Weiss Associates
Environmental and Geologic Services
5500 Shellmound Street, Emeryville, CA 94608-2411
Fax: 510-547-5043 Phone: 510-547-5420

January 20, 1994

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

Re: ACDEH STID #1976
Shell Service Station
WIC #204-4380-0303
318 South Livermore Avenue
Livermore, California
WA Job #81-613-203

Dear Mr. Sharpio:

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 fourth quarter 1993 and proposed work for the first quarter 1994.

Fourth Quarter 1993 Activities:

- Blaine Tech Services, Inc. (BTS) of San Jose, California measured depths to ground water and collected ground water samples from all four site wells. BTS' report describing these activities and the analytic report for the ground water samples are included as Attachment A.
- Weiss Associates (WA) compiled the ground water elevation and analytic data (Tables 1 and 2) and prepared a ground water elevation contour map (Figure 2).

Anticipated First Quarter 1994 Activities:

As approved in the ACDEH's July 19, 1993[1] letter to Dan Kirk of Shell Oil Company, the monitoring frequency at this site will be reduced to twice annually, in the spring and fall quarters. The next sampling event will occur in the second quarter of 1994.

Conclusions and Recommendations:

As indicated in the ACDEH's June 19, 1992 letter to Dan Kirk of Shell Oil Company[1], this site would be granted case closure if no hydrocarbons or lead were detected during four consecutive quarters of ground water sampling. We began sampling this site on September 2, 1992 and have attempted to sample all site wells quarterly for the last five quarters. Due to low water levels, not all of the wells could be sampled each quarter. However, each of the wells has been sampled at least four times, including during recent quarters when the water levels were up to 16 ft higher than in previous quarters. Since 1990 when the wells were first installed, benzene has been detected over Department of Toxic Substances Control (DTSC) maximum contaminant levels for drinking water (MCLs) only twice, at a maximum of 6.8 parts per billion (ppb) in well MW-3.

WA will continue semiannual monitoring of the site. However, since no benzene or other hydrocarbons have ever been detected over DTSC MCLs in downgradient wells MW-1, MW-2 and MW-4 despite the recent rise in ground water, and since the benzene concentrations detected in source area well MW-3 are consistently near or below DTSC MCLs and do not pose any threat to human health or the environment, we request that the Alameda County Department of Environmental Health grant case closure for this site.

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[1] ACDEH, July 26, 1993, Letter from hazardous materials specialist Eva Chu to Shell environmental engineer Dan Kirk regarding the Shell service station at 318 South Livermore Avenue, Livermore, California, 1 pg.

Please call if you have any questions.

Sincerely,
Weiss Associates

John Wolf
Technical Assistant

N. Scott MacLeod, R.G.
Project Geologist

JWA/NSM:jaw

J:\SHELL\600\QMRPTS\613QMJA4.WP

Attachments: A - Ground Water Monitoring Report and Analytic Data

cc: Dan Kirk, Shell Oil Company, P.O. Box 5278, Concord, CA 94520
Tom Callaghan, Regional Water Quality Control Board, San Francisco Bay Region, 2101 Webster Street, Oakland, CA 94612

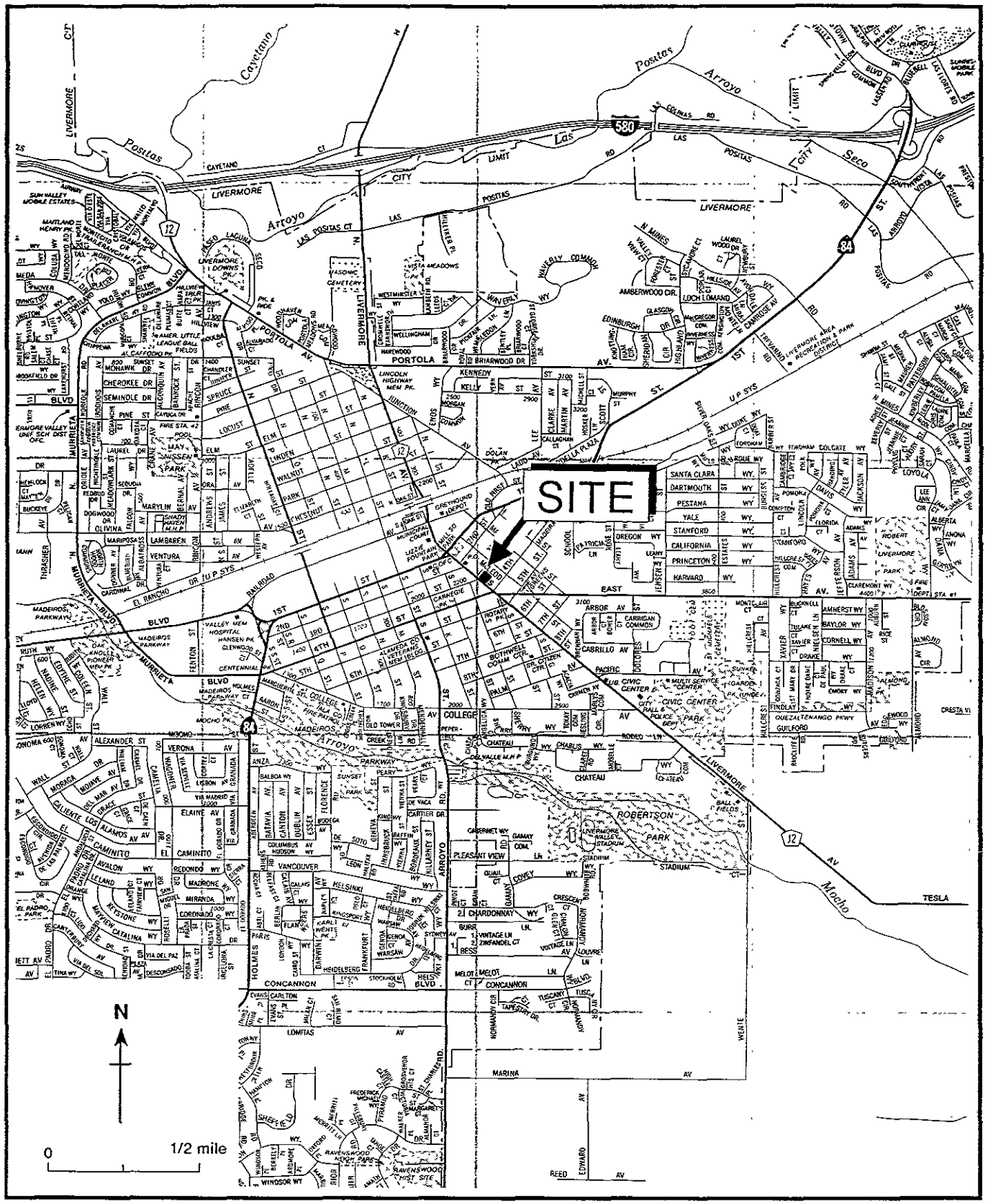

Figure 1. Site Location Map - Shell Service Station WIC #204-4380-0303, 318 South Livermore Avenue, Livermore, California

2/28/92

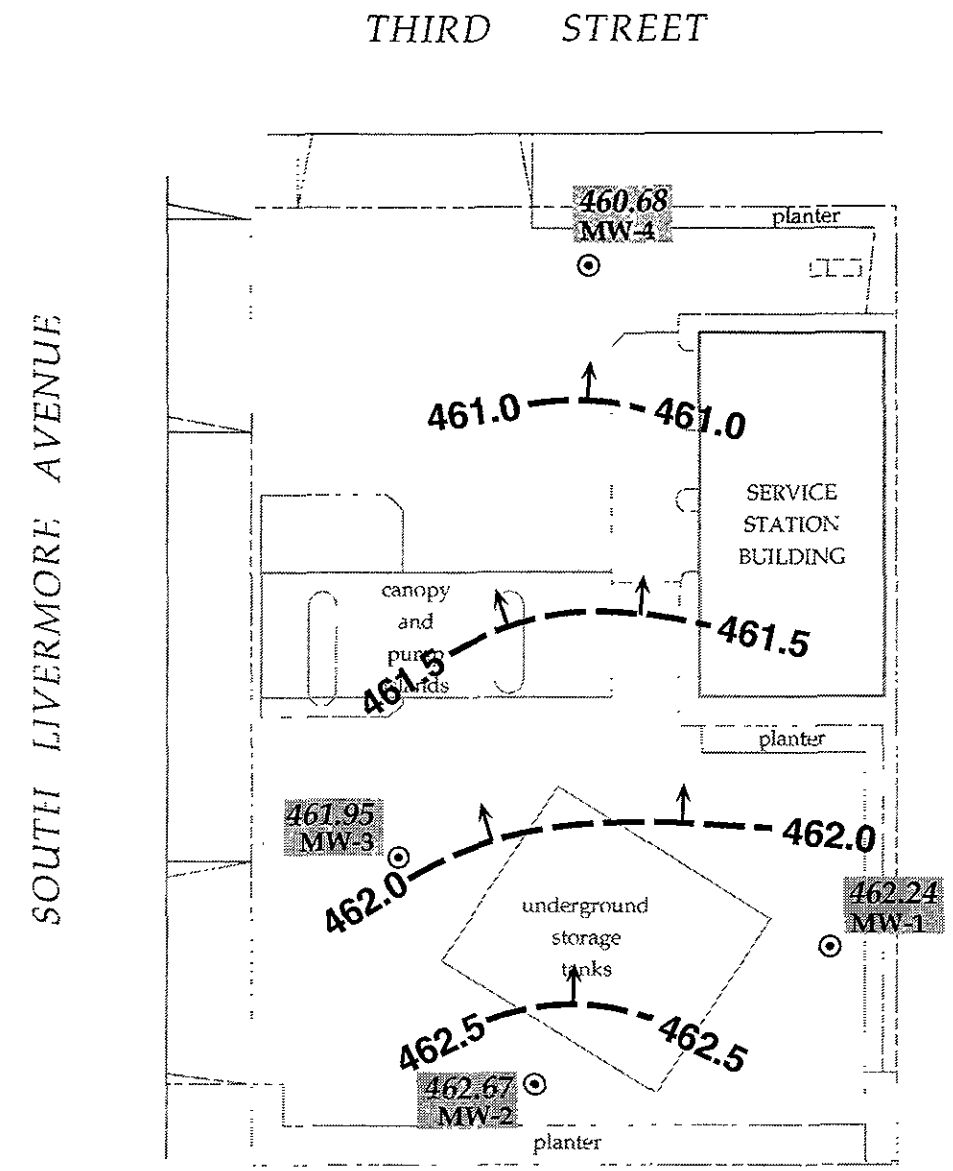

Figure 2. Monitoring Well Locations and Ground Water Elevations - December 9, 1993 - Shell Service Station WIC #204-4380-0303, 318 South Livermore Avenue, Livermore, California

Table 1. Ground Water Elevations - Shell Service Station WIC #204-4380-0303, 318 South Livermore Avenue, Livermore, California

Well ID	Date	Top-of-Casing Elevation (ft above msl)	Depth to Water (ft)	Ground Water Elevation (ft above msl)
MW-1	06/21/90	496.08	42.69	453.39
	09/28/90		44.75	451.33
	11/06/90		45.61	450.47
	12/07/90		45.82	450.26
	09/02/92		Dry	Dry
	11/13/92		Dry	Dry
	01/25/93		47.47	448.61
	05/27/93		31.09	464.99
	09/21/93		33.67	462.41
	12/09/93		**33.84**	**462.24**
MW-2	06/21/90	495.49	42.15	453.34
	09/28/90		44.18	451.31
	11/06/90		44.98	450.51
	12/07/90		45.32	450.17
	09/02/92		Dry	Dry
	11/13/92		Dry	Dry
	01/25/93		47.14	448.35
	05/27/93		31.48	464.01
	09/21/93		33.31	462.18
	12/09/93		**32.82**	**462.67**
MW-3	06/21/90	494.80	42.07	452.73
	09/28/90		44.15	450.65
	11/06/90		44.93	449.87
	12/07/90		45.56	449.24
	09/02/92		Dry	Dry
	11/13/92		Dry	Dry
	01/25/93		47.02	447.78
	05/27/93		29.58	465.22
	09/21/93		33.79	461.01
	12/09/93		**32.85**	**461.95**
MW-4	06/21/90	494.33	42.21	452.12
	09/28/90		44.27	450.06
	11/06/90		45.12	449.21
	12/07/90		45.97	448.36
	09/02/92		50.61	443.72
	11/13/92		Dry	Dry
	01/25/93		47.40	446.93
	05/27/93		32.54	461.79
	09/21/93		33.55	460.78
	12/19/93		**33.65**	**460.68**

Table 2. Analytic Results for Ground Water - Shell Service Station WIC #204-4380-0303, 318 South Livermore Avenue, Livermore, California

Well ID	Date	Depth to Water	TPH-G	B	E	T	X	Lead
			<----------parts per billion (ug/L)---------->					
MW-1	06/21/90	42.69	<30	<0.3	<0.3	<0.3	<0.3	---
	10/02/90	44.75	<30	<0.3	<0.3	<0.3	<0.3	---
	09/02/92	---	---	---	---	---	---	---
	11/13/92	---	---	---	---	---	---	---
	01/25/93	47.47	<50	<0.5	<0.5	<0.5	<0.5	<3
	05/27/93	31.09	<50	<0.5	<0.5	<0.5	<0.5	---
	05/27/93[dup]	31.09	<50	<0.5	<0.5	<0.5	<0.5	---
	09/21/93	33.67	<50	<0.5	<0.5	<0.5	<0.5	---
	12/09/93	33.84	<50	<0.5	<0.5	<0.5	<0.5	---
MW-2	06/21/90	42.15	<30	<0.3	<0.3	<0.3	<0.3	---
	10/02/90	44.18	<30	<0.3	<0.3	<0.3	<0.3	---
	09/02/92	Dry	---	---	---	---	---	---
	11/13/92	Dry	---	---	---	---	---	---
	01/25/93	47.14	<50	<0.5	<0.5	<0.5	<0.5	<3
	05/27/93	31.48	<50	<0.5	<0.5	<0.5	<0.5	---
	09/21/93	33.31	<50	<0.5	<0.5	<0.5	<0.5	---
	12/09/93	32.82	<50	<0.5	<0.5	<0.5	<0.5	---
MW-3	06/21/90	42.07	<30	<0.3	<0.3	<0.3	<0.3	---
	10/02/90	44.15	<30	<0.3	<0.3	<0.3	<0.3	---
	09/02/92	Dry	---	---	---	---	---	---
	11/13/92	Dry	---	---	---	---	---	---
	01/25/93	47.02	<50	<0.5	<0.5	<0.5	<0.5	<3
	05/27/93	29.58	50	6.8	5	1.9	5.7	---
	09/21/93	33.79	80	2.3	0.9	1.0	0.9	---
	09/21/93[dup]	33.79	90	2.3	0.9	0.9	4.0	---
	12/09/93	32.85	90	<0.5	<0.5	<0.5	<0.5	---
	12/09/93[dup]	32.85	80	<0.5	<0.5	<0.5	<0.5	---
MW-4	06/21/90	42.21	<30	<0.3	<0.3	<0.3	<0.3	---
	10/02/90	44.27	<30	<0.3	<0.3	<0.3	<0.3	---
	09/02/92	50.61	63	<0.5	<0.5	<0.5	<0.5	3.3
	09/02/92[dup]	50.61	67	<0.5	<0.5	<0.5	<0.5	---
	11/13/92	Dry	---	---	---	---	---	---
	01/25/93	47.40	<50	<0.5	<0.5	<0.5	<0.5	<3
	01/25/93[dup]	47.40	<50	<0.5	<0.5	<0.5	<0.5	<3
	05/27/93	32.54	<50	<0.5	<0.5	<0.5	<0.5	---
	09/21/93	33.55	<50	<0.5	<0.5	<0.5	<0.5	---
	12/09/93	33.65	<50	<0.5	<0.5	<0.5	<0.5	---
Trip Blank	09/02/92		<50	<0.5	<0.5	<0.5	<0.5	---
	01/25/93		<50	<0.5	<0.5	<0.5	<0.5	<3
	05/27/93		<50	<0.5	<0.5	<0.5	<0.5	---

-- Table 2 continues on next page --

Table 2. Analytic Results for Ground Water - Shell Service Station WIC #204-4380-0303, 318 South Livermore Avenue, Livermore, California (continued)

	09/21/93	<50	<0.5	<0.5	<0.5	<0.5	---
	12/09/93	<50	<0.5	<0.5	<0.5	<0.5	---
DTSC MCLs		NE	1	680	100[a]	1,750	50

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 8020
Lead = Lead by EPA Method 7421
NE = Not established
--- = Not analyzed
<n = Not detected at detection limits of n ppb
DTSC MCLs = California Department of Toxic Substances Control maximum contaminant levels for drinking water
dup = Duplicate sample

Notes:

a = DTSC recommended action level; MCL not established

ATTACHMENT A

GROUND WATER MONITORING REPORT AND ANALYTIC REPORT

BLAINE
TECH SERVICES INC.

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

December 31, 1993

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

Attn: Daniel T. Kirk

SITE:
Shell WIC #204-4380-0303
318 S. Livermore Avenue
Livermore, California

QUARTER:
4th quarter of 1993

QUARTERLY GROUNDWATER SAMPLING REPORT 931209-K-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 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 are removed in cases where more evacuation is needed to achieve stabilization of water parameters and when requested by the local implementing agency. Less water may be removed 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. Effluent water from purging and on-site equipment cleaning is collected and transported to Shell's Martinez Manufacturing Complex in Martinez, California.

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 sites 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.

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/mla

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

cc: Weiss Associates
5500 Shellmound Street
Emeryville, CA 94608-2411
ATTN: Michael Asport

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)
MW-1	12/9/93	TOC	--	NONE	--	--	33.84	54.31
MW-2	12/9/93	TOC	--	NONE	--	--	32.82	52.37
MW-3 *	12/9/93	TOC	--	NONE	--	--	32.85	51.60
MW-4	12/9/93	TOC	--	NONE	--	--	33.65	54.70

* Sample DUP was a duplicate sample taken from well MW-3.

#494

9312138 (18)

19:30

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No:

Date:
Page 1 of 1

Site Address: 318 S. Livermore Ave., Livermore

WIC#: 204-4380-0303

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: KMB

Printed Name: Kent Brown

LAB: Anametrix

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	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
(1) MW1	12/9			W		3						X		1gal	1PE			
(2) MW2	"			W		3						X		"	"			
(3) MW3	"			W		3						X		"	"			
(4) MW4	"			W		5						X		"	"			
(5) DUP	"			W		3						X		"	"			
(6) FB	"			W		3						X		"	"			
(7) TB	✓			W		2						X		↓	↓			
(8) ~~MW5~~																		

Relinquished By (signature)	Printed Name	Date	Time	Received (signature)	Printed Name	Date	Time
Kent Brown	Kent Brown	12-10-93	1430	Benny S. Cuevas	Benny S. Cuevas	12/10/93	1430
Benny S. Cuevas	Benny S. Cuevas	12-10-93	1510		Maria Barajas	12-10-93	1510
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

CHECK ONE (1) BOX ONLY	C1/D1	TURN AROUND TIME
Quarterly Monitoring	☒ 6441	24 hours ☐
Site Investigation	☐ 6442	48 hours ☐
Soil Closure/Disposal	☐ 6443	10 days ☒ (Normal)
Water Closure/Disposal	☐ 6444	Other ☐
Soil/Air Rem. or Syst. O & M	☐ 6445	NOTE: Notify Lab as soon as possible of 24/48 hr. TAT.
Water Rem. or Syst. O & M	☐ 6446	
Other	☐	

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 # : 9312138
Date Received : 12/10/93
Project ID : 204-4380-0303
Purchase Order: MOH-B813

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

ANAMETRIX ID	CLIENT SAMPLE ID
9312138- 1	MW1
9312138- 2	MW2
9312138- 3	MW3
9312138- 4	MW4
9312138- 5	DUP
9312138- 6	EB
9312138- 7	TB

This report consists of 6 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.

Sarah Schoen, Ph.D.
Laboratory Director

12-23-93
Date

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

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

Workorder # : 9312138
Date Received : 12/10/93
Project ID : 204-4380-0303
Purchase Order: MOH-B813
Department : GC
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9312138- 1	MW1	WATER	12/09/93	TPHgBTEX
9312138- 2	MW2	WATER	12/09/93	TPHgBTEX
9312138- 3	MW3	WATER	12/09/93	TPHgBTEX
9312138- 4	MW4	WATER	12/09/93	TPHgBTEX
9312138- 5	DUP	WATER	12/09/93	TPHgBTEX
9312138- 6	EB	WATER	12/09/93	TPHgBTEX
9312138- 7	TB	WATER	12/09/93	TPHgBTEX

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

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

Workorder # : 9312138
Date Received : 12/10/93
Project ID : 204-4380-0303
Purchase Order: MOH-B813
Department : GC
Sub-Department: TPH

QA/QC SUMMARY :

- No QA/QC problems encountered for these samples.

Corinne Pham 12/22/93
Department Supervisor Date

Lucia Shen 12/23/93
Chemist Date

Organic Analysis Data Sheet
Total Petroleum Hydrocarbons as Gasoline with BTEX
ITS - Anametrix Laboratories - (408)432-8192

Lab Workorder : 9312138 | Client Project ID : 204-4380-0303

Matrix : WATER | Units : ug/L

Compound Name	Method Reporting Limit*	Client ID MW1 Lab ID 9312138-01	Client ID MW2 Lab ID 9312138-02	Client ID MW3 Lab ID 9312138-03	Client ID MW4 Lab ID 9312138-04	Client ID DUP Lab ID 9312138-05
Benzene	0.50	ND	ND	ND	ND	ND
Toluene	0.50	ND	ND	ND	ND	ND
Ethylbenzene	0.50	ND	ND	ND	ND	ND
Total Xylenes	0.50	ND	ND	ND	ND	ND
TPH as Gasoline	50	ND	ND	90	ND	80
Surrogate Recovery		116%	123%	114%	115%	115%
Instrument ID		HP21	HP21	HP21	HP21	HP21
Date Sampled		12/09/93	12/09/93	12/09/93	12/09/93	12/09/93
Date Analyzed		12/15/93	12/15/93	12/15/93	12/15/93	12/15/93
RLMF		1	1	1	1	1
Filename Reference		FPD13801.D	FPD13802.D	FPD13803.D	FPD13804.D	FPD13805.D

* The Method Reporting Limit must be multiplied by the Reporting Limit Multiplication Factor (RLMF) to achieve the compound's reporting limit in the analysis.

ND : Not detected at or above the reporting limit for the analysis as performed.
TPHg : Determined by GC/FID following sample purge & trap by EPA Method 5030.
BTEX : Determined by modified EPA Method 8020 following sample purge & trap by EPA Method 5030.

Lab Control Limits for surrogate compound p-Bromofluorobenzene are 61-139%.

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

Kamel G. Kamel 12/22/93
Analyst Date

Lucia Shen 12/22/93
Supervisor Date

Issued on 12/22/93 @ 3:51 PM

Organic Analysis Data Sheet
Total Petroleum Hydrocarbons as Gasoline with BTEX
ITS - Anametrix Laboratories - (408)432-8192

Lab Workorder : 9312138 Client Project ID : 204-4380-0303

Matrix : WATER Units : ug/L

Compound Name	Method Reporting Limit*	Client ID EB Lab ID 9312138-06	Client ID TB Lab ID 9312138-07	Client ID Lab ID METHOD BLANK	Client ID Lab ID 	Client ID Lab ID
Benzene	0.50	ND	ND	ND		
Toluene	0.50	ND	ND	ND		
Ethylbenzene	0.50	ND	ND	ND		
Total Xylenes	0.50	ND	ND	ND		
TPH as Gasoline	50	ND	ND	ND		
Surrogate Recovery		117%	116%	114%		
Instrument ID		HP21	HP21	HP21		
Date Sampled		12/09/93	12/09/93	N/A		
Date Analyzed		12/15/93	12/15/93	12/15/93		
RLMF		1	1	1		
Filename Reference		FPD13806.D	FPD13807.D	BD1501E1.D		

* The Method Reporting Limit must be multiplied by the Reporting Limit Multiplication Factor (RLMF) to achieve the compound's reporting limit in the analysis.

ND : Not detected at or above the reporting limit for the analysis as performed.
TPHg : Determined by GC/FID following sample purge & trap by EPA Method 5030.
BTEX : Determined by modified EPA Method 8020 following sample purge & trap by EPA Method 5030.

Lab Control Limits for surrogate compound p-Bromofluorobenzene are 61-139%.

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

Luca Sloan 12/22/93
Analyst Date

Corinne Ram 12/22/93
Supervisor Date

Matrix Spike Report
Total Petroleum Hydrocarbons as BTEX
ITS - Anametrix Laboratories - (408)432-8192

Project ID : 204-4380-0303
Sample ID : MW1
Matrix : WATER
Date Sampled : 12/09/93

Laboratory ID : 9312138-01
Analyst : TS
Supervisor : CP
Instrument ID : HP21
Units : ug/L

COMPOUND NAME	SPIKE AMOUNT	SAMPLE RESULTS	MS RECOVERY	MSD RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS
Benzene	20	ND	110%	120%	45-139	-9%	30
Toluene	20	ND	120%	125%	51-138	-4%	30
Ethylbenzene	20	ND	115%	130%	48-146	-12%	30
Total Xylenes	20	ND	110%	125%	50-139	-13%	30
Surrogate Recovery		116%	115%	120%			
Date Analyzed		12/15/93	12/15/93	12/15/93			
Multiplier		1	1	1			
Filename Reference		FPD13801.D	FMD13801.D	FDD13801.D			

* Limits established by Inchcape Testing Services, Anametrix Laboratories.

Laboratory Control Spike Report
Total Petroleum Hydrocarbons as BTEX
ITS - Anametrix Laboratories - (408)432-8192

Instrument ID : HP21
Matrix : LIQUID

Analyst : IS
Supervisor : CP
Units : ug/L

COMPOUND NAME	SPIKE AMOUNT	LCS RECOVERY	RECOVERY LIMITS
Benzene	20	115%	52-133
Toluene	20	120%	57-136
Ethylbenzene	20	125%	56-139
Total Xylenes	20	125%	56-141
Surrogate Recovery		119%	61-139
Date Analyzed		12/15/93	
Multiplier		1	
Filename Reference		MD1501E1.D	

* Limits established by Inchcape Testing Services, Anametrix Laboratories.