PACIFIC
ENVIRONMENTAL
GROUP, INC.

July 18, 1994
Project 305-085.2B

Mr. Dan Kirk
Shell Oil Company
P.O. Box 4023
Concord, California 94524

Re: Quarterly Report - Second Quarter 1994
Shell Service Station
230 West MacArthur Boulevard at Piedmont Avenue
Oakland, California
WIC No 204-5508-0703

Dear Mr. Kirk:

The following presents the results of the second quarter 1994 monitoring program for the site referenced above. This letter has been prepared for Shell Oil Company by Pacific Environmental Group, Inc. (PACIFIC).

FINDINGS

Groundwater monitoring wells were gauged and sampled by Blaine Tech Services, Inc. (Blaine) at the direction of PACIFIC on June 6, 1994. Groundwater elevation contours for the sampling date are shown on Figure 1. Table 1 presents groundwater elevation data.

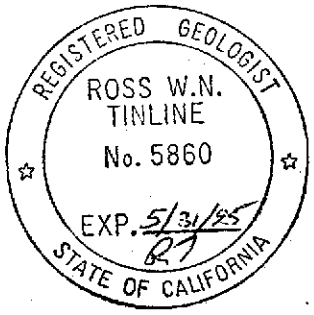
Groundwater analytical data are presented in Table 2. Total petroleum hydrocarbons calculated as gasoline (TPH-g) and benzene concentrations for the June 1994 sampling event are shown on Figure 2. The only positive result of TPH-g was found in Well MW-4 and its duplicate sample. The laboratory noted these results to be the C_6-C_{12} hydrocarbon range. Blaine's groundwater sampling report, including field data, is presented as Attachment A.

2025 Gateway Place, Suite 440, San Jose, California 95110 (408) 441-7500 FAX (408) 441-7539

If you have any questions regarding the contents of this letter, please call.

Sincerely,

Pacific Environmental Group, Inc.



Ross W.N. Tinline
Project Geologist
RG 5860

Attachments: Table 1 - Groundwater Elevation Data
Table 2 - Groundwater Analytical Data - Total Petroleum Hydrocarbons (TPH as Gasoline and BTEX Compounds)
Figure 1 - Groundwater Elevation Contour Map
Figure 2 - TPH-g/Benzene Concentration Map
Attachment A - Groundwater Sampling Report

cc: Ms. Lisa McCann, Regional Water Quality Control Board - S.F. Bay Region
Mr. Craig Mayfield, Alameda County Flood Control and Water Conservation District
Mr. Gil Wistar, Alameda County Health Department

Table 1
Groundwater Elevation Data

Shell Service Station
230 West MacArthur Boulevard at Piedmont Avenue
Oakland, California

Well Number	Date Gauged	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)
MW-1	07/14/88	73.89	13.30	60.59
	10/04/88		13.65	60.24
	11/10/88		13.55	60.34
	12/09/88		13.22	60.67
	01/10/89		12.86	61.03
	01/20/89		12.91	60.98
	02/06/89		12.94	60.95
	03/10/89		12.59	61.30
	06/06/89		14.05	59.84
	09/07/89		14.92	58.97
	12/18/89		14.88	59.01
	03/08/90		14.08	59.81
	06/07/90		13.89	60.00
	09/05/90		14.83	59.06
	12/03/90		15.05	58.84
	03/01/91		14.34	59.55
	06/03/91		14.16	59.73
	09/04/91		14.60	59.29
	03/13/92		13.40	60.49
	06/03/92		13.76	60.13
	08/19/92		14.57	59.32
	11/16/92		14.78	59.11
	02/18/93		12.14	61.75
	06/01/93		13.30	60.59
	08/30/93		14.32	59.57
	12/13/93		14.06	59.83
	03/03/94		13.12	60.77
	06/06/94		14.20	59.69
MW-2	07/14/88	75.24	15.18	60.06
	10/04/88		15.30	59.94
	11/10/88		15.17	60.07
	12/09/88		14.82	60.42
	01/20/89		14.54	60.70
	02/06/89		14.59	60.65
	03/10/89		14.88	60.36
	06/06/89		15.30	59.94
	09/07/89		16.76	58.48
	12/18/89		16.65	58.59
	03/08/90		15.92	59.32
	06/07/90		16.10	59.14
	09/05/90		16.61	58.63
	12/03/90		17.06	58.18
	03/01/91		16.62	58.62

Table 1 (continued)
Groundwater Elevation Data

Shell Service Station
230 West MacArthur Boulevard at Piedmont Avenue
Oakland, California

Well Number	Date Gauged	Well Elevation (feet, MSL)	Depth To Water (feet, TOC)	Groundwater Elevation (feet, MSL)
MW-2 (cont.)	06/03/91		16.65	58.59
	09/04/91		16.57	58.67
	03/13/92		14.66	60.58
	06/03/92		15.90	59.34
	08/19/92		16.72	58.52
	11/16/92		16.66	58.58
	02/18/93		13.88	61.36
	06/01/93		14.74	60.50
	08/30/93		15.85	59.39
	12/13/93		15.83	59.41
	03/03/94		14.80	60.44
	06/06/94		16.65	58.59
MW-3	07/14/88	74.68	14.05	60.63
	10/04/88		14.60	60.08
	11/10/88		14.35	60.33
	12/09/88		14.04	60.64
	01/10/89		13.70	60.98
	01/20/89		13.72	60.96
	02/06/89		13.75	60.93
	03/10/89		13.42	61.26
	06/06/89		14.52	60.16
	09/07/89		15.52	59.16
	12/18/89		19.59	55.09
	03/08/90		14.72	59.96
	06/07/90		14.65	60.03
	09/05/90		15.51	59.17
	12/03/90		14.85	59.83
	03/01/91		14.92	59.76
	06/03/91		14.75	59.93
	09/04/91		15.14	59.54
	03/13/92		13.50	61.18
	06/03/92		14.39	60.29
	08/19/92		15.08	59.60
	11/16/92		15.43	59.25
	02/18/93		12.96	61.72
	06/01/93		13.98	60.70
	08/30/93		14.82	59.86
	12/13/93		14.70	59.98
	03/03/94		13.92	60.76
	06/06/94		14.73	59.95

Table 1 (continued)
Groundwater Elevation Data

Shell Service Station
230 West MacArthur Boulevard at Piedmont Avenue
Oakland, California

Well Number	Date Gauged	Well Elevation (feet, MSL)	Depth To Water (feet, TOC)	Groundwater Elevation (feet, MSL)
MW-4	01/23/90	73.83	14.68	59.15
	03/08/90		14.38	59.45
	06/07/90		14.27	59.56
	09/05/90		15.40	58.43
	12/03/90		15.90	57.93
	06/03/91		14.60	59.23
	09/04/91		15.25	58.58
	03/13/92		12.72	61.11
	06/03/92		14.33	59.50
	08/19/92		15.18	58.65
	11/16/92		15.39	58.44
	02/18/93		12.62	61.21
	06/01/93		13.68	60.15
	08/30/93		14.83	59.00
	12/13/93		14.50	59.33
	03/03/94		13.48	60.35
	06/06/94		14.26	59.57

MSL = Mean sea level
TOC = Top of casing

Table 2
Groundwater Analytical Data
Total Petroleum Hydrocarbons
(TPH as Gasoline and BTEX Compounds)

Shell Service Station
230 West MacArthur Boulevard at Piedmont Avenue
Oakland, California

Well Number	Date Sampled	TPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)
MW-1	07/14/88	ND	ND	ND	ND	ND
	10/04/88	ND	8	4.3	ND	9
	11/10/88	ND	ND	ND	ND	ND
	12/09/88	ND	ND	ND	ND	ND
	01/10/89	ND	ND	ND	ND	NA
	01/20/89	ND	ND	NA	NA	ND
	02/06/89	ND	ND	ND	ND	ND
	03/10/89	ND	ND	ND	ND	ND
	06/06/89	ND	ND	ND	ND	ND
	09/07/89	ND	ND	ND	ND	ND
	12/18/89	ND	ND	ND	ND	ND
	03/08/90	ND	ND	ND	ND	ND
	06/07/90	ND	ND	ND	ND	ND
	09/05/90	ND	ND	ND	ND	ND
	12/03/90	ND	ND	ND	ND	ND
	03/01/91	ND	ND	ND	ND	ND
	06/03/91	ND	ND	ND	ND	ND
	09/04/91	ND	ND	ND	ND	ND
	03/13/92	ND	ND	ND	ND	ND
	06/03/92	ND	ND	ND	ND	ND
	08/19/92	87	ND	ND	ND	ND
	11/16/92	ND	ND	ND	ND	ND
	02/18/93	59*	ND	ND	ND	ND
	06/01/93	ND	ND	ND	ND	ND
	08/30/93	ND	ND	ND	ND	ND
	12/13/93	ND	ND	ND	ND	ND
	03/03/94	100	ND	ND	ND	ND
	06/06/94	ND	ND	ND	ND	ND
MW-2	07/14/88	ND	7.9	2.6	1.1	4
	10/04/88	90	ND	1.3	2.3	12
	11/10/88	ND	ND	ND	ND	2
	12/09/88	ND	ND	0.6	ND	3
	01/20/89	ND	ND	ND	ND	ND
	02/06/89	NA	ND	ND	ND	ND
	03/10/89	ND	ND	ND	ND	ND
	06/06/89	ND	ND	0.5	ND	ND
	09/07/89	ND	ND	ND	ND	ND
	12/18/89	ND	ND	ND	ND	ND
	03/08/90	ND	ND	ND	ND	ND

Table 2 (continued)
Groundwater Analytical Data
Total Petroleum Hydrocarbons
(TPH as Gasoline and BTEX Compounds)

Shell Service Station
230 West MacArthur Boulevard at Piedmont Avenue
Oakland, California

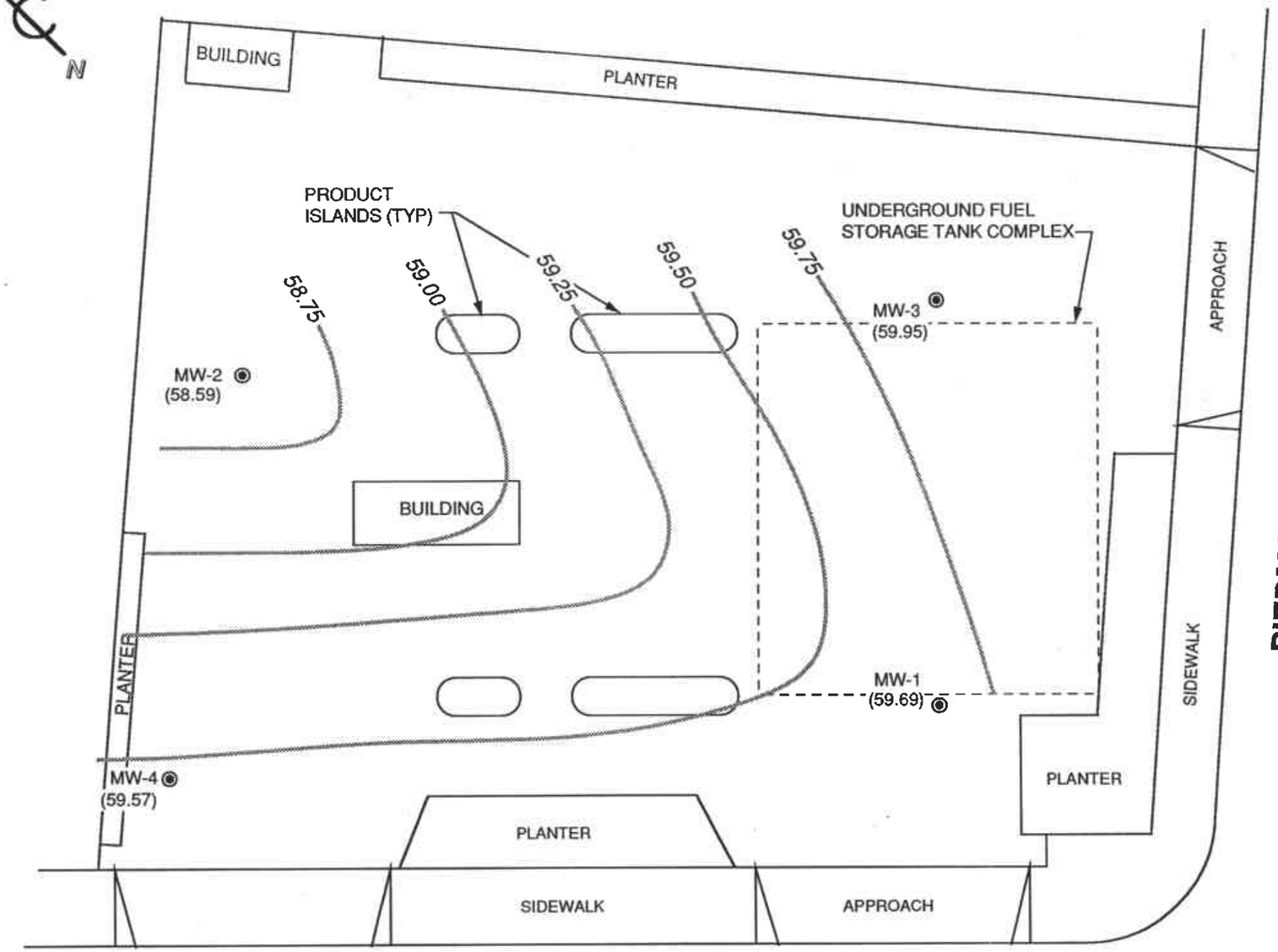
Well Number	Date Sampled	TPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)
MW-2 (cont.)	06/07/90	ND	ND	ND	ND	ND
	09/05/90	ND	ND	ND	ND	ND
	12/03/90	ND	ND	ND	ND	ND
	03/01/91	ND	ND	ND	ND	ND
	06/03/91	ND	ND	ND	ND	ND
	09/04/91	ND	ND	ND	ND	ND
	03/13/92	ND	ND	ND	ND	ND
	06/03/92	ND	ND	ND	ND	ND
	08/19/92	67	ND	ND	ND	ND
	11/16/92	50	ND	ND	ND	1.2
	02/18/93	52*	ND	ND	ND	ND
	02/18/93(D)	52*	ND	ND	ND	ND
	06/01/93	ND	ND	ND	ND	ND
	08/30/93	70*	ND	ND	ND	ND
	12/13/93	68*	ND	ND	ND	ND
	03/03/94	280*	ND	ND	ND	ND
	06/06/94	ND	ND	ND	ND	ND
MW-3	07/14/88	ND	ND	ND	ND	ND
	10/04/88	ND	ND	ND	ND	5
	11/10/88	ND	ND	ND	ND	ND
	12/09/88	ND	ND	ND	ND	ND
	01/10/89	ND	ND	ND	ND	NA
	01/20/89	NA	NA	ND	ND	ND
	02/06/89	70	ND	ND	ND	ND
	03/10/89	150	ND	ND	ND	ND
	06/06/89	ND	ND	ND	ND	ND
	09/07/89	ND	0.65	ND	ND	ND
	12/06/89	46	1.3	ND	0.44	0.66
	03/08/90	ND	ND	ND	ND	ND
	06/07/90	ND	ND	ND	ND	ND
	09/05/91	ND	ND	ND	ND	ND
	12/03/90	ND	ND	ND	ND	ND
	03/01/91	1.9	59	ND	22	ND
	06/03/91	ND	ND	ND	ND	ND
	09/04/91	ND	ND	ND	ND	ND
	03/13/92	ND	ND	ND	ND	ND
	06/03/92	ND	ND	ND	ND	ND
	08/19/92	92	ND	ND	ND	ND
	08/19/92(D)	76	ND	ND	ND	ND
	11/16/92	200*	ND	ND	ND	ND

Table 2 (continued)
Groundwater Analytical Data
Total Petroleum Hydrocarbons
(TPH as Gasoline and BTEX Compounds)

Shell Service Station
230 West MacArthur Boulevard at Piedmont Avenue
Oakland, California

Well Number	Date Sampled	TPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)
MW-3 (cont.)	11/16/92(D)	140*	ND	ND	ND	ND
	02/18/93	680*	ND	ND	ND	ND
	06/01/93	160*	ND	ND	ND	ND
	06/01/93(D)	150*	ND	ND	ND	ND
	08/30/93	110*	ND	ND	ND	ND
	12/13/93	140*	ND	ND	ND	ND
	12/13/93(D)	110*	ND	ND	ND	ND
	03/03/94	61*	ND	ND	ND	ND
	06/06/94	ND	ND	ND	ND	ND
MW-4	01/23/90	1,600	100	10	30	20
	03/08/90	4,200	260	18	88	39
	06/07/90	2,000	150	6.9	14	17
	09/05/90	1,700	130	10	7.2	19
	12/03/90	2,600	108	41	17	59
	06/03/91	2,800	160	15	8.8	32
	09/04/91	---------- Separate-Phase Hydrocarbon Sheen ----------				
	03/13/92	2,700	180	70	5.9	29
	06/03/92	1,700	190	ND	30	23
	08/19/92	170	4.2	ND	0.6	1.0
	11/16/92	2,600	92	49	50	81
	02/18/93	7,400	120	38	51	87
	06/01/93	7,000	1,800	1,700	1,600	1,700
	08/30/93	2,100	80	11	ND	11
	08/30/93(D)	2,100	77	5.6	ND	5.5
	12/13/93	2,000*	20	ND	21	52
	03/03/94	3,500	150	86	85	90
	03/03/94(D)	3,200	130	73	74	76
	06/06/94	590	25	ND	ND	ND
	06/06/94(D)	400	16	ND	ND	ND

ppb = Parts per billion
ND = Not detected
NA = Not analyzed
(D) = Duplicate sample
* = The concentration reported as gasoline is primarily due to the presence of a discrete hydrocarbon peak not indicative of gasoline.
See certified analytical reports for detection limits.



LEGEND

MW-1 ◉ GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION

(59.95) GROUNDWATER ELEVATION IN FEET - MSL, 6-6-94

59.50 GROUNDWATER ELEVATION CONTOUR IN FEET - MSL, 6-6-94

APPROXIMATE DIRECTION OF GROUNDWATER FLOW

APPROXIMATE GRADIENT = 0.009

PACIFIC ENVIRONMENTAL GROUP, INC.

SCALE
0 20 40 FEET

SHELL SERVICE STATION
230 West MacArthur Boulevard at Piedmont Avenue
Oakland, California

GROUNDWATER ELEVATION CONTOUR MAP

FIGURE: 1
PROJECT: 305-085.2B

07/13/94

N

BUILDING

PLANTER

PRODUCT
ISLANDS (TYP)

UNDERGROUND FUEL
STORAGE TANK COMPLEX

MW-3
ND/ND

APPROACH

MW-2
ND/ND

BUILDING

PLANTER

MW-1
ND/ND

SIDEWALK

MW-4
590/25

PLANTER

PLANTER

APPROACH

SIDEWALK

APPROACH

PIEDMONT AVENUE

MAC ARTHUR BOULEVARD

LEGEND

MW-1 ◉ GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION

590/25 TPH-g/BENZENE CONCENTRATION IN GROUNDWATER, IN PARTS PER BILLION, 6-6-94

ND NOT DETECTED

APPROXIMATE DIRECTION
OF GROUNDWATER FLOW

PACIFIC
ENVIRONMENTAL
GROUP, INC.

SCALE
0 20 40 FEET

SHELL SERVICE STATION
230 West MacArthur Boulevard at Piedmont Avenue
Oakland, California

TPH-g/BENZENE CONCENTRATION MAP

FIGURE:
2
PROJECT:
305-085.2B

07/13/94

ATTACHMENT A

GROUNDWATER SAMPLING REPORT

BLAINE
TECH SERVICES INC.

985 TIMOTHY DRIVE
SAN JOSE, CA 9513
(408) 995-553
FAX (408) 293-877

June 20, 1994

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

Attn: Daniel T. Kirk

SITE:
Shell WIC #204-5508-0703
230 West MacArthur Blvd.
Oakland, California

QUARTER:
2nd quarter of 1994

QUARTERLY GROUNDWATER SAMPLING REPORT 940606-F-1

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 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: Pacific Environmental Group, Inc.
2025 Gateway Place, Suite #440
San Jose, CA 95110
ATTN: Rhonda Barrick

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	6/6/94	TOC	--	NONE	--	--	14.20	29.54
MW-2	6/6/94	TOC	--	NONE	--	--	16.65	27.86
MW-3	6/6/94	TOC	--	NONE	--	--	14.73	28.28
MW-4 *	6/6/94	TOC	--	NONE	--	--	14.26	23.93

* Sample DUP was a duplicate sample taken from welll MW-4.

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: 940606 – F1

Date: 6-6-94
Page 1 of 1

Site Address: 230 West MacArthur Blvd., Oakland
WIC#: 204-5508-0703

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: Michael LeDesky

Printed Name: Michael LeDesky

LAB: ~~Anametrix~~ SEQUOIA

Sample ID	Time	Date	Sludge	Soil	Water	Air	No. of conts.
MW-1	9:57	6/6/94			X		3
MW-2	10:02				X		
MW-3	10:26				X		
MW-4	10:40				X		
DUP	—				X		
EB	9:54				X		
TB	Lab				X		2

Analysis Required

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
					X					40 mL VOA	HCl	
					X							
					X							
					X							
					X							
					X							
					X							

CHECK ONE (1) BOX ONLY — CT/DT

	CT/DT
Quarterly Monitoring	☒ 6441
Site Investigation	☐ 6441
Soil Closure/Disposal	☐ 6442
Water Closure/Disposal	☐ 6443
Soil/Air Rem. or Sys. O & M	☐ 6442
Water Rem. or Sys. O & M	☐ 6443
Other	☐

TURN AROUND TIME

- 24 hours ☐
- 48 hours ☐
- 15 days ☒ (Normal)
- Other ☐

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

MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
9406539-01	
-02	
-03	
-04	
-05	MW @ 1141
-06	
-07	

Relinquished By (signature)	Printed Name	Date	Time	Received (signature)	Printed Name	Date	Time
Michael LeDesky	Michael LeDesky	6/6/94	7:00	Dan Burkhart	DAN B	6/6	16:00
Dan Burkhart	DAN		11:40				
				Keith E. Gless	KEITH E. GLESS	6/6/94	1140

White - Laboratory Yellow - Project Manager Pink - Originator

Sequoia Analytical

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

Project: 940606-F1, Shell, 230 W. MacArthur Bl

Enclosed are the results from 7 water samples received at Sequoia Analytical on June 8,1994. The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE OF COLLECTION	TEST METHOD
4F53901	Water, MW-1	6/6/94	EPA 5030/8015 Mod./8020
4F53902	Water, MW-2	6/6/94	EPA 5030/8015 Mod./8020
4F53903	Water, MW-3	6/6/94	EPA 5030/8015 Mod./8020
4F53904	Water, MW-4	6/6/94	EPA 5030/8015 Mod./8020
4F53905	Water, Dup	6/6/94	EPA 5030/8015 Mod./8020
4F53906	Water, EB	6/6/94	EPA 5030/8015 Mod./8020
4F53907	Water, TB	6/6/94	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

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Blaine Tech Services, Inc.	Client Project ID:	940606-F1, Shell, 230 W. MacArthur	Sampled: Jun 6, 1994
985 Timothy Drive	Sample Matrix:	Water	Received: Jun 8, 1994
San Jose, CA 95133	Analysis Method:	EPA 5030/8015 Mod./8020	Reported: Jun 14, 1994
Attention: Jim Keller	First Sample #:	4F53901	

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit µg/L	Sample I.D. 4F53901 MW-1	Sample I.D. 4F53902 MW-2	Sample I.D. 4F53903 MW-3	Sample I.D. 4F53904 MW-4	Sample I.D. 4F53905 Dup	Sample I.D. 4F53906 EB
Purgeable Hydrocarbons	50	N.D.	N.D.	N.D.	590	400	N.D.
Benzene	0.50	N.D.	N.D.	N.D.	25	16	N.D.
Toluene	0.50	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Ethyl Benzene	0.50	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Total Xylenes	0.50	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Chromatogram Pattern:		--	--	--	C6 - C12	C6 - C12	--

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0	1.0	5.0	5.0	1.0
Date Analyzed:	6/9/94	6/10/94	6/10/94	6/13/94	6/13/94	6/10/94
Instrument Identification:	GCHP-2	GCHP-2	GCHP-2	GCHP-17	GCHP-17	GCHP-2
Surrogate Recovery, %: (QC Limits = 70-130%)	92	88	88	92	82	90

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

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Blaine Tech Services, Inc.	Client Project ID:	940606-F1, Shell, 230 W. MacArthur	Sampled:	Jun 6, 1994
985 Timothy Drive	Sample Matrix:	Water	Received:	Jun 8, 1994
San Jose, CA 95133	Analysis Method:	EPA 5030/8015 Mod./8020	Reported:	Jun 14, 1994
Attention: Jim Keller	First Sample #:	4F53907		

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit µg/L	Sample I.D. 4F53907 TB
Purgeable Hydrocarbons	50	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Total Xylenes	0.50	N.D.
Chromatogram Pattern:		--

Quality Control Data

Report Limit Multiplication Factor:	1.0
Date Analyzed:	6/10/94
Instrument Identification:	GCHP-2
Surrogate Recovery, %: (QC Limits = 70-130%)	91

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

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

Client Project ID: 940606-F1, Shell, 230 W. MacArthur Bl
Matrix: Liquid
QC Sample Group: 4F53901

Reported: Jun 14, 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#:	4F33301	4F33301	4F33301	4F33301
Date Prepared:	-	-	-	-
Date Analyzed:	6/9/94	6/9/94	6/9/94	6/9/94
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:	100	110	110	107
Matrix Spike Duplicate % Recovery:	110	110	110	110
Relative % Difference:	9.5	0.0	0.0	2.8
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:
The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

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

Client Project ID: 940606-F1, Shell, 230 W. MacArthur Bl
Matrix: Liquid
QC Sample Group: 4F53902-03, 06-07

Reported: Jun 14, 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#:	4F47202	4F47202	4F47202	4F47202
Date Prepared:	-	-	-	-
Date Analyzed:	6/10/94	6/10/94	6/10/94	6/10/94
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:	93	93	93	90
Matrix Spike Duplicate % Recovery:	86	86	86	87
Relative % Difference:	7.8	7.8	7.8	3.4
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: 940606-F1, Shell, 230 W. MacArthur Bl
Matrix: Liquid
QC Sample Group: 4F53904-05

Reported: Jun 14, 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#:	4F60004	4F60004	4F60004	4F60004
Date Prepared:	-	-	-	-
Date Analyzed:	6/13/94	6/13/94	6/13/94	6/13/94
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:	100	100	100	100
Matrix Spike Duplicate % Recovery:	90	91	93	93
Relative % Difference:	11	9.4	7.3	7.3
LCS Batch#:	-	-	-	-
Date Prepared:	-	-	-	-
Date Analyzed:	-	-	-	-
Instrument I.D.#:	-	-	-	-
LCS % Recovery:	-	-	-	-
% Recovery Control Limits:	71-133	72-128	72-130	71-120

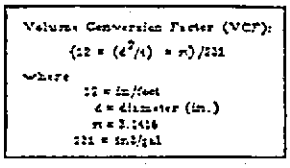
SEQUOIA ANALYTICAL

Suzanne Chin
Project Manager

Please Note:
The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

SHELL WELL MONITORING DATA SHEET

Project #: 9401c016 - F1	Wic # 204 - 5508 - 0703
Sampler: TF/ML	Date Sampled: 6-6-94
Well I.D.: MW-1	Well Diameter: (circle one) 2 3 (4) 6 ____
Total Well Depth: Before 29.54 After	Depth to Water: Before 14.20 After
Depth to Free Product:	Thickness of Free Product (feet):
Measurements referenced to: (PVC)	Grade Other --



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

10.0	x	3	=	30.0
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:
9:43	66.2	7.1	650	18.3	10.0	
9:46	67.1	7.1	490	2.5	20.0	
9:47	66.7	7.1	490	2.3	30.0	

Did Well Dewater? If yes, gals. Gallons Actually Evacuated: 30.0

Sampling Time: 9:52

Sample I.D.: MW-1 Laboratory: SEQ

Analyzed for: TPH-G, BTEX

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

Analyzed for:

Shipping Notations:

Additional Notations:

SHELL WELL MONITORING DATA SHEET

Project #: 9403.06 - F1	Wic # 204-5508-0703
Sampler: TF/ML	Date Sampled: 6-6-94
Well I.D.: MW-2	Well Diameter: (circle one) 2 3 (4) 6 ___
Total Well Depth: Before 27.86 After	Depth to Water: Before 16.65 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

7.5	x	3	=	22.5
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:
9:59	67.6	7.2	630	6.0	7.5	
10:01	68.2	7.1	1660	2.2	15.0	
10:03	68.6	7.0	680	1.5	22.5	

Did Well Dewater? If yes, gals. Gallons Actually Evacuated: 23.0

Sampling Time: 1002

Sample I.D.: MW-2 Laboratory: SEQ

Analyzed for: TPH-G BTEX

Duplicate I.D.: Cleaning Blank I.D.: EB 954

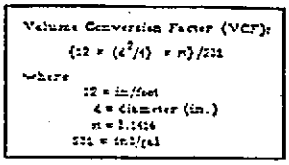
Analyzed for:

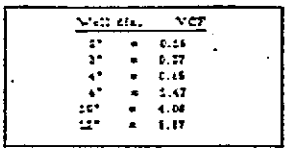
Shipping Notations:

Additional Notations:

SHELL WELL MONITORING DATA SHEET

Project #: 940606 - F1	Wic # 204 - 5508 - 0703
Sampler: TF/ML	Date Sampled: 6-6-94
Well I.D.: MW-3	Well Diameter: (circle one) 2 3 (4) 6 ____
Total Well Depth: Before 28.28 After	Depth to Water: Before 14.73 After
Depth to Free Product:	Thickness of Free Product (feet):
Measurements referenced to: (PVC) Grade	Other --





9.0	x	3	=	27.0
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:
1018	68.1	7.1	550	2.0	9.0	/
1021	69.0	7.0	490	5.2	18.0	/
1024	69.2	7.0	500	6.8	27.0	/

Did Well Dewater? no If yes, gals. Gallons Actually Evacuated: 27.00

Sampling Time: 1026

Sample I.D.: MW-3 Laboratory: SEQ

Analyzed for: TPH-G - BTEX

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

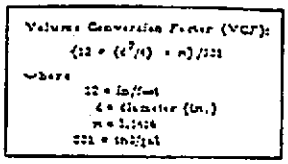
Analyzed for:

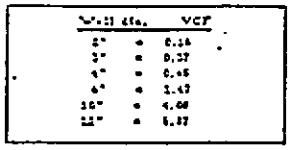
Shipping Notations:

Additional Notations:

SHELL WELL MONITORING DATA SHEET

Project #: 940606 - F1	Wic # 204 - 5508 - 0703
Sampler: TF/ML	Date Sampled: 6-6-94
Well I.D.: MW-4	Well Diameter: (circle one) 2 3 (4) 6 ___
Total Well Depth: Before 23.93 After	Depth to Water: Before 14.26 After
Depth to Free Product:	Thickness of Free Product (feet):
Measurements referenced to: (PVC) Grade Other --	





6.5	x	3	=	19.5
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:
1032	67.7	7.2	580	>200	6.5	
1035	67.9	7.2	580	>200	13.0	
1038	68.3	7.1	590	>200	19.5	

Did Well Dewater? no If yes, gals. Gallons Actually Evacuated: 20.0

Sampling Time: 1040

Sample I.D.: MW-4 Laboratory: SEQ

Analyzed for: TPH-G, BTEX

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

Analyzed for: TPHG - BTEX

Shipping Notations:

Additional Notations: