

**QUARTERLY GROUNDWATER  
MONITORING REPORT  
Third Quarter 1994**

**JOE SIO CHEVROLET  
914-916 San Pablo Avenue  
Albany, California  
STID-3808**

**September 15, 1994**

**Prepared for:**

**MS. FLORENCE ANN CONNORS  
EXECUTOR FOR THE ESTATE OF JOSEPHINE A. DIBBLE  
1658 Del Dayo Drive  
Carmichael, California 95608**

**Prepared by:**

**BURLINGTON ENVIRONMENTAL INC.  
5901 Christie Avenue, Suite 501  
Emeryville, California 94608**

**SIO101/12104.2001**



# BURLINGTON ENVIRONMENTAL

September 15, 1994  
SIO101/12104

Ms. Florence Ann Connors  
Executor for the Estate of Josephine A. Dibble  
1658 Del Dayo Drive  
Carmichael, California 95608

**Subject: QUARTERLY GROUNDWATER MONITORING REPORT**  
**Third Quarter 1994**  
Joe Sio Chevrolet  
914-916 San Pablo Avenue, Albany, California

Dear Ms. Connors:

Burlington Environmental Inc. (Burlington) is pleased to submit the following quarterly monitoring report for Joe Sio Chevrolet, located at 914-916 San Pablo Avenue in Albany, California (see Figure 1, Site Location Map). The groundwater monitoring and sampling was conducted by Burlington on July 14, 1994.

## MONITORING ACTIVITIES

Two 550-gallon underground storage tanks (USTs) were removed from the site on March 20, 1989 by Petroleum Engineering, Inc. (PE). One UST contained gasoline and was located under the sidewalk between the former building and San Pablo Avenue, and the other UST contained waste oil and was located adjacent to the southwest corner of the former building (see Figure 2, Site Plan). Soil samples collected from the former gasoline UST contained concentrations of total petroleum hydrocarbons (TPH) ranging between 270 and 1,300 milligrams per kilogram (mg/kg). As a result of the TPH in the soil samples from beneath the former gasoline UST, Alameda County Department of Environmental Health (ACDEH) requested that additional excavation be conducted in the vicinity of the former gasoline UST, and groundwater monitoring wells be installed and sampled to determine groundwater quality, flow direction, and gradient.

On July 24 and 25, 1991, Aqua Terra Technologies (ATT) of Walnut Creek, California, installed three groundwater monitoring wells (MW-1, MW-2, and MW-3) at the site (see Figure 2, Site Plan). The three groundwater monitoring wells were developed on July 31, 1991 and sampled on August 7, 1991. The analytical results of the sampling event conducted by ATT on August 7, 1991 are presented in Table 1. Development and purge water were contained in 55-gallon drums and stored on the site. At the time the

Ms. Florence Ann Connors  
September 15, 1994  
Page 2

wells were sampled, ATT determined that the groundwater flow direction was to the west-northwest with an approximate hydraulic gradient of 0.01 feet/foot.

In a letter dated November 9, 1993, Ms. Juliet Shin (ACDEH) directed that quarterly groundwater monitoring be resumed at the site. In April 1994, Burlington received authority to proceed with quarterly groundwater monitoring at the site.

In each well, the depth to groundwater and the presence or absence of phase-separated hydrocarbons (PSH) were determined. Groundwater samples were collected and analyzed according to U. S. Environmental Protection Agency (EPA) guidelines to determine the concentrations of total petroleum hydrocarbons as gasoline (TPHg); benzene, toluene, ethylbenzene, and total xylenes (BTEX); and total lead. In addition, groundwater from monitoring well MW-3 was analyzed for cadmium, chromium, zinc, and nickel. The monitoring and sampling procedures are presented in Appendix A. Field data sheets are presented in Appendix B.

Western Environmental Science & Technology, located in Davis, California, performed the analysis. The analytical results and detection limits are presented in Table 1.

## RESULTS

The groundwater elevation in the monitoring wells beneath the site on July 14, 1994, ranged from 31.04 to 32.06 feet above mean sea level (see Table 2, Groundwater Elevation Data). A contour map of these data is presented in Figure 3. The approximate groundwater flow direction is to the southwest with an approximate hydraulic gradient of 0.005 feet/foot.

The results of the chemical analyses are presented in Table 2. No PSH were detected in any of the groundwater monitoring wells. Groundwater samples collected from well MW-1 contained 470 micrograms per liter ( $\mu\text{g/l}$ ) of TPHg, 110  $\mu\text{g/l}$  of benzene, 22  $\mu\text{g/l}$  of toluene, 21  $\mu\text{g/l}$  of ethyl-benzene, 87  $\mu\text{g/l}$  of total xylenes, and 0.0059 milligrams per liter (mg/l) of total lead. Samples collected from well MW-2 contained 0.023 mg/l of total lead. Samples collected from well MW-3 contained 0.22 mg/l of total lead, 0.017 mg/l of cadmium, 0.55 mg/l of chromium, 0.73 mg/l of nickel, and 0.84 mg/l of zinc. The sample collected from MW-3 contained 0.50  $\mu\text{g/l}$  of total xylenes and the duplicate sample collected from MW-3 contained 0.53  $\mu\text{g/l}$  of total xylenes.

*DHS  
incl  
exceeded  
(incl = 50ppb)*

The laboratory detected low levels of toluene and total xylenes in the sample collected from MW-2. However, the laboratory indicated that an external standard quantitation was used due to the presence of tetrachloroethene (PCE) in the sample. Since there has been no past evidence of TPHg, BTEX or PCE contamination in well MW-2, Burlington believes that the sample bottle may have been contaminated by an external source, and the results of the analysis are not indicative of actual contamination in MW-2. Burlington

Ms. Florence Ann Connors  
September 15, 1994  
Page 3

recommends that the sample collected from MW-2 during the fourth quarter 1994 monitoring event be analyzed for PCE on a one time basis. The results of this analysis will determine the need for further PCE analysis of samples collected from MW-2.

Chain-of-custody documentation and certified analytical results are presented in Appendix C. Purge and rinsate water was stored on the site in 55-gallon drums. The drums were labeled by the field sampling technician. Purge and rinsate water disposal will be arranged by the client.

## CONCLUSIONS

Although the ATT Groundwater Sampling Report dated November 15, 1991 states that the source of hydrocarbons has been removed from the area of the former gasoline UST, the significant increase in the level of TPHg and BTEX in the sample collected from well MW-1 in 1994 over the sample collected from well MW-1 in 1991 indicates that the groundwater below the former gasoline UST continues to be impacted. ATT's report also indicates that further excavation below the former gasoline UST is not possible because of underground utilities in the area.

The presence of toluene and total xylenes in MW-2 and the presence of total xylenes in MW-3 during this monitoring event could indicate that contaminants believed to be located beneath the former UST are migrating toward MW-2 and MW-3 since both MW-2 and MW-3 are hydraulically downgradient from the former UST. However, because of the possible external PCE contamination in the sample collected from MW-2, and the presence of toluene and total xylenes in the rinsate sample collected by the Burlington field technician, further monitoring of the site is required to determine if the contaminants believed to be located beneath the former UST are migrating, or if the analytical results from the third quarter monitoring event are anomalous.


Burlington appreciates the opportunity to provide you with quality consulting and environmental services. Please feel free to contact us if we can provide further assistance.

Ms. Florence Ann Connors  
September 15, 1994  
Page 4

Sincerely,

**BURLINGTON ENVIRONMENTAL INC.**

  
Larry Miller  
Senior Project Manager

  
David C. Tight, R.G. No. 4603  
Investigation/Remediation Manager

Attachments:

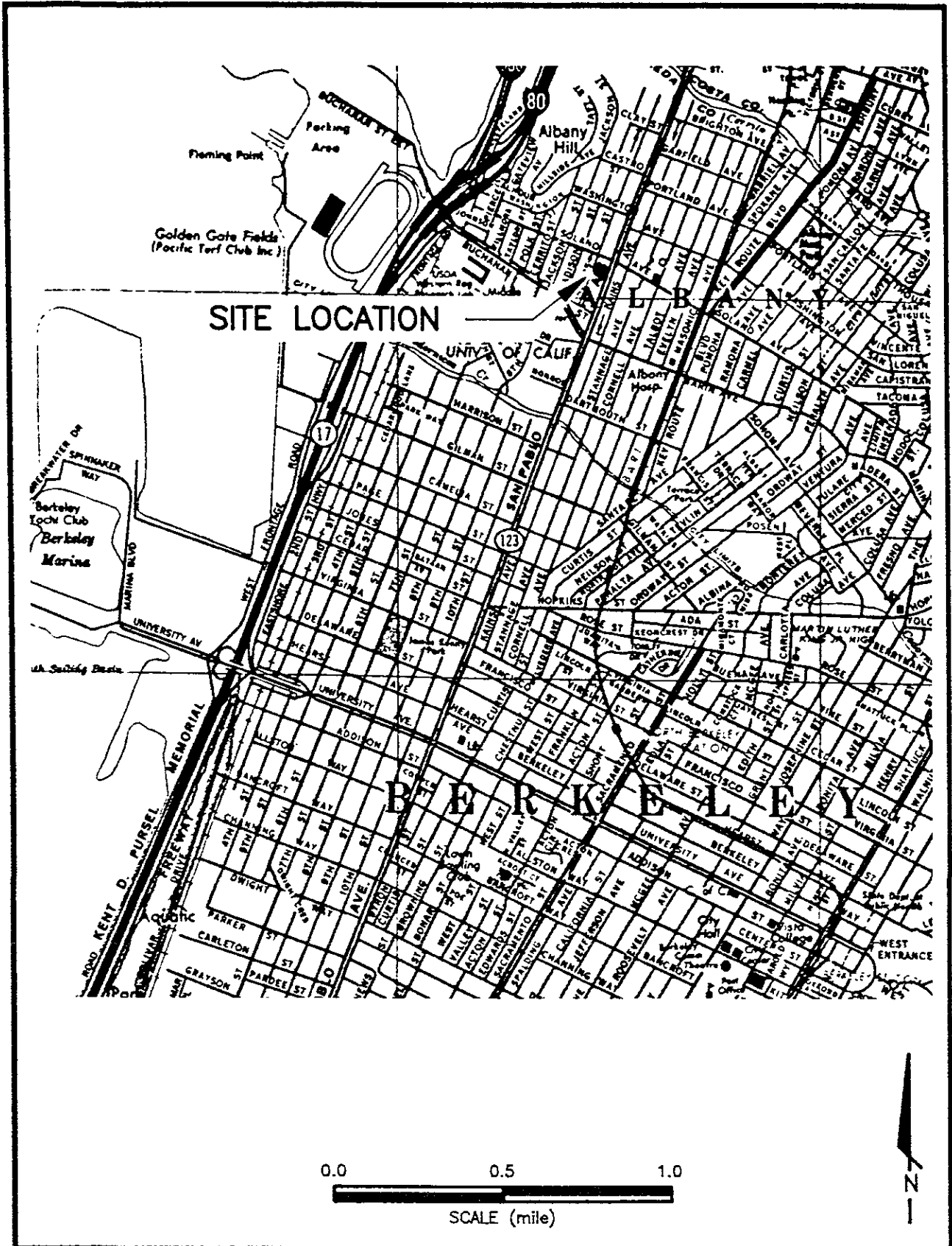
Figure 1 - Site Location Map  
Figure 2 - Site Plan  
Figure 3 - Groundwater Elevation Contours

Table 1 - Groundwater Analytical Data  
Table 2 - Groundwater Elevation Data

Appendix A - Groundwater Sampling and Analysis Procedures  
Appendix B - Water Sample Field Data Sheets  
Appendix C - Chain-of-Custody Records and Certified Analytical Reports

cc: Ms. Juliet Shin (ACDEH)

**FIGURES 1 - 3**

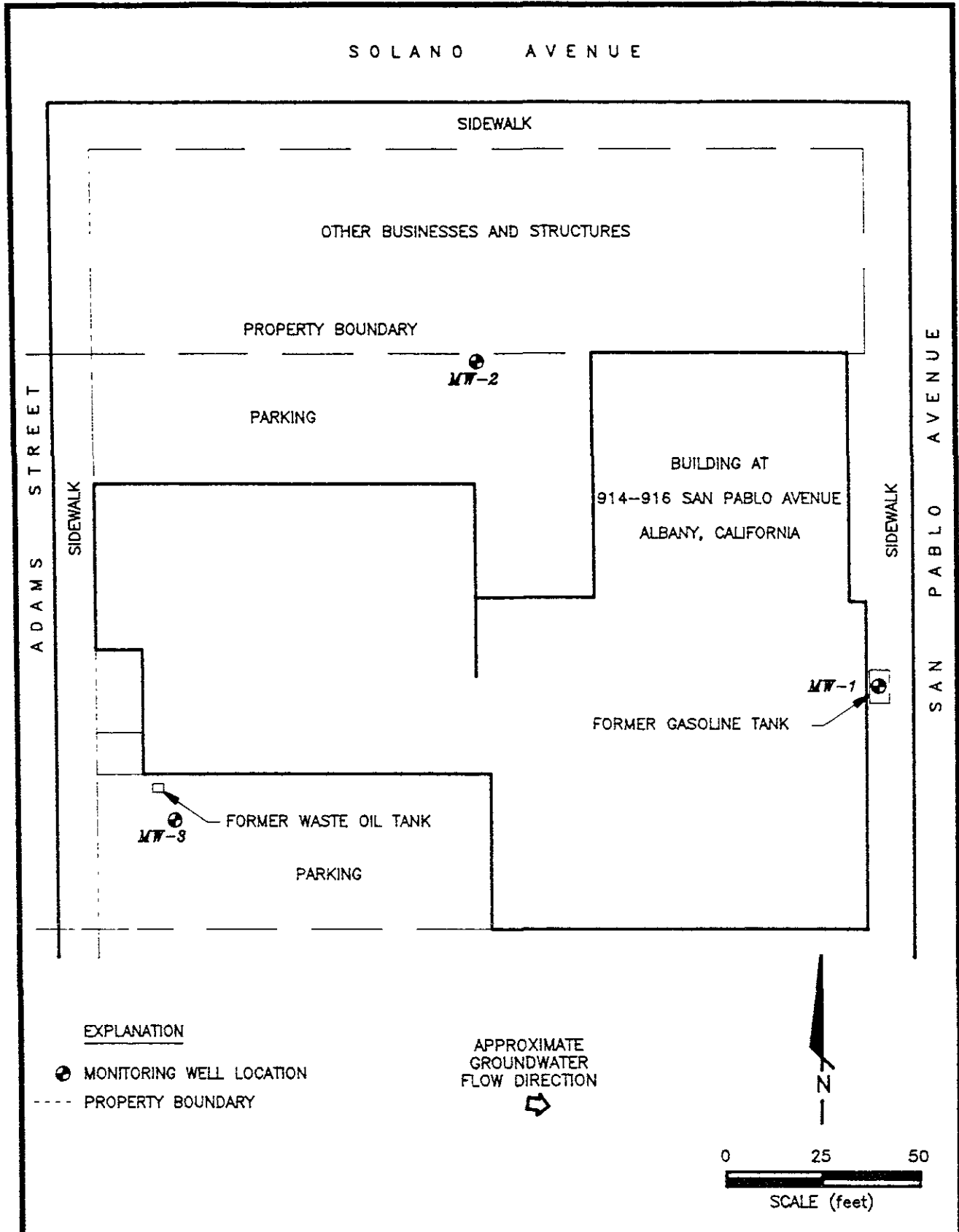


**SITE LOCATION MAP**  
 Joe Sio Chevrolet  
 914 - 916 San Pablo Avenue  
 Albany, California

Reviewed By : *LM*      Date : *9/21/94*

**Figure 1**

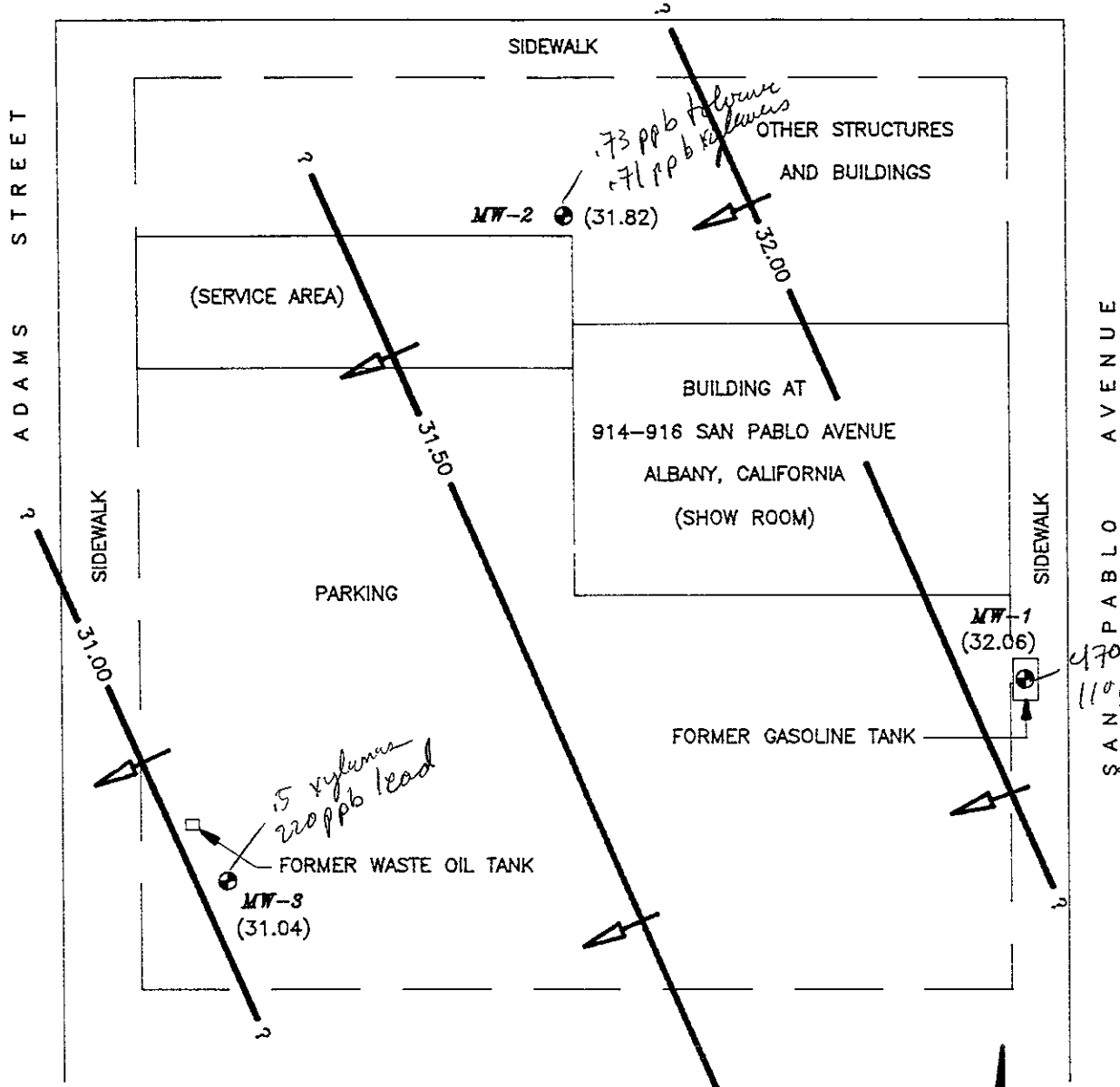
|                      |              |
|----------------------|--------------|
| Project No. 12104    |              |
| Drawn By SBW         | Date 5/27/94 |
| Drawing No. ASI00101 |              |



|   |   |                   |                       |                      |
|---|---|-------------------|-----------------------|----------------------|
| <br>BURLINGTON<br>ENVIRONMENTAL INC. | <b>SITE PLAN</b><br>Joe Sio Chevrolet<br>914 - 916 San Pablo Avenue<br>Albany, California |                   | <b>Figure 2</b>       |                      |
|   | Reviewed By : <i>LM</i>   |                   | Date : <i>9/21/94</i> |                      |
|   |   | Project No. 12104 |                       | Drawn By<br>SBW      |
|   |   | Date<br>5/27/94   |                       | Drawing No. ASI00102 |

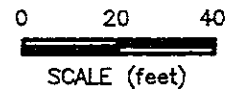


SOLANO AVENUE




EXPLANATION

- MONITORING WELL LOCATION
- (32.06) GROUNDWATER ELEVATION (FT-MSL)  
MEASURED ON: JULY 14, 1994
- 32.00 — GROUNDWATER ELEVATION CONTOUR (FT-MSL)  
CONTOUR INTERVAL = 0.50'
- (FT-MSL) FEET ABOVE MEAN SEA LEVEL
- ← APPROXIMATE GROUNDWATER FLOW DIRECTION



THIRD QUARTER 1994

|   |  |  |                   |                 |                      |
|---|--|--|-------------------|-----------------|----------------------|
| <br>BURLINGTON<br>ENVIRONMENTAL INC. | <b>GROUNDWATER ELEVATION CONTOURS</b><br>Joe Sio Chevrolet<br>914 - 916 San Pablo Avenue<br>Albany, California |  | <b>Figure 3</b>   |                 |                      |
|   |  |  | Project No. 12104 |                 |                      |
|   |  |  | Drawn By<br>SBW   | Date<br>9/21/94 |                      |
|   | Reviewed By : LM   |  | Date : 9/21/94    |                 | Drawing No. ASI00104 |

*Handwritten notes:*  
 470 ppb benzene  
 110 ppb toluene  
 22 ppb E.B.  
 21 ppb xylene

TABLES 1 - 2

TABLE 1  
GROUNDWATER ANALYTICAL DATA

Joe Sio Chevrolet  
914-916 San Pablo Avenue, Albany, California

| Monitoring Well No.                    | Date Sampled | Sample No.  | TPH Gasoline (ug/l) | Benzene (ug/l) | Toluene (ug/l) | Ethyl-benzene (ug/l) | Total Xylenes (ug/l) | Total Oil and Grease (mg/l) | Cadmium (mg/l) | Chromium (mg/l) | Lead (mg/l) | Nickel (mg/l) | Zinc (mg/l) |
|--|--------------|-------------|---------------------|----------------|----------------|----------------------|----------------------|-----------------------------|----------------|-----------------|-------------|---------------|-------------|
| EPA Analytical Method:                 |              |             | 8016m               | 602            | 602            | 602                  | 602                  | 9070                        | AA             | AA              | AA          | AA            | AA          |
| <b>Groundwater Analyses:</b>           |              |             |                     |                |                |                      |                      |                             |                |                 |             |               |             |
| MW-1                                   | 8/7/91       | MW-1        | 110                 | 16             | 2              | 0.7                  | 16                   | NA                          | NA             | NA              | NA          | NA            | NA          |
|  | 4/15/94      | MW01-041594 | 2,500               | 880            | 22             | 79                   | 47                   | NA                          | NA             | NA              | 0.009       | NA            | NA          |
|  | 7/14/94      | MW01-071494 | 470                 | 110            | 22             | 21                   | 87                   | NA                          | NA             | NA              | 0.008       | NA            | NA          |
| MW-2                                   | 8/7/91       | MW-2        | NA(<50)             | ND(<0.50)      | ND(<0.50)      | ND(<0.50)            | ND(<0.50)            | NA                          | NA             | NA              | NA          | NA            | NA          |
|  | 4/15/94      | MW02-041494 | ND(<50)             | ND(<0.30)      | ND(<0.30)      | ND(<0.30)            | ND(<0.50)            | NA                          | NA             | NA              | 0.022       | NA            | NA          |
|  | 7/14/94      | MW02-071494 | ND(<60)*            | ND(<0.30)*     | 0.73*          | ND(<0.30)*           | 0.71*                | NA                          | NA             | NA              | 0.023       | NA            | NA          |
| MW-3                                   | 8/7/91       | MW-3        | NA(<50)             | ND(<0.50)      | ND(<0.50)      | ND(<0.50)            | ND(<0.50)            | ND(<5)                      | NA             | NA              | NA          | NA            | NA          |
|  | 4/15/94      | MW03-041594 | ND(<50)             | ND(<0.30)      | ND(<0.30)      | ND(<0.30)            | ND(<0.50)            | NA                          | 0.012          | 0.26            | 0.22        | 0.34          | 0.49        |
|  | 4/15/94 (d)  | DW01-041494 | ND(<50)             | ND(<0.30)      | ND(<0.30)      | ND(<0.30)            | ND(<0.50)            | NA                          | NA             | NA              | NA          | NA            | NA          |
|  | 7/14/94      | MW03-071494 | ND(<50)             | ND(<0.30)      | ND(<0.30)      | ND(<0.30)            | 0.60                 | NA                          | 0.017          | 0.65            | 0.22        | 0.73          | 0.84        |
|  | 7/14/94 (d)  | DW01-071494 | ND(<50)             | ND(<0.30)      | ND(<0.30)      | ND(<0.30)            | 0.63                 | NA                          | NA             | NA              | NA          | NA            | NA          |
| <b>Rinsate Analyses:</b>               |              |             |                     |                |                |                      |                      |                             |                |                 |             |               |             |
| -                                      | 4/15/94      | RS01-041594 | ND(<50)             | ND(<0.30)      | ND(<0.30)      | ND(<0.30)            | ND(<0.50)            | NA                          | NA             | NA              | NA          | NA            | NA          |
|  | 7/14/94      | RS01-071494 | ND(<50)             | ND(<0.30)      | 0.33           | ND(<0.30)            | 0.65                 | NA                          | NA             | NA              | NA          | NA            | NA          |
| <b>Trip Blank Analyses:</b>            |              |             |                     |                |                |                      |                      |                             |                |                 |             |               |             |
| -                                      | 4/15/94      | TB01-041594 | ND(<50)             | ND(<0.30)      | ND(<0.30)      | ND(<0.30)            | ND(<0.50)            | NA                          | NA             | NA              | NA          | NA            | NA          |
|  | 7/14/94      | TB01-071494 | ND(<50)             | ND(<0.30)      | ND(<0.30)      | ND(<0.30)            | ND(<0.50)            | NA                          | NA             | NA              | NA          | NA            | NA          |
| <b>DRINKING WATER STANDARDS:</b>       |              |             |                     |                |                |                      |                      |                             |                |                 |             |               |             |
| California Maximum Contaminant Levels: |              |             | -                   | 1              | -              | 680                  | 1750                 | -                           | 0.1            | 0.5             | 0.05        | -             | 5           |

Results above detection limit are bolded for emphasis.

\* An external standard quantitation was used on this sample due to the presence of tetrachloroethene.

(d) Duplicate sample  
mg/l Milligrams per liter (parts per million)  
NA Not analyzed  
ND Concentration below detection limit presented in parenthesis  
ug/l Micrograms per liter (parts per billion)

TABLE 2  
GROUNDWATER ELEVATION DATA

Joe Sio Chevrolet  
914-916 San Pablo Avenue, Albany, California

| Monitoring Well No. | Date Measured | Total Depth (ft-BTOC) | TOC Elevation (ft-MSL) | Depth to Water (ft-BTOC) | Water Elevation (ft-MSL) |
|---------------------|---------------|-----------------------|------------------------|--------------------------|--------------------------|
| MW-1                | 8/7/91        | NM                    | 42.61                  | 10.49                    | 32.12                    |
|                     | 8/12/91       | NM                    | 42.61                  | 10.37                    | 32.24                    |
|                     | 4/15/94       | 29.80                 | 42.61                  | 10.60                    | 32.01                    |
|                     | 7/14/94       | 29.70                 | 42.61                  | 10.55                    | 32.06                    |
| MW-2                | 8/7/91        | NM                    | 42.73                  | 11.64                    | 31.09                    |
|                     | 8/12/91       | NM                    | 42.73                  | 11.69                    | 31.04                    |
|                     | 4/15/94       | 26.88                 | 42.73                  | 10.16                    | 32.57                    |
|                     | 7/14/94       | 26.85                 | 42.73                  | 10.91                    | 31.82                    |
| MW-3                | 8/7/91        | NM                    | 39.44                  | 8.94                     | 30.50                    |
|                     | 8/12/91       | NM                    | 39.44                  | 8.94                     | 30.50                    |
|                     | 4/15/94       | 25.58                 | 39.44                  | 7.68                     | 31.76                    |
|                     | 7/14/94       | 25.62                 | 39.44                  | 8.40                     | 31.04                    |

Water levels measured on 8/7/91 and 8/12/91 by Aqua Terra Technologies (ATT) of Walnut Creek, California.

TOC elevations obtained from survey data provided in the ATT Groundwater Monitoring Report dated 11/11/91.

ft-BTOC      Feet below top of casing  
ft-MSL      Feet above mean sea level  
NM          Not measured  
TOC        Top of casing

**APPENDIX A**  
**Groundwater Sampling and  
Analysis Procedures**



## **APPENDIX A**

### **Groundwater Sampling and Analysis Procedures**

#### **INTRODUCTION**

The sampling and analysis procedures for water-quality monitoring programs are contained in this Appendix. These procedures ensure that consistent and reproducible sampling methods are used, proper analytical methods are applied, analytical results are accurate, precise, and complete, and the overall objectives of the monitoring program are achieved.

#### **SAMPLE COLLECTION**

Sample collection procedures include equipment cleaning, water-level and total well-depth measurements, and well purging and sampling.

##### **Equipment Cleaning**

Sample bottles, caps, and septa were precleaned and provided by a DHS-certified laboratory. All sampling containers were used only once and discarded after analysis was complete.

Before starting the sampling event, all equipment to be placed in the well or come in contact with groundwater was disassembled and cleaned thoroughly with detergent water, then steam cleaned with tap water, and rinsed with distilled water. Any parts that may absorb contaminants, such as plastic pump valves or bladders, were cleaned as described above or replaced.

During the sampling event all equipment used in the well was washed with detergent, steam-cleaned, and rinsed with distilled water before purging or sampling the next well. The rinsate water was contained for temporary storage in 55-gallon drums and disposal



## **BURLINGTON ENVIRONMENTAL**

*A Philip Environmental Company*

will be arranged by the client. The 55-gallon drums were stored onsite and labeled by the field technician.

### **Quality Assurance Samples**

A trip blank was analyzed to insure contamination did not result from travel exposure.

### **WATER-LEVEL, FLOATING-HYDROCARBON, AND TOTAL WELL-DEPTH MEASUREMENTS**

Before purging and sampling, the depth to water, floating hydrocarbon thickness, and the well total depth were measured using an oil water interface probe and an electric sounder. The electric sounder, manufactured by Slope-Indicator, Inc., is a transistorized instrument that uses a reel-mounted, two conductor, coaxial cable that connects the control panel to the sensor. Cable markings are stamped at 1-foot intervals. An engineers rule was used to measure the depths to the closest 0.01 foot. The water level was measured by lowering the sensor into the monitoring well. A low current circuit is completed when the sensor contacts the water, which serves as a conductor. The current is amplified and fed across an indicator light and audible buzzer, signaling when water has been contacted. A sensitivity control compensates for very saline or conductive water. The oil water interface probe signals with a solid sound when it contacts phase-separated hydrocarbons. When the probe detects water, the sound changes to a beeping sound.

No phase-separated hydrocarbons were detected in any of the monitoring wells. When PSH is detected at greater than 1/32-inch in thickness, a sample is not collected.

All liquid measurements were recorded to the nearest 0.01 foot in the field logbook. The groundwater elevation at each monitoring well was calculated by subtracting the measured depth to water from the surveyed well-casing elevation. Well total depth was then measured by lowering the sensor to the bottom of the well. Well total depth, used to calculate purge volumes and to determine whether the well screen is partially obstructed by silt, was recorded to the nearest 0.01 foot in the field log book.



# BURLINGTON ENVIRONMENTAL

*A Philip Environmental Company*

## WELL PURGING

Before sampling, standing water in the casing was purged from the monitoring wells using a PVC hand bailer. Samples were collected from the monitoring wells after a minimum of four casing volumes had been evacuated or the pH, electrical conductivity, and temperature had stabilized. In the case that the monitoring well was purged until dry, the well was allowed to recover to within 80% of its static water level and sampled.

The pH, electrical conductivity, and temperature meter were calibrated each day before beginning field activities. After every well volume of groundwater removed from the monitoring well, field measurements were taken. The data is presented on the water sample field data sheets. The calibration was checked once each day to verify meter performance. All field meter calibrations were recorded in the field log book.

Groundwater generated from well-purging operations were contained for temporary storage in 55-gallon drums. All drums were labeled and stored onsite. The sampler recorded on the drum label for each drum generated:

- drum content (i.e., groundwater)
- source (i.e., well identification code)
- date generated
- client contact
- project number
- name of sampler.

The purge water will be disposed of by the client.





# BURLINGTON ENVIRONMENTAL

*A Philip Environmental Company*

## **WELL SAMPLING**

A Teflon bailer was used for well sampling. Glass bottles of at least 40 milliliters volume and fitted with Teflon-lined septa were used in sampling for volatile organics. These bottles were filled completely to prevent air from remaining in the bottle. A positive meniscus forms when the bottle is completely full. A convex Teflon septum is placed over the meniscus to eliminate air. After capping, the bottle was inverted and tapped to verify that it did not contain air bubbles. The sample containers for other parameters were filled, and capped.

## **SAMPLE HANDLING AND DOCUMENTATION**

The following section specifies the procedures and documentation used during sample handling.

### **Sample Handling**

All sample containers were labeled immediately following sample collection. Samples were kept cool with ice cubes until received by the laboratory. At the time of sampling, each sample was logged on a chain-of-custody record which accompanied the sample to the Western Environmental, Science, and Technology.

### **Sample Documentation**

The following procedures were used during sampling and analysis to provide chain-of-custody control during sample handling from collection through storage. Sample documentation included:

- field log books to document sampling activities in the field
- labels to identify individual samples; and



**BURLINGTON  
ENVIRONMENTAL**  
*A Philip Environmental Company*

- chain-of-custody record sheets for documenting possession and transfer of samples.

Field Log Book

In the field, the sampler recorded on the Water Sample Field Data Sheet for each sample collected:

- project number
- client name
- location
- name of sampler
- date and time
- pertinent well data (e.g., casing diameter, depth to water, well depth)
- calculated and actual purge volumes
- purging equipment used
- sampling equipment used
- appearance of each sample (e.g., color, turbidity, sediment)
- results of field analyses (i.e., temperature, pH, electrical conductivity)
- general comments

The field logbooks were signed by the sampler.



# BURLINGTON ENVIRONMENTAL

*A Philip Environmental Company*

## Labels

Sample labels contained:

- project number
- sample number (i.e., well designation)
- sampler's initials
- date and time of collection
- type of preservative used (if any)

## Sampling and Analysis Chain-of-Custody Record

The Sampling and Analysis Chain-of-Custody record, initiated at the time of sampling, contains, but is not limited to, the well number, sample type, analytical request, date of sampling, and the name of the sampler. The record sheet was signed, timed, and dated by the sampler when transferring the samples. The number of custodians in the chain of possessions were kept to a minimum. A copy of the Sampling and Analysis Chain-of-Custody record is included in Appendix C.

**APPENDIX B**

**Water Sample Field Data Sheets**



# WATER DATA SHEET

PROJECT NO.: 12104

SAMPLE ID.: MW01-071494

LOCATION: 914 SAN PABLO AVE., ALBANY

DATE: 7-14-94

STATION NO.: S10-101

WELL/SAMPLE

SAMPLER: D. LAMB

POINT DESIGNATION: MW-1

SAMPLING       DEVELOPING       BAILING FLOATING PRODUCT

Casing Diameter:

- 2 inch
- 3 inch
- 4 inch
- 6 inch
- other

Screened Int. (ft.): 10-30

Calc. Casing Vol. (gal.): 3.25

(2" = .17) (3" = .38) (4" = .65) (6" = 1.5)

Initial DTW (ft.): 10.55 @ 0825

Calc. Purge Vol. (gal.): 13.02

Initial TD (ft.): 29.70

Final DTW (ft.): 19.13 @ 0901

Casing Elev. (ft.): \_\_\_\_\_

Water Column Height (ft.): 19.15

Final TD (ft.): 29.75

TD (Actual) (ft.): 30

80 % Recovery (ft.): 14.38

Product Bailed (gal.): 0

### FIELD MEASUREMENTS

| TIME        | VOLUME<br>(gal.) | pH<br>(units) | TEMP.<br>(degrees F) | E.C.<br>(umhos/cm)           | COLOR                | DTW<br>(ft. dry) |
|-------------|------------------|---------------|----------------------|------------------------------|----------------------|------------------|
| <u>0847</u> | <u>3.25</u>      | <u>5.15</u>   | <u>67.3</u>          | <u>1.90 x 10<sup>2</sup></u> | <u>TAN/DARK GRN.</u> | _____            |
| <u>0851</u> | <u>6.50</u>      | <u>5.30</u>   | <u>66.9</u>          | <u>1.93 x 10<sup>2</sup></u> | <u>" "</u>           | _____            |
| <u>0855</u> | <u>9.95</u>      | <u>5.63</u>   | <u>66.8</u>          | <u>1.93 x 10<sup>2</sup></u> | <u>" "</u>           | _____            |
| <u>0859</u> | <u>13.0</u>      | <u>5.67</u>   | <u>66.6</u>          | <u>1.91 x 10<sup>2</sup></u> | <u>TAN</u>           | _____            |
| _____       | _____            | _____         | _____                | _____                        | _____                | _____            |
| _____       | _____            | _____         | _____                | _____                        | _____                | _____            |

Odor? slight

Actual Purge Vol. (gal.): 13

PURGE METHOD:

- Bailor (Teflon)
- Bailor (PVC)
- Well Wizard
- Dedicated Bailor
- Other \_\_\_\_\_

SAMPLE METHOD:

- Bailor (Teflon)
- Bailor (PVC)
- Dedicated Bailor
- Other \_\_\_\_\_

REMARKS: MW01-071494 samples @ 0920 ON 7-14-94.

WEATHER: SUNNY, ~70°

# WATER DATA SHEET

PROJECT NO.: 12104

SAMPLE ID.: MW02-071494

LOCATION: 914 SAN PABLO AVE., ALBANY

DATE: 7-14-94

STATION NO.: S10-101

WELL/SAMPLE

SAMPLER: D. LAMB

POINT DESIGNATION: MW-2

SAMPLING       DEVELOPING       BAILING FLOATING PRODUCT

Casing Diameter:

- 2 inch
- 3 inch
- 4 inch
- 6 inch
- other

Screened Int. (ft.): 8-28

Calc. Casing Vol. (gal.): 2.71

(2" = .17) (3" = .34) (4" = .66) (6" = 1.5)

Initial DTW (ft.): 10.91 @ 0817

Calc. Purge Vol. (gal.): 10.83

Initial TD (ft.): 26.85

Final DTW (ft.): 12.43 @ 1000

Casing Elev. (ft.): \_\_\_\_\_

Water Column Height (ft.): 15.94

Final TD (ft.): 26.88

TD (Actual) (ft.): 28

80 % Recovery (ft.): 14.10

Product Bailed (gal.): 0

## FIELD MEASUREMENTS

| TIME        | VOLUME<br>(gal.) | pH<br>(units) | TEMP.<br>(degrees F) | E.C.<br>(umhos/cm)           | COLOR                | DTW<br>(ft. dry) |
|-------------|------------------|---------------|----------------------|------------------------------|----------------------|------------------|
| <u>0947</u> | <u>3</u>         | <u>6.27</u>   | <u>65.6</u>          | <u>1.78 x 10<sup>2</sup></u> | <u>yellow / BEN.</u> | _____            |
| <u>0951</u> | <u>6</u>         | <u>6.21</u>   | <u>65.2</u>          | <u>1.75 x 10<sup>2</sup></u> | <u>" "</u>           | _____            |
| <u>0954</u> | <u>9</u>         | <u>6.20</u>   | <u>65.1</u>          | <u>1.76 x 10<sup>2</sup></u> | <u>" "</u>           | _____            |
| <u>0958</u> | <u>11</u>        | <u>6.19</u>   | <u>64.8</u>          | <u>1.76 x 10<sup>2</sup></u> | <u>yellow / TAN</u>  | _____            |
| _____       | _____            | _____         | _____                | _____                        | _____                | _____            |
| _____       | _____            | _____         | _____                | _____                        | _____                | _____            |

Odor? NONE

Actual Purge Vol. (gal.): 11

PURGE METHOD:

- Bailor (Teflon)
- Bailor (PVC)
- Well Wizard
- Dedicated Bailor
- Other \_\_\_\_\_

SAMPLE METHOD:

- Bailor (Teflon)
- Bailor (PVC)
- Dedicated Bailor
- Other \_\_\_\_\_

REMARKS: MW02-071494 sampled @ 1020 ON 7-14-94

WEATHER: SUNNY, ~70°

# WATER DATA SHEET

PROJECT NO.: 12104

SAMPLE ID.: DW01 - 071494 (Duplicate)  
MW03 - 071494

LOCATION: 914 SAN PABLO AVE, ALBANY

DATE: 7-14-94

STATION NO.: 510-101

WELL/SAMPLE

SAMPLER: O. Lamb

POINT DESIGNATION: MW-3

SAMPLING       DEVELOPING       BAILING FLOATING PRODUCT

Casing Diameter:

- 2 inch
- 3 inch
- 4 inch
- 6 inch
- other

Screened Int. (ft.): 7-27

Calc. Casing Vol. (gal.): 2.93

(2" = .17) (3" = .38) (4" = .65) (6" = 1.5)

Initial DTW (ft.): 8.40 @ 0807

Calc. Purge Vol. (gal.): 11.70

Initial TD (ft.): 25.62

Final DTW (ft.): 8.69 @ 1102

Casing Elev. (ft.): \_\_\_\_\_

Water Column Height (ft.): 17.22

Final TD (ft.): 25.61

TD (Actual) (ft.): 27

80 % Recovery (ft.): 11.84

Product Bailed (gal.): ∅

### FIELD MEASUREMENTS

| TIME        | VOLUME (gal.) | pH (units)  | TEMP. (degrees F) | E.C. (umhos/cm)              | COLOR        | DTW (ft dry) |
|-------------|---------------|-------------|-------------------|------------------------------|--------------|--------------|
| <u>1048</u> | <u>3</u>      | <u>7.07</u> | <u>67.6</u>       | <u>1.76 x 10<sup>2</sup></u> | <u>BROWN</u> |              |
| <u>1052</u> | <u>6</u>      | <u>6.88</u> | <u>67.0</u>       | <u>1.72 x 10<sup>2</sup></u> | <u>"</u>     |              |
| <u>1056</u> | <u>9</u>      | <u>6.87</u> | <u>66.7</u>       | <u>1.70 x 10<sup>2</sup></u> | <u>"</u>     |              |
| <u>1100</u> | <u>12</u>     | <u>6.86</u> | <u>66.3</u>       | <u>1.69 x 10<sup>2</sup></u> | <u>BROWN</u> |              |
|             |               |             |                   |                              |              |              |
|             |               |             |                   |                              |              |              |

Odor? NONE

Actual Purge Vol. (gal.): 12

PURGE METHOD:

- Bailor (Teflon)
- Bailor (PVC)
- Well Wizard
- Dedicated Bailor
- Other \_\_\_\_\_

SAMPLE METHOD:

- Bailor (Teflon)
- Bailor (PVC)
- Dedicated Bailor
- Other \_\_\_\_\_

REMARKS: MW03 - 071494 Samples @ 1115 ON 7-14-94.  
DW01 - 071494 Samples @ 1130 ON 7-14-94.

WEATHER: SUNNY, ~70°



**APPENDIX C**  
**Chain-of-Custody Records**  
**and**  
**Certified Analytical Data**



July 21, 1994  
Sample Log 9842

Larry Miller  
Burlington Environmental Inc.  
5901 Cristie Street, Ste. 501  
Emeryville, CA 94608

Subject: Analytical Results for 6 Water Samples  
Identified as: Project # 12104 (sio-101)  
Received: 07/14/94  
Purchase Order: 50069

Dear Mr. Miller:

Analysis of the sample(s) referenced above has been completed. This report is written to confirm results communicated on July 21, 1994 and describes procedures used to analyze the samples.

The sample(s) were received in:

1-L polyethylene bottle with polyethylene cap  
40-ml glass vials sealed with TFE-lined septae

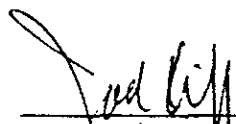
Each sample was transported and received under documented chain of custody, assigned a consecutive log number and stored at 4 degrees Celsius until analysis commenced.

Sample(s) were analyzed using the following method(s):

"BTEX" (EPA Method 602/Purge-and-Trap)  
"TPH as Gasoline" (Modified EPA Method 8015/Purge-and-Trap)  
"Metals by Atomic Absorption/ICAP" (EPA Methods 7000/6010/200.7)  
"Total Lead" (EPA 7421)

Please refer to the following table(s) for summarized analytical results and contact us at 916-753-9500 if you have questions regarding procedures or results. The chain-of-custody document is enclosed.

Approved by:

  
\_\_\_\_\_  
Joel Kiff  
Senior Chemist



Sample: MW01-071494

From : Project # 12104 (sio-101)

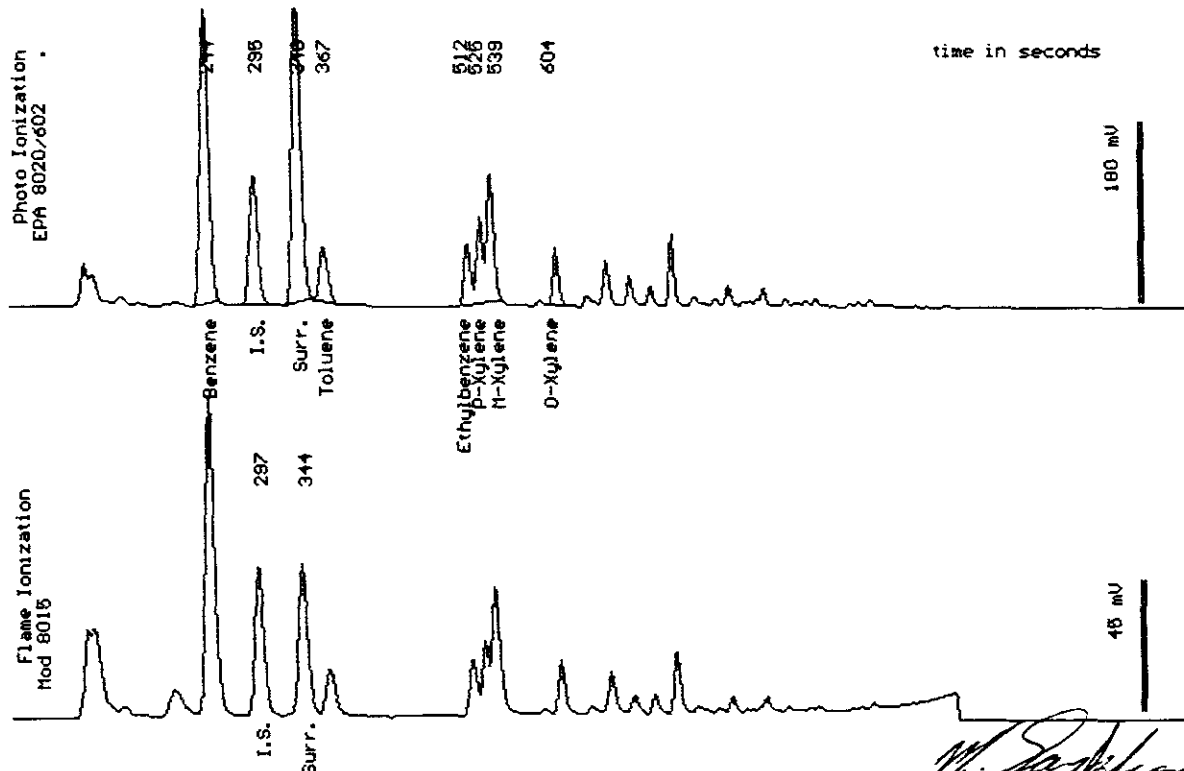
Sampled : 07/14/94

Dilution : 1:3

QC Batch : 2094I

Matrix : Water

| Parameter          | (MRL) ug/L | Measured Value ug/L |
|--------------------|------------|---------------------|
| Benzene            | (.75)      | 110                 |
| Toluene            | (.75)      | 22                  |
| Ethylbenzene       | (.75)      | 21                  |
| Total Xylenes      | (1.3)      | 87                  |
| TPH as Gasoline    | (130)      | 470                 |
| Surrogate Recovery |            | 92 %                |



Date Analyzed: 07-17-94  
Column : 0.53mm ID X 30m DBWAX (J&W Scientific)

*M. Sarkhosh*  
Mitra Sarkhosh  
Senior Chemist



Sample Log 9842  
9842-4

Sample: MW02-071494

From : Project # 12104 (sio-101)

Sampled : 07/14/94

Dilution : 1:1

QC Batch : 6120f

Matrix : Water

| Parameter       | (MRL) ug/L | Measured Value ug/L |
|-----------------|------------|---------------------|
| Benzene         | (.30)      | <.30 *              |
| Toluene         | (.30)      | .73 *               |
| Ethylbenzene    | (.30)      | <.30 *              |
| Total Xylenes   | (.50)      | .71 *               |
| TPH as Gasoline | (50)       | <50 *               |

Surrogate Recovery

90 \* %

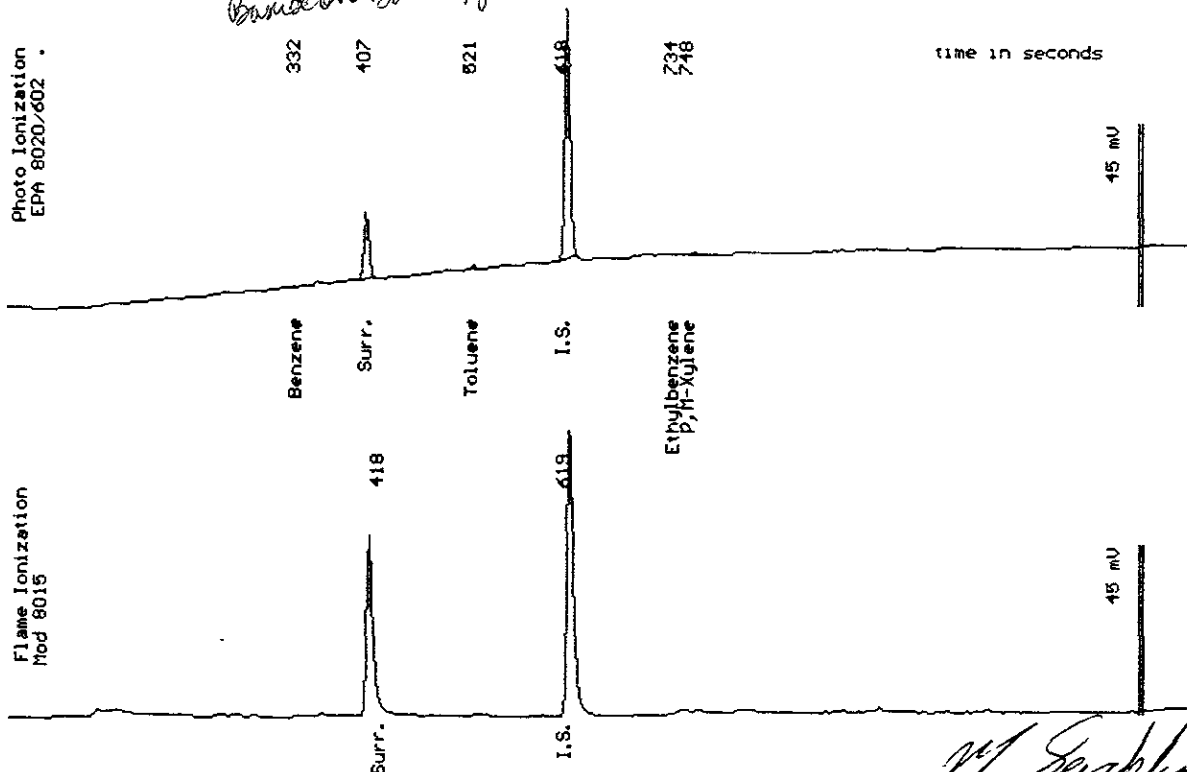
\*External standard quantitation was used on this sample due to the presence of tetrachloroethene.

*Some peaks come out due to polarity → DB Wax*

*due to matrix interference*

*Band on boiling pt. → DB5*

*columns used*



Date Analyzed: 07-19-94  
Column : 0.53mm ID X 30m DB5 (J&W Scientific)

*M. Sarkhosh*  
Mitra Sarkhosh  
Senior Chemist



Sample Log 9842

9842-5

Sample: MW03-071494

From : Project # 12104 (sio-101)

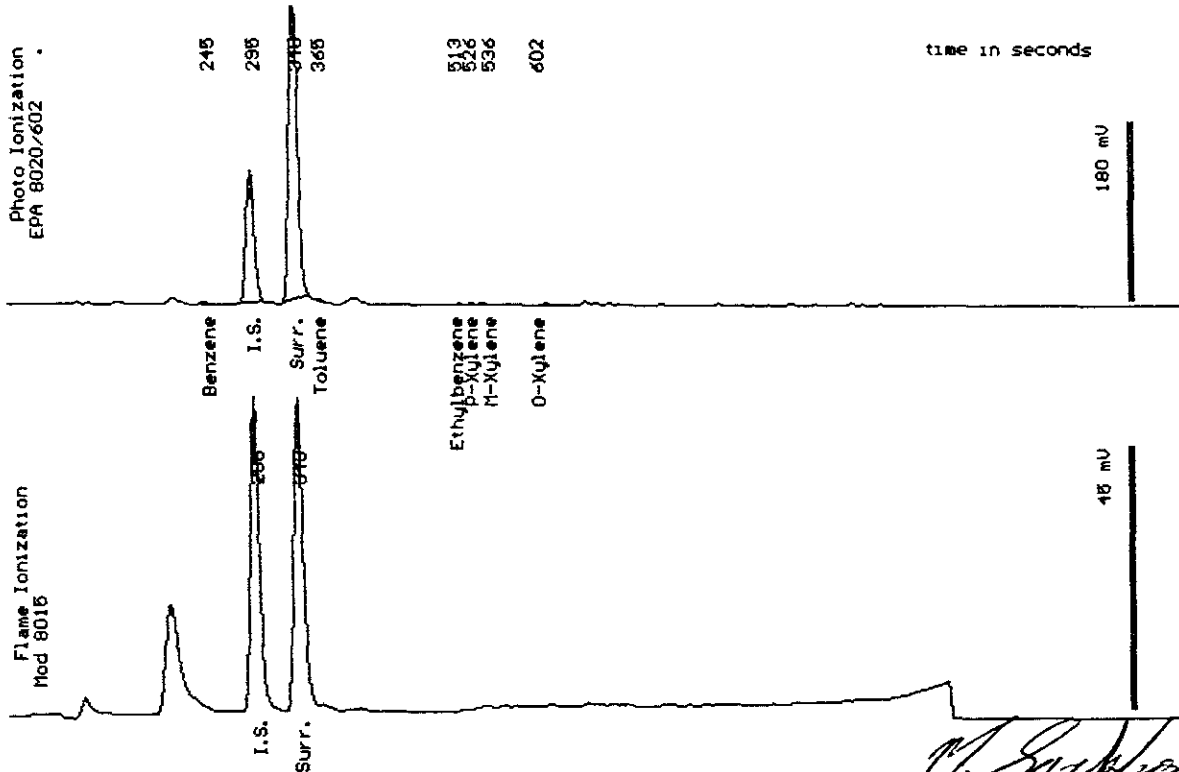
Sampled : 07/14/94

Dilution : 1:1

QC Batch : 2095F

Matrix : Water

| Parameter          | (MRL) ug/L | Measured Value ug/L |
|--------------------|------------|---------------------|
| Benzene            | (.30)      | <.30                |
| Toluene            | (.30)      | <.30                |
| Ethylbenzene       | (.30)      | <.30                |
| Total Xylenes      | (.50)      | .50                 |
| TPH as Gasoline    | (50)       | <50                 |
| Surrogate Recovery |            | 93 %                |



Date Analyzed: 07-19-94  
Column : 0.53mm ID X 30m DBWAX (J&W Scientific)

*M. Sarkhosh*  
Mitra Sarkhosh  
Senior Chemist



Sample Log 9842

9842-6

Sample: DW01-071494

From : Project # 12104 (sio-101)

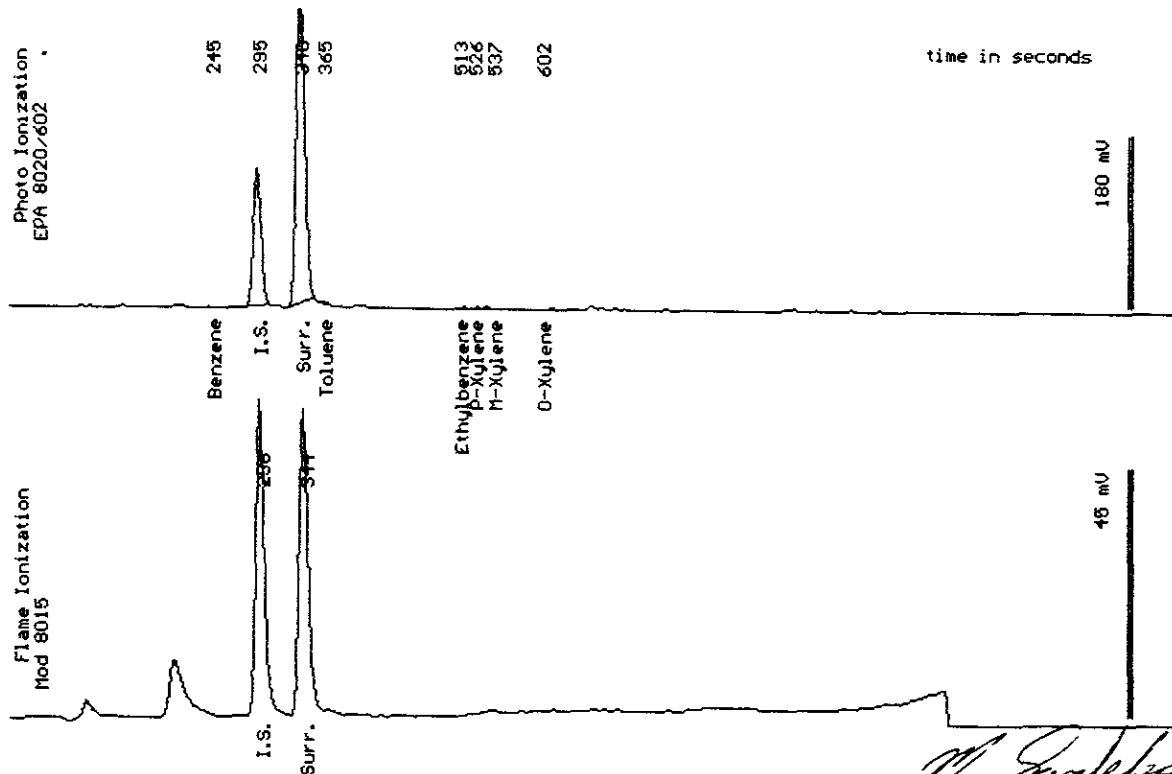
Sampled : 07/14/94

Dilution : 1:1

QC Batch : 2095F

Matrix : Water

| Parameter          | (MRL) ug/L | Measured Value ug/L |   |
|--------------------|------------|---------------------|---|
| Benzene            | (.30)      | <.30                |   |
| Toluene            | (.30)      | <.30                |   |
| Ethylbenzene       | (.30)      | <.30                |   |
| Total Xylenes      | (.50)      | .53                 |   |
| TPH as Gasoline    | (50)       | <50                 |   |
| Surrogate Recovery |            | 94                  | % |



Date Analyzed: 07-19-94  
Column : 0.53mm ID X 30m DBWAX (J&W Scientific)

*M. Sarkhosh*  
Mitra Sarkhosh  
Senior Chemist



July 21, 1994  
Sample Log 9842

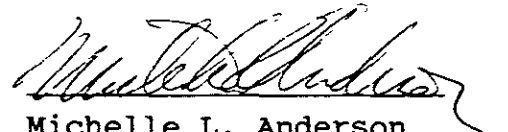
From : Project # 12104 (sio-101)  
Sampled : 07/14/94  
Matrix : Water

Received : 07/14/94  
Units : mg/L

**Total Lead by EPA 7421**

| <u>WEST ID</u> | <u>Sample ID</u> | <u>Date Digested</u> | <u>Date Analyzed</u> | <u>MRL*</u> | <u>Conc.</u> |
|----------------|------------------|----------------------|----------------------|-------------|--------------|
| 9842-3         | MW01-071494      | 07/18/94             | 07/20/94             | (0.003)     | 0.0059       |
| 9842-4         | MW02-071494      | 07/18/94             | 07/20/94             | (0.003)     | 0.023        |

\* MRL = Method Reporting Limit

  
Michelle L. Anderson  
Metals Supervisor



July 21, 1994  
Sample Log 9842-5

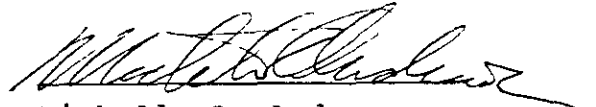
Sample : MW03-071494  
From : Project # 12104 (sio-101)  
Sampled : 07/14/94  
Matrix : Water

Received : 07/14/94  
Units : mg/L

5 LUFT "Waste Oil" Metals

| <u>Parameter</u> | <u>EPA Method</u> | <u>Date Digested</u> | <u>Date Analyzed</u> | <u>MRL*</u> | <u>Result</u> |
|------------------|-------------------|----------------------|----------------------|-------------|---------------|
| Cadmium          | 6010              | 07/18/94             | 07/20/94             | (0.004)     | 0.017         |
| Chromium         | 6010              | 07/18/94             | 07/20/94             | (0.007)     | 0.55          |
| Lead             | 7421              | 07/18/94             | 07/20/94             | (0.030)     | 0.22          |
| Nickel           | 6010              | 07/18/94             | 07/20/94             | (0.015)     | 0.73          |
| Zinc             | 6010              | 07/18/94             | 07/20/94             | (0.010)     | 0.84          |

\* MRL = Method Reporting Limit



Michelle L. Anderson  
Metals Supervisor





Sample Log 9842

9842-2

Sample: RS01-071494

From : Project # 12104 (sio-101)

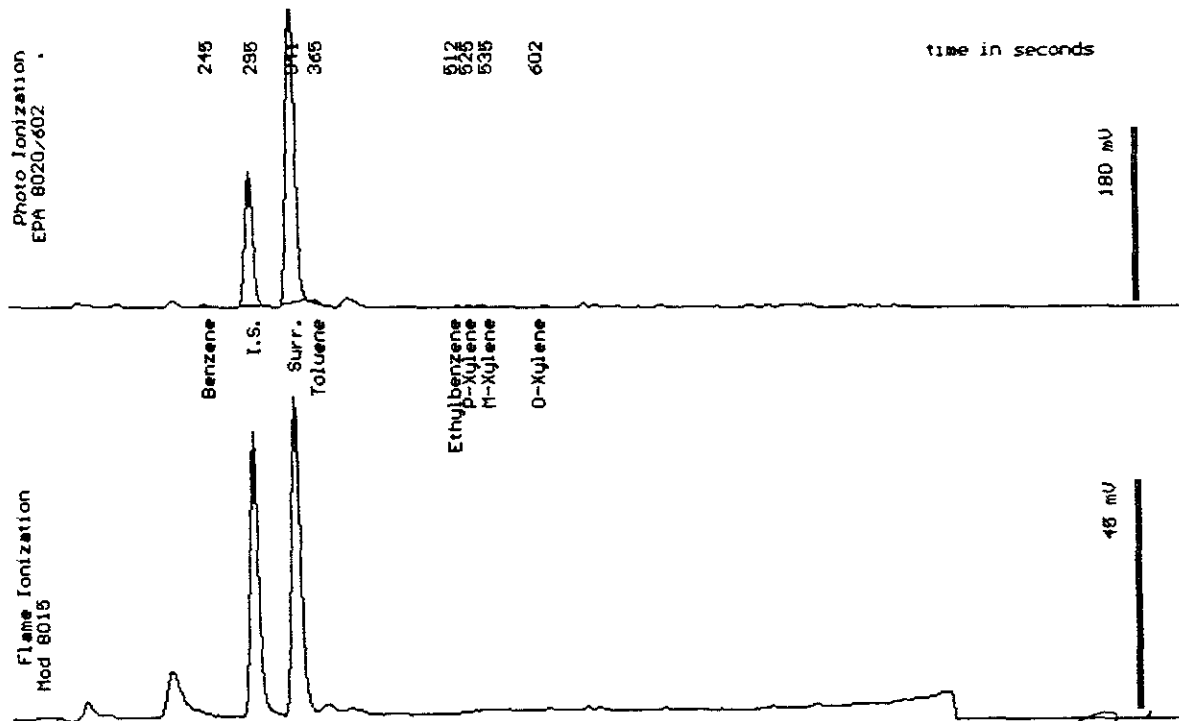
Sampled : 07/14/94

Dilution : 1:1

Matrix : Water

QC Batch : 2095F

| Parameter          | (MRL) ug/L | Measured Value ug/L |
|--------------------|------------|---------------------|
| Benzene            | (.30)      | <.30                |
| Toluene            | (.30)      | .33                 |
| Ethylbenzene       | (.30)      | <.30                |
| Total Xylenes      | (.50)      | .65                 |
| TPH as Gasoline    | (50)       | <50                 |
| Surrogate Recovery |            | 94 %                |



Date Analyzed: 07-19-94  
Column : 0.53mm ID X 30m DB4AX (J&W Scientific)

*M. Sarkhosh*  
Mitra Sarkhosh  
Senior Chemist



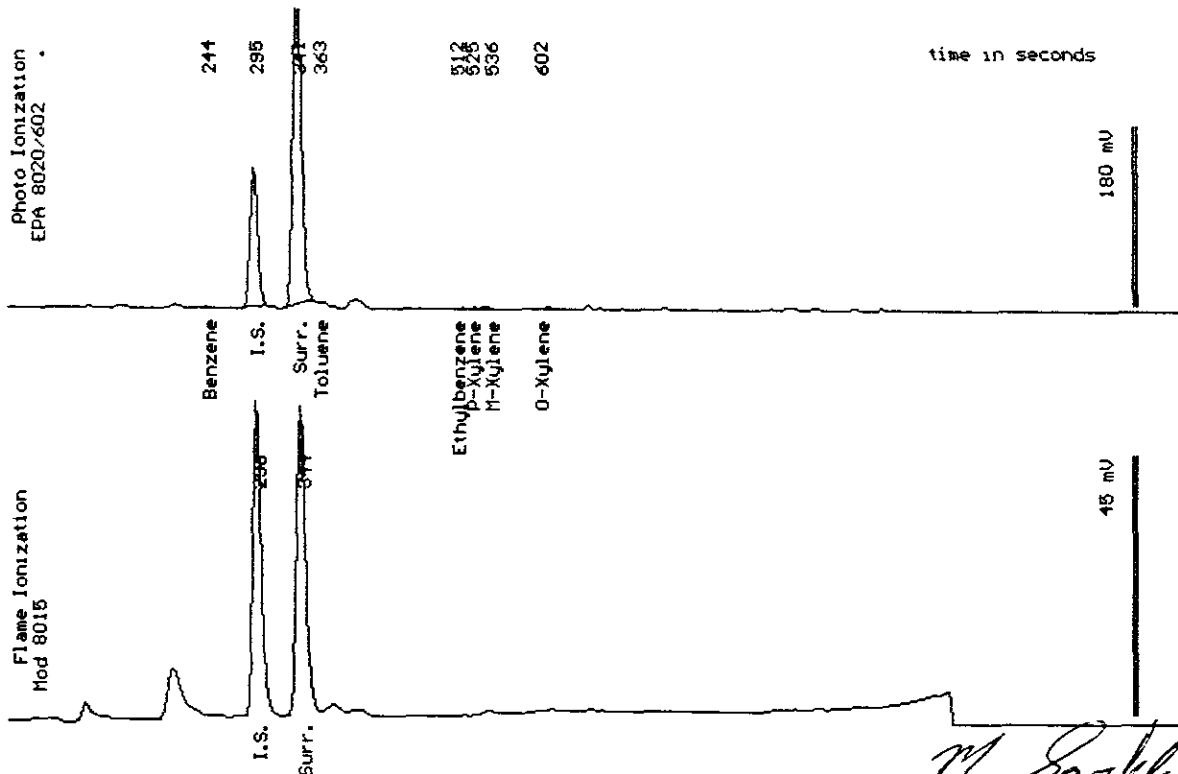
Sample Log 9842  
9842-1

Sample: TB01-071494

From : Project # 12104 (sio-101)  
Sampled : 07/14/94  
Dilution : 1:1  
Matrix : Water

QC Batch : 2095F

| Parameter          | (MRL) ug/L | Measured Value ug/L |
|--------------------|------------|---------------------|
| Benzene            | (.30)      | <.30                |
| Toluene            | (.30)      | <.30                |
| Ethylbenzene       | (.30)      | <.30                |
| Total Xylenes      | (.50)      | <.50                |
| TPH as Gasoline    | (50)       | <50                 |
| Surrogate Recovery |            | 94 %                |



Date Analyzed: 07-19-94  
Column : 0.53mm ID X 30m DBWAX (J&W Scientific)

*M. Sarkhosh*  
Mitra Sarkhosh  
Senior Chemist



1046 Olive Drive, Suite 3  
Davis, CA 95616

916-753-9500  
FAX #: 916-753-6091  
LAB#: 916-757-4650

# CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: LARRY MILLER Phone #: 510-420-7910

Company/Address: BURLINGTON ENVIRONMENTAL FAX #: 510-658-7770  
5701 CARSHIE AVE. STE 401 EMERYVILLE, CA

Project Number: 12104 P.O.#: 50067 Project Name: 510-101

Project Location: 914 SAN PABLO AVE., ALBANY, CA Sampler Signature: [Signature]

## ANALYSIS REQUEST

TAT

| Sample ID   | Sampling |      | Container |        |          | Method Preserved |     |                  |     | Matrix |       |      |
|-------------|----------|------|-----------|--------|----------|------------------|-----|------------------|-----|--------|-------|------|
|             | DATE     | TIME | VOA       | SLEEVE | 1L GLASS | 1L PLASTIC       | HCl | HNO <sub>3</sub> | ICE | NONE   | WATER | SOIL |
| TB01 071494 | 7.14     | 0700 | X         |        |          |                  | X   | X                |     |        | X     |      |
| RS01 071494 | 7.14     | 0800 | X         |        |          |                  | X   | X                |     |        | X     |      |
| MW01 071494 | 7.14     | 0920 | X         |        | X        |                  | X   | X                |     |        | X     |      |
| MW02 071494 | 7.14     | 1020 | X         |        | X        |                  | X   | X                |     |        | X     |      |
| MW03 071494 | 7.14     | 1115 | X         |        | X        |                  | X   | X                |     |        | X     |      |
| DW01 071494 | 7.14     | 1130 | X         |        |          |                  | X   | X                |     |        | X     |      |

|                                       |   |
|---------------------------------------|---|
| WET (✓)                               |   |
| TOTAL (✓)                             |   |
| BTEX (602/8020)                       | X |
| BTEX/TPH as Gasoline (602/8020/8015)  | X |
| TPH as Diesel/Oil (8015)              | X |
| Total Oil & Grease (5520 B/E,F,C)     |   |
| Total Oil & Grease IR (5520 B/E,F,C)  |   |
| 96-Hour Fish Bioassay                 |   |
| EPA 601/8010                          |   |
| EPA 602/8020                          |   |
| EPA 615/8150                          |   |
| EPA 608/8080 - Pesticides             |   |
| EPA 608/8080-PCBs                     |   |
| EPA 624/8240                          |   |
| EPA 625/8270                          |   |
| ORGANIC LEAD                          |   |
| Reactivity, Corrosivity, Ignitibility |   |
| CAM - 17 Metals                       |   |
| EPA - Priority Pollutant Metals       |   |
| LEAD(7420/7421/239 2)                 |   |
| Cd, Cr, Pb, Zn, Ni (5 LVT)            | X |
| TRM LEAD                              | X |
| RUSH SERVICE (12 hr) or (24 hr)       |   |
| EXPEDITED SERVICE (48 hr) or (1 wk)   | X |
| STANDARD SERVICE (1 wk)               | X |

Relinquished by: [Signature] Date Time: 7/14/94 12:00  
 Relinquished by: [Signature] Date Time: 7/14/94 13:55  
 Relinquished by: [Signature] Date Time: 07/14/94 13:55

Received by: [Signature]  
 Received by: [Signature]  
 Received by Laboratory: [Signature]

Remarks: [Blank]

Bill To: [Blank]

RECEIVED  
 DATE: 07/14/94 TIME: 13:55  
 WEST LAB  
 INITIAL: [Signature]