

ENVIRONMENTAL
PROTECTION

GROUNDWATER MONITORING REPORT

96 MAY 31 PM 1:19

**5800 CHRISTIE AVENUE,
EMERYVILLE, CALIFORNIA**

MARCH 1996

SUC 334

SUBMITTED TO:

**MS. SUSAN HUGO
ALAMEDA COUNTY HEALTH CARE SERVICES
HAZARDOUS MATERIALS DIVISION
1131 HARBOUR BAY PARKWAY,
ALAMEDA, CALIFORNIA 94502**

PREPARED FOR :

**CROLEY & HERRING INVESTMENT COMPANY
353 BEACON RIDGE LANE,
WALNUT CREEK, CALIFORNIA 94596**

PREPARED BY:

**ETS ENVIRONMENT & TECHNOLOGY SERVICES
2081 15TH STREET,
SAN FRANCISCO, CALIFORNIA 94114
TELEPHONE: 415-861-0810
FACIMILE: 415-861-3269**

ETS ENVIRONMENT & TECHNOLOGY SERVICES

2081 15TH STREET, SAN FRANCISCO, CALIFORNIA 94114
PHONE 415-861-0810 FAX 415-861-3269

April 22, 1996

Mr. Dick Herring
President
Croley & Herring Investment Company
353 Beacon Ridge Lane,
Walnut Creek, California 94596

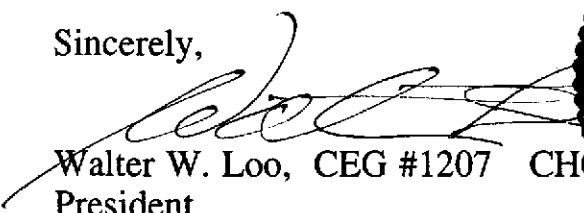
Subject: Groundwater Monitoring Report 1996
5800 Christie Avenue, Emeryville, California

Dear Mr. Herring:

Enclosed please find a copy of the semi-annual groundwater monitoring report for the March 1996 sampling period at the subject facility. The subject groundwater monitoring event was requested by Ms. Susan Hugo of Alameda County Health Care Services as a partial requirement for the groundwater closure for the subject property and the adjacent Lathrop property.

Please contact me if you have any questions regarding this report.

Sincerely,


Walter W. Loo, CEG #1207 CHC #30
President



CC: Mr. Sum Arigala, San Francisco Bay Area RWQCB
Ms. Susan Hugo, Alameda County Health Care Services

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1.0 INTRODUCTION

Environment & Technology Services(ETS) was retained by Croley & Herring Investment Company(CHIC) to perform the groundwater monitoring for the facility located at 5800 Christie Street in Emeryville, California. The subject facility is currently leased to an electronic merchandise retailer. Prior to leasing, soil contamination was identified at the subject facility. The contaminated soil was removed with the exception of that which was underlying the building because of safety concerns. The removed soil was remediated on-site and properly disposed of with the approval of the regulatory agencies.

A vapor extraction system(VES) was installed immediately adjacent to the eastern side of the building to mitigate the residual volatile hydrocarbons contained in the soil. The residual volatile organic chemicals(VOCs) were remediated from an average VOCs concentration of about 660 ppm to a satisfactory level at an average of 0.82 ppm in soil. A soil closure plan was submitted(11/15/91) and approval of closure was received on 1/21/92 after submittal of confirming soil sampling results. The soil vapor extraction system was decommissioned and the Bay Area Air Quality Management District was notified on 12/16/91. The final VES closure report was completed on August 29, 1992.

An indoor vapor monitoring system Sierra Monitor Model 5000 was installed by the "Good Guys" electronic store in 1989 and operated through March, 1993. No methane or other VOCs were detected for the monitoring period. The vapor monitoring system was disconnected in March, 1993 with the concurrence of Mr. Brian Oliva of Alameda County Health Care Services, per March 15,1993 correspondence.

As part of the site activities, a groundwater monitoring program was implemented. Previous monitoring events were conducted on November 6, 1989, February 20, 1990, May 31, 1990, September 7, 1990, December 4, 1990, April 16, 1991, July 3,1991, October 12, 1991, January 26, 1992, April 8, 1992, July 15,1992, October 19, 1992, January 11, 1993, March 29, 1993, July 7, 1993, October 8, 1993, January 19, 1994, January 25, 1995, September 18, 1995, January 6, 1996 and January 29, 1996, respectively. As per Ms. Susan Hugo requested, this groundwater level monitoring event was conducted on March 25, 1996. Groundwater samples were taken from the monitoring wells on both the subject property and the adjacent Lathrop property and sent to a State-certified laboratory for analysis under proper chain-of-custody procedures. There are three monitoring wells located on the Lathrop property and they were sampled on January 29, 1996 and March 25, 1996.

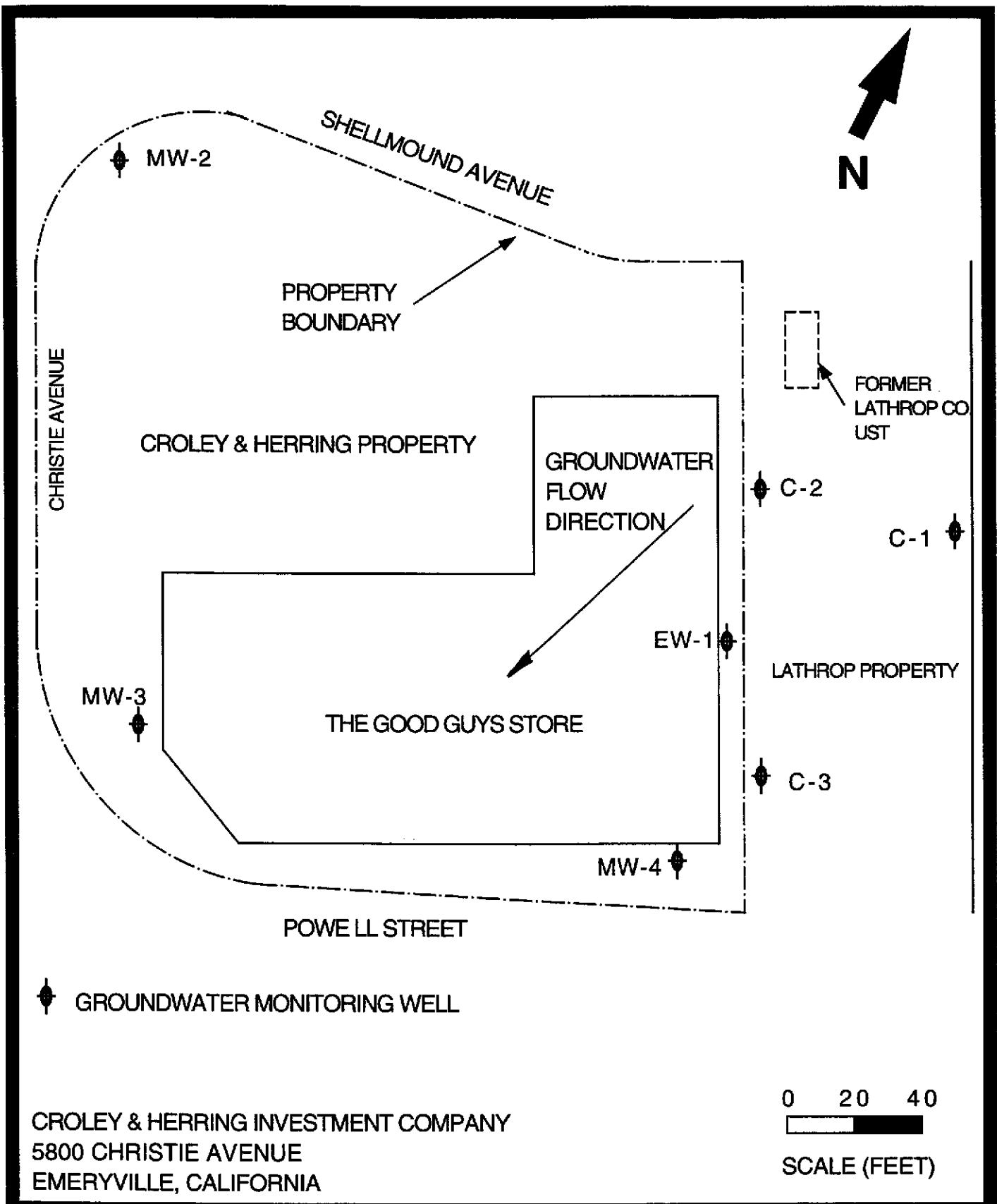
This report presents the results of this groundwater monitoring including laboratory analytical results, groundwater movement analysis, summary of findings, and conclusions and discussions.

2.0 GROUNDWATER MOVEMENT ANALYSIS

Prior to sample collection, depth-to-water table in each of the four existing monitoring wells was measured for the analysis of groundwater movement. Table 1 presents a summary of the water levels in the four wells (EW1, MW2, MW3 and MW4) from the groundwater monitoring events prepared by ETS.

From the water level measurements on March 25, 1996, elevation of water levels were higher, as compared to the data collected in September 18, 1995. The groundwater flow direction remained in the same direction, flowing towards the southwest (Figure 1). The hydraulic gradient was 0.0177 feet per horizontal foot.

Groundwater movement across the facility remains in a similar pattern, as compared to sampling events. Data on flow direction and hydraulic gradient are summarized in Table 2.



CROLEY & HERRING INVESTMENT COMPANY
 5800 CHRISTIE AVENUE
 EMERYVILLE, CALIFORNIA

0 20 40
 SCALE (FEET)

ETS

ENVIRONMENT & TECHNOLOGY SERVICES

**FIGURE 1
 GENERAL SITE MAP**

TABLE 1

SUMMARY OF WATER LEVEL DATA

WELL Name	Elev. of TOC (Ft-MSL)	1/6/89		2/20/90		5/31/90		9/7/90	
		DTW Ft.	SWL Ft.	DTW Ft.	SWL Ft.	DTW Ft.	SWL Ft.	DTW Ft.	SWL Ft.
EW-1	8.62	6.15	2.47	5.93	2.69	5.86	2.76	6.30	2.32
MW-2	7.42	4.37	3.05	4.26	3.16	4.26	3.16	4.60	2.82
MW-3	6.42	5.10	1.32	5.42	1.00	4.93	1.49	5.15	1.17

WELL Name	12/4/90		4/16/91		7/3/91		10/14/91		1/9/92	
	DTW Ft.	SWL Ft.	DTW Ft.	SWL Ft.	DTW Ft.	SWL Ft.	DTW Ft.	SWL Ft.	DTW Ft.	SWL Ft.
EW-1	7.39	2.23	6.02	2.60	6.20	2.42	6.5	2.12	6.20	2.42
MW-2	4.67	2.75	4.31	3.11	4.52	2.90	3.92	3.5	4.43	3.10
MW-3	5.96	1.35	5.25	1.17	5.33	1.09	4.63	1.79	6.50	-0.08

WELL Name	7/15/92		10/19/92		1/11/93		4/19/93	
	DTW Ft.	SWL Ft.	DTW Ft.	SWL Ft.	DTW Ft.	SWL Ft.	DTW Ft.	SWL Ft.
EW-1	6.10	2.52	6.1	2.52	5.5	3.12	5.95	2.67
MW-2	4.42	3.00	4.77	2.65	2.9	4.92	4.35	3.07
MW-3	5.23	1.19	5.37	1.05	3.6	2.82	5.1	1.32

TABLE 1(continue)

SUMMARY OF WATER LEVEL DATA

WELL Name	Elev. of TOC (Ft-MSL)	7/13/93		10/15/93		1/19/94		1/4/95	
		DTW Ft.	SWL Ft.	DTW Ft.	SWL Ft.	DTW Ft.	SWL Ft.	DTW Ft.	SWL Ft.
EW-1	8.62	6.2	2.42	6.25	2.37	6.3	2.32	4.75	3.87
MW-2	7.42	4.7	2.72	4.25	3.17	4.9	2.52	3.57	3.85
MW-3	6.42	5.35	1.07	5.35	1.07	5.3	1.12	5.1	1.32
MW-4	7.07*	5.75	1.32	5.80	1.27	5.75	1.32	6.1	0.97

WELL Name	Elev. of TOC (Ft-MSL)	9/18/95		3/25/96	
		DTW Ft.	SWL Ft.	DTW Ft.	SWL Ft.
EW-1	8.62	6.30	2.32	4.95	3.67
MW-2	7.42	4.70	2.72	3.50	3.92
MW-3	6.42	5.10	1.32	4.60	1.82
MW-4	7.07*	6.90	0.17	6.40	0.67

* Adjusted elevation

Note: TOC top of casing
 DTW depth to water table
 SWL static water level above MSL
 MSL mean sea level

TABLE 2

GROUNDWATER MOVEMENT ANALYSIS

Date	4/25/89	11/6/89	2/20/90	5/31/90	9/7/90	12/4/90
Flow Towards	SW	S	S	S	S	S
Gradient	0.001	0.012	0.016	0.0125	0.0115	0.045
Date	4/16/91	7/3/91	10/14/91	1/9/92	7/15/92	10/19/92
Flow Towards	S	S	S	SW	S	S
Gradient	0.014	0.013	0.011	0.0238	0.013	0.0127
Date	1/11/93	4/19/93	7/7/93	10/15/93	1/19/94	1/4/95
Flow Towards	S	SW	SW	S	S	S
Gradient	0.011	0.013	0.013	0.0153	0.0105	0.028
Date	9/18/95	3/25/96				
Flow Towards	SW	SW				
Gradient	0.0176	0.0177				

3.0 GROUNDWATER QUALITY

On March 25, 1996, ETS field personnel visited the facility and collected water samples from monitoring well EW1 and MW4 for laboratory analysis. In addition, wells C1, C2, and C3 were sampled at the adjacent Lathrop property. These groundwater samples were sent to a state-certified laboratory for analyses of halocarbons using EPA method 601, total petroleum hydrocarbons (TPH) as gasoline and gasoline constituents benzene, toluene, ethylbenzene, and total xylenes (BTEX) using EPA method 602.

Lathrop's wells C1 and C2 were non-detect on VOCs and BTEX compounds for both monitoring periods.

From the results of the laboratory analysis (Appendix A), water samples taken from well EW1 contained some volatile organic compounds. The VOCs detected in well EW-1 from the March 25, 1996 sampling are presented in Table 3. The total VOC's in EW-1 have declined steadily over the last six months from September 18, 1995 from 4.06 to 1.399 ppm. TPH as gasoline dropped from 3.2 ppm to 1.3 ppm with benzene showing non-detect for all four rounds of monitoring. Chlorinated solvents dropped from 0.86 to 0.099 ppm for the same period.

Groundwater quality results of CHIC well MW4 and Lathrop's well C-3 are included in Table 4 and 5 respectively. Only gasoline and BTEX were detected and they were steady for both monitoring periods.

TABLE 3

**SUMMARY OF GROUNDWATER QUALITY WELL EW-1
5800 CHRISTIE AVENUE,
EMERYVILLE, CALIFORNIA**

CONCENTRATIONS IN MG/L

COMPOUNDS	7/7/93	10/8/93	1/19/94	1/25/95	9/18/95	1/6/96	1/29/96	3/25/96
TPH as GASOLINE	40	12	5	13	3.2	1.7	1.8	1.3
BENZENE	ND	ND	0.022	0.026	ND	ND	ND	ND
TOLUENE	3.6	11	4.3	5.0	0.62	1.2	1.1	0.55
XYLENES	ND	0.081	0.07	0.048	0.015	0.033	0.043	0.011
ETHYLBENZENE	ND	ND	0.012	0.009	ND	ND	ND	ND
HALOCARBONS	1.7	1.81	ND	3.15	0.86	0.179	0.434	0.099
PCE	ND	ND	ND	ND	ND	ND	ND	ND
TCE	ND	ND	ND	0.95	0.04	0.013	0.054	ND
1,1 DCE	ND	ND	ND	ND	ND	ND	ND	ND
1,2 DCE	ND	ND	ND	0.4	ND	ND	ND	ND
1,1,1 TCA	ND	0.21	ND	ND	ND	ND	ND	ND
1,1 DCA	1.7	1.6	ND	1.8	0.11	0.08	0.38	0.039
1,2 DCA	ND	ND	ND	ND	ND	ND	ND	ND
VINYL CHLORIDE	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROFORM	ND	ND	ND	ND	0.19	0.06	ND	0.032
MET. CHLORIDE	ND	ND	ND	ND	ND	ND	ND	ND
BROMO DCA	ND	ND	ND	ND	0.02	ND	ND	ND
1,2 DCPROPANE	ND	ND	ND	ND	0.5	0.026	ND	0.028
TOTAL VOCs	41.7	13.81	5	16.15	4.06	1.879	2.234	1.399

NA NOT ANALYSED

ND NOT DETECTED OR BELOW DETECTION LIMITS

VOCs VOLATILE ORGANIC COMPOUNDS (TPH PLUS TOX)

TABLE 4

SUMMARY OF GROUNDWATER QUALITY WELL MW-4
5800 CHRISTIE AVENUE,
EMERYVILLE, CALIFORNIA

CONCENTRATIONS IN MG/L

COMPOUNDS	7/7/93	10/8/93	1/19/94	1/25/95	9/18/95	1/29/96	3/25/96
TPH as GASOLINE	<100.0*	2.2*	0.35	26.0	5.3	11.00	14.00
BENZENE	0.8	0.29	0.21	1.4	0.57	0.75	1.0
TOLUENE	0.28	0.22	0.025	0.27	0.11	0.11	0.15
XYLENES	0.3	0.2	0.037	0.28	0.096	0.14	0.22
ETHYLBENZENE	0.27	0.12	0.035	0.56	0.16	0.24	0.38
HALOCARBONS	ND	0.06	ND	ND	ND	ND	ND
PCE	ND	ND	ND	ND	ND	ND	ND
TCE	ND	ND	ND	ND	ND	ND	ND
1,1 DCE	ND	ND	ND	ND	ND	ND	ND
1,2 DCE	ND	ND	ND	ND	ND	ND	ND
1,1,1 TCA	ND	0.005	ND	ND	ND	ND	ND
1,1 DCA	ND	ND	ND	ND	ND	ND	ND
1,2 DCA	ND	0.055	ND	ND	ND	ND	ND
VINYL CHLORIDE	ND	ND	ND	ND	ND	ND	ND
CHLOROFORM	ND	ND	ND	ND	ND	ND	ND
MET. CHLORIDE	ND	ND	ND	ND	ND	ND	ND
BROMO DCA	ND	ND	ND	ND	ND	ND	ND
1,2 DCPROPANE	ND	ND	ND	ND	ND	ND	ND
TOTAL VOCs	<100*	2.26*	0.35	26.0	5.3	11.00	14.00

* BTEX DO NOT MATCH GASOLINE PATTERN
 NA NOT ANALYSED
 ND NOT DETECTED OR BELOW DETECTION LIMITS
 VOCs VOLATILE ORGANIC COMPOUNDS (TPH PLUS TOX)

TABLE 5

SUMMARY OF GROUNDWATER QUALITY WELL C-3 (LATHROP)
5800 CHRISTIE AVENUE,
EMERYVILLE, CALIFORNIA

CONCENTRATIONS IN MG/L

COMPOUNDS	1/29/96	3/25/96
TPH as GASOLINE	20.00	21.00
BENZENE	3.6	2.90
TOLUENE	0.55	0.49
XYLENES	0.39	0.36
ETHYLBENZENE	0.39	0.41
HALOCARBONS	ND	ND
PCE	ND	ND
TCE	ND	ND
1,1 DCE	ND	ND
1,2 DCE	ND	ND
1,1,1 TCA	ND	ND
1,1 DCA	ND	ND
1,2 DCA	ND	ND
VINYL CHLORIDE	ND	ND
CHLOROFORM	ND	ND
MET. CHLORIDE	ND	ND
BROMO DCA	ND	ND
1,2 DCPROPANE	ND	ND
TOTAL VOCs	20.00	21.00

* BTEX DO NOT MATCH GASOLINE PATTERN

NA NOT ANALYSED

ND NOT DETECTED OR BELOW DETECTION LIMITS

VOCs VOLATILE ORGANIC COMPOUNDS (TPH PLUS TOX)

4.0 SUMMARY OF FINDINGS

Table 3, 4, and 5 present the most recent analytical result of wells EW-1, MW4, and Lathrop C-3, respectively. There are several factors affecting the change from previous reading which are noted below.

With regards to EW-1, all values are down or lower than previous results. The chlorinated solvents have dropped from 3.15 ppm in January 1995 to 0.099 in March 1996. TPH as Gasoline has dropped from 13 ppm to 1.3 ppm in the same period. This has undoubtedly resulted from both natural as well as stimulated bio-remediation. Benzene has been non-detect since September 1995.

MW-4 well presents a different situation. In January 1995 values suddenly jumped upward, possibly due to disturbance of groundwater upgradient on the Lathrop property based on their drilling of 30 wells in September and December 1994. Some of these wells were only 20 to 30 feet up gradient from MW-4. The Lathrop C-3 well shows the some gasoline constituents as MW-4 but in higher concentrations. Although the September 1995 values were lower, the January and March 1996 numbers have gone up slightly, probably due to the heavy rain during the winter months thus diluting the natural bio-remediation and with higher water levels causing toxic flow from up gradient source.

The Lathrop C-3 well with only BTEX compounds(no chlorinated solvents) have changed slightly downward in value from January to March 1996.

Lathrop well C-1 and C-2 were non-detect on Chlorinated solvents and BTEX.

CHIC wells MW-2 and MW-3 have been non-detect on BTEX and chlorinated solvents since their inception in 1989.

APPENDIX A

GROUNDWATER LABORATORY ANALYSIS REPORT

Enviro - Chem, Inc.

1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

Date: April 2, 1996

Mr. Dick Herring/Walter Loo
Croley & Herring Co.
353 Beacon Ridge Lane
Walnut Creek, CA 94596

Dear Mr. Herring:


The analytical results for the water samples (Project: CHIC), received by our Lab on March 26, 1996, are attached. The report also faxed to Mr. walter Loo at (310)498-2479.

Enviro-Chem appreciates the opportunity to provide you and your company this and other services. Please do not hesitate to call Mr. John Ackerman, our Customer Service Specialist, or myself, if you have any questions.

Sincerely,



Steven Chen, Ph.D.
Lab Director



Hon Su
program Manager

LABORATORY REPORT

CUSTOMER: CROLEY & HERRING CO., 353 BEACON RIDGE LANE,
WALNUT CREEK, CA 94596 TEL (510) 939-1118

PROJECT: CHIC
 MATRIX: WATER DATE SAMPLE REC'D: 03/26/96 (ETS)
 DATE SAMPLED: 03/25/96 DATE ANALYZED: 03/27-28/96
 REPORTED TO: MR. DICK HERRING DATE REPORTED: 04/02/96
MR. WALTER LOO/ETS (FAX: 310-498-2479) (415) 861-3269

 SAMPLE I.D.: EW-1 LAB I.D.: 960326-4

*EPA 601 FOR PURGEABLE HALOCARBONS ANALYSIS; UNIT: UG/L (PPB)

PARAMETER	SAMPLE RESULT	DETECTION LIMIT X10
Chloromethane	ND	5
Bromoethane	ND	5
Vinyl Chloride	ND	5
Chloroethane	ND	5
Methylene Chloride	ND	5
1,1-Dichloroethene	ND	1
1,1-Dichloroethane	39	1
Trans-1,2-Dichloroethene	ND	1
Chloroform	32	1
1,2-Dichloroethane	ND	1
1,1,1-Trichloroethane	ND	1
Carbon Tetrachloride	ND	1
Bromodichloromethane	ND	1
1,2-Dichloropropane	28	1
Cis-1,3-Dichloropropene	ND	1
Trichloroethene	ND	1
Dibromochloromethane	ND	1
1,1,2-Trichloroethane	ND	1
Trans-1,3-dichloropropene	ND	1
2-Chloroethylvinylether	ND	5
Bromoform	ND	5
Tetrachloroethene	ND	1
1,1,2,2-Tetrachloroethane	ND	1
Chlorobenzene	ND	1
1,3-Dichlorobenzene	ND	1
1,4-Dichlorobenzene	ND	1
1,2-Dichlorobenzene	ND	1
Dichlorodifluoromethane	ND	5
Trichlorofluoromethane	ND	5

 ND = The concentration is below the detection limit or non-detected
 * = Performed by GC/MS Method (EPA 8240)

Data Reviewed and Approved by: _____ *S*
 CAL-DHS ELAP CERTIFICATE No.: 1555

LABORATORY REPORT

CUSTOMER: CROLEY & HERRING CO., 353 BEACON RIDGE LANE,
WALNUT CREEK, CA 94596 TEL (510) 939-1118

PROJECT: CHIC
MATRIX: WATER DATE SAMPLE REC'D: 03/26/96 (ETS)
DATE SAMPLED: 03/25/96 DATE ANALYZED: 03/27-28/96
REPORTED TO: MR. DICK HERRING DATE REPORTED: 04/02/96
MR. WALTER LOO/ETS (FAX: 310-498-2479) (415) 861-3269


SAMPLE I.D.: EW-1 LAB I.D.: 960326-4

*EPA 602 FOR PURGEABLE AROMATICS ANALYSIS; UNIT: UG/L (PPB)

<u>PARAMETER</u>	<u>SAMPLE RESULT</u>	<u>DETECTION LIMIT X10</u>
Benzene	ND	1
Chlorobenzene	ND	1
1,2-Dichlorobenzene	ND	1
1,3-Dichlorobenzene	ND	1
1,4-Dichlorobenzene	ND	1
Ethylbenzene	ND	1
Toluene	550	1
Xylenes, Total	11	2

COMMENTS

ND = The concentration is below the detection limit or non-detected
* = Confirmed by GC/MS (EPA 624)

Data Reviewed and Approved by: _____ 

CAL-DHS ELAP CERTIFICATE No.: 1555

LABORATORY REPORT

CUSTOMER: CROLEY & HERRING CO., 353 BEACON RIDGE LANE,
WALNUT CREEK, CA 94596 TEL(510) 939-1118

PROJECT: CHIC

MATRIX: WATER

DATE SAMPLED: 03/25/96

REPORTED TO: MR. DICK HERRING

DATE SAMPLE REC'D: 03/26/96 (ETS)

DATE ANALYZED: 03/27-28/96

DATE REPORTED: 04/02/96

MR. WALTER LOO/ETS (FAX: 310-498-2479) (415) 861-3269

SAMPLE I.D.: EW-1

LAB I.D.: 960326-4

*EPA 8015M FOR GASOLINE ANALYSIS; UNIT: UG/L (PPB)

<u>PARAMETER</u>	<u>SAMPLE RESULT</u>	<u>DETECTION LIMIT</u>
TPH as GASOLINE	1,300	50

Data Reviewed and Approved by: _____ 

CAL-DHS ELAP CERTIFICATE No.: 1555

LABORATORY REPORT

CUSTOMER: CROLEY & HERRING CO., 353 BEACON RIDGE LANE,
WALNUT CREEK, CA 94596 TEL(510)939-1118

PROJECT: CHIC
 MATRIX: WATER DATE SAMPLE REC'D: 03/26/96 (ETS)
 DATE SAMPLED: 03/25/96 DATE ANALYZED: 03/27-28/96
 REPORTED TO: MR. DICK HERRING DATE REPORTED: 04/02/96
MR. WALTER LOO/ETS (FAX:310-498-2479) (415)861-3269

 SAMPLE I.D.: MW-4 LAB I.D.: 960326-5

*EPA 601 FOR PURGEABLE HALOCARBONS ANALYSIS; UNIT: UG/L (PPB)

PARAMETER	SAMPLE RESULTD	DETECTION LIMIT X10
Chloromethane	ND	5
Bromoethane	ND	5
Vinyl Chloride	ND	5
Chloroethane	ND	5
Methylene Chloride	ND	5
1,1-Dichloroethene	ND	1
1,1-Dichloroethane	ND	1
Trans-1,2-Dichloroethene	ND	1
Chloroform	ND	1
1,2-Dichloroethane	ND	1
1,1,1-Trichloroethane	ND	1
Carbon Tetrachloride	ND	1
Bromodichloromethane	ND	1
1,2-Dichloropropane	ND	1
Cis-1,3-Dichloropropene	ND	1
Trichloroethene	ND	1
Dibromochloromethane	ND	1
1,1,2-Trichloroethane	ND	1
Trans-1,3-dichloropropene	ND	1
2-Chloroethylvinylether	ND	5
Bromoform	ND	5
Tetrachloroethene	ND	1
1,1,2,2-Tetrachloroethane	ND	1
Chlorobenzene	ND	1
1,3-Dichlorobenzene	ND	1
1,4-Dichlorobenzene	ND	1
1,2-Dichlorobenzene	ND	1
Dichlorodifluoromethane	ND	5
Trichlorofluoromethane	ND	5

 ND = The concentration is below the detection limit or non-detected
 * = Performed by GC/MS Method (EPA 8240)

Data Reviewed and Approved by: _____
 CAL-DHS ELAP CERTIFICATE No.: 1555

LABORATORY REPORT

CUSTOMER: CROLEY & HERRING CO., 353 BEACON RIDGE LANE,
WALNUT CREEK, CA 94596 TEL(510)939-1118

PROJECT: CHIC
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MR. WALTER LOO/ETS (FAX:310-498-2479) (415)861-3269


 SAMPLE I.D.: MW-4 LAB I.D.: 960326-5

*EPA 602 FOR PURGEABLE AROMATICS ANALYSIS; UNIT: UG/L (PPB)

<u>PARAMETER</u>	<u>SAMPLE RESULT</u>	<u>DETECTION LIMIT X10</u>
Benzene	1,000	1
Chlorobenzene	ND	1
1,2-Dichlorobenzene	ND	1
1,3-Dichlorobenzene	ND	1
1,4-Dichlorobenzene	ND	1
Ethylbenzene	380	1
Toluene	150	1
Xylenes, Total	220	2

COMMENTS

ND = The concentration is below the detection limit or non-detected
 * = Confirmed by GC/MS (EPA 624)

 Data Reviewed and Approved by: _____ 

CAL-DHS ELAP CERTIFICATE No.: 1555

LABORATORY REPORT

CUSTOMER: CROLEY & HERRING CO., 353 BEACON RIDGE LANE,
WALNUT CREEK, CA 94596 TEL(510)939-1118

PROJECT: CHIC

MATRIX: WATER

DATE SAMPLED: 03/25/96

REPORTED TO: MR. DICK HERRING

DATE SAMPLE REC'D: 03/26/96 (ETS)

DATE ANALYZED: 03/27-28/96

DATE REPORTED: 04/02/96


MR. WALTER LOO/ETS (FAX:310-498-2479) (415)861-3269

SAMPLE I.D.: MW-4

LAB I.D.: 960326-5

*EPA 8015M FOR GASOLINE ANALYSIS; UNIT: UG/L (PPB)

<u>PARAMETER</u>	<u>SAMPLE RESULT</u>	<u>DETECTION LIMIT</u>
TPH as GASOLINE	14,000	50

Data Reviewed and Approved by: 

CAL-DHS ELAP CERTIFICATE No.: 1555

LABORATORY REPORT

CUSTOMER: CROLEY & HERRING CO., 353 BEACON RIDGE LANE,
WALNUT CREEK, CA 94596 TEL (510) 939-1118

PROJECT: CHIC

MATRIX: WATER

DATE SAMPLED: 03/25/96

REPORTED TO: MR. DICK HERRING

MR. WALTER LOO/ETS (FAX: 310-498-2479) (415) 861-3269

DATE SAMPLE REC'D: 03/26/96 (ETS)

DATE ANALYZED: 03/27-28/96

DATE REPORTED: 04/02/96

SAMPLE I.D.: C-1

LAB I.D.: 960326-1

*EPA 601 FOR PURGEABLE HALOCARBONS ANALYSIS; UNIT: UG/L (PPB)

PARAMETER	SAMPLE RESULTD	DETECTION LIMIT X10
Chloromethane	ND	5
Bromoethane	ND	5
Vinyl Chloride	ND	5
Chloroethane	ND	5
Methylene Chloride	ND	5
1,1-Dichloroethene	ND	1
1,1-Dichloroethane	ND	1
Trans-1,2-Dichloroethene	ND	1
Chloroform	ND	1
1,2-Dichloroethane	ND	1
1,1,1-Trichloroethane	ND	1
Carbon Tetrachloride	ND	1
Bromodichloromethane	ND	1
1,2-Dichloropropane	ND	1
Cis-1,3-Dichloropropene	ND	1
Trichloroethene	ND	1
Dibromochloromethane	ND	1
1,1,2-Trichloroethane	ND	1
Trans-1,3-dichloropropene	ND	1
2-Chloroethylvinylether	ND	5
Bromoform	ND	5
Tetrachloroethene	ND	1
1,1,2,2-Tetrachloroethane	ND	1
Chlorobenzene	ND	1
1,3-Dichlorobenzene	ND	1
1,4-Dichlorobenzene	ND	1
1,2-Dichlorobenzene	ND	1
Dichlorodifluoromethane	ND	5
Trichlorofluoromethane	ND	5

ND = The concentration is below the detection limit or non-detected

* = Performed by GC/MS Method (EPA 8240)

Data Reviewed and Approved by: _____
 CAL-DHS ELAP CERTIFICATE No.: 1555

LABORATORY REPORT

CUSTOMER: CROLEY & HERRING CO., 353 BEACON RIDGE LANE,
WALNUT CREEK, CA 94596 TEL(510)939-1118

PROJECT: CHIC
 MATRIX: WATER DATE SAMPLE REC'D: 03/26/96 (ETS)
 DATE SAMPLED: 03/25/96 DATE ANALYZED: 03/27-28/96
 REPORTED TO: MR. DICK HERRING DATE REPORTED: 04/02/96
MR. WALTER LOO/ETS (FAX:310-498-2479) (415)861-3269

 SAMPLE I.D.: C-1 LAB I.D.: 960326-1

*EPA 602 FOR PURGEABLE AROMATICS ANALYSIS; UNIT: UG/L (PPB)

<u>PARAMETER</u>	<u>SAMPLE RESULT</u>	<u>DETECTION LIMIT X10</u>
Benzene	ND	1
Chlorobenzene	ND	1
1,2-Dichlorobenzene	ND	1
1,3-Dichlorobenzene	ND	1
1,4-Dichlorobenzene	ND	1
Ethylbenzene	ND	1
Toluene	ND	1
Xylenes, Total	ND	2

COMMENTS

ND = The concentration is below the detection limit or non-detected
 * = Confirmed by GC/MS (EPA 624)

Data Reviewed and Approved by: _____ 

CAL-DHS ELAP CERTIFICATE No.: 1555

LABORATORY REPORT

CUSTOMER: CROLEY & HERRING CO., 353 BEACON RIDGE LANE,
WALNUT CREEK, CA 94596 TEL (510) 939-1118

PROJECT: CHIC

MATRIX: WATER

DATE SAMPLED: 03/25/96

REPORTED TO: MR. DICK HERRING

DATE SAMPLE REC'D: 03/26/96 (ETS)

DATE ANALYZED: 03/27-28/96

DATE REPORTED: 04/02/96

MR. WALTER LOO/ETS (FAX: 310-498-2479) (415) 861-3269

SAMPLE I.D.: C-1

LAB I.D.: 960326-1


*EPA 8015M FOR GASOLINE ANALYSIS; UNIT: UG/L (PPB)

<u>PARAMETER</u>	<u>SAMPLE RESULT</u>	<u>DETECTION LIMIT</u>
------------------	----------------------	------------------------

TPH as GASOLINE

ND

50

Data Reviewed and Approved by: _____ 

CAL-DHS ELAP CERTIFICATE No.: 1555

LABORATORY REPORT

CUSTOMER: CROLEY & HERRING CO., 353 BEACON RIDGE LANE,
WALNUT CREEK, CA 94596 TEL(510)939-1118

PROJECT: CHIC
 MATRIX: WATER DATE SAMPLE REC'D: 03/26/96 (ETS)
 DATE SAMPLED: 03/25/96 DATE ANALYZED: 03/27-28/96
 REPORTED TO: MR. DICK HERRING DATE REPORTED: 04/02/96
MR. WALTER LOO/ETS (FAX:310-498-2479) (415)861-3269

SAMPLE I.D.: C-2

LAB I.D.: 960326-2

*EPA 601 FOR PURGEABLE HALOCARBONS ANALYSIS; UNIT: UG/L (PPB)

PARAMETER	SAMPLE RESULT	DETECTION LIMIT X10
Chloromethane	ND	5
Bromoethane	ND	5
Vinyl Chloride	ND	5
Chloroethane	ND	5
Methylene Chloride	ND	5
1,1-Dichloroethene	ND	1
1,1-Dichloroethane	ND	1
Trans-1,2-Dichloroethene	ND	1
Chloroform	ND	1
1,2-Dichloroethane	ND	1
1,1,1-Trichloroethane	ND	1
Carbon Tetrachloride	ND	1
Bromodichloromethane	ND	1
1,2-Dichloropropane	ND	1
Cis-1,3-Dichloropropene	ND	1
Trichloroethene	ND	1
Dibromochloromethane	ND	1
1,1,2-Trichloroethane	ND	1
Trans-1,3-dichloropropene	ND	1
2-Chloroethylvinylether	ND	5
Bromoform	ND	5
Tetrachloroethene	ND	1
1,1,2,2-Tetrachloroethane	ND	1
Chlorobenzene	ND	1
1,3-Dichlorobenzene	ND	1
1,4-Dichlorobenzene	ND	1
1,2-Dichlorobenzene	ND	1
Dichlorodifluoromethane	ND	5
Trichlorofluoromethane	ND	5

ND = The concentration is below the detection limit or non-detected
 * = Performed by GC/MS Method (EPA 8240)

Data Reviewed and Approved by: _____
 CAL-DHS ELAP CERTIFICATE No.: 1555

LABORATORY REPORT

CUSTOMER: CROLEY & HERRING CO., 353 BEACON RIDGE LANE,
WALNUT CREEK, CA 94596 TEL(510)939-1118

PROJECT: CHIC
MATRIX: WATER DATE SAMPLE REC'D: 03/26/96 (ETS)
DATE SAMPLED: 03/25/96 DATE ANALYZED: 03/27-28/96
REPORTED TO: MR. DICK HERRING DATE REPORTED: 04/02/96
MR. WALTER LOO/ETS (FAX:310-498-2479) (415)861-3269

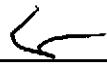
SAMPLE I.D.: C-2 LAB I.D.: 960326-2

*EPA 602 FOR PURGEABLE AROMATICS ANALYSIS; UNIT: UG/L (PPB)

<u>PARAMETER</u>	<u>SAMPLE RESULT</u>	<u>DETECTION LIMIT X10</u>
Benzene	ND	1
Chlorobenzene	ND	1
1,2-Dichlorobenzene	ND	1
1,3-Dichlorobenzene	ND	1
1,4-Dichlorobenzene	ND	1
Ethylbenzene	ND	1
Toluene	ND	1
Xylenes, Total	ND	2

COMMENTS

ND = The concentration is below the detection limit or non-detected
* = Confirmed by GC/MS (EPA 624)

Data Reviewed and Approved by: _____ 

CAL-DHS ELAP CERTIFICATE No.: 1555

LABORATORY REPORT

CUSTOMER: CROLEY & HERRING CO., 353 BEACON RIDGE LANE,
WALNUT CREEK, CA 94596 TEL (510) 939-1118

PROJECT: CHIC

MATRIX: WATER

DATE SAMPLED: 03/25/96

REPORTED TO: MR. DICK HERRING

DATE SAMPLE REC'D: 03/26/96 (ETS)

DATE ANALYZED: 03/27-28/96

DATE REPORTED: 04/02/96

MR. WALTER LOO/ETS (FAX: 310-498-2479) (415) 861-3269

SAMPLE I.D.: C-2

LAB I.D.: 960326-2

*EPA 8015M FOR GASOLINE ANALYSIS; UNIT: UG/L (PPB)

<u>PARAMETER</u>	<u>SAMPLE RESULT</u>	<u>DETECTION LIMIT</u>
TPH as GASOLINE	ND	50

Data Reviewed and Approved by: _____ 

CAL-DHS ELAP CERTIFICATE No.: 1555

LABORATORY REPORT

CUSTOMER: CROLEY & HERRING CO., 353 BEACON RIDGE LANE,
WALNUT CREEK, CA 94596 TEL(510)939-1118

PROJECT: CHIC

MATRIX: WATER

DATE SAMPLED: 03/25/96

REPORTED TO: MR. DICK HERRING

MR. WALTER LOO/ETS (FAX:310-498-2479) (415)861-3269

DATE SAMPLE REC'D: 03/26/96 (ETS)

DATE ANALYZED: 03/27-28/96

DATE REPORTED: 04/02/96

SAMPLE I.D.: C-3

LAB I.D.: 960326-3

*EPA 601 FOR PURGEABLE HALOCARBONS ANALYSIS; UNIT: UG/L (PPB)

PARAMETER	SAMPLE RESULT	DETECTION LIMIT X10
Chloromethane	ND	5
Bromoethane	ND	5
Vinyl Chloride	ND	5
Chloroethane	ND	5
Methylene Chloride	ND	5
1,1-Dichloroethene	ND	1
1,1-Dichloroethane	ND	1
Trans-1,2-Dichloroethene	ND	1
Chloroform	ND	1
1,2-Dichloroethane	ND	1
1,1,1-Trichloroethane	ND	1
Carbon Tetrachloride	ND	1
Bromodichloromethane	ND	1
1,2-Dichloropropane	ND	1
Cis-1,3-Dichloropropene	ND	1
Trichloroethene	ND	1
Dibromochloromethane	ND	1
1,1,2-Trichloroethane	ND	1
Trans-1,3-dichloropropene	ND	1
2-Chloroethylvinylether	ND	5
Bromoform	ND	5
Tetrachloroethene	ND	1
1,1,2,2-Tetrachloroethane	ND	1
Chlorobenzene	ND	1
1,3-Dichlorobenzene	ND	1
1,4-Dichlorobenzene	ND	1
1,2-Dichlorobenzene	ND	1
Dichlorodifluoromethane	ND	5
Trichlorofluoromethane	ND	5

ND = The concentration is below the detection limit or non-detected
 * = Performed by GC/MS Method (EPA 8240)

Data Reviewed and Approved by: _____
 CAL-DHS ELAP CERTIFICATE No.: 1555

LABORATORY REPORT

CUSTOMER: CROLEY & HERRING CO., 353 BEACON RIDGE LANE,
WALNUT CREEK, CA 94596 TEL(510)939-1118

PROJECT: CHIC
 MATRIX: WATER DATE SAMPLE REC'D: 03/26/96 (ETS)
 DATE SAMPLED: 03/25/96 DATE ANALYZED: 03/27-28/96
 REPORTED TO: MR. DICK HERRING DATE REPORTED: 04/02/96
MR. WALTER LOO/ETS (FAX:310-498-2479) (415)861-3269

 SAMPLE I.D.: C-3 LAB I.D.: 960326-3

*EPA 602 FOR PURGEABLE AROMATICS ANALYSIS; UNIT: UG/L (PPB)

<u>PARAMETER</u>	<u>SAMPLE RESULT</u>	<u>DETECTION LIMIT X10</u>
Benzene	2,900	1
Chlorobenzene	ND	1
1,2-Dichlorobenzene	ND	1
1,3-Dichlorobenzene	ND	1
1,4-Dichlorobenzene	ND	1
Ethylbenzene	410	1
Toluene	490	1
Xylenes, Total	360	2

COMMENTS

ND = The concentration is below the detection limit or non-detected
 * = Confirmed by GC/MS (EPA 624)

Data Reviewed and Approved by: *LS*

CAL-DHS ELAP CERTIFICATE No.: 1555

**ENVIRO-CHEM, INC.
LABORATORIES**

1214 E. Lexington Ave.
Pomona, CA 91766


(909) 590-5905 • Fax: (909) 590-5907

CHAIN of CUSTODY RECORD

Lab Project # _____

CA-DHS ELAP CERTIFICATE # 1555

DATE: 3/25/96
PAGE: _____ of _____

REPORT TO: <u>DICK HERRING</u>		PROJECT NAME: <u>CHIC</u>		TURN AROUND TIME DESIRED	
STREET: <u>353 BEACON RIDGE LANE</u>		PROJECT CONTACT: <u>WALTER LO</u>		<input type="checkbox"/> Same Day <input type="checkbox"/> 24 Hour <input type="checkbox"/> 48 Hour <input checked="" type="checkbox"/> 1 Week <input type="checkbox"/> Standard(2 Weeks)	
CITY: <u>WALNUT CREEK</u>	STATE: <u>CA</u>	ZIP: <u>94596</u>	SAMPLER(S) SIGNATURE: 		
TEL: <u>(415) 861-0810</u>	FAX: <u>(415) 861-3269</u>	Confirmed By: _____			
SHIPPING INFORMATION:		AFTER ANALYSES, SAMPLES ARE TO BE: <input type="checkbox"/> DISPOSED OF <input type="checkbox"/> RETURNED TO CLIENT <input type="checkbox"/> STORED (30 days) <input type="checkbox"/> OTHER: _____			
RELINQUISHED BY: (Signature) <u>AMOUR SOUBARIAN</u>		RECEIVED BY: (Signature) <u>Yi-ding Lu</u>		DATE: <u>3/26/96</u>	TIME: <u>9:30am</u>
RELINQUISHED BY: (Signature)		RECEIVED BY: (Signature)		DATE:	TIME:
RELINQUISHED BY: (Signature)		RECEIVED BY: (Signature)		DATE:	TIME:

SAMPLE I.D.	LAB I.D.	SAMPLING DATE/TIME	MATRIX	Nº of Containers	ANALYSIS REQUESTED	SAMPLE RECEIVED CONDITION	Sample Stored Location
C-1	960326-1	<u>3/25/96 11:30 AM</u>	<u>H₂O</u>	<u>2(40ML)</u>	<u>TPH GAS 601 602</u>	<u>OK/chilled</u>	<u>R9</u>
C-2	960326-2	<u>"</u>	<u>H₂O</u>	<u>2(40ML)</u>	<u>TPH GAS 601 602</u>	<u>OK "</u>	<u>"</u>
C-3	960326-3	<u>"</u>	<u>H₂O</u>	<u>2(40ML)</u>	<u>TPH GAS 601 602</u>	<u>OK "</u>	<u>"</u>
EW-1	960326-4	<u>"</u>	<u>H₂O</u>	<u>2(40ML)</u>	<u>TPH GAS 601 602</u>	<u>OK "</u>	<u>"</u>
MW-4	960326-5	<u>"</u>	<u>H₂O</u>	<u>2(40ML)</u>	<u>TPH GAS 601 602</u>	<u>OK "</u>	<u>"</u>