



93 JUL 19

July 15, 1993

Jennifer Eberle
Alameda County Department
of Environmental Health
80 Swan Way, Room 200
Oakland, CA 94621-1426

3714

Re: Shell Service Station
WIC #204-5510-0204
350 Grand Avenue
Oakland, California
WA Job #81-701-203

Dear Ms. Eberle:

This letter describes recently completed and anticipated activities at the Shell service station referenced above (Figure 1). This status report satisfies the quarterly reporting requirements prescribed by California Administrative Code Title 23 Waters, Chapter 3, Subchapter 16, Article 5, Section 265.d. Included below are descriptions and results of activities performed in the second quarter 1993 and proposed work for the third quarter 1993.

Second Quarter 1993 Activities:

- Blaine Tech Services, Inc. (BTS) of San Jose, California measured ground water depths and collected ground water samples from the three site wells. BTS' report describing these activities and the analytic report for the ground water samples are included as Attachment A.
- Weiss Associates (WA) calculated ground water elevations and compiled the analytic data (Tables 1 and 2) and prepared a ground water elevation contour map (Figure 2).
- WA investigated permit and installation requirements with several City of Oakland agencies to install a soil vapor extraction (SVE) system at the site to remediate hydrocarbons detected near well S-2. Since ground water has risen by several feet compared to previous quarters and is currently above the well screens, SVE may not be possible until later this summer.

Jennifer Eberle
July 15, 1993

2

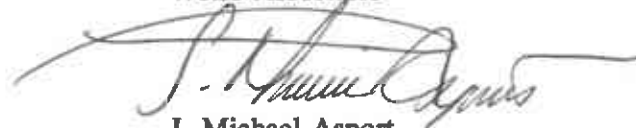
Anticipated Third Quarter 1993 Activities:

WA will submit a report presenting the results of the third quarter 1993 ground water sampling and ground water depth measurements. The report will include tabulated chemical analytic results, ground water elevations and a ground water elevation contour map. We will also monitor ground water elevation to assess whether SVE will be possible later this summer.

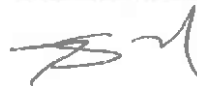
Please call if you have any questions.



Sincerely,
Weiss Associates



J. Michael Asport
Technical Assistant



N. Scott MacLeod, R.G.
Project Geologist

JMA/NSM:jma

J:\SHELL\700\701QM\Y3.WP

Attachments: Figures
Tables
A - Blaine Tech's Ground Water Monitoring Report

cc: Dan Kirk, Shell Oil Company, P.O. Box 5278, Concord, California 94520-9998
Lester Feldman, Regional Water Quality Control Board - San Francisco Bay Region, 2101
Webster Street, Suite 500, Oakland, California 94612

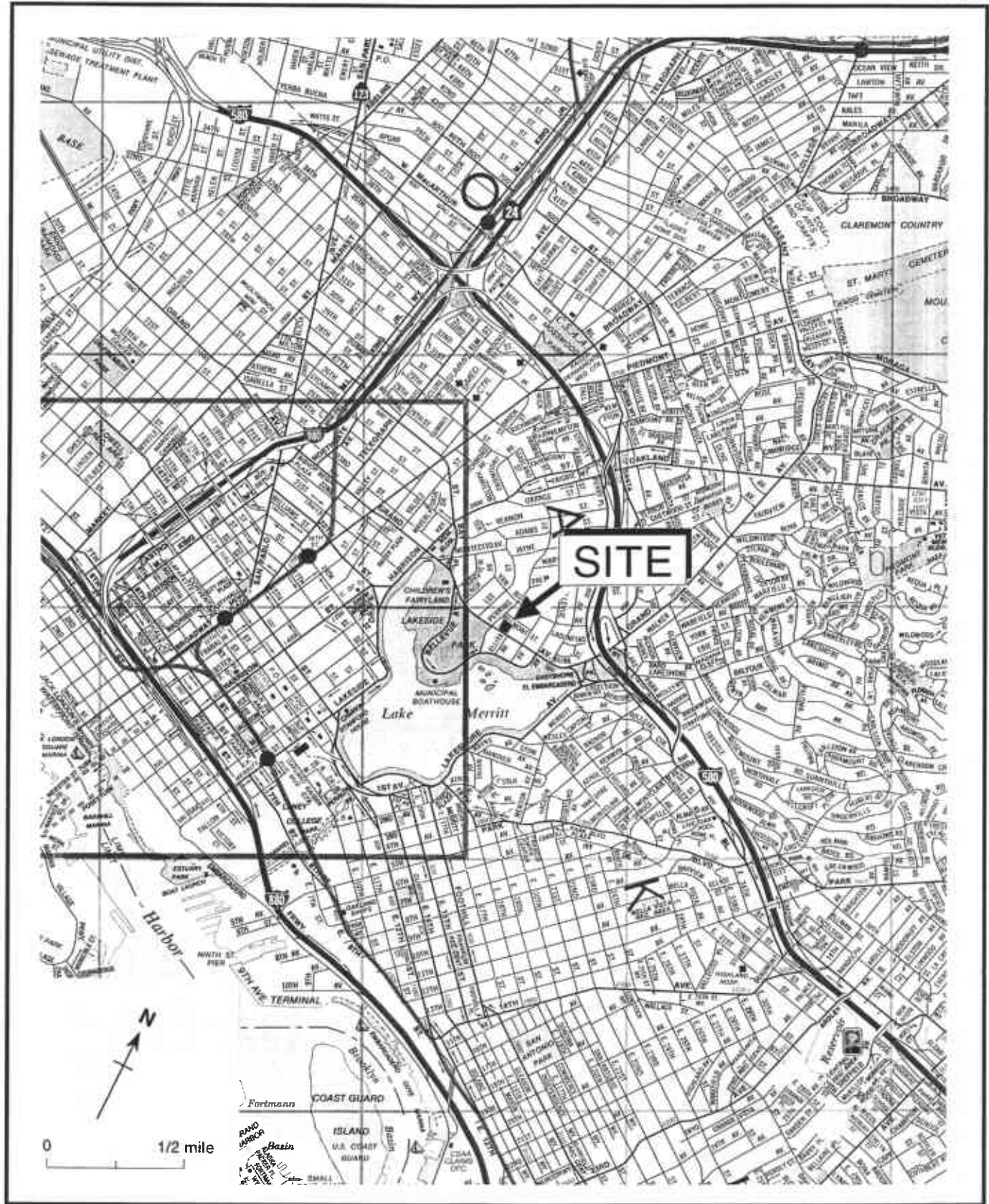


Figure 1. Site Location Map - Shell Service Station WIC #204-5510-0204, 350 Grand Avenue, Oakland, California

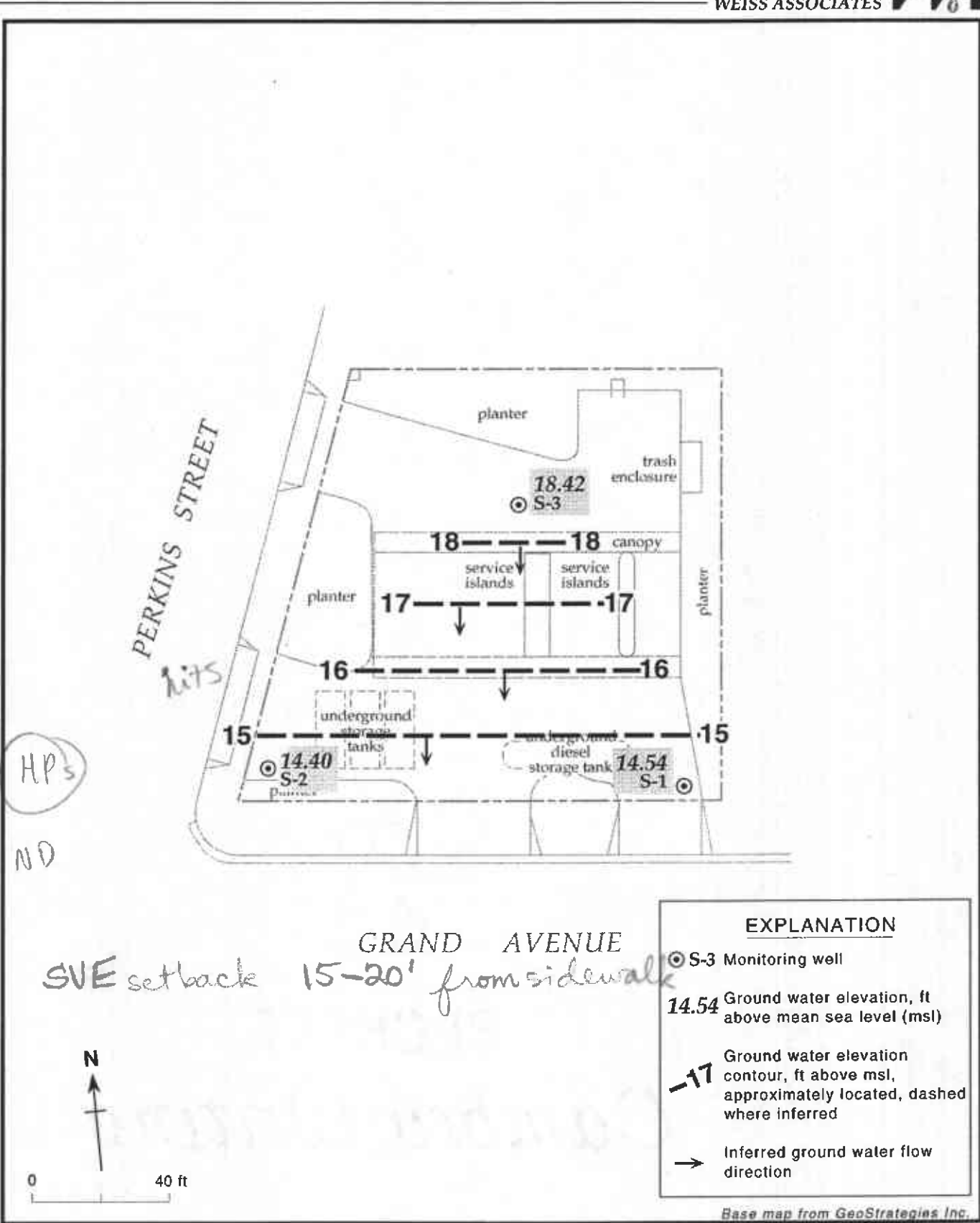


Figure 2. Monitoring Well Location and Ground Water Elevation Contour Map - April 26, 1993 - Shell Service Station WIC #204-5510-0204, 350 Grand Avenue, Oakland, California

Table 1. Ground Water Elevations - Shell Service Station WIC #204-5510-0204, 350 Grand Avenue, Oakland, California

Well ID	Date	Top-of-Casing Elevation	Depth to Water (ft)	Ground Water Elevation (ft above msl)
S-1	04/27/92	20.84	7.06	13.78
	07/10/92		8.31	12.53
	10/06/92		9.55	11.29
	01/06/93		9.86	10.98
	04/26/93		6.30	14.54
S-2	04/27/92	21.24	7.83	13.41
	07/10/92		8.57	12.67
	10/06/92		9.49	11.75
	01/06/93		8.56	12.68
	04/26/93		6.84	14.40
S-3	04/27/92	22.70	7.25	15.45
	07/10/92		8.46	14.24
	10/06/92		11.77	10.93
	01/06/93		12.53	10.17
	04/26/93		4.28	18.42

ATTACHMENT A
GROUND WATER MONITORING REPORT AND ANALYTIC REPORT

Table 2. Analytic Results for Ground Water, Former Shell Service Station, WIC #204-5510-0204, 350 Grand Avenue, Oakland, California

Sample ID	Date	Depth to Water (ft)	TPH-D	TPH-G	B	E	T	X
-----parts per million-----								
WELLS								
S-1 ✓	04/27/92	7.06	0.070 ^a	<0.050	0.0012	<0.0005	<0.0005	<0.0005
	07/10/92	8.31	0.093	<0.050	0.013	<0.0005	<0.0005	<0.0005
	10/06/92	9.55	0.110	0.062	<0.0005	<0.0005	<0.0005	<0.0005
	01/06/93	9.86	0.081	0.085	0.0011	<0.0005	<0.0005	<0.0005
	04/26/93	6.30	0.053 ^a	<0.050	<0.0005	<0.0005	<0.0005	<0.0005
	04/26/93 ^{dup}		0.053 ^a	<0.050	<0.0005	<0.0005	<0.0005	<0.0005
	04/27/92	7.83	12.0	21 ^c	4.8	1.6	0.32	1.4
	07/10/92	8.57	3.7 ^d	31	7.5	3.4	0.94	3.5
	10/06/92	9.49	4.5 ^d	57	9.3	4.0	1.2	4.9
	01/06/93	8.56	5.6	57	5.6	3.0	0.36	3.0
	04/26/93	6.84	9.4 ^d			4.4	0.5	3.6
S-3 ✓	04/27/92	7.25	0.10	<0.050	<0.0005	<0.0005	<0.0005	<0.0005
	07/10/92	8.46	0.068	<0.050	<0.0005	<0.0005	<0.0005	<0.0005
	10/06/92	11.77	<0.010	<0.050	<0.0005	<0.0005	<0.0005	<0.0005
	01/06/93	12.53	<0.010	<0.050	<0.0005	<0.0005	<0.0005	<0.0005
	04/26/93	4.28	0.069	<0.050	<0.0005	<0.0005	<0.0005	<0.0005
Trip Blank	04/26/93		<0.050	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
DTSC MCLs				NE	0.001	0.680	0.10 ^e	1.750

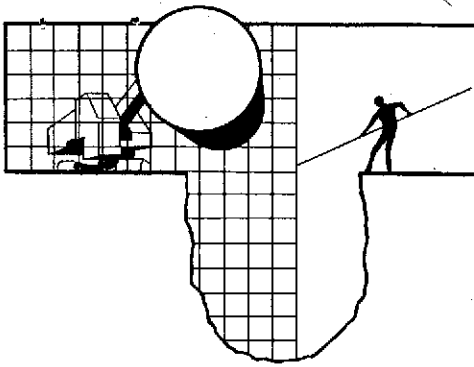
Abbreviations:

TPH-G = Total petroleum hydrocarbons as gasoline by Modified EPA Method 8015
 B = Benzene by EPA Method 8020
 E = Ethylbenzene by EPA Method 8020
 T = Toluene by EPA Method 8020
 X = Xylenes by EPA Method 602 or 8020
 --- = Not analyzed
 DTSC MCLs = California Department of Toxic Substances Control maximum contaminant levels for drinking water
 NE = Not established
 <n = Not detected at detection limits of n ppm
 dup = Duplicate sample

Notes:

a = Compounds detected and calculated as diesel appear to be the less volatile constituents of gasoline
 b = Concentration reported as diesel primarily due to the presence of a heavier petroleum product, possibly motor oil.
 c = Compounds detected and calculated as gasoline are not characteristic of the standard gasoline chromatographic pattern.
 d = Concentrations reported as diesel is primarily due to the presence of lighter petroleum product, possibly gasoline or kerosene
 e = DTSC recommended action level for drinking water; MCL not established





BLAINE TECH SERVICES INC.

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

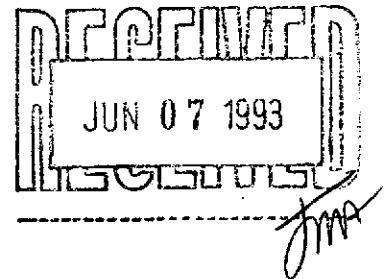
May 4, 1993

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

Attn: Daniel T. Kirk

SITE:
Shell WIC # 204-5510-0204
350 Grand Avenue
Oakland, California

QUARTER:
2nd quarter of 1993



QUARTERLY GROUNDWATER SAMPLING REPORT 930426-W-2

This report contains data collected during routine inspection, gauging and sampling of groundwater monitoring wells performed by Blaine Tech Services, Inc. in response 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 the 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.

TABLE OF WELL GAUGING DATA

WELL I.D.	WELL DIAMETER (inches)	DATA COLLECTION DATE	MEASUREMENTS REFERENCED TO	QUALITATIVE OBSERVATIONS (seen)	DEPTH TO FIRST IMMISCIBLE LIQUID (FPZ) (feet)	THICKNESS OF IMMISCIBLE LIQUID ZONE (feet)	VOLUME OF IMMISCIBLES REMOVED (ml)	DEPTH TO WATER (feet)	DEPTH TO WELL BOTTOM (feet)
S-1 *	3	04-26-93	GRADE	--	NONE	--	--	6.30	17.65
S-2	3	04-26-93	GRADE	ODOR	NONE	--	--	6.84	15.0
S-3	3	04-26-93	GRADE	--	NONE	--	--	4.28	15.04

* Sample DUP was a duplicate sample taken from well S-1.

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 dewateres 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

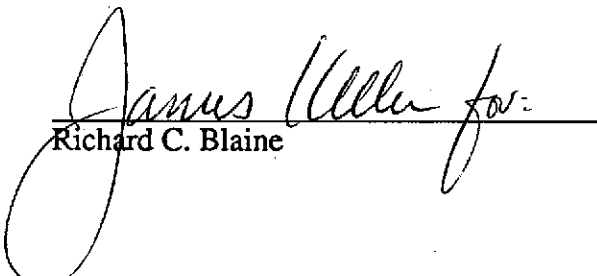
Blaine Tech Services, Inc. performs specialized environmental sampling and documentation as an independent third party. In order to avoid compromising the objectivity necessary for the proper and disinterested performance of this work, Blaine Tech Services, Inc. performs no consulting and does not become 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: chain of custody
certified analytical report

cc: GeoStrategies, Inc.
2140 W. Winton Ave.
Hayward, CA 94545
ATTN: Ellen Fostersmith



SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD

Serial No: _____

Date: 4/27/93

Page (of) 1

Site Address: 330 Grand Oakland

Analysis Required

LAB: Asymmetric

WICH: 204-5510-0204

Shell-Engineer: Dan Kirk Phone No.: _____
Fax #: _____

Consultant Name & Address: Blaine Tech Serv. 985 Timothy St.

Consultant Contact: Glen Bennett Phone No.: 908-995-5525
Fax #: _____

Comments: _____

Sampled by: Don Wertz

Printed Name: DON WERTZ

CHECK ONE (1) BOX ONLY	CL/DI	TURN AROUND TIME
Quarterly Monitoring <input checked="" type="checkbox"/> 6441		24 hours <input type="checkbox"/>
Site Investigation <input type="checkbox"/> 6441		48 hours <input type="checkbox"/>
Soil Clarity/Disposal <input type="checkbox"/> 6442		16 days <input checked="" type="checkbox"/> (Normal)
Water Clarity/Disposal <input type="checkbox"/> 6443		Other <input type="checkbox"/> _____
Soil/Air Rem. or Sys. O & M <input type="checkbox"/> 6482		NOTE: Notify Lab as soon as possible of 24/48 hr. TAT.
Water Rem. or Sys. O & M <input type="checkbox"/> 6483		
Other <input type="checkbox"/>		

Sample ID	Date	Sludge	Soil	Water	Air	No. of conds.	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 8070	Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
① S-3	4/27			X		4	X					X		4oz	1/8	N	Groundwater	
② S-1				X		4	X					X						
③ S-2				X		4	X					X						
④ DUP				X		4	X					X						
⑤ TB				X		2						X		4oz	1/8		trip blank	

Relinquished By (signature): <u>Don Wertz</u>	Printed Name: <u>DON WERTZ</u>	Date: <u>4/27/93</u>	Time: <u>10:15</u>	Received (signature): <u>Simon Heape</u>	Printed Name: <u>Simon Heape</u>	Date: <u>4/27/93</u>	Time: <u>10:15</u>
Relinquished By (signature): <u>Simon Heape</u>	Printed Name: <u>Simon Heape</u>	Date: <u>4/28/93</u>	Time: <u>10:15</u>	Received (signature): <u>Maria Barajas</u>	Printed Name: <u>Maria Barajas</u>	Date: <u>4/28/93</u>	Time: <u>10:15</u>
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

- ①
- ②
- ③
- ④
- ⑤

0:10

9304 329

18

10/25



Part of INCHCAPE ENVIRONMENTAL

MR. GLEN BENNETT
BLAINE TECH
985 TIMOTHY STREET
SAN JOSE, CA 95133

Workorder # : 9304329
Date Received : 04/28/93
Project ID : 204-5510-0204
Purchase Order: MOH-B813

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

ANAMETRIX ID	CLIENT SAMPLE ID
9304329- 1	S-3
9304329- 2	S-1
9304329- 3	S-2
9304329- 4	DUP
9304329- 5	TB

This report consists of 8 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

05-13-93
Date

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

MR. GLEN BENNETT
BLAINE TECH
985 TIMOTHY STREET
SAN JOSE, CA 95133

Workorder # : 9304329
Date Received : 04/28/93
Project ID : 204-5510-0204
Purchase Order: MOH-B813
Department : GC
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9304329- 1	S-3	WATER	04/27/93	TPHd
9304329- 2	S-1	WATER	04/27/93	TPHd
9304329- 3	S-2	WATER	04/27/93	TPHd
9304329- 4	DUP	WATER	04/27/93	TPHd
9304329- 1	S-3	WATER	04/27/93	TPHg/BTEX
9304329- 2	S-1	WATER	04/27/93	TPHg/BTEX
9304329- 3	S-2	WATER	04/27/93	TPHg/BTEX
9304329- 4	DUP	WATER	04/27/93	TPHg/BTEX
9304329- 5	TB	WATER	04/27/93	TPHg/BTEX

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

MR. GLEN BENNETT
BLAINE TECH
985 TIMOTHY STREET
SAN JOSE, CA 95133

Workorder # : 9304329
Date Received : 04/28/93
Project ID : 204-5510-0204
Purchase Order: MOH-B813
Department : GC
Sub-Department: TPH

QA/QC SUMMARY :

- The concentrations reported as diesel for samples S-3, S-1 and DUP are primarily due to the presence of a heavier petroleum product, possibly motor oil.
- The concentration reported as diesel for sample S-2 is primarily due to the presence of a lighter petroleum product, possibly gasoline.
- The recoveries for the diesel laboratory control sample and laboratory control sample duplicate are outside of quality control limits due to a possible preparation error. Due to insufficient sample volume, we were unable to re-extract the samples.

Sheryl Balman
Department Supervisor

5/12/93
Date

Charles Runk
Chemist

5-12-93
Date

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

Anamatrix W.O.: 9304329
Matrix : WATER
Date Sampled : 04/27/93

Project Number : 204-5510-0204
Date Released : 05/12/93

Reporting Limit	Sample I.D.# S-3	Sample I.D.# S-1	Sample I.D.# S-2	Sample I.D.# DUP	Sample I.D.# TB	
(ug/L)	-01	-02	-03	-04	-05	
Benzene	0.5	ND	ND	10000 ✓	ND	ND
Toluene	0.5	ND	ND	500	ND	ND
Ethylbenzene	0.5	ND	ND	4400	ND	ND
Total Xylenes	0.5	ND	ND	3600	ND	ND
TPH as Gasoline	50	ND	ND	32000 ✓	ND	ND
% Surrogate Recovery	122%	120%	128%	119%	106%	
Instrument I.D.	HP4	HP21	HP21	HP21	HP21	
Date Analyzed	05/06/93	05/04/93	05/04/93	05/04/93	05/04/93	
RLMF	1	1	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 GC/FID 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 61-139%.

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

Charles Burch 5.12.93
Analyst Date

Cheryl Balmer 5/12/93
Supervisor Date

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

Anamatrix W.O.: 9304329
Matrix : WATER
Date Sampled : N/A

Project Number : 204-5510-0204
Date Released : 05/12/93

COMPOUNDS	Reporting Limit (ug/L)	Sample I.D.# BY0401E3 BLANK	Sample I.D.# BY0601E3 BLANK
Benzene	0.5	ND	ND
Toluene	0.5	ND	ND
Ethylbenzene	0.5	ND	ND
Total Xylenes	0.5	ND	ND
TPH as Gasoline	50	ND	ND
% Surrogate Recovery		100%	114%
Instrument I.D.		HP21	HP4
Date Analyzed		05/04/93	05/06/93
RLMF		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 61-139%.

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

Charles M. Birch 5.12.93
Analyst Date

Cheryl Baumer 5/12/93
Supervisor Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS AS DIESEL
ANAMETRIX, INC. (408) 432-8192

Anamatrix W.O.: 9304329
Matrix : WATER
Date Sampled : 04/27/93
Date Extracted: 05/04/93

Project Number : 204-5510-0204
Date Released : 05/12/93
Instrument I.D.: HP9

Anamatrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (ug/L)	Amount Found (ug/L)
9304329-01	S-3	05/05/93	50	69
9304329-02	S-1	05/05/93	50	53
9304329-03	S-2	05/08/93	1000	9400
9304329-04	DUP	05/05/93	50	53
BY0413E1	METHOD BLANK	05/05/93	50	ND

Note : Reporting limit is obtained by multiplying the dilution factor times 500 ug/L.

ND - Not detected at or above the practical quantitation limit for the method.

TPHd - Total Petroleum Hydrocarbons as diesel is determined by GCFID following sample extraction by EPA Method 3550.

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

Charles Burch 5-12-93
Analyst Date

Cheryl Balmer 5/12/93
Supervisor Date

TOTAL VOLATILE HYDROCARBON MATRIX SPIKE REPORT
 EPA METHOD 5030 WITH GC/FID
 ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 204-5510-0204 S-3
 Matrix : WATER
 Date Sampled : 04/27/93
 Date Analyzed : 05/04/93

Anamatrix I.D. : 04329-01
 Analyst : *CMB*
 Supervisor : *SA*
 Date Released : 05/12/93
 Instrument ID : HP21

COMPOUND	SPIKE AMT (ug/L)	SAMPLE AMT (ug/L)	REC MS (ug/L)	% REC MS	REC MD (ug/L)	% REC MD	RPD	% REC LIMITS
GASOLINE	500	0	500	100%	490	98%	-2%	48-149
P-BFB				98%		98%		61-139

* Limits established by Anamatrix, Inc.

TOTAL VOLATILE HYDROCARBON LABORATORY CONTROL SAMPLE REPORT
 EPA METHOD 5030 WITH GC/FID
 ANAMETRIX, INC. (408) 432-8192

Sample I.D. : LAB CONTROL SAMPLE
 Matrix : WATER
 Date Sampled : N/A
 Date Analyzed : 05/04/93

Anamatrix I.D. : LCSW0504
 Analyst : *CMB*
 Supervisor : *ca*
 Date Released : 05/12/93
 Instrument I.D.: HP21

COMPOUND	SPIKE AMT. (ug/L)	REC LCS (ug/L)	%REC LCS	% REC LIMITS
GASOLINE	500	540	108%	67-127
p-BFB			107%	61-139

* Quality control established by Anamatrix, Inc.

TOTAL EXTRACTABLE HYDROCARBON LABORATORY CONTROL SAMPLE REPORT
 EPA METHOD 3510 WITH GC/FID
 ANAMETRIX, INC. (408) 432-8192

Sample I.D. : LAB CONTROL SAMPLE
 Matrix : WATER
 Date Sampled : N/A
 Date Extracted: 05/04/93
 Date Analyzed : 05/05/93

Anamatrix I.D. : LCSW0504
 Analyst : *CMB*
 Supervisor : *CB*
 Date Released : 05/07/93
 Instrument I.D.: HP9

COMPOUND	SPIKE AMT (ug/L)	LCS REC (ug/L)	% REC LCS	LCSD REC (ug/L)	% REC LCSD	RPD	% REC LIMITS
DIESEL	1250	420	34%	410	33%	-2%	47-130

*Quality control established by Anamatrix, Inc.