



## Environmental Services, Inc.

2111 Jennings Street, San Francisco, CA 94124-3224, Phone (415) 822-4555 FAX (415) 822-5290

93 JUL 28 PM 2: 24

May 10, 1993

Ms. Pam Evans  
Hazardous Materials Division  
Department of Environmental Health  
Alameda County Health Care Services Agency  
80 Swan Way, Room 200  
Oakland, California 94621

**Subject: Groundwater Monitoring - March 1993  
Arroyo School  
15701 Lorenzo Avenue  
San Lorenzo, California**

Dear Ms. Evans:

Enclosed please find a copy of the report documenting the tenth round of sampling for the monitoring wells at the Arroyo School, located at 15701 Lorenzo Avenue, San Lorenzo, California ("the site"). Groundwater monitoring at the Site was initiated February 7, 1991.

If you have any questions or comments, please do not hesitate to contact me at (415) 822-4555.

Sincerely,

A handwritten signature in black ink, appearing to read 'George Wilson', written over a horizontal line.

George Wilson  
Vice President

Enclosure

cc: San Lorenzo Unified School District



# Environmental Services, Inc.

2111 Jennings Street, San Francisco, CA 94124-3224, Phone (415) 822-4555 FAX (415) 822-5290

**QUARTERLY MONITORING REPORT  
FOR WELLS MW1, MW2, MW3, AND MW4  
QUARTER ENDING MARCH 1993  
ARROYO SCHOOL  
15701 LORENZO AVENUE  
SAN LORENZO, CALIFORNIA**

**MAY 10, 1993**

**PROJECT NUMBER LWES 5186D**

Prepared for:  
San Lorenzo Unified School District  
15510 Usher Street  
San Lorenzo, California

Prepared by:

A handwritten signature in cursive script, appearing to read 'Sudhir'.

\_\_\_\_\_  
Sudhir Avalakki  
Environmental Engineer

A handwritten signature in cursive script, appearing to read 'Peng Leong'.

\_\_\_\_\_  
Peng Leong, P.E.  
Associate Engineer

A handwritten signature in cursive script, appearing to read 'George Wilson'.

\_\_\_\_\_  
George Wilson  
Vice President

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- 07/24/92 Work Plan for one more well installation and three additional profile borings published by LWES.
- 08/10/92 Borings B14, B15, B16 and MW4 drilled and sampled. Boring MW4 converted to groundwater monitoring well MW4.

Monitoring Wells MW1, MW2, and MW3 sampled on the following dates:

|                  |                       |
|------------------|-----------------------|
| February 7, 1991 | January 3, 1992       |
| March 15, 1991   | April 14, 1992        |
| April 16, 1991   | July 21, 1992         |
| July 15, 1991    | October 15, 1991      |
| November 6, 1992 | <b>March 23, 1992</b> |

Monitoring Well MW4 sampled on the following dates:

|                       |                  |
|-----------------------|------------------|
| September 11, 1992    | November 6, 1992 |
| <b>March 23, 1992</b> |                  |

### 3.0 SITE GEOLOGY

According to "Maps showing Maximum Earthquake Intensity Predicted in the Southern San Francisco Bay Region, California, for Large Earthquakes on the San Andreas and Hayward Faults," Sheet 3, (USGS, 1975), the Site and vicinity are located on Quaternary alluvium, consisting of unconsolidated to weakly consolidated silt, sand, and gravel of Holocene and late Pleistocene age. The unit includes minor deposits of Holocene and late Pleistocene beach and dune sand, and marine terrace deposits.

Based on logs of half the borings drilled, the geology of the Site consists of about one foot of gravel and sand fill with varying amounts of silt and clay. The fill was underlain by either silt, clay, or both silt and clay in these borings. In the other borings, the general profile was similar, but no recognizable fill material was present. In some of the borings, sand layers were present within layers of silt or clay.

### 4.0 GROUNDWATER SAMPLING

Groundwater samples were collected on March 23, 1993. Depth-to-ground water was measured using an electric water level meter prior to groundwater sampling activities. Groundwater sampling involved using a pre-cleaned pump to remove approximately four well casing volumes of water out of the wells prior to sampling. Parameters such as water clarity, pH, temperature, specific conductance and volume extracted were noted during purging. The wells were pumped nearly continuously until all stagnant water was removed.

**GROUNDWATER MONITORING - MARCH 1993  
ARROYO SCHOOL  
15701 LORENZO AVENUE  
SAN LORENZO, CALIFORNIA**

**1.0 INTRODUCTION**

At the request of the San Lorenzo Unified School District, L & W Environmental Services, Inc. (LWES) performed the tenth round of groundwater sampling for monitoring wells MW1 through MW3 and third round of groundwater sampling for monitoring well MW4 at the Arroyo School, located at 15701 Lorenzo Avenue, San Lorenzo, California ("the Site"). The work was performed in accordance with the recommendations of the California Regional Water Quality Control Board's document entitled "Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites."

The proposed groundwater monitoring activities were performed to assess groundwater conditions below the Site.

**2.0 BACKGROUND**

This report summarizes and presents the results of the quarterly monitoring of four wells at the Arroyo School in San Lorenzo, California. The Arroyo School is located on the southwest side of Lorenzo Avenue, in San Lorenzo, California. The Site and surrounding area is shown on the Vicinity Map, Figure 1.

A chronology of site-related work to date is summarized below:

**CHRONOLOGY**

---

- 01/03/91 One 6,000 gallon fuel tank removed from the Site.
- 01/16/91 Borings B1 through B6 drilled.
- 01/25/91 Borings B7 through B11 drilled.
- 01/28/91 Borings B12 and B13 drilled.
- 01/31/91 Monitoring wells MW1 through MW3 installed.
- 07/09/92 Alameda County Health Care Services Agency Order for additional work published.

One groundwater sample was collected manually (hand-bailed) from each well using a Teflon bailer from each monitoring well. The sample was transferred into 40-mL VOA vials with Teflon septa and 1-liter amber-colored glass bottles. The samples were stored in a chilled cooler containing crushed ice to preserve the sample at 4°C during delivery to the laboratory. Strict chain-of-custody protocols were followed in all phases of sample handling.

All equipment used during this investigation which might come into contact with contaminated materials were thoroughly cleaned before and after each use. This was accomplished by washing with Alconox (a laboratory-grade detergent) and/or cleaning with high-pressure hot water (steam cleaning).

## 5.0 GROUNDWATER ELEVATION AND FLOW

The elevation of the groundwater surface (potentiometric surface) was measured for each monitoring well to evaluate the direction of groundwater flow at the Site. Groundwater level measurements were recorded using an electronic water-level probe attached to an engineer's measuring tape graduated to 0.01-foot intervals.

Measurements were recorded from the top of the groundwater surface to the top of the well casing. LWES determined the relative elevation of the top of each well casing by arbitrarily setting the elevation of the casing top in MW1 to 100.00 feet, and surveying the tops of the other well casings to the nearest 0.01 foot. The difference between the top of the well elevation and the depth to the top of the groundwater surface is a measurement of the potentiometric surface of the groundwater table.

*Not to  
establish  
benchmark*

Measured groundwater levels at the Site ranged from 9.22 feet (MW2) to 9.84 feet (MW4). Mapping and analysis of the groundwater elevation data suggest that local groundwater flow is to the northeast. The top of well casing elevations, depth-to-surface are listed in Table 3. Table 2 lists the groundwater elevations for the previous groundwater level measurements conducted in February, 1991 through November, 1992. Figure 3 shows the water-level data collected on March 23, 1993, and the interpreted contour lines.

## 6.0 LABORATORY ANALYSES

The groundwater sample was analyzed within 14 days from the day the sample was collected by Precision Analytical Laboratory of Richmond, California, a state-certified laboratory. The groundwater samples collected from the four monitoring wells were analyzed for total petroleum hydrocarbon (TPH) as diesel (TPHd) using the DHS Extraction Method (LUFT), benzene, toluene, ethylbenzene, and xylenes (BTEX) using EPA Method 602, and Total Oil & Grease (TOG) using EPA Method 5520B.



## 6.1 LABORATORY ANALYTICAL RESULTS

The laboratory analytical results are summarized in Table 1. Monitoring well and groundwater data is presented in Table 2 and Table 3. Laboratory certificates are included in Appendix A.

Analysis of groundwater samples indicated:

- TPH-D concentrations ranged from 0.08 mg/L to 0.13 mg/L;
- Benzene concentrations ranged from less than 0.0003 mg/L (not detected) to 0.0007 mg/L;
- Toluene concentrations ranged from less than 0.0003 mg/L (not detected) to 0.0130 mg/L;
- Ethylbenzene concentrations were less than 0.0003 mg/L (not detected);
- Xylene concentrations ranged from less than 0.0006 mg/L (not detected) to 0.0017 mg/L; and
- TOG concentrations were less than 5.0 mg/L (not detected).

## 7.0 DISCUSSION

Laboratory analytical results indicated that there were detectable concentrations of TPHd in groundwater samples collected from all monitoring wells at the Site. Benzene, toluene, and xylenes were detected in some, but not all of the groundwater samples collected. TOG and ethylbenzene concentrations in all samples collected were not detected.

The benzene concentrations in all of the groundwater samples was below the Maximum Contaminant Limit (MCL) of 0.001 mg/L. Water containing contaminants exceeding their respective MCL presents a risk to the health of humans when continually used for drinking or culinary purposes.

Subsequent quarterly sampling and water-level measurements will be conducted in June, 1993. Status reports will be prepared for submission to the San Lorenzo Unified School District approximately two weeks following receipt of groundwater sample results from the laboratory.

## 8.0 EXCLUSIONS

LWES assumes no responsibility or liability for the reliance hereon or use hereof of information contained in this report by any one other than the party to whom it is addressed

**TABLE 1**  
**LABORATORY ANALYTICAL RESULTS FOR**  
**FUEL-RELATED COMPOUNDS**  
**DETECTED IN MW1, MW2, MW3, AND MW4**  
**ARROYO SCHOOL**  
**San Lorenzo, California**

(concentration expressed in mg/l)

| <u>Sample</u>                     | <u>TPHd</u> | <u>BTEX</u>     | <u>TOG</u> |
|-----------------------------------|-------------|-----------------|------------|
| <b>(Sampled February 7, 1991)</b> |             |                 |            |
| MW1                               | 0.3         | ND/ND/ND/ND     | ND         |
| MW2                               | ND          | ND/ND/ND/ND     | ND         |
| MW3                               | 0.3         | ND/ND/ND/ND     | ND         |
| <b>(Sampled March 15, 1991)</b>   |             |                 |            |
| MW1                               | ND          | ND/ND/ND/ND     | ND         |
| MW2                               | ND          | ND/ND/ND/ND     | ND         |
| MW3                               | 0.055       | ND/ND/ND/ND     | ND         |
| <b>(Sampled April 16, 1991)</b>   |             |                 |            |
| MW1                               | 0.20        | ND/ND/ND/ND     | ND         |
| MW2                               | ND          | ND/ND/ND/ND     | ND         |
| MW3                               | ND          | ND/ND/ND/ND     | ND         |
| <b>(Sampled July 15, 1991)</b>    |             |                 |            |
| MW1                               | ND          | ND/0.0003/ND/ND | ND         |
| MW2                               | ND          | ND/ND/ND/ND     | ND         |
| MW3                               | ND          | ND/ND/ND/ND     | ND         |
| <b>(Sampled October 15, 1991)</b> |             |                 |            |
| MW1                               | 0.080       | ND/ND/ND/ND     | ND         |
| MW2                               | ND          | ND/ND/ND/ND     | ND         |
| MW3                               | ND          | ND/ND/ND/ND     | ND         |
| <b>(Sampled January 3, 1992)</b>  |             |                 |            |
| MW1                               | 0.14        | ND/ND/ND/ND     | ND         |
| MW2                               | ND          | ND/ND/ND/ND     | ND         |
| MW3                               | 0.065       | ND/ND/ND/ND     | ND         |

TABLE 1 (Continued)

| (Sampled April 14, 1992)  |                     |                         |    |
|---|---------------------|-------------------------|----|
| MW1   | ND                  | ND/0.023/ND/ND          | ND |
| MW2   | ND                  | ND/0.0007/ND/ND         | ND |
| MW3   | ND                  | ND/ND/ND/ND             | ND |
| Sampled July 21, 1992 (MW 1 - MW 3) and September 11, 1992 (MW 4) |                     |                         |    |
| MW1   | ND                  | ND/ND/ND/ND             | ND |
| MW2   | ND                  | ND/ND/ND/ND             | ND |
| MW3   | ND                  | ND/ND/ND/ND             | ND |
| MW4   | 0.1                 | ND/ND/ND/ND             | ND |
| (Sampled November 6, 1992)  |                     |                         |    |
| MW1   | ND                  | ND/ND/ND/ND             | ND |
| MW2   | ND                  | ND/ND/ND/ND             | ND |
| MW3   | ND                  | ND/ND/ND/ND             | ND |
| MW4   | 0.07                | ND/ND/ND/ND             | ND |
| (Sampled March 23, 1993)  |                     |                         |    |
| MW1   | 0.08 <sup>80</sup>  | ND/ND/ND/ND             | ND |
| MW2   | 0.08 <sup>80</sup>  | 0.00033/0.004/ND/0.0017 | ND |
| MW3   | 0.09 <sup>90</sup>  | 0.00070/0.013/ND/0.0017 | ND |
| MW4   | 0.13 <sup>130</sup> | 0.00040/0.0019/ND/ND    | ND |

ND Not Detected

**TABLE 2**  
**GROUNDWATER ELEVATIONS**  
**WELLS MW1, MW2, MW3, AND MW4**  
**FEBRUARY 1991 THROUGH NOVEMBER 1992**  
**ARROYO SCHOOL**  
**San Lorenzo, California**

**FEBRUARY 1991**

| <b>WELL</b> | <b>TOP OF CASING<br/>ELEVATION</b> | <b>DEPTH TO<br/>GROUNDWATER</b> | <b>GROUNDWATER<br/>ELEVATION</b> |
|-------------|------------------------------------|---------------------------------|----------------------------------|
| MW1         | 100.00                             | 11.42                           | 88.58                            |
| MW2         | 100.03                             | 11.27                           | 88.76                            |
| MW3         | 100.17                             | 11.44                           | 88.73                            |

**MARCH 1991**

| <b>WELL</b> | <b>TOP OF CASING<br/>ELEVATION</b> | <b>DEPTH TO<br/>GROUNDWATER</b> | <b>GROUNDWATER<br/>ELEVATION</b> |
|-------------|------------------------------------|---------------------------------|----------------------------------|
| MW1         | 100.00                             | 10.16                           | 89.84                            |
| MW2         | 100.03                             | 10.16                           | 89.87                            |
| MW3         | 100.17                             | 10.48                           | 89.69                            |

**APRIL 1991**

| <b>WELL</b> | <b>TOP OF CASING<br/>ELEVATION</b> | <b>DEPTH TO<br/>GROUNDWATER</b> | <b>GROUNDWATER<br/>ELEVATION</b> |
|-------------|------------------------------------|---------------------------------|----------------------------------|
| MW1         | 100.00                             | 10.44                           | 89.56                            |
| MW2         | 100.03                             | 10.50                           | 89.53                            |
| MW3         | 100.17                             | 10.72                           | 89.45                            |

TABLE 2 (Continued)

JULY 1991

| WELL | TOP OF CASING<br>ELEVATION | DEPTH TO<br>GROUNDWATER | GROUNDWATER<br>ELEVATION |
|------|----------------------------|-------------------------|--------------------------|
| MW1  | 100.00                     | 12.06                   | 87.94                    |
| MW2  | 100.03                     | 12.04                   | 87.99                    |
| MW3  | 100.17                     | 12.20                   | 87.97                    |

OCTOBER 1991

| WELL | TOP OF CASING<br>ELEVATION | DEPTH TO<br>GROUNDWATER | GROUNDWATER<br>ELEVATION |
|------|----------------------------|-------------------------|--------------------------|
| MW1  | 100.00                     | 12.50                   | 87.50                    |
| MW2  | 100.03                     | 12.48                   | 87.55                    |
| MW3  | 100.17                     | 12.60                   | 87.57                    |

JANUARY 1992

| WELL | TOP OF CASING<br>ELEVATION | DEPTH TO<br>GROUNDWATER | GROUNDWATER<br>ELEVATION |
|------|----------------------------|-------------------------|--------------------------|
| MW1  | 100.00                     | 11.52                   | 88.48                    |
| MW2  | 100.03                     | 11.53                   | 88.50                    |
| MW3  | 100.17                     | 11.70                   | 88.47                    |

TABLE 2 (Continued)

APRIL 1992

| WELL | TOP OF CASING<br>ELEVATION | DEPTH TO<br>GROUNDWATER | GROUNDWATER<br>ELEVATION |
|------|----------------------------|-------------------------|--------------------------|
| MW1  | 100.00                     | 10.23                   | 89.77                    |
| MW2  | 100.03                     | 10.24                   | 89.79                    |
| MW3  | 100.17                     | 10.50                   | 89.67                    |

JULY 1992 (MW 1 - MW 3) AND SEPTEMBER, 1992 (MW 4)

| WELL | TOP OF CASING<br>ELEVATION | DEPTH TO<br>GROUNDWATER | GROUNDWATER<br>ELEVATION |
|------|----------------------------|-------------------------|--------------------------|
| MW1  | 100.00                     | 11.96                   | 88.04                    |
| MW2  | 100.03                     | 11.96                   | 88.07                    |
| MW3  | 100.17                     | 12.08                   | 88.09                    |
| MW4  | 100.20                     | 12.84                   | 87.36                    |

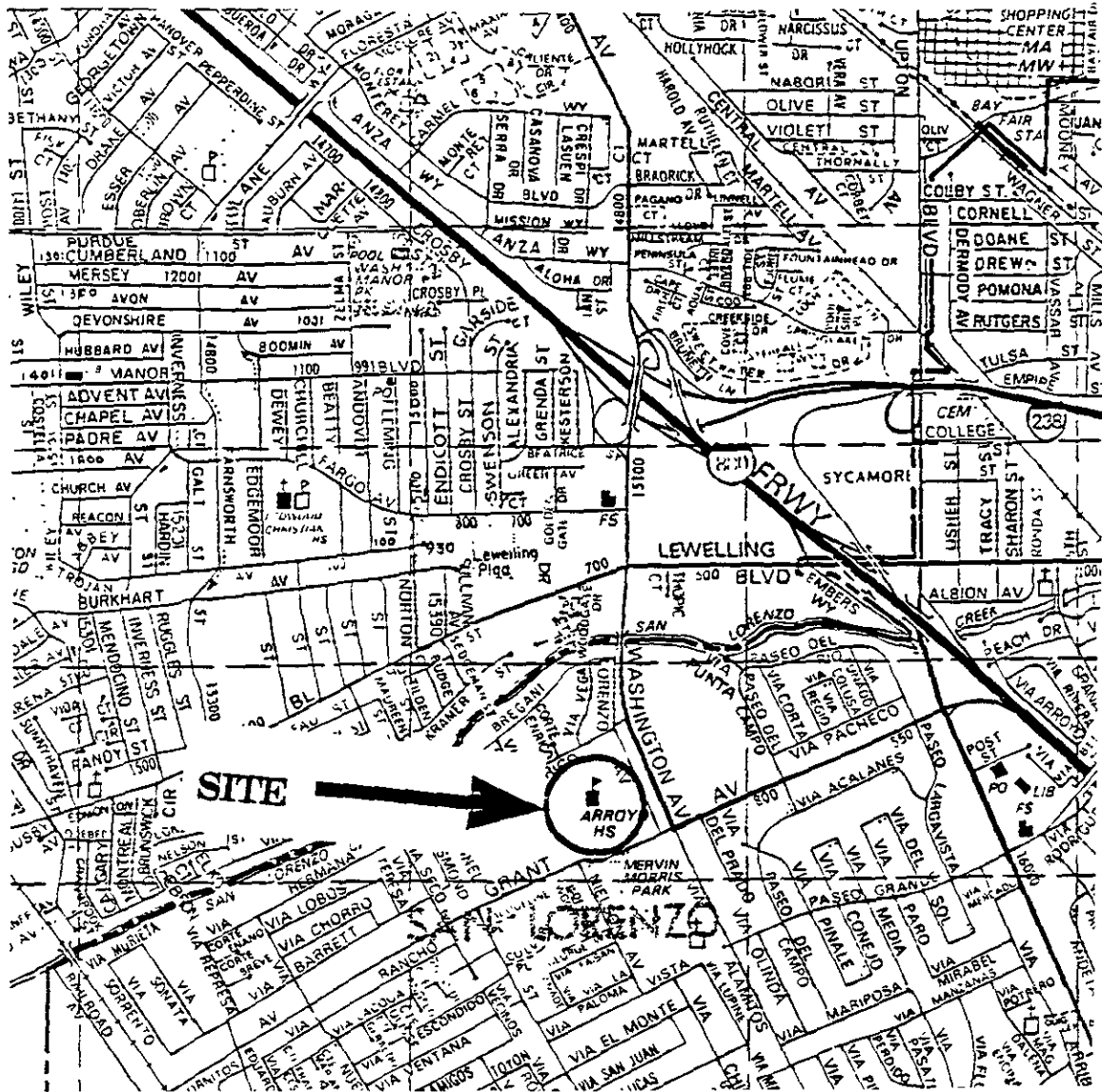
NOVEMBER, 1992

| WELL | TOP OF CASING<br>ELEVATION | DEPTH TO<br>GROUNDWATER | GROUNDWATER<br>ELEVATION |
|------|----------------------------|-------------------------|--------------------------|
| MW1  | 100.00                     | 12.20                   | 87.80                    |
| MW2  | 100.03                     | 12.18                   | 87.85                    |
| MW3  | 100.17                     | 12.32                   | 87.85                    |
| MW4  | 100.20                     | 12.60                   | 87.60                    |

**TABLE 3**  
**GROUNDWATER ELEVATIONS**  
**WELLS MW1, MW2, MW3, AND MW4**  
**MARCH 1993**  
**ARROYO SCHOOL**  
**San Lorenzo, California**

| WELL | TOP OF CASING<br>ELEVATION | DEPTH TO<br>GROUNDWATER | GROUNDWATER<br>ELEVATION |
|------|----------------------------|-------------------------|--------------------------|
| MW1  | 100.00                     | 9.30                    | 90.70                    |
| MW2  | 100.03                     | 9.22                    | 90.81                    |
| MW3  | 100.17                     | 9.66                    | 90.51                    |
| MW4  | 100.20                     | 9.84                    | 90.36                    |

*Shallowest  
water table  
yet &  
highest  
concentrations  
observed  
in  
samples*



L & W Environmental Services, Inc.  
2111 Jennings Street  
San Francisco, California

Vicinity Map  
Arroyo High School  
San Lorenzo, California

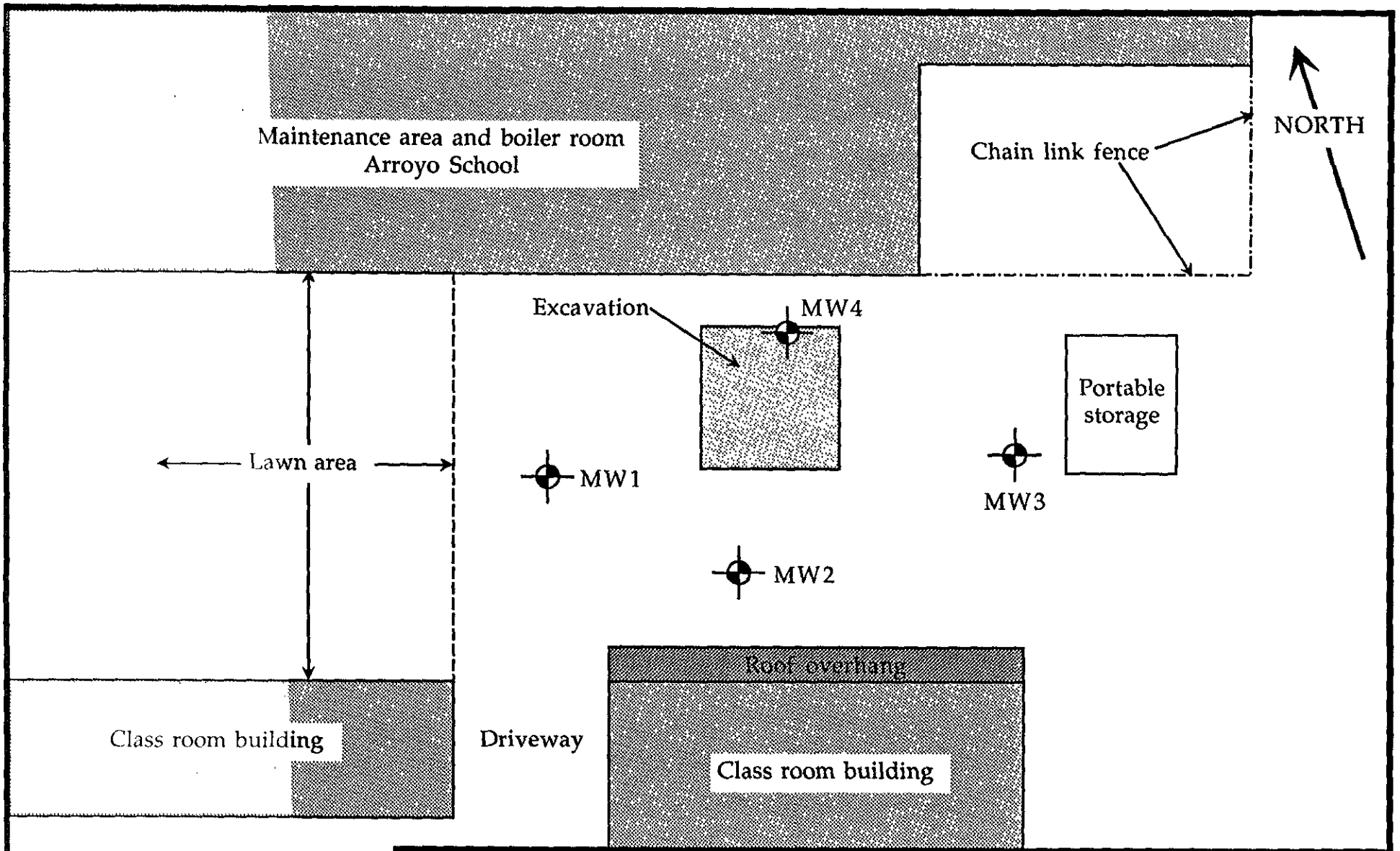
Project Number: 5186


Drawn by: SA

May, 1993

Figure Number: 1






 Location of monitoring well

**L & W Environmental Services, Inc.**  
 2111 Jennings Street  
 San Francisco, California

**Site Plan**  
**Arroyo School**  
 San Lorenzo, California

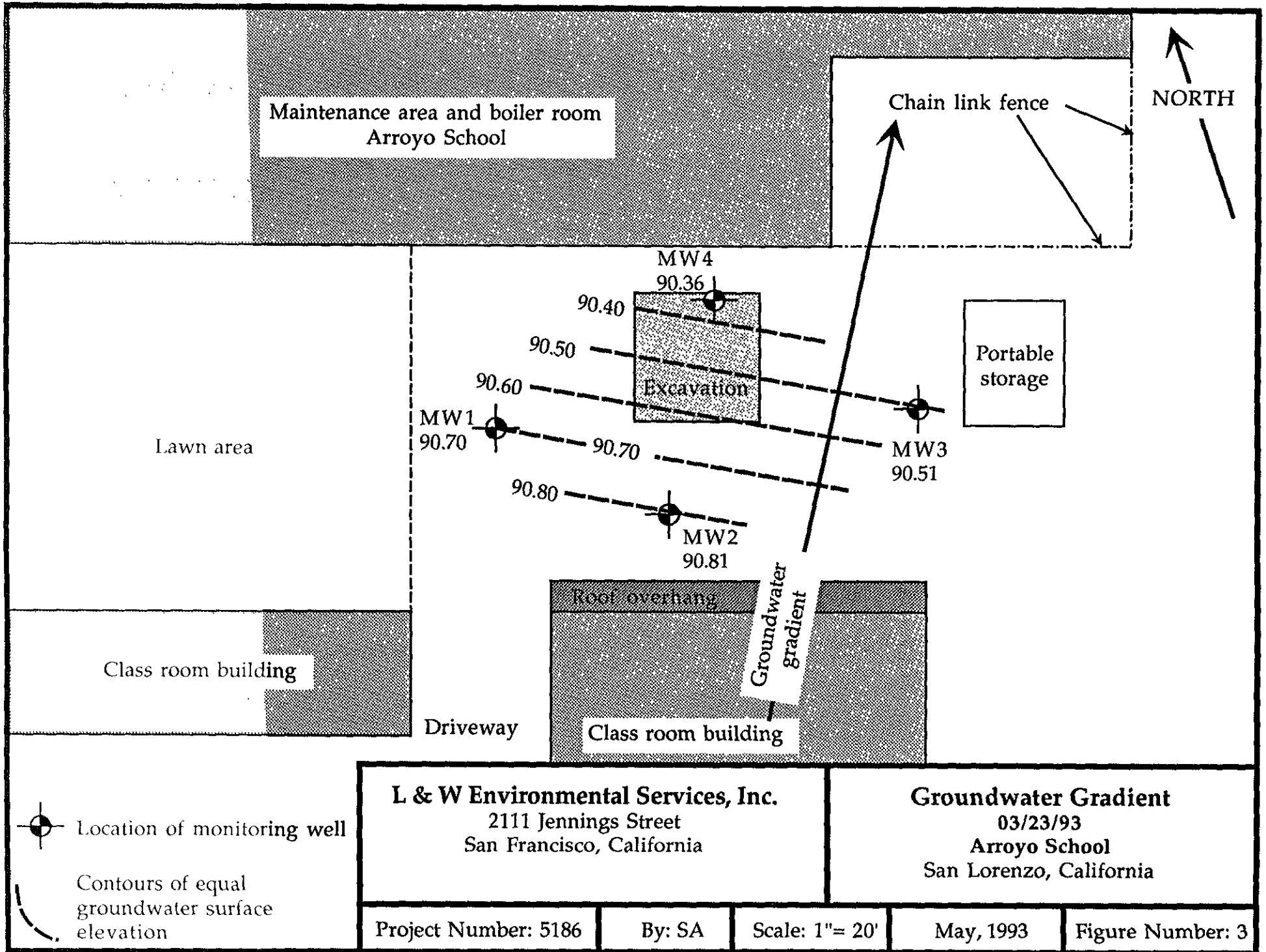
Project Number: 5186

By: SA

Scale: 1" = 20'

May, 1993

Figure Number: 2



**APPENDIX A**

**CHAIN-OF-CUSTODY FORM**  
**LABORATORY CERTIFICATES**

# CHAIN OF CUSTODY

ANALYST (Signature) Edith Harris  
 PROJECT NAME (Print) Arroyo School JOB NUMBER 5186D  
 DESCRIPTION Quarterly Ground Water Monitoring  
 ADDRESS 15701 Lorenzo, San Lorenzo

| CROSS REFERENCE NUMBER | DATE    | TIME | SOIL | WATER | SAMPLE LOCATION  | ANALYSIS REQUESTED                |               |                      |                 |           |        |  | REMARKS |  |            |
|------------------------|---------|------|------|-------|------------------|-----------------------------------|---------------|----------------------|-----------------|-----------|--------|--|---------|--|------------|
|                        |         |      |      |       |                  | TOTAL PETROLEUM HYDROCARBONS BTEX | VOC - BPA EPA | TOTAL OIL AND GREASE | TETRAETHYL LEAD | EPA - 870 | METALS |  |         |  |            |
| 5186D-mw1              | 3-23-93 | 1215 |      | X     | 9.30 FT INTO MW1 | X                                 | X             |                      | X               |           |        |  |         |  | 2 Lit 300a |
| 5186D-mw2              | 3-23-93 | 1230 |      | X     | 9.44 FT INTO MW2 | X                                 | X             |                      | X               |           |        |  |         |  | 2 Lit 300a |
| 2186D-mw3              | 3-23-93 | 1245 |      | X     | 9.76 FT INTO MW3 | X                                 | X             |                      | X               |           |        |  |         |  | 2 Lit 300a |
| 2186D-mw4              | 3-23-93 | 1300 |      | X     | 9.88 FT INTO MW4 | X                                 | X             |                      | X               |           |        |  |         |  | 2 Lit 300a |
|                        |         |      |      |       |                  |                                   |               |                      |                 |           |        |  |         |  |            |
|                        |         |      |      |       |                  |                                   |               |                      |                 |           |        |  |         |  |            |
|                        |         |      |      |       |                  |                                   |               |                      |                 |           |        |  |         |  |            |
|                        |         |      |      |       |                  |                                   |               |                      |                 |           |        |  |         |  |            |
|                        |         |      |      |       |                  |                                   |               |                      |                 |           |        |  |         |  |            |
|                        |         |      |      |       |                  |                                   |               |                      |                 |           |        |  |         |  |            |
|                        |         |      |      |       |                  |                                   |               |                      |                 |           |        |  |         |  |            |
|                        |         |      |      |       |                  |                                   |               |                      |                 |           |        |  |         |  |            |
|                        |         |      |      |       |                  |                                   |               |                      |                 |           |        |  |         |  |            |
|                        |         |      |      |       |                  |                                   |               |                      |                 |           |        |  |         |  |            |
|                        |         |      |      |       |                  |                                   |               |                      |                 |           |        |  |         |  |            |
|                        |         |      |      |       |                  |                                   |               |                      |                 |           |        |  |         |  |            |
|                        |         |      |      |       |                  |                                   |               |                      |                 |           |        |  |         |  |            |
|                        |         |      |      |       |                  |                                   |               |                      |                 |           |        |  |         |  |            |
|                        |         |      |      |       |                  |                                   |               |                      |                 |           |        |  |         |  |            |
|                        |         |      |      |       |                  |                                   |               |                      |                 |           |        |  |         |  |            |

|   |                      |   |                      |
|---|----------------------|---|----------------------|
| RELINQUISHED BY: (Signature) <u>Edith Harris</u>      | DATE <u>3-23-93</u>  | RECEIVED BY: (Signature) <u>LOW STORAGE</u>       | DATE <u>3-23-93</u>  |
| RELINQUISHED BY: (Signature) <u>R Colly</u>           | TIME <u>1600</u>     | RECEIVED BY: (Signature) <u>R Colly</u>           | TIME <u>1600</u>     |
| RELINQUISHED BY: (Signature) <u>Low STORAGE</u>       | DATE <u>1600</u>     | RECEIVED BY: (Signature) <u>Latshant Sidhu</u>    | DATE <u>1600</u>     |
| RELINQUISHED BY: (Signature) <u>Latshant Sidhu</u>    | TIME <u>3-24-93</u>  | RECEIVED BY: (Signature) <u>Sureshinder Sidhu</u> | TIME <u>3-24-93</u>  |
| RELINQUISHED BY: (Signature) <u>Sureshinder Sidhu</u> | DATE <u>03/25/93</u> | RECEIVED BY: (Signature) <u>Kulwinder Sidhu</u>   | DATE <u>03/25/93</u> |
| RELINQUISHED BY: (Signature) <u>Sureshinder Sidhu</u> | TIME <u>6 AM</u>     | RECEIVED BY: (Signature) <u>Kulwinder Sidhu</u>   | TIME <u>6 AM</u>     |
| RELINQUISHED BY: (Signature) <u>Sureshinder Sidhu</u> | DATE <u>03/25/93</u> | RECEIVED BY: (Signature) <u>Kulwinder Sidhu</u>   | DATE <u>03/25/93</u> |
| RELINQUISHED BY: (Signature) <u>Sureshinder Sidhu</u> | TIME <u>8 AM</u>     | RECEIVED BY: (Signature) <u>Kulwinder Sidhu</u>   | TIME <u>8 AM</u>     |
| RELINQUISHED BY: (Signature) <u>Sureshinder Sidhu</u> | DATE                 | RECEIVED BY: (Signature)                          | DATE                 |
| RELINQUISHED BY: (Signature)                          | TIME                 | RECEIVED BY: (Signature)                          | TIME                 |

## CERTIFICATE OF ANALYSIS

STATE LICENSE NO. 1150

Date Received: 03/25/93  
Date Analyzed: 04/01/93  
Date Reported: 04/08/93  
Job #: 74523

Attn: George Wilson  
L&W Environmental Services, Inc.  
2111 Jennings Street  
San Francisco, CA 94124

Project: Arroyo School  
15701 Lorenzo  
San Lorenzo, CA

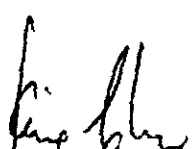
Matrix: Water

Total Petroleum Hydrocarbon Analysis  
DHS Extraction Method (LUFT)  
mg/L

| <u>Lab I.D.</u> | <u>Client I.D.</u> | <u>Diesel Range</u> | <u>MDL</u> |
|-----------------|--------------------|---------------------|------------|
| 74523-1         | 5186D-MW1          | 0.08                | 0.05       |
| 74523-2         | 5186D-MW2          | 0.08                | 0.05       |
| 74523-3         | 5186D-MW3          | 0.09                | 0.05       |
| 74523-4         | 5186D-MW4          | 0.13                | 0.05       |

QA/QC: Matrix Spike Recovery for Diesel: 99%  
Matrix Spike Duplicate Recovery for Diesel: 83%

MDL: Method Detection Limit. Compound below this level would not be detected.

  
Jaime Chow  
Laboratory Director

JC/td

OUTSTANDING QUALITY AND SERVICE  
CALIFORNIA STATE CERTIFIED LABORATORY

**CERTIFICATE OF ANALYSIS**

STATE LICENSE NO. 1150

Attn: George Wilson  
 L&W Environmental Services, Inc.  
 2111 Jennings Street  
 San Francisco, CA 94124

Date Received: 03/25/93  
 Date Analyzed: 03/25/93  
 Date Reported: 04/08/93  
 Job #: 74523

Project: Arroyo School  
 15701 Lorenzo  
 San Lorenzo, CA  
 Matrix: Water

Aromatic Volatile Hydrocarbon Analysis  
 EPA Method 602  
 µg/L

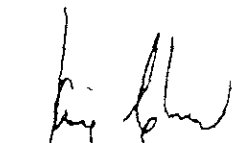
| Lab I.D. | Client I.D. | Benzene | MDL | Toluene | MDL |
|----------|-------------|---------|-----|---------|-----|
| 74523-1  | 5186D-MW1   | ND<0.3  | 0.3 | ND<0.3  | 0.3 |
| 74523-2  | 5186D-MW2   | 0.33    | 0.3 | 4.0     | 0.3 |
| 74523-3  | 5186D-MW3   | 0.70    | 0.3 | 13.0    | 0.3 |
| 74523-4  | 5186D-MW4   | 0.40    | 0.3 | 1.9     | 0.3 |

| Lab I.D. | Client I.D. | Ethyl-benzene | MDL | Xylenes | MDL |
|----------|-------------|---------------|-----|---------|-----|
| 74523-1  | 5186D-MW1   | ND<0.3        | 0.3 | ND<0.6  | 0.6 |
| 74523-2  | 5186D-MW2   | ND<0.3        | 0.3 | 1.7     | 0.6 |
| 74523-3  | 5186D-MW3   | ND<0.3        | 0.3 | 1.7     | 0.6 |
| 74523-4  | 5186D-MW4   | ND<0.3        | 0.3 | ND<0.6  | 0.6 |

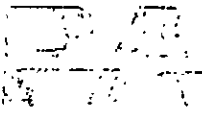
QA/QC: Matrix Spike Recovery for Benzene: 118%  
 Matrix Spike Recovery for Toluene: 105%  
 Matrix Spike Recovery for o-Xylene: 96%

Matrix Spike Duplicate Recovery for Benzene: 121%  
 Matrix Spike Duplicate Recovery for Toluene: 111%  
 Matrix Spike Duplicate Recovery for o-Xylene: 103%

MDL: Method Detection Limit. Compound below this level would not be detected.

  
 \_\_\_\_\_  
 Jaime Chow  
 Laboratory Director

JC/td



Precision Analytical Laboratory, Inc.

4136 LAKESIDE DRIVE, RICHMOND, CA 94806

PHONE (510) 222-3002

FAX (510) 222-1251

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Date Received: 03/25/93

Date Reported: 04/08/93

Job #: 74523

Attn: George Wilson  
L&W Environmental Services, Inc.  
2111 Jennings Street  
San Francisco, CA 94124

Project: Arroyo School  
15701 Lorenzo  
San Lorenzo, CA

Matrix: Water

Total Oil and Grease Analysis  
EPA Method 5520B  
mg/L

| <u>Lab I.D.</u> | <u>Client I.D.</u> | <u>Total Oil and Grease</u> | <u>MDL</u> |
|-----------------|--------------------|-----------------------------|------------|
| 74523-1         | 5186D-MW1          | ND<5.0                      | 5.0        |
| 74523-2         | 5186D-MW2          | ND<5.0                      | 5.0        |
| 74523-3         | 5186D-MW3          | ND<5.0                      | 5.0        |
| 74523-4         | 5186D-MW4          | ND<5.0                      | 5.0        |

QA/QC: Matrix Spike Recovery: 93%

MDL: Method Detection Limit. Compound below this level would not be detected.

Jaime Chow  
Laboratory Director

JC/td

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