Weiss Associates Environmental and Geologic Services

5500 Shellmound Street, Emeryville, CA 94608-2411 Fax: 510-547-5043 Phone: 510-450-6000

July 26, 1994

Brian Oliva
Alameda County Department
of Environmental Health
1131 Harbor Bay Parkway
Suite 250
Alameda, CA 94502

Re: Shell Service Station
WIC #204-2495-0101
1800 Powell Street
Emeryville, California
WA Job #81-794-104

Dear Mr. Oliva:

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 1994 and proposed work for the third quarter 1994.

Second Quarter 1994 Activities:

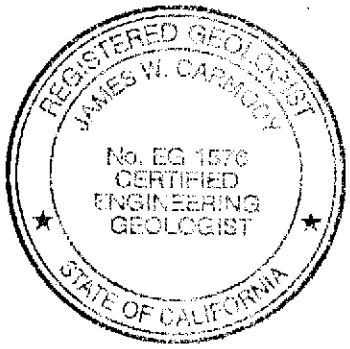
- Blaine Tech Services, Inc. (BTS) of San Jose, California measured ground water depths and collected ground water samples from the site wells. BTS' report describing these activities and the analytic report for the ground water samples are included as Attachment A.
- Weiss Associates (WA) calculated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

July 26, 1994

Anticipated Third Quarter 1994 Activities:

WA will submit a report presenting the results of the second quarter 1994 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. Historical and current data will be compiled into one table.

Please call if you have any questions.



Sincerely,
Weiss Associates

John Wolf
Technical Assistant

James W. Carmody, C.E.G.
Senior Project Hydrogeologist

JAW/JWC:jaw

J:\SHELL\750\794QMJY4.WP

Attachments: A - Blaine Tech's Ground Water Monitoring Report
B - Historical Ground Water Elevation and Analytic Data

cc: Dan Kirk, Shell Oil Company, P.O. Box 4023, Concord, California 94524
Kevin Graves, Regional Water Quality Control Board - San Francisco Bay Region, 2101 Webster Street, Suite 500, Oakland, California 94612

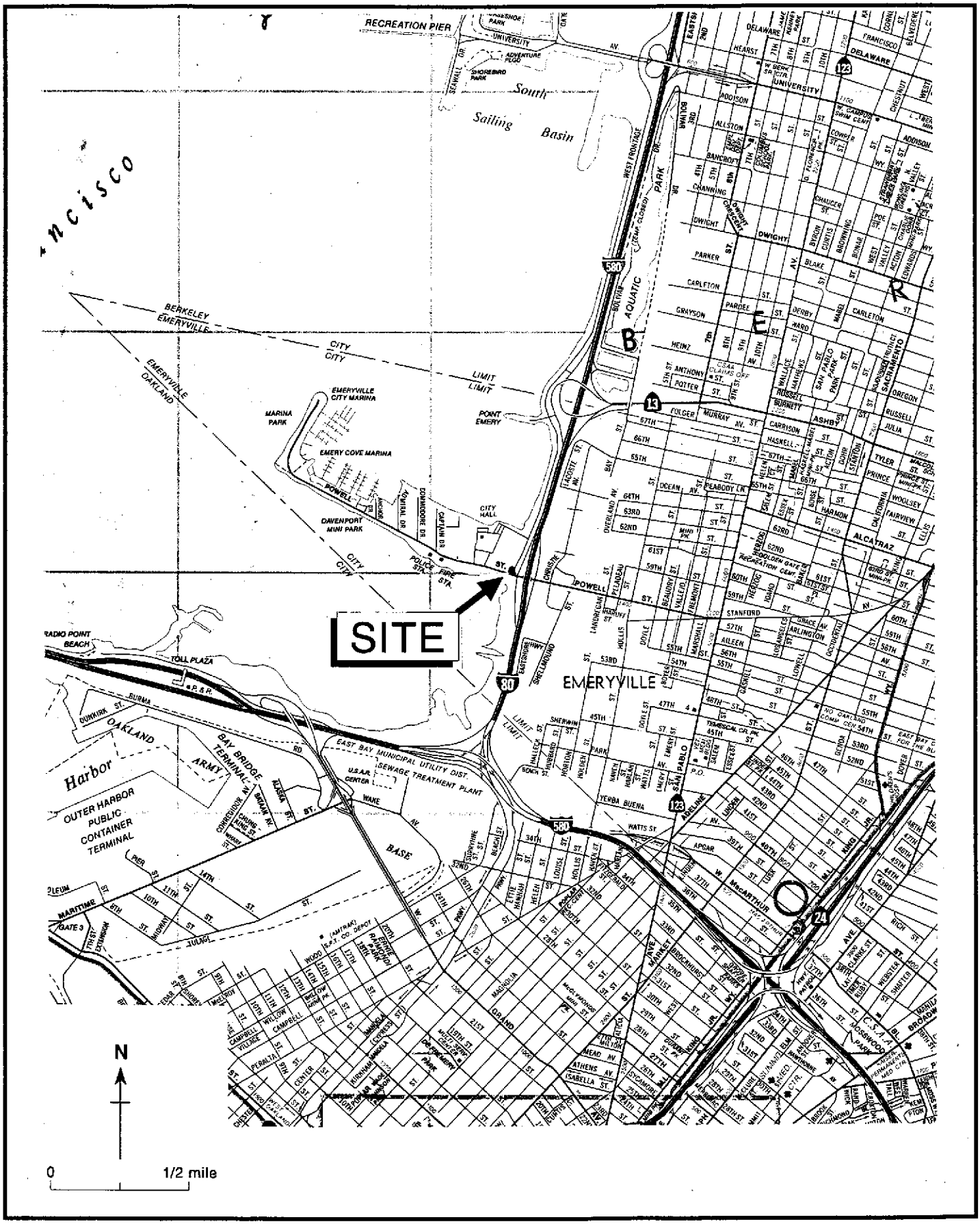


Figure 1. Site Location Map - Shell Service Station WIC# 204-2495-01, 1800 Powell Street, Emeryville, California

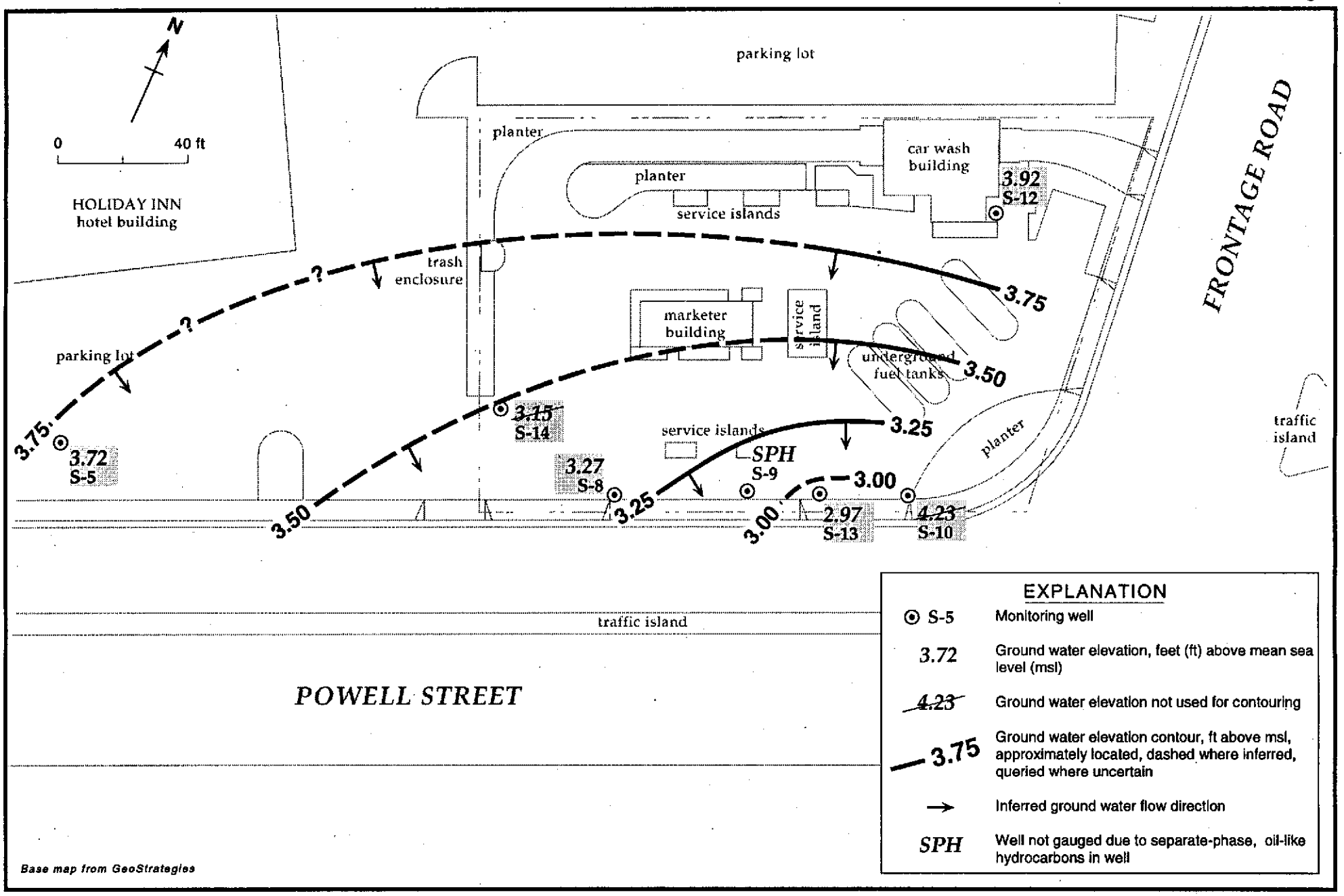


Figure 2. Monitoring Well Locations and Ground Water Elevation Contours - May 16, 1994 - Shell Service Station - WIC# 204-2495-0107, 1800 Powell Street, Emeryville, California

Table 1. Ground Water Elevations and Analytic Results - Shell Service Station WIC# 204-2495-0101, 1800 Powell Street, Emeryville, California

Well ID	Sampling Date	Top-of-Casing (ft msl)	Depth to Water (ft)	Separate-Phase Hydrocarbon Thickness (ft)	Ground Water Elevation (ft msl)	TPH-G	TPH-D	B	T	E	X
						<----------parts per billion (µg/L)---------->					
S-5	02/21/94[dup]	11.72	7.95	---	3.77	1,300	---	220	<5	<5	11
	05/16/94		8.00	---	3.72	1,200	---	230	<5	<5	<5
S-8	02/21/94	12.76	9.52	---	3.24	3,200	---	480	52	<5	130
	05/16/94		9.49	---	3.27	1,000	---	220	7.3	<5	28
	05/16/94[dup]		9.49	---	3.27	1,000	---	280	10	<5	29
S-9	02/24/94[SPH]	---	---	---	---	---	---	---	---	---	---
	05/16/94[SPH]	---	---	1.5	---	---	---	---	---	---	---
S-10	02/21/94	12.58	8.32		4.26	1,400	---	190	9.9	<2.5	19
	05/16/94		8.35		4.23	300	---	45	8.6	6.2	19
S-12	02/21/94	12.84	8.22		4.62	240[a]	2,200[b]	0.7	<0.5	<0.5	3.6
	05/16/94		8.92		3.92	96	2,200	1.5	<0.5	<0.5	2.0
S-13	02/21/94	12.59	9.26		3.33	700	1,800[b]	200	<5	<5	45
	05/16/94		9.62		2.97	650	1,700	180	2.5	<2.5	21
S-14	02/21/94	12.69	9.30		3.39	2,800[a]	3,600[b]	<5.0	<5	<5	14
	05/16/94		9.54		3.15	310	6,700	<2.5	<2.5	<2.5	3.1
Trip Blank	02/21/94					<50	<50	<0.5	<0.5	<0.5	<0.5
	05/16/94					<50	<50	<0.5	<0.5	<0.5	<0.5
DTSC MCLs						NE	NE	1	100[c]	680	1,750

Abbreviations:

ft msl = Feet above mean sea level
TPH-G = Total petroleum hydrocarbons as gasoline by Modified EPA Method 8015
TPH-D = Total petroleum hydrocarbons as diesel by Modified EPA Method 8015
B = Benzene by EPA Method 8020
T = Toluene by EPA Method 8020
E = Ethylbenzene by EPA Method 8020
X = Xylenes by EPA Method 8020
NE = Not established
DTSC MCLs = California Department of Toxic Substances Control maximum contaminant levels for drinking water
<n = Not detected at detection limits of n ppb
dup = Duplicate sample
SPH = Separate-phase hydrocarbons present
--- = Not analyzed/not measured

Notes:

a = The concentrations reported as gasoline for samples S-12 and S-14 are primarily due to the presence of a discrete peak and underline of gasoline
b = The concentrations reported as diesel for samples S-12, S-13 and S-14 are due to the presence of a combination of diesel and a heavier petroleum product of hydrocarbon range C18 - C36, possibly motor oil
c = 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

June 2, 1994

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

Attn: Daniel T. Kirk

SITE:
Shell WIC #204-2495-0101
1800 Powell Street
Emeryville, California

QUARTER:
2nd quarter of 1994

QUARTERLY GROUNDWATER SAMPLING REPORT 940516-A-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 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. 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 Sequoia Analytical Laboratory in Redwood City, California. Sequoia Analytical Laboratory is a California Department of Health Services certified Hazardous Materials Testing Laboratory and is listed as DOHS HMTL #1210.

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/lp

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)
S-5	5/16/94	TOB	--	NONE	--	--	8.00	12.46
S-8 *	5/16/94	TOB	ODOR	NONE	--	--	9.49	18.66
S-9	5/16/94	TOB	FREE PRODUCT	--	1.5	--	--	--
S-10	5/16/94	TOB	--	NONE	--	--	8.35	19.58
S-12	5/16/94	TOB	--	NONE	--	--	8.92	24.32
S-13	5/16/94	TOB	--	NONE	--	--	9.62	20.64
S-14	5/16/94	TOB	ODOR	NONE	--	--	9.54	23.82

* Sample DUP was a duplicate sample taken from well S-8.

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: 940516AZ

Date: 5/17/94
Page 1 of 2

Site Address: 1800 Powell Street, Emeryville
WIC#: 204-2495-0101
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: JEFF CURTIS
Printed Name: Jeff Curtis

LAB: ~~Anametrix~~ Sequoia

CHECK ONE (1) BOX ONLY	CT/DT
Quarterly Monitoring [X]	5461
Site Investigation [ ]	5441
Soil Classify/Disposal [ ]	5442
Water Classify/Disposal [ ]	5443
Soil/Air Rem. or Sys. O & M [ ]	5462
Water Rem. or Sys. O & M [ ]	5463
Other [ ]	

TURN AROUND TIME: 24 hours [ ] 48 hours [ ] 15 days [X] (Normal) Other [ ]

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

Analysis Required

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
S-5	5/17/94			W		3						X							ground water	9405A59-01
S-8						3						X								-02
S-10						3						X								-03
S-12						5		X				X								-04
S-13						5		X				X								-05
S-14						5		X				X								-06
EB						3						X								-07
Dup	↓			↓		3						X								-08

Relinquished By (signature)	Printed Name	Date/Time	Received (signature)	Printed Name	Date/Time
Jeff Curtis	JEFF CURTIS	Date: 5/18/94 Time: 10:15	Dan Buchholz	DAN B	Date: 5/18 Time: 16:15
Dan Buchholz	DAN	Date: 5/18 Time: 11:30			Date: Time:
		Date: Time:	KmE. A	KEITH G. GRESS	Date: 051894 Time: 1130

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

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: 9405A59

Date: 5/17/94
Page 2 of 2

Site Address: 1800 Powell Street, Emeryville

WIC #: 204-2495-0101

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: Jeff Curtis

Printed Name: Jeff Curtis

LAB: Sequoia (Analytix)

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
Trip Blank	5/17			W		2						X							Groundwater	9405A59-09
															1					

CHECK ONE (1) BOX ONLY — CT/DI — TURN AROUND TIME

Quarterly Monitoring	X	6441
Site Investigation		6441
Soil Closure/Disposal		6442
Water Closure/Disposal		6443
Soil/Air Rem. at 3yr. O & M		6442
Water Rem. at 3yr. O & M		6443
Other		

TURN AROUND TIME: 24 hours ☐ 48 hours ☐ 10 days X (Normal) ☐ Other ☐ ____

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

Relinquished by (Signature):	Printed Name:	Date: 5/18/94 Time: 10:45	Received (Signature):	Printed Name:	Date: 5/18/94 Time: 10:15
Relinquished by (Signature):	Printed Name:	Date: 5/18/94 Time: 11:50	Received (Signature):	Printed Name:	Date: Time:
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

MAY 11 28

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
1900 Bates Avenue, Suite L, Concord, CA 94520, (510) 686-9600, FAX (510) 686-9689
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Blaine Tech Services, Inc.
985 Timothy Drive
San Jose, CA 95133
Attention: Jim Keller

Project: 940516-A2, Shell, 1800 Powell St.

Enclosed are the results from 9 water samples received at Sequoia Analytical on May 18,1994. The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE OF COLLECTION	TEST METHOD
4EA5901	Water, S-5	5/17/94	EPA 5030/8015 Mod./8020
4EA5902	Water, S-8	5/17/94	EPA 5030/8015 Mod./8020
4EA5903	Water, S-10	5/17/94	EPA 5030/8015 Mod./8020
4EA5904	Water, S-12	5/17/94	EPA 3510/3520/8015 Mod. EPA 5030/8015 Mod./8020
4EA5905	Water, S-13	5/17/94	EPA 3510/3520/8015 Mod. EPA 5030/8015 Mod./8020
4EA5906	Water, S-14	5/17/94	EPA 3510/3520/8015 Mod. EPA 5030/8015 Mod./8020
4EA5907	Water, EB	5/17/94	EPA 5030/8015 Mod./8020
4EA5908	Water, DUP	5/17/94	EPA 5030/8015 Mod./8020
4EA5909	Water, Trip Blank	5/17/94	EPA 5030/8015 Mod./8020

Please contact me if you have any questions. In the meantime, thank you for the opportunity to work with you on this project.

Very truly yours,

SEQUOIA ANALYTICAL

Suzanne Chin
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
1900 Bates Avenue, Suite L, Concord, CA 94520, (510) 686-9600, FAX (510) 686-9689
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Blaine Tech Services, Inc.	Client Project ID:	940516-A2, Shell, 1800 Powell St.	Sampled: May 17, 1994
985 Timothy Drive	Sample Matrix:	Water	Received: May 18, 1994
San Jose, CA 95133	Analysis Method:	EPA 5030/8015 Mod./8020	Reported: May 27, 1994
Attention: Jim Keller	First Sample #:	4EA5901	

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit µg/L	Sample I.D. 4EA5901 S-5	Sample I.D. 4EA5902 S-8	Sample I.D. 4EA5903 S-10	Sample I.D. 4EA5904 S-12	Sample I.D. 4EA5905 S-13	Sample I.D. 4EA5906 S-14
Purgeable Hydrocarbons	50	1,200	1,000	300	96	650	310
Benzene	0.50	230	220	45	1.5	180	N.D.
Toluene	0.50	N.D.	7.3	8.6	N.D.	2.5	N.D.
Ethyl Benzene	0.50	N.D.	N.D.	6.2	N.D.	N.D.	N.D.
Total Xylenes	0.50	N.D.	28	19	2.0	21	3.1
Chromatogram Pattern:		C6 - C12	C6 - C12	C6 - C12	C6 - C12	C6 - C12	C8 - C12

Quality Control Data

Report Limit Multiplication Factor:	10	10	2.0	1.0	5.0	5.0
Date Analyzed:	5/23/94	5/23/94	5/24/94	5/24/94	5/24/94	5/24/94
Instrument Identification:	GCHP-2	GCHP-2	GCHP-2	GCHP-2	GCHP-3	GCHP-17
Surrogate Recovery, %: (QC Limits = 70-130%)	94	89	104	96	124	97

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL

Suzanne Chin
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
1900 Bates Avenue, Suite L, Concord, CA 94520, (510) 686-9600, FAX (510) 686-9689
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Blaine Tech Services, Inc.	Client Project ID:	940516-A2, Shell, 1800 Powell St.	Sampled:	May 17, 1994
985 Timothy Drive	Sample Matrix:	Water	Received:	May 18, 1994
San Jose, CA 95133	Analysis Method:	EPA 5030/8015 Mod./8020	Reported:	May 27, 1994
Attention: Jim Keller	First Sample #:	4EA5907		

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit µg/L	Sample I.D. 4EA5907 EB	Sample I.D. 4EA5908 DUP	Sample I.D. 4EA5909 Trip Blank
Purgeable Hydrocarbons	50	N.D.	1,000	N.D.
Benzene	0.50	N.D.	280	N.D.
Toluene	0.50	N.D.	10	N.D.
Ethyl Benzene	0.50	N.D.	N.D.	N.D.
Total Xylenes	0.50	N.D.	29	N.D.
Chromatogram Pattern:		--	C6 - C12	--

Quality Control Data

Report Limit Multiplication Factor:	1.0	10	1.0
Date Analyzed:	5/23/94	5/23/94	5/23/94
Instrument Identification:	GCHP-17	GCHP-17	GCHP-17
Surrogate Recovery, %: (QC Limits = 70-130%)	91	91	93

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL

Suzanne Chin
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
1900 Bates Avenue, Suite L, Concord, CA 94520, (510) 686-9600, FAX (510) 686-9689
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Blaine Tech Services, Inc.	Client Project ID:	940516-A2, Shell, 1800 Powell St.	Sampled:	May 17, 1994
985 Timothy Drive	Sample Matrix:	Water	Received:	May 18, 1994
San Jose, CA 95133	Analysis Method:	EPA 3510/3520/8015 Mod.	Reported:	May 27, 1994
Attention: Jim Keller	First Sample #:	4EA5904		

TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS

Analyte	Reporting Limit µg/L	Sample I.D. 4EA5904 S-12	Sample I.D. 4EA5905 S-13	Sample I.D. 4EA5906 S-14
Extractable Hydrocarbons	50	2,200	1,700	6,700
Chromatogram Pattern:		C10 - C24	C10 - C24	C10 - C24

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0	1.0
Date Extracted:	5/19/94	5/19/94	5/19/94
Date Analyzed:	5/20/94	5/20/94	5/20/94
Instrument Identification:	GCHP-5	GCHP-5	GCHP-5

Extractable Hydrocarbons are quantitated against a fresh diesel standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL

Suzanne Chin
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
1900 Bates Avenue, Suite L, Concord, CA 94520, (510) 686-9600, FAX (510) 686-9689
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Blaine Tech Services, Inc.
985 Timothy Drive
San Jose, CA 95133
Attention: Jim Keller

Client Project ID: 940516-A2, Shell, 1800 Powell St.
Matrix: Liquid
QC Sample Group: 4EA5903, 04

Reported: May 27, 1994

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	J. Minkel	J. Minkel	J. Minkel	J. Minkel
MS/MSD Batch#:	4EC0702	4EC0702	4EC0702	4EC0702
Date Prepared:	N.A.	N.A.	N.A.	N.A.
Date Analyzed:	5/24/94	5/24/94	5/24/94	5/24/94
Instrument I.D.#:	GCHP-2	GCHP-2	GCHP-2	GCHP-2
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Matrix Spike % Recovery:	110	110	110	107
Matrix Spike Duplicate % Recovery:	110	110	100	103
Relative % Difference:	0.0	0.0	9.5	3.8
LCS Batch#:	-	-	-	-
Date Prepared:	-	-	-	-
Date Analyzed:	-	-	-	-
Instrument I.D.#:	-	-	-	-
LCS % Recovery:	-	-	-	-
% Recovery Control Limits:	71-133	72-128	72-130	71-120

SEQUOIA ANALYTICAL

Suzanne Chin
Project Manager

Please Note:
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Sequoia Analytical

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1900 Bates Avenue, Suite L, Concord, CA 94520, (510) 686-9600, FAX (510) 686-9689
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Blaine Tech Services, Inc.
985 Timothy Drive
San Jose, CA 95133
Attention: Jim Keller

Client Project ID: 940516-A2, Shell, 1800 Powell St.
Matrix: Liquid
QC Sample Group: 4EA5905

Reported: May 27, 1994

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	J. Minkel	J. Minkel	J. Minkel	J. Minkel
MS/MSD Batch#:	4EC0701	4EC0701	4EC0701	4EC0701
Date Prepared:	N.A.	N.A.	N.A.	N.A.
Date Analyzed:	5/24/94	5/24/94	5/24/94	5/24/94
Instrument I.D.#:	GCHP-3	GCHP-3	GCHP-3	GCHP-3
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Matrix Spike % Recovery:	110	110	100	107
Matrix Spike Duplicate % Recovery:	100	100	100	103
Relative % Difference:	9.5	9.5	0.0	3.8
LCS Batch#:	-	-	-	-
Date Prepared:	-	-	-	-
Date Analyzed:	-	-	-	-
Instrument I.D.#:	-	-	-	-
LCS % Recovery:	-	-	-	-
% Recovery Control Limits:	71-133	72-128	72-130	71-120

SEQUOIA ANALYTICAL

Suzanne Chin
Project Manager

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Blaine Tech Services, Inc.
985 Timothy Drive
San Jose, CA 95133
Attention: Jim Keller

Client Project ID: 940516-A2, Shell, 1800 Powell St.
Matrix: Liquid
QC Sample Group: 4EA5901, 02

Reported: May 27, 1994

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	R. Vincent	R. Vincent	R. Vincent	R. Vincent
MS/MSD Batch#:	4E94702	4E94702	4E94702	4E94702
Date Prepared:	N.A.	N.A.	N.A.	N.A.
Date Analyzed:	5/23/94	5/23/94	5/23/94	5/23/94
Instrument I.D.#:	GCHP-2	GCHP-2	GCHP-2	GCHP-2
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Matrix Spike % Recovery:	97	96	96	97
Matrix Spike Duplicate % Recovery:	94	94	93	97
Relative % Difference:	3.1	2.1	3.2	0.0
LCS Batch#:	-	-	-	-
Date Prepared:	-	-	-	-
Date Analyzed:	-	-	-	-
Instrument I.D.#:	-	-	-	-
LCS % Recovery:	-	-	-	-
% Recovery Control Limits:	71-133	72-128	72-130	71-120

SEQUOIA ANALYTICAL

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Project Manager

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Blaine Tech Services, Inc.
985 Timothy Drive
San Jose, CA 95133
Attention: Jim Keller

Client Project ID: 940516-A2, Shell, 1800 Powell St.
Matrix: Liquid
QC Sample Group: 4EA5906

Reported: May 27, 1994

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	J. Minkel	J. Minkel	J. Minkel	J. Minkel
MS/MSD Batch#:	4EC0506	4EC0506	4EC0506	4EC0506
Date Prepared:	N.A.	N.A.	N.A.	N.A.
Date Analyzed:	5/24/94	5/24/94	5/24/94	5/24/94
Instrument I.D.#:	GCHP-17	GCHP-17	GCHP-17	GCHP-17
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Matrix Spike % Recovery:	97	97	99	100
Matrix Spike Duplicate % Recovery:	98	98	100	100
Relative % Difference:	1.0	1.0	1.0	0.0
LCS Batch#:	-	-	-	-
Date Prepared:	-	-	-	-
Date Analyzed:	-	-	-	-
Instrument I.D.#:	-	-	-	-
LCS % Recovery:	-	-	-	-
% Recovery Control Limits:	71-133	72-128	72-130	71-120

SEQUOIA ANALYTICAL

Suzanne Chin
Project Manager

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Blaine Tech Services, Inc.
985 Timothy Drive
San Jose, CA 95133
Attention: Jim Keller

Client Project ID: 940516-A2, Shell, 1800 Powell St.
Matrix: Liquid
QC Sample Group: 4EA5907-09

Reported: May 27, 1994

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	R. Vincent	R. Vincent	R. Vincent	R. Vincent
MS/MSD Batch#:	4E94703	4E94703	4E94703	4E94703
Date Prepared:	N.A.	N.A.	N.A.	N.A.
Date Analyzed:	5/23/94	5/23/94	5/23/94	5/23/94
Instrument I.D.#:	GCHP-17	GCHP-17	GCHP-17	GCHP-17
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Matrix Spike % Recovery:	91	91	91	90
Matrix Spike Duplicate % Recovery:	98	97	97	97
Relative % Difference:	7.4	6.4	6.4	7.5
LCS Batch#:	-	-	-	-
Date Prepared:	-	-	-	-
Date Analyzed:	-	-	-	-
Instrument I.D.#:	-	-	-	-
LCS % Recovery:	-	-	-	-
% Recovery Control Limits:	71-133	72-128	72-130	71-120

SEQUOIA ANALYTICAL

Suzanne Chin
Project Manager

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Blaine Tech Services, Inc.
985 Timothy Drive
San Jose, CA 95133
Attention: Jim Keller

Client Project ID: 940516-A2, Shell, 1800 Powell St.
Matrix: Liquid
QC Sample Group: 4EA5904-06

Reported: May 27, 1994

QUALITY CONTROL DATA REPORT

ANALYTE	Diesel
Method:	EPA 8015 Mod.
Analyst:	M. Cassidy
MS/MSD Batch#:	4E97915
Date Prepared:	5/19/94
Date Analyzed:	5/20/94
Instrument I.D.#:	GCHP-5
Conc. Spiked:	600 µg/L
Matrix Spike % Recovery:	58
Matrix Spike Duplicate % Recovery:	65
Relative % Difference:	11
LCS Batch#:	-
Date Prepared:	-
Date Analyzed:	-
Instrument I.D.#:	-
LCS % Recovery:	-
% Recovery Control Limits:	28-122

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SEQUOIA ANALYTICAL

Suzanne Chin
Project Manager

ATTACHMENT B

HISTORICAL GROUND WATER ELEVATION AND ANALYTIC DATA

Table 1

SUMMARY OF GROUND WATER ELEVATIONS AND WATER SAMPLE ANALYTICAL RESULTS

Shell Service Station
1800 Powell Street
Emeryville, California
WIC#204-2495-0101

Well Number	Sampling Date	TOB (feet)	DTW (feet)	GWE (feet)	TPHg (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	TPHd (ppb)	TPHmo (ppb)
S-5	10/27/88	11.72	—	—	3000	660	20	20	70	NA	NA
	2/10/89	11.72	—	—	2900	550	20	20	30	NA	NA
	4/28/89	11.72	—	—	4300	750	10	20	<30	NA	NA
	7/7/89	11.72	—	—	1500	300	8.0	7	9	NA	NA
	10/25/89	11.72	—	—	2100	760	10	40	50	NA	NA
	1/4/90	11.72	—	—	1300	520	9.0	8	10	NA	NA
	7/6/90	11.72	8.36	3.36	1400	500	10	4	<10	NA	NA
	10/19/90	11.72	—	—	4200	1100	9.0	14	7	NA	NA
	1/14/91	11.72	—	—	4500	1100	15	30	25	6100	NA
	4/23/91	11.72	—	—	2800	500	8.0	14	10	NA	NA
	7/8/91	11.72	9.15	2.57	3200	1000	16	9	12	NA	NA
	10/11/91	11.72	9.67	2.05	1700	16	5.7	5.2	8.9	NA	NA
	2/12/92	11.72	9.00	2.72	1300	300	5.0	<5.0	<5	NA	NA
	5/11/92	11.72	8.61	3.11	1900	490	<5.0	<5.0	<5	NA	NA
	9/1/92	11.72	9.61	2.11	6700	760	26	<25	<25	NA	NA
	12/4/92	11.72	9.47	2.25	2900	890	5.3	7.3	13	NA	NA
	2/17/93	11.72	8.29	3.43	1300	280	3.0	3.4	9.4	NA	NA
	5/29/93	11.72	9.16	2.56	460	130	<0.5	<0.5	2.9	NA	NA
	8/11/93	11.72	9.30	2.42	1700	530	5.5	<5.0	5.8	NA	NA
S-6	10/27/88	—	—	—	6000	1700	50	80	420	NA	NA
	2/10/89	—	—	—	2800	740	20	20	140	NA	NA
	4/28/89	—	—	—	6500	2400	30	50	210	NA	NA
	7/7/89	—	—	—	3700	1700	34	55	200	NA	NA
	10/25/89	—	—	—	<50	23	<5.0	<5.0	10	NA	NA
	11/10/89	—	—	—	Well abandoned						
S-7	10/27/88	—	—	—	50	1.1	<1.0	<1.0	4	NA	NA
	2/10/89	—	—	—	50	0.9	<1.0	<1.0	<3	NA	NA
	4/28/89	—	—	—	<50	1.0	<1.0	<1.0	<3	NA	NA
	7/7/89	—	—	—	70	2.2	<1.0	<1.0	<3	NA	NA
	10/25/89	—	—	—	6200	2200	130	190	660	NA	NA
	11/10/89	—	—	—	Well abandoned						

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Shell Service Station
1800 Powell Street
Emeryville, California
WIC#204-2495-0101

Well Number	Sampling Date	TOB (feet)	DTW (feet)	GWE (feet)	TPHg (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	TPHd (ppb)	TPHmo (ppb)
S-8	10/27/88	12.76	—	—	1000	610	9	1.0	42	NA	NA
	2/10/89	12.76	—	—	500	160	5	<2.0	17	NA	NA
	4/28/89	12.76	—	—	2700	1500	20	10	40	NA	NA
	7/7/89	12.76	—	—	440	180	5	2.0	12	NA	NA
	10/25/89	12.76	—	—	2000	1100	17	5.0	70	NA	NA
	1/4/90	12.76	—	—	1900	1300	20	<10	70	NA	NA
	7/6/90	12.76	9.50	3.26	1600	920	30	<10	60	NA	NA
	10/19/90	12.76	—	—	1400	640	<10	<10	30	NA	NA
	1/14/91	12.76	—	—	670	190	5.8	<0.5	19	760	600
	4/23/91	12.76	—	—	2400	740	54	5.7	59	NA	NA
	7/8/91	12.76	10.45	2.31	1100	450	15	<2.5	42	NA	NA
	10/11/91	12.76	10.83	1.93	340	4	0.6	<0.5	17	NA	NA
	2/12/92	12.76	10.44	2.32	<1000	260	<10	<10	11	NA	NA
	5/11/92	12.76	10.17	2.59	1800	700	14	<5.0	46	NA	NA
	9/1/92	12.76	10.81	1.95	Floating product					NA	NA
	12/4/92	12.76	10.81	1.95	960	250	4.3	<2.5	14	NA	NA
	2/17/93	12.76	9.65	3.11	2700	800	35	10	83	NA	NA
	5/29/93	12.76	10.46	2.30	960	710	25	84	80	NA	NA
	8/11/93	12.76	10.59	2.17	1300	630	17	<5.0	46	NA	NA
S-9	10/27/88	12.75	—	—	Floating product: thickness not measured						
	2/10/89	12.75	—	—	Floating product: 1.30 feet measured thickness						
	4/28/89	12.75	—	—	Floating product: 1.25 feet measured thickness						
	7/7/89	12.75	—	—	Floating product: 1.20 feet measured thickness						
	10/25/89	12.75	—	—	Floating product: unable to measure accurately						
	1/4/90	12.75	—	—	Floating product: unable to measure accurately						
	4/12/90	12.75	—	—	Floating product: unable to measure accurately						
	7/6/90	12.75	9.67	3.08	Floating product: unable to measure accurately						
	10/19/90	12.75	—	—	Floating product: unable to measure accurately						
	1/14/91	12.75	—	—	Floating product: unable to measure accurately						
	4/23/91	12.75	—	—	Floating product: unable to measure accurately						
	7/8/91	12.75	—	—	Floating product: unable to measure accurately						
	10/11/91	12.75	22.30	-9.55	Floating product: unable to measure accurately. Very slow recharge.						

Table 1

SUMMARY OF GROUND WATER ELEVATIONS AND WATER SAMPLE ANALYTICAL RESULTS

Shell Service Station
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WIC#204-2495-0101

Well Number	Sampling Date	TOB (feet)	DTW (feet)	GWE (feet)	TPHg (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	TPHd (ppb)	TPHmo (ppb)
S-10	10/27/88	12.58	—	—	700000	37000	100000	20000	110000	NA	NA
	2/10/89	12.58	—	—	6500	480	700	100	1800	NA	NA
	4/28/89	12.58	—	—	13000	1300	500	600	3700	NA	NA
	7/7/89	12.58	—	—	14000	1300	310	270	2400	NA	NA
	10/25/89	12.58	—	—	4200	580	34	4.0	440	NA	NA
	1/4/90	12.58	—	—	1700	360	10	7.8	170	NA	NA
	4/12/90	12.58	—	—	Floating product: 0.01 feet measured thickness						
	7/6/90	12.58	9.16	3.42	Floating product: 0.01 feet measured thickness						
	10/19/90	12.58	—	—	Floating product: 0.03 feet measured thickness						
	1/14/91	12.58	—	—	Floating product: 0.03feet measured thickness						
	4/23/91	12.58	—	—	Floating product: 0.01 feet measured thickness						
	7/8/91	12.58	9.41	3.17	Floating product: 0.03 feet measured thickness						
	10/11/91	12.58	7.77	4.81	Not sampled: insufficient recharge						
	2/12/92	12.58	6.41	6.17	1200	470	16	<5.0	14	NA	NA
	5/11/92	12.58	9.04	3.54	1100	100	6	4.0	19	NA	NA
	9/1/92	12.58	9.38	3.20	Floating product: 0.01 feet measured thickness						
	12/4/92	12.58	6.89	5.69	Floating product						
	2/17/93	12.58	7.34	5.24	530	89	8.5	1.6	4.5	NA	NA
	5/29/93	12.58	6.60	5.98	240	65	3.8	2.2	8.6	NA	NA
	8/11/93	12.58	9.09	3.49	250	23	4.1	<1.0	6.4	NA	NA
S-12	11/17/89	12.84	—	—	<250	18	<2.0	<2.0	<5	1400	NA
	1/4/90	12.84	—	—	<250	24	2.0	<2.0	<5	NA	NA
	7/6/90	12.84	8.27	4.57	80	15	0.7	<0.5	2	NA	NA
	10/19/90	12.84	—	—	150	12	9.0	<0.5	3.6	NA	NA
	1/14/91	12.84	—	—	120	3.6	0.8	<0.5	2.9	1000	600
	4/23/91	12.84	—	—	100	3.7	3.8	0.8	11	820^	800
	7/8/91	12.84	9.50	3.34	70	2.5	0.8	<0.5	2.4	NA	NA
	10/11/91	12.84	9.90	2.94	220	2.1	0.7	<0.5	1.2	2500	5100
	2/12/92	12.84	9.43	3.41	110	0.8	<0.5	<0.5	1.3	2500	1400
	5/11/92	12.84	8.65	4.19	140	0.8	0.8	<0.5	2.5	3800^	NA
	9/1/92	12.84	9.86	2.98	190	3.0	15	0.5	4.5	2600^	NA

Table 1

SUMMARY OF GROUND WATER ELEVATIONS AND WATER SAMPLE ANALYTICAL RESULTS

Shell Service Station
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Emeryville, California
WIC#204-2495-0101

Well Number	Sampling Date	TOB (feet)	DTW (feet)	GWE (feet)	TPHg (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	TPHd (ppb)	TPHmo (ppb)
S-12	12/4/92	12.84	9.93	2.91	180	1.2	1.0	1.0	7.7	3900^	NA
	2/17/93	12.84	8.08	4.76	350*	0.6	<0.5	0.5	5.5	2100^	NA
	5/29/93	12.84	9.08	3.76	290	2.0	1.6	4.4	6.0	2200	NA
	8/11/93	12.84	9.35	3.49	240	0.7	<0.5	<0.5	1.1	720	NA
S-13	11/17/89	12.59	—	—	1900	700	160	70	340	2000	5000
	1/4/90	12.59	—	—	2800	1400	130	10	500	NA	NA
	7/6/90	12.59	9.47	3.12	3100	1800	60	40	270	NA	NA
	10/24/90	12.59	—	—	3400	1500	28	28	250	NA	NA
	1/14/91	12.59	—	—	1900	830	15	<10	99	900	1600
	4/23/91	12.59	—	—	2900*	1100	20	30	140	770**	640
	7/8/91	12.59	10.38	2.21	1500	880	10	6.0	160	NA	NA
	10/11/91	12.59	10.78	1.81	480	830	15	<0.5	120	2400	4900
	2/12/92	12.59	10.48	2.11	1300	510	<10	<10	86	1300	1300
	5/11/92	12.59	9.48	3.11	1000	470	<5.0	<5.0	50	1300^	NA
	9/1/92	12.59	10.74	1.85	Free product						
	12/4/92	12.59	10.30	2.29	900	290	4.6	<2.5	20	2400^	NA
	2/17/93	12.59	7.60	4.99	840*	310	3.5	<2.5	27	1200^	NA
	5/29/93	12.59	10.60	1.99^^	2100	1100	19	50	350	4600	NA
	8/11/93	12.59	10.58	2.01^^	900	230	16	6.9	65	2300	NA
S-14	11/17/89	12.69	—	—	<250	3.0	<2.0	<2.0	<5	<400	3000
	1/4/90	12.69	—	—	<250	3.0	2.0	<2.0	<5	NA	NA
	4/23/91	12.69	—	—	1200	7.4	2.7	15	110	18000**	<5000
	7/8/91	12.69	10.32	2.37	190	6.5	0.6	1.9	26	NA	NA
	10/11/91	12.69	10.77	1.92	4900	7.0	1.2	<0.5	25	21000	<500
	2/12/92	12.69	10.40	2.29	370	4.6	<2.5	<2.5	26	12000*	2500
	5/11/92	12.69	9.66	3.03	660	2.9	<2.5	<2.5	24	2200^	NA
	9/1/92	12.69	10.74	1.95	700	3.2	<2.5	<2.5	15	7900	NA
	12/4/92	12.69	10.69	2.00	210	<0.5	<0.5	0.8	6.8	11000^	NA

Table 1

SUMMARY OF GROUND WATER ELEVATIONS AND WATER SAMPLE ANALYTICAL RESULTS

Shell Service Station
1800 Powell Street
Emeryville, California
WIC#204-2495-0101

Well Number	Sampling Date	TOB (feet)	DTW (feet)	GWE (feet)	TPHg (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	TPHd (ppb)	TPHmo (ppb)
S-14	2/17/93	12.69	9.69	3.00	130*	<0.5	<0.5	<0.5	4.4	5700^	NA
	5/29/93	12.69	10.42	2.27	770	<0.5	<0.5	<0.5	4.5	5200	NA
	8/11/93	12.69	10.54	2.15	920	<1.0	<1.0	1.6	17	8800	NA

Notes :

TOB : Top of well box referenced to mean sea level
DTW : Depth to water
GWE : Ground water elevation. Ground water elevation data available for certain dates only.
TPHg : Total petroleum hydrocarbons as gasoline by EPA Method 8015 (modified)
BTEX : Benzene, toluene, ethylbenzene and total xylenes by EPA Method 8020
TPHd: Total petroleum hydrocarbons as diesel by EPA Method 8015 (modified)
TPHmo Total petroleum hydrocarbons as motor oil by EPA Method 8015 (modified)
NA : Not analyzed
* Compounds detected within the chromatographic range of gasoline but not characteristic of the standard gasoline pattern.
^ Compounds detected within the chromatographic range of diesel with pattern typical of weathered diesel.
** Compounds detected within the chromatographic range of diesel appears to include gasoline compounds.
^^ Ground water elevation not used to define contours on Figure 3. See text.