

Ro-374

JUN 24 2002

**FIRST QUARTER OF 2002 GROUNDWATER  
MONITORING AND SAMPLING  
FOR THE PROPERTY  
LOCATED AT 15595 WASHINGTON AVENUE  
SAN LORENZO, CALIFORNIA  
APRIL 4, 2002**

**PREPARED FOR:  
MR. MEHDI MOHAMMADIAN  
CAL GAS  
15595 WASHINGTON AVENUE  
SAN LORENZO, CALIFORNIA 94580**

**BY:  
ENVIRO SOIL TECH CONSULTANTS  
131 TULLY ROAD  
SAN JOSE, CALIFORNIA 95111**

**ENVIRO SOIL TECH CONSULTANTS**

JUN 24 2002

## LIST OF TABLES

**TABLE 1** ... Groundwater Monitoring Data and Analytical Results

**TABLE 2** ... Groundwater Analytical Results for Hydrocarbons Fuel Oxygenates (EPA 8260B)

## LIST OF FIGURES

**FIGURE 1** ... Site Vicinity Map showing 15595 Washington Avenue,  
San Lorenzo, California

**FIGURE 2** ... Site Plan showing location of Building, Monitoring Wells  
Groundwater Flow Direction and Groundwater Elevation  
Contour

**FIGURE 3** ... TPHg Concentration Contour Map

**FIGURE 4** ... Benzene Concentration Contour Map

**FIGURE 5** ... MTBE Concentration Contour Map

JUN 24 2002

## LIST OF APPENDICES

**APPENDIX "A"** ... Table 1 and Table 2

**APPENDIX "B"** ... Figures 1, 2, 3, 4 and 5

**APPENDIX "C"** ... Graphs of Historical Chemical Concentrations and  
Groundwater Elevations

**APPENDIX "D"** ... Standard Operation Procedures

**APPENDIX "E"** ... Laboratory Report and Chain-of-Custody  
Documentation

**APPENDIX "F"** ... Field Data Notes

<b>TABLE OF CONTENTS</b>	<b><u>Page Number</u></b>
<b>LETTER OF TRANSMITTAL</b>	1
<b>PURPOSE</b>	2
<b>SITE DESCRIPTION</b>	2
<b>BACKGROUND</b>	2-3
<b>SCOPE OF PRESENT WORK</b>	4
<b>FIELD ACTIVITIES</b>	4
<i>GROUNDWATER MONITORING</i>	4-5
<i>GROUNDWATER SAMPLING</i>	5
<b>GROUNDWATER FLOW</b>	5
<b>ANALYTICAL RESULTS</b>	6
<b>SUMMARY</b>	6
<b>RECOMMENDATION</b>	7
<b>LIMITATIONS</b>	7-8

**APPENDIX "A"**

<b>TABLE 1 - GROUNDWATER MONITORING DATA AND ANALYTICAL RESULTS</b>	T1-T5
<b>TABLE 2 - GROUNDWATER ANALYTICAL RESULTS FOR HYDROCARBONS FUEL OXYGENATES EPA 8260B</b>	T6-T8

**APPENDIX "B"**

<b>FIGURE 1 - VICINITY MAP</b>	M1
<b>FIGURE 2 - SITE PLAN</b>	M2
<b>FIGURE 3 - TPHG CONCENTRATION CONTOUR MAP</b>	M3
<b>FIGURE 4 - BENZENE CONCENTRATION CONTOUR MAP</b>	M4
<b>FIGURE 5 - MTBE CONCENTRATION CONTOUR MAP</b>	M5

**TABLE OF CONTENTS CONT'D**                            Page Number

**APPENDIX "C"**

**GRAPHS OF HISTORICAL CHEMICAL CONCENTRATIONS  
AND GROUNDWATER ELEVATIONS**

**APPENDIX "D"**

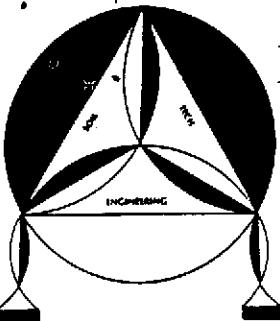
**GROUNDWATER SAMPLING**

**APPENDIX "E"**

**CURTIS & TOMPKINS, LTD. LABS REPORT AND CHAIN-OF-CUSTODY**

**APPENDIX "F"**

**FIELD DATA NOTES**



# ENVIRO SOIL TECH CONSULTANTS

Environmental & Geotechnical Consultants

131 TULLY ROAD, SAN JOSE, CALIFORNIA 95111

Tel: (408) 297-1500

Fax: (408) 292-2116

April 4, 2002

File No. 12-99-702-SI

**Mr. Mehdi Mohammadian**

Cal Gas

15595 Washington Avenue

San Lorenzo, California 94580

**SUBJECT: FIRST QUARTER OF 2002 GROUNDWATER  
MONITORING AND SAMPLING  
FOR THE PROPERTY**

Located at 15595 Washington Avenue, in  
San Lorenzo, California

Dear Mr. Mohammadian:

This report presents the results of first quarter of 2002 groundwater monitoring and sampling conducted by Enviro Soil Tech Consultants (ESTC), on March 25, 2002, at the subject site (Figure 1).

The five monitoring wells (MW-1 through MW-5) located on-site were monitored for presence of floating products and/or distinctive odor, and groundwater were collected from these wells for laboratory analyses.

**PURPOSE:**

The purpose of quarterly groundwater monitoring and sampling investigation was to define the direction of groundwater flow and the extent of hydrocarbons contamination in the groundwater at the site.

**SITE DESCRIPTION:**

The site is located on the northwest corner of Washington Avenue and Via Enrico Street, in San Lorenzo, California (Figure 1), and is currently being used as a service station. The site contained one single story building, underground storage tanks located at the center portion of the property and south of the pump islands. The subject property is located in an area of commercial and residential development.

**BACKGROUND:**

From 1974 to 1983, the site was owned by Calleris who had operated the gasoline service station.

From 1983 to 1986, Texaco owned the site, and during this time, the site was not in operation. Texaco removed the existing USTs in 1986, and subsurface contamination was detected in the fuel tank excavation.

In 1986, the site was purchased by Bertram Kubo, who installed three new 10,000 gallon fuel tanks at a new location and reopened as a retail service station.

In 1990, the property was sold to the current owner, Mr. Mehdi Mohammadian, who operates the site as Shell retail service station.

In 1986, soil and groundwater investigation was conducted at the site by Groundwater Technology (GWT) by installing three on-site monitoring wells (MW-1 to MW-3). Hydrocarbon impact to shallow groundwater was detected in these wells. The detail of GWT's subsurface investigation is described in a report dated October 1986.

In July 1998, an additional subsurface investigation was conducted by Toxicem Management Systems, Inc. (TMS), by installing two additional on-site wells (MW-4 and MW-5). TMS's findings showed presence of petroleum hydrocarbons in all wells. The details of this additional assessment is described in their report dated October 16, 1998. Quarterly monitoring of the five on-site wells has been conducted since August 1998. TPHg, BTEX and MTBE were detected in all the monitoring wells.

Per the request and authorization of Mr. Mehdi Mohammadian and under the directive of Mr. Scott O. Seery with ACHCSA-EHS in letters dated May 9, 1999; November 8, 1999 and November 10, 1999, ESTC submitted a proposed work plan for assessment of off-site gasoline plume using of so-called "rapid assessment" tools such as Geoprobe. The details of this work plan is described in ESTC's report entitled "Proposed Work Plan for Preliminary Off-Site Soil & Groundwater Assessment for the Property...", dated February 11, 2000.

On April 18, 2000, ESTC conducted soil and groundwater assessment off-site gasoline plume. Based on the off-site investigation, upto date, ESTC have been conducting quarterly monitoring and sampling of groundwater from the on-site monitoring wells.

## **SCOPE OF PRESENT WORK:**

The scope of present work are as follow;

- Monitor wells MW-1 to MW-5 for presence of any sheen and/or odor and measure the depth-to-water table.
- Purge the monitoring wells prior to sampling.
- Sample monitoring wells MW-1 to MW-5.
- Submit water samples to a state-certified laboratory for chemical analyses of Total Petroleum Hydrocarbons as gasoline (TPHg); Benzene, Toluene, Ethylbenzene, Total Xylenes (BTEX); Methyl Tertiary Butyl Ether (MTBE) and other hydrocarbons fuel oxygenates compounds per EPA Method 8260B.
- Review results and prepare a report of the investigation.

## **FIELD ACTIVITIES:**

The five on-site monitoring wells (MW-1 to MW-5) were monitored for floating products and/or distinctive odor, and the water samples were collected for laboratory analyses (Figure 2).

## ***GROUNDWATER MONITORING:***

On March 25, 2002, ESTC's staff monitored five monitoring wells (MW-1 to MW-5) for groundwater depth and presence of sheen and/or odor. No sheen or odor were detected in monitoring wells MW-2 through MW-5 during field inspection. Light rainbow sheen was detected only in monitoring well MW-1. The shallow groundwater

table depths ranged from 6.86 feet (well MW-2) to 9.08 feet (well MW-5) below ground surface. Table 1 summarizes the depth to groundwater measurements and the field observations made.

#### ***GROUNDWATER SAMPLING:***

Following the monitoring of the groundwater, in order to assure the samples were representative of surrounding groundwater, approximately four to five well volumes of water was purged from each well using a bailer before the sample was collected. A stainless steel bailer was used for sample collection. Water sampling equipment was decontaminated before and after each well sampling using Tri-sodium Phosphate (TSP) and water wash, followed by double rinsing. Groundwater samples were collected in 40 milliliter glass vials sealed with Teflon-lined screw caps, labeled and placed in a cold ice chest. Groundwater samples were submitted to Curtis & Tompkins, Ltd., a state-certified laboratory, with proper chain-of-custody for analyses. The sampling was conducted in accordance with ESTC's Standard Operation Procedures (Appendix "D") and ACHCSA-EHS guidelines.

#### **GROUNDWATER FLOW:**

Water elevation data were used to determine groundwater flow direction. Table 1 summarizes the groundwater elevations. The groundwater flow direction beneath the site was in a westerly direction as of March 25, 2002 (Figure 2).

## **ANALYTICAL RESULTS:**

Groundwater samples from monitoring wells MW-1 to MW-5 were analyzed for Total Petroleum Hydrocarbons as gasoline (TPHg) per EPA methods 5030/8015 and hydrocarbons fuel oxygenates compounds per EPA Method 8260B.

Groundwater samples from the monitoring wells detected levels of TPHg ranging from non-detectable to the maximum of 4000 micrograms per liter ( $\mu\text{g}/\text{L}$ ); Benzene from non-detectable to maximum of 170  $\mu\text{g}/\text{L}$  and MTBE from 14  $\mu\text{g}/\text{L}$  to the maximum of 62000  $\mu\text{g}/\text{L}$ . All five monitoring wells detected Toluene, Ethylbenzene and Total Xylenes below laboratory detection limit in the water samples. Only monitoring well MW-5 detected some other petroleum hydrocarbons constituents in the groundwater samples.

The groundwater analytical results are summarized in Table 1. Copy of the analytical results and chain-of-custody documentation are attached in Appendix "E".

## **SUMMARY:**

All five wells detected MTBE in the water samples. Three out of five monitoring wells detected TPHg in the water samples. One out of five monitoring wells detected Benzene in the groundwater samples. All five wells detected TEX below laboratory detection limit in the water samples. Only monitoring well MW-5 detected some other hydrocarbons fuel oxygenates compounds.

## **RECOMMENDATION:**

ESTC recommends the continuation of quarterly monitoring and sampling of the five on-site wells. A copy of this report will be forward to Alameda County Health Care Services Agency-Environmental Health Services (ACHCSA-EHS) and Regional Water Quality Control Board (RWQCB).

## **LIMITATIONS:**

This report and the associated work have been provided in accordance with the general principles and practices currently employed in the environmental consulting profession. The contents of this report reflect the conditions of the site at this particular time. The findings of this report are based on:

- 1) The observations of field personnel.
- 2) The results of laboratory analyses performed by a state-certified laboratory.

It is possible that variations in the soil and groundwater could exist beyond the points explored in this investigation. Also, changes in groundwater conditions of a property can occur with the passage of time due to variations in rainfall, temperature, regional water usage and other natural processes or the works of man on this property or adjacent property.

The services that ESTC provided have been in accordance with generally accepted environmental professional practices for the nature and conditions of work completed in the same or similar localities at the time the work was performed. The contents of this report reflect the conditions of the subject site at this particular time. No other warranties, expressed or implied as to the professional advice provided are made.

This quarterly groundwater monitoring and sampling of the on-site monitoring wells was conducted in accordance with the request and authorization of Mr. Mehdi Mohammadian and at the request of Mr. Scott O. Seery with Alameda County Health Care Services Agency-Environmental Health Services (ACHCSA-EHS) in letter dated May 19, 1999.

If you have any questions or require additional information, please feel free to contact our office at (408) 297-1500.

Sincerely,

**ENVIRO SOIL TECH CONSULTANTS**

FRANK HAMEDI-FARD  
*GENERAL MANAGER*



LAWRENCE KOO, P. E.  
C. E. #34928

File No. 12-99-702-SI

**A P P E N D I X "A"**

**ENVIRO SOIL TECH CONSULTANTS**

**TABLE 1**  
**GROUNDWATER MONITORING DATA (feet)**  
**AND ANALYTICAL RESULTS ( $\mu\text{g/L}$ )**

Date	Well No./Elevation	Depth of Well	Depth of Perf.	Depth to Water	GW Elev.	Well Observation	TPHg	B	T	E	X	MTBE
8/08/86	MW-1 (N/A)	15	10	N/A	N/A	N/A	N/A	ND<500	ND<500	NA	82	NA
11/12/92				11.37†	N/A	N/A	720	3	0.5	1	1	NA
3/24/94	22.93 (feet MSL)			8.71*	14.22	Odor	1300	110	ND<0.5	19	ND<0.5	NA
12/15/95				8.49*	14.44	No sheen Weakly petroleum odor	350	18	2.9	3.5	2.8	NA
8/26/98	22.96 Resurveyed			9.30*	13.66	N/A	ND <500	17	ND<5	ND<5	ND<5	340000
1/26/99				7.96*	15.00	N/A	ND <50000	ND<500	ND<500	ND<500	ND<500	269000
4/06/99				8.01*	14.95	N/A	3500	296	ND<10	43	18.6	117000
5/24/00	23.05 Resurveyed			8.24*	14.81	No sheen or odor	33000	ND <5000	ND <5000	ND <5000	ND <5000	74000
8/24/00				9.43*	13.62	No sheen or odor	11000	ND <2000	ND <2000	ND <2000	ND <2000	32000
11/22/00				9.28*	13.77	Light rainbow sheen No odor	24000	ND <2500	ND <2500	ND <2500	ND <2500	35000
2/22/01				7.86*	15.19	No sheen or odor	19000	ND <5000	ND <5000	ND <5000	ND <5000	51000
5/29/01				8.96*	14.09	No sheen or odor	30000	ND <5000	ND <5000	ND <5000	ND <5000	110000
8/22/01				9.66*	13.39	No sheen or odor	46000	ND <2500	ND <2500	ND <2500	ND <2500	70000
12/06/01				8.36*	14.69	No sheen or odor	25000	ND <2500	ND <2500	ND <2500	ND <2500	37000
3/25/02				7.84*	15.21	Light rainbow sheen No odor	770	ND<830	ND<830	ND<830	ND<830	20000

**TABLE 1 CONT'D**  
**GROUNDWATER MONITORING DATA (feet)**  
**AND ANALYTICAL RESULTS ( $\mu\text{g/L}$ )**

Date	Well No./Elevation	Depth of Well	Depth of Perf.	Depth to Water	GW Elev.	Well Observation	TPHg	B	T	E	X	MTBE
8/08/96	MW-2 (N/A)	15	10	N/A	N/A	N/A	NA	ND<50	ND<50	NA	ND<50	NA
11/12/92				10.55†	N/A	N/A	ND<10	ND<0.3	ND<0.3	ND<0.3	ND<0.5	NA
3/24/94	22.09 (feet MSL)			7.87*	14.22	N/A	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	N/A
12/15/95				4.62*	17.47	No sheen or odor	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NA
2/28/98	22.07 Resurveyed			8.40*	13.67	N/A	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	210000
1/26/99				7.29*	14.78	N/A	ND <2000	ND<20	ND<20	ND<20	ND<20	9450
4/06/99				7.28*	14.79	N/A	ND <1000	ND<10	ND<10	ND<10	ND<10	209000
5/24/00	21.94 Resurveyed			7.22*	14.72	No sheen or odor	46000	ND <12500	ND <12500	ND <12500	ND <12500	180000
8/24/00				8.39*	13.55	No sheen or odor	21000	ND <2500	ND <2500	ND <2500	ND <2500	70000
11/22/00				8.24*	13.70	No sheen or odor	29000	ND <2500	ND <2500	ND <2500	ND <2500	43000
2/22/01				6.52*	15.42	No sheen or odor	20000	ND <5000	ND <5000	ND <5000	ND <5000	61000
5/29/01				7.90*	14.04	No sheen or odor	9100	ND <1000	ND <1000	ND <1000	ND <1000	24000
8/22/01				8.62*	13.32	No sheen or odor	8700	ND<500	ND<500	ND<500	ND<500	12000
12/06/01				7.28*	14.66	No sheen or odor	11000	ND <1250	ND <1250	ND <1250	ND <1250	22000
3/25/02				6.86*	15.08	No sheen or odor	ND<50	ND<830	ND<830	ND<830	ND<830	25000
8/08/86	MW-3 (N/A)	16	10	N/A	N/A	N/A	NA	ND<50	ND<50	NA	ND<50	NA

**TABLE 1 CONT'D**  
**GROUNDWATER MONITORING DATA (feet)**  
**AND ANALYTICAL RESULTS ( $\mu\text{g/L}$ )**

Date	Well No./Elevation	Depth of Well	Depth of Perf.	Depth to Water	GW Elev.	Well Observation	TPHg	B	T	E	X	MTBE
11/12/92	MW-3 (N/A)	16	10	11.32†	N/A	N/A	69	ND<0.3	ND<0.3	ND<0.3	ND<0.3	NA
3/24/94	22.73 (feet MSL)			8.69*	14.04	N/A	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NA
12/15/95				8.31*	14.42	No sheen or odor	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NA
8/26/98	22.74 Resurveyed			9.29*	13.45	N/A	ND <500	36	ND<5	ND<5	ND<5	99000
12/16/99				8.00*	14.74	N/A	ND <500	ND<50	ND<50	ND<50	ND<50	19800
4/06/99				8.00*	14.74	N/A	ND <1000	ND<10	ND<10	ND<10	ND<10	151000
5/24/00	22.56 Resurveyed			8.08*	14.47	No sheen or odor	48000	ND <12500	ND <12500	ND <12500	ND <12500	200000
8/24/00				9.24*	13.32	No sheen or odor	52000	ND <5000	ND <5000	ND <5000	ND <5000	170000
11/22/00				9.08*	13.48	No sheen or odor	69000	ND <10000	ND <10000	ND <10000	ND <10000	160000
2/22/01				7.58*	14.98	No sheen or odor	30000	ND <5000	ND <5000	ND <5000	ND <5000	130000
5/29/01				8.76*	13.80	No sheen or odor	29000	ND <2500	ND <2500	ND <2500	ND <2500	78000
8/22/01				9.46*	13.10	No sheen or odor	37000	ND <5000	ND <5000	ND <5000	ND <5000	98000
12/06/01				8.06*	14.50	No sheen or odor	33000	ND <5000	ND <5000	ND <5000	ND <5000	94000
3/25/02				7.62*	14.94	No sheen or odor	ND<50	ND <2500	ND <2500	ND <2500	ND <2500	62000

**TABLE 1 CONT'D**  
**GROUNDWATER MONITORING DATA (feet)**  
**AND ANALYTICAL RESULTS ( $\mu\text{g/L}$ )**

Date	Well No./Elevation	Depth of Well	Depth of Perf.	Depth to Water	GW Elev.	Well Observation	TPHg	B	T	E	X	MTBE
8/26/98	MW-4 (23.51) feet MSL	19	N/A	9.87	13.64	N/A	170	2	0.74	1.3	1	150
1/26/99				8.54	14.97	N/A	140	ND<0.5	ND<0.5	ND<0.5	ND<0.5	7.6
4/06/99				8.34	15.17	N/A	390	3.94	ND<0.5	1.52	0.808	15.2
5/24/00	23.40 Resurveyed			8.72	14.68	No sheen or odor	210	ND<5	ND<5	ND<5	ND<5	40
8/24/00				9.88	13.52	No Sheen or odor	160	ND<5	7.4	ND<5	ND<5	44
11/22/00				9.76	13.64	No sheen or odor	140	ND<5	ND<5	ND<5	ND<5	25
2/22/01				8.42	14.98	No sheen or odor	160	ND<5	ND<5	ND<5	ND<5	32
5/29/01				9.42	13.98	No sheen or odor	160	ND<5	ND<5	ND<5	ND<5	31
8/22/01				10.10	13.30	No sheen or odor	96	ND<5	ND<5	ND<5	ND<5	28
12/06/01				8.68	14.72	No sheen or odor	160	ND<5	ND<5	ND<5	ND<5	25
3/25/02				8.28	15.12	No sheen or odor	150	ND<5	ND<5	ND<5	ND<5	14
8/26/98	MW-5 (23.85) feet MSL	19	N/A	10.51	13.34	N/A	6600	240	ND<50	380	84	ND<250
1/26/99				10.26	13.59	N/A	371	11.7	ND<0.5	3.22	ND<0.5	36.4
4/06/99				9.32	14.53	N/A	7680	266	ND<10	280	ND<10	ND<10
5/24/00	23.86 Resurveyed			9.39	14.47	Rainbow sheen No odor	3300	180	ND<25	140	ND<25	200
8/24/00				10.54	13.32	Light rainbow sheen No odor	3200	150	ND<10	91	ND<10	300
11/22/00				10.42	13.44	No sheen Light sewerage odor	520	120	ND<25	46	ND<25	510
2/22/01				8.88	14.98	No sheen or odor	5400	100	ND<50	94	ND<50	700

**TABLE 1 CONT'D**  
**GROUNDWATER MONITORING DATA (feet)**  
**AND ANALYTICAL RESULTS ( $\mu\text{g/L}$ )**

Date	Well No./Elevation	Depth of Well	Depth of Perf.	Depth to Water	GW Elev.	Well Observation	TPHg	B	T	E	X	MTBE
5/29/01	MW-5 (23.86) feet MSL	19	N/A	10.08	13.78	Rainbow sheen No odor	3700	83	ND<50	58	ND<50	860
8/22/01				10.76	13.10	Light rainbow sheen No odor	5900	150	ND<10	ND<10	ND<10	1700
12/06/01				9.48	14.38	Rainbow sheen Light petroleum odor	4900	ND<50	ND<50	ND<50	ND<50	1900
3/25/02				9.08	14.78	No sheen or odor	4000	170	ND<83	ND<83	ND<83	2200

TPHg - Total Petroleum Hydrocarbons as gasoline

MTBE - Methyl Tertiary Butyl Ether

MSL - Mean Sea Level

N/A - Not Applicable

ND - Not Detected (Below Laboratory Detection Limit)

\* Well screens are submerged

BTEX - Benzene, Toluene, Ethylbenzene, Total Xylenes

Perf. - Perforation

GW Elev. - Groundwater Elevation

NA - Not Analyzed

† Well screens are not submerged

**TABLE 2**  
**GROUNDWATER ANALYTICAL RESULTS FOR**  
**HYDROCARBONS FUEL OXYGENATES (EPA 8260B)**

Date	Well No.	Hydrocarbons Fuel Oxygenates	Concentration ( $\mu\text{g/L}$ )
5/24/00	MW-1	Methyl tert-butyl Ether	74000
8/24/00		Methyl tert-butyl Ether	32000
11/22/00		Methyl tert-butyl Ether	35000
2/22/01		Methyl tert-butyl Ether	51000
5/29/01		Methyl tert-butyl Ether	110000
8/22/01		Methyl tert-butyl Ether	70000
		tert-Butanol	11000
12/06/01		Methyl tert-butyl Ether	37000
3/25/02		Methyl tert-butyl Ether	20000
5/24/00	MW-2	Methyl tert-butyl Ether	180000
8/24/00		Methyl tert-butyl Ether	70000
11/22/00		Methyl tert-butyl Ether	43000
2/22/01		Methyl tert-butyl Ether	61000
5/29/01		Methyl tert-butyl Ether	24000
8/22/01		Methyl tert-butyl Ether	12000
12/06/01		Methyl tert-butyl Ether	22000
3/25/02		Methyl tert-butyl Ether	25000
5/24/00	MW-3	Methyl tert-butyl Ether	200000
8/24/00		Methyl tert-butyl Ether	170000
11/22/00		Methyl tert-butyl Ether	160000
2/22/01		Methyl tert-butyl Ether	130000
5/29/01		Methyl tert-butyl Ether	78000
8/22/01		Methyl tert-butyl Ether	98000
12/06/01		Methyl tert-butyl Ether	94000
3/25/02		Methyl tert-butyl Ether	62000
5/24/00	MW-4	Methyl tert-butyl Ether	40
8/24/00		Methyl tert-butyl Ether	44
		Toluene	7.4
11/22/00		Methyl tert-butyl Ether	25

**TABLE 2 CONT'D**  
**GROUNDWATER ANALYTICAL RESULTS FOR**  
**HYDROCARBONS FUEL OXYGENATES (EPA 8260B)**

Date	Well No.	Hydrocarbons Fuel Oxygenates	Concentration ( $\mu\text{g/L}$ )
2/22/01	MW-4	Methyl tert-butyl Ether	32
5/29/01		Methyl tert-butyl Ether	31
8/22/01		Methyl tert-butyl Ether	28
12/06/01		Methyl tert-butyl Ether	25
3/25/02		Methyl tert-butyl Ether	14
5/24/00	MW-5	Benzene Ethylbenzene Isopropylbenzene Methyl tert-butyl Ether n-Butylbenzene n-Propylbenzene Naphthalene	180 140 55 200 42 200 120
8/24/00		1,2,4-Trimethylbenzene Benzene Ethylbenzene Isopropylbenzene Methyl tert-butyl Ether n-Butylbenzene n-Propylbenzene Naphthalene p-Isopropyltoluene sec-Butylbenzene	15 150 91 38 300 29 140 87 28 12
11/22/00		Benzene Ethylbenzene Isopropylbenzene Methyl tert-butyl Ether n-Propylbenzene Naphthalene	120 46 31 510 100 37
2/22/01		Benzene Ethylbenzene Methyl tert-butyl Ether n-Propylbenzene Naphthalene	100 94 700 160 90

**TABLE 2 CONT'D  
GROUNDWATER ANALYTICAL RESULTS FOR  
HYDROCARBONS FUEL OXYGENATES (EPA 8260B)**

Date	Well No.	Hydrocarbons Fuel Oxygenates	Concentration ( $\mu\text{g/L}$ )
5/29/01	MW-5	Benzene	83
		Ethylbenzene	58
		Methyl tert-butyl Ether	860
		n-Propylbenzene	130
		Naphthalene	64
8/22/01		Benzene	150
		Methyl tert-butyl Ether	1700
		n-Propylbenzene	230
		Naphthalene	140
12/06/01		Methyl tert-butyl Ether	1900
3/25/02		Methyl tert-butyl Ether	2200
		Benzene	170
		Propylbenzene	180

File No. 12-99-702-SI

**A P P E N D I X "B"**

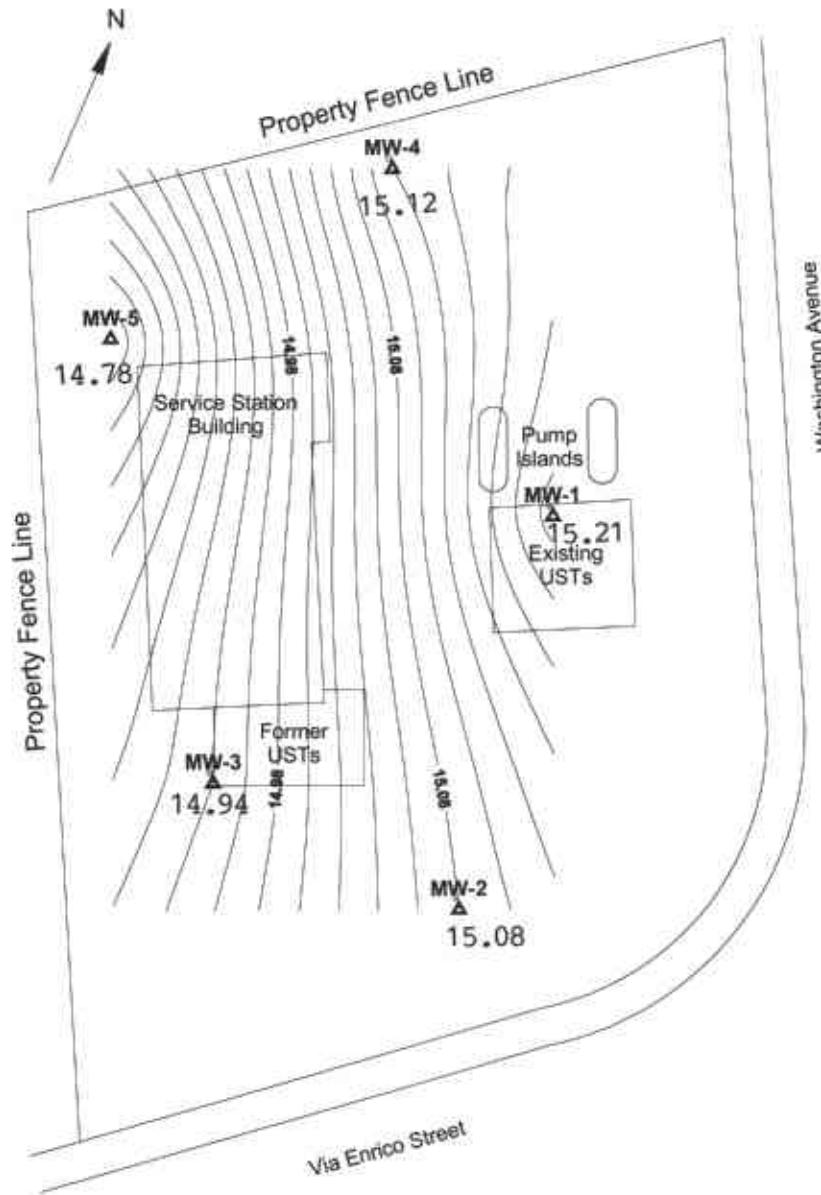
**ENVIRO SOIL TECH CONSULTANTS**



ENVIRO SOIL TECH CONSULTANTS

Figure 1

Approximate Groundwater  
Flow Direction  
← as of 3/25/02



1" = 20'  
0 20 40

Figure 2 : Groundwater Elevation Contour Map.

**Enviro Soil Consultants**

M2

4/4/02 - I

Approximate Groundwater  
Flow Direction  
as of 3/25/02

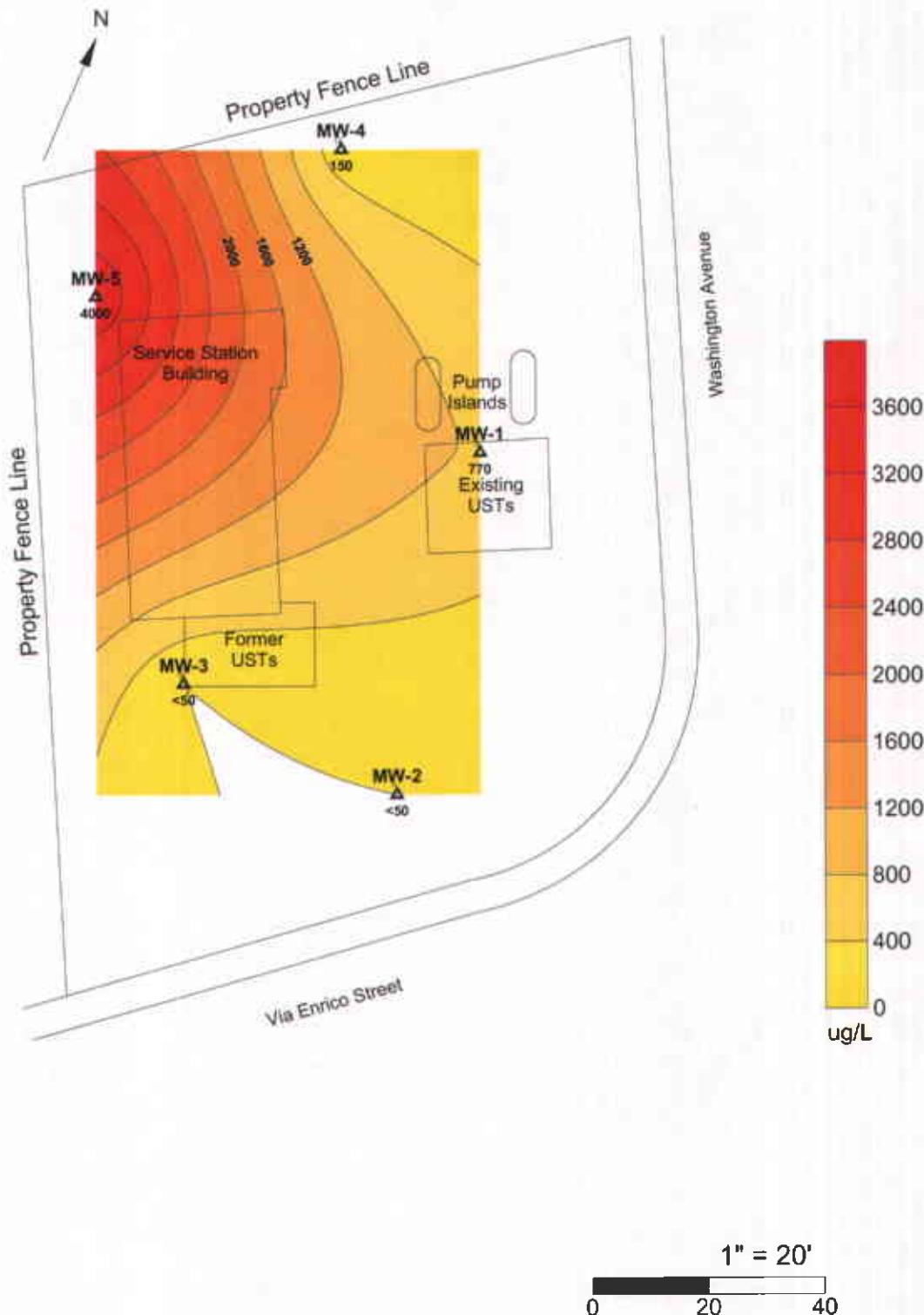


Figure 3 : TPH-g Concentration Contour Map, March 2002.

Approximate Groundwater  
Flow Direction  
← as of 3/25/02

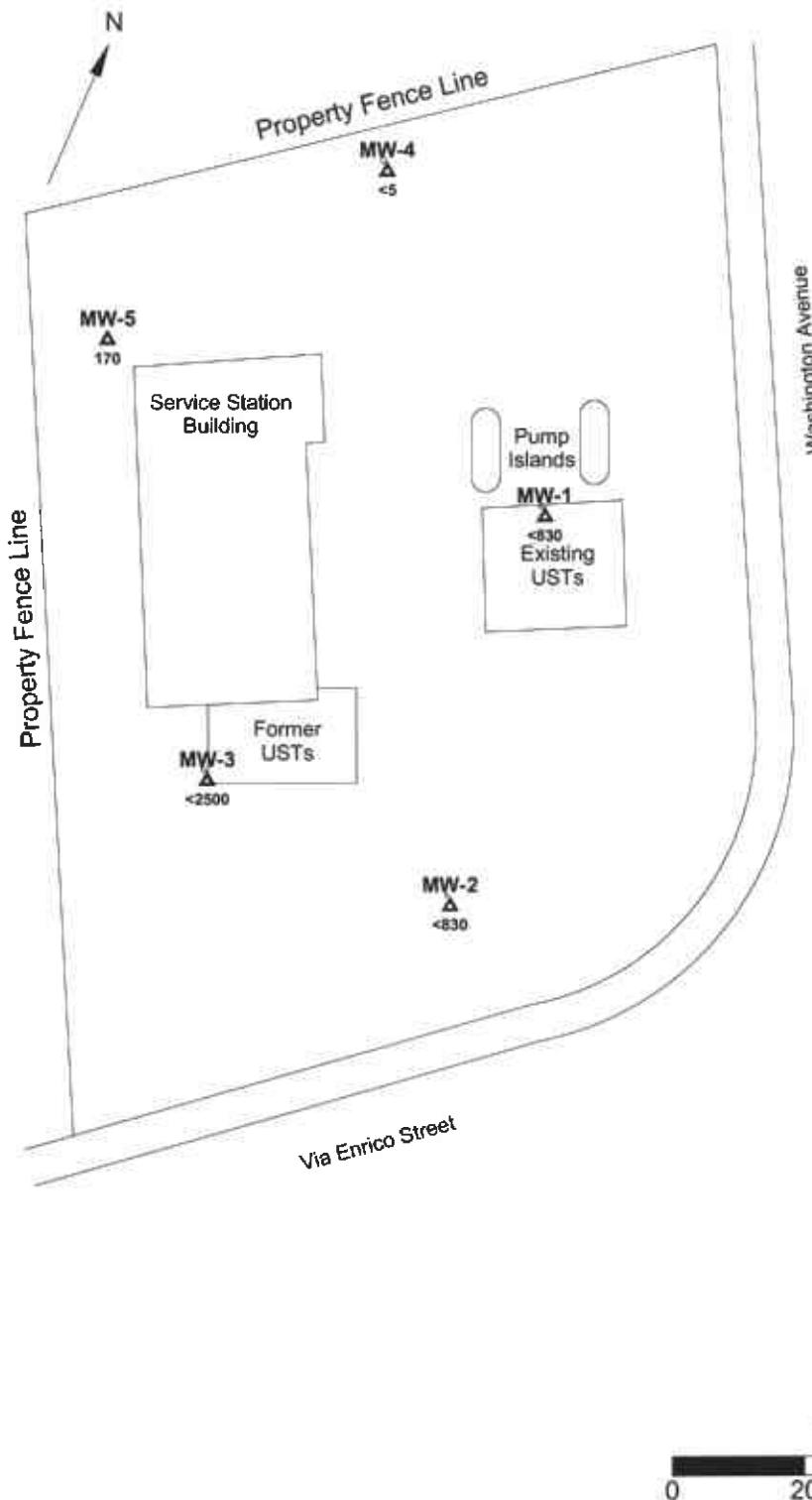


Figure 4: Benzene Concentration Post Map, March 2002.

Approximate Groundwater  
Flow Direction  
← as of 3/25/02

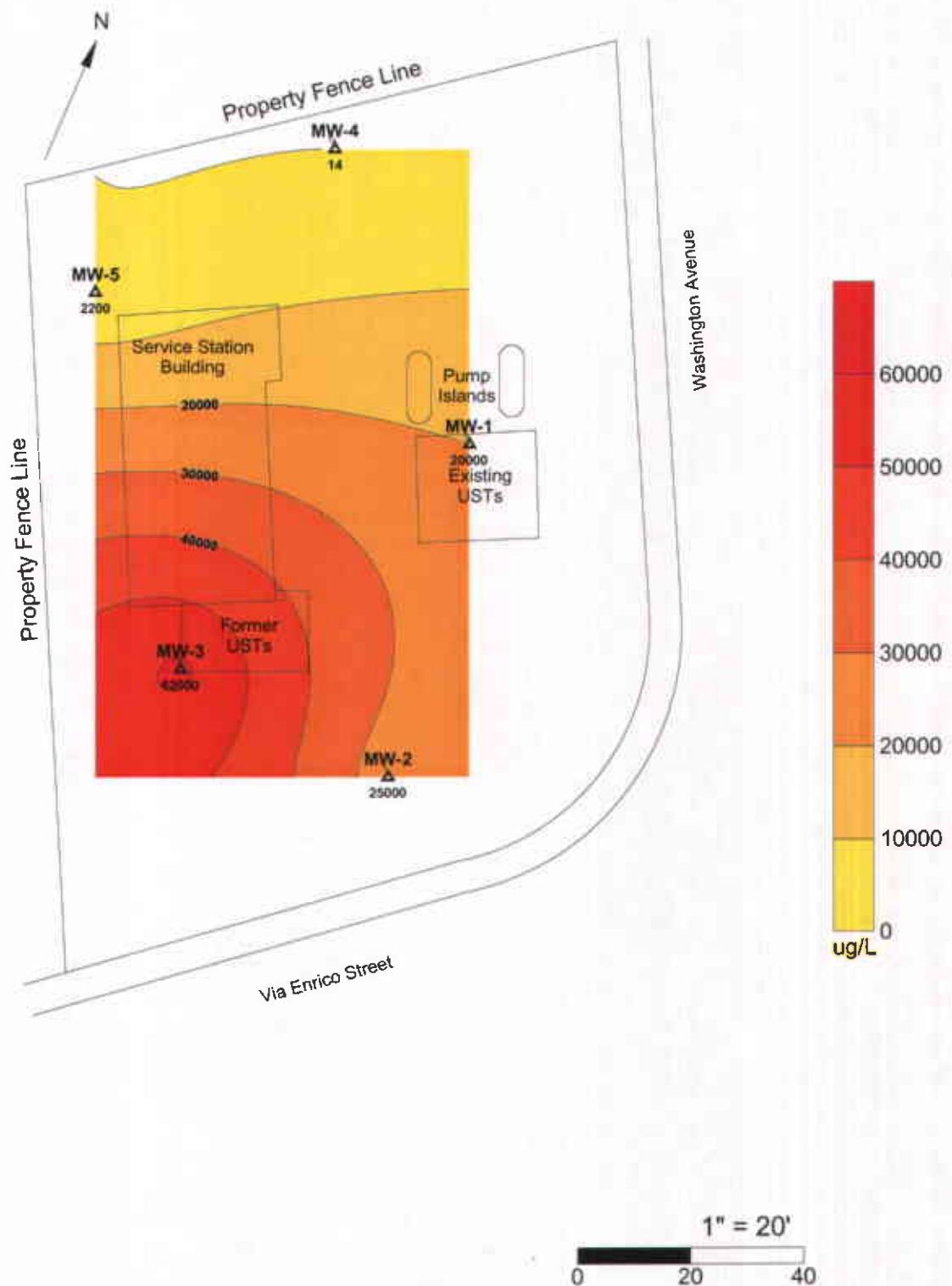


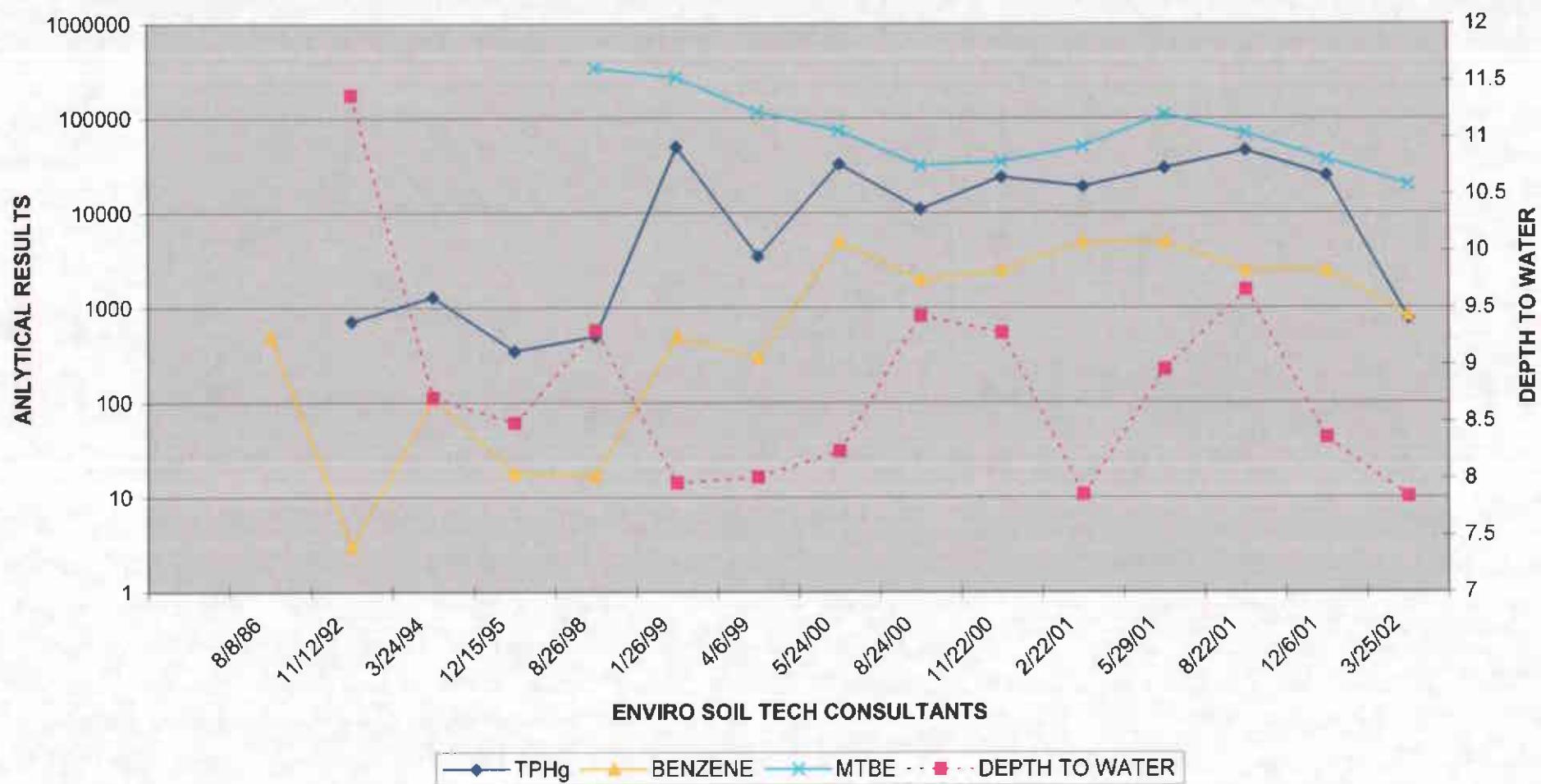
Figure 5: MtBE Concentration Contour Map, March 2002.

File No. 12-99-702-SI

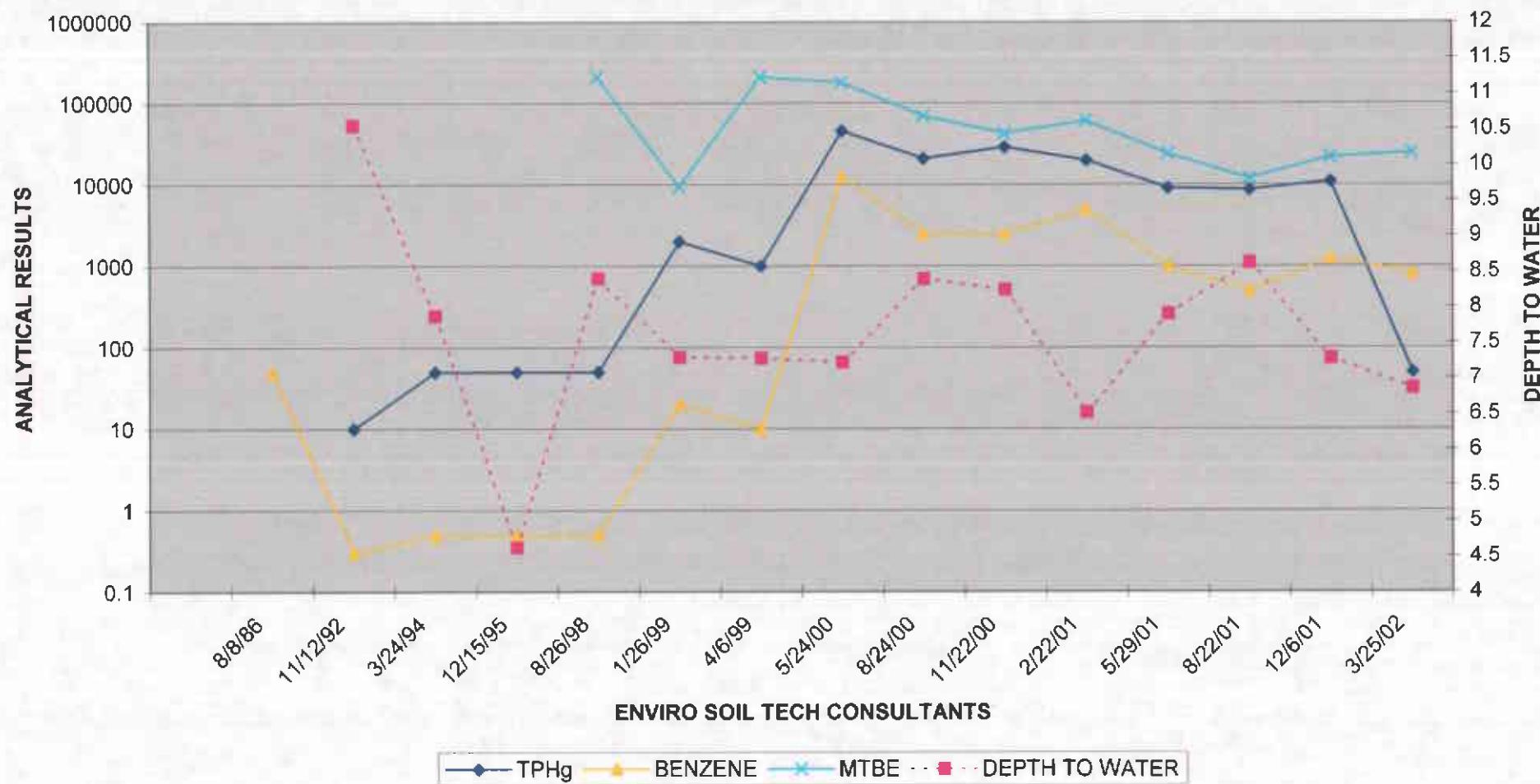
**A P P E N D I X "C"**

**ENVIRO SOIL TECH CONSULTANTS**

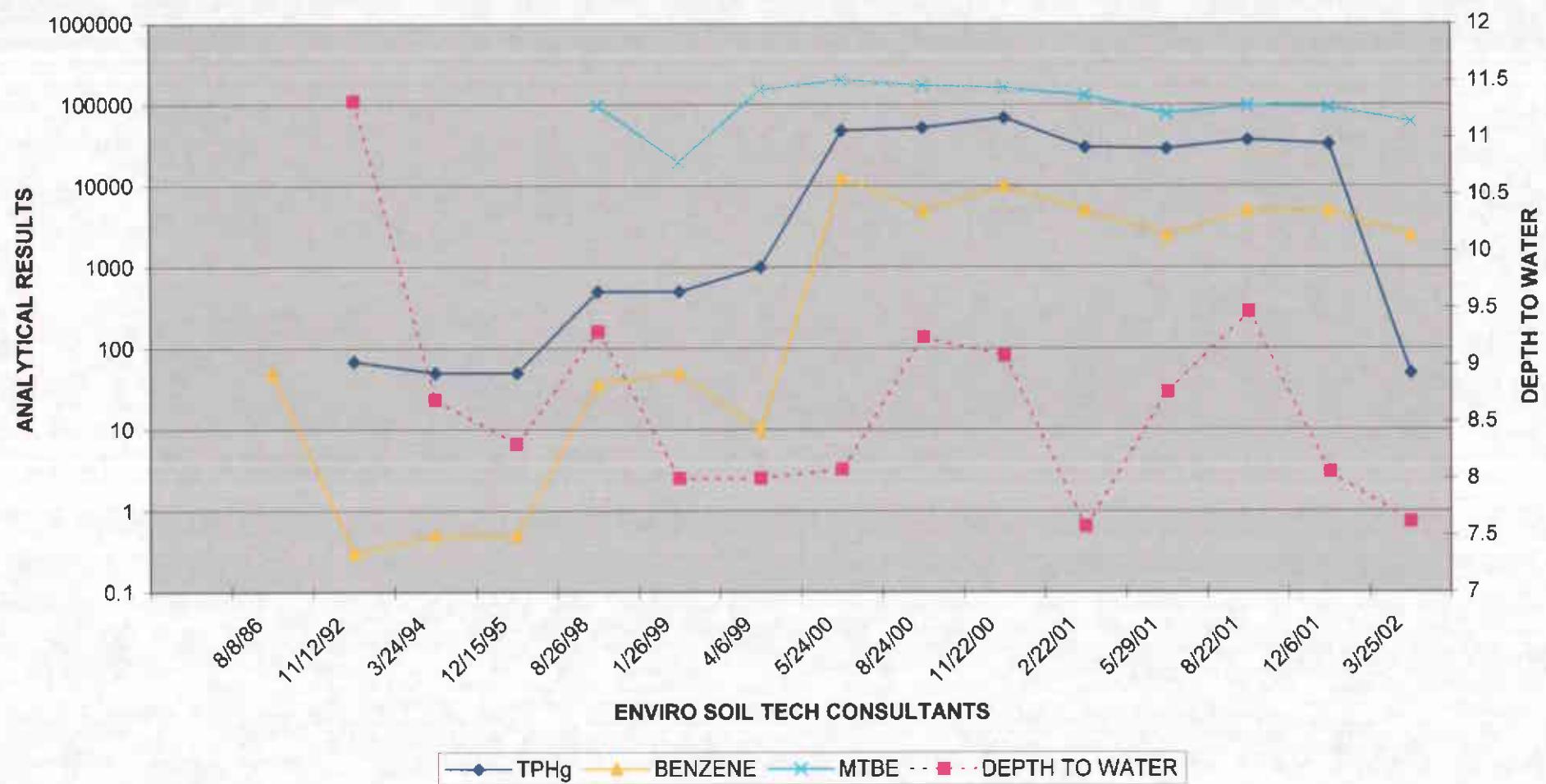
File No : 12-99-702-SI  
TPHg, BENZENE & MTBE FOR MW-1 ( $\mu\text{g/L}$ ) AND DEPTH TO WATER  
MEASUREMENT (Feet)



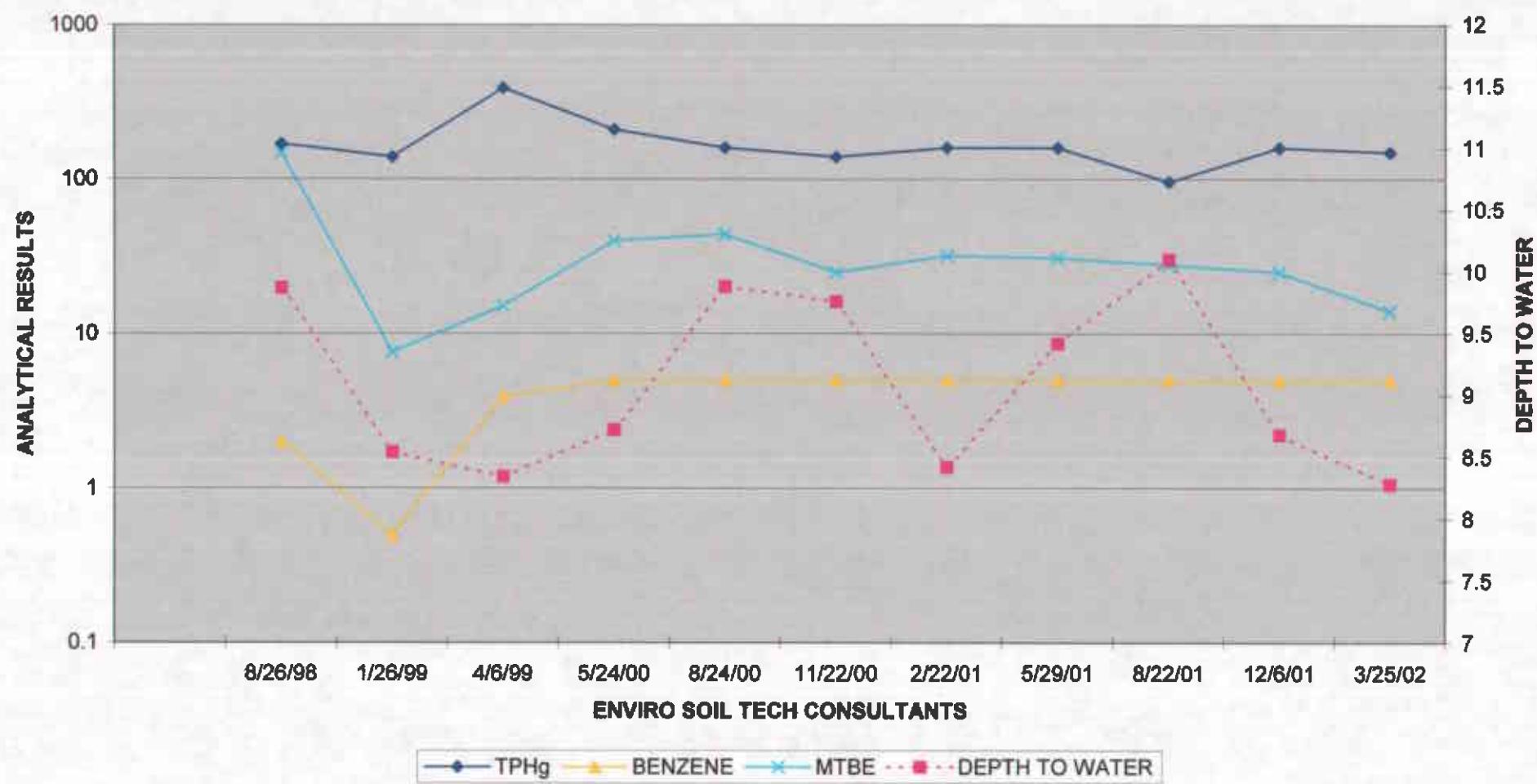
File No : 12-99-702-SI  
TPHg, BENZENE & MTBE RESULTS FOR MW-2 ( $\mu\text{g/L}$ ) AND DEPTH TO WATER  
MEASUREMENT (Feet)



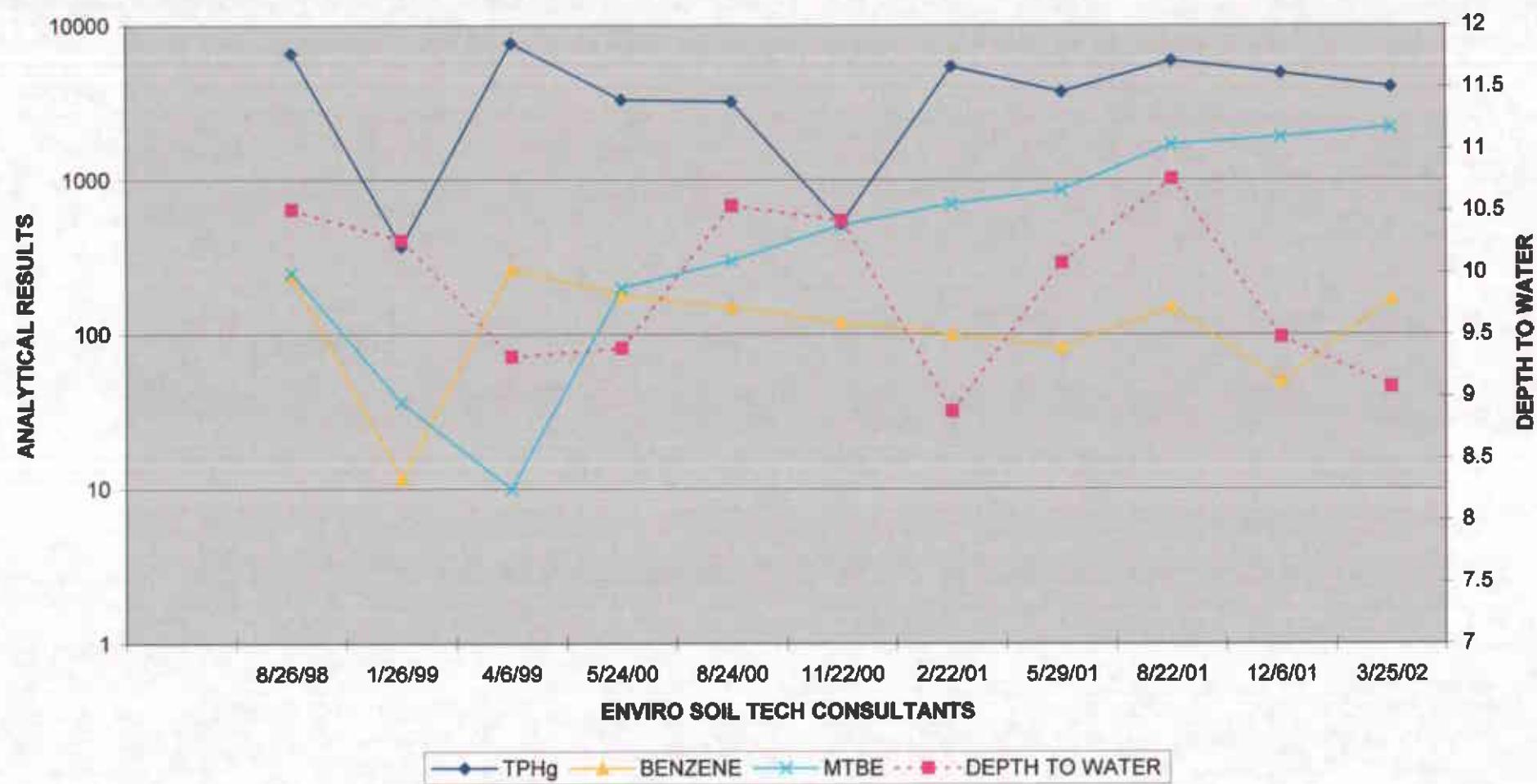
File No : 12-99-702-SI  
TPHg, BENZENE & MTBE RESULTS FOR MW-3 ( $\mu\text{g/L}$ ) AND DEPTH TO WATER  
MEASUREMENT (Feet)



File No : 12-99-702-SI  
**TPHg, BENZENE & MTBE RESULTS FOR MW-4 ( $\mu\text{g/L}$ ) AND DEPTH TO WATER  
MEASUREMENT (Feet)**



File No : 12-99-702-SI  
**TPHg, BENZENE & MTBE RESULTS FOR MW-5 ( $\mu\text{g/L}$ ) AND DEPTH TO WATER  
MEASUREMENT (Feet)**



File No. 12-99-702-SI

**A P P E N D I X "D"**

**ENVIRO SOIL TECH CONSULTANTS**

## **GROUNDWATER SAMPLING**

Prior to collection of groundwater samples, all of the sampling equipment (i.e. bailer, cables, bladder pump, discharge lines and etc.) was cleaned by pumping TSP water solution followed by distilled water.

Prior to purging, the well "Water Sampling Field Survey Forms" were filled out (depth to water and total depth of water column were measured and recorded). The well was then bailed or pumped to remove four to ten well volumes or until the discharged water temperature, conductivity and pH stabilized. "Stabilized" is defined as three consecutive readings within 15% of one another.

The groundwater sample was collected when the water level in the well recovered to 80% of its static level.

Forty milliliter (ml.), glass volatile organic analysis (VOA) vials with Teflon septa were used as sample containers. The groundwater sample was decanted into each VOA vial in such a manner that there was a meniscus at the top. The cap was quickly placed over the top of the vial and securely tightened. The VOA vial was then inverted and tapped to see if air bubbles were present. If none were present, the sample was labeled and refrigerated for delivery under chain-of-custody to the laboratory. The label information would include a sample identification number, job identification number, date, time, type of analysis requested, and the sampler's name.

File No. 12-99-702-SI

**A P P E N D I X "E"**

**ENVIRO SOIL TECH CONSULTANTS**



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

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

A N A L Y T I C A L   R E P O R T

Prepared for:

Enviro Soil Tech Consultants  
131 Tully Road  
San Jose, CA 95111

Date: 05-APR-02  
Lab Job Number: 157803  
Project ID: 12-99-702-SI  
Location: 15595 Washington Ave.

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signatures. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis.

Reviewed by:

Paul Prendergast  
Project Manager

Reviewed by:

Operations Manager

This package may be reproduced only in its entirety.



Curtis & Tompkins, Ltd.

Laboratory Number: **157803**  
Client: **Enviro Soil Tech Consultants**  
Project Name: **15595 Washington Avenue, San Lorenzo**  
Project #: **12-99-702-SI**  
Receipt Date: **03/28/02**

## **CASE NARRATIVE**

This hardcopy data package contains sample results and batch QC results for eight water samples received from the above referenced project on March 28<sup>th</sup>, 2002. The samples were received at ambient temperature and intact.

### **Gasoline by GC/FID CA LUFT (EPA 8015B(M)):**

The recovery for the trifluorotoluene surrogate was over the acceptable QC limits for client ID MW-5 (C&T ID 157803-005) due to coelution of sample hydrocarbons with this surrogate. No other analytical problems were encountered.

### **Purgeable Organic by GC/MS (EPA 8260B):**

No analytical problems were encountered.

### **Gasoline Oxygenates by GC/MS (EPA 8260B):**

No analytical problems were encountered.



Curtis &amp; Tompkins, Ltd.

**Gasoline by GC/FID CA LUFT**

Lab #:	157803	Location:	15595 Washington Ave.
Client:	Enviro Soil Tech Consultants	Prep:	EPA 5030B
Project#:	12-99-702-SI	Analysis:	8015B(M)
Matrix:	Water	Sampled:	03/25/02
Units:	ug/L	Received:	03/28/02
Batch#:	71254		

ield ID: MW-1 Diln Fac: 5.000  
Type: SAMPLE Analyzed: 03/30/02  
Lab ID: 157803-001

Analyte	Result	RL
Gasoline C7-C12	770	250

Surrogate	%REC	Limits
Trifluorotoluene (FID)	106	68-145
Bromofluorobenzene (FID)	111	66-143

ield ID: MW-2 Diln Fac: 1.000  
Type: SAMPLE Analyzed: 03/30/02  
Lab ID: 157803-002

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	105	68-145
Bromofluorobenzene (FID)	108	66-143

ield ID: MW-3 Diln Fac: 1.000  
Type: SAMPLE Analyzed: 03/30/02  
Lab ID: 157803-003

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	104	68-145
Bromofluorobenzene (FID)	115	66-143

ield ID: MW-4 Diln Fac: 1.000  
Type: SAMPLE Analyzed: 03/30/02  
Lab ID: 157803-004

Analyte	Result	RL
Gasoline C7-C12	150	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	107	68-145
Bromofluorobenzene (FID)	118	66-143

\* = Value outside of QC limits; see narrative

b= See narrative

ND= Not Detected

RL= Reporting Limit

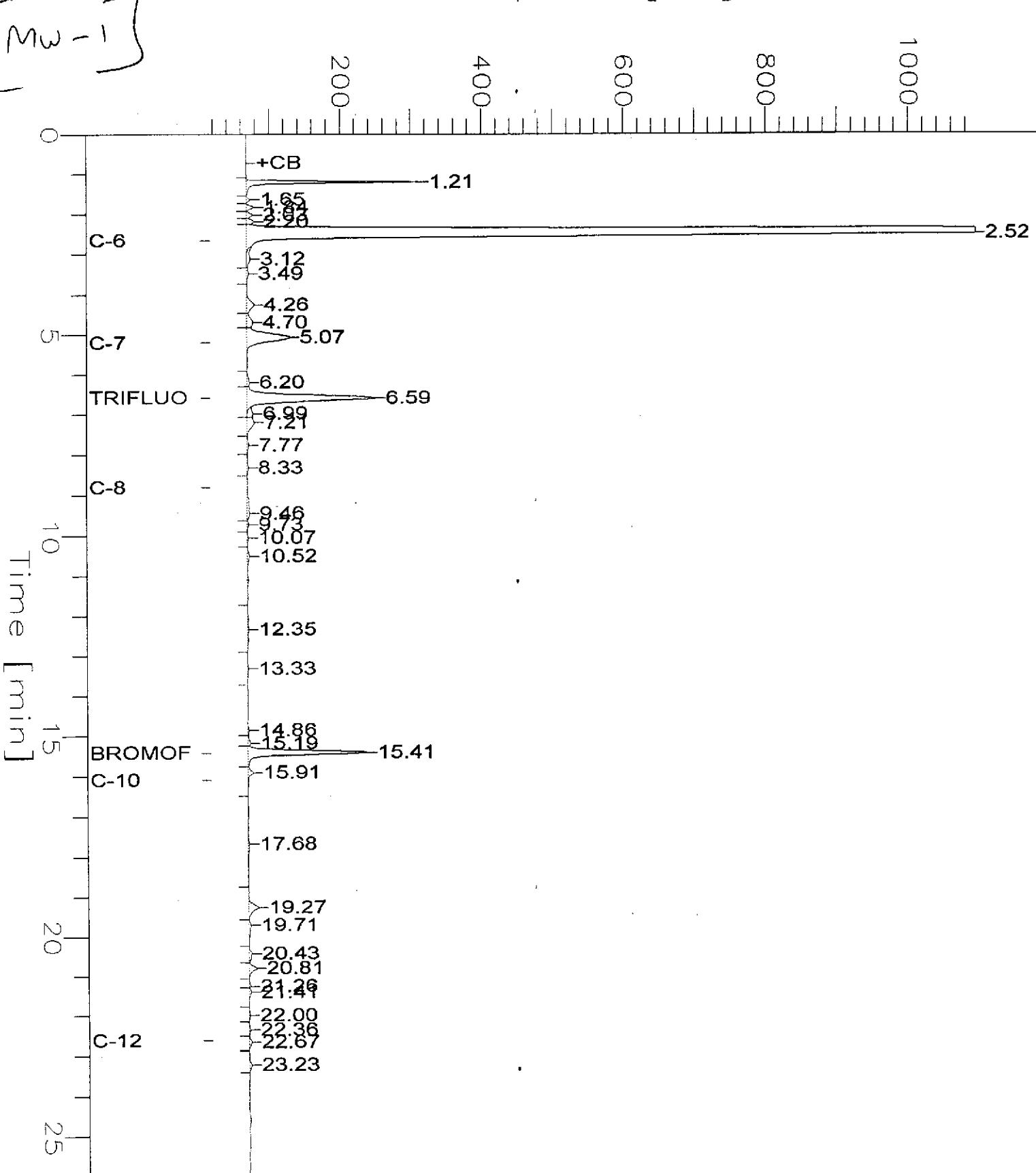
LR= Response exceeds instrument's linear range

# GC04 TVH 'J' Data File FID

Sample Name : 157803-001,71254  
FileName : G:\GC04\DATA\088J027.raw  
Method : TVHBTXE  
Start Time : 0.00 min End Time : 26.00 min  
Scale Factor: 1.0 Plot Offset: 17 mV

Sample #: c1 Page 1 of 1  
Date : 3/30/02 10:33 AM  
Time of Injection: 3/30/02 10:07 AM  
Low Point : 16.56 mV High Point : 1094.43 mV  
Plot Scale: 1077.9 mV

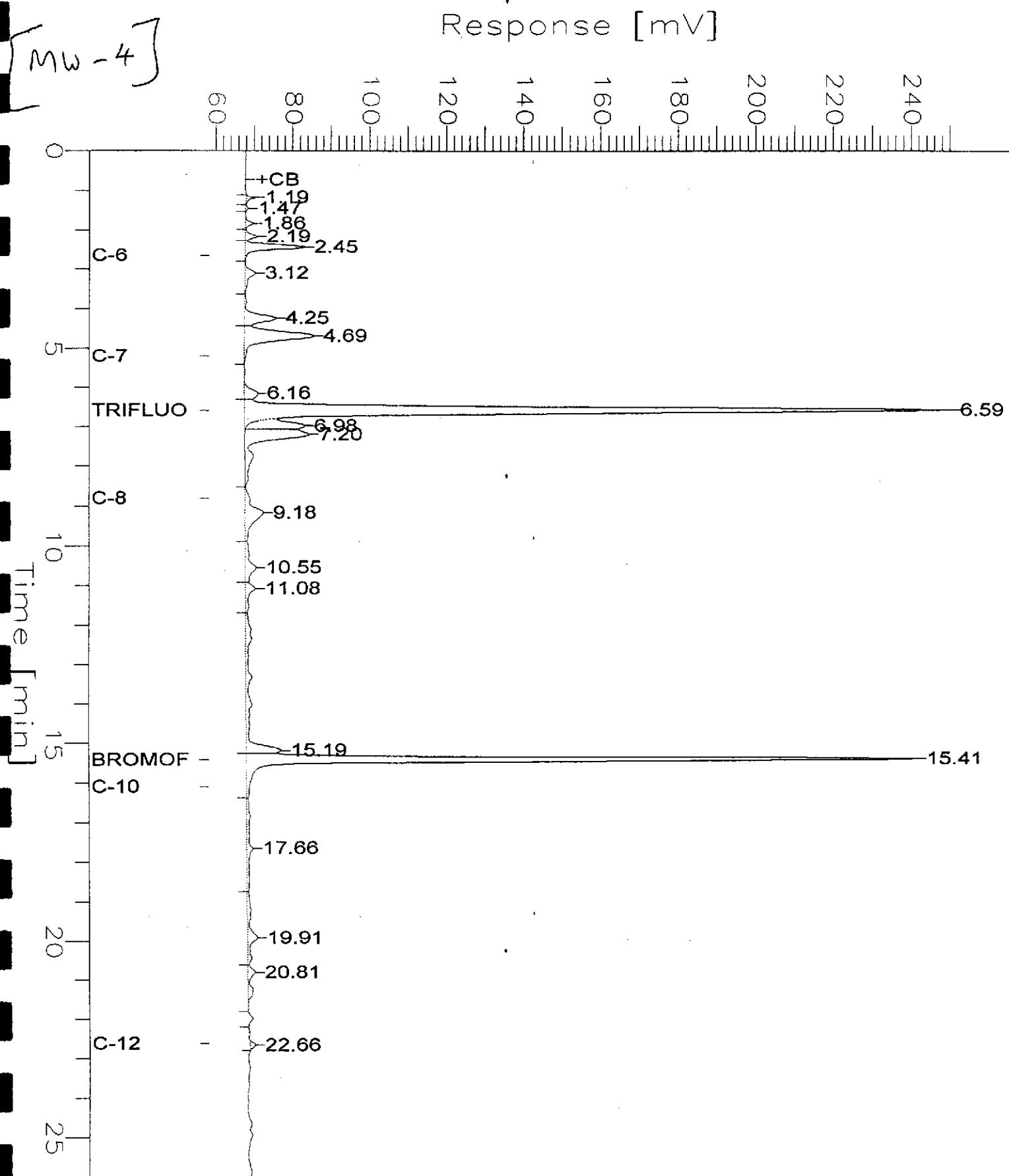
Response [mV]



## GC04 TVH 'J' Data File FID

Sample Name : 157803-004,71254  
FileName : G:\GC04\DATA\088J017.raw  
Method : TVHBTXE  
Start Time : 0.00 min End Time : 26.00 min  
Scale Factor: 1.0 Plot Offset: 58 mV

Sample #: c1 Page 1 of 1  
Date : 3/30/02 04:37 AM  
Time of Injection: 3/30/02 04:11 AM  
Low Point : 58.30 mV High Point : 250.31 mV  
Plot Scale: 192.0 mV





Curtis &amp; Tompkins, Ltd.

## Gasoline by GC/FID CA LUFT

Lab #:	157803	Location:	15595 Washington Ave.
Client:	Enviro Soil Tech Consultants	Prep:	EPA 5030B
Project#:	12-99-702-SI	Analysis:	8015B(M)
Matrix:	Water	Sampled:	03/25/02
Units:	ug/L	Received:	03/28/02
Batch#:	71254		

Field ID: MW-5 Diln Fac: 1.000  
Type: SAMPLE Analyzed: 03/30/02  
Lab ID: 157803-005

Analyst	Result	RL
Gasoline C7-C12	4,000	50

Analyst	Result	RL
Trifluorotoluene (FID)	354 * >LR b	68-145
Bromofluorobenzene (FID)	117	66-143

Type: BLANK Diln Fac: 1.000  
Lab ID: QC174552 Analyzed: 03/29/02

Analyst	Result	RL
Gasoline C7-C12	ND	50

Analyst	Result	RL
Trifluorotoluene (FID)	98	68-145
Bromofluorobenzene (FID)	106	66-143

\*= Value outside of QC limits; see narrative

b= See narrative

ND= Not Detected

RL= Reporting Limit

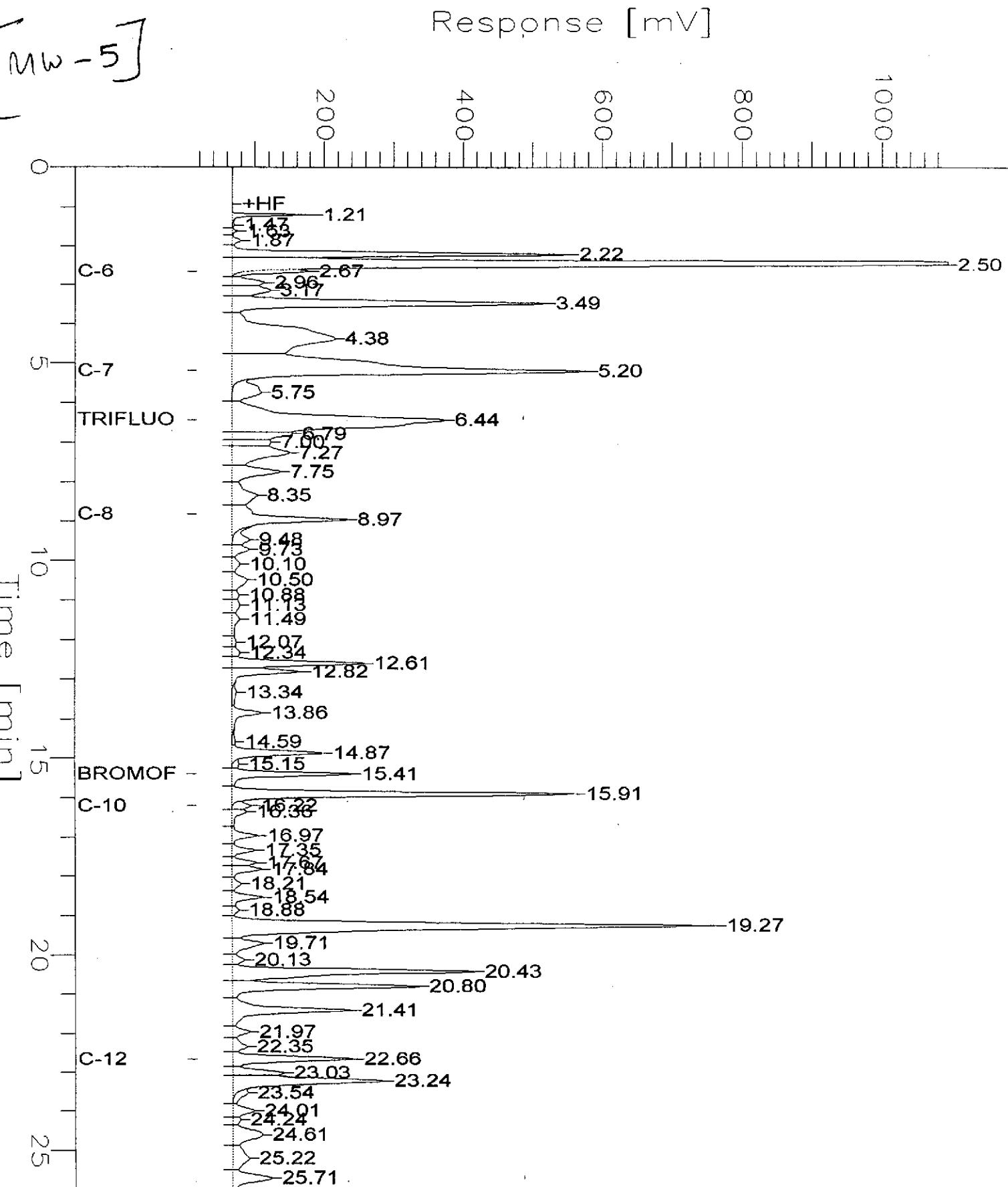
&gt;LR= Response exceeds instrument's linear range

## GC04 TVH 'J' Data File FID

Sample Name : 157803-005,71254  
FileName : G:\GC04\DATA\088J018.raw  
Method : TVHBTXE  
Start Time : 0.00 min End Time : 26.00 min  
Scale Factor: 1.0 Plot Offset: 16 mV

Sample #: c1 Page 1 of 1  
Date : 4/1/02 02:58 PM  
Time of Injection: 3/30/02 04:46 AM  
Low Point : 16.11 mV High Point : 1094.42 mV  
Plot Scale: 1078.3 mV

Response [mV]

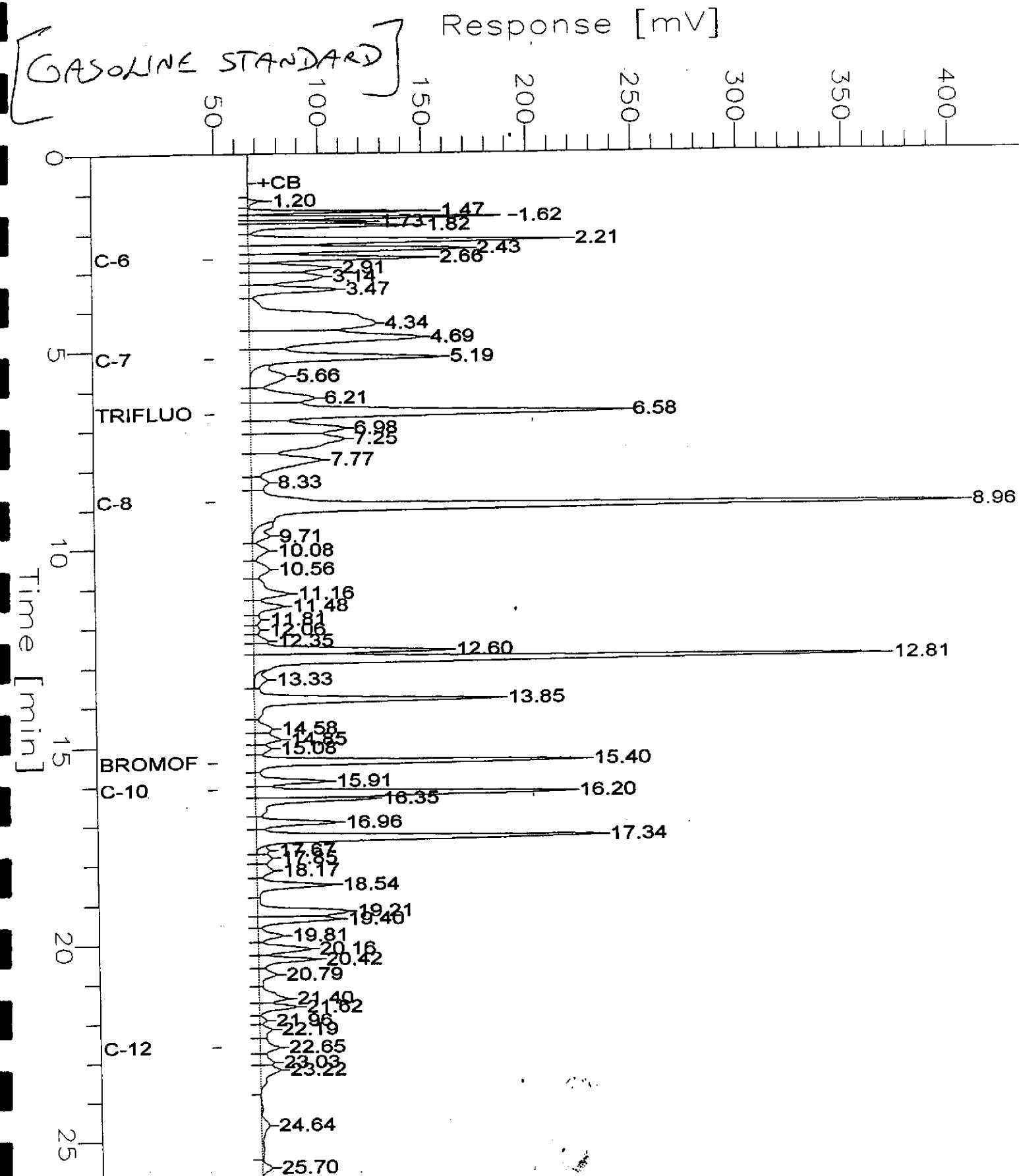


# GC04 TVH 'J' Data File FID

Sample Name : ccv/lcs,gc174553,71254,02ws0489,5/5000  
 FileName : G:\GC04\DATA\088J002.raw  
 Method : TVHBTXE  
 Start Time : 0.00 min  
 Scale Factor: 1.0

End Time : 26.00 min  
 Plot Offset: 49 mV

Sample #: Page 1 of 1  
 Date : 3/29/02 07:42 PM  
 Time of Injection: 3/29/02 07:16 PM  
 Low Point : 49.44 mV High Point : 405.35 mV  
 Plot Scale: 355.9 mV





Curtis &amp; Tompkins, Ltd.

**Gasoline by GC/FID CA LUFT**

Lab #:	157803	Location:	15595 Washington Ave.
Client:	Enviro Soil Tech Consultants	Prep:	EPA 5030B
Project#:	12-99-702-SI	Analysis:	8015B (M)
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC174553	Batch#:	71254
Matrix:	Water	Analyzed:	03/29/02
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	2,000	2,101	105	79-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	116	68-145
Bromofluorobenzene (FID)	103	66-143



Curtis & Tompkins, Ltd.

**Gasoline by GC/FID CA LUFT**

Lab #:	157803	Location:	15595 Washington Ave.
Client:	Enviro Soil Tech Consultants	Prep:	EPA 5030B
Project#:	12-99-702-SI	Analysis:	8015B (M)
Field ID:	ZZZZZZZZZZ	Batch#:	71254
MSS Lab ID:	157752-003	Sampled:	03/26/02
Matrix:	Water	Received:	03/26/02
Units:	ug/L	Analyzed:	03/30/02
Diln Fac:	1.000		

Type: MS Lab ID: QC174554

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	<33.00	2,000	2,144	107	67-120
Surrogate	%REC	Limits			
Trifluorotoluene (FID)	120	68-145			
Bromofluorobenzene (FID)	114	66-143			

Type: MSD Lab ID: QC174555

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	2,115	106	67-120	1	20
Surrogate	%REC	Limits				
Trifluorotoluene (FID)	120	68-145				
Bromofluorobenzene (FID)	112	66-143				



Curtis &amp; Tompkins, Ltd.

## Purgeable Organics by GC/MS

Lab #:	157803	Location:	15595 Washington Ave.
Client:	Enviro Soil Tech Consultants	Prep:	EPA 5030B
Project#:	12-99-702-SI	Analysis:	EPA 8260B
Field ID:	MW-1	Batch#:	71278
Lab ID:	157803-001	Sampled:	03/25/02
Matrix:	Water	Received:	03/28/02
Units:	ug/L	Analyzed:	04/01/02
Diln Fac:	166.7		

Analyte	Result	RL
Freon 12	ND	1,700
Chloromethane	ND	1,700
Vinyl Chloride	ND	1,700
Bromomethane	ND	1,700
Chloroethane	ND	1,700
Trichlorofluoromethane	ND	830
Acetone	ND	3,300
Freon 113	ND	830
1,1-Dichloroethene	ND	830
Methylene Chloride	ND	3,300
Carbon Disulfide	ND	830
MTBE	20,000	83
trans-1,2-Dichloroethene	ND	830
Vinyl Acetate	ND	8,300
1,1-Dichloroethane	ND	830
2-Butanone	ND	1,700
cis-1,2-Dichloroethene	ND	830
2,2-Dichloropropane	ND	830
Chloroform	ND	830
Bromochloromethane	ND	1,700
1,1,1-Trichloroethane	ND	830
1,1-Dichloropropene	ND	830
Carbon Tetrachloride	ND	830
1,2-Dichloroethane	ND	830
Benzene	ND	830
Trichloroethene	ND	830
1,2-Dichloropropane	ND	830
Bromodichloromethane	ND	830
Dibromomethane	ND	830
4-Methyl-2-Pentanone	ND	1,700
cis-1,3-Dichloropropene	ND	830
Toluene	ND	830
trans-1,3-Dichloropropene	ND	830
1,1,2-Trichloroethane	ND	830
2-Hexanone	ND	1,700
1,3-Dichloropropane	ND	830
Tetrachloroethene	ND	830

ND= Not Detected

L= Reporting Limit

Page 1 of 2



Curtis &amp; Tompkins, Ltd.

## Purgeable Organics by GC/MS

Lab #:	157803	Location:	15595 Washington Ave.
Client:	Enviro Soil Tech Consultants	Prep:	EPA 5030B
Project#:	12-99-702-SI	Analysis:	EPA 8260B
Field ID:	MW-1	Batch#:	71278
Lab ID:	157803-001	Sampled:	03/25/02
Matrix:	Water	Received:	03/28/02
Units:	ug/L	Analyzed:	04/01/02
Diln Fac:	166.7		

Analyte	Result	RL
Dibromochloromethane	ND	830
1,2-Dibromoethane	ND	830
Chlorobenzene	ND	830
1,1,1,2-Tetrachloroethane	ND	830
Ethylbenzene	ND	830
m,p-Xylenes	ND	830
p-Xylene	ND	830
Styrene	ND	830
Bromoform	ND	830
Isopropylbenzene	ND	830
1,1,2,2-Tetrachloroethane	ND	830
1,2,3-Trichloropropane	ND	830
Propylbenzene	ND	830
Bromobenzene	ND	830
1,3,5-Trimethylbenzene	ND	830
2-Chlorotoluene	ND	830
4-Chlorotoluene	ND	830
tert-Butylbenzene	ND	830
1,2,4-Trimethylbenzene	ND	830
sec-Butylbenzene	ND	830
para-Isopropyl Toluene	ND	830
1,3-Dichlorobenzene	ND	830
1,4-Dichlorobenzene	ND	830
n-Butylbenzene	ND	830
1,2-Dichlorobenzene	ND	830
1,2-Dibromo-3-Chloropropane	ND	830
1,2,4-Trichlorobenzene	ND	830
Hexachlorobutadiene	ND	830
Naphthalene	ND	830
1,2,3-Trichlorobenzene	ND	830

Surrogate	REC	Limits
Dibromofluoromethane	97	80-121
1,2-Dichloroethane-d4	106	77-130
Toluene-d8	104	80-120
Bromofluorobenzene	105	80-120

ND= Not Detected

L= Reporting Limit

Page 2 of 2



Curtis &amp; Tompkins, Ltd.

## Purgeable Organics by GC/MS

Lab #:	157803	Location:	15595 Washington Ave.
Client:	Enviro Soil Tech Consultants	Prep:	EPA 5030B
Project#:	12-99-702-SI	Analysis:	EPA 8260B
Field ID:	MW-2	Batch#:	71300
Lab ID:	157803-002	Sampled:	03/25/02
Matrix:	Water	Received:	03/28/02
Units:	ug/L	Analyzed:	04/02/02
Diln Fac:	166.7		

Analyte	Result	RL
Freon 12	ND	1,700
Chloromethane	ND	1,700
Vinyl Chloride	ND	1,700
Bromomethane	ND	1,700
Chloroethane	ND	1,700
Trichlorofluoromethane	ND	830
Acetone	ND	3,300
Freon 113	ND	830
1,1-Dichloroethene	ND	830
Methylene Chloride	ND	3,300
Carbon Disulfide	ND	830
MTBE	25,000	83
trans-1,2-Dichloroethene	ND	830
Vinyl Acetate	ND	8,300
1,1-Dichloroethane	ND	830
2-Butanone	ND	1,700
cis-1,2-Dichloroethene	ND	830
2,2-Dichloropropane	ND	830
Chloroform	ND	830
Bromochloromethane	ND	1,700
1,1,1-Trichloroethane	ND	830
1,1-Dichloropropene	ND	830
Carbon Tetrachloride	ND	830
1,2-Dichloroethane	ND	830
Benzene	ND	830
Trichloroethene	ND	830
1,2-Dichloropropane	ND	830
Bromodichloromethane	ND	830
Dibromomethane	ND	830
1-Methyl-2-Pentanone	ND	1,700
cis-1,3-Dichloropropene	ND	830
Toluene	ND	830
trans-1,3-Dichloropropene	ND	830
1,1,2-Trichloroethane	ND	830
2-Hexanone	ND	1,700
1,3-Dichloropropane	ND	830
Tetrachloroethene	ND	830

ND= Not Detected

L= Reporting Limit

Page 1 of 2



Curtis &amp; Tompkins, Ltd.

## Purgeable Organics by GC/MS

Lab #:	157803	Location:	15595 Washington Ave.
Client:	Enviro Soil Tech Consultants	Prep:	EPA 5030B
Project#:	12-99-702-SI	Analysis:	EPA 8260B
Field ID:	MW-2	Batch#:	71300
Lab ID:	157803-002	Sampled:	03/25/02
Matrix:	Water	Received:	03/28/02
Units:	ug/L	Analyzed:	04/02/02
Diln Fac:	166.7		

Analyte	Result	RL
Dibromochloromethane	ND	830
1,2-Dibromoethane	ND	830
Chlorobenzene	ND	830
1,1,1,2-Tetrachloroethane	ND	830
Ethylbenzene	ND	830
m,p-Xylenes	ND	830
o-Xylene	ND	830
Styrene	ND	830
Bromoform	ND	830
Isopropylbenzene	ND	830
1,1,2,2-Tetrachloroethane	ND	830
1,2,3-Trichloropropane	ND	830
Propylbenzene	ND	830
Bromobenzene	ND	830
1,3,5-Trimethylbenzene	ND	830
2-Chlorotoluene	ND	830
4-Chlorotoluene	ND	830
tert-Butylbenzene	ND	830
1,2,4-Trimethylbenzene	ND	830
sec-Butylbenzene	ND	830
para-Isopropyl Toluene	ND	830
1,3-Dichlorobenzene	ND	830
1,4-Dichlorobenzene	ND	830
n-Butylbenzene	ND	830
1,2-Dichlorobenzene	ND	830
1,2-Dibromo-3-Chloropropane	ND	830
1,2,4-Trichlorobenzene	ND	830
Hexachlorobutadiene	ND	830
Naphthalene	ND	830
1,2,3-Trichlorobenzene	ND	830

Surrogate	#REC	Limits
Dibromofluoromethane	93	80-121
1,2-Dichloroethane-d4	99	77-130
Toluene-d8	104	80-120
Bromofluorobenzene	118	80-120

ND= Not Detected

L= Reporting Limit

Page 2 of 2



Curtis &amp; Tompkins, Ltd.

## Purgeable Organics by GC/MS

Lab #:	157803	Location:	15595 Washington Ave.
Client:	Enviro Soil Tech Consultants	Prep:	EPA 5030B
Project#:	12-99-702-SI	Analysis:	EPA 8260B
Field ID:	MW-3	Batch#:	71278
Lab ID:	157803-003	Sampled:	03/25/02
Matrix:	Water	Received:	03/28/02
Units:	ug/L	Analyzed:	04/01/02
Diln Fac:	500.0		

Analyte	Result	RL
Freon 12	ND	5,000
Chloromethane	ND	5,000
Vinyl Chloride	ND	5,000
Bromomethane	ND	5,000
Chloroethane	ND	5,000
Trichlorofluoromethane	ND	2,500
Acetone	ND	10,000
Freon 113	ND	2,500
1,1-Dichloroethene	ND	2,500
Methylene Chloride	ND	10,000
Carbon Disulfide	ND	2,500
MTBE	62,000	250
trans-1,2-Dichloroethene	ND	2,500
Vinyl Acetate	ND	25,000
1,1-Dichloroethane	ND	2,500
2-Butanone	ND	5,000
cis-1,2-Dichloroethene	ND	2,500
2,2-Dichloropropane	ND	2,500
Chloroform	ND	2,500
Bromochloromethane	ND	5,000
1,1,1-Trichloroethane	ND	2,500
1,1-Dichloropropene	ND	2,500
Carbon Tetrachloride	ND	2,500
1,2-Dichloroethane	ND	2,500
Benzene	ND	2,500
Trichloroethene	ND	2,500
1,2-Dichloropropane	ND	2,500
Bromodichloromethane	ND	2,500
Dibromomethane	ND	2,500
4-Methyl-2-Pentanone	ND	5,000
cis-1,3-Dichloropropene	ND	2,500
Toluene	ND	2,500
trans-1,3-Dichloropropene	ND	2,500
1,1,2-Trichloroethane	ND	2,500
2-Hexanone	ND	5,000
1,3-Dichloropropane	ND	2,500
Tetrachloroethene	ND	2,500

ND= Not Detected

RL= Reporting Limit

Page 1 of 2



Curtis &amp; Tompkins, Ltd.

## Purgeable Organics by GC/MS

Lab #:	157803	Location:	15595 Washington Ave.
Client:	Enviro Soil Tech Consultants	Prep:	EPA 5030B
Project#:	12-99-702-SI	Analysis:	EPA 8260B
Field ID:	MW-3	Batch#:	71278
Lab ID:	157803-003	Sampled:	03/25/02
Matrix:	Water	Received:	03/28/02
Units:	ug/L	Analyzed:	04/01/02
Diln Fac:	500.0		

Analyte	Result	RL
Dibromochloromethane	ND	2,500
1,2-Dibromoethane	ND	2,500
Chlorobenzene	ND	2,500
1,1,1,2-Tetrachloroethane	ND	2,500
Ethylbenzene	ND	2,500
m,p-Xylenes	ND	2,500
o-Xylene	ND	2,500
Styrene	ND	2,500
Bromoform	ND	2,500
Isopropylbenzene	ND	2,500
1,1,2,2-Tetrachloroethane	ND	2,500
1,2,3-Trichloropropane	ND	2,500
Propylbenzene	ND	2,500
Bromobenzene	ND	2,500
1,3,5-Trimethylbenzene	ND	2,500
2-Chlorotoluene	ND	2,500
4-Chlorotoluene	ND	2,500
tert-Butylbenzene	ND	2,500
1,2,4-Trimethylbenzene	ND	2,500
sec-Butylbenzene	ND	2,500
para-Isopropyl Toluene	ND	2,500
1,3-Dichlorobenzene	ND	2,500
1,4-Dichlorobenzene	ND	2,500
n-Butylbenzene	ND	2,500
1,2-Dichlorobenzene	ND	2,500
1,2-Dibromo-3-Chloropropane	ND	2,500
1,2,4-Trichlorobenzene	ND	2,500
Hexachlorobutadiene	ND	2,500
Naphthalene	ND	2,500
1,2,3-Trichlorobenzene	ND	2,500

Surrogate	REC	Limits
Dibromofluoromethane	97	80-121
1,2-Dichloroethane-d4	107	77-130
Toluene-d8	101	80-120
Bromofluorobenzene	106	80-120

ND= Not Detected

L= Reporting Limit

Page 2 of 2



Curtis &amp; Tompkins, Ltd.

## Purgeable Organics by GC/MS

Lab #:	157803	Location:	15595 Washington Ave.
Client:	Enviro Soil Tech Consultants	Prep:	EPA 5030B
Project#:	12-99-702-SI	Analysis:	EPA 8260B
Field ID:	MW-4	Batch#:	71246
Lab ID:	157803-004	Sampled:	03/25/02
Matrix:	Water	Received:	03/28/02
Units:	ug/L	Analyzed:	03/29/02
Diln Fac:	1.000		

Analyte	Result	RL
Freon 12	ND	10
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.0
Acetone	ND	20
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	20
Carbon Disulfide	ND	5.0
MTBE	14	0.5
trans-1,2-Dichloroethene	ND	5.0
Vinyl Acetate	ND	50
1,1-Dichloroethane	ND	5.0
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	5.0
2,2-Dichloropropane	ND	5.0
Chloroform	ND	5.0
Bromochloromethane	ND	10
1,1,1-Trichloroethane	ND	5.0
1,1-Dichloropropene	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	ND	5.0
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
Dibromomethane	ND	5.0
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	5.0
Toluene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
2-Hexanone	ND	10
1,3-Dichloropropane	ND	5.0
Tetrachloroethene	ND	5.0

ND= Not Detected

L= Reporting Limit

Page 1 of 2



Curtis &amp; Tompkins, Ltd.

## Purgeable Organics by GC/MS

Lab #:	157803	Location:	15595 Washington Ave.
Client:	Enviro Soil Tech Consultants	Prep:	EPA 5030B
Project#:	12-99-702-SI	Analysis:	EPA 8260B
Field ID:	MW-4	Batch#:	71246
Lab ID:	157803-004	Sampled:	03/25/02
Matrix:	Water	Received:	03/28/02
Units:	ug/L	Analyzed:	03/29/02
Diln Fac:	1.000		

Analyte	Result	RL
Dibromochloromethane	ND	5.0
1,2-Dibromoethane	ND	5.0
Chlorobenzene	ND	5.0
1,1,1,2-Tetrachloroethane	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Styrene	ND	5.0
Bromoform	ND	5.0
Isopropylbenzene	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
1,2,3-Trichloropropane	ND	5.0
Propylbenzene	ND	5.0
Bromobenzene	ND	5.0
1,3,5-Trimethylbenzene	ND	5.0
2-Chlorotoluene	ND	5.0
4-Chlorotoluene	ND	5.0
tert-Butylbenzene	ND	5.0
1,2,4-Trimethylbenzene	ND	5.0
sec-Butylbenzene	ND	5.0
para-Isopropyl Toluene	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
n-Butylbenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Dibromo-3-Chloropropane	ND	5.0
1,2,4-Trichlorobenzene	ND	5.0
Hexachlorobutadiene	ND	5.0
Naphthalene	ND	5.0
1,2,3-Trichlorobenzene	ND	5.0

Surrogate	REC	Limits
Dibromofluoromethane	96	80-121
1,2-Dichloroethane-d4	113	77-130
Toluene-d8	104	80-120
Bromofluorobenzene	108	80-120

ND= Not Detected

L= Reporting Limit

Page 2 of 2



Curtis &amp; Tompkins, Ltd.

## Purgeable Organics by GC/MS

Lab #:	157803	Location:	15595 Washington Ave.
Client:	Enviro Soil Tech Consultants	Prep:	EPA 5030B
Project#:	12-99-702-SI	Analysis:	EPA 8260B
Field ID:	MW-5	Batch#:	71278
Lab ID:	157803-005	Sampled:	03/25/02
Matrix:	Water	Received:	03/28/02
Units:	ug/L	Analyzed:	04/01/02
Gill Fac:	16.67		

Analyte	Result	RL
Freon 12	ND	170
Chloromethane	ND	170
Vinyl Chloride	ND	170
Bromomethane	ND	170
Chloroethane	ND	170
Trichlorofluoromethane	ND	83
Acetone	ND	330
Freon 113	ND	83
,1-Dichloroethene	ND	83
Methylene Chloride	ND	330
Carbon Disulfide	ND	83
TBEE	2,200	8.3
trans-1,2-Dichloroethene	ND	83
Vinyl Acetate	ND	830
,1-Dichloroethane	ND	83
3-Butanone	ND	170
cis-1,2-Dichloroethene	ND	83
,2-Dichloropropane	ND	83
Chloroform	ND	83
Bromochloromethane	ND	170
,1,1-Trichloroethane	ND	83
,1-Dichloropropene	ND	83
Carbon Tetrachloride	ND	83
,2-Dichloroethane	ND	83
Benzene	170	83
Trichloroethene	ND	83
,2-Dichloropropane	ND	83
Bromodichloromethane	ND	83
Dibromomethane	ND	83
4-Methyl-2-Pentanone	ND	170
cis-1,3-Dichloropropene	ND	83
Toluene	ND	83
trans-1,3-Dichloropropene	ND	83
,1,2-Trichloroethane	ND	83
3-Hexanone	ND	170
,3-Dichloropropane	ND	83
Tetrachloroethene	ND	83

ND= Not Detected

RL= Reporting Limit

Page 1 of 2

**Purgeable Organics by GC/MS**

Lab #:	157803	Location:	15595 Washington Ave.
Client:	Enviro Soil Tech Consultants	Prep:	EPA 5030B
Project#:	12-99-702-SI	Analysis:	EPA 8260B
Field ID:	MW-5	Batch#:	71278
Lab ID:	157803-005	Sampled:	03/25/02
Matrix:	Water	Received:	03/28/02
Units:	ug/L	Analyzed:	04/01/02
Diln Fac:	16.67		

Analyte	Result	RL
Dibromochloromethane	ND	83
1,2-Dibromoethane	ND	83
Chlorobenzene	ND	83
1,1,1,2-Tetrachloroethane	ND	83
Ethylbenzene	ND	83
m,p-Xylenes	ND	83
o-Xylene	ND	83
Styrene	ND	83
Bromoform	ND	83
Isopropylbenzene	ND	83
1,1,2,2-Tetrachloroethane	ND	83
1,2,3-Trichloropropane	ND	83
Propylbenzene	180	83
Bromobenzene	ND	83
1,3,5-Trimethylbenzene	ND	83
2-Chlorotoluene	ND	83
4-Chlorotoluene	ND	83
tert-Butylbenzene	ND	83
1,2,4-Trimethylbenzene	ND	83
sec-Butylbenzene	ND	83
para-Isopropyl Toluene	ND	83
1,3-Dichlorobenzene	ND	83
1,4-Dichlorobenzene	ND	83
n-Butylbenzene	ND	83
1,2-Dichlorobenzene	ND	83
1,2-Dibromo-3-Chloropropane	ND	83
1,2,4-Trichlorobenzene	ND	83
Hexachlorobutadiene	ND	83
Naphthalene	ND	83
1,2,3-Trichlorobenzene	ND	83

Surrogate	GRAC	Limits
Dibromofluoromethane	98	80-121
1,2-Dichloroethane-d4	100	77-130
Toluene-d8	99	80-120
Bromofluorobenzene	100	80-120

ND= Not Detected

RL= Reporting Limit

Page 2 of 2



Curtis &amp; Tompkins, Ltd.

## Purgeable Organics by GC/MS

Lab #:	157803	Location:	15595 Washington Ave.
Client:	Enviro Soil Tech Consultants	Prep:	EPA 5030B
Project#:	12-99-702-SI	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC174526	Batch#:	71246
Matrix:	Water	Analyzed:	03/29/02
Units:	ug/L		

Analyte	Result	RL
Freon 12	ND	10
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.0
Acetone	ND	20
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	20
Carbon Disulfide	ND	5.0
MTBE	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
Vinyl Acetate	ND	50
1,1-Dichloroethane	ND	5.0
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	5.0
2,2-Dichloropropane	ND	5.0
Chloroform	ND	5.0
Bromochloromethane	ND	10
1,1,1-Trichloroethane	ND	5.0
1,1-Dichloropropene	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	ND	5.0
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
Dibromomethane	ND	5.0
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	5.0
Toluene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
2-Hexanone	ND	10
1,3-Dichloropropane	ND	5.0
Tetrachloroethene	ND	5.0
Dibromochloromethane	ND	5.0

ND= Not Detected

RL= Reporting Limit

Page 1 of 2



Curtis &amp; Tompkins, Ltd.

**Purgeable Organics by GC/MS**

Lab #:	157803	Location:	15595 Washington Ave.
Client:	Enviro Soil Tech Consultants	Prep:	EPA 5030B
Project#:	12-99-702-SI	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC174526	Batch#:	71246
Matrix:	Water	Analyzed:	03/29/02
Units:	ug/L		

Analyte	Result	RL
1,2-Dibromoethane	ND	5.0
Chlorobenzene	ND	5.0
1,1,1,2-Tetrachloroethane	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Styrene	ND	5.0
Bromoform	ND	5.0
Isopropylbenzene	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
1,2,3-Trichloropropane	ND	5.0
Propylbenzene	ND	5.0
Bromobenzene	ND	5.0
1,3,5-Trimethylbenzene	ND	5.0
2-Chlorotoluene	ND	5.0
4-Chlorotoluene	ND	5.0
tert-Butylbenzene	ND	5.0
1,2,4-Trimethylbenzene	ND	5.0
sec-Butylbenzene	ND	5.0
para-Isopropyl Toluene	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
n-Butylbenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Dibromo-3-Chloropropane	ND	5.0
1,2,4-Trichlorobenzene	ND	5.0
Hexachlorobutadiene	ND	5.0
Naphthalene	ND	5.0
1,2,3-Trichlorobenzene	ND	5.0

Surrogate	REC	Limits
Dibromofluoromethane	95	80-121
1,2-Dichloroethane-d4	112	77-130
Toluene-d8	104	80-120
Bromofluorobenzene	106	80-120

ND= Not Detected

RL= Reporting Limit

Page 2 of 2



Curtis &amp; Tompkins, Ltd.

## Purgeable Organics by GC/MS

Lab #:	157803	Location:	15595 Washington Ave.
Client:	Enviro Soil Tech Consultants	Prep:	EPA 5030B
Project#:	12-99-702-SI	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC174644	Batch#:	71278
Matrix:	Water	Analyzed:	04/01/02
Units:	ug/L		

Analyte	Result	RL
Freon 12	ND	10
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.0
Acetone	ND	20
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	20
Carbon Disulfide	ND	5.0
MTBE	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
Vinyl Acetate	ND	50
1,1-Dichloroethane	ND	5.0
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	5.0
2,2-Dichloropropane	ND	5.0
Chloroform	ND	5.0
Bromochloromethane	ND	10
1,1,1-Trichloroethane	ND	5.0
1,1-Dichloropropene	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	ND	5.0
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
Dibromomethane	ND	5.0
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	5.0
Toluene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
2-Hexanone	ND	10
1,3-Dichloropropane	ND	5.0
Tetrachloroethene	ND	5.0
Dibromochloromethane	ND	5.0

ND= Not Detected

RL= Reporting Limit

Page 1 of 2



Curtis &amp; Tompkins, Ltd.

## Purgeable Organics by GC/MS

Lab #:	157803	Location:	15595 Washington Ave.
Client:	Enviro Soil Tech Consultants	Prep:	EPA 5030B
Project#:	12-99-702-SI	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC174644	Batch#:	71278
Matrix:	Water	Analyzed:	04/01/02
Units:	ug/L		

Analyte	Result	RL
1,2-Dibromoethane	ND	5.0
Chlorobenzene	ND	5.0
1,1,1,2-Tetrachloroethane	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Styrene	ND	5.0
Bromoform	ND	5.0
Isopropylbenzene	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
1,2,3-Trichloropropane	ND	5.0
Propylbenzene	ND	5.0
Bromobenzene	ND	5.0
1,3,5-Trimethylbenzene	ND	5.0
2-Chlorotoluene	ND	5.0
4-Chlorotoluene	ND	5.0
tert-Butylbenzene	ND	5.0
1,2,4-Trimethylbenzene	ND	5.0
sec-Butylbenzene	ND	5.0
para-Isopropyl Toluene	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
n-Butylbenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Dibromo-3-Chloropropane	ND	5.0
1,2,4-Trichlorobenzene	ND	5.0
Hexachlorobutadiene	ND	5.0
Naphthalene	ND	5.0
1,2,3-Trichlorobenzene	ND	5.0

Surrogate	RSC	Limits
Dibromofluoromethane	99	80-121
1,2-Dichloroethane-d4	99	77-130
Toluene-d8	95	80-120
Bromofluorobenzene	115	80-120

ND= Not Detected

RL= Reporting Limit

Page 2 of 2



Curtis &amp; Tompkins, Ltd.

**Purgeable Organics by GC/MS**

Lab #:	157803	Location:	15595 Washington Ave.
Client:	Enviro Soil Tech Consultants	Prep:	EPA 5030B
Project#:	12-99-702-SI	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC174721	Batch#:	71300
Matrix:	Water	Analyzed:	04/02/02
Units:	ug/L		

Analyte	Result	RL
Freon 12	ND	10
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.0
Acetone	ND	20
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	20
Carbon Disulfide	ND	5.0
MTBE	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
Vinyl Acetate	ND	50
1,1-Dichloroethane	ND	5.0
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	5.0
2,2-Dichloropropane	ND	5.0
Chloroform	ND	5.0
Bromochloromethane	ND	10
1,1,1-Trichloroethane	ND	5.0
1,1-Dichloropropene	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	ND	5.0
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
Dibromomethane	ND	5.0
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	5.0
Toluene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
2-Hexanone	ND	10
1,3-Dichloropropane	ND	5.0
Tetrachloroethene	ND	5.0
Dibromochloromethane	ND	5.0

ND= Not Detected

RL= Reporting Limit

Page 1 of 2



Curtis &amp; Tompkins, Ltd.

## Purgeable Organics by GC/MS

Lab #:	157803	Location:	15595 Washington Ave.
Client:	Enviro Soil Tech Consultants	Prep:	EPA 5030B
Project#:	12-99-702-SI	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC174721	Batch#:	71300
Matrix:	Water	Analyzed:	04/02/02
Units:	ug/L		

Analyte	Result	RL
1,2-Dibromoethane	ND	5.0
Chlorobenzene	ND	5.0
1,1,1,2-Tetrachloroethane	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Styrene	ND	5.0
Bromoform	ND	5.0
Isopropylbenzene	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
1,2,3-Trichloropropane	ND	5.0
Propylbenzene	ND	5.0
Bromobenzene	ND	5.0
1,3,5-Trimethylbenzene	ND	5.0
2-Chlorotoluene	ND	5.0
4-Chlorotoluene	ND	5.0
tert-Butylbenzene	ND	5.0
1,2,4-Trimethylbenzene	ND	5.0
sec-Butylbenzene	ND	5.0
para-Isopropyl Toluene	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
n-Butylbenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Dibromo-3-Chloropropane	ND	5.0
1,2,4-Trichlorobenzene	ND	5.0
Hexachlorobutadiene	ND	5.0
Naphthalene	ND	5.0
1,2,3-Trichlorobenzene	ND	5.0

Surrogate	%REC	Limits
Dibromofluoromethane	96	80-121
1,2-Dichloroethane-d4	97	77-130
Toluene-d8	94	80-120
Bromofluorobenzene	109	80-120

ND= Not Detected

RL= Reporting Limit

Page 2 of 2



Curtis &amp; Tompkins, Ltd.

**Purgeable Organics by GC/MS**

Lab #:	157803	Location:	15595 Washington Ave.
Client:	Enviro Soil Tech Consultants	Prep:	EPA 5030B
Project#:	12-99-702-SI	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	71246
Units:	ug/L	Analyzed:	03/29/02
Diln Fac:	1.000		

Type: BS Lab ID: QC174524

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	50.00	50.68	101	71-131
Benzene	50.00	47.48	95	76-120
Trichloroethene	50.00	52.98	106	78-120
Toluene	50.00	48.87	98	79-120
Chlorobenzene	50.00	46.07	92	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	97	80-121
1,2-Dichloroethane-d4	113	77-130
Toluene-d8	103	80-120
Bromofluorobenzene	104	80-120

Type: BSD Lab ID: QC174525

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	50.00	47.67	95	71-131	6	20
Benzene	50.00	46.77	94	76-120	2	20
Trichloroethene	50.00	50.49	101	78-120	5	20
Toluene	50.00	47.59	95	79-120	3	20
Chlorobenzene	50.00	46.03	92	80-120	0	20

Surrogate	%REC	Limits
Dibromofluoromethane	95	80-121
1,2-Dichloroethane-d4	107	77-130
Toluene-d8	102	80-120
Bromofluorobenzene	106	80-120

RPD= Relative Percent Difference

Page 1 of 1



Curtis &amp; Tompkins, Ltd.

## Purgeable Organics by GC/MS

Lab #:	157803	Location:	15595 Washington Ave.
Client:	Enviro Soil Tech Consultants	Prep:	EPA 5030B
Project#:	12-99-702-SI	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	71278
Units:	ug/L	Analyzed:	04/01/02
Diln Fac:	1.000		

Type: BS Lab ID: QC174642

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	50.00	50.88	102	71-131
Benzene	50.00	50.05	100	76-120
Trichloroethene	50.00	50.33	101	78-120
Toluene	50.00	50.39	101	79-120
Chlorobenzene	50.00	52.17	104	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	103	80-121
1,2-Dichloroethane-d4	103	77-130
Toluene-d8	97	80-120
Bromofluorobenzene	103	80-120

Type: BSD Lab ID: QC174643

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	50.00	53.38	107	71-131	5	20
Benzene	50.00	48.88	98	76-120	2	20
Trichloroethene	50.00	50.65	101	78-120	1	20
Toluene	50.00	50.95	102	79-120	1	20
Chlorobenzene	50.00	48.22	96	80-120	8	20

Surrogate	%REC	Limits
Dibromofluoromethane	100	80-121
1,2-Dichloroethane-d4	104	77-130
Toluene-d8	94	80-120
Bromofluorobenzene	107	80-120



Curtis &amp; Tompkins, Ltd.

**Purgeable Organics by GC/MS**

Lab #:	157803	Location:	15595 Washington Ave.
Client:	Enviro Soil Tech Consultants	Prep:	EPA 5030B
Project#:	12-99-702-SI	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	71300
Units:	ug/L	Analyzed:	04/02/02
Diln Fac:	1.000		

Type: BS Lab ID: QC174719

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	50.00	51.58	103	71-131
Benzene	50.00	51.37	103	76-120
Trichloroethene	50.00	49.30	99	78-120
Toluene	50.00	51.08	102	79-120
Chlorobenzene	50.00	49.85	100	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	101	80-121
1,2-Dichloroethane-d4	109	77-130
Toluene-d8	103	80-120
Bromofluorobenzene	100	80-120

Type: BSD Lab ID: QC174720

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	50.00	49.63	99	71-131	4	20
Benzene	50.00	48.32	97	76-120	6	20
Trichloroethene	50.00	46.88	94	78-120	5	20
Toluene	50.00	47.01	94	79-120	8	20
Chlorobenzene	50.00	43.62	87	80-120	13	20

Surrogate	%REC	Limits
Dibromofluoromethane	99	80-121
1,2-Dichloroethane-d4	104	77-130
Toluene-d8	99	80-120
Bromofluorobenzene	107	80-120



Curtis &amp; Tompkins, Ltd.

## Gasoline Oxygenates by GC/MS

Lab #:	157803	Location:	15595 Washington Ave.
Client:	Enviro Soil Tech Consultants	Prep:	EPA 5030B
Project#:	12-99-702-SI	Analysis:	EPA 8260B
Matrix:	Water	Sampled:	03/25/02
Units:	ug/L	Received:	03/28/02

Field ID: MW-1 Diln Fac: 166.7  
Type: SAMPLE Batch#: 71278  
Lab ID: 157803-001 Analyzed: 04/01/02

Analyte	Result	RL
tert-Butyl Alcohol (TBA)	ND	3,300
MTBE	20,000	83
Isopropyl Ether (DIPE)	ND	83
Ethyl tert-Butyl Ether (ETBE)	ND	83
Methyl tert-Amyl Ether (TAME)	340	83

Surrogate	REC	Limits
Dibromofluoromethane	97	80-121
1,2-Dichloroethane-d4	106	77-130
Toluene-d8	104	80-120
Bromofluorobenzene	105	80-120

Field ID: MW-2 Diln Fac: 166.7  
Type: SAMPLE Batch#: 71300  
Lab ID: 157803-002 Analyzed: 04/02/02

Analyte	Result	RL
tert-Butyl Alcohol (TBA)	ND	3,300
MTBE	25,000	83
Isopropyl Ether (DIPE)	ND	83
Ethyl tert-Butyl Ether (ETBE)	ND	83
Methyl tert-Amyl Ether (TAME)	ND	83

Surrogate	REC	Limits
Dibromofluoromethane	93	80-121
1,2-Dichloroethane-d4	99	77-130
Toluene-d8	104	80-120
Bromofluorobenzene	118	80-120

Field ID: MW-3 Diln Fac: 500.0  
Type: SAMPLE Batch#: 71278  
Lab ID: 157803-003 Analyzed: 04/01/02

Analyte	Result	RL
tert-Butyl Alcohol (TBA)	ND	10,000
MTBE	62,000	250
Isopropyl Ether (DIPE)	ND	250
Ethyl tert-Butyl Ether (ETBE)	ND	250
Methyl tert-Amyl Ether (TAME)	ND	250

Surrogate	REC	Limits
Dibromofluoromethane	97	80-121
1,2-Dichloroethane-d4	107	77-130
Toluene-d8	101	80-120
Bromofluorobenzene	106	80-120

ND= Not Detected

RL= Reporting Limit

Page 1 of 3

## Gasoline Oxygenates by GC/MS

Lab #:	157803	Location:	15595 Washington Ave.
Client:	Enviro Soil Tech Consultants	Prep:	EPA 5030B
Project#:	12-99-702-SI	Analysis:	EPA 8260B
Matrix:	Water	Sampled:	03/25/02
Units:	ug/L	Received:	03/28/02

Field ID: MW-4 Diln Fac: 1.000  
 Type: SAMPLE Batch#: 71246  
 Lab ID: 157803-004 Analyzed: 03/29/02

Analyte	Result	RL
tert-Butyl Alcohol (TBA)	ND	20
MTBE	14	0.5
Isopropyl Ether (DIPE)	ND	0.5
Ethyl tert-Butyl Ether (ETBE)	ND	0.5
Methyl tert-Amyl Ether (TAME)	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	96	80-121
1,2-Dichloroethane-d4	113	77-130
Toluene-d8	104	80-120
Bromofluorobenzene	108	80-120

Field ID: MW-5 Diln Fac: 16.67  
 Type: SAMPLE Batch#: 71278  
 Lab ID: 157803-005 Analyzed: 04/01/02

Analyte	Result	RL
tert-Butyl Alcohol (TBA)	ND	330
MTBE	2,200	8.3
Isopropyl Ether (DIPE)	ND	8.3
Ethyl tert-Butyl Ether (ETBE)	ND	8.3
Methyl tert-Amyl Ether (TAME)	ND	8.3

Surrogate	%REC	Limits
Dibromofluoromethane	98	80-121
1,2-Dichloroethane-d4	100	77-130
Toluene-d8	99	80-120
Bromofluorobenzene	100	80-120

Type: BLANK Batch#: 71246  
 Lab ID: OC174526 Analyzed: 03/29/02  
 Diln Fac: 1.000

Analyte	Result	RL
tert-Butyl Alcohol (TBA)	ND	20
MTBE	ND	0.5
Isopropyl Ether (DIPE)	ND	0.5
Ethyl tert-Butyl Ether (ETBE)	ND	0.5
Methyl tert-Amyl Ether (TAME)	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	95	80-121
1,2-Dichloroethane-d4	112	77-130
Toluene-d8	104	80-120
Bromofluorobenzene	106	80-120



Curtis &amp; Tompkins, Ltd.

## Gasoline Oxygenates by GC/MS

Lab #:	157803	Location:	15595 Washington Ave.
Client:	Enviro Soil Tech Consultants	Prep:	EPA 5030B
Project#:	12-99-702-SI	Analysis:	EPA 8260B
Matrix:	Water	Sampled:	03/25/02
Units:	ug/L	Received:	03/28/02

Type: BLANK Batch#: 71278  
Lab ID: QC174644 Analyzed: 04/01/02  
Diln Fac: 1.000

Analyte	Result	RL
tert-Butyl Alcohol (TBA)	ND	20
MTBE	ND	0.5
Isopropyl Ether (DIPE)	ND	0.5
Ethyl tert-Butyl Ether (ETBE)	ND	0.5
Methyl tert-Amyl Ether (TAME)	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	99	80-121
1,2-Dichloroethane-d4	99	77-130
Toluene-d8	95	80-120
Bromofluorobenzene	115	80-120

Type: BLANK Batch#: 71300  
Lab ID: QC174721 Analyzed: 04/02/02  
Diln Fac: 1.000

Analyte	Result	RL
tert-Butyl Alcohol (TBA)	ND	20
MTBE	ND	0.5
Isopropyl Ether (DIPE)	ND	0.5
Ethyl tert-Butyl Ether (ETBE)	ND	0.5
Methyl tert-Amyl Ether (TAME)	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	96	80-121
1,2-Dichloroethane-d4	97	77-130
Toluene-d8	94	80-120
Bromofluorobenzene	109	80-120

ND= Not Detected  
RL= Reporting Limit  
Page 3 of 3



Curtis &amp; Tompkins, Ltd.

## Gasoline Oxygenates by GC/MS

Lab #:	157803	Location:	15595 Washington Ave.
Client:	Enviro Soil Tech Consultants	Prep:	EPA 5030B
Project#:	12-99-702-SI	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	71246
Units:	ug/L	Analyzed:	03/29/02
Diln Fac:	1.000		

Type: BS Lab ID: QC174524

Analyte	Spiked	Result	%REC	Limits
MTBE	50.00	49.48	99	49-144

Surrogate	%REC	Limits
Dibromofluoromethane	97	80-121
1,2-Dichloroethane-d4	113	77-130
Toluene-d8	103	80-120
Bromofluorobenzene	104	80-120

Type: BSD Lab ID: QC174525

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	50.00	49.17	98	49-144	1	21

Surrogate	%REC	Limits
Dibromofluoromethane	95	80-121
1,2-Dichloroethane-d4	107	77-130
Toluene-d8	102	80-120
Bromofluorobenzene	106	80-120



Curtis &amp; Tompkins, Ltd.

**Gasoline Oxygenates by GC/MS**

Lab #:	157803	Location:	15595 Washington Ave.
Client:	Enviro Soil Tech Consultants	Prep:	EPA 5030B
Project#:	12-99-702-SI	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	71278
Units:	ug/L	Analyzed:	04/01/02
Diln Fac:	1.000		

Type: BS Lab ID: QC174642

Analyte	Spiked	Result	*REC	Limits
MTBE	50.00	53.54	107	49-144

Surrogate	*REC	Limits
Dibromofluoromethane	103	80-121
1,2-Dichloroethane-d4	103	77-130
Toluene-d8	97	80-120
Bromofluorobenzene	103	80-120

Type: BSD Lab ID: QC174643

Analyte	Spiked	Result	*REC	Limits	RPD	Lim
MTBE	50.00	55.64	111	49-144	4	21

Surrogate	*REC	Limits
Dibromofluoromethane	100	80-121
1,2-Dichloroethane-d4	104	77-130
Toluene-d8	94	80-120
Bromofluorobenzene	107	80-120



Curtis &amp; Tompkins, Ltd.

**Gasoline Oxygenates by GC/MS**

Lab #:	157803	Location:	15595 Washington Ave.
Client:	Enviro Soil Tech Consultants	Prep:	EPA 5030B
Project#:	12-99-702-SI	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	71300
Units:	ug/L	Analyzed:	04/02/02
Diln Fac:	1.000		

Type: BS Lab ID: QC174719

Analyte	Spiked	Result	%REC	Limits
MTBE	50.00	54.40	109	49-144

Surrogate	%REC	Limits
Dibromofluoromethane	101	80-121
1,2-Dichloroethane-d4	109	77-130
Toluene-d8	103	80-120
Bromofluorobenzene	100	80-120

Type: BSD Lab ID: QC174720

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	50.00	50.00	100	49-144	8	21

Surrogate	%REC	Limits
Dibromofluoromethane	99	80-121
1,2-Dichloroethane-d4	104	77-130
Toluene-d8	99	80-120
Bromofluorobenzene	107	80-120

RPD= Relative Percent Difference

Page 1 of 1

157803  
CHAIN OF CUSTODY RECORD

PROJ. NO.	NAME
12-99-702-SI	15595 Washington Ave., San Lorenzo

SAMPLERS: (Signature)

*Daniel Marley*

CON-TAINER

ANALYSES REQUESTED (2)  
 TPHg EPA 8260B

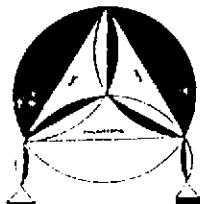
REMARKS

	NO.	DATE	TIME	SOIL	WATER	LOCATION	6	✓ ✓			
-1	1	3/29/02	12:17	✓		MW-1	6	✓ ✓			
-2	2		13:52	✓		MW-2	6	✓ ✓			
-3	3		14:57	✓		MW-3	6	✓ ✓			
-4	4		11:37	✓		MW-4	6	✓ ✓			
-5	5	V	10:14	✓		MW-5	6	✓ ✓			

Received:  On Ice  
 Cold  Ambient  Intact

Preservation Correct?  
 Yes  No  N/A

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
<i>Daniel Marley</i>	3/29/02 12:05	<i>TPHg</i>			
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	Please send lab report to Frank Hamedi



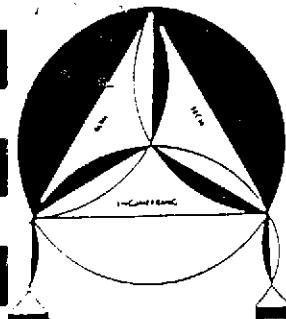
ENVIRO SOIL TECH CONSULTANTS

Environmental & Geotechnical Consultants  
 111 TULLY ROAD, SAN JOSE, CALIFORNIA 95111  
 Tel: (408) 297-1500 Fax: (408) 292-2116

File No. 12-99-702-SI

**A P P E N D I X "F"**

**ENVIRO SOIL TECH CONSULTANTS**



## **ENVIRO SOIL TECH CONSULTANTS**

Environmental & Geotechnical Consultants

*131 TULLY ROAD, SAN JOSE, CALIFORNIA 95111*

Tel: (408) 297-1500

Fax: (408) 292-2116

FILE NO.: 12-99-702-ST

WELL NO.: 2210-1

DATE: 3/25/02

SAMPLER: Richard Marlow

DEPTH TO WELL: \_\_\_\_\_

1 WELL VOLUME: 1.17

DEPTH TO WATER: 7<sup>ft</sup> .84

5 WELL VOLUME: 5.05

HEIGHT OF WATER COLUMN: \_\_\_\_\_

ACTUAL PURGED VOLUME: 9

CASING DIAMETER: \_\_\_\_\_ 2"

4

## CALCULATIONS:

$$2'' \times 0.1632 \quad 7.16$$

4" x 0.653

PURGE METHOD: BAILER

SAMPLE METHOD:  BAILER

## DISPLACEMENT PUMP

OTHER

SHEEN: NO

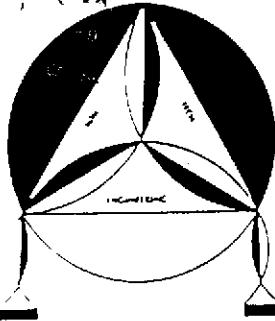
YES, DESCRIBE: Lawn Ranch Row

ODOR: ✓ NO

YES, DESCRIBE: \_\_\_\_\_

## FIELD MEASUREMENTS

<u>TIME</u>	<u>VOLUME</u>	<u>Ph</u>	<u>TEMP.</u>	<u>E.C.</u>
	35 ml	8.29	19.0	646
	65 ml	7.94	16.2	648
	99 ml	7.91	15.0	643



## ENVIRO SOIL TECH CONSULTANTS

## **Environmental & Geotechnical Consultants**

*131 TULLY ROAD, SAN JOSE, CALIFORNIA 95111*

Tel: (408) 297-1500

Fax: (408) 292-2116

FILE NO.: 12-99-702-ST

WELL NO.: M10-3

DATE: 3/25/02

SAMPLER: Richard Marker

DEPTH TO WELL: \_\_\_\_\_

1 WELL VOLUME: 1.87

DEPTH TO WATER: 7<sup>ft</sup> .62

5 WELL VOLUME: 6.85

### HEIGHT OF WATER COLUMN:

ACTUAL PURGED VOLUME: 9

CASING DIAMETER: ✓ 2"

4

## CALCULATIONS:

$2'' \times 0.1632$  8.38

4" x 0.653

**PURGE METHOD: BAILER**

## DISPLACEMENT PUMP

OTHER

SAMPLE METHOD:  BAILER

OTHER

SHEEN: V NO

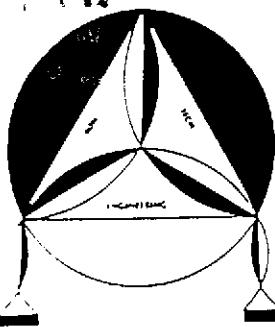
YES, DESCRIBE:

ODOR: NO

**YES, DESCRIBE:**

## FIELD MEASUREMENTS

<u>TIME</u>	<u>VOLUME</u>	<u>Ph</u>	<u>TEMP.</u>	<u>E.C.</u>
	397L	8.12	18.7	595
	698L	7.76	19.0	674
	951L	7.78	19.2	711



## **ENVIRO SOIL TECH CONSULTANTS**

## **Environmental & Geotechnical Consultants**

*131 TULLY ROAD, SAN JOSE, CALIFORNIA 95111*

Tel: (408) 297-1500

Fax: (408) 292-2116

FILE NO.: 12-99-702-57

WELL NO.: M-10-

DATE: 3/25/02

SAMPLER: Richard Marley

DEPTH TO WELL: \_\_\_\_\_

1 WELL VOLUME: 1.75

DEPTH TO WATER: 8 FT., 28

5 WELL VOLUME: 57.75

HEIGHT OF WATER COLUMN: \_\_\_\_\_

ACTUAL PURGED VOLUME: 9

CASING DIAMETER:  2"

41

## CALCULATIONS:

2" x 0.1632

4" x 0.653

PURGE METHOD: BAILER

DISPLACEMENT PUMP

## OTHER

SAMPLE METHOD:  BAILER

## OTHER

SHEEN: J NO

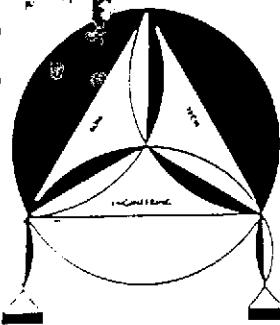
YES, DESCRIBE: \_\_\_\_\_

ODOR: ✓ NO

YES, DESCRIBE: \_\_\_\_\_

## FIELD MEASUREMENTS

<u>TIME</u>	<u>VOLUME</u>	<u>Ph</u>	<u>TEMP.</u>	<u>E.C.</u>
	39 ml	7.87	18.1	671
	65 ml	7.97	18.5	666
	99 ml	7.84	18.6	665



## **ENVIRO SOIL TECH CONSULTANTS**

Environmental & Geotechnical Consultants

*131 TULLY ROAD, SAN JOSE, CALIFORNIA 95111*

Tel: (408) 297-1500

Fax: (408) 292-2116

FILE NO.: 12-99-702-ST

WELL NO.: M10-5

DATE: 3/25/02

SAMPLER: Ruth Marley

DEPTH TO WELL: \_\_\_\_\_

1 WELL VOLUME: 1.62

DEPTH TO WATER: 9<sup>ft</sup>, .08

5 WELL VOLUME: 8.1

### HEIGHT OF WATER COLUMN: \_\_\_\_\_

ACTUAL PURGED VOLUME: 9

CASING DIAMETER: ✓ 2"

4'

## CALCULATIONS:

$$2'' \times 0.1632 \quad \underline{\quad 9.92 \quad}$$

4" x 0.653

**PURGE METHOD: BAILER**

## DISPLACEMENT PUMP

OTHER

SAMPLE METHOD: BAILER

OTHER

SHEEN: ✓, NO

YES, DESCRIBE: \_\_\_\_\_

ODOR: NO

YES, DESCRIBE: \_\_\_\_\_

## FIELD MEASUREMENTS

<u>TIME</u>	<u>VOLUME</u>	<u>Ph</u>	<u>TEMP.</u>	<u>E.C.</u>
	3 gal	7.96	17.0	1010
	6 gal	7.54	71.1	986
	9 gal	7.58	77.2	955