



AEGIS ENVIRONMENTAL INC. DEC 14 11:23 11

801 Riverside Avenue, Suite C, Roseville, CA 95678

916 • 782-2110 / 916 • 969-2110 / FAX 916 • 786-7830

December 11, 1990

Lowell Miller  
Alameda County Health Care Services  
Dept of Environmental Health  
Hazardous Materials Division  
80 Swan Way, Room 200  
Oakland, CA. 94621

RE: Shell Service Station  
318 S. Livermore Ave.  
Livermore, CA.

Dear Mr. Miller:

Enclosed for your review is the Hydrogeologic Investigation Results Report and analytical results from groundwater samples taken October 2, 1990, for the above referenced site. I am requesting closure for the site because of the successive non-detect status for all analyses.

If you have any questions please contact me at (916) 782-2110.

Sincerely,

*David L. Poulsen*  
David L. Poulsen  
Staff Geologist

DLP/rc

Enclosures

*(Emergency)*

*one hole here  
anodes  
detector*

*handwritten field  
log  
need rough notes  
M u screen 60-45  
wouldn't catch  
but maybe  
next year*

*MWS  
(JFW)*



# SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520  
(415) 686-9600 • FAX (415) 686-9689



10/18/90

Aegis Environmental Consultants  
801 Riverside Avenue, Suite C  
Roseville, CA 95678  
Attention: Pat Wright

Project: 89-041/Shell - Livermore

Enclosed are the results from 4 water samples received at Sequoia Analytical on October 3, 1990. The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE OF COLLECTION	TEST METHOD
010-0120 A-D	Water, MW-1	10/2/90	EPA 5030/8015/8020
010-0121 A-D	Water, MW-2	10/2/90	EPA 5030/8015/8020
010-0122 A-D	Water, MW-3	10/2/90	EPA 5030/8015/8020
010-0123 A-D	Water, MW-4	10/2/90	EPA 5030/8015/8020

Please contact me if you have any questions. In the meantime, thank you for the opportunity to work with you on this project.

Very truly yours,

SEQUOIA ANALYTICAL

Belinda C. Vega  
Laboratory Director



# SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520  
(415) 686-9600 • FAX (415) 686-9689

Aegis Environmental Consultants 801 Riverside Avenue, Suite C Roseville, CA 95678 Attention: Pat Wright	Client Project ID: 89-041/Shell - Livermore Matrix Descript: Water Analysis Method: EPA 5030/8015/8020 First Sample #: 010-0120 A-D	Sampled: Oct 2, 1990 Received: Oct 3, 1990 Analyzed: Oct 8, 1990 Reported: Oct 10, 1990
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## TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons	Benzene	Toluene	Ethyl Benzene	Xylenes
		$\mu\text{g/L}$ (ppb)	$\mu\text{g/L}$ (ppb)	$\mu\text{g/L}$ (ppb)	$\mu\text{g/L}$ (ppb)	$\mu\text{g/L}$ (ppb)
010-0120 A-D	MW-1	N.D.	N.D.	N.D.	N.D.	N.D.
010-0121 A-D	MW-2	N.D.	N.D.	N.D.	N.D.	N.D.
010-0122 A-D	MW-3	N.D.	N.D.	N.D.	N.D.	N.D.
010-0123 A-D	MW-4	N.D.	N.D.	N.D.	N.D.	N.D.

<b>Detection Limits:</b>	<b>30</b>	<b>0.30</b>	<b>0.30</b>	<b>0.30</b>	<b>0.30</b>
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Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.  
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Belinda C. Vega  
Laboratory Director

Phone (916) 782 2110  
 FAX (916) 786-7830

# AEGIS Environmental Consultants, Inc.

## Sample Identification/Field Chain of Custody Record

Send results to:  
 Aegis Environmental  
 801 Riverside, Suite C  
 Roseville, CA 95678

Site Address: SHELL OIL 318 S LIVERMORE AVE LIVERMORE CA  
 AEGIS Project #: 89-041  
 Shipped By: AEGIS ENV  
 Shipped To: SEQUOIA  
 Project Manager: PAT WRIGHT

For Shell Projects Only  
 WIC: 204 4380 0303  
 AFE: 986683  
 CT/DL: 5441  
 Shell Engineer: SIAM ROLLER  
 Hazardous Materials Suspected? (yes/no)

Sampling Point	Location	Field ID#	Date	Sample Type	No. of Containers	Analysis Required
MW-1 01001200	318 S LIVERMORE	MW-1	10-2-90	WATER	4	TPH, LAS, BTEX
MW-2 121		MW-2			4	
MW-3 122		MW-3			4	
MW-4 123		MW-4			4	

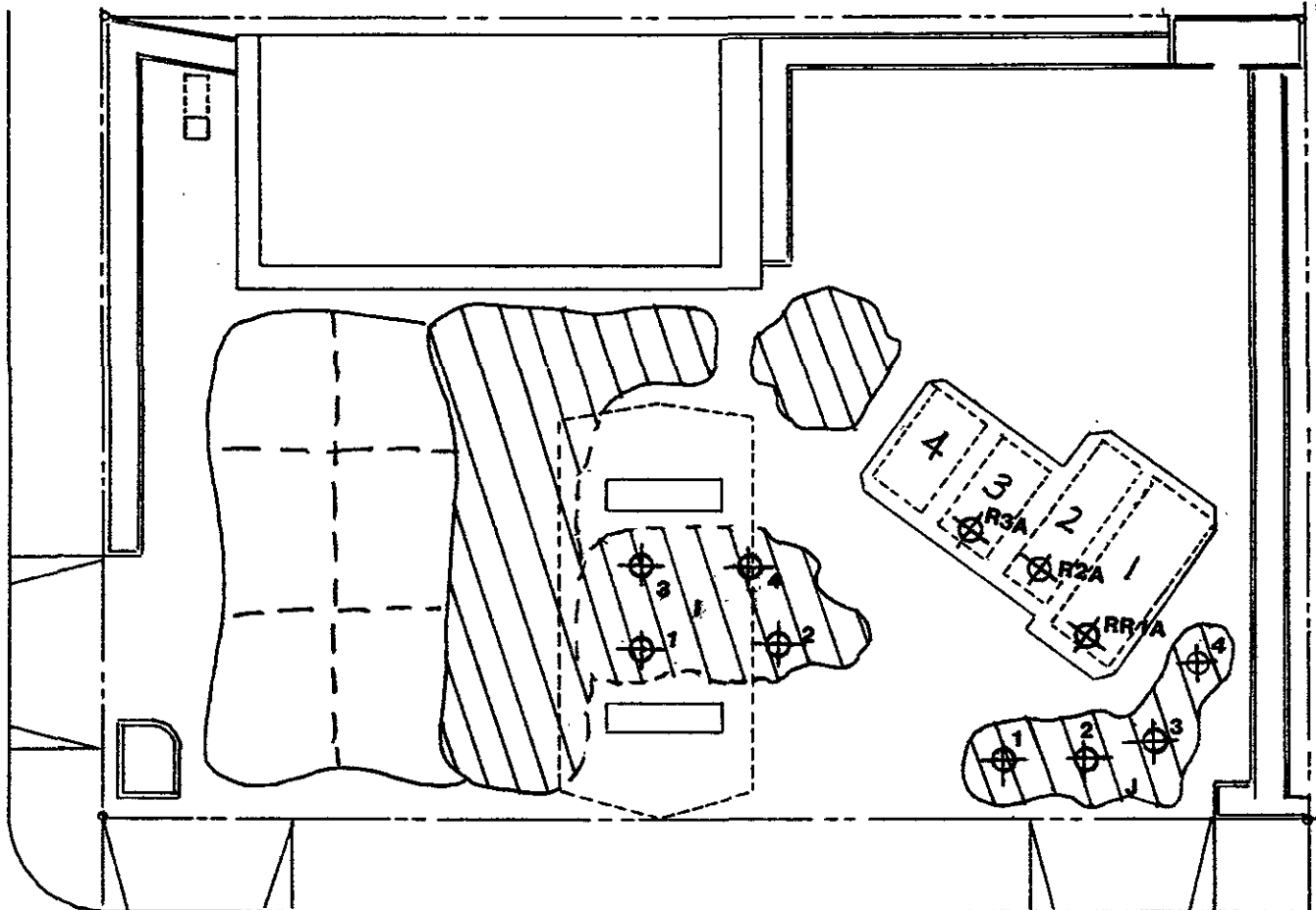
Sampler(s) (signature) Brie Ash

Field ID	Relinquished By (signature)	Received By (signature)	Date/Time	Comments
MW-1234	Brie Ash	Mike Adan	10-3 11:34	
	Mike Adan		11:34	

Sealed for shipment by: (signature) Brie Ash Date/Time: 10-2-90 5:00 PM Shipment Method: COURIER TO PICK UP  
 Received for Lab by: (signature) Mike Adan Date/Time: 10-2-90 11:34 Comments: 10 DAY TURN AROUND  
Pat Wright 10/3 1:00 PM

831.02 /  
Balance

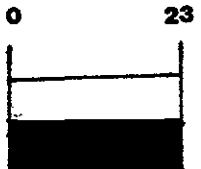
SITE # 575  
STID # 1976



SOIL SAMPLE LOCATIONS

SAMPLE DATE  
DECEMBER 12, 1989

SCALE  
1" = 23'



SITE MAP Shell Service Station 318 South Livermore Ave. Livermore, Ca.	
AEGIS JOB NO. 89-041	
DRAWN BY: Ed Bernard	DATE: Dec. 18, 1989
REVIEWED BY:	DATE:



# SEQUOIA ANALYTICAL

880 Chesapeake Drive • Redwood City, CA 94063  
(415) 384-9600 • FAX (415) 384-9233

Aegis Environmental Consultants 801 Riverside Ave., Suite C Roseville, CA 95678 Attention: Pat Wright	Client Project ID: #89-041, Shell, Livermore, 318 So. Livermore Matrix Descript: Soil Analysis Method: EPA 5030/8015/8020 First Sample #: 912-1487	Sampled: Dec 12, 1989 Received: Dec 13, 1989 Analyzed: Dec 13, 1989 Reported: Dec 18, 1989
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## TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons mg/kg (ppm)	Benzene mg/kg (ppm)	Toluene mg/kg (ppm)	Ethyl Benzene mg/kg (ppm)	Xylenes mg/kg (ppm)
912-1487	RR1A	180	N.D.	N.D.	N.D.	0.35
912-1488	R2A	N.D.	N.D.	N.D.	N.D.	N.D.
912-1489	R3A	N.D.	N.D.	N.D.	N.D.	N.D.
9121490 A-D	J1,2,3,4, Composite	12	N.D.	N.D.	N.D.	N.D.
9121491 A-D	J1,2,3,4, Composite	70	N.D.	N.D.	0.11	0.72

### Detection Limits:

1.0

0.05

0.1

0.1

0.1

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.  
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

*V. Tague*  
Vickie Tague  
Project Manager

9121487.AAA <1>



# SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063  
(415) 364-9800 • FAX (415) 364-9233

Aegis Environmental Consultants 801 Riverside Ave., Suite C Roseville, CA 95678 Attention: Pat Wright	Client Project ID: #89-041, Shell, Livermore, 318 So. Livermore Sample Descript: Soil Analysis for: Lead First Sample #: 912-1487	Sampled: Dec 12, 1989 Received: Dec 13, 1989 Extracted: Dec 14, 1989 Analyzed: Dec 14, 1989 Reported: Dec 18, 1989
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## LABORATORY ANALYSIS FOR: Lead

Sample Number	Sample Description	Detection Limit mg/kg	Sample Result mg/kg
912-1487	RR1A	0.05	8.1
912-1488	R2A	0.05	8.1
912-1489	R3A	0.05	8.1
9121490 A-D	I1,2,3,4, Composite	0.05	13
9121491 A-D	J1,2,3,4, Composite	0.05	7.2

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

*V. Tague*  
Vickie Tague  
Project Manager

9121487.AAA <2>



INTERNATIONAL  
TECHNOLOGY  
CORPORATION

Sequoia Analytical  
Redwood City

CHAIN-OF-CUSTODY RECORD

R/A Control No. \_\_\_\_\_

C/C Control No. **A 80841**

PROJECT NAME/NUMBER Livermore Shell/89-041

LAB DESTINATION Sequoia Analytical

SAMPLE TEAM MEMBERS Tracy Schilling

CARRIER/WAYBILL NO. \_\_\_\_\_

any questions - CALL 916/782-2110

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
RK1A	Livermore Shell ; Soil ex	12/12/89/1:00pm	Soil	Biogestyl		
R2A	↓ ex	↓ ↓	↓	↓		
R3A	↓ ex	↓ ↓	↓	↓		
I,2,3,4	↓ sp	↓ ↓	↓	↓		
J,1,2,3,4	↓ sp	↓ ↓	↓	↓		

Special Instructions: 24 hour turnaround Mod 8015 TTH-CW/BTX4E, EIA 7421 Total Pb.

Possible Sample Hazards: \_\_\_\_\_

SIGNATURES: (Name, Company, Date and Time)

ex - excavation  
sp - stock pile

1. Relinquished By: Tracy Schilling / Acqui / 12/12/89/3:00pm

3. Relinquished By: \_\_\_\_\_

Received By: \_\_\_\_\_

Received by: \_\_\_\_\_

2. Relinquished By: \_\_\_\_\_

4. Relinquished By: \_\_\_\_\_

Received By: \_\_\_\_\_

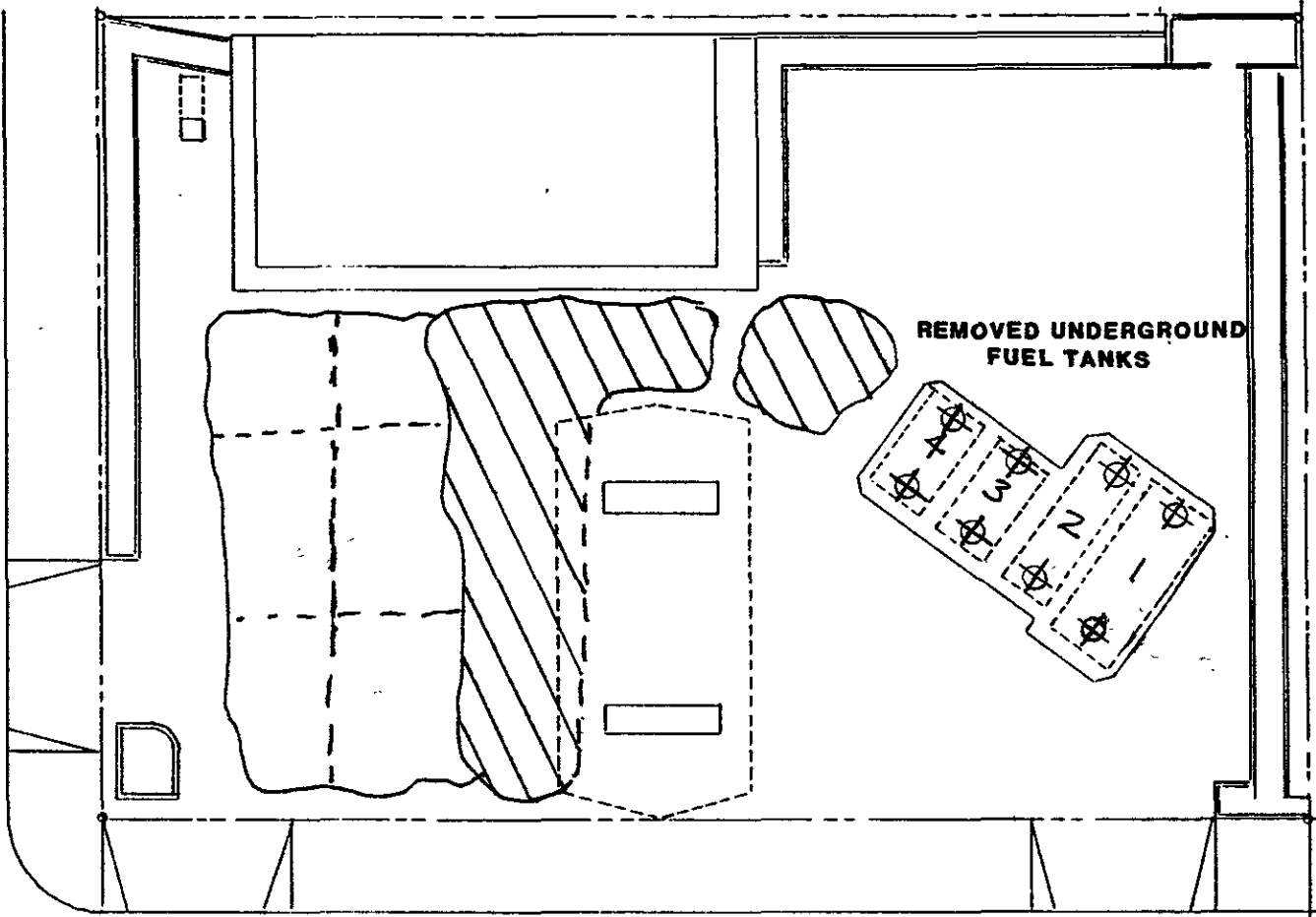
Received By: \_\_\_\_\_

WIC: 204-4380-0303  
AFE: 986683  
Exp Code: 5441

318 So. Livermore Ave  
Cross Street: 3rd Street  
Livermore, CA

Shell Eng:  
Mr. Stan Roller





**SOIL SAMPLE LOCATIONS**

**SAMPLE DATE  
DECEMBER 5, 1989**

**SCALE**

**1" = 23'**



**SITE MAP  
Shell Service Station  
318 South Livermore Ave.  
Livermore, Ca.**

**AEGIS JOB NO. 89-041**

**DRAWN BY: Ed Bernard      DATE: Dec. 18, 1989  
REVIEWED BY:                      DATE:**



# SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063  
(415) 364-9600 • FAX (415) 364-9233

RECEIVED  
12-17

Aegis Environmental Consultants  
801 Riverside Ave., Suite C  
Roseville, CA 95678  
Attention: Tracy Schilling

Project: #89-041, Shell, Livermore

Enclosed are the results from 8 soil samples received at Sequoia Analytical on December 6, 1989. The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE OF COLLECTION	TEST METHOD
9120384	Soil, 1A	12/5/89	EPA 5030/8015/8020 Lead
9120385	Soil, 2A	12/5/89	EPA 5030/8015/8020 Lead
9120386	Soil, 3A	12/5/89	EPA 5030/8015/8020 Lead
9120387	Soil, 4A	12/5/89	EPA 5030/8015/8020 Lead
9120388	Soil, 1B	12/5/89	EPA 5030/8015/8020 Lead
9120389	Soil, 2B	12/5/89	EPA 5030/8015/8020 Lead
9120390	Soil, 3B	12/5/89	EPA 5030/8015/8020 Lead
9120391	Soil, 4B	12/5/89	EPA 5030/8015/8020 Lead

Please contact me if you have any questions. In the meantime, thank you for the opportunity to work with you on this project.

Very truly yours,

SEQUOIA ANALYTICAL

  
Vickie Tague  
Project Manager



# SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063  
(415) 364-9600 • FAX (415) 364-9233

Aegis Environmental Consultants 801 Riverside Ave., Suite C Roseville, CA 95678 Attention: Tracy Schilling	Client Project ID: #89-041, Shell, Livermore Matrix Descript: Soil Analysis Method: EPA 5030/8015/8020 First Sample #: 912-0384	Sampled: Dec 5, 1989 Received: Dec 6, 1989 Analyzed: Dec 7, 1989 Reported: Dec 8, 1989
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## TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons mg/kg (ppm)	Benzene mg/kg (ppm)	Toluene mg/kg (ppm)	Ethyl Benzene mg/kg (ppm)	Xylenes mg/kg (ppm)
912-0384	1A	870	N.D.	0.17	0.87	16
912-0385	2A	3.8	N.D.	N.D.	N.D.	N.D.
912-0386	3A	1.6	N.D.	N.D.	N.D.	N.D.
912-0387	4A	N.D.	N.D.	N.D.	N.D.	N.D.
912-0388	1B	N.D.	N.D.	N.D.	N.D.	N.D.
912-0389	2B	1.6	N.D.	N.D.	N.D.	N.D.
912-0390	3B	N.D.	N.D.	N.D.	N.D.	N.D.
912-0391	4B	1.3	N.D.	N.D.	N.D.	N.D.

<b>Detection Limits:</b>	<b>1.0</b>	<b>0.05</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>
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Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.  
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

  
Vickie Tague  
Project Manager



# SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063  
(415) 364-9600 • FAX (415) 364-9233

Aegis Environmental Consultants 801 Riverside Ave., Suite C Roseville, CA 95678 Attention: Tracy Schilling	Client Project ID: #89-041, Shell, Livermore Sample Descript: Soil Analysis for: Lead First Sample #: 912-0384	Sampled: Dec 5, 1989 Received: Dec 6, 1989 Extracted: Dec 7, 1989 Analyzed: Dec 7, 1989 Reported: Dec 8, 1989
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## LABORATORY ANALYSIS FOR: Lead

Sample Number	Sample Description	Detection Limit mg/kg	Sample Result mg/kg
912-0384	1A	0.25	4.8
912-0385	2A	0.25	31
912-0386	3A	0.25	5.4
912-0387	4A	0.25	3.0
912-0388	1B	0.25	3.4
912-0389	2B	0.25	6.6
912-0390	3B	0.25	2.6
912-0391	4B	0.25	2.2

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

  
Vickie Tague  
Project Manager



Shell Eng. Stan Roller

REQUEST FOR ANALYSIS

SEQUOIA  
Redwood City

PROJECT NAME SHELL LIVERMORE  
PROJECT NUMBER 89-041  
PROJECT MANAGER PAT WRIGHT  
BILL TO SHELL

DATE SAMPLES SHIPPED \_\_\_\_\_  
LAB DESTINATION \_\_\_\_\_  
LABORATORY CONTACT \_\_\_\_\_  
SEND LAB REPORT TO \_\_\_\_\_

R/A Control No. \_\_\_\_\_  
C/C Control No. 12/5/89  
~~12/5/89~~  
~~12/5/89~~  
AEGIS ENVIRONMENTAL  
801 RIVERSIDE AVE  
ROSEVILLE, AVE 95678  
12/7/89  
PAT WRIGHT  
(916) 782-2110

PURCHASE ORDER NO. \_\_\_\_\_  
Address: 318 So. Livermore Ave / Cross St. : 3rd  
Livermore CA  
WIC 204 4380 0303 AFE 9816683 Exp Code 5441

DATE REPORT REQUIRED \_\_\_\_\_  
PROJECT CONTACT \_\_\_\_\_  
PROJECT CONTACT PHONE NO. \_\_\_\_\_

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
1A	Soil	BRASS Cyl.	N/A	Mod 8015	(24 hr)
2A	↓	↓	↓	(TPH G w/ BTX & E)	Turn Around
3A	↓	↓	↓	+ Total Pb	Mod 8015
4A	↓	↓	↓	EPA 7420	(TPH G w/ BTX & E in series)
1B	↓	↓	↓	↓	Total Pb
2B	↓	↓	↓	↓	
3B	↓	↓	↓	↓	
4B	↓	↓	↓	↓	
				all samples	

Add organic lead for 2A per Tracy

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)  
Normal \_\_\_\_\_ Rush  (Subject to rush surcharge)

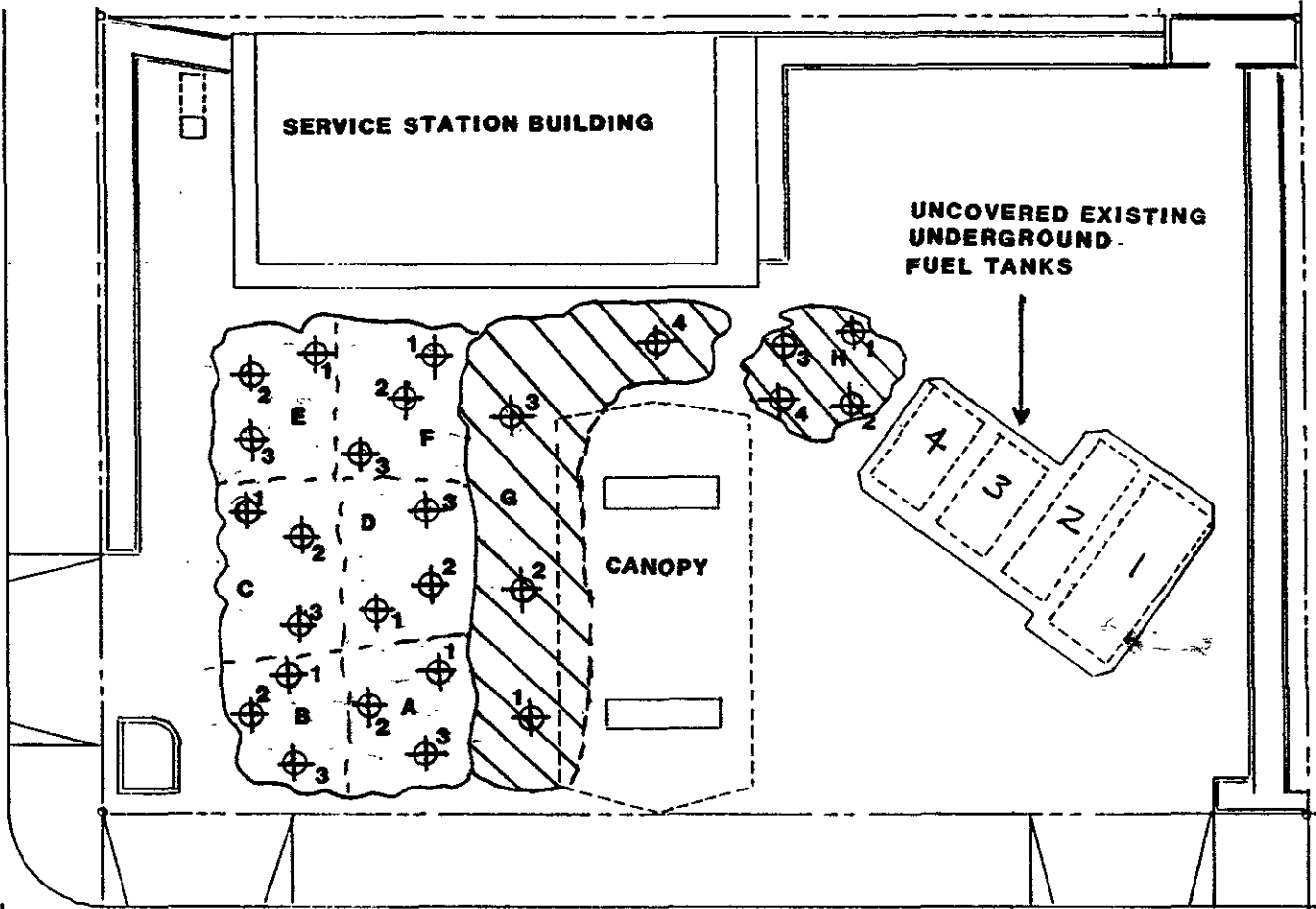
\* PLEASE FREEZE FOR FURTHER ANALYSIS.




POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)  
Nonhazardous \_\_\_\_\_ Flammable \_\_\_\_\_ Skin Irritant \_\_\_\_\_ Highly Toxic \_\_\_\_\_ Other \_\_\_\_\_ (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)  
Return to Client \_\_\_\_\_ Disposal by Lab

Any QUESTIONS PLEASE Call.

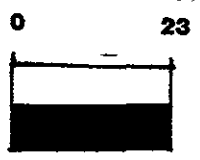
FOR LAB USE ONLY  
Received By \_\_\_\_\_ Date/Time \_\_\_\_\_



-  - EXCAVATED SOILS
-  - TYPICAL NON-DETECTED SOILS
-  - TYPICAL DETECTED SOILS

**SAMPLE DATE**  
**NOVEMBER 30, 1989**

**SCALE**  
 1"=23'



<b>SITE MAP</b> Shell Service Station 318 South Livermore Ave. Livermore, Ca.	
AEGIS JOB NO. 89-041	
DRAWN BY: Ed Bernard	DATE: Dec. 18, 1989
REVIEWED BY:	DATE:



INTERNATIONAL  
TECHNOLOGY  
CORPORATION

# ANALYTICAL SERVICES

## CERTIFICATE OF ANALYSIS

Aegis Environmental Consultants  
801 Riverside Avenue, Suite C  
Roseville, CA 95678  
ATTN: Tracy Schilling

Date: December 7, 1989

Work Order Number: S9-11-370

P.O. Number: MOH 890501A

This is the Certificate of Analysis for the following samples:

Client Project ID: Aegis #89-041, Shell, 318 S. Livermore  
Avenue/3rd Street, Livermore, CA  
Date Received by Lab: 11/30/89  
Number of Samples: 26  
Sample Type: Soil

The methods of analysis for metals and general chemistry are taken from E.P.A. protocol, using methods from SW-846, 3rd Edition or Methods for Chemical Analysis of Water and Wastes, 600/4-79-020. The method used is listed adjacent to the parameter in the table.

The samples were prepared by extracting with 0.2M sodium citrate for 48 hours. The resulting values are the soluble threshold limit limit concentrations for the requested parameters.

The method of analysis for low boiling hydrocarbons is taken from EPA Methods 8015, 8020 and 5030. The sample is examined using the purge and trap technique. Final detection is by gas chromatography using a flame ionization detector as well as a photoionization detector. The result for total low boiling hydrocarbons is calculated as gasoline and includes benzene, toluene, ethyl benzene and xylenes.

Reviewed and Approved

Michael E. Dean  
Project Manager

MED/an

16 Pages Following - Tables of Results

American Council of Independent Laboratories  
International Association of Environmental Testing Laboratories  
American Association for Laboratory Accreditation

Page: 2 of 16  
Date: December 7, 1989  
Client Project ID: Aegis #89-041, Shell,  
318 S. Livermore Ave./3rd St., Livermore, CA

IT ANALYTICAL SERVICES  
SAN JOSE, CA

Work Order Number: S9-11-370

Client Sample ID: A-1, A-2, A-3 [composite]  
Sample Date: 11/30/89  
Lab Sample ID: S9-11-370-01, S9-11-370-02, S9-11-370-03 [composite]  
Receipt Condition: Cool  
Extraction Date: 12/1/89  
Analysis Date: 12/1/89

Total Petroleum Hydrocarbons - Modified E.P.A. Methods 8015, 8020

Results - Milligrams per Kilogram

Parameter	Detection Limit	Detected
Low Boiling Hydrocarbons, calculated as Gasoline	2.5	None
Benzene	0.025	None
Toluene	0.025	None
Ethyl Benzene	0.025	None
Xylenes (total)	0.05	None



Page: 4 of 16  
Date: December 7, 1989  
Client Project ID: Aegis #89-041, Shell,  
318 S. Livermore Ave./3rd St., Livermore, CA

IT ANALYTICAL SERVICES  
SAN JOSE, CA

Work Order Number: S9-11-370

Client Sample ID: B-1, B-2, B-3 [composite]

Sample Date: 11/30/89  
Lab Sample ID: S9-11-370-04, S9-11-370-05, S9-11-370-06 [composite]  
Receipt Condition: Cool  
Extraction Date: 12/1/89  
Analysis Date: 12/1/89

Total Petroleum Hydrocarbons - Modified E.P.A. Methods 8015, 8020

Results - Milligrams per Kilogram

Parameter	Detection Limit	Detected
Low Boiling Hydrocarbons, calculated as Gasoline	2.5	None
Benzene	0.025	None
Toluene	0.025	None
Ethyl Benzene	0.025	None
Xylenes (total)	0.05	None

Page: 6 of 16  
Date: December 7, 1989  
Client Project ID: Aegis #89-041, Shell,  
318 S. Livermore Ave./3rd St., Livermore, CA

IT ANALYTICAL SERVICES  
SAN JOSE, CA

Work Order Number: S9-11-370

Client Sample ID: C-1, C-2, C-3 [composite]

Sample Date: 11/30/89  
Lab Sample ID: S9-11-370-07, S9-11-370-08, S9-11-370-09 [composite]  
Receipt Condition: Cool  
Extraction Date: 12/1/89  
Analysis Date: 12/1/89

Total Petroleum Hydrocarbons - Modified E.P.A. Methods 8015, 8020

Results - Milligrams per Kilogram

Parameter	Detection Limit	Detected
Low Boiling Hydrocarbons, calculated as Gasoline	2.5	None
Benzene	0.025	None
Toluene	0.025	None
Ethyl Benzene	0.025	None
Xylenes (total)	0.05	None

Page: 8 of 16  
Date: December 7, 1989  
Client Project ID: Aegis #89-041, Shell,  
318 S. Livermore Ave./3rd St., Livermore, CA

IT ANALYTICAL SERVICES  
SAN JOSE, CA

Work Order Number: S9-11-370

Client Sample ID: D-1, D-2, D-3 [composite]  
Sample Date: 11/30/89  
Lab Sample ID: S9-11-370-10, S9-11-370-11, S9-11-370-12 [composite]  
Receipt Condition: Cool  
Extraction Date: 12/1/89  
Analysis Date: 12/4/89

Total Petroleum Hydrocarbons - Modified E.P.A. Methods 8015, 8020

Results - Milligrams per Kilogram

Parameter	Detection Limit	Detected
Low Boiling Hydrocarbons, calculated as Gasoline	2.5	None
Benzene	0.025	None
Toluene	0.025	None
Ethyl Benzene	0.025	None
Xylenes (total)	0.05	None

Page: 10 of 16  
Date: December 7, 1989  
Client Project ID: Aegis #89-041, Shell,  
318 S. Livermore Ave./3rd St., Livermore, CA

IT ANALYTICAL SERVICES  
SAN JOSE, CA

Work Order Number: S9-11-370

Client Sample ID: E-1, E-2, E-3 [composite]  
Sample Date: 11/30/89  
Lab Sample ID: S9-11-370-13, S9-11-370-14, S9-11-370-15 [composite]  
Receipt Condition: Cool  
Extraction Date: 12/1/89  
Analysis Date: 12/1/89

Total Petroleum Hydrocarbons - Modified E.P.A. Methods 8015, 8020

Results - Milligrams per Kilogram

Parameter	Detection Limit	Detected
Low Boiling Hydrocarbons, calculated as Gasoline	2.5	None
Benzene	0.025	None
Toluene	0.025	None
Ethyl Benzene	0.025	None
Xylenes (total)	0.05	None

Page: 12 of 16  
Date: December 7, 1989  
Client Project ID: Aegis #89-041, Shell,  
318 S. Livermore Ave./3rd St., Livermore, CA

IT ANALYTICAL SERVICES  
SAN JOSE, CA

Work Order Number: S9-11-370

Client Sample ID: F-1, F-2, F-3 [composite]  
Sample Date: 11/30/89  
Lab Sample ID: S9-11-370-16, S9-11-370-17, S9-11-370-18 [composite]  
Receipt Condition: Cool  
Extraction Date: 12/1/89  
Analysis Date: 12/5/89

Total Petroleum Hydrocarbons - Modified E.P.A. Methods 8015, 8020

Results - Milligrams per Kilogram

Parameter	Detection Limit	Detected
Low Boiling Hydrocarbons, calculated as Gasoline	2.5	None
Benzene	0.025	None
Toluene	0.025	None
Ethyl Benzene	0.025	None
Xylenes (total)	0.05	None

Page: 1 of 16  
Date: December 7, 1989  
Client Project ID: Aegis #89-041, Shell,  
318 S. Livermore Ave./3rd St., Livermore, CA

IT ANALYTICAL SERVICES  
SAN JOSE, CA

Work Order Number: S9-11-370

Client Sample ID: A-1, A-2, A-3 [composite]  
Sample Date: 11/30/89  
Lab Sample ID: S9-11-370-01, S9-11-370-02, S9-11-370-03 [composite]  
Receipt Condition: Cool

Results - Milligrams per Kilogram

Parameter	E.P.A. Method	Detection Limit	Detected
Lead	6010	1.5	25.

Wet Results - Milligrams per Liter

Parameter	E.P.A. Method	Detection Limit	Detected
Lead	6010	0.06	0.98

Page: 3 of 16  
Date: December 7, 1989  
Client Project ID: Aegis #89-041, Shell,  
318 S. Livermore Ave./3rd St., Livermore, CA

IT ANALYTICAL SERVICES  
SAN JOSE, CA

Work Order Number: S9-11-370

Client Sample ID: B-1, B-2, B-3 [composite]  
Sample Date: 11/30/89  
Lab Sample ID: S9-11-370-04, S9-11-370-05, S9-11-370-06 [composite]  
Receipt Condition: Cool

Results - Milligrams per Kilogram

Parameter	E.P.A. Method	Detection Limit	Detected
Lead	6010	1.5	9.3

Wet Results - Milligrams per Liter

Parameter	E.P.A. Method	Detection Limit	Detected
Lead	6010	0.06	0.22

Page: 5 of 16  
Date: December 7, 1989  
Client Project ID: Aegis #89-041, Shell,  
318 S. Livermore Ave./3rd St., Livermore, CA

IT ANALYTICAL SERVICES  
SAN JOSE, CA

Work Order Number: S9-11-370

Client Sample ID: C-1, C-2, C-3 [composite]  
Sample Date: 11/30/89  
Lab Sample ID: S9-11-370-07, S9-11-370-08, S9-11-370-09 [composite]  
Receipt Condition: Cool

Results - Milligrams per Kilogram

Parameter	E.P.A. Method	Detection Limit	Detected
Lead	6010	1.5	9.9

Wet Results - Milligrams per Liter

Parameter	E.P.A. Method	Detection Limit	Detected
Lead	6010	0.06	0.11



Page: 7 of 16  
Date: December 7, 1989  
Client Project ID: Aegis #89-041, Shell,  
318 S. Livermore Ave./3rd St., Livermore, CA

IT ANALYTICAL SERVICES  
SAN JOSE, CA

Work Order Number: S9-11-370

Client Sample ID: D-1, D-2, D-3 [composite]  
Sample Date: 11/30/89  
Lab Sample ID: S9-11-370-10, S9-11-370-11, S9-11-370-12 [composite]  
Receipt Condition: Cool

Results - Milligrams per Kilogram

Parameter	E.P.A. Method	Detection Limit	Detected
Lead	6010	1.5	8.2

Wet Results - Milligrams per Liter

Parameter	E.P.A. Method	Detection Limit	Detected
Lead	6010	0.06	0.13

Page: 9 of 16  
Date: December 7, 1989  
Client Project ID: Aegis #89-041, Shell,  
318 S. Livermore Ave./3rd St., Livermore, CA

IT ANALYTICAL SERVICES  
SAN JOSE, CA

Work Order Number: S9-11-370

Client Sample ID: E-1, E-2, E-3 [composite]  
Sample Date: 11/30/89  
Lab Sample ID: S9-11-370-13, S9-11-370-14, S9-11-370-15 [composite]  
Receipt Condition: Cool

Results - Milligrams per Kilogram

Parameter	E.P.A. Method	Detection Limit	Detected
Lead	6010	1.5	15.

Wet Results - Milligrams per Liter

Parameter	E.P.A. Method	Detection Limit	Detected
Lead	6010	0.06	0.28

Page: 11 of 16  
Date: December 7, 1989  
Client Project ID: Aegis #89-041, Shell,  
318 S. Livermore Ave./3rd St., Livermore, CA

IT ANALYTICAL SERVICES  
SAN JOSE, CA

Work Order Number: S9-11-370

Client Sample ID: F-1, F-2, F-3 [composite]

Sample Date: 11/30/89

Lab Sample ID: S9-11-370-16, S9-11-370-17, S9-11-370-18 [composite]

Receipt Condition: Cool

Results - Milligrams per Kilogram

Parameter	E.P.A. Method	Detection Limit	Detected
Lead	6010	1.5	11.

Wet Results - Milligrams per Liter

Parameter	E.P.A. Method	Detection Limit	Detected
Lead	6010	0.06	0.69

Page: 14 of 16  
Date: December 7, 1989  
Client Project ID: Aegis #89-041, Shell,  
318 S. Livermore Ave./3rd St., Livermore, CA

IT ANALYTICAL SERVICES  
SAN JOSE, CA

Work Order Number: S9-11-370

Client Sample ID: G-1, G-2, G-3, G-4 [composite]  
Sample Date: 11/30/89  
Lab Sample ID: S9-11-370-19, S9-11-370-20, S9-11-370-21,  
S9-11-370-22 [composite]  
Receipt Condition: Cool  
Extraction Date: 12/1/89  
Analysis Date: 12/5/89

Total Petroleum Hydrocarbons - Modified E.P.A. Methods 8015, 8020

Results - Milligrams per Kilogram

Parameter	Detection Limit	Detected
Low Boiling Hydrocarbons, calculated as Gasoline	34.	190.
Benzene	0.025	0.38
Toluene	0.025	3.0
Ethyl Benzene	0.025	1.4
Xylenes (total)	0.05	11.

Page: 13 of 16  
Date: December 7, 1989  
Client Project ID: Aegis #89-041, Shell,  
318 S. Livermore Ave./3rd St., Livermore, CA

IT ANALYTICAL SERVICES  
SAN JOSE, CA

Work Order Number: S9-11-370

Client Sample ID: G-1, G-2, G-3, G-4 [composite]  
Sample Date: 11/30/89  
Lab Sample ID: S9-11-370-19, S9-11-370-20, S9-11-370-21  
S9-11-370-22 [composite]  
Receipt Condition: Cool

Results - Milligrams per Kilogram

Parameter	E.P.A. Method	Detection Limit	Detected
Lead	6010	1.5	21.

Wet Results - Milligrams per Liter

Parameter	E.P.A. Method	Detection Limit	Detected
Lead	6010	0.06	0.49

Page: 16 of 16  
Date: December 7, 1989  
Client Project ID: Aegis #89-041, Shell,  
318 S. Livermore Ave./3rd St., Livermore, CA

IT ANALYTICAL SERVICES  
SAN JOSE, CA

Work Order Number: S9-11-370

Client Sample ID: H-1, H-2, H-3, H-4 [composite]

Sample Date: 11/30/89

Lab Sample ID: S9-11-370-23, S9-11-370-24, S9-11-370-25,  
S9-11-370-26 [composite]

Receipt Condition: Cool

Extraction Date: 12/1/89

Analysis Date: 12/5/89

Total Petroleum Hydrocarbons - Modified E.P.A. Methods 8015, 8020

Results - Milligrams per Kilogram

Parameter	Detection Limit	Detected
Low Boiling Hydrocarbons, calculated as Gasoline	16.	100.
Benzene	0.2	0.3
Toluene	0.2	3.2
Ethyl Benzene	0.2	1.6
Xylenes (total)	0.3	14.

Page: 15 of 16  
Date: December 7, 1989  
Client Project ID: Aegis #89-041, Shell,  
318 S. Livermore Ave./3rd St., Livermore, CA

IT ANALYTICAL SERVICES  
SAN JOSE, CA

Work Order Number: S9-11-370

Client Sample ID: H-1, H-2, H-3, H-4 [composite]  
Sample Date: 11/30/89  
Lab Sample ID: S9-11-370-23, S9-11-370-24, S9-11-370-25  
S9-11-370-26 [composite]  
Receipt Condition: Cool

Results - Milligrams per Kilogram

Parameter	E.P.A. Method	Detection Limit	Detected
Lead	6010	1.5	11.

Wet Results - Milligrams per Liter

Parameter	E.P.A. Method	Detection Limit	Detected
Lead	6010	0.06	0.35



INTERNATIONAL  
TECHNOLOGY  
CORPORATION

RECEIVED  
12-9-89

December 02, 1989

AEGIS Enviromental Cons.  
801 Riverside Avae. Suite C  
Roseville, CA. 95678

RE:Project #: 204-4380-0303 986683 5441 M60

8904)

ATTENTION: Tracy Schilling

On November 30, 1989, the following samples were received at the  
ITAS San Jose Laboratory:

Your Sample ID's :

A-1	G-4
A-2	H-1
A-3	H-2
B-1	H-3
B-2	H-4
B-3	
C-1	
C-2	
C-3	
D-1	
D-2	
D-3	
E-1	
E-2	
E-3	
F-1	
F-2	
F-3	
G-1	
G-2	
G-3	

The samples were checked into our sample tracking system as order  
number S9-11-370 and assigned testing for the following parameters:

Waste Extraction Test Soil  
EPA 6010  
Modified 8015/8020

When the above analyses are completed, your report will be issued  
to the address or addresses stated on the request for analysis form.  
If you need to arrange for other reporting, please contact me.

Sincerely,

*Josephine DeCarli*

Josephine Decarli



AEGIS

59-11-370



CHAIN-OF-CUSTODY RECORD

R/A Control No. \_\_\_\_\_

C/C Control No. A 80836

PROJECT NAME/NUMBER LIVERMORE SHELL; 89-041

LAB DESTINATION It 2055 JUNCTION AVE, SAN JOSE

SAMPLE TEAM MEMBERS TRACY SCHILLING, Pat Weight

CARRIER/WAYBILL NO. \_\_\_\_\_

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
A1,2,3	↓ 318 So Livermore Ave ("Sandy") Livermore, CA	11/30/89 10:45 AM	Soil	Bios Tube	cool/ok	
B1,2,3		↓	↓	↓		
C1,2,3		↓	↓	↓		
D1,2,3		↓	↓	↓		
E1,2,3		↓	↓	↓		
F1,2,3		↓	↓	↓		
G1,2,3,4		↓	↓	↓		
H1,2,3,4		12:15			NIC 26A 4380 0303 AFE 981683 EXP CODE 5441 CROSS STREET → 3 <sup>rd</sup> St. STAN Roller SHELL Eng	

Special Instructions: 24 hr turn around; Modified 8015 EPA METHOD

Possible Sample Hazards: (TPH G w/ BTX+E SERIES)

Call if any QUESTIONS (916) 782-2110.

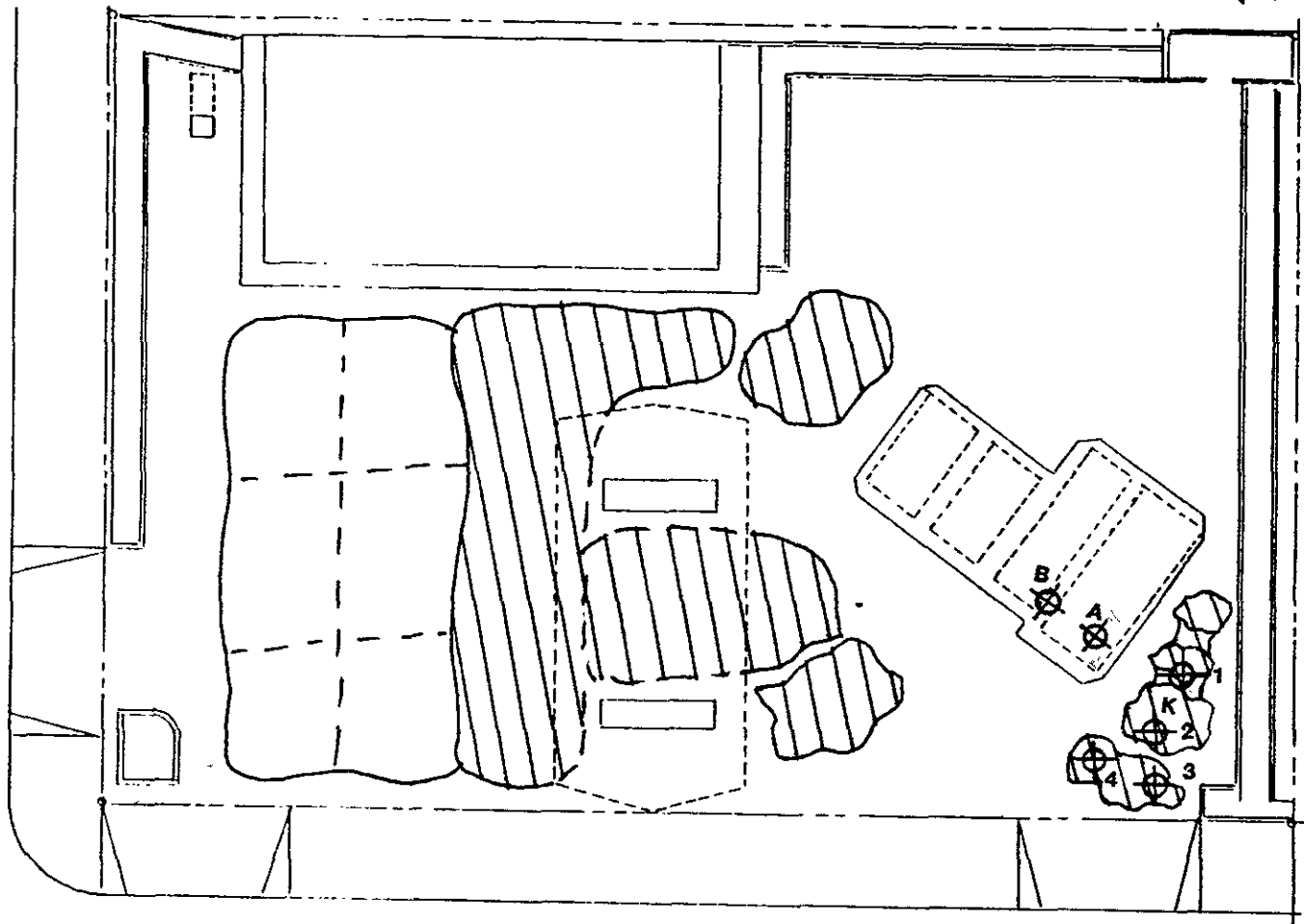
SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Tracy Schilling 11/30/89 (12:30pm) 3. Relinquished By: \_\_\_\_\_

Received By: [Signature] 11/30/89 16:50 Received by: \_\_\_\_\_

2. Relinquished By: \_\_\_\_\_ 4. Relinquished By: \_\_\_\_\_

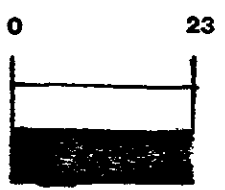
Received By: \_\_\_\_\_ Received By: \_\_\_\_\_



 - SOIL SAMPLE LOCATIONS

SAMPLE DATE  
DECEMBER 15, 1989

SCALE  
1" = 23'



SITE MAP Shell Service Station 318 South Livermore Ave. Livermore, Ca.	
AEGIS JOB NO. 89-041	
DRAWN BY: Ed Bernard	DATE: Dec. 18, 1989
REVIEWED BY:	DATE:



# SEQUOIA ANALYTICAL

880 Chesapeake Drive • Redwood City, CA 94063  
(415) 364-9600 • FAX (415) 364-9233

Aegis Environmental Consultants 801 Riverside Ave., Suite C Roseville, CA 95678 Attention: Clarke Owen	Client Project ID: #89-041, Livermore, Shell Sample Descript: Soil Analysis for: Lead First Sample #: 912-2284 A-D	Sampled: Dec 15, 1989 Received: Dec 18, 1989 Extracted: Dec 18, 1989 Analyzed: Dec 18, 1989 Reported: Dec 19, 1989
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## LABORATORY ANALYSIS FOR: Lead

Sample Number	Sample Description	Detection Limit mg/kg	Sample Result mg/kg
9122284 A-D	K1,2,3,4, Composite	0.05	14
912-2285	A	0.05	11
912-2286	B	0.05	12

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

*V. Tague*  
Vickie Tague  
Project Manager

Please Note:  
318 So. Livermore, Livermore



# SEQUOIA ANALYTICAL

880 Chesapeake Drive • Redwood City, CA 94063  
(415) 364-9600 • FAX (415) 364-9233

Aegle Environmental Consultants 801 Riverside Ave., Suite C Roseville, CA 95678 Attention: Clarke Owen	Client Project ID: #89-041, Livermore, Shall Matrix Descript: Soil Analysis Method: EPA 5030/8015/8020 First Sample #: 912-2284 A-D	Sampled: Dec 15, 1989 Received: Dec 18, 1989 Analyzed: Dec 18, 1989 Reported: Dec 19, 1989
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## TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons mg/kg (ppm)	Benzene mg/kg (ppm)	Toluene mg/kg (ppm)	Ethyl Benzene mg/kg (ppm)	Xylenes mg/kg (ppm)
9122284 A-D	K1,2,3,4, Composite	530	0.32	0.84	4.2	24
912-2285	A	12	0.090	N.D.	N.D.	0.41
912-2286	B	13	0.11	N.D.	N.D.	0.13

### Detection Limits:

1.0

0.05

0.1

0.1

0.1

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.  
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

*V. Tague*  
Vickie Tague  
Project Manager

Please Note:

318 So. Livermore, Livermore



Jettler — ryan inc.

RECEIVED  
11-1-89

general contractors

March 9, 1989

Mr. Stanley J. Roller  
Shell Oil Company  
Post Office Box 4023  
Concord, California 94520

Reference: Shell Service Station  
318 S. Livermore Avenue  
Livermore, California

Mr. Roller:

Enclosed are five copies of the report issued by Woodward-Clyde Consultants, dated March 8, 1989, discussing the soil investigation conducted on at the referenced location.

On February 27, 1989, four exploratory soil borings were drilled in the native soil adjacent to the existing underground storage tank complex. Soil samples, collected at five foot depth intervals, were tested in the field for the presence of volatile organic compounds using an HNu photoionization detector. Volatile organic vapors were not detected in any of the soil samples collected. Soil samples collect from the 15-16.5' depth interval from each boring were retained for laboratory analysis. Low boiling hydrocarbons, benzene, toluene, ethyl benzene, and xylenes were not detected in any of the soil samples analyzed.

Please note that the boring logs indicate that groundwater is encountered at an approximate depth of 15 feet below grade.

Copies of this report should be forwarded to the agencies listed on the attached letter.

Please do not hesitate to call should you have any question or comment.

John P. Werfal

enclosures