



**GeoStrategies Inc.**

2140 WEST WINTON AVENUE  
HAYWARD, CALIFORNIA 94545

(510) 352-4800

June 26, 1992

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

Reference: Former Shell Service Station  
15275 Washington Street  
San Leandro, California  
WIC 204-6852-1008

Ms. Evans:

As requested by Mr. Paul Hayes of Shell Oil Company, we are forwarding the June 26, 1992 Quarterly Report prepared for the referenced location. The report presents the results of the ground-water sampling conducted during the second quarter of 1992.

If you have any questions, please call.

Sincerely,

A handwritten signature in cursive script that reads "Ellen Fostersmith".

Ellen Fostersmith  
Geologist

EF/shl

Enclosure

cc: Mr. Paul Hayes, Shell Oil Company  
Mr. Lester Feldman, Regional Water Quality Control Board  
Mr. Larry Turner, Shell Oil Company



**GeoStrategies Inc.**

**QUARTERLY REPORT**

Former Shell Service Station  
15275 Washington Avenue  
San Leandro, California  
WIC 204-6852-1008

761501-17

June 26, 1992



**GeoStrategies Inc.**

2140 WEST WINTON AVENUE  
HAYWARD, CALIFORNIA 94545

(510) 352-4800

June 26, 1992

Shell Oil Company  
P.O. Box 5278  
Concord, California

Attn: Mr. Paul Hayes

Re: QUARTERLY REPORT  
Former Shell Service Station  
15275 Washington Avenue  
San Leandro, California  
WIC# 204-6852-1008

Mr. Hayes:

This Quarterly Report has been prepared by GeoStrategies Inc. (GSI) presents the results of the 1992 second quarter sampling for the above referenced site (Plate 1). Sampling data were furnished by the Shell Oil Company sampling contractor.

There are currently sixteen monitoring wells and one recovery well at the site; Wells S-1, S-3, S-5 through S-18, and SR-1 (Plate 2). These wells were installed between 1985 and 1991 by EMCON Associates, Woodward-Clyde Consultants and GSI. Wells S-2 and S-4 were destroyed in 1987.

**CURRENT QUARTER SAMPLING RESULTS**

Depth to water-level measurements were obtained in each monitoring well on April 28, 1992. Static ground-water levels were measured from the surveyed top of each well box and recorded to the nearest  $\pm 0.01$  foot. Water-level elevations, referenced to Mean Sea Level (MSL) datum, and the stabilized values of measured physical parameters are presented in the EMCON report (Appendix A). Water-level data were used to construct a quarterly potentiometric map (Plate 2). Shallow ground-water flow is generally to the south, at an approximate hydraulic gradient of 0.01.

Each well was checked for the presence of floating product. Floating product was not observed in the wells this quarter.

## GeoStrategies Inc.

Shell Oil Company  
June 26, 1992  
Page 2


Ground-water samples were collected on April 28 and 29, 1992. Samples were analyzed for Total Petroleum Hydrocarbons calculated as Gasoline (TPH-Gasoline), according to EPA Method 8015 (Modified) and for BTEX according to EPA Method 8020. The ground-water samples were analyzed by International Technology (IT) Analytical Services, a California State-certified laboratory located in Cerritos, California. These data are summarized in the EMCON report (Appendix A). A chemical isoconcentration map for benzene is presented on Plate 3. Historical chemical analytical data are presented in Appendix A.

If you have any questions, please call.

GeoStrategies Inc. by,



Ellen C. Fostersmith  
Geologist



Michael C. Carey  
Engineering Geologist  
C.E.G. 1351



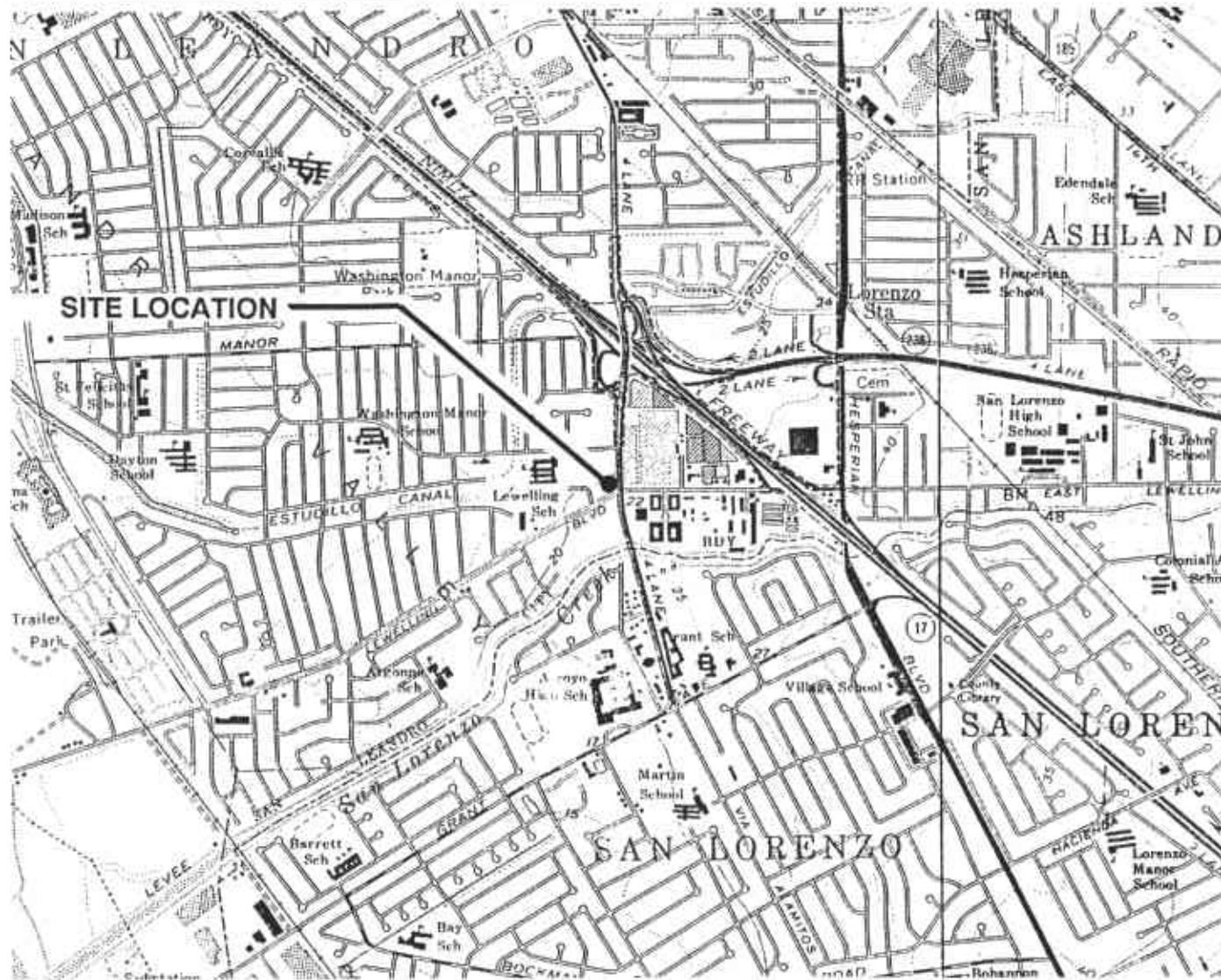
ECF/MCC/shl

Plate 1. Vicinity Map  
Plate 2. Site Plan/Potentiometric Map  
Plate 3. Benzene Isoconcentration Map

Appendix A: EMCON Monitoring Report and Chain-of-Custody Form

QC Review: \_\_\_\_\_





Approximate Scale : 1" = 2000'

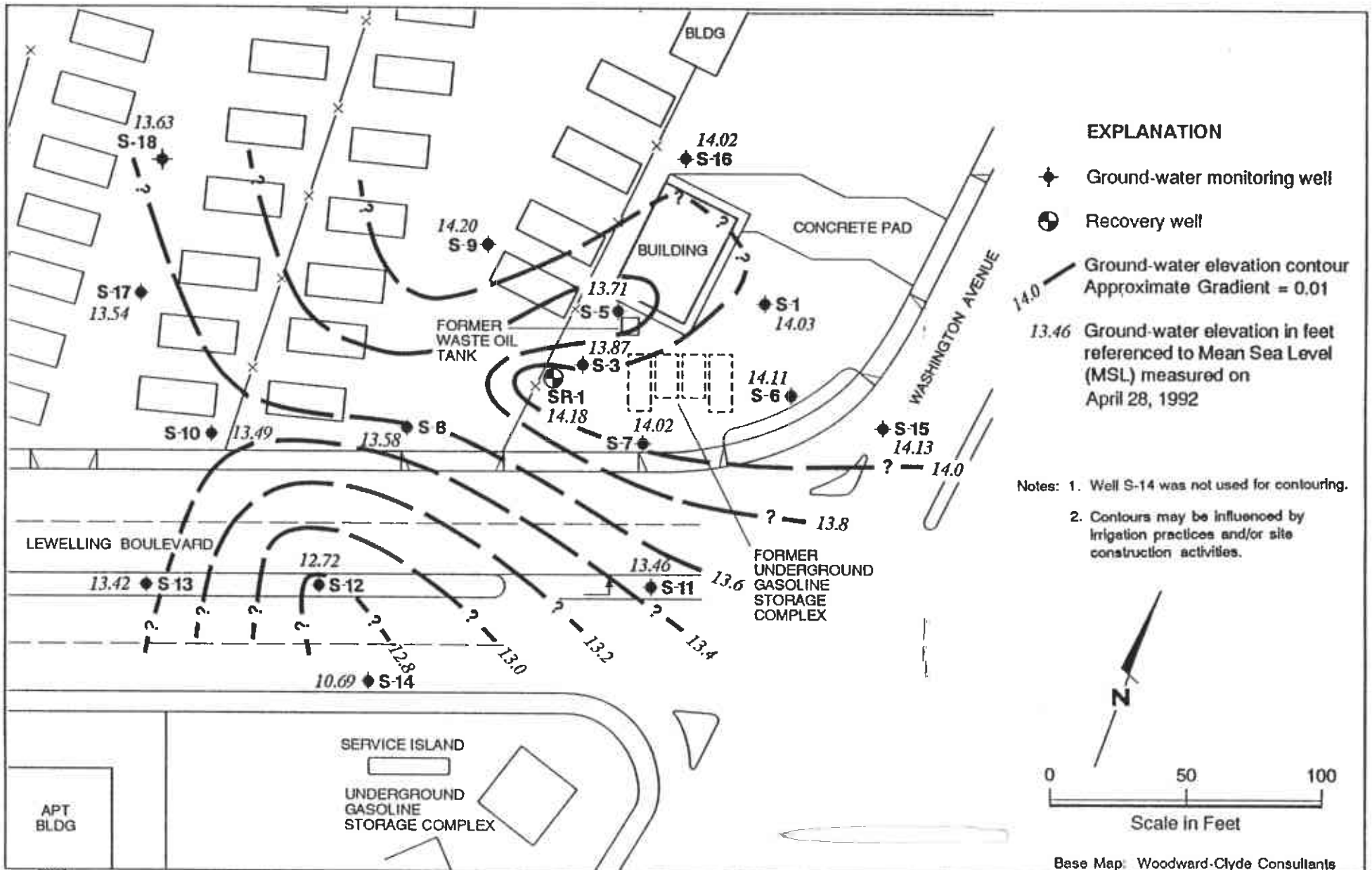
Base Map: USGS Topographic Map

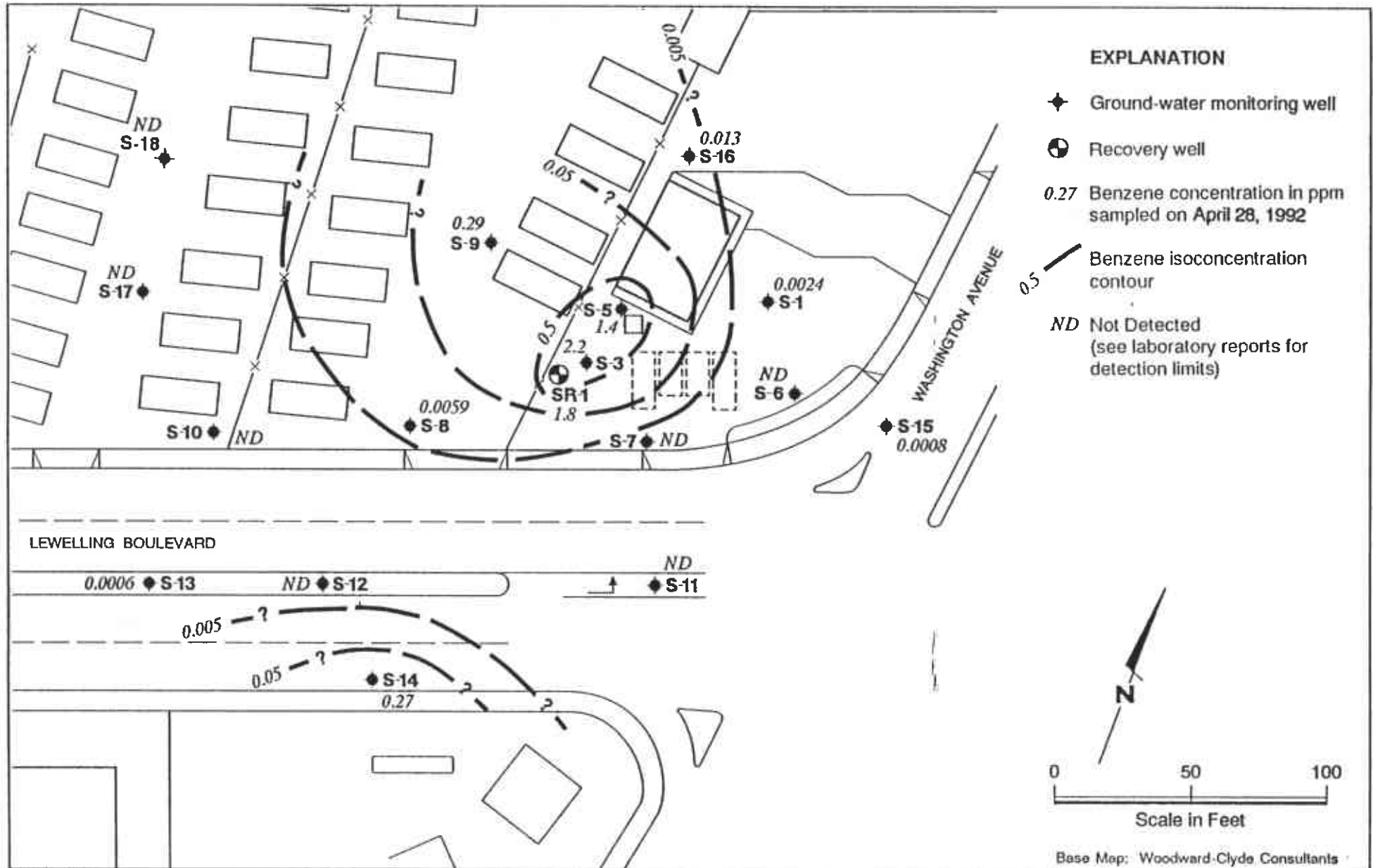


**Vicinity Map**  
 Former Shell Service Station  
 15275 Washington Avenue  
 San Leandro, California

PLATE

**1**





GeoStrategies Inc.

**Benzene Isoconcentration Map**  
 Former Shell Service Station  
 15275 Washington Avenue  
 San Leandro, California

PLATE

**3**

JOB NUMBER  
761501-17

REVIEWED BY  
GSI

DATE  
6/92

REVISED DATE

REVISED DATE

**GeoStrategies Inc.**

APPENDIX A  
EMCON MONITORING REPORT  
AND  
CHAIN-OF-CUSTODY





**EMCON**  
ASSOCIATES  
Consultants in Wastes  
Management and  
Environmental Control

RECEIVED

JUN 2 1992

**GeoStrategies Inc.**

June 1, 1992

Project: G67-28.01

WIC#: 204-6852-1008

Ms. Ellen Fostersmith  
Geo Strategies Inc.  
2140 West Winton Avenue  
Hayward, California 94545

Re: Second quarter 1992 ground-water monitoring report, Shell Oil  
Company, 15275 Washington Avenue, San Leandro, California

Dear Ms. Fostersmith:

This letter presents the results of the second quarter 1992 ground-water monitoring event for the Shell Oil Company (Shell) site located at 15275 Washington Avenue, San Leandro, California. Second quarter monitoring was conducted on April 28 and 29, 1992. The site is monitored quarterly. Selected wells are sampled semiannually during second and fourth quarters.

#### **GROUND-WATER LEVEL SURVEY**

A water-level survey preceded the purging and sampling of the monitoring wells. The wells included in the survey are identified in figure 1 (supplied by Geo Strategies Inc.). During the survey, wells S-1, S-3, S-5 through S-18, and SR-1 were measured for depth to water, floating product thickness, and total depth. Depth to water and floating product thickness were measured to the nearest 0.01 foot with an oil/water interface probe. No floating product was observed in any wells. Total depth was measured to the nearest 0.1 foot. Results of the second quarter water-level survey, and available data from four previous surveys, are summarized in table 1.

#### **SAMPLING AND ANALYSIS**

Ground-water samples were collected from wells S-1, S-3, S-5 through S-18, and SR-1 on April 28 and 29, 1992. Prior to sample collection, the wells were purged with polyvinyl chloride bailers. During the purging operation, ground water was monitored for pH, electrical conductivity, and temperature as a function of volume of water removed. Purging continued until these parameters were stable and a minimum of three casing volumes of ground water were removed. Well S-18 was evacuated to dryness before the removal of three casing volumes. The well was allowed to recharge for up to 24 hours. Samples were collected after the well had recharged to a level sufficient for sample collection. Field mea-

G672801B.DOC



measurements from second quarter monitoring, and available measurements from four previous monitoring events, are summarized in table 1. Purge water from the monitoring wells was contained in 55-gallon drums. The drums were identified with Shell-approved labels and secured for on-site storage.

Ground-water samples were collected with a Teflon<sup>®</sup> bailer, labeled, placed on ice, and transported to a Shell-approved and state-certified analytical laboratory for analysis. Shell chain-of-custody documents accompanied all samples to the laboratory.

All equipment that was placed down a well or that came in contact with ground water was steam cleaned with deionized water prior to use at each well.

Quality control samples for second quarter monitoring included a trip blank (TB) and a duplicate well sample (SD-7) collected at well S-7. All water samples collected during second quarter monitoring were analyzed for total petroleum hydrocarbons as gasoline (TPH-g), and benzene, toluene, ethylbenzene, and total xylenes (BTEX).

#### **ANALYTICAL RESULTS**

Analytical results for the second quarter 1992 monitoring event, and available results from four previous monitoring events, are summarized in table 2. The original certified analytical report and copy of the final chain-of-custody document are attached.

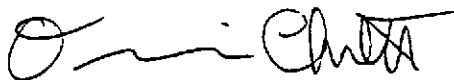
If you have any questions, please call.

Very truly yours,

EMCON Associates



David Larsen  
Environmental Sampling Coordinator



Orrin Childs  
Environmental Sampling Supervisor

DL/OC:dl

Attachments: Table 1 - Monitoring well field measurement data  
Table 2 - Summary of analytical results  
Figure 1 - Monitoring well locations  
Certified analytical report  
Chain-of-custody document

Table 1  
Monitoring Well Field Measurement Data  
Second Quarter 1992

Shell Station: 15275 Washington Avenue  
San Leandro, California  
NIC #: 204-6852-1008

Date: 05/22/92  
Project Number: G87-28.01

Well Designation	Water Level Field Date	TOB Elevation (ft-MSL)	Depth to Water (feet)	Ground-water Elevation (ft-MSL)	Total Well Depth (feet)	Floating Product Thickness (feet)	Water Sample Field Date	pH (std. units)	Electrical Conductivity (micromhos/cm)	Temperature (degrees F)	Turbidity (NTU)
S-1	04/25/91	21.55	7.18	14.37	19.9	ND	04/25/91	7.24	1131	67.7	NR
S-1	07/09/91	21.55	8.22	13.33	19.9	ND	07/09/91	7.37	1187	69.2	NR
S-1	10/08/91	21.55	8.70	12.85	19.9	ND	10/08/91	7.38	879	70.9	NR
S-1	02/05/92	21.55	8.14	13.41	19.9	ND	02/05/92	7.30	1308	65.0	>200
S-1	04/28/92	21.55	7.52	14.03	20.0	ND	04/28/92	7.02	1210	67.1	>1000
S-3	05/25/91	21.14	6.91	14.23	15.3	ND	04/25/91	6.87	1414	65.3	NR
S-3	07/09/91	21.14	8.07	13.07	15.3	ND	07/09/91	7.65	651	68.7	NR
S-3	10/08/91	21.14	8.81	12.53	15.3	ND	10/08/91	6.97	1048	70.0	NR
S-3	02/05/92	21.14	7.80	13.34	15.4	ND	02/06/92	7.79	951	66.2	>200
S-3	04/28/92	21.14	7.27	13.87	15.3	ND	04/29/92	6.78	1790	66.3	>200
S-5	04/25/91	21.41	7.40	14.01	18.4	ND	04/25/91	6.97	1236	65.9	NR
S-5	07/09/91	21.41	8.52	12.89	18.4	ND	07/09/92	7.30	1499	66.1	NR
S-5	10/08/91	21.41	9.00	12.41	18.4	ND	10/08/91	7.12	1243	71.0	NR
S-5	02/05/92	21.41	8.11	13.30	18.4	ND	02/06/92	7.40	756	66.8	>200
S-5	04/28/92	21.41	7.70	13.71	18.3	ND	04/29/92	6.71	1747	65.9	>200
S-6	04/25/91	22.02	7.74	14.28	24.8	ND	04/25/91	7.51	1011	68.2	NR
S-6	07/09/91	22.02	8.81	13.21	24.6	ND	07/09/91	7.26	1065	68.7	NR
S-6	10/08/91	22.02	9.26	12.76	24.7	ND	10/08/91	7.48	853	69.4	NR
S-6	02/05/92	22.02	8.47	13.55	24.7	ND	02/05/92	NA	NA	NA	NA
S-6	04/28/92	22.02	7.91	14.11	24.5	ND	04/28/92	7.23	996	67.4	>1000

TOB = top of well box

ft-MSL = elevation in feet, relative to mean sea level

std. units = standard pH units

micromhos/cm = micromhos per centimeter

degrees F = degrees Fahrenheit

NTU = nephelometric turbidity units

ND = None detected

NR = Not reported; data not available

NA = Not applicable; well was not scheduled for sampling

Table 1  
Monitoring Well Field Measurement Data  
Second Quarter 1992

Shell Station: 15275 Washington Avenue  
San Leandro, California  
WIC #: 204-6852-1008

Date: 05/22/92  
Project Number: 067-28.01

Well Designation	Water Level Field Date	TOB Elevation (ft-MSL)	Depth to Water (feet)	Ground-water Elevation (ft-MSL)	Total Well Depth (feet)	Floating Product Thickness (feet)	Water Sample Field Date	pH (std. units)	Electrical Conductivity (micromhos/cm)	Temperature (degrees F)	Turbidity (NTU)
S-7	04/25/91	21.47	7.25	14.22	21.7	ND	04/25/91	7.25	1448	67.7	NR
S-7	07/09/91	21.47	8.41	13.06	21.7	ND	07/09/91	7.37	1388	70.3	NR
S-7	10/08/91	21.47	8.95	12.52	22.7	ND	10/08/91	7.20	1095	73.8	NR
S-7	02/05/92	21.47	8.04	13.43	24.4	ND	02/05/92	7.37	1538	63.5	>200
S-7	04/28/92	21.47	7.45	14.02	24.2	ND	04/28/92	7.03	1247	67.6	>1000
S-8	04/25/91	20.72	6.72	14.00	24.3	ND	04/25/91	7.15	1578	68.0	NR
S-8	07/09/91	20.72	7.98	12.74	24.3	ND	07/09/91	7.79	1655	70.4	NR
S-8	10/08/91	20.72	8.55	12.17	24.2	ND	10/08/91	7.34	1243	73.2	NR
S-8	02/05/92	20.72	7.50	13.22	24.2	ND	02/05/92	7.21	1840	64.1	>200
S-8	04/28/92	20.72	7.14	13.58	24.1	ND	04/28/92	7.20	1837	70.6	>200
S-9	04/25/91	20.96	6.09	14.87	17.9	ND	04/25/91	6.94	1472	66.5	NR
S-9	07/09/91	20.96	8.00	12.96	17.9	ND	07/09/91	7.47	1547	71.2	NR
S-9	10/08/91	20.96	8.55	12.41	17.9	ND	10/08/91	7.47	1206	74.5	NR
S-9	02/05/92	20.96	6.96	14.00	17.9	ND	02/06/92	7.20	1010	63.8	>200
S-9	04/28/92	20.96	6.76	14.20	17.9	ND	04/29/92	6.75	2050	67.9	>200
S-10	04/25/91	20.69	6.91	13.78	18.2	ND	04/25/91	7.38	921	63.4	NR
S-10	07/09/91	20.69	8.14	12.55	18.1	ND	07/09/91	7.39	965	63.6	NR
S-10	10/08/91	20.69	8.70	11.99	18.2	ND	10/08/91	7.14	749	68.1	NR
S-10	02/05/92	20.69	7.57	13.12	18.1	ND	02/05/92	7.18	963	64.0	>200
S-10	04/28/92	20.69	7.20	13.49	18.1	ND	04/28/92	7.09	1175	66.0	>200

TOB = top of well box  
ft-MSL = elevation in feet, relative to mean sea level  
std. units = standard pH units  
micromhos/cm = micromhos per centimeter  
degrees F = degrees Fahrenheit  
NTU = nephelometric turbidity units  
ND = None detected  
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Table 1  
Monitoring Well Field Measurement Data  
Second Quarter 1992

Shell Station: 15275 Washington Avenue  
San Leandro, California  
WIC #: 204-6852-1008

Date: 05/22/92  
Project Number: G67-28.01

Well Designation	Water Level Field Date	TOB Elevation (ft-MSL)	Depth to Water (feet)	Ground-water Elevation (ft-MSL)	Total Well Depth (feet)	Floating Product Thickness (feet)	Water Sample Field Date	pH (std. units)	Electrical Conductivity (micromhos/cm)	Temperature (degrees F)	Turbidity (NTU)
S-11	04/25/91	21.26	7.53	13.73	22.5	ND	04/25/91	7.50	1139	65.3	NR
S-11	07/09/91	21.26	8.85	12.41	22.6	ND	07/09/91	7.85	1078	67.6	NR
S-11	10/08/91	21.26	9.34	11.92	22.5	ND	10/08/91	7.71	875	68.6	NR
S-11	02/05/92	21.26	8.50	12.76	24.1	ND	02/05/92	NA	NA	NA	NA
S-11	04/28/92	21.26	7.80	13.46	22.5	ND	04/28/92	7.40	976	69.2	>1000
S-12	04/25/91	21.05	7.08	13.97	24.0	ND	04/25/91	7.28	1223	66.0	NR
S-12	07/09/91	21.05	8.42	12.63	24.1	ND	07/09/91	7.80	1164	66.5	NR
S-12	10/08/91	21.05	8.80	12.25	24.0	ND	10/08/91	7.82	947	69.8	NR
S-12	02/05/92	21.05	8.07	12.98	24.0	ND	02/05/92	7.69	1151	64.3	>200
S-12	04/28/92	21.05	8.33	12.72	23.8	ND	04/28/92	7.33	1115	69.8	>1000
S-13	04/25/91	20.57	7.00	13.57	23.9	ND	04/25/91	7.21	1567	66.1	NR
S-13	07/09/91	20.57	8.12	12.45	23.9	ND	07/09/91	7.59	1596	66.9	NR
S-13	10/08/91	20.57	8.69	11.88	23.9	ND	10/08/91	7.50	1296	69.0	NR
S-13	02/05/92	20.57	7.62	12.95	23.8	ND	02/05/92	NA	NA	NA	NA
S-13	04/28/92	20.57	7.15	13.42	23.6	ND	04/28/92	7.44	1497	71.8	>1000
S-14	04/25/91	20.44	6.40	14.04	23.1	ND	04/25/91	7.24	1428	64.9	NR
S-14	07/09/91	20.44	7.69	12.75	23.2	ND	07/09/91	7.77	1384	67.2	NR
S-14	10/08/91	20.44	8.24	12.20	23.2	ND	10/08/91	7.59	1125	68.1	NR
S-14	02/05/92	20.44	7.20	13.24	23.2	ND	02/05/92	NA	NA	NA	NA
S-14	04/28/92	20.44	9.75	10.69	23.1	ND	04/28/92	7.20	1312	68.7	>1000

TOB = top of well box

ft-MSL = elevation in feet, relative to mean sea level

std. units = standard pH units

micromhos/cm = micromhos per centimeter

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Table 1  
Monitoring Well Field Measurement Data  
Second Quarter 1992

Shell Station: 15275 Washington Avenue  
San Leandro, California  
WIC #: 204-6852-1008

Date: 05/22/92  
Project Number: G67-28.01

Well Designation	Water Level Field Date	TOB Elevation (ft-MSL)	Depth to Water (feet)	Ground-water Elevation (ft-MSL)	Total Well Depth (feet)	Floating Product Thickness (feet)	Water Sample Field Date	pH (std. units)	Electrical Conductivity (micromhos/cm)	Temperature (degrees F)	Turbidity (NTU)
S-15	04/25/91	22.22	7.83	14.39	23.6	ND	04/25/91	7.49	1021	67.6	NR
S-15	07/09/91	22.22	8.93	13.29	23.7	ND	07/09/91	8.12	980	68.2	NR
S-15	10/08/91	22.22	9.28	12.96	23.7	ND	10/08/91	7.57	752	69.7	NR
S-15	02/05/92	22.22	8.60	13.62	23.6	ND	02/06/92	7.52	928	63.0	>200
S-15	04/28/92	22.22	8.09	14.13	23.6	ND	04/28/92	7.22	941	66.7	>1000
S-16	04/25/91	21.82	7.48	14.34	24.2	ND	04/25/91	7.15	1431	65.0	NR
S-16	07/09/91	21.82	8.48	13.34	24.0	ND	07/09/91	7.42	1385	65.5	NR
S-16	10/08/91	21.82	8.95	12.87	24.1	ND	10/08/91	7.10	1085	69.5	NR
S-16	02/05/92	21.82	6.20	13.62	23.9	ND	02/05/92	7.20	1496	65.6	>200
S-16	04/28/92	21.82	7.80	14.02	23.8	ND	04/29/92	6.59	2040	66.7	>200
S-17	04/25/91	20.95	7.15	13.80	24.4	ND	04/25/91	7.27	1037	66.2	NR
S-17	07/09/91	20.95	8.24	12.71	24.3	ND	07/09/91	7.66	1142	66.3	NR
S-17	10/08/91	20.95	8.86	12.09	24.4	ND	10/08/91	7.40	967	69.8	NR
S-17	02/05/92	20.95	7.74	13.21	24.4	ND	02/05/92	NA	NA	NA	NA
S-17	04/28/92	20.95	7.41	13.54	24.3	ND	04/28/92	7.32	1205	68.4	>200
S-18	05/31/91	NR	NR	NR	NR	ND	05/31/91	NR	NR	NR	NR
S-18	07/09/91	21.03	8.23	12.80	18.1	ND	07/09/91	7.62	1152	70.1	NR
S-18	10/08/91	21.03	8.84	12.19	18.1	ND	10/08/91	7.39	1038	71.8	NR
S-18	02/05/92	21.03	7.67	13.36	18.1	ND	02/05/92	7.39	1520	65.5	>200
S-18	04/28/92	21.03	7.40	13.63	18.0	ND	04/28/92	7.23	1458	69.7	101.0

TOB = top of well box

ft-MSL = elevation in feet, relative to mean sea level

std. units = standard pH units

micromhos/cm = micromhos per centimeter

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NTU = nephelometric turbidity units

ND = None detected

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Table 1  
Monitoring Well Field Measurement Data  
Second Quarter 1992

Shell Station: 15275 Washington Avenue  
San Leandro, California  
WIC #: 204-6852-1008

Date: 05/22/92  
Project Number: 067-28.01

Well Desig- nation	Water Level Field Date	TOB Elevation  (ft-MSL)	Depth to Water  (feet)	Ground- water Elevation  (ft-MSL)	Total Well Depth  (feet)	Floating Product Thickness  (feet)	Water Sample Field Date	pH   (std. units)	Electrical Conductivity  (micromhos/cm)	Temperature   (degrees F)	Turbidity   (NTU)
SR-1	01/28/91	21.45	8.37	13.08	NR	ND	01/28/91	7.25	1827	67.4	NR
SR-1	07/09/91	21.45	8.11	13.34	21.2	ND	07/09/91	7.17	1613	67.8	NR
SR-1	10/08/91	21.45	8.63	12.82	21.3	ND	10/08/91	7.14	1249	70.4	NR
SR-1	02/05/92	21.45	7.68	13.77	21.2	ND	02/08/92	6.89	1520	61.1	>200
SR-1	04/28/92	21.45	7.27	14.18	21.2	ND	04/29/92	6.52	1910	65.3	>200

TOB = top of well box  
ft-MSL = elevation in feet, relative to mean sea level  
std. units = standard pH units  
micromhos/cm = micromhos per centimeter  
degrees F = degrees Fahrenheit  
NTU = nephelometric turbidity units  
NR = Not reported; data not available  
ND = None detected

Table 2  
Summary of Analytical Results  
Second Quarter 1992  
milligrams per liter (mg/l) or parts per million (ppm)

Shell Station: 15275 Washington Avenue  
San Leandro, California  
WIC #: 204-6852-1008

Date: 05/22/92  
Project Number: 067-28.01

Sample Designation	Water Sample Field Date	TPH-g	Benzene	Toluene	Ethylbenzene	Total Xylenes
		(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
S-1	04/25/91	0.08&	0.0037	<0.0005	0.0007	0.0020
S-1	07/09/91	0.20	0.016	<0.0005	0.0013	0.0058
S-1	10/08/91	<0.05	0.0023	<0.0005	<0.0005	<0.0005
S-1	02/05/92	0.16	0.0089	<0.0005	<0.0005	0.0060
S-1	04/28/92	<0.05	0.0024	<0.0005	<0.0005	0.0009
S-3	04/25/91	120.	3.9	3.6	2.4	8.9
S-3	07/09/91	50.	3.6	2.3	1.8	10.
S-3	10/08/91	130.	3.6	1.0	2.8	8.4
S-3	02/06/92	150.	2.5	0.67	2.7	10.
S-3	04/29/92	120.	2.2	1.2	2.0	5.8
S-5	04/25/91	67.	5.1	3.1	2.8	11.
S-5	07/09/92	4.9	0.48	0.036	0.36	1.0
S-5	10/08/91	6.6	0.37	0.0070	0.19	0.38
S-5	02/06/92	44.	4.8	0.85	2.7	8.4
S-5	04/29/92	33.	1.4	0.32	1.6	5.2
S-6	04/25/91	<0.05	<0.0005	<0.0005	<0.0005	0.0007
S-6	07/09/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
S-6	10/08/91	<0.05	0.0007	<0.0005	<0.0005	<0.0005
S-6	02/05/92	NA	NA	NA	NA	NA
S-6	04/28/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005

TPH-g = total petroleum hydrocarbons as gasoline

& = Compounds detected within the gasoline range are not characteristic of the standard gasoline chromatographic pattern.

NA = Not applicable; well was not scheduled for sampling



Table 2  
 Summary of Analytical Results  
 Second Quarter 1992  
 milligrams per liter (mg/l) or parts per million (ppm)

Shell Station: 15275 Washington Avenue  
 San Leandro, California  
 WIC #: 204-6852-1008

Date: 05/22/92  
 Project Number: G87-28.01

Sample Designation	Water Sample Field Date	TPH-g	Benzene	Toluene	Ethylbenzene	Total Xylenes
		(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
S-7	04/25/91	0.06&	<0.0005	<0.0005	<0.0005	<0.0005
S-7	07/09/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
S-7	10/08/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
S-7	02/05/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
S-7	04/28/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
SD-7	04/28/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
S-8	04/25/91	0.13&	0.019	<0.0005	0.0013	0.0011
S-8	07/09/91	0.20	0.033	<0.0005	0.0018	0.0028
S-8	10/08/91	0.58	0.095	0.0022	0.0049	0.0065
S-8	02/05/92	0.09&	0.018	<0.0005	0.0062	0.0018
S-8	04/28/92	<0.05	0.0059	<0.0005	0.0025	<0.0005
S-9	04/25/91	5.8	0.88	0.0090	0.36	0.50
S-9	07/09/91	1.4	0.22	0.0028	0.082	0.10
S-9	10/08/91	0.89	0.096	<0.0025	0.016	0.029
S-9	02/05/92	0.95	0.24	<0.0025	0.028	0.055
S-9	04/29/92	1.4&	0.29	0.003	0.10	0.081
S-10	04/25/91	<0.05	<0.0005	<0.0005	0.0011	0.0008
S-10	07/09/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
S-10	10/08/91	0.14	<0.0005	<0.0005	<0.0005	<0.0005
S-10	02/05/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
S-10	04/28/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005

TPH-g = total petroleum hydrocarbons as gasoline

& = Compounds detected within the gasoline range are not characteristic of the standard gasoline chromatographic pattern.

Table 2  
 Summary of Analytical Results  
 Second Quarter 1992  
 milligrams per liter (mg/l) or parts per million (ppm)

Shell Station: 15275 Washington Avenue  
 San Leandro, California  
 WIC #: 204-6852-1008

Date: 05/22/92  
 Project Number: G87-28.01

Sample Designation	Water Sample Field Date	TPH-g	Benzene	Toluene	Ethylbenzene	Total Xylenes
		(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
S-11	04/25/91	<0.05	<0.0005	<0.0005	0.0008	<0.0005
S-11	07/09/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
S-11	10/08/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
S-11	02/05/92	NA	NA	NA	NA	NA
S-11	04/28/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
S-12	04/25/91	0.09	0.0054	<0.0005	0.0011	0.0007
S-12	07/09/91	<0.05	0.0029	<0.0005	<0.0005	<0.0005
S-12	10/08/91	0.05	<0.0005	<0.0005	<0.0005	<0.0005
S-12	02/05/92	0.05&	<0.0005	<0.0005	<0.0005	<0.0005
S-12	04/28/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
S-13	04/25/91	0.44&	0.0038	<0.0005	0.0012	0.0006
S-13	07/09/91	0.32&	0.0006	<0.0005	<0.0005	<0.0005
S-13	10/08/91	0.31	<0.0005	<0.0005	<0.0005	<0.0005
S-13	02/05/92	NA	NA	NA	NA	NA
S-13	04/28/92	<0.05	0.0006	<0.0005	<0.0005	<0.0005
S-14	04/25/91	14.	0.93	0.43	0.25	0.97
S-14	07/09/91	0.16	0.030	0.0053	0.0050	0.016
S-14	10/08/91	5.4	0.081	0.057	0.095	0.38
S-14	02/05/92	NA	NA	NA	NA	NA
S-14	04/28/92	2.0	0.27	0.14	0.048	0.17

TPH-g = total petroleum hydrocarbons as gasoline

NA = Not applicable; well was not scheduled for sampling

& = Compounds detected within the gasoline range are not characteristic of the standard gasoline chromatographic pattern.

Table 2  
 Summary of Analytical Results  
 Second Quarter 1992  
 milligrams per liter (mg/l) or parts per million (ppm)

Shell Station: 15275 Washington Avenue  
 San Leandro, California  
 WIC #: 204-6852-1008

Date: 05/22/92  
 Project Number: G67-28.01

Sample Designation	Water Sample Field Date	TPH-g (mg/l)	Benzene (mg/l)	Toluene (mg/l)	Ethylbenzene (mg/l)	Total Xylenes (mg/l)
S-15	04/25/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
S-15	07/09/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
S-15	10/08/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
S-15	02/06/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
S-15	04/28/92	0.05	0.0008	0.0009	<0.0005	0.0014
S-16	04/25/91	0.06^	0.021	0.0005	0.0032	0.0048
S-16	07/09/91	<0.05	0.0010	<0.0005	<0.0005	<0.0005
S-16	10/08/91	0.05	0.017	0.0014	0.0012	0.0055
S-16	02/05/92	0.15	0.065	0.0007	<0.0005	0.0084
S-16	04/29/92	<0.05	0.013	<0.0005	<0.0005	<0.0005
S-17	04/25/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
S-17	07/09/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
S-17	10/08/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
S-17	02/05/92	NA	NA	NA	NA	NA
S-17	04/28/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
S-18	05/31/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
S-18	07/09/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
S-18	10/08/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
S-18	02/05/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
S-18	04/28/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005

TPH-g = total petroleum hydrocarbons as gasoline

^ = Compounds reported as gasoline are due to volatile aromatics (BTEX) in the sample; gasoline was not detected.

NA = Not applicable; well was not scheduled for sampling

Table 2  
 Summary of Analytical Results  
 Second Quarter 1992  
 milligrams per liter (mg/l) or parts per million (ppm)

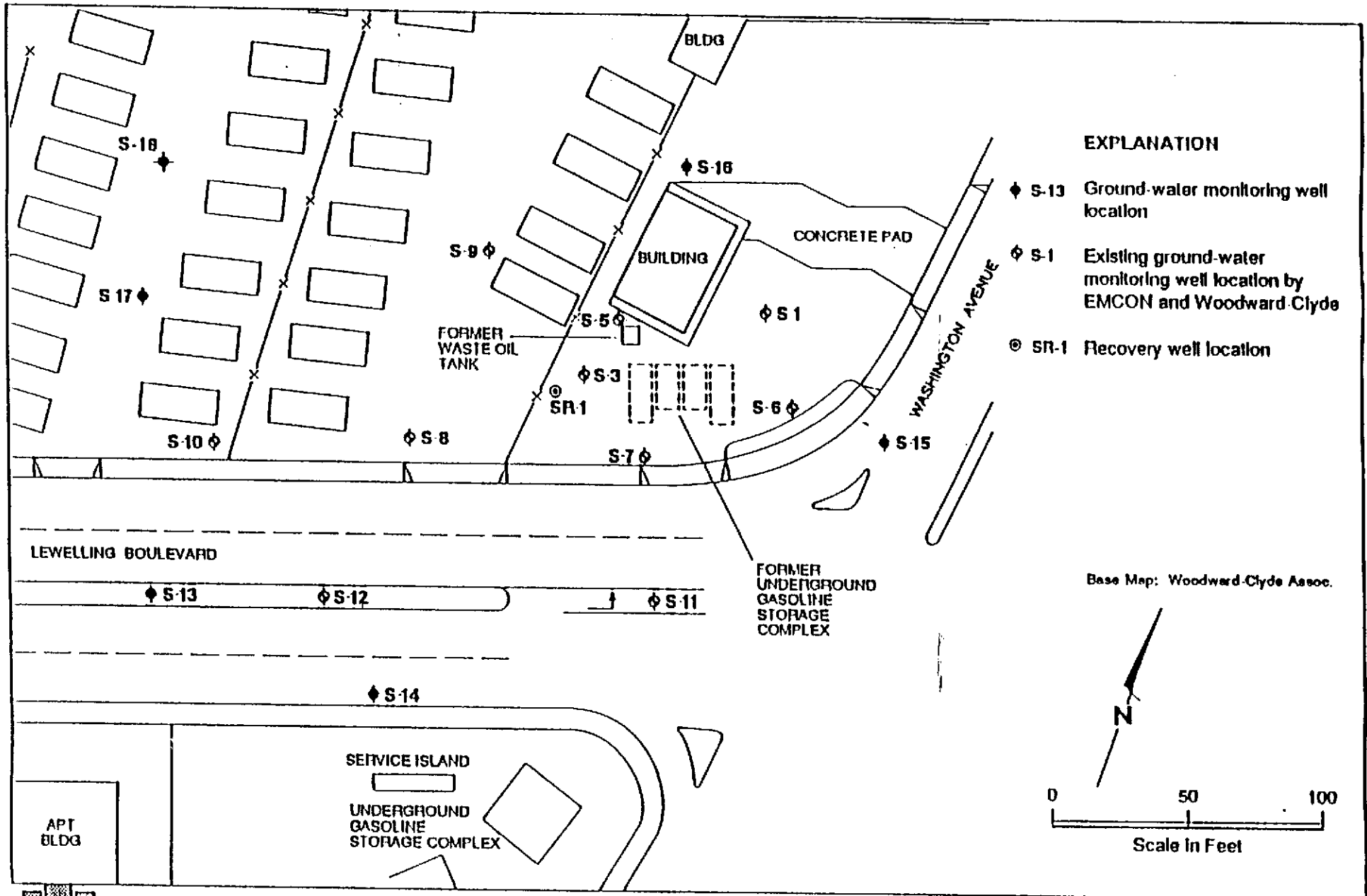
Shell Station: 15275 Washington Avenue  
 San Leandro, California  
 WIC #: 204-6852-1008

Date: 05/22/92  
 Project Number: G67-28.01

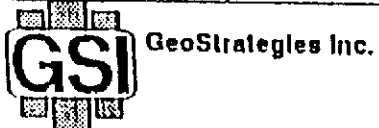
Sample Designation	Water Sample Field Date	TPH-g	Benzene	Toluene	Ethyl-benzene	Total Xylenes
		(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
SR-1	01/28/91	1.1	0.120	0.012	0.051	0.110
SR-1	07/09/91	1.4	0.20	0.027	0.13	0.34
SR-1	10/08/91	0.98	0.079	0.0015	0.044	0.052
SR-1	02/06/92	3.8	0.58	0.036	0.32	0.40
SR-1	04/29/92	38.	1.8	0.46	1.9	7.5
TB	02/06/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
TB	04/29/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005

TPH-g = total petroleum hydrocarbons as gasoline

Figure 1  
 (Supplied by Geo Strategies, Inc.)



- EXPLANATION**
- ◆ S-13 Ground-water monitoring well location
  - ◆ S-1 Existing ground-water monitoring well location by EMCON and Woodward-Clyde
  - ⊙ SR-1 Recovery well location



Site Plan  
 Former Shell Service Station  
 15275 Washington Avenue  
 San Leandro, California

PLATE

AXI NUMBER  
 761501-14

REVIEWED BY  
 G.P.S.

DATE  
 9/91

REVISED DATE

REVISED DATE



**INTERNATIONAL  
TECHNOLOGY  
CORPORATION**

ITAS Cerritos W.O.#: C2-05-006

Shell Site: 15275 Washington Ave, San Leandro  
WIC No.: 204-6852-1008  
Shell Engineer: Kurt Miller  
Shell Consultant: EMCON Associates / David Larsen

**ANALYTICAL SUMMARY**

Sample: S-10

Analyte	Result (MG/L)	Detection Limit (MG/L)
Benzene	ND	0.0005
Toluene	ND	0.0005
Ethylbenzene	ND	0.0005
Xylenes (total)	ND	0.05
Gasoline	ND	0.05

Sample: S-11

Analyte	Result (MG/L)	Detection Limit (MG/L)
Benzene	ND	0.0005
Toluene	ND	0.0005
Ethylbenzene	ND	0.0005
Xylenes (total)	ND	0.0005
Gasoline	ND	0.05

Sample: S-15

Analyte	Result (MG/L)	Detection Limit (MG/L)
Benzene	0.0008	0.0005
Toluene	0.0009	0.0005
Ethylbenzene	ND	0.0005
Xylenes (total)	0.0014	0.0005
Gasoline	0.05	0.05

Sample: S-17

Analyte	Result (MG/L)	Detection Limit (MG/L)
Benzene	ND	0.0005
Toluene	ND	0.0005
Ethylbenzene	ND	0.0005
Xylenes (total)	ND	0.0005
Gasoline	ND	0.05

Sample: S-18

Analyte	Result (MG/L)	Detection Limit (MG/L)
Benzene	ND	0.0005
Toluene	ND	0.0005
Ethylbenzene	ND	0.0005
Xylenes (total)	ND	0.0005
Gasoline	ND	0.05

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MAY 27 1992

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Regional Office

17605 Fabrica Way • Cerritos, California 90701 • 213-921-9831 or 714-523-9200

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## Sample: S-6

Analyte	Result (MG/L)	Detection Limit (MG/L)
Benzene	ND	0.0005
Toluene	ND	0.0005
Ethylbenzene	ND	0.0005
Xylenes (total)	ND	0.0005
Gasoline	ND	0.05

## Sample: S-7

Analyte	Result (MG/L)	Detection Limit (MG/L)
Benzene	ND	0.0005
Toluene	ND	0.0005
Ethylbenzene	ND	0.0005
Xylenes (total)	ND	0.0005
Gasoline	ND	0.05

## Sample: S-12

Analyte	Result (MG/L)	Detection Limit (MG/L)
Benzene	ND	0.0005
Toluene	ND	0.0005
Ethylbenzene	ND	0.0005
Xylenes (total)	ND	0.0005
Gasoline	ND	0.05

## Sample: S-3

Analyte	Result (MG/L)	Detection Limit (MG/L)
Benzene	2.2	0.05
Toluene	1.2	0.05
Ethylbenzene	2.0	0.05
Xylenes (total)	5.8	0.05
Gasoline	120	5

## Sample: SD-7

Analyte	Result (MG/L)	Detection Limit (MG/L)
Benzene	ND	0.0005
Toluene	ND	0.0005
Ethylbenzene	ND	0.0005
Xylenes (total)	ND	0.0005
Gasoline	ND	0.05

## Sample: Trip Blank

Analyte	Result (MG/L)	Detection Limit (MG/L)
Benzene	ND	0.0005
Toluene	ND	0.0005
Ethylbenzene	ND	0.0005
Xylenes (total)	ND	0.0005
Gasoline	ND	0.05

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## QC SUMMARY

Analyte	Matrix Spike (%Rec)	Matrix Spike Dup (%Rec)
Benzene	94	98
Toluene	91	91
Ethylbenzene	93	96
Xylenes (total)	91	92
Gasoline	89	90

## Method Blank

Analyte	Result (MG/L)	Detection Limit (MG/L)
Benzene	ND	0.0005
Toluene	ND	0.0005
Ethylbenzene	ND	0.0005
Xylenes (total)	ND	0.0005
Gasoline	ND	0.05

Reviewed and Approved:

  
Maria Miller  
Project Manager

EMCON ASSOCIATES

MAY 14 1992

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# ANALYTICAL SERVICES

## CERTIFICATE OF ANALYSIS

EMCON ASSOCIATES  
1938 JUNCTION AVE  
SAN JOSE CA 95131  
DAVID LARSEN

Date: 05/13/92

Work Order: C2-05-006

Project/P.O.#: 204-6852-1008  
SHELL NORTH

This is the Certificate of Analysis for the following samples:

Client Work ID: 15275 WASHINGTON, SAN LEANDRO  
Date Received: 05/01/92 275000  
Number of Samples: 14  
Sample Type: LIQUID

Shell Site: 15275 Washington Ave, San Leandro  
WIC No.: 204-6852-1008  
Shell Engineer: Kurt Miller  
Shell Consultant: EMCON Associates / David Larsen  
Work Description: Quarterly Monitoring  
Class Type: 5461

Samples were labeled as follows:

<u>SAMPLE IDENTIFICATION</u>	<u>LABORATORY #</u>
S-10	C2-05-006-01
S-11	C2-05-006-02
S-15	C2-05-006-03
S-17	C2-05-006-04
S-18	C2-05-006-05
S-6	C2-05-006-06
S-7	C2-05-006-07

EMCON ASSOCIATES

Reviewed and Approved:

Marla Miller  
Project Manager

MAY 14 1992  
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American Council of Independent Laboratories  
International Association of Environmental Testing Laboratories  
American Association for Laboratory Accreditation

Company: EMCON ASSOCIATES

Date: 05/13/92

Client Work ID: 15275 WASHINGTON, SAN LEANDRO 275000

IT ANALYTICAL SERVICES  
CERRITOS, CA

Work Order: C2-05-006

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Samples, continued from above:

<u>SAMPLE IDENTIFICATION</u>	<u>LABORATORY #</u>
S-12	C2-05-006-08
S-3	C2-05-006-09
SD-7	C2-05-006-10
TRIP BLANK	C2-05-006-11
MATRIX SPIKE	C2-05-006-12
MATRIX SPIKE DUPLICATE	C2-05-006-13
METHOD BLANK	C2-05-006-14

Company: EMCON ASSOCIATES

Date: 05/13/92

Client Work ID: 15275 WASHINGTON, SAN LEANDRO 275000

IT ANALYTICAL SERVICES  
CERRITOS, CA

Work Order: C2-05-006

---

TEST NAME: VOLATILE FUEL HYDROCARBONS

SAMPLE ID: 8-10

LAB SAMPLE ID: C205006-01A

SAMPLE DATE: 04/28/92

ANALYSIS DATE: 05/06/92

EXTRACTION DATE:

	Results in	MG/L:	Detection Limit
	TPHC AS UNLEADED GASOLINE	ND	0.05

Surrogate	% Recovery
A,A,A-TRIFLUOROTOLUENE	108

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.  
'NA' indicates not applicable  
'\*' surrogate recovery is outside QC limit.  
'D' surrogate is diluted out.  
'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES

Date: 05/13/92

Client Work ID: 15275 WASHINGTON, SAN LEANDRO 275000

IT ANALYTICAL SERVICES  
CERRITOS, CA

Work Order: C2-05-006

TEST NAME: BTEX BY METHOD 8020

SAMPLE ID: S-10

LAB SAMPLE ID: C205006-01A

SAMPLE DATE: 04/28/92

ANALYSIS DATE: 05/06/92

CONFIRMATION DATE:

	Results in	MG/L:	Detection Limit
BENZENE		ND	0.0005
TOLUENE		ND	0.0005
ETHYLBENZENE		ND	0.0005
XYLENES (TOTAL)		ND	0.0005

Surrogate	% Recovery	Limits
A,A,A-TRIFLUOROTOLUENE	97	75 - 125
1-CHLORO-2-FLUOROBENZENE		-

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.  
 'NA' indicates not applicable  
 '\*' Surrogate recovery is outside QC limit.  
 'D' Surrogate is diluted out.  
 'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES  
Date: 05/13/92  
Client Work ID: 15275 WASHINGTON, SAN LEANDRO 275000

IT ANALYTICAL SERVICES  
CERRITOS, CA

Work Order: C2-05-006

---

TEST NAME: VOLATILE FUEL HYDROCARBONS

SAMPLE ID: S-11  
LAB SAMPLE ID: C205006-02A  
SAMPLE DATE: 04/28/92  
ANALYSIS DATE: 05/06/92  
EXTRACTION DATE:

	Results in	MG/L:	Detection Limit
TPHC AS UNLEADED GASOLINE		ND	0.05

Surrogate	% Recovery
A,A,A-TRIFLUOROTOLUENE	107

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.  
'NA' indicates not applicable  
'\*' Surrogate recovery is outside QC limit.  
'D' Surrogate is diluted out.  
'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES

Date: 05/13/92

Client Work ID: 15275 WASHINGTON, SAN LEANDRO 275000

IT ANALYTICAL SERVICES  
CERRITOS, CA

Work Order: C2-05-006

TEST NAME: BTEX BY METHOD 8020

SAMPLE ID: S-11

LAB SAMPLE ID: C205006-02A

SAMPLE DATE: 04/28/92

ANALYSIS DATE: 05/06/92

CONFIRMATION DATE:

	Results in	MG/L:	Detection Limit
BENZENE		ND	0.0005
TOLUENE		ND	0.0005
ETHYLBENZENE		ND	0.0005
XYLENES (TOTAL)		ND	0.0005

	Surrogate	% Recovery	Limits
A,A,A-TRIFLUOROTOLUENE		96	75 - 125
1-CHLORO-2-FLUOROBENZENE			-

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.  
 'NA' indicates not applicable  
 '\*' Surrogate recovery is outside QC limit.  
 'D' Surrogate is diluted out.  
 'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES

Date: 05/13/92

Client Work ID: 15275 WASHINGTON, SAN LEANDRO 275000

IT ANALYTICAL SERVICES  
CERRITOS, CA

Work Order: C2-05-006

---

TEST NAME: VOLATILE FUEL HYDROCARBONS

SAMPLE ID: S-15

LAB SAMPLE ID: C205006-03A

SAMPLE DATE: 04/28/92

ANALYSIS DATE: 05/07/92

EXTRACTION DATE:

	Results in	MG/L:	Detection Limit
TPHC AS UNLEADED GASOLINE		0.05	0.05

Surrogate	% Recovery
A,A,A-TRIFLUOROTOLUENE	108

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.  
'NA' indicates not applicable  
'\*' surrogate recovery is outside QC limit.  
'D' surrogate is diluted out.  
'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES

Date: 05/13/92

Client Work ID: 15275 WASHINGTON, SAN LEANDRO 275000

IT ANALYTICAL SERVICES  
CERRITOS, CA

Work Order: C2-05-006

TEST NAME: BTEX BY METHOD 8020

SAMPLE ID: S-15

LAB SAMPLE ID: C205006-03A

SAMPLE DATE: 04/28/92

ANALYSIS DATE: 05/07/92

CONFIRMATION DATE:

	Results in	MG/L:	Detection Limit
BENZENE	- - -	0.0008	0.0005
TOLUENE		0.0009	0.0005
ETHYLBENZENE		ND	0.0005
XYLENES (TOTAL)		0.0014	0.0005

Surrogate	% Recovery	Limits
A,A,A-TRIFLUOROTOLUENE	97	75 - 125
1-CHLORO-2-FLUOROBENZENE		-

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.  
 'NA' indicates not applicable  
 '\*' Surrogate recovery is outside QC limit.  
 'D' Surrogate is diluted out.  
 'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.



Company: EMCON ASSOCIATES  
Date: 05/13/92  
Client Work ID: 15275 WASHINGTON, SAN LEANDRO 275000

IT ANALYTICAL SERVICES  
CERRITOS, CA

Work Order: C2-05-006

TEST NAME: VOLATILE FUEL HYDROCARBONS

SAMPLE ID: S-17  
LAB SAMPLE ID: C205006-04A  
SAMPLE DATE: 04/28/92  
ANALYSIS DATE: 05/07/92  
EXTRACTION DATE:

	Results in	MG/L:	Detection Limit
TPHC AS UNLEADED GASOLINE		ND_____	0.05

Surrogate	% Recovery
A,A,A-TRIFLUOROTOLUENE	110

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.  
'NA' indicates not applicable  
'\*' Surrogate recovery is outside QC limit.  
'D' Surrogate is diluted out.  
'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES

Date: 05/13/92

Client Work ID: 15275 WASHINGTON, SAN LEANDRO 275000

IT ANALYTICAL SERVICES  
CERRITOS, CA

Work Order: C2-05-006

TEST NAME: BTEX BY METHOD 8020

SAMPLE ID: S-17

LAB SAMPLE ID: C205006-04A

SAMPLE DATE: 04/28/92

ANALYSIS DATE: 05/07/92

CONFIRMATION DATE:

	Results in	MG/L:	Detection Limit
BENZENE		ND	0.0005
TOLUENE		ND	0.0005
ETHYLBENZENE		ND	0.0005
XYLENES (TOTAL)		ND	0.0005

	Surrogate	% Recovery	Limits	
A,A,A-TRIFLUOROTOLUENE		100	75	- 125
1-CHLORO-2-FLUOROBENZENE				-

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.  
 'NA' indicates not applicable  
 '\*' Surrogate recovery is outside QC limit.  
 'D' Surrogate is diluted out.  
 'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES

Date: 05/13/92

Client Work ID: 15275 WASHINGTON, SAN LEANDRO 275000

IT ANALYTICAL SERVICES  
CERRITOS, CA

Work Order: C2-05-006

---

TEST NAME: VOLATILE FUEL HYDROCARBONS

SAMPLE ID: S-18

LAB SAMPLE ID: C205006-05A

SAMPLE DATE: 04/28/92

ANALYSIS DATE: 05/07/92

EXTRACTION DATE:

	Results in	MG/L:	Detection Limit
	TPHC AS UNLEADED GASOLINE	ND	0.05

Surrogate	% Recovery
A,A,A-TRIFLUOROTOLUENE	107

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.  
'NA' indicates not applicable  
'\*' Surrogate recovery is outside QC limit.  
'D' Surrogate is diluted out.  
'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES

Date: 05/13/92

Client Work ID: 15275 WASHINGTON, SAN LEANDRO 275000

IT ANALYTICAL SERVICES  
CERRITOS, CA

Work Order: C2-05-006

TEST NAME: BTEX BY METHOD 8020

SAMPLE ID: S-18

LAB SAMPLE ID: C205006-05A

SAMPLE DATE: 04/28/92

ANALYSIS DATE: 05/11/92

CONFIRMATION DATE:

	Results in	MG/L:	Detection Limit
BENZENE		ND	0.0005
TOLUENE		ND	0.0005
ETHYLBENZENE		ND	0.0005
XYLENES (TOTAL)		ND	0.0005

	Surrogate	% Recovery	Limits	
A,A,A-TRIFLUOROTOLUENE		101	75	- 125
1-CHLORO-2-FLUOROBENZENE				-

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.  
 'NA' indicates not applicable  
 '\*' Surrogate recovery is outside QC limit.  
 'D' Surrogate is diluted out.  
 'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES

Date: 05/13/92

Client Work ID: 15275 WASHINGTON, SAN LEANDRO 275000

IT ANALYTICAL SERVICES  
CERRITOS, CA

Work Order: C2-05-006

---

TEST NAME: VOLATILE FUEL HYDROCARBONS

SAMPLE ID: S-6

LAB SAMPLE ID: C205006-06A

SAMPLE DATE: 04/28/92

ANALYSIS DATE: 05/07/92

EXTRACTION DATE:

	Results in	MG/L:	Detection Limit
	TPHC AS UNLEADED GASOLINE	ND	0.05

Surrogate	% Recovery
A,A,A-TRIFLUOROTOLUENE	108

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.  
'NA' indicates not applicable  
'\*' Surrogate recovery is outside QC limit.  
'D' Surrogate is diluted out.  
'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: ENCON ASSOCIATES

Date: 05/13/92

Client Work ID: 15275 WASHINGTON, SAN LEANDRO 275000

IT ANALYTICAL SERVICES  
CERRITOS, CA

Work Order: C2-05-006

TEST NAME: BTEX BY METHOD 8020

SAMPLE ID: S-6

LAB SAMPLE ID: C205006-06A

SAMPLE DATE: 04/28/92

ANALYSIS DATE: 05/07/92

CONFIRMATION DATE:

	Results in	MG/L:	Detection Limit
BENZENE		ND	0.0005
TOLUENE		ND	0.0005
ETHYLBENZENE		ND	0.0005
XYLENES (TOTAL)		ND	0.0005

Surrogate	% Recovery	Limits
A,A,A-TRIFLUOROTOLUENE	97	75 - 125
1-CHLORO-2-FLUOROBENZENE		-

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.  
 'NA' indicates not applicable  
 '\*' Surrogate recovery is outside QC limit.  
 'D' Surrogate is diluted out.  
 'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES

Date: 05/13/92

Client Work ID: 15275 WASHINGTON, SAN LEANDRO 275000

Work Order: C2-05-006

TEST NAME: VOLATILE FUEL HYDROCARBONS

SAMPLE ID: S-7

LAB SAMPLE ID: C205006-07A

SAMPLE DATE: 04/28/92

ANALYSIS DATE: 05/07/92

EXTRACTION DATE:

	Results in	MG/L:	Detection Limit
	TPHC AS UNLEADED GASOLINE	ND	0.05

Surrogate	% Recovery
A,A,A-TRIFLUOROTOLUENE	110

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.  
 'NA' indicates not applicable  
 '\*' Surrogate recovery is outside QC limit.  
 'D' Surrogate is diluted out.  
 'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES

Date: 05/13/92

Client Work ID: 15275 WASHINGTON, SAN LEANDRO 275000

IT ANALYTICAL SERVICES  
CERRITOS, CA

Work Order: C2-05-006

TEST NAME: BTEX BY METHOD 8020

SAMPLE ID: S-7

LAB SAMPLE ID: C205006-07A

SAMPLE DATE: 04/28/92

ANALYSIS DATE: 05/07/92

CONFIRMATION DATE:

	Results in	MG/L:	Detection Limit
BENZENE		ND	0.0005
TOLUENE		ND	0.0005
ETHYLBENZENE		ND	0.0005
XYLENES (TOTAL)		ND	0.0005

Surrogate	% Recovery	Limits
A,A,A-TRIFLUOROTOLUENE	98	75 - 125
1-CHLORO-2-FLUOROBENZENE		-

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.  
 'NA' indicates not applicable  
 '\*' Surrogate recovery is outside QC limit.  
 'D' Surrogate is diluted out.  
 'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.



Company: EMCON ASSOCIATES  
Date: 05/13/92  
Client Work ID: 15275 WASHINGTON, SAN LEANDRO 275000

IT ANALYTICAL SERVICES  
CERRITOS, CA

Work Order: C2-05-006

TEST NAME: VOLATILE FUEL HYDROCARBONS

SAMPLE ID: S-12  
LAB SAMPLE ID: C205006-08A  
SAMPLE DATE: 04/28/92  
ANALYSIS DATE: 05/07/92  
EXTRACTION DATE:

	Results in	MG/L:	Detection Limit
	TPHC AS UNLEADED GASOLINE	ND	0.05

Surrogate	% Recovery
A,A,A-TRIFLUOROTOLUENE	109

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.  
'NA' indicates not applicable  
'\*' Surrogate recovery is outside QC limit.  
'D' Surrogate is diluted out.  
'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES

Date: 05/13/92

Client Work ID: 15275 WASHINGTON, SAN LEANDRO 275000

IT ANALYTICAL SERVICES  
CERRITOS, CA

Work Order: C2-05-006

TEST NAME: BTEX BY METHOD 8020

SAMPLE ID: S-12

LAB SAMPLE ID: C205006-08A

SAMPLE DATE: 04/28/92

ANALYSIS DATE: 05/07/92

CONFIRMATION DATE:

	Results in	MG/L:	Detection Limit
BENZENE		ND	0.0005
TOLUENE		ND	0.0005
ETHYLBENZENE		ND	0.0005
XYLENES (TOTAL)		ND	0.0005

	Surrogate	% Recovery	Limits	
A,A,A-TRIFLUOROTOLUENE		97	75	- 125
1-CHLORO-2-FLUOROBENZENE				-

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.  
 'NA' indicates not applicable  
 '\*' surrogate recovery is outside QC limit.  
 'D' surrogate is diluted out.  
 'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES

Date: 05/13/92

Client Work ID: 15275 WASHINGTON, SAN LEANDRO 275000

IT ANALYTICAL SERVICES  
CERRITOS, CA

Work Order: C2-05-006

TEST NAME: VOLATILE FUEL HYDROCARBONS

SAMPLE ID: S-3

LAB SAMPLE ID: C205006-09A

SAMPLE DATE: 04/29/92

ANALYSIS DATE: 05/07/92

EXTRACTION DATE:

	Results in	MG/L:	Detection Limit
TPHC AS UNLEADED GASOLINE		120	5

Surrogate	% Recovery
A,A,A-TRIFLUOROTOLUENE	103

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.  
'NA' indicates not applicable  
'\*' Surrogate recovery is outside QC limit.  
'D' Surrogate is diluted out.  
'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES  
 Date: 05/13/92  
 Client Work ID: 15275 WASHINGTON, SAN LEANDRO 275000

IT ANALYTICAL SERVICES  
 CERRITOS, CA

Work Order: C2-05-006

TEST NAME: BTEX BY METHOD 8020

SAMPLE ID: S-3  
 LAB SAMPLE ID: C205006-09A  
 SAMPLE DATE: 04/29/92  
 ANALYSIS DATE: 05/07/92  
 CONFIRMATION DATE:

	Results in	MG/L:	Detection Limit
BENZENE		2.2	0.05
TOLUENE		1.2	0.05
ETHYLBENZENE		2.0	0.05
XYLENES (TOTAL)		5.8	0.05

Surrogate	% Recovery	Limits
A,A,A-TRIFLUOROTOLUENE	99	75 - 125
1-CHLORO-2-FLUOROBENZENE		-

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.  
 'NA' indicates not applicable  
 '\*' Surrogate recovery is outside QC limit.  
 'D' Surrogate is diluted out.  
 'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES  
Date: 05/22/92  
Client Work ID: 15275 WASHINGTON, SAN LEANDRO 275000

IT ANALYTICAL SERVICES  
CERRITOS, CA

Work Order: C2-05-006

TEST NAME: VOLATILE FUEL HYDROCARBONS

SAMPLE ID: SD-7  
LAB SAMPLE ID: C205006-10A  
SAMPLE DATE: 04/28/92  
ANALYSIS DATE: 05/07/92  
EXTRACTION DATE:

	Results in	MG/L:	Detection Limit
TPHC AS UNLEADED GASOLINE		ND	0.05

Surrogate	% Recovery
A,A,A-TRIFLUOROTOLUENE	107

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.  
 'NA' indicates not applicable  
 '\*' Surrogate recovery is outside QC limit.  
 'D' Surrogate is diluted out.  
 'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

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Company: EMCON ASSOCIATES

Date: 05/22/92

Client Work ID: 15275 WASHINGTON, SAN LEANDRO 275000

IT ANALYTICAL SERVICES  
CERRITOS, CA

Work Order: C2-05-006

TEST NAME: BTEX BY METHOD 8020

SAMPLE ID: SD-7

LAB SAMPLE ID: C205006-10A

SAMPLE DATE: 04/28/92

ANALYSIS DATE: 05/07/92

CONFIRMATION DATE:

	Results in	MG/L:	Detection Limit
BENZENE		ND	0.0005
TOLUENE		ND	0.0005
ETHYLBENZENE		ND	0.0005
XYLENES (TOTAL)		ND	0.0005

Surrogate	% Recovery	Limits
A,A,A-TRIFLUOROTOLUENE	95	75 - 125
1-CHLORO-2-FLUOROBENZENE		-

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.  
 'NA' indicates not applicable  
 '\*' Surrogate recovery is outside QC limit.  
 'D' Surrogate is diluted out.  
 'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

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MAY 27 1992

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Company: ENCON ASSOCIATES

Date: 05/13/92

Client Work ID: 15275 WASHINGTON, SAN LEANDRO 275000

IT ANALYTICAL SERVICES  
CERRITOS, CA

Work Order: C2-05-006

TEST NAME: VOLATILE FUEL HYDROCARBONS

SAMPLE ID: TRIP BLANK

LAB SAMPLE ID: C205006-11A

SAMPLE DATE: 04/28/92

ANALYSIS DATE: 05/07/92

EXTRACTION DATE:

	Results in	MG/L:	Detection Limit
TPHC AS UNLEADED-GASOLINE		ND	0.05

Surrogate            % Recovery  
A,A,A-TRIFLUOROTOLUENE      106

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.  
'NA' indicates not applicable  
'\*' Surrogate recovery is outside QC limit.  
'D' Surrogate is diluted out.  
'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES

Date: 05/13/92

Client Work ID: 15275 WASHINGTON, SAN LEANDRO 275000

IT ANALYTICAL SERVICES  
CERRITOS, CA

Work Order: C2-05-006

TEST NAME: BTEX BY METHOD 8020

SAMPLE ID: TRIP BLANK

LAB SAMPLE ID: C205006-11A

SAMPLE DATE: 04/28/92

ANALYSIS DATE: 05/07/92

CONFIRMATION DATE:

	Results in	MG/L:	Detection Limit
BENZENE		ND	0.0005
TOLUENE		ND	0.0005
ETHYLBENZENE		ND	0.0005
KYLENES (TOTAL)		ND	0.0005

	Surrogate	% Recovery	Limits
A,A,A-TRIFLUOROTOLUENE		94	75 - 125
1-CHLORO-2-FLUOROBENZENE			-

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.  
 'NA' indicates not applicable  
 '\*' Surrogate recovery is outside QC limit.  
 'D' Surrogate is diluted out.  
 'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.



Company: EMCON ASSOCIATES

Date: 05/13/92

Client Work ID: 15275 WASHINGTON, SAN LEANDRO 275000

IT ANALYTICAL SERVICES  
CERRITOS, CA

Work Order: C2-05-006

TEST NAME: VOLATILE FUEL HYDROCARBONS

SAMPLE ID: MATRIX SPIKE

LAB SAMPLE ID: C205006-12A

SAMPLE DATE: not spec

ANALYSIS DATE: 05/06/92

EXTRACTION DATE:

	Results in	%REC:	Detection Limit
TPHC AS UNLEADED GASOLINE		89	---

Surrogate	% Recovery
A,A,A-TRIFLUOROTOLUENE	100

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.  
 'NA' indicates not applicable  
 '\*' Surrogate recovery is outside QC limit.  
 'D' Surrogate is diluted out.  
 'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES

Date: 05/13/92

Client Work ID: 15275 WASHINGTON, SAN LEANDRO 275000

IT ANALYTICAL SERVICES  
CERRITOS, CA

Work Order: C2-05-006

TEST NAME: BTEX BY METHOD 8020

SAMPLE ID: MATRIX SPIKE

LAB SAMPLE ID: C205006-12A

SAMPLE DATE: not spec

ANALYSIS DATE: 05/05/92

CONFIRMATION DATE:

	Results in	%REC:	Detection Limit
BENZENE	-	94	-
TOLUENE	-	91	-
ETHYLBENZENE	-	93	-
XYLENES (TOTAL)	-	91	-

Surrogate	% Recovery	Limits
A,A,A-TRIFLUOROTOLUENE	98	75 - 125
1-CHLORO-2-FLUOROBENZENE	-	-

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.  
 'NA' indicates not applicable  
 '\*\*' Surrogate recovery is outside QC limit.  
 'D' Surrogate is diluted out.  
 'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES

Date: 05/13/92

Client Work ID: 15275 WASHINGTON, SAN LEANDRO 275000

IT ANALYTICAL SERVICES  
CERRITOS, CA

Work Order: C2-05-006

TEST NAME: VOLATILE FUEL HYDROCARBONS

SAMPLE ID: MATRIX SPIKE DUPLICATE

LAB SAMPLE ID: C205006-13A

SAMPLE DATE: not spec

ANALYSIS DATE: 05/06/92

EXTRACTION DATE:

	Results in	%REC:	Detection Limit
TPHC AS UNLEADED GASOLINE		90	---

Surrogate	% Recovery
A,A,A-TRIFLUOROTOLUENE	101

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.  
 'NA' indicates not applicable  
 '\*' Surrogate recovery is outside QC limit.  
 'D' Surrogate is diluted out.  
 'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES  
 Date: 05/13/92  
 Client Work ID: 15275 WASHINGTON, SAN LEANDRO 275000

IT ANALYTICAL SERVICES  
 CERRITOS, CA

Work Order: C2-05-006

TEST NAME: BTEX BY METHOD 8020

SAMPLE ID: MATRIX SPIKE DUPLICATE  
 LAB SAMPLE ID: C205006-13A  
 SAMPLE DATE: not spec  
 ANALYSIS DATE: 05/06/92  
 CONFIRMATION DATE:

	Results in	%REC:	Detection Limit
BENZENE		98	-
TOLUENE		91	-
ETHYLBENZENE		96	-
XYLENES (TOTAL)		92	-

	Surrogate	% Recovery	Limits
A,A,A-TRIFLUOROTOLUENE		99	75 - 125
1-CHLORO-2-FLUOROBENZENE			-

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.  
 'NA' indicates not applicable  
 '\*' Surrogate recovery is outside QC limit.  
 'D' Surrogate is diluted out.  
 'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES

Date: 05/13/92

Client Work ID: 15275 WASHINGTON, SAN LEANDRO 275000

IT ANALYTICAL SERVICES  
CERRITOS, CA

Work Order: C2-05-006

TEST NAME: VOLATILE FUEL HYDROCARBONS

SAMPLE ID: METHOD BLANK

LAB SAMPLE ID: C205006-14A

SAMPLE DATE: not spec

ANALYSIS DATE: 05/06/92

EXTRACTION DATE:

	Results in	MG/L:	Detection Limit
TPHC AS UNLEADED-GASOLINE		ND	0.05

Surrogate	% Recovery
A,A,A-TRIFLUOROTOLUENE	104

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.  
 'NA' indicates not applicable  
 '\*' Surrogate recovery is outside QC limit.  
 'D' Surrogate is diluted out.  
 'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES

Date: 05/13/92

Client Work ID: 15275 WASHINGTON, SAN LEANDRO 275000

IT ANALYTICAL SERVICES  
CERRITOS, CA

Work Order: C2-05-006

TEST NAME: BTEX BY METHOD 8020

SAMPLE ID: METHOD BLANK

LAB SAMPLE ID: C205006-14A

SAMPLE DATE: not spec

ANALYSIS DATE: 05/06/92

CONFIRMATION DATE:

	Results in	MG/L:	Detection Limit
BENZENE	-	ND	0.0005
TOLUENE		ND	0.0005
ETHYLBENZENE		ND	0.0005
XYLENES (TOTAL)		ND	0.0005

Surrogate	% Recovery	Limits
A,A,A-TRIFLUOROTOLUENE	94	75 - 125
1-CHLORO-2-FLUOROBENZENE		-

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.  
 'NA' indicates not applicable  
 '\*' Surrogate recovery is outside QC limit.  
 'D' Surrogate is diluted out.  
 'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES

Date: 05/13/92

Client Work ID: 15275 WASHINGTON, SAN LEANDRO 275000

IT ANALYTICAL SERVICES  
CERRITOS, CA

Work Order: C2-05-006

TEST NAME VOLATILE FUEL HYDROCARBONS TEST CODE 8015U

Low boiling fuel hydrocarbons are analyzed by methods established by the California DRS' LUFT manual. An aliquot of the sample is purged with helium and the volatile fuel hydrocarbons are transferred to the vapor phase. The vapor is swept through a sorbent column where the hydrocarbons are adsorbed. Upon completion, the sorbent column is heated and backflushed onto a gas chromatograph equipped with a 30 meter capillary column. Detection and quantitation is made by a flame ionization detector. Unleaded gasoline is used as the calibration standard.

TEST NAME BTEX BY METHOD 8020

TEST CODE BTEX\_W

The sample was analyzed for benzene, toluene, ethylbenzene and total xylenes according to USEPA Methods 8020 and 5030. An aliquot of the sample is purged with helium and the volatile compounds are transferred to the vapor phase. The vapor is swept through a sorbent column where the aromatics are adsorbed. Upon completion the sorbent column is heated and backflushed onto a GC column. The trapped compounds are separated by the megabore column and detected by a photoionization detector.



Shell Site: 15275 Washington Ave, San Leandro  
 WIC No.: 204-6852-1008  
 Shell Engineer: Kurt Miller  
 Shell Consultant: EMCON Associates / David Larsen

**ANALYTICAL SUMMARY**

Sample: S-8

Analyte	Result (MG/L)	Detection Limit (MG/L)
Benzene	0.0059	0.0005
Toluene	ND	0.0005
Ethylbenzene	0.0025	0.0005
Xylenes (total)	ND	0.05
Gasoline	ND	0.05

Sample: S-1

Analyte	Result (MG/L)	Detection Limit (MG/L)
Benzene	0.0024	0.0005
Toluene	ND	0.0005
Ethylbenzene	ND	0.0005
Xylenes (total)	0.0009	0.0005
Gasoline	ND	0.05

Sample: S-14

Analyte	Result (MG/L)	Detection Limit (MG/L)
Benzene	0.27	0.003
Toluene	0.14	0.003
Ethylbenzene	0.048	0.003
Xylenes (total)	0.17	0.003
Gasoline	2.0	0.3

Sample: S-16

Analyte	Result (MG/L)	Detection Limit (MG/L)
Benzene	0.013	0.0005
Toluene	ND	0.0005
Ethylbenzene	ND	0.0005
Xylenes (total)	ND	0.0005
Gasoline	ND	0.05

Sample: S-13

Analyte	Result (MG/L)	Detection Limit (MG/L)
Benzene	0.0006	0.0005
Toluene	ND	0.0005
Ethylbenzene	ND	0.0005
Xylenes (total)	ND	0.0005
Gasoline	ND	0.05

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## Sample: S-9

Analyte	Result (MG/L)	Detection Limit (MG/L)
Benzene	0.29	0.003
Toluene	0.003	0.003
Ethylbenzene	0.10	0.003
Xylenes (total)	0.081	0.003
Gasoline	1.4**	0.05

## Sample: SR-1

Analyte	Result (MG/L)	Detection Limit (MG/L)
Benzene	1.8	0.03
Toluene	0.46	0.03
Ethylbenzene	1.9	0.03
Xylenes (total)	7.5	0.03
Gasoline	38	3

## Sample: S-5

Analyte	Result (MG/L)	Detection Limit (MG/L)
Benzene	1.4	0.03
Toluene	0.32	0.03
Ethylbenzene	1.6	0.03
Xylenes (total)	5.2	0.03
Gasoline	33	3

## QC SUMMARY

Analyte	Matrix Spike (%Rec)	Matrix Spike Dup (%Rec)
Benzene	94	98
Toluene	91	91
Ethylbenzene	93	96
Xylenes (total)	91	92
Gasoline	89	90

## Method Blank

Analyte	Result (MG/L)	Detection Limit (MG/L)
Benzene	ND	0.0005
Toluene	ND	0.0005
Ethylbenzene	ND	0.0005
Xylenes (total)	ND	0.0005
Gasoline	ND	0.05

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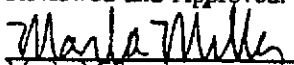
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COMMENTS

\*\* The chromatographic pattern of the purgeable hydrocarbons found in the sample does not match the pattern of gasoline. The sample does appear to contain components of gasoline and is quantitated using a gasoline standard.

Reviewed and Approved:



Marla Miller  
Project Manager

**CERTIFICATE OF ANALYSIS**

EMCON ASSOCIATES  
1938 JUNCTION AVE  
SAN JOSE CA 95131  
DAVID LARSEN

Date: 05/13/92

Work Order: C2-05-003

Project/P.O.#: 204-6852-1008  
SHELL\_NORTH

This is the Certificate of Analysis for the following samples:

Client Work ID: 15275 WASHINGTON, SAN LEANDRO  
Date Received: 05/01/92 275000  
Number of Samples: 11  
Sample Type: LIQUID

Shell Site: 15275 Washington Ave, San Leandro  
WIC No.: 204-6852-1008  
Shell Engineer: Kurt Miller  
Shell Consultant: EMCON Associates / David Larsen  
Work Description: Quarterly Monitoring  
Class Type: 5461

Samples were labeled as follows:

<u>SAMPLE IDENTIFICATION</u>	<u>LABORATORY #</u>
S-8	C2-05-003-01
S-1	C2-05-003-02
S-14	C2-05-003-03
S-16	C2-05-003-04
S-13	C2-05-003-05
S-9	C2-05-003-06
SR-1	C2-05-003-07

Reviewed and Approved:

Marla Miller  
Marla Miller  
Project Manager

EMCON ASSOCIATES

MAY 14 1992

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Company: EMCON ASSOCIATES

Date: 05/13/92

Client Work ID: 15275 WASHINGTON, SAN LEANDRO 275000

IT ANALYTICAL SERVICES  
CERRITOS, CA

Work Order: C2-05-003

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Samples, continued from above:

<u>SAMPLE IDENTIFICATION</u>	<u>LABORATORY #</u>
S-5	C2-05-003-08
MATRIX SPIKE	C2-05-003-09
MATRIX SPIKE DUPLICATE	C2-05-003-10
METHOD BLANK	C2-05-003-11

Company: EMCON ASSOCIATES

Date: 05/13/92

Client Work ID: 15275 WASHINGTON, SAN LEANDRO 275000

IT ANALYTICAL SERVICES  
CERRITOS, CA

Work Order: C2-05-003

TEST NAME: VOLATILE FUEL HYDROCARBONS

SAMPLE ID: S-8

LAB SAMPLE ID: C205003-01A

SAMPLE DATE: 04/28/92

ANALYSIS DATE: 05/05/92

EXTRACTION DATE:

	Results in	MG/L:	Detection Limit
TPHC AS UNLEADED GASOLINE		ND	0.05

Surrogate	% Recovery
A,A,A-TRIFLUOROTOLUENE	104

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.  
'NA' indicates not applicable  
'\*' Surrogate recovery is outside QC limit.  
'D' Surrogate is diluted out.  
'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES

Date: 05/13/92

Client Work ID: 15275 WASHINGTON, SAN LEANDRO 275000

IT ANALYTICAL SERVICES  
CERRITOS, CA

Work Order: C2-05-003

TEST NAME: BTEX BY METHOD 8020

SAMPLE ID: S-8

LAB SAMPLE ID: C205003-01A

SAMPLE DATE: 04/28/92

ANALYSIS DATE: 05/05/92

CONFIRMATION DATE:

	Results in	MG/L:	Detection Limit
BENZENE		0.0059	<del>0.0005</del>
TOLUENE		ND	0.0005
ETHYLBENZENE		0.0025	0.0005
XYLENES (TOTAL)		ND	0.0005

Surrogate	% Recovery	Limits
A,A,A-TRIFLUOROTOLUENE	97	75 - 125
1-CHLORO-2-FLUOROBENZENE		-

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.  
 'NA' indicates not applicable  
 '\*' Surrogate recovery is outside QC limit.  
 'D' Surrogate is diluted out.  
 'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES

Date: 05/13/92

Client Work ID: 15275 WASHINGTON, SAN LEANDRO 275000

IT ANALYTICAL SERVICES  
CERRITOS, CA

Work Order: C2-05-003

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TEST NAME: VOLATILE FUEL HYDROCARBONS

SAMPLE ID: S-1

LAB SAMPLE ID: C205003-02A

SAMPLE DATE: 04/28/92

ANALYSIS DATE: 05/06/92

EXTRACTION DATE:

Results in	MG/L:	Detection Limit
TPHC AS UNLEADED-GASOLINE	ND	0.05

Surrogate	% Recovery
A,A,A-TRIFLUOROTOLUENE	109

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.  
'NA' indicates not applicable  
'\*' Surrogate recovery is outside QC limit.  
'D' Surrogate is diluted out.  
'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

IT ANALYTICAL SERVICES  
CERRITOS, CA

Company: EMCON ASSOCIATES

Date: 05/13/92

Client Work ID: 15275 WASHINGTON, SAN LEANDRO 275000

Work Order: C2-05-003

TEST NAME: BTEX BY METHOD 8020

SAMPLE ID: S-1

LAB SAMPLE ID: C205003-02A

SAMPLE DATE: 04/28/92

ANALYSIS DATE: 05/06/92

CONFIRMATION DATE:

	Results in	MG/L:	Detection Limit
BENZENE	- -	0.0024	0.0005
TOLUENE		ND	0.0005
ETHYLBENZENE		ND	0.0005
XYLENES (TOTAL)		0.0009	0.0005

	Surrogate	% Recovery	Limits
A,A,A-TRIFLUOROTOLUENE		100	75 - 125
1-CHLORO-2-FLUOROBENZENE			-

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.  
 'NA' indicates not applicable  
 '\*' Surrogate recovery is outside QC limit.  
 'D' Surrogate is diluted out.  
 'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES  
Date: 05/13/92  
Client Work ID: 15275 WASHINGTON, SAN LEANDRO 275000

IT ANALYTICAL SERVICES  
CERRITOS, CA

Work Order: C2-05-003

TEST NAME: VOLATILE FUEL HYDROCARBONS

SAMPLE ID: S-14  
LAB SAMPLE ID: C205003-03A  
SAMPLE DATE: 04/28/92  
ANALYSIS DATE: 05/07/92  
EXTRACTION DATE:

	Results in	MG/L:	Detection Limit
TPHC AS UNLEADED GASOLINE		2.0	0.3

Surrogate	% Recovery
A,A,A-TRIFLUOROTOLUENE	107

- 'ND' or '<' indicates that the compound is not detected at the specified limit.
- 'NA' indicates not applicable
- '\*' Surrogate recovery is outside QC limit.
- 'D' Surrogate is diluted out.
- 'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.



ge: 8

IT ANALYTICAL SERVICES  
CERRITOS, CA

Company: EMCON ASSOCIATES

Date: 05/13/92

Client Work ID: 15275 WASHINGTON, SAN LEANDRO 275000

Work Order: C2-05-003

TEST NAME: BTEX BY METHOD 8020

SAMPLE ID: S-14

LAB SAMPLE ID: C205003-03A

SAMPLE DATE: 04/28/92

ANALYSIS DATE: 05/07/92

CONFIRMATION DATE:

	Results in	MG/L:	Detection Limit
BENZENE		0.27	0.003
TOLUENE		0.14	0.003
ETHYLBENZENE		0.048	0.003
KYLENES (TOTAL)		0.17	0.003

Surrogate	% Recovery	Limits
A,A,A-TRIFLUOROTOLUENE	93	75 - 125
1-CHLORO-2-FLUOROBENZENE		-

- Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.  
 'NA' indicates not applicable  
 '\*' Surrogate recovery is outside QC limit.  
 'D' Surrogate is diluted out.  
 'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

age: 9

company: EMCON ASSOCIATES

date: 05/22/92

client Work ID: 15275 WASHINGTON, SAN LEANDRO 275000

IT ANALYTICAL SERVICES  
CERRITOS, CA

Work Order: C2-05-003

TEST NAME: VOLATILE FUEL HYDROCARBONS

SAMPLE ID: S-16

LAB SAMPLE ID: C205003-04A

SAMPLE DATE: 04/29/92

ANALYSIS DATE: 05/06/92

EXTRACTION DATE:

	Results in	MG/L:	Detection Limit
TPHC AS UNLEADED GASOLINE		ND	0.05

Surrogate	% Recovery
A,A,A-TRIFLUOROTOLUENE	106

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.  
'NA' indicates not applicable  
'\*' surrogate recovery is outside QC limit.  
'D' Surrogate is diluted out.  
'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

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IT ANALYTICAL SERVICES  
CERRITOS, CA

EMCON ASSOCIATES  
05/22/92

Work ID: 15275 WASHINGTON, SAN LEANDRO 275000

Work Order: C2-05-003

NAME: BTEX BY METHOD 8020

PILE ID: S-16  
SAMPLE ID: C205003-04A  
PILE DATE: 04/29/92  
LYSIS DATE: 05/06/92  
FIRMATION DATE:

	Results in	MG/L:	Detection Limit
BENZENE	-	0.013	0.0005
TOLUENE	-	ND	0.0005
ETHYLBENZENE	-	ND	0.0005
XYLENES (TOTAL)	-	ND	0.0005

Surrogate	% Recovery	Limits
A,A,A-TRIFLUOROTOLUENE	98	75 - 125
1-CHLORO-2-FLUOROBENZENE	-	-

- 'ND' or '<' indicates that the compound is not detected at the specified limit.
- 'NA' indicates not applicable
- '\*' Surrogate recovery is outside QC limit.
- 'D' Surrogate is diluted out.
- 'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

EMCON ASSOCIATES  
MAY 27 1992  
RECEIVED

Company: EMCON ASSOCIATES  
Date: 05/13/92  
Client Work ID: 15275 WASHINGTON, SAN LEANDRO 275000

IT ANALYTICAL SERVICES  
CERRITOS, CA

Work Order: C2-05-003

TEST NAME: VOLATILE FUEL HYDROCARBONS

SAMPLE ID: S-13  
LAB SAMPLE ID: C205003-05A  
SAMPLE DATE: 04/28/92  
ANALYSIS DATE: 05/06/92  
EXTRACTION DATE:

	Results in	MG/L:	Detection Limit
TPHC AS UNLEADED GASOLINE		ND	0.05

Surrogate	% Recovery
A,A,A-TRIFLUOROTOLUENE	109

- Notes: 'ND' or '<' indicates that the compound is not detected at the specified limit.
- 'NA' indicates not applicable
- '\*\*' Surrogate recovery is outside QC limit.
- 'D' Surrogate is diluted out.
- 'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES

Date: 05/13/92

Client Work ID: 15275 WASHINGTON, SAN LEANDRO 275000

IT ANALYTICAL SERVICES  
CERRITOS, CA

Work Order: C2-05-003

TEST NAME: BTEX BY METHOD 8020

SAMPLE ID: S-13

LAB SAMPLE ID: C205003-05A

SAMPLE DATE: 04/28/92

ANALYSIS DATE: 05/06/92

CONFIRMATION DATE:

	Results in	MG/L:	Detection Limit
BENZENE		0.0006	0.0005
TOLUENE		ND	0.0005
ETHYLBENZENE		ND	0.0005
XYLENES (TOTAL)		ND	0.0005

	Surrogate	% Recovery	Limits	
A,A,A-TRIFLUOROTOLUENE		98	75	- 125
1-CHLORO-2-FLUOROBENZENE				-

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.  
 'NA' indicates not applicable  
 '\*' Surrogate recovery is outside QC limit.  
 'D' Surrogate is diluted out.  
 'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

IT ANALYTICAL SERVICES  
CERRITOS, CA

Company: EMCON ASSOCIATES

Date: 05/13/92

Client Work ID: 15275 WASHINGTON, SAN LEANDRO 275000

Work Order: C2-05-003

## TEST NAME: VOLATILE FUEL HYDROCARBONS

SAMPLE ID: 8-9

LAB SAMPLE ID: C205003-06A

SAMPLE DATE: 04/29/92

ANALYSIS DATE: 05/06/92

EXTRACTION DATE:

	Results in	MG/L:	Detection Limit
TPHC AS UNLEADED GASOLINE		1.4**	0.05

Surrogate	% Recovery
A,A,A-TRIFLUOROTOLUENE	108

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.  
 'NA' indicates not applicable  
 '\*' Surrogate recovery is outside QC limit.  
 'D' Surrogate is diluted out.  
 'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

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Company: EMCON ASSOCIATES  
Date: 05/13/92  
Client Work ID: 15275 WASHINGTON, SAN LEANDRO 275000

IT ANALYTICAL SERVICES  
CERRITOS, CA

Work Order: C2-05-003

TEST NAME: BTEX BY METHOD 8020

SAMPLE ID: S-9  
LAB SAMPLE ID: C205003-06A  
SAMPLE DATE: 04/29/92  
ANALYSIS DATE: 05/11/92  
CONFIRMATION DATE:

	Results in	MG/L:	Detection Limit
BENZENE		0.29	0.003
TOLUENE		0.003	0.003
ETHYLBENZENE		0.10	0.003
XYLENES (TOTAL)		0.081	0.003

Surrogate	% Recovery	Limits
A,A,A-TRIFLUOROTOLUENE	98	75 - 125
1-CHLORO-2-FLUOROBENZENE		-

Notes: 'ND' or '<' indicates that the compound is not detected at the specified limit.  
 'NA' indicates not applicable  
 '\*' Surrogate recovery is outside QC limit.  
 'D' Surrogate is diluted out.  
 'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES

Date: 05/13/92

Client Work ID: 15275 WASHINGTON, SAN LEANDRO 275000

Work Order: C2-05-003

TEST NAME: VOLATILE FUEL HYDROCARBONS

SAMPLE ID: SR-1

LAB SAMPLE ID: C205003-07A

SAMPLE DATE: 04/29/92

ANALYSIS DATE: 05/07/92

EXTRACTION DATE:

	Results in	MG/L:	Detection Limit
TPHC AS UNLEADED GASOLINE		38	—3

Surrogate	% Recovery
A,A,A-TRIFLUOROTOLUENE	108

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.  
 'NA' indicates not applicable  
 '\*' Surrogate recovery is outside QC limit.  
 'D' Surrogate is diluted out.  
 'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.



Company: EMCON ASSOCIATES

Date: 05/13/92

Client Work ID: 15275 WASHINGTON, SAN LEANDRO 275000

IT ANALYTICAL SERVICES  
CERRITOS, CA

Work Order: C2-05-003

TEST NAME: BTEX BY METHOD 8020

SAMPLE ID: SR-1

LAB SAMPLE ID: C205003-07A

SAMPLE DATE: 04/29/92

ANALYSIS DATE: 05/07/92

CONFIRMATION DATE:

	Results in	MG/L:	Detection Limit
BENZENE		1.8	0.03
TOLUENE		0.46	0.03
ETHYLBENZENE		1.9	0.03
XYLENES (TOTAL)		7.5	0.03

	Surrogate	% Recovery	Limits
A,A,A-TRIFLUOROTOLUENE		96	75 - 125
1-CHLORO-2-FLUOROBENZENE			-

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.  
 'NA' indicates not applicable  
 '\*' Surrogate recovery is outside QC limit.  
 'D' Surrogate is diluted out.  
 'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES  
Date: 05/13/92  
Client Work ID: 15275 WASHINGTON, SAN LEANDRO 275000

IT ANALYTICAL SERVICES  
CERRITOS, CA

Work Order: C2-05-003

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TEST NAME: VOLATILE FUEL HYDROCARBONS

SAMPLE ID: S-5  
LAB SAMPLE ID: C205003-08A  
SAMPLE DATE: 04/29/92  
ANALYSIS DATE: 05/07/92  
EXTRACTION DATE:

	Results in	MG/L:	Detection Limit
TPHC AS UNLEADED GASOLINE		33	3

Surrogate	% Recovery
A,A,A-TRIFLUOROTOLUENE	109

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.  
'NA' indicates not applicable  
'\*' Surrogate recovery is outside QC limit.  
'D' Surrogate is diluted out.  
'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES

Date: 05/13/92

Client Work ID: 15275 WASHINGTON, SAN LEANDRO 275000

Work Order: C2-05-003

TEST NAME: BTEX BY METHOD 8020

SAMPLE ID: S-5

LAB SAMPLE ID: C205003-08A

SAMPLE DATE: 04/29/92

ANALYSIS DATE: 05/07/92

CONFIRMATION DATE:

	Results in	MG/L:	Detection Limit
BENZENE		1.4	0.03
TOLUENE		0.32	0.03
ETHYLBENZENE		1.6	0.03
XYLENES (TOTAL)		5.2	0.03

Surrogate	% Recovery	Limits
A,A,A-TRIFLUOROTOLUENE	99	75 - 125
1-CHLORO-2-FLUOROBENZENE		-

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.  
 'NA' indicates not applicable  
 '\*' Surrogate recovery is outside QC limit.  
 'D' Surrogate is diluted out.  
 'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES

Date: 05/13/92

Client Work ID: 15275 WASHINGTON, SAN LEANDRO 275000

IT ANALYTICAL SERVICES  
CERRITOS, CA

Work Order: C2-05-003

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TEST NAME: VOLATILE FUEL HYDROCARBONS

SAMPLE ID: MATRIX SPIKE  
LAB SAMPLE ID: C205003-09A  
SAMPLE DATE: not spec  
ANALYSIS DATE: 05/06/92  
EXTRACTION DATE:

	Results in	%REC:	Detection Limit
TPHC AS UNLEADED_GASOLINE		89	-

Surrogate	% Recovery
A,A,A-TRIFLUOROTOLUENE	100

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.  
'NA' indicates not applicable  
'\*' Surrogate recovery is outside QC limit.  
'D' Surrogate is diluted out.  
'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES

Date: 05/13/92

Client Work ID: 15275 WASHINGTON, SAN LEANDRO 275000

IT ANALYTICAL SERVICES  
CERRITOS, CA

Work Order: C2-05-003

TEST NAME: BTEX BY METHOD 8020

SAMPLE ID: MATRIX SPIKE

LAB SAMPLE ID: C205003-09A

SAMPLE DATE: not spec

ANALYSIS DATE: 05/05/92

CONFIRMATION DATE:

	Results in	%REC:	Detection Limit
BENZENE		94	-
TOLUENE		91	-
ETHYLBENZENE		93	-
XYLENES (TOTAL)		91	-

Surrogate	% Recovery	Limits
A,A,A-TRIFLUOROTOLUENE	98	75 - 125
1-CHLORO-2-FLUOROBENZENE		-

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.  
'NA' indicates not applicable  
'\*' Surrogate recovery is outside QC limit.  
'D' Surrogate is diluted out.  
'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES

Date: 05/13/92

Client Work ID: 15275 WASHINGTON, SAN LEANDRO 275000

IT ANALYTICAL SERVICES  
CERRITOS, CA

Work Order: C2-05-003

TEST NAME: VOLATILE FUEL HYDROCARBONS

SAMPLE ID: MATRIX SPIKE DUPLICATE

LAB SAMPLE ID: C205003-10A

SAMPLE DATE: not spec

ANALYSIS DATE: 05/06/92

EXTRACTION DATE:

	Results in	%REC:	Detection Limit
TPHC AS UNLEADED_GASOLINE		90	_____

Surrogate	% Recovery
A,A,A-TRIFLUOROTOLUENE	101

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.  
'NA' indicates not applicable  
'\*' Surrogate recovery is outside QC limit.  
'D' Surrogate is diluted out.  
'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES  
Date: 05/13/92  
Client Work ID: 15275 WASHINGTON, SAN LEANDRO 275000

IT ANALYTICAL SERVICES  
CERRITOS, CA

Work Order: C2-05-003

TEST NAME: BTEX BY METHOD 8020

SAMPLE ID: MATRIX SPIKE DUPLICATE  
LAB SAMPLE ID: C205003-10A  
SAMPLE DATE: not spec  
ANALYSIS DATE: 05/05/92  
CONFIRMATION DATE:

	Results in	%REC:	Detection Limit
BENZENE		98	-
TOLUENE		91	-
ETHYLBENZENE		96	-
XYLENES (TOTAL)		92	-

Surrogate	% Recovery	Limits
A,A,A-TRIFLUOROTOLUENE	99	75 - 125
1-CHLORO-2-FLUOROBENZENE		-

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.  
 'NA' indicates not applicable  
 '\*' Surrogate recovery is outside QC limit.  
 'D' Surrogate is diluted out.  
 'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES

Date: 05/13/92

Client Work ID: 15275 WASHINGTON, SAN LEANDRO 275000

IT ANALYTICAL SERVICES  
CERRITOS, CA

Work Order: C2-05-003

TEST NAME: VOLATILE FUEL HYDROCARBONS

SAMPLE ID: METHOD BLANK

LAB SAMPLE ID: C205003-11A

SAMPLE DATE: not spec

ANALYSIS DATE: 05/05/92

EXTRACTION DATE:

	Results in	MG/L:	Detection Limit
TPHC AS UNLEADED GASOLINE		ND	___0.05

Surrogate	% Recovery
A,A,A-TRIFLUOROTOLUENE	104

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.  
'NA' indicates not applicable  
'\*' Surrogate recovery is outside QC limit.  
'D' Surrogate is diluted out.  
'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.



age: 24

company: EMCON ASSOCIATES

date: 05/13/92

Client Work ID: 15275 WASHINGTON, SAN LEANDRO 275000

IT ANALYTICAL SERVICES  
CERRITOS, CA

Work Order: C2-05-003

TEST NAME: BTEX BY METHOD 8020

SAMPLE ID: METHOD BLANK

LAB SAMPLE ID: C205003-11A

SAMPLE DATE: not spec

ANALYSIS DATE: 05/05/92

CONFIRMATION DATE:

	Results in	MG/L:	Detection Limit
BENZENE		ND	0.0005
TOLUENE		ND	0.0005
ETHYLBENZENE		ND	0.0005
XYLENES (TOTAL)		ND	0.0005

Surrogate	% Recovery	Limits
A,A,A-TRIFLUOROTOLUENE	97	75 - 125
1-CHLORO-2-FLUOROBENZENE		-

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.  
'NA' indicates not applicable  
'\*' Surrogate recovery is outside QC limit.  
'D' Surrogate is diluted out.  
'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES

Date: 05/13/92

Client Work ID: 15275 WASHINGTON, SAN LEANDRO 275000

IT ANALYTICAL SERVICES  
CERRITOS, CA

Work Order: C2-05-003

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COMMENTS

\*\* The chromatographic pattern of purgeable hydrocarbons found in the sample does not match the pattern of gasoline standard. The sample does appear to contain components of gasoline and is quantitated using a gasoline standard.

Samples SR-1 and S-5 appear to be weathered gasoline.

Company: EMCON ASSOCIATES

Date: 05/13/92

Client Work ID: 15275 WASHINGTON, SAN LEANDRO 275000

IT ANALYTICAL SERVICES  
CERRITOS, CA

Work Order: C2-05-003

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TEST NAME VOLATILE FUEL HYDROCARBONS TEST CODE 8015U

Low boiling fuel hydrocarbons are analyzed by methods established by the California DHS' LUFT manual. An aliquot of the sample is purged with helium and the volatile fuel hydrocarbons are transferred to the vapor phase. The vapor is swept through a sorbent column where the hydrocarbons are adsorbed. Upon completion, the sorbent column is heated and backflushed onto a gas chromatograph equipped with a 30 meter capillary column. Detection and quantitation is made by a flame ionization detector. Unleaded gasoline is used as the calibration standard.

TEST NAME BTEX BY METHOD 8020

TEST CODE BTEX\_W

The sample was analyzed for benzene, toluene, ethylbenzene and total xylenes according to USEPA Methods 8020 and 5030. An aliquot of the sample is purged with helium and the volatile compounds are transferred to the vapor phase. The vapor is swept through a sorbent column where the aromatics are adsorbed. Upon completion the sorbent column is heated and backflushed onto a GC column. The trapped compounds are separated by the megabore column and detected by a photoionization detector.

15015 Washington Avenue  
San Leandro CA

**Analysis Required**

LAB: IT Analytical - 8 Cerms

WIC#: 204-6852-1008

Shell Engineer: Kurt Miller  
Phone No. (510) 685-3853  
Fax #: 685-3853

Consultant Name & Address: EMCON Assoc.  
1938 Junction Ave.  
San Jose, CA 95131

Consultant Contact: David Larsen  
Phone No. (408) 453-2269  
Fax #: 453-2269

Comments: 3-VOAs for g, BTEX  
2-VOAs for TB

Sampled By: Bart Stafford, John Wataha, Steve Horton  
Printed Name: Bart Stafford, John Wataha, Steve Horton

CHECK ONE (1) BOX ONLY	CT/DT	TURN AROUND TIME
Quarterly Monitoring <input checked="" type="checkbox"/>	5461	24 hours <input type="checkbox"/>
Site Investigation <input type="checkbox"/>	5441	48 hours <input type="checkbox"/>
Soil for disposal <input type="checkbox"/>	5442	15 days <input checked="" type="checkbox"/> (Normal)
Water for disposal <input type="checkbox"/>	5443	Other <input type="checkbox"/>
Air Sample- Sys O&M <input type="checkbox"/>	5452	NOTE: Notify Lab as soon as possible of 24/48 hrs. TAT.
Water Sample - Sys O&M <input type="checkbox"/>	5453	
Other <input type="checkbox"/>		

Sample ID	Date	Soil	Water	Air	No. of conds.
S-10	4-28-92		X		3
S-11	4-28-92				3
S-15	4-28-92				3
S-17	4-28-92				3
S-18	4-28-92				3
S-6	4-28-92				3
S-7	4-28-92				3
S-12	4-28-92				3

TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal
X		X		
X		X		
X		X		
X		X		
X		X		
X		X		
X		X		
X		X		
X		X		

Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
40 ml	HCL	No		200 Label in

Relinquished By (signature): *Bart Stafford*  
Printed name: Bart Stafford  
Date: 4/30/92  
Time: 9:00

Relinquished By (signature): *DAVID SOLEWSKI*  
Printed name: DAVID SOLEWSKI  
Date: 4/30/92  
Time: 6:10

Relinquished By (signature): *J. MACTEN*  
Printed name: J. MACTEN  
Date: 4/30/92  
Time: 07:00

Relinquished By (signature): *DAVID SOLEWSKI*  
Printed name: DAVID SOLEWSKI  
Date: 4/30/92  
Time: 6:50

Relinquished By (signature): *J. MACTEN*  
Printed name: J. MACTEN  
Date: 5/1/92  
Time: 07:00

THE LABORATORY MUST PROVIDE A COPY OF THIS CHAIN-OF-CUSTODY WITH INVOICE AND RESULTS

Last Revision Date: 10/15/91

T2-04-016 / 0205006

Site Address: 15275 Washington Avenue  
San Leandro CA

WIC#: 204-6852-1008

Shell Engineer: Kurt Miller  
Phone No. (510) 685-3853  
Fax #: 685-3853

Consultant Name & Address: EMCON Assoc.  
1938 Junction Ave.  
San Jose, CA 95131

Consultant Contact: David Larsen  
Phone No. (408) 453-2269  
Fax #: 453-2269

Comments: 3-VOAs for J, BTEX  
2-VOAs for TB

Sampled By: Bart Stifford, John Wataha, Steve Hester  
Printed Name: Bart Stifford, John Wataha, Steve Hester

### Analysis Required

TPH (EPA 8015 Mod. Diesel)	
TPH (EPA 8015 Mod. Diesel)	
BTEX (EPA 8070/602)	
Volatile Organics (EPA 8240)	
Test for Disposal	

LAB: JT ANALYTICAL SERVICES

CHECK ONE (1) BOX ONLY		CT/DT	TURN AROUND TIME
Quarterly Monitoring	<input checked="" type="checkbox"/>	5461	24 hours <input type="checkbox"/>
Site Investigation	<input type="checkbox"/>	5441	48 hours <input type="checkbox"/>
Soil for disposal	<input type="checkbox"/>	5442	15 days <input checked="" type="checkbox"/> (Normal)
Water for disposal	<input type="checkbox"/>	5443	Other <input type="checkbox"/>
Air Sample- Sys O&M	<input type="checkbox"/>	5452	
Water Sample - Sys O&M	<input type="checkbox"/>	5453	
Other	<input type="checkbox"/>		

NOTE: Notify Lab as soon as possible of 24/48 hrs. TAT.

Sample ID	Date	Soil	Water	Air	No. of conis.	TPH (EPA 8015 Mod. Diesel)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8070/602)	Volatile Organics (EPA 8240)	Test for Disposal
S-8	4-28-92		X		3	X		X		
S-1	4-28-92				3	X		X		
S-14	4-28-92				3	X		X		
S-16	4-29-92				3	X		X		
S-13	4-28-92				3	X		X		
S-9	4-29-92				3	X		X		
SR-1	4-29-92				3	X		X		
S-5	4-29-92				3	X		X		

Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
40 ml	HCl	No		2c Initial Jar

Relinquished By (signature): *Bart Stifford*  
 Relinquished By (signature): *DAVID SULEWSKI*  
 Relinquished By (signature): *J. MARTENS*

Printed name: Bart Stifford  
 Printed name: DAVID SULEWSKI  
 Printed name: J. MARTENS

Date: 4-30-92  
 Time: 9:00  
 Date: 4/30/92  
 Time: 09:10  
 Date:  
 Time:

Received (signature): *[Signature]*  
 Received (signature): *[Signature]*  
 Received (signature): *[Signature]*

Printed name: DAVID SULEWSKI  
 Printed name: J. MARTENS

Date: 4/30/92  
 Time: 09:00  
 Date: 5/1/92  
 Time: 09:00  
 Date:  
 Time:

THE LABORATORY MUST PROVIDE A COPY OF THIS CHAIN-OF-CUSTODY WITH INVOICE AND RESULTS

Last Revision Date: 10/15/91

T2-04-016/C205003

15275 Washington Avenue  
San Leandro CA

Analysis Required

LAB: *ET ANALYTICAL CERRITOS*

WICN: 204-6852-1008

Shell Engineer: Kurt Miller  
Phone No. (510) 685-3853  
Fax #: 685-3853

Consultant Name & Address: EMCON Assoc.  
1938 Junction Ave.  
San Jose, CA 95131

Consultant Contact: David Larsen  
Phone No. (408) 453-2269  
Fax #: 453-2269

Comments: 3-VOAs for g, BTEX  
2-VOAs for TB

Sampled By: Bart Stafford, John Wataha, Steve Horton  
Witness Name: Bart Stafford, John Wataha, Steve Horton

CHECK ONE (1) BOX ONLY	CT/DT	TURN AROUND TIME
Quarterly Monitoring <input checked="" type="checkbox"/>	5461	24 hours <input type="checkbox"/>
Site Investigation <input type="checkbox"/>	5441	48 hours <input type="checkbox"/>
Soil for disposal <input type="checkbox"/>	5442	15 days <input checked="" type="checkbox"/> (Normal)
Water for disposal <input type="checkbox"/>	5443	Other <input type="checkbox"/>
Air Sample - Sys O&M <input type="checkbox"/>	5452	
Water Sample - Sys O&M <input type="checkbox"/>	5453	
Other <input type="checkbox"/>		

NOTE: Notify Lab as soon as possible of 24/48 hrs. TAT.

TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal
X	X	X		
X	X	X		
X	X	X		

Sample ID	Date	Soil	Water	Air	No. of conis.
S-3	4-29-92		X		3
SD-7	4-29-92		↓		3
TB	4-28-92		↓		3

Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
40 ml	HCl	No		Intact Jar
↓	↓	↓		↓

Relinquished By (signature): *Bart Stafford*  
Printed name: Bart Stafford  
Date: 4/30/92  
Time: 9:00

Relinquished By (signature): *David Sulewski, ET*  
Printed name: DAVID SULEWSKI  
Date: 4/30/92  
Time: 0910

Received (signature): *David Sulewski, ET*  
Printed name: DAVID SULEWSKI  
Date: 4/30/92  
Time: 0900

Received (signature): *J. Martin*  
Printed name: J. Martin  
Date: 4/30/92  
Time: 0900

THE LABORATORY MUST PROVIDE A COPY OF THIS CHAIN-OF-CUSTODY WITH INVOICE AND RESULTS

Last Revision Date: 10/15/91

T2-04-016/C205006