rec'd 10-5-93 JE

TRANSMITTAL

TO: Mr. Lynn Walker
Shell Oil Company
P.O. Box 5278
Concord, California 94520

DATE: October 5, 1993
PROJECT #: 764401-18
SUBJECT: Quarterly Report

FROM:
Robert D. Campbell
Assistant Project Geologist
GeoStrategies Inc.
2140 West Winton Avenue
Hayward, California 94545

WE ARE SENDING YOU:

COPIES	DATED	DESCRIPTION
1	10/04/93	Third Quarter 1993 QMR WIC #204-5508-6200

THESE ARE TRANSMITTED as checked below:

[ ] For review and comment [ ] Approved as submitted [ ] Resubmit __ copies for approval

[ ] As requested [ ] Approved as noted [ ] Submit __ copies for distribution

[ ] For approval [ ] Return for corrections [ ] Return __ corrected prints

[X] For your files

cc: Ms. Jennifer Eberle, ACHCSA
Mr. Richard Hiett, CRWQCB - SF Bay Region
Mr. Jeff Holland, Shell

GeoStrategies Inc.

October 4, 1993

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

Attn: Mr. Lynn Walker

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

Mr. Walker:

This Quarterly Report has been prepared by GeoStrategies Inc. (GSI) and presents the results of the 1993 third quarter sampling for the above referenced site (Plate 1). Sampling data were furnished by the Shell Oil Company sampling contractor.

EXECUTIVE SUMMARY

- Floating product was observed in Well S-5 at a measured thickness of 0.25 feet during the third quarter 1993 sampling.
- Approximately 150 gallons of groundwater and product from Well S-5 were vacuumed out by Crosby and Overton Inc. on July 22, 1993.

SITE DESCRIPTION

There are currently three monitoring wells within the site vicinity; Wells

2140 WEST WINTON AVENUE • HAYWARD, CALIFORNIA 94545 • (510) 352-4800
601 UNIVERSITY AVENUE • SUITE 150 • SACRAMENTO, CALIFORNIA 95825 • (916) 568-7500

S-4, S-5, and S-6 (Plate 2). These wells were installed in 1981 by Groundwater Technology Inc. (GTI). Wells S-1, S-2, S-3, and S-7 were destroyed in 1987. GSI has conducted quarterly groundwater monitoring and sampling at the site since October, 1988.

CURRENT QUARTER SAMPLING RESULTS

Depth-to-water measurements were obtained in each monitoring well on July 22, 1993. Static groundwater levels were measured from the surveyed top of the well box and recorded to the nearest $\pm$0.01 feet. Depth-to-water measurements and water-level elevations, referenced to project site datum, are presented in the Blaine Tech Services Inc. (Blaine) report (Appendix A) and in Table 1. Water-level data were used to construct a quarterly Water-level map (Plate 2). Natural groundwater flow beneath the site is probably to the south-southwest, towards the San Francisco Bay. Previous measured flow directions have generally been away from the Bay, possibly in response to pumping from remediation wells at nearby sites

Each well was checked for the presence floating product prior to sampling. Floating product was observed in Well S-5 at a measured thickness of 0.25 feet. Well S-4 was monitored, but it was not accessible to the sampling equipment due to a chain-link fence surrounding the property.

Groundwater samples were collected from Well S-6 on July 22, 1993. Samples were analyzed for Total Petroleum Hydrocarbons calculated as Gasoline (TPH-Gasoline) according to EPA Method 8015 (Modified) and Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) according to EPA Method 8020. Groundwater samples were analyzed by Anametrix Inc., a California State-certified laboratory located in San Jose, California. The laboratory analytical report and Chain-of-Custody form are presented in Appendix A. A chemical concentration map for benzene is presented on Plate 3. Current and historical chemical analytical data are summarized in Table 2.

DISCUSSION

Well S-4 was accessible only for monitoring this quarter due to a chain-link fence surrounding the property where this well is located. The fence prevented access of sampling equipment to the wellhead.

Concentrations of TPH-Gasoline and benzene have remained relatively consistent at the site. Groundwater elevations and hydrocarbon thickness in Well S-5 have also remained relatively consistent. Approximately 150 gallons of groundwater and product were vacuumed from Well S-5 on July 22, 1993 by Crosby and Overton Inc.

If you have any questions or comments, please call us at (510) 352-4800.

Sincerely,
GeoStrategies Inc.

Robert D. Campbell
Project Manager

John F. Vargas
Senior Geologist
RG 5046

REGISTERED GEOLOGIST
JOHN F. VARGAS
NO. 5046
STATE OF CALIFORNIA

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

Appendix A: Chemical Analytical Reports and Chain-of-Custody Form

764401-18

cc: Mr. Jeff Holland, Shell Oil Company
Ms. Jennifer Eberle, Alameda County Health Care Services Agency
Mr. Richard Hiett, Regional Water Quality Control Board - San Francisco Bay Region

QC Review: JR

Table 1
Field Monitoring Data
Former Shell Service Station
461 8th Street, Oakland

Well No.	Monitoring Date	Casing Dia. (in)	Total Well Depth (ft)	Well Elev. (ft)	Depth to Water (ft)	Product Thickness (ft)	Static Water Elev. (ft)	Method of Purging	Method of Sampling	Time	Volume Removed (gals)	pH	Temp (F)	Conductivity (umhos/cm)	Turbidity (NTUs)
S-4	22-Jul-93	4	16.52	93.51	14.42	------	79.09	N/A	Bailer	-----	------	------	-----	------	------
S-5	22-Jul-93	4	N/A	99.36	21.68	[redacted]	77.68	N/A	Bailer	-----	------	------	-----	------	------
S-6	22-Jul-93	4	36.68	100.58	21.64	------	78.94	Submersible Pump	Bailer	10:40	30	7.1	67.2	900	76

1. Static water elevations were corrected for floating product by a factor of of 0.80
2. Static water elevations referenced to Project Datum
3. Well S-4 contained insuffient water for sampling
4. Well S-5 was vaccuumed, and not sampled

TABLE 2

HISTORICAL GROUNDWATER QUALITY DATABASE
Former Shell Service Station
461 8th Street, Oakland

SAMPLE DATE	SAMPLE POINT	TPH-G (PPB)	BENZENE (PPB)	TOLUENE (PPB)	ETHYLBENZENE (PPB)	XYLENES (PPB)
16-Apr-87	S-2	47,000	8,200	4,700	---	3,100
26-Oct-88	S-4	130	3.8	13	4	30
14-Feb-89	S-4	<50	0.5	<1	<1	3
01-May-89	S-4	Dry				
27-Jul-89	S-4	Dry				
05-Oct-89	S-4	Dry				
09-Jan-90	S-4	Dry				
30-Apr-90	S-4	<50	<0.5	<0.5	<5	<1
31-Jul-90	S-4	Dry				
30-Oct-90	S-4	Dry				
06-Mar-91	S-4	Dry				
27-Jun-91	S-4	<50	<0.5	<0.5	<0.5	<0.5
24-Sep-91	S-4	Dry				
07-Nov-91	S-4	Dry				
13-Feb-92	S-4	<50	<0.5	<0.5	<0.5	3
11-May-92	S-4	Dry				
03-Dec-92	S-4	Inaccessible				
13-May-93	S-4	Inaccessible				
22-Jul-93	S-4	[redacted]				
16-Apr-87	S-5	130,000	15,000	16,000	---	14,000
26-Oct-88	S-5	110,000	20,000	25,000	2,300	10,000
14-Feb-89	S-5	94,000	16,000	21,000	1,800	10,000
01-May-89	S-5	120,000	29,000	35,000	3,100	15,000
27-Jul-89	S-5	110,000	20,000	29,000	2,400	14,000
05-Oct-89	S-5	Floating Product 0.01 ft				
09-Jan-90	S-5	Floating Product 0.01 ft				
30-Apr-90	S-5	100,000	13,000	22,000	2,100	11,000
31-Jul-90	S-5	53,000	8,300	14,000	1,200	7,400
30-Oct-90	S-5	Floating Product 0.03 ft				
06-Mar-91	S-5	Floating Product 0.13 ft				
27-Jun-91	S-5	Floating Product 0.03 ft				

TABLE 2

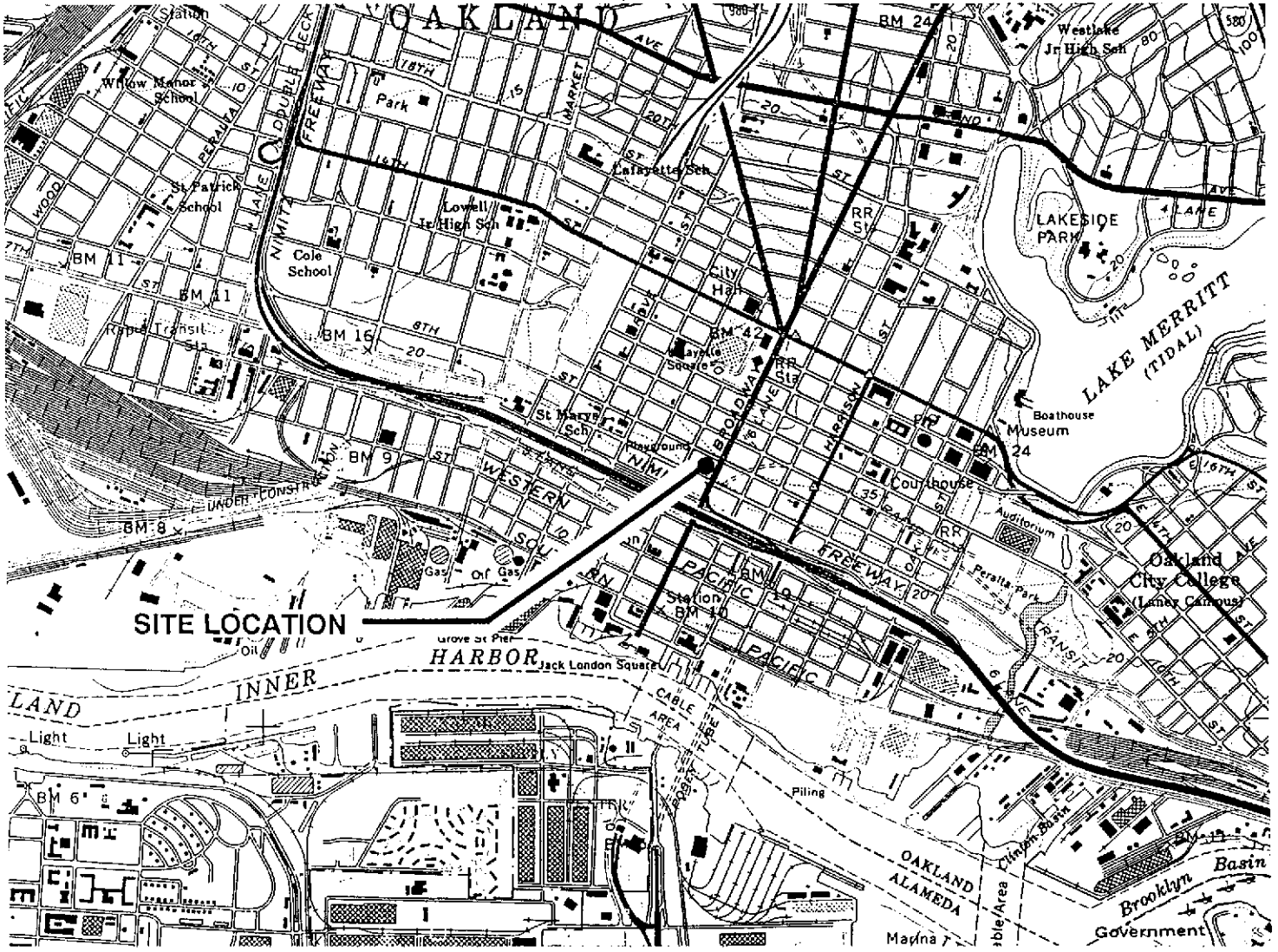
HISTORICAL GROUNDWATER QUALITY DATABASE
Former Shell Service Station
461 8th Street, Oakland

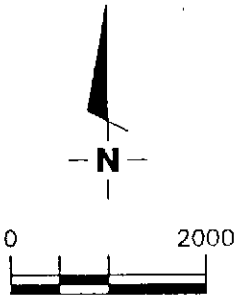
SAMPLE DATE	SAMPLE POINT	TPH-G (PPB)	BENZENE (PPB)	TOLUENE (PPB)	ETHYLBENZENE (PPB)	XYLENES (PPB)
24-Sep-91	S-5		Floating Product 0.06 ft			
07-Nov-91	S-5		Floating Product 0.25 ft			
13-Feb-92	S-5		Floating Product 0.31 ft			
11-May-92	S-5		Floating Product 0.58 ft			
03-Dec-92	S-5		Inaccessible			
13-May-93	S-5		Floating Product 0.27 ft			
22-Jul-93	S-5	[redacted]				
16-Apr-87	S-6	81,000	16,000	9,000	---	6,400
26-Oct-88	S-6	110,000	29,000	18,000	2,500	8,200
14-Feb-89	S-6	54,000	18,000	4,500	1,400	4,000
01-May-89	S-6	93,000	43,000	9,900	3,000	8,000
27-Jul-89	S-6	52,000	20,000	3,200	1,700	5,500
05-Oct-89	S-6	55,000	20,000	2,900	1,600	5,500
09-Jan-90	S-6	76,000	35,000	9,100	2,300	8,600
30-Apr-90	S-6	39,000	13,000	2,300	900	2,800
31-Jul-90	S-6	48,000	20,000	4,600	1,500	4,900
30-Oct-90	S-6	27,000	7,400	900	600	1,400
06-Mar-91	S-6	35,000	3,900	2,700	2,300	3,500
27-Jun-91	S-6	51,000	19,000	5,600	1,700	6,300
24-Sep-91	S-6	42,000	14,000	4,300	1,200	4,000
07-Nov-91	S-6	39,000	11,000	2,000	800	2,300
13-Feb-92	S-6	64,000	21,000	6,200	1,600	5,100
11-May-92	S-6	57,000	22,000	7,600	2,200	7,700
03-Dec-92	S-6	110,000	26,000	9,400	2,100	8,700
13-May-93	S-6	58,000	21,000	6,800	2,500	9,800
22-Jul-93	S-6	[redacted]		14,000	3,000	13,000

TPH-G = Total Petroleum Hydrocarbons calculated as Gasoline.
PPB = Parts Per Billion.

Notes:
1. Ethylbenzene and Xylenes were combined prior to May 1987.
2. All data shown as <x are reported as ND (none detected).

764401





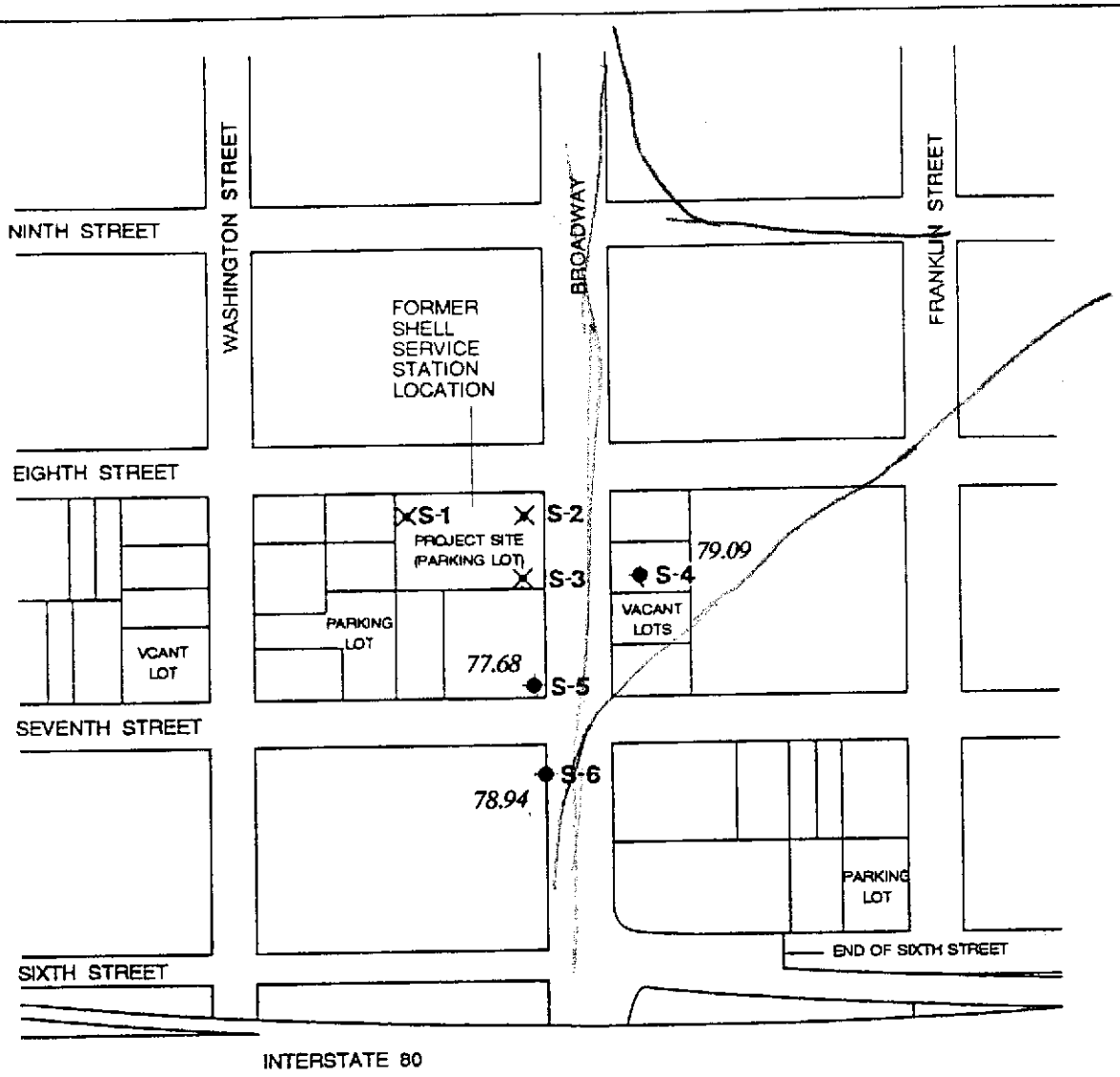
Base Map: USGS Topographic Map

GeoStrategies Inc.

VICINITY MAP
Former Shell Service Station
461 8th Street
Oakland, California

PLATE **1**

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
7644		9/93	



EXPLANATION

◆ S-1	Groundwater monitoring well
×	Destroyed well
78.94	Groundwater elevation in feet referenced project datum measured on July 22, 1993

N

0 200 400

Scale in Feet

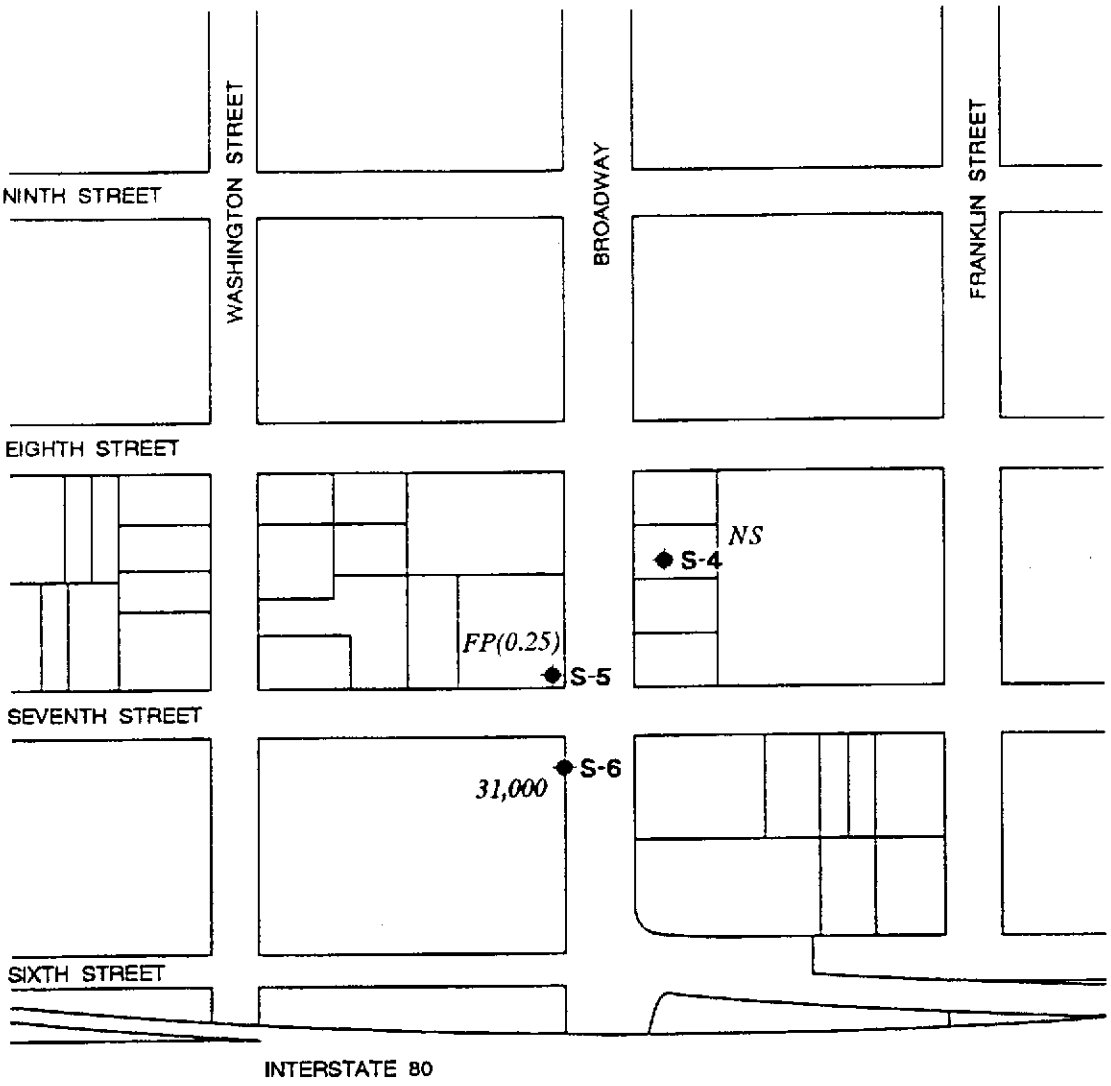
Note: Well S-7 located at Washington and Fifth Streets was destroyed in 1987

GeoStrategies Inc.

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

PLATE **2**

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE	REVISED DATE
764401-18		9/93		



EXPLANATION

◆ S-1	Groundwater monitoring well
50	Benzene concentration in ppb sampled on July 22, 1993
ND	Not Detected (see laboratory reports for detection limits)
FP(0.10)	Floating Product (measured thickness in feet)
NS	Not Sampled

N

0 200 400

Scale in Feet

GeoStrategies Inc.

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

PLATE
3

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE	REVISED DATE
764401-18		9/93		

APPENDIX A

CHEMICAL ANALYTICAL REPORTS

AND CHAIN-OF-CUSTODY FORMS

BLAINE
TECH SERVICES INC.

985 TIMOTHY DRIVE
SAN JOSE, CA 95133
(408) 995-5535
FAX (408) 293-8773

August 2, 1993

Shell Oil Company
P.O. Box 5278
Concord, CA 94520-9998

Attn: Daniel T. Kirk

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

QUARTER:
3rd quarter of 1993

QUARTERLY GROUNDWATER SAMPLING REPORT 930722-W-1

This report contains data collected during routine inspection, gauging and sampling of groundwater monitoring wells performed by Blaine Tech Services, Inc. in reponse to the request of the consultant who is overseeing work at this site on behalf of our mutual client, Shell Oil Company. Data collected in the course of our field work is presented in a TABLE OF WELL GAUGING DATA. The field information was collected during our preliminary gauging and inspection of the wells, the subsequent evacuation of each well prior to sampling, and at the time of sampling.

Measurements taken include the total depth of the well and the depth to water. The surface of water was further inspected for the presence of immiscibles which may be present as a thin film (a sheen on the surface of the water) or as a measurable free product zone (FPZ). At intervals during the evacuation phase, the purge water was monitored with instruments that measure electrical conductivity (EC), potential hydrogen (pH), temperature (degrees Fahrenheit), and turbidity (NTU). In the interest of simplicity, fundamental information is tabulated here, while the bulk of the information is turned over directly to the consultant who is making professional interpretations and evaluations of the conditions at the site.

STANDARD PROCEDURES

Evacuation

Groundwater wells are thoroughly purged before sampling to insure that the sample is collected from water that has been newly drawn into the well from the surrounding geologic formation. The selection of equipment to evacuate each well is based on the physical characteristics of the well and what is known about the performance of the formation in which the well has been installed. There are several suitable devices which can be used for evacuation. The most commonly employed devices are air or gas actuated pumps, electric submersible pumps, and hand or mechanically actuated bailers. Our personnel frequently employ USGS/Middleburg positive displacement pumps or similar air actuated pumps which do not agitate the water standing in the well.

Normal evacuation removes three case volumes of water from the well. More than three case volumes of water may be removed in cases where more evacuation is needed to achieve stabilization of water parameters. Less than three case volumes of water may be obtained in cases where the well dewaters and does not recharge to 80% of its original volume within two hours and any additional time our personnel have reason to remain at the site. In such cases, our personnel return to the site within twenty four hours and collect sample material from the water which has recharged into the well case.

Decontamination

All apparatus is brought to the site in clean and serviceable condition. The equipment is decontaminated after each use and before leaving the site.

Free Product Skimmer

The column headed, VOLUME OF IMMISCIBLES REMOVED (ml) is included in the TABLE OF WELL GAUGING DATA to cover situations where a free product skimming device must be removed from the well prior to gauging. Skimmers are installed in wells with a free product zone on the surface of the water. The skimmer is a free product recovery device which often prevents normal well gauging and free product zone measurements. The 2.0" and 3.0" PetroTraps fall into the category of devices that obstruct normal gauging. In cases where the consultant elects to have our personnel pull the skimmers out of the well and gauge the well, our personnel perform the additional task of draining the accumulated free product out of the PetroTrap before putting it back in the well. This recovered free product is measured and logged in the VOLUME OF IMMISCIBLES REMOVED column. Gauging at such site is performed in accordance with specific directions from the professional consulting firm overseeing work at the site on Shell's behalf.

Sample Containers

Sample material is collected in specially prepared containers which are provided by the laboratory that performs the analyses.

Sampling

Sample material is collected in stainless steel bailer type devices normally fitted with both a top and a bottom check valve. Water is promptly decanted into new sample containers in a manner which reduces the loss of volatile constituents and follows the applicable EPA standard for handling volatile organic and semi-volatile compounds.

Following collection, samples are promptly placed in an ice chest containing prefrozen blocks of an inert ice substitute such as Blue Ice or Super Ice. The samples are maintained in either an ice chest or a refrigerator until delivered into the custody of the laboratory.

Sample Designations

All sample containers are identified with a site designation and a discrete sample identification number specific to that particular groundwater well. Additional standard notations (e.g. time, date, sampler) are also made on the label. Either the requested analyses or the specific analytes are written on the sample label (e.g. TPH-G, BTEX).

Chain of Custody

Samples are continuously maintained in an appropriate cooled container while in our custody and until delivered to the laboratory under a standard Shell Oil Company chain of custody. If the samples are taken charge of by a different party (such as another person from our office, a courier, etc.) prior to being delivered to the laboratory, appropriate release and acceptance records are made on the chain of custody (time, date, and signature of the person releasing the samples followed by the time, date and signature of the person accepting custody of the samples).

Hazardous Materials Testing Laboratory

The samples obtained at this site were delivered to Anametrix, Inc. in San Jose, California. Anametrix, Inc. is a California Department of Health Services certified Hazardous Materials Testing Laboratory and is listed as DOHS HMTL #1234.

Objective Information Collection

Blaine Tech Services, Inc. performs specialized environmental sampling and documentation as an independent third party. In order to avoid compromising the objectivity necessary for the proper and disinterested performance of this work, Blaine Tech Services, Inc. performs no consulting and does not become involved in the marketing or installation of remedial systems of any kind. Blaine Tech Services, Inc. is concerned only with the generation of objective information, not with the use of that information to support evaluations and recommendations concerning the environmental condition of the site. Even the straightforward interpretation of objective analytical data is better performed by interested regulatory agencies, and those engineers and geologists who are engaged in the work of providing professional opinions about the site and proposals to perform additional investigation or design remedial systems.

Reportage

Submission of this report and the attached laboratory report to interested regulatory agencies is handled by the consultant in charge of the project. Any professional evaluations or recommendations will be made by the consultant under separate cover.

Please call if we can be of any further assistance.

Richard C. Blaine

RCB/lpn

attachments: table of well gauging data
chain of custody
certified analytical report

cc: GeoStrategies, Inc
2140 W. Winton Avenue
Hayward, CA 94545
ATTN: Michael Carey

TABLE OF WELL GAUGING DATA

WELL I.D.	DATA COLLECTION DATE	MEASUREMENT REFERENCED TO	QUALITATIVE OBSERVATIONS (sheen)	DEPTH TO FIRST IMMISCIBLES LIQUID (FPZ) (feet)	THICKNESS OF IMMISCIBLES LIQUID ZONE (feet)	VOLUME OF IMMISCIBLES REMOVED (ml)	DEPTH TO WATER (feet)	DEPTH TO WELL BOTTOM (feet)
S-4	7/22/93	TOB	–	NONE	–	–	14.42	16.52
S-5	7/22/93	TOB	FREE PRODUCT	21.43	0.25	–	21.68	–
S-6	7/22/93	TOB	ODOR	NONE	--	–	21.64	36.68

9307263 (18)

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: _____

Date: 7/22/93
Page 1 of 1

Site Address: 461 8th Street, Oakland

WIC#: 204-5508-6200

Shell Engineer: Dan Kirk — Phone No.: (510) 675-6168 Fax #: 675-6160

Consultant Name & Address: Blaine Tech Services, Inc. 985 Timothy Drive San Jose, CA 95133

Consultant Contact: Jim Keller — Phone No.: (408) 995-5535 Fax #: 293-8773

Comments:

Sampled by: Don Wells

Printed Name: DON WELLS

LAB: Anametrix

CHECK ONE (1) BOX ONLY | C1/D1 | TURN AROUND TIME

- Quarterly Monitoring ☑ $441 — 24 hours ☐
- Site Investigation ☐ $441 — 48 hours ☐
- Soil Classify/Disposal ☐ $442 — 15 days ☑ (Normal)
- Water Classify/Disposal ☐ $443 — Other ☐ _____
- Soil/Air Rem. or Sys. O & M ☐ $442
- Water Rem. or Sys. O & M ☐ $443
- Other ☐

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

Sample ID	Date	Sludge	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	Combination TPH 8015 & BTEX 8020			Asbestos	Container Size	Preservation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
(1) S-6	7/22			X		3						X				40 ml	HCl	N	Groundwater	
(2) TB	7/21			X		2						X				"	"	"	trip blank	

Relinquished By (signature):	Printed Name:	Date:	Time:	Received (signature):	Printed Name:	Date:	Time:
Don Wells	DON WELLS	7-23-93	1000	Benny S. Carrasco	BENNY S. CARRASCO	7-23-93	1000
Benny S. Carrasco	BENNY S. CARRASCO	7-23-93	1670	Maria Barajas	Maria Barajas	7/23/93	1640
Relinquished By (signature):	Printed Name:	Date:	Time:	Received (signature):	Printed Name:	Date:	Time:

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

Inchcape Testing Services
Anametrix Laboratories

1961 Concourse Drive
Suite E
San Jose, CA 95131
Tel: 408-432-8192
Fax: 408-432-8198

MR. JIM KELLER
BLAINE TECH
985 TIMOTHY DRIVE
SAN JOSE, CA 95133

Workorder # : 9307263
Date Received : 07/23/93
Project ID : 204-5508-6200
Purchase Order: MOH-B813

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

ANAMETRIX ID	CLIENT SAMPLE ID
9307263- 1	S-6
9307263- 2	TB

This report consists of 4 pages not including the cover letter, and is organized in sections according to the specific Anametrix 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 Anametrix 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.

Anametrix 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 Anametrix.

Larry Kent for

Sarah Schoen, Ph.D.
Laboratory Director

7-30-93
Date

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

MR. JIM KELLER
BLAINE TECH
985 TIMOTHY DRIVE
SAN JOSE, CA 95133

Workorder # : 9307263
Date Received : 07/23/93
Project ID : 204-5508-6200
Purchase Order: MOH-B813
Department : GC
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9307263- 1	S-6	WATER	07/22/93	TPHgBTEX
9307263- 2	TB	WATER	07/21/93	TPHgBTEX

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

MR. JIM KELLER
BLAINE TECH
985 TIMOTHY DRIVE
SAN JOSE, CA 95133

Workorder # : 9307263
Date Received : 07/23/93
Project ID : 204-5508-6200
Purchase Order: MOH-B813
Department : GC
Sub-Department: TPH

QA/QC SUMMARY :

- No QA/QC problems encountered for these samples.

Cheryl Balmer 7/30/93
Department Supervisor Date

CRPatel 07-30-93
Chemist Date

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

Anametrix W.O.: 9307263
Matrix : WATER
Date Sampled : 07/22/93

Project Number : 204-5508-6200
Date Released : 07/30/93

	Reporting Limit	Sample I.D.# S-6	Sample I.D.# TB	Sample I.D.# BLANK		
COMPOUNDS	(ug/L)	-01	-02	BL2801E3		
Benzene	0.5	31000	ND	ND		
Toluene	0.5	14000	ND	ND		
Ethylbenzene	0.5	3000	ND	ND		
Total Xylenes	0.5	13000	ND	ND		
TPH as Gasoline	50	70000	ND	ND		
% Surrogate Recovery		127%	119%	121%		
Instrument I.D.		HP21	HP21	HP21		
Date Analyzed		07/28/93	07/28/93	07/28/93		
RLMF		500	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.

Anametrix control limits for surrogate p-Bromofluorobenzene recovery are 61-139%

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

CPatel 07/30/93
Analyst Date

Cheryl Balmer 7/30/93
Supervisor Date

BTEX LABORATORY CONTROL SAMPLE REPORT
EPA METHOD 5030 WITH GC/PID
ANAMETRIX, INC. (408) 432-8192

Sample I.D.	: LAB CONTROL SAMPLE	Anametrix I.D.	: ML2801E3
Matrix	: WATER	Analyst	: AR
Date Sampled	: N/A	Supervisor	: CS
Date Analyzed	: 07/28/93	Date Released	: 07/30/93
		Instrument ID	: HP21

COMPOUND	SPIKE AMT. (ug/L)	LCS (ug/L)	REC LCS	%REC LIMITS
Benzene	20.0	17.6	88%	52-133
Toluene	20.0	19.6	98%	57-136
Ethylbenzene	20.0	20.8	104%	56-139
TOTAL Xylenes	20.0	21.5	108%	56-141
P-BFB			114%	61-139

* Limits established by Anametrix, Inc.

WELL GAUGING DATA

Shell WIC #204 - 5508 - 6200

Project # 930722-W1 Date 7/22/93 Client Shell

Site 461 Ft 1st Oakland Sampler JW

Well I.D.	Well Size (in.)	Sheen/ Odor	Depth to Immisible Liquid (feet)	Thickness of Immisible Liquid (ft.)	Volume of Immisibles Removed (ml)	Depth to Water (feet)	Depth to Well Bottom (feet)	Measured to: Top of Pipe or Grade
S-4	4	—	—	—	—	14.42	16.52	Grade
S-5	4	F.P.	21.43	0.25	vacuumed by CHO	21.68	—	↓
S-6	4	Odor	none	—	—	21.64	36.68	↓

SHELL WELL MONITORING DATA SHEET

Project #: 930722-W1	Wic # 204-5508-6200
Sampler: RWS	Date Sampled: 7/22/93
Well I.D.: S-6	Well Diameter: (circle one) 2 3 (4) 6 ___
Total Well Depth: Before 36.68 After	Depth to Water: Before 21.64 After
Depth to Free Product:	Thickness of Free Product (feet):
Measurements referenced to: PVC Grade Other --	

Volume Conversion Factor (VCF):
$(12 \times (d^2/4) \times \pi)/231$
Where
12 = in/foot
d = diameter (in.)
π = 3.1416
231 = in³/gal

Well dia.	VCF
2"	= 0.16
3"	= 0.37
4"	= 0.65
6"	= 1.47
10"	= 4.08
12"	= 5.87

9.8 (1 Case Volume) x 3 (Specified Volumes) = 29.4 gallons

Purging: Bailer ☐
Middleburg ☐
Electric Submersible ☑
Suction Pump ☐
Type of Installed Pump _____

Sampling: Bailer ☑
Middleburg ☐
Electric Submersible ☐
Suction Pump ☐
Installed Pump ☐

TIME	TEMP. (F)	pH	COND.	TURBIDITY:	VOLUME REMOVED:	OBSERVATIONS:
1022	68.2	7.1	1700	49	10	str odor
1027	67.0	7.1	910	151	20	4
1040	67.2	7.1	900	76	30	4

Did Well Dewater? No If yes, gals. Gallons Actually Evacuated: 30

Sampling Time: 1050

Sample I.D.: S-6 Laboratory: Anametrix

Analyzed for: TPH-G/BTEX

Duplicate I.D.: Cleaning Blank I.D.:

Analyzed for:

Shipping Notations:

Additional Notations:

SHELL WELL MONITORING DATA SHEET

Project #: 930722-WI	Wic #: 204-5508-6200
Sampler: [illegible]	Date Sampled: ~~2/22/93~~ not sampled
Well I.D.: S-5	Well Diameter: (circle one) 2 3 (4) 6 ____
Total Well Depth: Before — After	Depth to Water: Before 21.68 After
Depth to Free Product: 21.43	Thickness of Free Product (feet): 0.25
Measurements referenced to: PVC (Grade) Other --	

Volume Conversion Factor (VCF):
$\{12 \times (d^2/4) \times \pi\}/231$
where
12 = in/foot
d = diameter (in.)
π = 3.1416
231 = in³/gal

Well dia.		VCF
2"	=	0.16
3"	=	0.37
4"	=	0.65
6"	=	1.47
10"	=	4.08
12"	=	5.87

F.P. Vecuumed by Crosby & Overton

_______ x _______ = _______
1 Case Volume   Specified Volumes   = gallons

Purging: Bailer ☐
Middleburg ☐
Electric Submersible ☐
Suction Pump ☐
Type of Installed Pump ________

Sampling: Bailer ☐
Middleburg ☐
Electric Submersible ☐
Suction Pump ☐
Installed Pump ☐

TIME	TEMP. (F)	pH	COND.	TURBIDITY:	VOLUME REMOVED:	OBSERVATIONS:

Did Well Dewater?   If yes, gals.   Gallons Actually Evacuated:

Sampling Time:

Sample I.D.:   Laboratory:

Analyzed for:

Duplicate I.D.:   Cleaning Blank I.D.:

Analyzed for:

Shipping Notations:

Additional Notations: