



GeoStrategies Inc.

2140 WEST WINTON AVENUE
HAYWARD, CALIFORNIA 94545

54 JUL 1 1992 (510) 352-4800

July 2, 1992

County of Alameda
Department of Environmental Health
Hazardous Materials Division
80 Swan Way, Room 200
Oakland, California 94621

Reference: Former Shell Service Station
461 Eighth Street
Oakland, California
WIC 204-5508-6200

Gentlemen:

As requested by Mr. Paul Hayes of Shell Oil Company, we are forwarding a copy of the ~~Quarterly Report dated July 2, 1992~~. The enclosed report presents the results of the second quarter 1992 ground-water sampling at the above referenced location.

If you have any questions, please call.

Sincerely,

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

Ellen Fostersmith
Geologist

enclosure

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



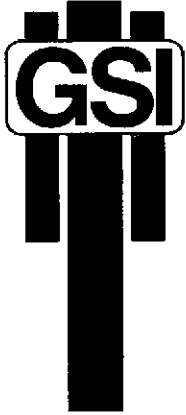
GeoStrategies Inc.

QUARTERLY REPORT

Former Shell Service Station
461 Eighth Street
Oakland, California
WIC 204-5508-6200

764401-14

July 2, 1992



GeoStrategies Inc.

2140 WEST WINTON AVENUE
HAYWARD, CALIFORNIA 94545

(510) 352-4800

July 2, 1992

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

Attn: Mr. Paul Hayes

Re: QUARTERLY REPORT
Former Shell Service Station
461 Eighth Street
Oakland, California
WIC# 204-5508-6200

Mr. Hayes:

This Quarterly Report has been prepared by GeoStrategies Inc. (GSI) and 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 three monitoring wells at the site; Wells S-4, S-5, and S-6 (Plate 2). These wells were installed in 1981 by Groundwater Technology Inc. Wells S-1, S-2, S-3 and S-7 were destroyed in 1987.

CURRENT QUARTER SAMPLING RESULTS

Depth to water-level measurements were obtained in each monitoring well on May 11, 1992. Static ground-water levels were measured from the surveyed top of the well box and recorded to the nearest ± 0.01 foot. Water-level elevations, referenced to project site 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 water-level elevation map (Plate 2).

Each well was checked for the presence of floating product. Floating product was observed in Well S-5 at a measured thickness of 0.58 feet.

GeoStrategies Inc.

Shell Oil Company
July 2, 1992
Page 2

Ground-water samples were collected on May 11, 1992. Samples were analyzed for Total Petroleum Hydrocarbons calculated as Gasoline (TPH-Gasoline), according to EPA Method 8015 (Modified) and for Benzene, Toluene, Ethylbenzene and Xylenes (BTEX) according to EPA Method 8020. The ground-water samples were analyzed by Anamatrix Inc., a California State-certified laboratory located in San Jose, California. These data are presented in the EMCON report (Appendix A). A chemical concentration map for benzene is presented on Plate 3. Historical chemical analytical data are presented in Appendix A.

If you have any questions, please call.

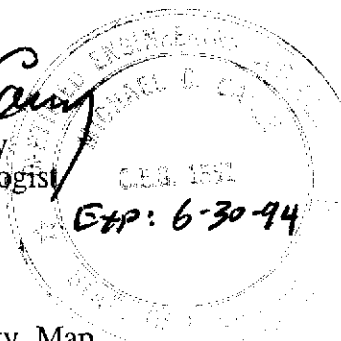
GeoStrategies Inc. by,

Ellen C. Fostersmith

Ellen C. Fostersmith
Geologist

Michael C. Carey

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



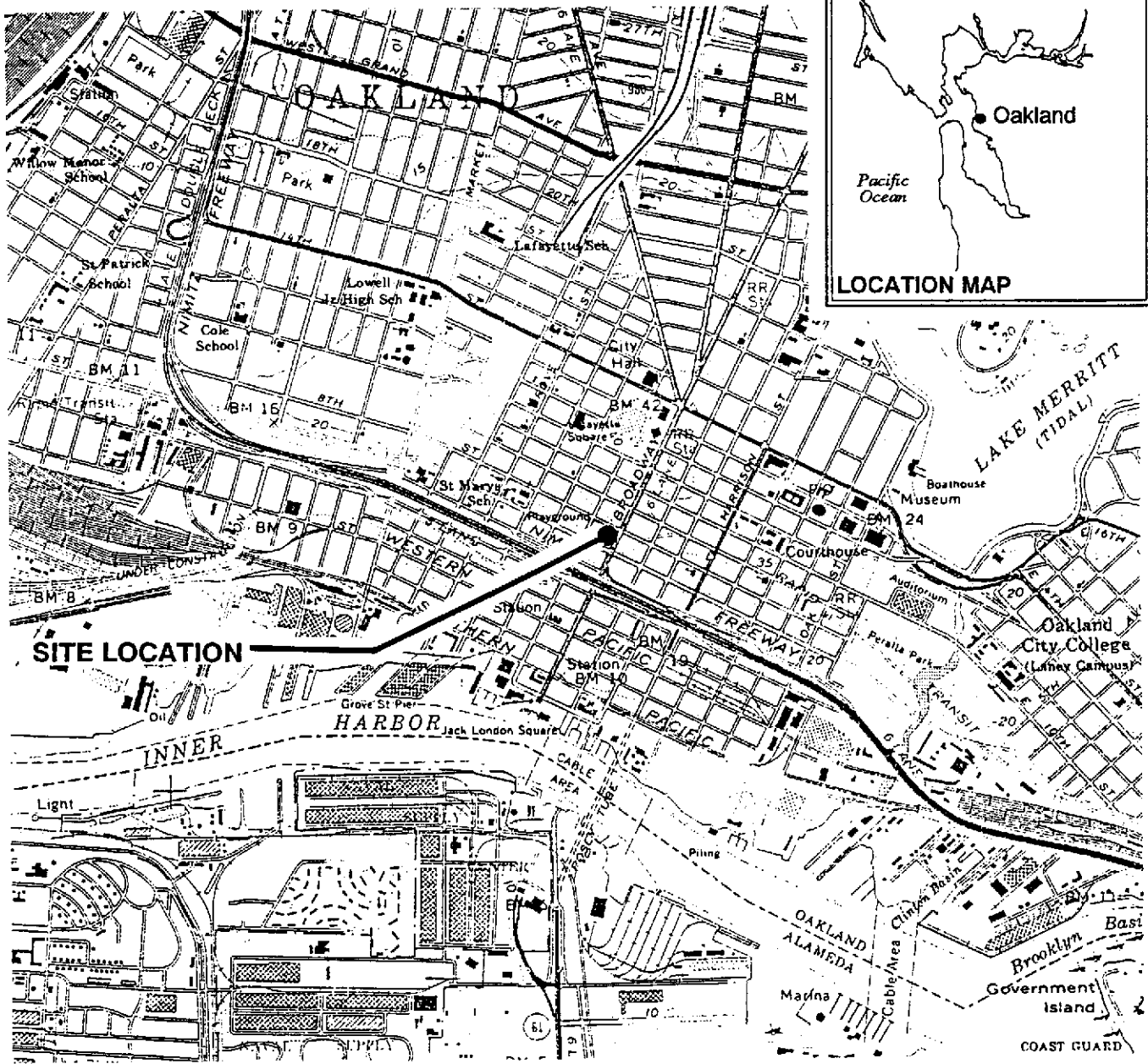
ECF/MCC/shl

Plate 1. Vicinity Map
Plate 2. Site Plan/Water-Level Elevation Map
Plate 3. Benzene Concentration Map

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

QC Review

JRP



SITE LOCATION

Base Map: USGS Topographic Map

Approximate Scale : 1" = 2000'



GeoStrategies Inc.

Vicinity Map
 Former Shell Service Station
 461 Eighth Street
 Oakland, California

PLATE

1

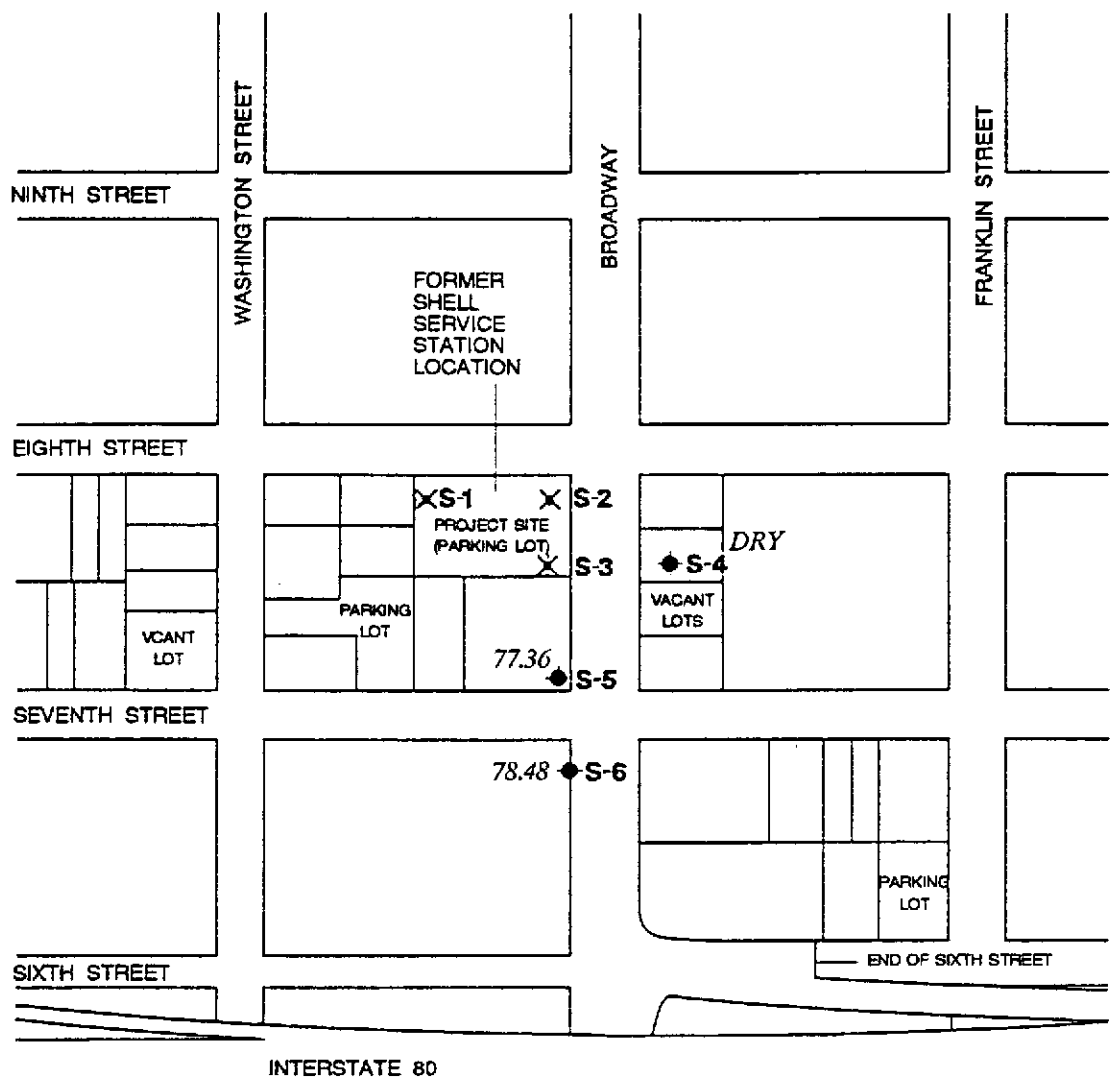
JOB NUMBER
7644

REVIEWED BY
24

DATE
5/90

REVISED DATE

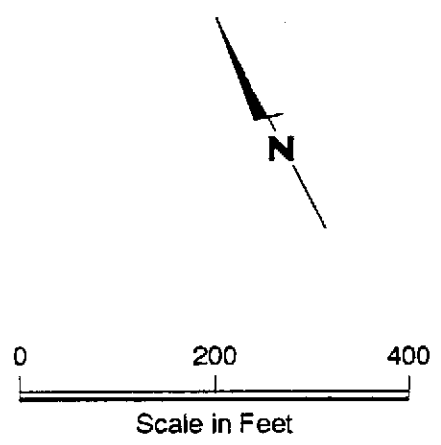
REVISED DATE



EXPLANATION

- ◆ S-1 Ground-water monitoring well location
 - X Destroyed well
 - 78.48 Ground-water elevation in feet referenced to project datum measured on May 11, 1992
- Water-levels corrected for Floating Product by a factor of 0.80

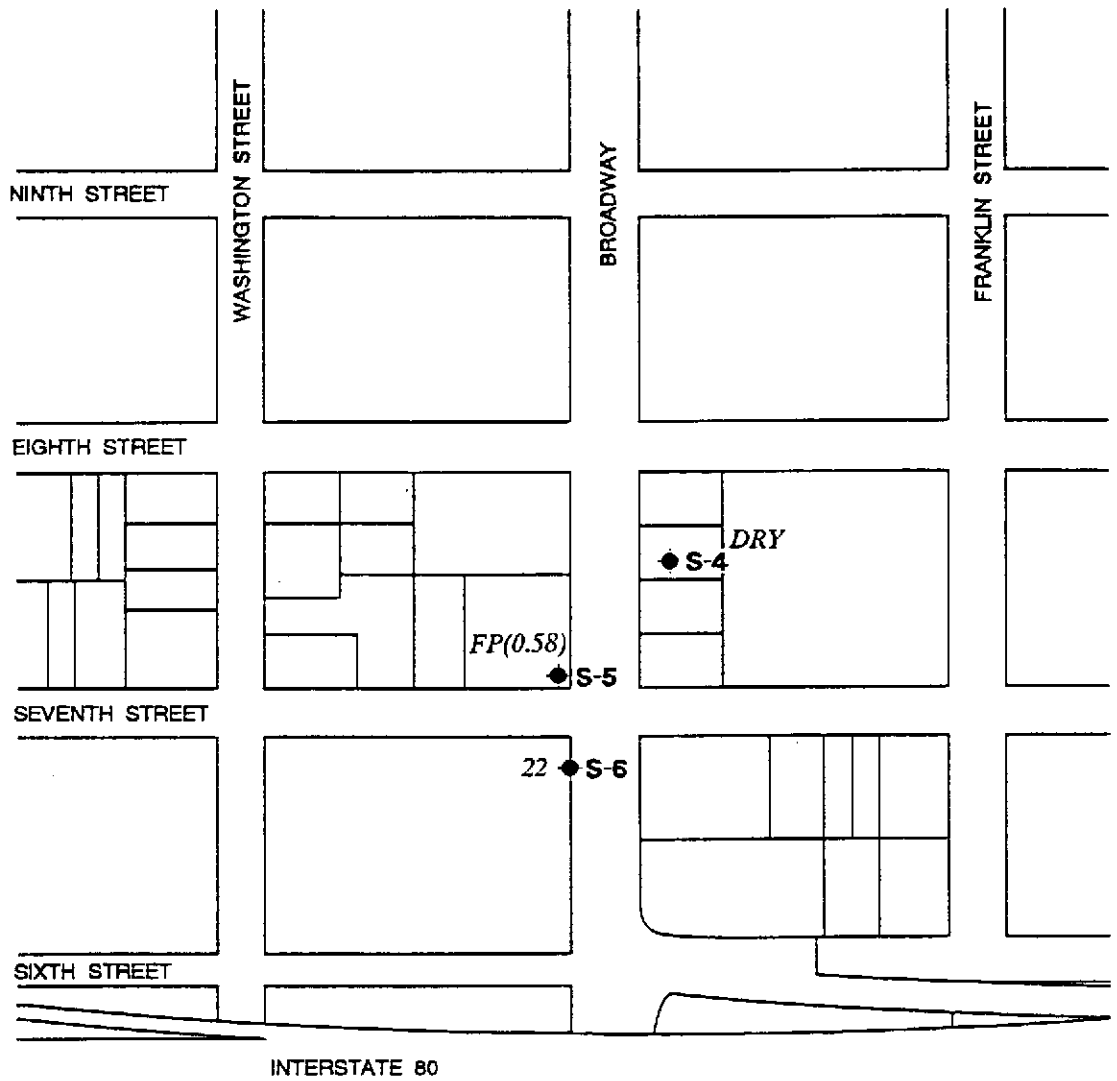
Note: Well S-7 located at Washington and Fifth Streets was destroyed in 1987



GeoStrategies Inc.

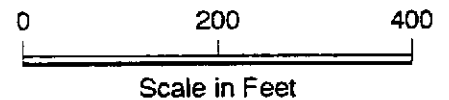
Site Plan/Water-Level Elevation Map
 Former Shell Service Station
 461 Eighth Street
 Oakland, California

PLATE
2



EXPLANATION

- ◆ S-1 Ground-water monitoring well location
- 22 Benzene concentration in ppm sampled on May 11, 1992
- ND Not Detected (see laboratory reports for detection limits)
- FP(0.01) Floating Product (measured thickness in feet)



GeoStrategies Inc.

Benzene Concentration Map
 Former Shell Service Station
 461 Eighth Street
 Oakland, California

PLATE

3

GeoStrategies Inc.

APPENDIX A
EMCON MONITORING REPORT
AND
CHAIN-OF-CUSTODY



RECEIVED

JUN 10 1992

GeoStrategies Inc.

June 9, 1992
Project: G67-23.01
WIC#: 204-5508-6200

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

Re: Second quarter 1992 ground-water monitoring report, Shell Oil
Company, 461 8th Street, Oakland, 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 461 8th Street, Oakland, California. Second quarter monitoring was conducted on May 11, 1992. The site is monitored quarterly.

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-4, S-5, and S-6 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. Floating product, 0.58 foot thick, was observed in well S-5. Ground water was not observed in well S-4. 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 well S-6 on May 11, 1992. Prior to sample collection, the well was purged with a polyvinyl chloride bailer. 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. Field measurements from second quarter monitoring, and available measurements from four previous monitoring events, are summarized in table 1. Purge water from the monitoring well was contained in a 55-gallon drum. The drum was removed from the site by Crosby-Overton on May 11, 1992.

G672301B.DOC



Well S-5 contained 0.58 foot of floating product and was not sampled during second quarter monitoring. Well S-4 was dry and could not be sampled during second quarter monitoring..

Ground-water samples were collected with a Teflon® 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. 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 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: 461 8th Street
Oakland, California
WIC #: 204-5508-6200

Date: 06/09/92
Project Number: G67-23.01

Well Designation	Water Level Field Date	TOB Elevation (ft-PSD)	Depth to Water (feet)	Ground-water Elevation (ft-PSD)	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-4	06/27/91	93.51	13.54	79.97	16.2	ND	06/27/91	7.15	330	64.9	NR
S-4	09/24/91	93.51	15.85	77.66	16.3	ND	09/24/91	DRY	DRY	DRY	DRY
S-4	11/07/91	93.51	15.60	77.91	15.3	ND	11/07/91	DRY	DRY	DRY	DRY
S-4	02/13/92	93.51	14.27	79.24	16.2	ND	02/13/92	6.40	489	61.3	80
S-4	05/11/92	93.51	DRY	DRY	16.7	ND	05/11/92	DRY	DRY	DRY	DRY
S-5	06/27/91	99.36	20.53	78.85**	NR	0.03	06/27/91	FP	FP	FP	FP
S-5	09/24/91	99.36	21.40	78.01**	NR	0.06	09/24/91	FP	FP	FP	FP
S-5	11/07/91	99.36	21.33	78.23**	21.5	0.25	11/07/91	FP	FP	FP	FP
S-5	02/13/92	99.36	22.52	77.09**	38.2	0.31	02/13/92	FP	FP	FP	FP
S-5	05/11/92	99.36	22.46	77.36**	38.1	0.58	05/11/92	FP	FP	FP	FP
S-6	06/27/91	100.58	21.21	79.37	38.4	ND	06/27/91	6.78	1016	67.4	NR
S-6	09/24/91	100.58	22.26	78.32	38.3	ND	09/24/91	6.52	684	68.4	NR
S-6	11/07/91	100.58	22.35	78.23	38.4	ND	11/07/91	6.96	722	68.7	NR
S-6	02/13/92	100.58	22.28	78.30	36.5	ND	02/13/92	6.38	1135	63.9	50
S-6	05/11/92	100.58	22.10	78.48	37.8	ND	05/11/92	6.52	9650	65.9	>200

TOB = top of well box

ft-PSD = elevation in feet, relative to project site datum

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

DRY = Dry well; ground water not detected or insufficient volume of ground water to collect samples

** = groundwater elevation corrected to include 80 percent of the floating product thickness measured in the well

FP = Floating product; well contained floating product and was not sampled

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

Shell Station: 461 8th Street
 Oakland, California
 WIC #: 204-5508-6200

Date: 06/09/92
 Project Number: 087-23.01

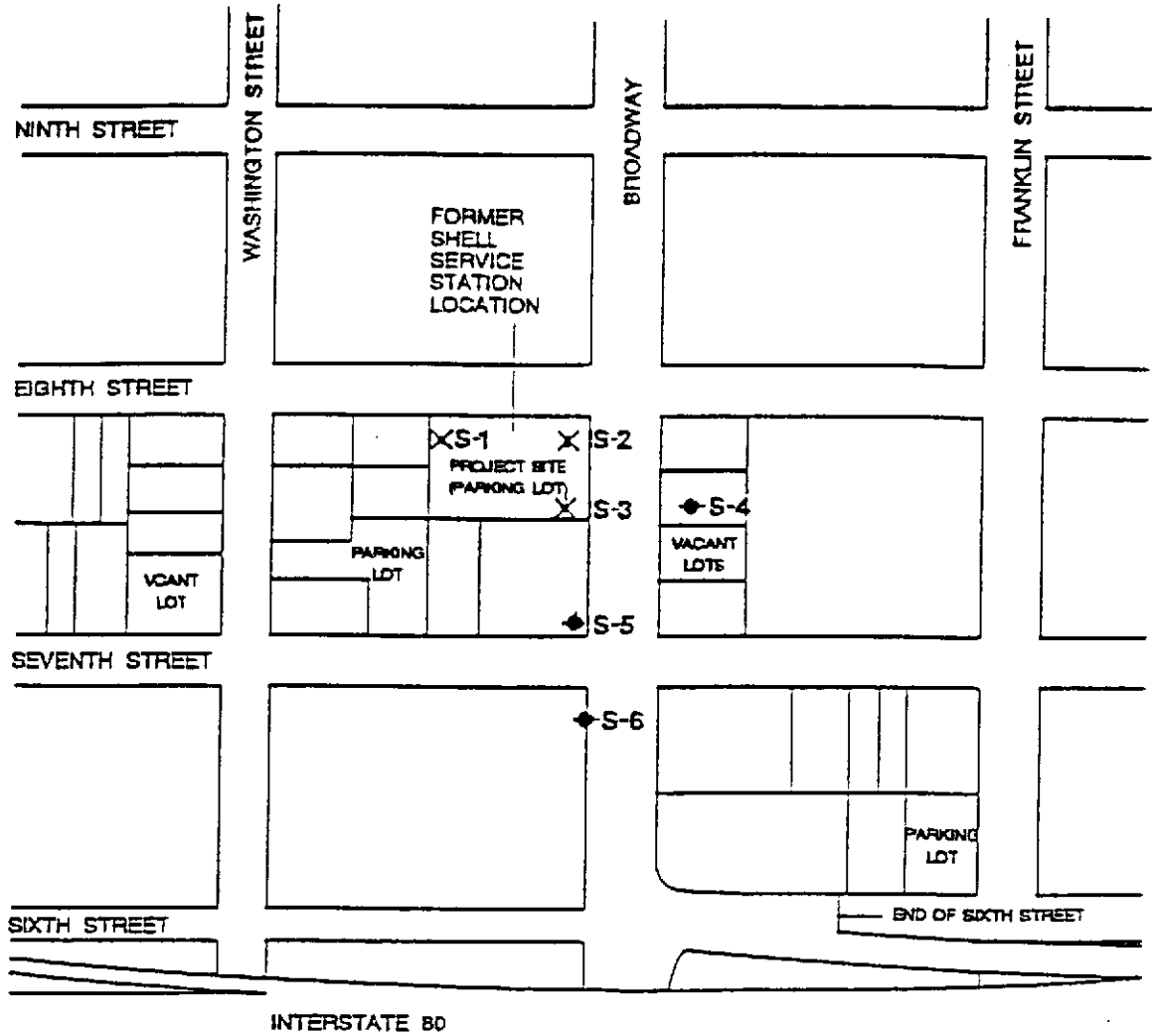
Sample Designation	Water Sample Field Date	TPH-g (mg/l)	Benzene (mg/l)	Toluene (mg/l)	Ethyl-benzene (mg/l)	Total Xylenes (mg/l)
S-4	06/27/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
S-4	09/24/91	DRY	DRY	DRY	DRY	DRY
S-4	11/07/91	DRY	DRY	DRY	DRY	DRY
S-4	02/13/92	<0.05	<0.0005	<0.0005	<0.0005	0.0030
S-4	05/11/92	DRY	DRY	DRY	DRY	DRY
S-5	06/27/91	FP	FP	FP	FP	FP
S-5	09/24/91	FP	FP	FP	FP	FP
S-5	11/07/91	FP	FP	FP	FP	FP
S-5	02/13/92	FP	FP	FP	FP	FP
S-5	05/11/92	FP	FP	FP	FP	FP
S-6	06/27/91	51.	19.	5.6	1.7	6.3
S-6	09/24/91	42.	14.	4.3	1.2	4.0
S-6	11/07/91	39.	11.	2.0	0.8	2.3
S-6	02/13/92	64.	21.	6.2	1.6	5.1
S-6	05/11/92	57.	22.	7.6	2.2	7.7
TB	02/13/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
TB	05/11/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005

TPH-g = total petroleum hydrocarbons as gasoline

DRY = Dry well; ground water not detected or insufficient volume of ground water to collect samples

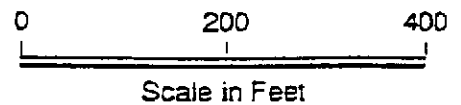
FP = Floating product; well contained floating product and was not sampled

Figure 1
 (Supplied by Geo Strategies, Inc.)



EXPLANATION

- ◆ S-1 Ground-water monitoring well location
- X Destroyed well



Note: Well S-7 located at Washington and Fifth Streets was destroyed in 1987



GeoStrategies Inc.

Site Plan
 Former Shell Service Station
 461 Eighth Street
 Oakland, California

PLATE

ANAMETRIX INC

Environmental & Analytical Chemistry
 1961 Concourse Drive, Suite E, San Jose, CA 95131
 (408) 432-8192 • Fax (408) 432-8198

**REPORT**

MR. DAVID LARSEN
 EMCON ASSOCIATES
 1938 JUNCTION AVE.
 SAN JOSE, CA 95131

Workorder # : 9205163
 Date Received : 05/12/92
 Project ID : G67-23.01
 Purchase Order: MOH-B813

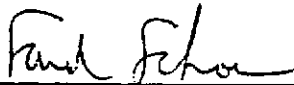
The following samples were received at Anamatrix, Inc. for analysis :

ANAMETRIX ID	CLIENT SAMPLE ID
9205163- 1	S-6
9205163- 2	TB

This report consists of 3 pages not including the cover letter, and is organized in sections according to the specific Anamatrix laboratory group or section which performed the analysis(es) and generated the data. The Report Summary that precedes each section will help you determine which Anamatrix group is responsible for those test results, and will bear the signatures of the department supervisor and the chemist who have reviewed the analytical data. Please refer all questions to the department supervisor who signed the form.

Anamatrix is certified by the California Department of Health Services (DHS) to perform environmental testing under Certificate Number 1234. A detailed list of the approved fields of testing can be obtained by calling our office, or the DHS Environmental Laboratory Accreditation Program at (415)540-2800.

If you have any further questions or comments on this report, please give us a call as soon as possible. Thank you for using Anamatrix.



 Sarah Schoen, Ph.D.
 Laboratory Director

5-26-92

 Date

EMCON ASSOCIATES

MAY 28 1992

RECEIVED

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. DAVID LARSEN
EMCON ASSOCIATES
1938 JUNCTION AVE.
SAN JOSE, CA 95131

Workorder # : 9205163
Date Received : 05/12/92
Project ID : G67-23.01
Purchase Order: MOH-B813
Department : GC
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9205163- 1	S-6	WATER	05/11/92	TPHg/BTEX
9205163- 2	TB	WATER	05/11/92	TPHg/BTEX

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. DAVID LARSEN
EMCON ASSOCIATES
1938 JUNCTION AVE.
SAN JOSE, CA 95131

Workorder # : 9205163
Date Received : 05/12/92
Project ID : G67-23.01
Purchase Order: M0H-B813
Department : GC
Sub-Department: TPH

QA/QC SUMMARY :

- No QA/QC problems encountered for these samples.

Cheryl Balmer 5/26/92
Department Supervisor Date

C. Fan 26 May 92
Chemist Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS
(GASOLINE WITH BTEX)
ANAMETRIX, INC. - (408) 432-8192

Anamatrix W.O.: 9205163
Matrix : WATER
Date Sampled : 05/11/92

Project Number : G67-23.01
Date Released : 05/26/92

COMPOUNDS	Reporting Limit (mg/L)	Sample I.D.# S-6	Sample I.D.# TB	Sample I.D.# 21B0520A
Benzene	0.0005	22	ND	ND
Toluene	0.0005	7.6	ND	ND
Ethylbenzene	0.0005	2.2	ND	ND
Total Xylenes	0.0005	7.7	ND	ND
TPH as Gasoline	0.050	57	ND	ND
% Surrogate Recovery		94%	99%	106%
Instrument I.D.		HP21	HP21	HP21
Date Analyzed		05/20/92	05/20/92	05/20/92
RLMF		250	1	1

- ND - Not detected at or above the practical quantitation limit for the method.
- TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using modified EPA Method 8015 following sample purge and trap by EPA Method 5030.
- BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA Method 8020 following sample purge and trap by EPA Method 5030.
- RLMF - Reporting Limit Multiplication Factor.

Anamatrix control limits for surrogate p-Bromofluorobenzene recovery are 53-147%.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

FC 26 May 92
Analyst Date

Cheryl Balmer 5/26/92
Supervisor Date

W&A RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD

Date: 5-11-92
Page 1 of 1

Site Address: 461 8th Street
Oakland CA 9205163

Serial No.: 205 (2) Official

(2) g.p. Analysis Required

LAB: Anamatrix

WIC#: 204-5508-6200

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-VOLAT (HCL) for g.BTEX

Sampled By: L. RATH

Printed Name: Jesse Rathy

Sample ID	Date	Soil	Water	Air	No. of conts.	TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal
S-4			X		3	X		X		
S-6	5-11-92				3					
S-5					3					
TB	5-11-92		↓		3	↓		↓		

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 soon as possible of 24/48 hrs. TAT.
Water Sample - Sys O&M <input type="checkbox"/> 5453		
Other <input type="checkbox"/>		

Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION COMMENT
40 ml	HCL	No	NO SAMPLE	
			2X 40ml have headspace	Cool
			NO SAMPLE	Cool

Relinquished By (signature): Jesse Rathy
Printed name: Jesse Rathy
Date: 5-11-92
Time: 1716

Relinquished By (signature): Bart Stafford
Printed name: Bart Stafford
Date: 5-12-92
Time: 947

Relinquished By (signature):
Printed name:
Date:
Time:

Received (signature):
Printed name: Bart Stafford
Date: 5/12/92
Time: 1722

Received (signature): Josephine DeCarli
Printed name: Josephine DeCarli
Date: 5/12/92
Time: 09:47

Received (signature):
Printed name:
Date:
Time:

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