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QUARTERLY GROUNDWATER MONITORING REPORT

5800 CHRISTIE STREET  
EMERYVILLE, CALIFORNIA

MARCH 22, 1990

SUBMITTED TO:

MR. DENNIS BYRNE  
ALAMEDA COUNTY HEALTH CARE SERVICES  
HAZARDOUS MATERIALS DIVISION  
80 SWAN WAY, ROOM 200  
OAKLAND, CALIFORNIA 94621

PREPARED FOR:

CROLEY & HERRING INVESTMENT COMPANY  
1311 63RD STREET  
EMERYVILLE, CALIFORNIA 94608

PREPARED BY:

AWD TECHNOLOGIES, INC.  
10 WEST ORANGE AVENUE  
SOUTH SAN FRANCISCO, CALIFORNIA 94080

March 22, 1990

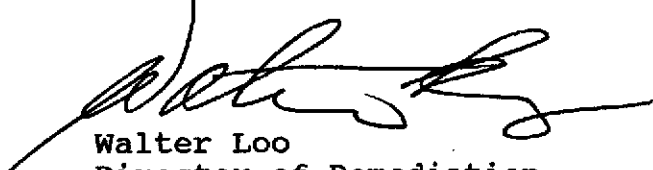
Mr. Steve Croley  
Croley and Herring Investment Company  
1311 63rd Street  
Emeryville, CA 94608

Subject: Quarterly Report for Groundwater Monitoring  
5800 Christie Avenue, Emeryville, California

Enclosed please find a copy of the quarterly status report regarding the results of groundwater sampling performed on February 20, 1990 at the subject facility.

Should you have any questions regarding the subject report, please contact me.

Sincerely yours,



Walter Loo  
Director of Remediation

WWL/isw

Enclosure

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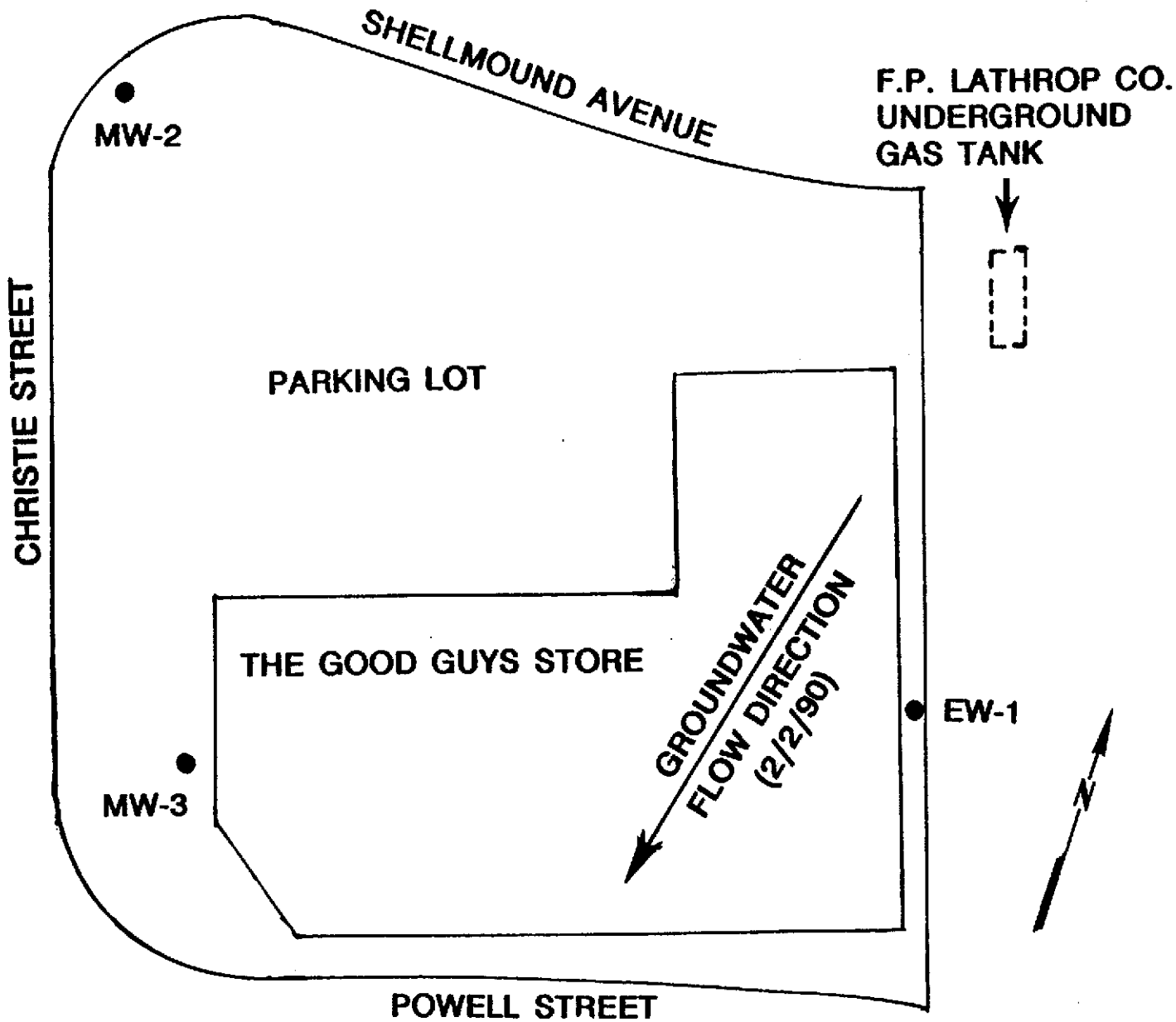
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## 1.0 INTRODUCTION

The Croley and Herring Investment Company (CHIC) facility is located on the southeast corner of Christie and Shellmound Avenues in Emeryville, California (Figure 1). Currently CHIC leases this property to The Good Guys, an electronic merchandise retailer. According to the previous investigations, soil contamination was identified. The soil containing solvents was removed from the area of concern and treated onsite. The contaminated soil was remediated and disposed of in Class III landfill in July 1989 on approval from the regulatory agency.

However, there were trace residual levels of volatile hydrocarbons remained in the soil in the close proximity of the excavated area. The facility has installed a vapor extraction system to abate the vapor trapped in the unsaturated soil after the Authority of Construct was received from Bay Area Air Quality Management District (BAAQMD). The system contains a blower connected to four venting wells and two 150-pound activated carbon canisters connected in series according to the specification provided by BAAQMD. The system is ready to operate pending inspection from BAAQMD.

As part of the site closure program, a quarterly groundwater monitoring program is required by Alameda County Health Services. There were two round of groundwater sampling performed from the three monitoring wells at the facility. The first round of water sampling took place on November 6, 1989 and the second round of water sampling took place on February 20, 1990. Water samples were sent to a State-certified laboratory for analysis under appropriate chain-of-custody procedures. This report incorporates the groundwater movement analysis, laboratory analytical results and a summary of findings.



**LEGEND**

● EXISTING WELL LOCATION



AWD TECHNOLOGIES, INC



SITE LOCATION MAP  
5800 CHRISTIE STREET  
EMERYVILLE, CALIFORNIA

CUSTOMER: CHIC  
DATE: 3/14/90

JOB NUMBER: 930-1000  
DRAWING NUMBER: FIGURE 1

REV  
0

## 2.0 GROUNDWATER LEVEL SURVEY

For groundwater movement analysis, water level was measured in the three existing groundwater monitoring wells EW-1, MW-2, and MW-3. Table 1 presents a summary of the water levels in the three wells from the two rounds of water sampling.

Based on water level data collected on February 20, 1990, water levels in wells EW-1 and MW-2 rose by 0.22 and 0.11 feet, respectively, and the water level in MW-3 dropped by 0.32 feet. The shallow groundwater flows toward the south and the gradient was 0.016 feet per foot of horizontal distance. The groundwater movement remained in the same direction as compared to the flow direction analyzed for the November 1989 sampling.

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TABLE 1  
SUMMARY OF WATER LEVEL DATA

WELL ID	Elevation of TOC Ft (MSL)	11/6/89		2/20/90	
		DTW Ft	SWL Ft (MSL)	DTW Ft	SWL Ft (MSL)
EW-1	8.62	6.15	2.47	5.93	2.69
MW-2	7.42	4.37	3.05	4.26	3.16
MW-3	6.42	5.10	1.32	5.42	1.00

Note:

TOC is top of casing  
DTW is depth to water table  
SWL is static water level  
MSL is mean sea level

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### 3.0 GROUNDWATER QUALITY

Groundwater samples were collected from each of the three monitoring wells on February 20, 1990. The samples were analyzed using EPA Method 601 and 602 for volatile organic compounds (VOCs) and total petroleum hydrocarbons (TPH) as gasoline.

None of the VOCs were detected in wells MW-2 and MW-3. However, the concentrations of hydrocarbons has significantly increased from those detected in water samples collected on November 6, 1989. There are two new compounds (chloroethane and methylene chloride) appeared in the water sample collected from well EW-1. The following compounds were detected in well EW-1:

TPH as gasoline	12,000 ppb
Benzene	1,300 ppb
Toluene	3,600 ppb
Xylenes	47 ppb
Ethylbenzene	7.1 ppb
TCE	1,100 ppb
1,1 DCE	14 ppb
1,2 DCE	2,500 ppb
1,1,1 TCA	550 ppb
1,1 DCA	460 ppb
1,2 DCA	34 ppb
Chloroethane	29 ppb
Methylene Chloride	14 ppb

#### 4.0 SUMMARY OF FINDINGS

Groundwater flow direction and gradient across the site are in a similar pattern as compared to the results from the previous Quarterly Monitoring Report (11/6/89). A summary of the flow direction and groundwater gradient are presented as following:

Groundwater Flow Direction	4/25/89 Southwest	11/6/89 South	2/20/90 South
Hydraulic Gradient	0.00145	0.012	0.016

There are no hydrocarbons detected in wells MW-2 and MW-3 with concentrations above detection limits. The changes in water quality in well EW-1 are shown as follows:

	Concentrations in ppb		
	5/8/89	11/6/89	2/20/90
TPH as Gasoline	Not tested	740	12,000
Benzene	N.D.	180	1,300
Toluene	190	39	3,600
Xylenes	170	67	47
Ethylbenzene	N.D.	0.8	7.1
TCE	640	740	1,100
1,1 DCE	78	2.3	14
1,2 DCE	N.D.	350	2,500
1,1,1 TCA	N.D.	26	550
1,1 DCA	N.D.	34	460
1,2 DCA	N.D.	4.8	34
Vinyl Chloride	N.D.	29	N.D.
Chloroethane	N.D.	N.D.	29
Methylene Chloride	N.D.	N.D.	14

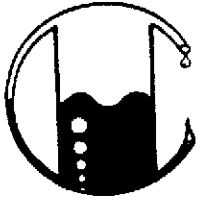
It is not uncommon to cause concentration fluctuation by a change in the water level. The increase in concentrations of chlorinated hydrocarbons in well EW-1 is likely caused, in part, by soil desorption due to the rise of water level and, in part, by a chemical breakdown process. The levels of gasoline and its constituents are alarming because of the fact that these compounds have significantly increased in concentration as compared to the



previous analytical results of sampling events performed in May and November 1989. The origin of gasoline and benzene may have come from a suspect upgradient source, the former F.P. Lathrop underground gasoline tank location (Figure 1). This needs to be confirmed. If confirmed, AWD will recommend to Alameda County Health Services that a groundwater extraction system at the source (F.P. Lathrop tank location) be installed to reverse the groundwater flow and remediate the gasoline and benzene plume.

APPENDIX A

Groundwater Quality Analysis Results



# MOBILE CHEM LABS INC.

1678 Reliez Valley Road  
Lafayette, CA 94549 • (415) 945-1266

AWD Technologies  
10 West Orange Ave.  
So. San Francisco, CA 94080  
Attn: Walter Loo

Date Sampled: 02-20-90  
Date Received: 02-20-90  
Date Reported: 02-21-90

Sample Number

020036

Sample Description

Proj. I.D.# CHIC-Emeryville

MW-2

WATER

ANALYSIS

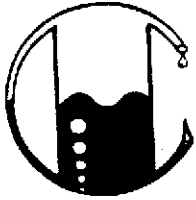
	<u>Detection Limit</u>	<u>Sample Results</u>
	ppb	ppb
Total Petroleum Hydrocarbons as Gasoline	50	<50
Benzene	0.5	<0.5
Toluene	0.5	0.6
Xylenes	0.5	<0.5
Ethylbenzene	0.5	<0.5

Note: Analysis was performed using EPA methods 5030 and TPH LUFT  
with method 8020 used for BTX distinction.

MOBILE CHEM LABS

*Joyce A. V. Dishman*

Ronald G. Evans  
Lab Director



# MOBILE CHEM LABS INC.

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Lafayette, CA 94549 • (415) 945-1266

AWD Technologies  
10 West Orange Ave.  
So. San Francisco, CA 94080  
Attn: Walter Loo

Date Sampled: 02-20-90  
Date Received: 02-20-90  
Date Reported: 02-21-90

Sample Number

020037

Sample Description

Proj. I.D.# CHIC-Emeryville

MW-3

WATER

## ANALYSIS

	Detection Limit	Sample Results
	ppb	ppb
Total Petroleum Hydrocarbons as Gasoline	50	<50
Benzene	0.5	<0.5
Toluene	0.5	<0.5
Xylenes	0.5	<0.5
Ethylbenzene	0.5	<0.5

Note: Analysis was performed using EPA methods 5030 and TPH LUFT  
with method 8020 used for BTX distinction.

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10 West Orange Ave.  
So. San Francisco, CA 94080  
Attn: Walter Loo

Date Sampled: 02-20-90  
Date Received: 02-20-90  
Date Reported: 02-21-90

Sample Number

020038

Sample Description

Proj. I.D.# CHIC-Emeryville

EW-1

WATER

## ANALYSIS

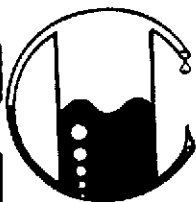
	<u>Detection Limit</u>	<u>Sample Results</u>
	ppb	ppb
Total Petroleum Hydrocarbons as Gasoline	50	12,000
Benzene	0.5	1,300
Toluene	0.5	3,600
Xylenes	0.5	47
Ethylbenzene	0.5	7.1

Note: Analysis was performed using EPA methods 5030 and TPH LUFT  
with method 8020 used for BTX distinction.

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*Ronald G. Evans*

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Lab Director



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AWD Technology  
#10 W. Orange Ave.  
So. San Francisco, CA 94080  
Attn: Walter Loo

Date Sampled: 02-20-90  
Date Received: 02-20-90  
Date Reported: 03-03-90

Sample Number

020036

Sample Description

Proj. ID. CHIC-Emeryville  
Powel Christy  
MW-2 WATER

## PRIORITY POLLUTANTS

### VOLATILE ORGANIC COMPOUNDS

results in ppb

Benzene.....	---	trans-1,2-Dichloroethene...	<0.5
Bromomethane.....	<1.0	1,2-Dichloropropane.....	<0.5
Bromodichloromethane.....	<0.5	1,3-Dichloropropene.....	<0.5
Bromoform.....	<0.5	Ethylbenzene.....	---
Carbon tetrachloride.....	<0.5	Methylene chloride.....	<0.5
Chlorobenzene.....	<0.5	1,1,2,2-Tetrachloroethane..	<0.5
Chloroethane.....	<1.0	Tetrachloroethene.....	<0.5
2-Chloroethylvinyl ether..	<0.5	1,1,1-Trichloroethane.....	<0.5
Chloroform.....	<0.5	1,1,2-Trichloroethane.....	<0.5
Chloromethane.....	<1.0	Trichloroethene.....	<0.5
Dibromochloromethane.....	<0.5	Toluene.....	---
1,1-Dichloroethane.....	<0.5	Vinyl chloride.....	<1.0
1,2-Dichloroethane.....	<0.5	1,2-Dichlorobenzene.....	<0.5
1,1-Dichloroethene.....	<0.2	1,3-Dichlorobenzene.....	<0.5
		1,4-Dichlorobenzene.....	<0.5

MOBILE CHEM LABS

  
Ronald G. Evans  
Lab Director

NOTE: Analysis was performed using EPA  
methods 601



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Date Reported: 03-03-90

Sample Number

020037

Sample Description

Proj. ID. CHIC-Emeryville  
Powel Christy  
MW-3 WATER

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS

results in ppb

Benzene.....	---	trans-1,2-Dichloroethene...	<0.5
Bromomethane.....	<1.0	1,2-Dichloropropane.....	<0.5
Bromodichloromethane.....	<0.5	1,3-Dichloropropene.....	<0.5
Bromoform.....	<0.5	Ethylbenzene.....	---
Carbon tetrachloride.....	<0.5	Methylene chloride.....	<0.5
Chlorobenzene.....	<0.5	1,1,2,2-Tetrachloroethane..	<0.5
Chloroethane.....	<1.0	Tetrachloroethene.....	<0.5
2-Chloroethylvinyl ether..	<0.5	1,1,1-Trichloroethane.....	<0.5
Chloroform.....	<0.5	1,1,2-Trichloroethane.....	<0.5
Chloromethane.....	<1.0	Trichloroethene.....	<0.5
Dibromochloromethane.....	<0.5	Toluene.....	---
1,1-Dichloroethane.....	<0.5	Vinyl chloride.....	<1.0
1,2-Dichloroethane.....	<0.5	1,2-Dichlorobenzene.....	<0.5
1,1-Dichloroethene.....	<0.2	1,3-Dichlorobenzene.....	<0.5
		1,4-Dichlorobenzene.....	<0.5

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Date Sampled: 02-20-90  
Date Received: 02-20-90  
Date Reported: 03-03-90

Sample Number

020038

Sample Description

Proj. ID. CHIC-Emeryville  
Powel Christy  
EW-1 WATER

## PRIORITY POLLUTANTS

### VOLATILE ORGANIC COMPOUNDS

results in ppb

Benzene.....	---	trans-1,2-Dichloroethene	2,500
Bromomethane.....	<1.0	1,2-Dichloropropane.....	<0.5
Bromodichloromethane.....	<0.5	1,3-Dichloropropene.....	<0.5
Bromoform.....	<0.5	Ethylbenzene.....	---
Carbon tetrachloride.....	<0.5	Methylene chloride.....	14
Chlorobenzene.....	<0.5	1,1,2,2-Tetrachloroethane..	<0.5
Chloroethane.....	29	Tetrachloroethene.....	<0.5
2-Chloroethylvinyl ether..	<0.5	1,1,1-Trichloroethane.....	550
Chloroform.....	<0.5	1,1,2-Trichloroethane.....	<0.5
Chloromethane.....	<1.0	Trichloroethene.....	1,100
Dibromochloromethane.....	<0.5	Toluene.....	---
1,1-Dichloroethane.....	460	Vinyl chloride.....	<1.0
1,2-Dichloroethane.....	34	1,2-Dichlorobenzene.....	<0.5
1,1-Dichloroethene.....	14	1,3-Dichlorobenzene.....	<0.5
		1,4-Dichlorobenzene.....	<0.5

MOBILE CHEM LABS

*Ronald G. Evans*  
Ronald G. Evans  
Lab Director

NOTE: Analysis was performed using EPA  
methods 601





# MOBILE CHEM LABS INC.

1678 Relief Valley Road  
Lafayette, CA 94549 • (415) 945-1266

#10 W. ORANGE AVE.  
San Jose, CA 94080

## CHAIN OF CUSTODY RECORD

PROJECT NO.		SITE NAME & ADDRESS			REQU ESTED AN ALY SIS	TURN AROUND TIME FOR ANALYSIS:											
SAMPLERS NAME & COMPANY ADDRESS						RUSH _____ NO RUSH <u>2 weeks</u>											
I.D. NO.	DATE	TIME	SOIL	WATER	SAMPLING LOCATION	REMARKS											
Chic-Chisty	2/20	1546		✓	MW-2	✓	✓										
Chic-Chisty	2/20	2:40 PM		✓	MW-3	✓	✓										
Ewl	2/20	5:00 PM		✓	EW-1	✓	✓										

RELINQUISHED BY: (Signature) <i>Dave P. Lewis</i>	DATE 2/20	TIME 5:30	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)

The following MUST BE completed by the laboratory accepting samples for analysis:

- 1) Have all samples received been stored in ice? \_\_\_\_\_
- 2) Did any VOA samples received have any head space? \_\_\_\_\_
- 3) Were samples in appropriate containers and packaged properly? \_\_\_\_\_

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