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**THIRD QUARTER 1995 GROUND WATER  
MONITORING REPORT  
S&S BUILDING SUPPLY  
SAN LEANDRO, CALIFORNIA**

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**LOWNEY ASSOCIATES**  
Environmental/Geotechnical/Engineering Services

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# LOWNEY ASSOCIATES

Environmental / Geotechnical / Engineering Services

September 25, 1995  
1063-1, MV092504

Mr. Bob Gardner  
**S&S BUILDING SUPPLY**  
701 Fremont Avenue  
San Leandro, California 94577

**RE: THIRD QUARTER 1995  
GROUND WATER  
MONITORING REPORT  
S&S BUILDING SUPPLY  
SAN LEANDRO, CALIFORNIA**

Dear Mr. Gardner:

In accordance with your request, we are pleased to present the third quarter 1995 ground water monitoring report for the referenced site, located at 701 Fremont Avenue in San Leandro, California.

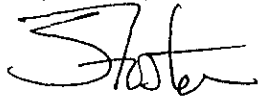
To evaluate the ground water quality, ground water samples were collected from monitoring wells MW-1, MW-2, and MW-3 on April 28, 1995. Laboratory analysis of the ground water samples detected gasoline range petroleum hydrocarbons at concentrations ranging from 69 to 2,000 parts per billion. The concentrations have notably decreased in the three on-site monitoring wells compared to those detected during previous sampling events.

In addition, per the request of the Alameda County Water District, the top of casing elevations of monitoring wells MW-1, MW-2, and MW-3 were surveyed to a City of San Leandro benchmark located in the intersection of Floresta Boulevard and Del Monte Way.

We refer you to the text of the report for details regarding our investigation. If you have any questions, please call.

Very truly yours,

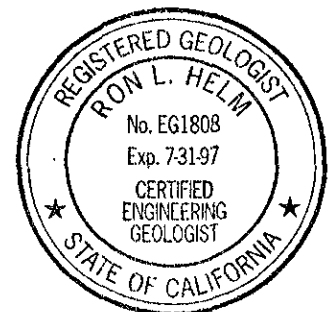
**LOWNEY ASSOCIATES**



Stason I. Foster, P.E.  
Associate  
Environmental Engineer



Ron L. Helm, C.E.G.  
Principal  
Environmental Geologist



RLH:SIF:BAF:tjc

Copies: Addressee (2)  
Alameda County Department of Environmental Health (1)  
Attn: Mr. Scott Seery

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**THIRD QUARTER 1995 MONITORING REPORT**

For

**S&S BUILDING SUPPLY**  
San Leandro, California

To

Mr. Bob Gardner  
**S&S BUILDING SUPPLY**  
701 Fremont Avenue  
San Leandro, California 94577

September 1995

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**THIRD QUARTER 1995 GROUND WATER MONITORING REPORT**  
**S&S BUILDING SUPPLY**  
**SAN LEANDRO, CALIFORNIA**

**1.0 INTRODUCTION**

In this report, we present the results of the third quarter 1995 monitoring of ground water at 701 Fremont Avenue in San Leandro, California. The purpose of this work was to evaluate current ground water quality.

Two 1,000-gallon gasoline underground storage tanks (USTs) and dispenser island were formerly located on-site. During the removal of the USTs in 1989, two soil samples were collected from beneath the northern and southern ends of each UST. Laboratory analysis of soil samples collected from beneath the northern and southern ends of the westernmost UST detected petroleum hydrocarbons in the gasoline range (TPHg) at 2,300 parts per million (ppm) and 7,600 ppm, respectively. Laboratory analysis of soil samples collected from beneath the easternmost UST did not detect TPHg or benzene, ethylbenzene, toluene, or xylenes (BTEX) above the laboratory detection limits.

We understand that additional soil was removed from the UST excavation; however, it does not appear that any additional verification soil samples were collected. The excavation reportedly was extended to ground water at a depth of 10 to 12 feet. Analysis of five composite soil samples collected from the stockpiled soil after aeration did not detect TPHg or BTEX compounds. The stockpiled soil was subsequently used to backfill the excavation.

**1.1 Purpose**

**1.2 Site Background**

The scope of work performed during this investigation included the following:

### 1.3 Scope of Work

- ▼ Surveying of the top of casing elevations relative to mean sea level (msl) and measurement of the on-site ground water flow direction.
- ▼ Collection of ground water samples from on-site monitoring wells MW-1, MW-2, and MW-3.
- ▼ Laboratory analysis of the ground water samples collected.

## 2.0 GROUND WATER QUALITY INVESTIGATION

To evaluate current ground water quality, ground water samples from the three on-site wells were collected on August 15, 1995. The samples were analyzed for TPHg/BTEX (EPA Test Method 8015/8020). The analytical results are presented in Table 1. A discussion of well sampling protocol and copies of all laboratory reports are presented in Appendices A and B, respectively.

### 2.1 Ground Water Quality

TABLE 1. Analytical Results for Ground Water Samples  
(concentrations in parts per billion)

Well Number	Date Sampled	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes
MW-1	11/03/94	35,000	<25	<25	140	430
	01/25/95	4,100	22	9.4	25	71
	04/2//95	3,600	9.6	7.0	39	120
	08/15/95	1,300	15	<5.0	46	90

continued

TABLE 1. Analytical Results for Ground Water Samples  
(concentrations in parts per billion)  
(continued)

Well Number	Date Sampled	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes
MW-2	11/03/94	1,200	<2.5	<2.5	<2.5	<2.5
	01/25/95	330	<0.50	<0.50	<0.50	<0.50
	04/28/95	220	1.8	<0.50	0.58	4.2
	08/15/95	69	<0.50	<0.50	<0.50	<0.50
MW-3	11/03/94	2,400	4.2	<2.0	40	43
	11/03/94*	3,000	5.6	<2.0	39	44
	01/25/95	2,800	27	<5.0	110	150
	04/28/95	6,500	12	11	300	410
	08/15/95	2,000	9.9	<5.0	64	45
Drinking Water Standards <sup>a</sup>		NE	1.0	1,000	680	1,750

- -U.S. Environmental Protection Agency, "Drinking Water Standards and Health Advisory Table", August 1991
- < -Compound not detected above the specified laboratory detection limit.
- -Split Sample
- NE -Not Established

To evaluate the ground water flow direction at the site, the top of casing elevation of each well was surveyed relative to mean sea level. Surveying protocols are discussed in Appendix A. The static ground water levels in monitoring wells MW-1, MW-2, and MW-3 were then measured using an electronic depth sounder. The ground water and top of casing elevations are presented in Table 2. As shown on Figure 3, the ground water flow direction beneath the site is towards the south, which is consistent with the previous measurements.

## 2.2 Ground Water Flow

TABLE 2. Ground Water and Top of Casing Elevations  
(measurements in feet)

Well Number	Date	Top of Casing Elevation	Ground Water Depth*	Ground Water Elevation
MW-1	11/03/94	100.05*	15.46	84.59
	01/25/95		12.21	87.84
	04/28/95		11.07	88.98
	08/15/95	33.90**	12.43	21.47
MW-2	11/03/94	100.00*	15.29	84.71
	01/25/95		12.06	87.94
	04/28/95		10.86	89.14
	08/15/95	33.85**	12.22	21.63
MW-3	11/03/94	99.58*	14.96	84.62
	01/25/95		11.75	87.83
	04/28/95		10.59	88.99
	08/15/95	33.43**	11.96	21.47

\* Relative top of casing elevation

\*\* Surveyed to City of San Leandro benchmark located in the intersection of Floresta Boulevard and Del Monte Way (Elevation = 32.403 feet above mean sea level).

■ Measured from top of casing

### 3.0 CONCLUSIONS AND RECOMMENDATIONS

The purpose of this investigation was to evaluate the current ground water quality in the existing on-site monitoring wells.

Laboratory analysis of the ground water samples collected from the on-site monitoring wells detected gasoline range petroleum hydrocarbons ranging from 69 to 2,000 ppb. The concentrations have notably decreased in the three on-site monitoring wells compared to those detected during previous sampling events.

In our opinion, a continued decrease in petroleum hydrocarbon concentrations would be expected due to natural degradation and attenuation processes.

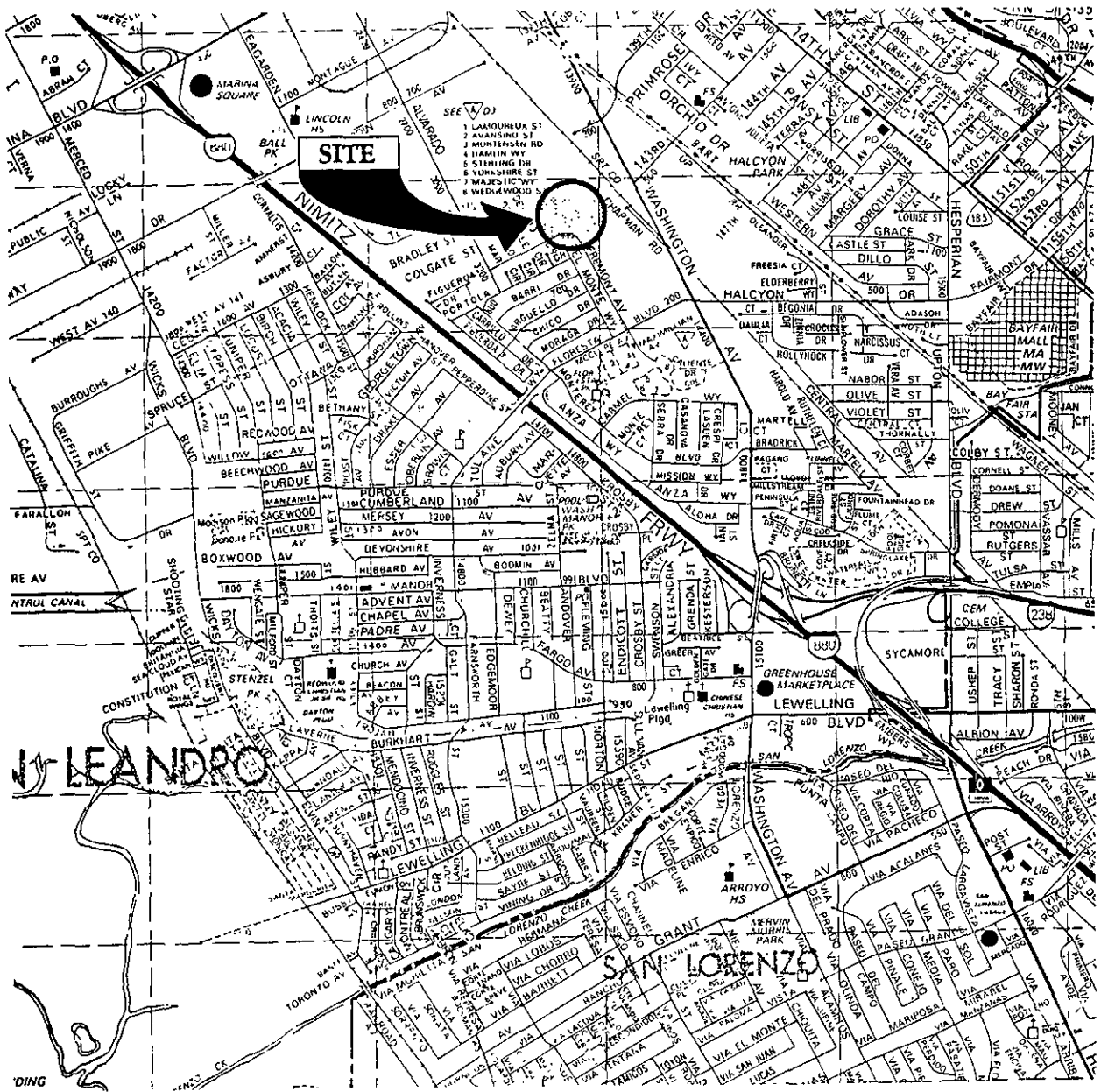


Based on the results of the past four consecutive sampling events, a decrease in sampling frequency from quarterly to semi-annually is justified and, in our opinion, would be sufficient to evaluate changes in ground water quality over time.

**4.0 LIMITATIONS**

This report was prepared for the use of S&S Building Supply in evaluating ground water quality at the referenced site at the time of this study. We make no warranty, expressed or implied, except that our services have been performed in accordance with environmental principles generally accepted at this time and location. The chemical and other data presented in this report can change over time and are applicable only to the time this study was performed.

\* \* \* \* \*



"Reproduced with permission granted by THOMAS BROS. MAPS."

1063-1, 9/95 BAF'EB

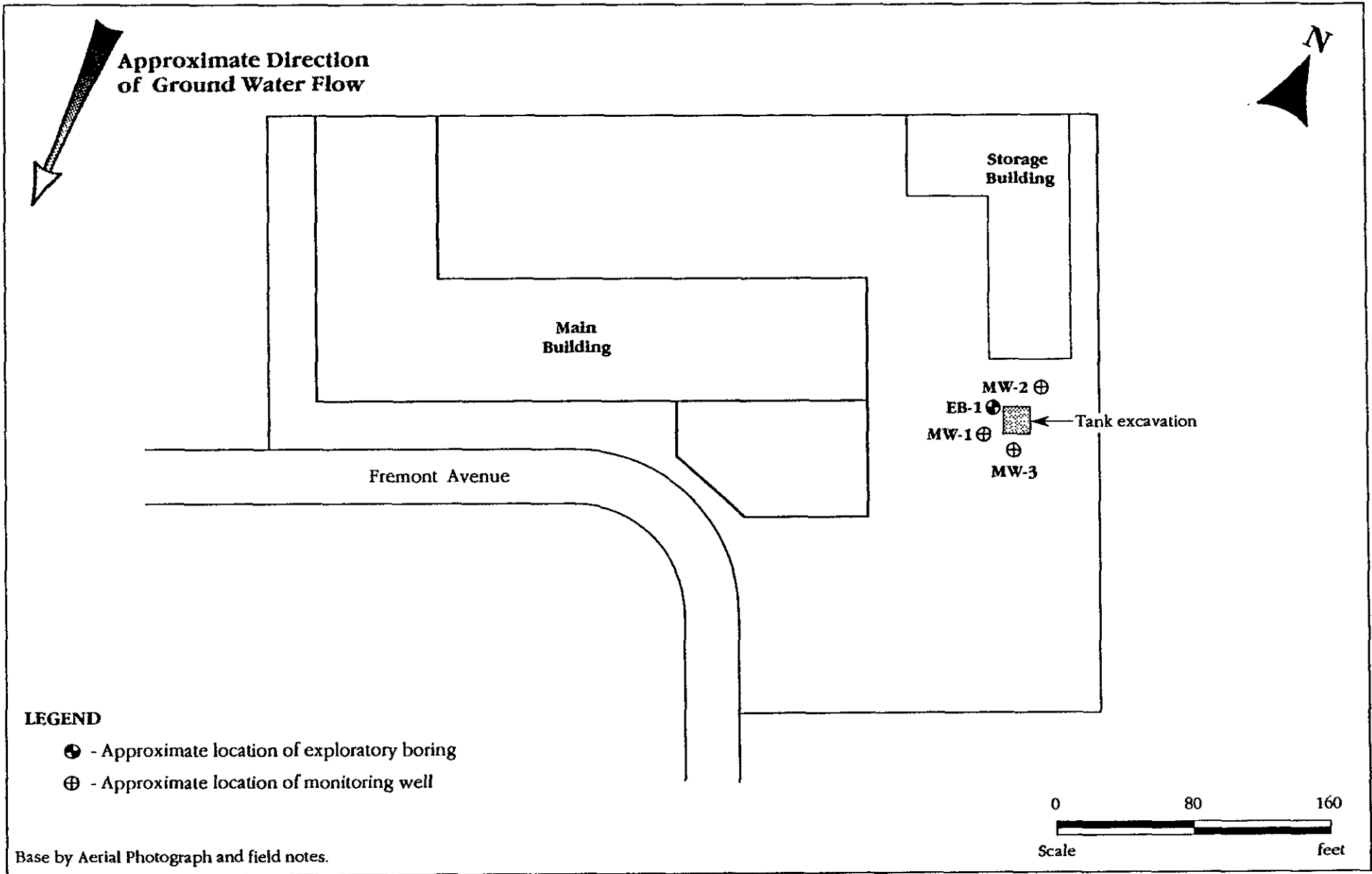
VICINITY MAP

S & S BUILDING SUPPLY  
San Leandro, California

**LOWNEY ASSOCIATES**  
Environmental/Geotechnical/Engineering Services

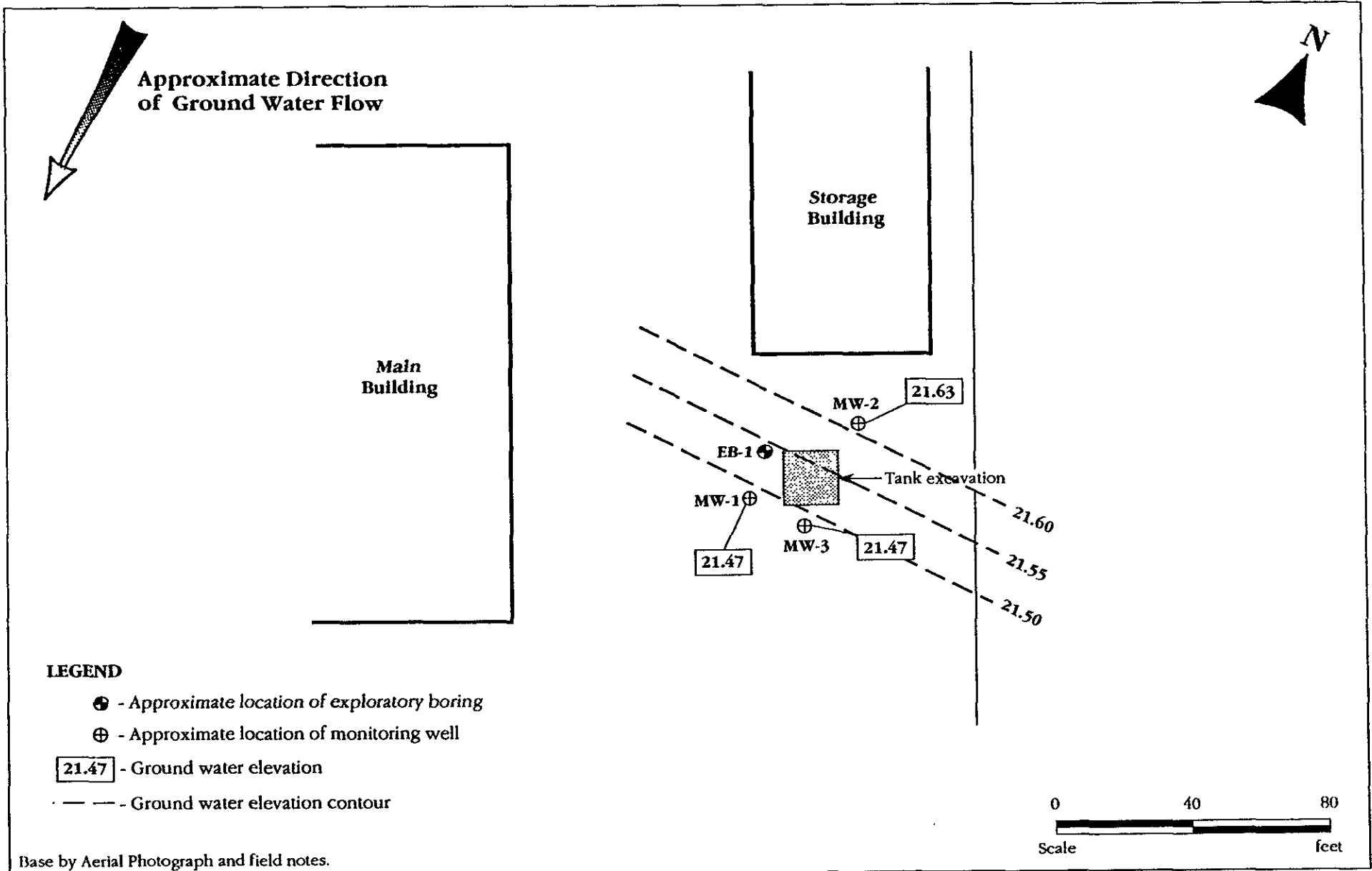
FIGURE 1

1063-1



1063-1, 8/95 BAF'EB

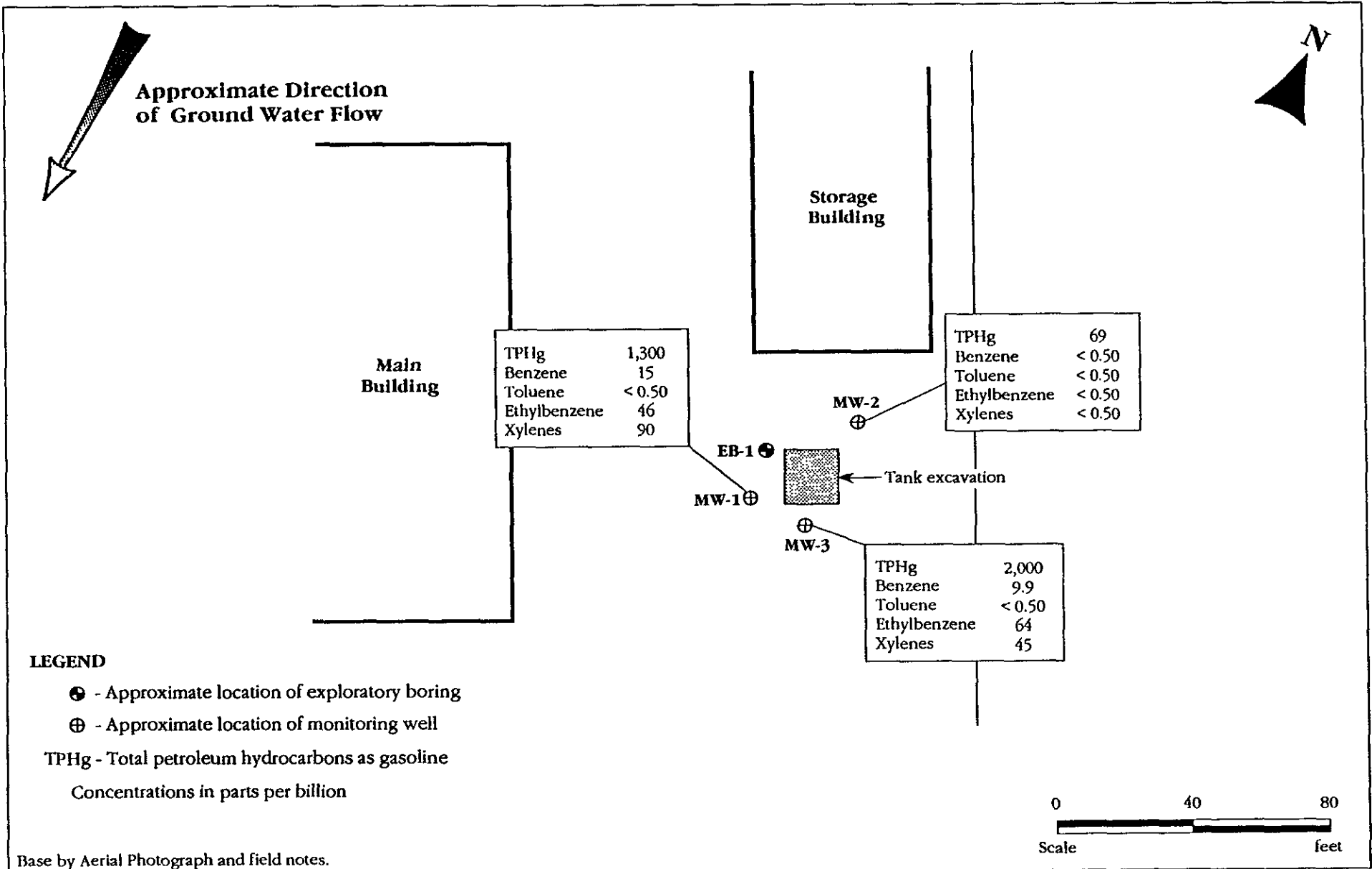
**SITE PLAN**  
**S & S BUILDING SUPPLY**  
 San Leandro, California



1063-1, 9/95 BAF\*EB

**GROUND WATER ELEVATION MAP**

**S & S BUILDING SUPPLY**  
San Leandro, California



1063-1,9/95BAF\*EB

**ANALYTICAL RESULTS FOR GROUND WATER SAMPLES**

**S & S BUILDING SUPPLY**  
San Leandro, California

**APPENDIX A**  
**WELL SAMPLING AND SURVEYING PROTOCOL AND RECORDS**

A Teflon bailer was used to purge a minimum of four well casing volumes of water from each well. After purging each well volume, pH, temperature, and conductivity measurements were recorded. In general, these measurements stabilize after three to four well volumes. If, after the fourth well volume the pH and conductivity did not stabilize, additional well volumes were removed until these measurements did stabilize. If the yield was low and the well was pumped dry, the well was allowed to recharge to 80 percent of the initial water level before sampling. Samples were collected in appropriate sample bottles, labeled, and immediately placed into an ice-cooled chest for delivery to a state certified analytical laboratory for analysis.

Ground Water  
Sampling

All well sampling equipment was cleaned with an aqueous tri-sodium phosphate solution and distilled water or steam cleaned prior to entering each well.

Equipment  
Decontamination

Well development and sampling records are attached.

To evaluate ground water flow direction, the lateral locations of the wells were established using a metered wheel. The top of casing elevations of the monitoring wells were then surveyed by a two-person crew using a Leitz level and an engineer's graduated rod to a City of San Leandro benchmark located in the intersection of Floresta Boulevard and Del Monte Way (Elevation = 32.403 feet above mean sea level).

Surveying

Project Number 1003-1

Project Name S+S Building

Field Geologist/Engineer BAF

Well Number MW-1

Boring Diameter \_\_\_\_\_ (inches)

Well Total Depth (completed) 25 (feet)

Casing Diameter 2 (inches)

Development Date \_\_\_\_\_ Method \_\_\_\_\_ Volume Produced \_\_\_\_\_ (liter/gal)

### WELL VOLUME CONVERSION FACTORS

#### 2-INCH CASING DIAMETER

VOL (GALLONS) = FEET OF WATER x 0.17  
VOL (LITERS) = FEET OF WATER x 0.62

#### 4-INCH CASING DIAMETER

VOL (GALLONS) = FEET OF WATER x 0.66  
VOL (LITERS) = FEET OF WATER x 2.5

Sampling Date 8-15-95 Time 4:00

Method Teflon Dailer

Static Water Level Prior to Purging 12.43 (ft)  
(Measured from top of casing)  $H+H_2O = 12.57$

Water Level After Recovery 12.42 (ft)

14.9  
80 Percent Recharged Yes  No

Well Volume 7.8 (liter/gal)

4  
Three Well Volumes 31.2 (liter/gal)

Total Produced 32 (liter/gal)

Number of Well Volumes 4

Production Time \_\_\_\_\_ (min)

Production Rate \_\_\_\_\_ (l/min)

Well Volumes	ph	Conductivity $\mu S \times 10$	Temp °F
1	7.9	18	66
2	7.8	8	66
3	7.7	5	67
4	7.7	3	67
5			
6			
7			
8			
9			
10			

Sample Description MW-1

Laboratory SEQUOIA

Deliver  Pick-Up  Date 8-15-95

Comments \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Project Number 1063-1

Project Name 5#5 Buildings

Field Geologist/Engineer BAF

Well Number MW-2

Boring Diameter \_\_\_\_\_ (inches)

Well Total Depth (completed) 25 (feet)

Casing Diameter 2 (inches)

Development Date \_\_\_\_\_ Method \_\_\_\_\_ Volume Produced \_\_\_\_\_ (liter/gal)

### WELL VOLUME CONVERSION FACTORS

#### 2-INCH CASING DIAMETER

VOL (GALLONS) = FEET OF WATER x 0.17  
VOL (LITERS) = FEET OF WATER x 0.62

#### 4-INCH CASING DIAMETER

VOL (GALLONS) = FEET OF WATER x 0.66  
VOL (LITERS) = FEET OF WATER x 2.5

Sampling Date 8-15-95 Time 3:00

Method Teflon Bailer

Static Water Level Prior to Purging 12.22 (ft)  
(Measured from top of casing) H<sub>2</sub>O = 12.78

Water Level After Recovery 12.25 (ft)

14.8  
80 Percent Recharged Yes  No

Well Volume 7.9 (liter/gal)

7 Three Well Volumes 31.7 (liter/gal)

Total Produced 32 (liter/gal)

Number of Well Volumes 4

Production Time \_\_\_\_\_ (min)

Production Rate \_\_\_\_\_ (L/min)

Well Volumes	ph	Conductivity $\mu\text{S} \times 10$	Temp $^{\circ}\text{F}$
1	7.4	32	68
2	7.4	25	67
3	7.4	21	68
4	7.4	20	68
5			
6			
7			
8			
9			
10			

Sample Description MW-2

Laboratory SEQUOIA

Deliver  Pick-Up  Date 8-15-95

Comments \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



Project Number 1063-1

Project Name S&S Buildings

Field Geologist/Engineer BAF

Well Number MW-3

Boring Diameter \_\_\_\_\_ (inches)

Well Total Depth (completed) 25 (feet)

Casing Diameter 2 (inches)

Development Date \_\_\_\_\_ Method \_\_\_\_\_ Volume Produced \_\_\_\_\_ (liter/gal)

### WELL VOLUME CONVERSION FACTORS

#### 2-INCH CASING DIAMETER

VOL (GALLONS) = FEET OF WATER x 0.17  
VOL (LITERS) = FEET OF WATER x 0.62

#### 4-INCH CASING DIAMETER

VOL (GALLONS) = FEET OF WATER x 0.66  
VOL (LITERS) = FEET OF WATER x 2.5

Sampling Date 8-15-95 Time 5:00

Method Teflon Bailor

Static Water Level Prior to Purging 11.96 (ft)  
(Measured from top of casing) (47/420 = 13.04)

Water Level After Recovery 11.99 (ft)

14.4  
80 Percent Recharged Yes  No

Well Volume 8.1 (liter/gal)

4 Three Well Volumes 32.3 (liter/gal)

Total Produced 33 (liter/gal)

Number of Well Volumes 4

Production Time \_\_\_\_\_ (min)

Production Rate \_\_\_\_\_ (l/min)

Well Volumes	ph	Conductivity $\mu\text{S} \times 10$	Temp °F
1	7.8	23	69
2	7.5	16	67
3	7.5	12	68
4	7.5	14	68
5			
6			
7			
8			
9			
10			

Sample Description MW-3

Laboratory Sequoia

Deliver  Pick-Up  Date 8-15-95

Comments \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**APPENDIX B**  
**ANALYTICAL RESULTS**

The chilled samples were delivered to a state certified analytical laboratory. Chain of custody documentation was maintained for all samples. Attached are copies of the analytical results and chain of custody forms.



Lowney Associates  
1600 S. Main St, Ste 125  
Walnut Creek, CA 94596  
Attention: Brock Foster

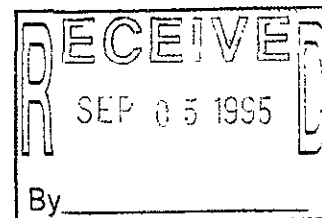
Client Project ID: S&S Building Supply; #1063-1  
Sample Matrix: Water  
Analysis Method: EPA 5030/8015 Mod./8020  
First Sample #: 508-0911

Sampled: Aug 15, 1995  
Received: Aug 15, 1995  
Reported: Aug 29, 1995

QC Batch Number: GC082695 GC082695 GC082695

**TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION**

Analyte	Reporting Limit µg/L	Sample I.D. 508-0911 MW-2	Sample I.D. 508-0912 MW-3	Sample I.D. 508-0913 MW-1
Purgeable Hydrocarbons	50	69	2,000	1,300
Benzene	0.50	N.D.	9.9	15
Toluene	0.50	N.D.	N.D.	N.D.
Ethyl Benzene	0.50	N.D.	64	46
Total Xylenes	0.50	N.D.	45	90
Chromatogram Pattern:		Gasoline	Gasoline	Gasoline



**Quality Control Data**

Report Limit Multiplication Factor:	1.0	10	10
Date Analyzed:	8/26/95	8/26/95	8/28/95
Instrument Identification:	HP-4	HP-4	HP-5
Surrogate Recovery, %: (QC Limits = 70-130%)	86	80	85

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.  
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL, #1271

*Kevin Van Slambrook*  
Kevin Van Slambrook  
Project Manager





Lowney Associates  
1600 S. Main St, Ste 125  
Walnut Creek, CA 94596  
Attention: Brock Foster

Client Project ID: S&S Building Supply; #1063-1  
Matrix: Liquid

QC Sample Group: 5080911-913

Reported: Aug 29, 1995

**QUALITY CONTROL DATA REPORT**

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC082695 802004A	GC082695 802004A	GC082695 802004A	GC082695 802004A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	-	-	-	-
Analyst:	M. Creusere	M. Creusere	M. Creusere	M. Creusere
MS/MSD #:	5080896	5080896	5080896	5080896
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	8/26/95	8/26/95	8/26/95	8/26/95
Analyzed Date:	8/26/95	8/26/95	8/26/95	8/26/95
Instrument I.D.#:	HP-4	HP-4	HP-4	HP-4
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L
Result:	20	21	21	64
MS % Recovery:	100	105	105	107
Dup. Result:	20	20	21	64
MSD % Recov.:	100	100	105	107
RPD:	0.0	4.9	0.0	0.0
RPD Limit:	0-20	0-20	0-20	0-20

LCS #:	2LCS082695	2LCS082695	2LCS082695	2LCS082695
Prepared Date:	8/26/95	8/26/95	8/26/95	8/26/95
Analyzed Date:	8/26/95	8/26/95	8/26/95	8/26/95
Instrument I.D.#:	HP-4	HP-4	HP-4	HP-4
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L
LCS Result:	20	21	21	63
LCS % Recov.:	99	104	105	106

MS/MSD LCS Control Limits	71-133	72-128	72-130	71-120
---------------------------	--------	--------	--------	--------

**Please Note:**  
The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.  
\*\* MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

SEQUOIA ANALYTICAL, #1271  
*Kevin Van Slambrook*  
Kevin Van Slambrook  
Project Manager





Lowney Associates  
1600 S. Main St, Ste 125  
Walnut Creek, CA 94596  
Attention: Brock Foster

Client Project ID: S&S Building Supply; #1063-1  
Matrix: Liquid

QC Sample Group: 5080911-913

Reported: Aug 29, 1995

**QUALITY CONTROL DATA REPORT**

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC082895	GC082895	GC082895	GC082895
	802004A	802004A	802004A	802004A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	-	-	-	-
Analyst:	K. Nill	K. Nill	K. Nill	K. Nill
MS/MSD #:	5081516	5081516	5081516	5081516
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	8/28/95	8/28/95	8/28/95	8/28/95
Analyzed Date:	8/28/95	8/28/95	8/28/95	8/28/95
Instrument I.D.#:	HP-5	HP-5	HP-5	HP-5
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L
Result:	23	24	24	73
MS % Recovery:	115	120	120	122
Dup. Result:	20	20	20	62
MSD % Recov.:	100	100	100	103
RPD:	14	18	18	16
RPD Limit:	0-20	0-20	0-20	0-20

LCS #:	3LCS082895	3LCS082895	3LCS082895	3LCS082895
Prepared Date:	8/28/95	8/28/95	8/28/95	8/28/95
Analyzed Date:	8/28/95	8/28/95	8/28/95	8/28/95
Instrument I.D.#:	HP-5	HP-5	HP-5	HP-5
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L
LCS Result:	18	18	18	57
LCS % Recov.:	90	92	92	95

MS/MSD LCS Control Limits	71-133	72-128	72-130	71-120
---------------------------	--------	--------	--------	--------

**Please Note:**

The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

\*\* MS=Matrix Spike, MSD=MS Duplicate, RPD=Relative % Difference

SEQUOIA ANALYTICAL, #1271

Kevin Van Slambrook  
Project Manager



