Weiss Associates Environmental and Geologic Services

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

May 18, 1995

Jennifer Eberle
Alameda County Department
of Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502-6577

Re: **Second Quarter 1995**
Shell Service Station
WIC #204-5510-0204
350 Grand Avenue
Oakland, California
WA Job #81-0701-205

Dear Ms. Eberle:

This status report satisfies the quarterly reporting requirements prescribed by California Administrative Code Title 23 Waters, Chapter 3, Subchapter 16, Article 5, Section 2652.d.

Second Quarter 1995 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 (Tables 1 and 2) and prepared a ground water elevation contour and benzene concentration in ground water map (Figure 2).

Anticipated Third Quarter 1995 Activities:

- WA will submit a report presenting the results of the second quarter 1995 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 and benzene concentrations in ground water map.

- WA will install at least one offsite ground water monitoring well.

Conclusions and Recommendations:

In April 1995, ground water flowed southeasterly beneath the site. Hydrocarbon concentrations in all monitoring wells remained within historical range.

Please call if you have any questions.

Sincerely,
Weiss Associates

Grady S. Glasser
Technical Assistant

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

Attachments: A - BTS Ground Water Monitoring Report

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

GSG/JWC:all
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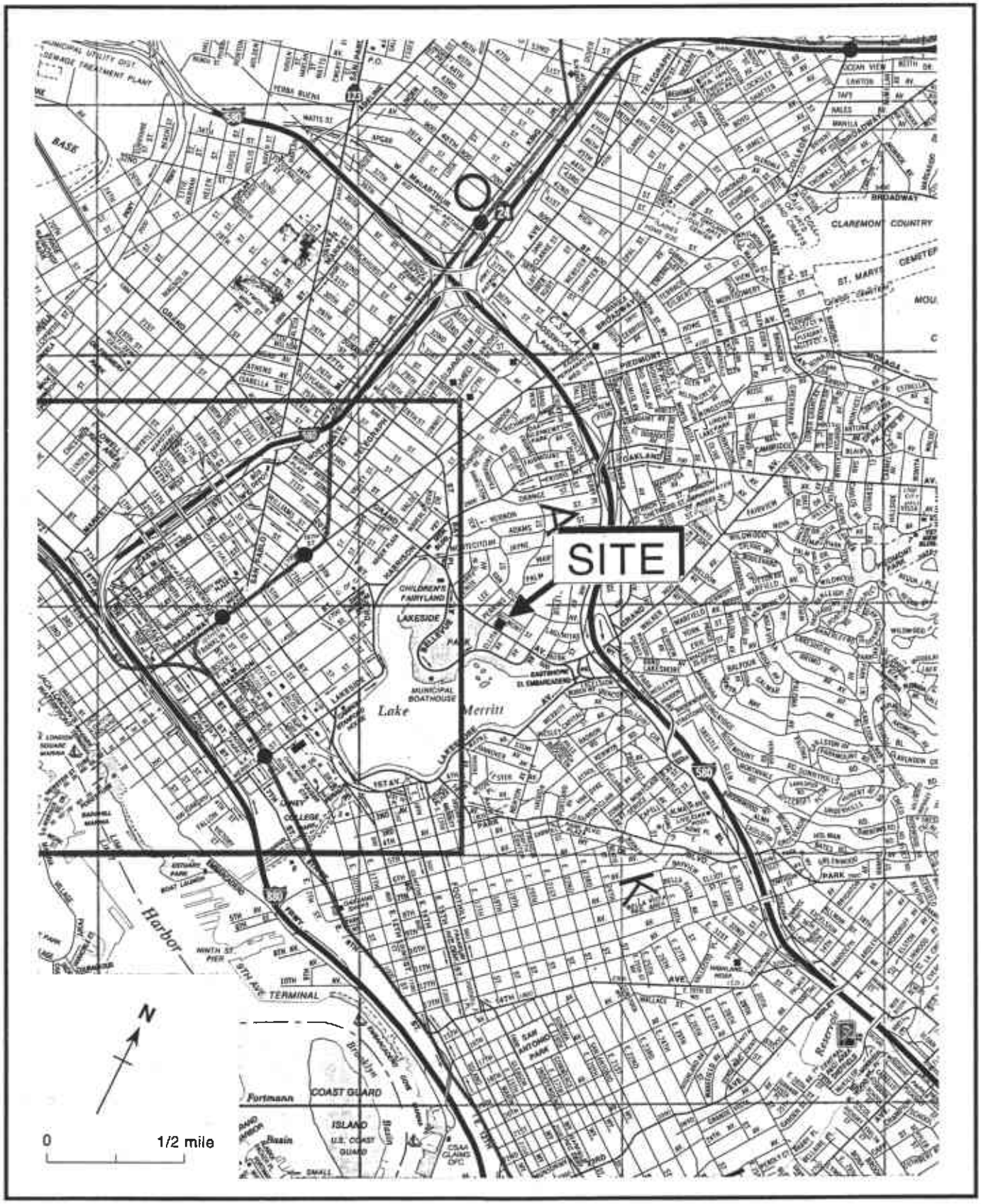
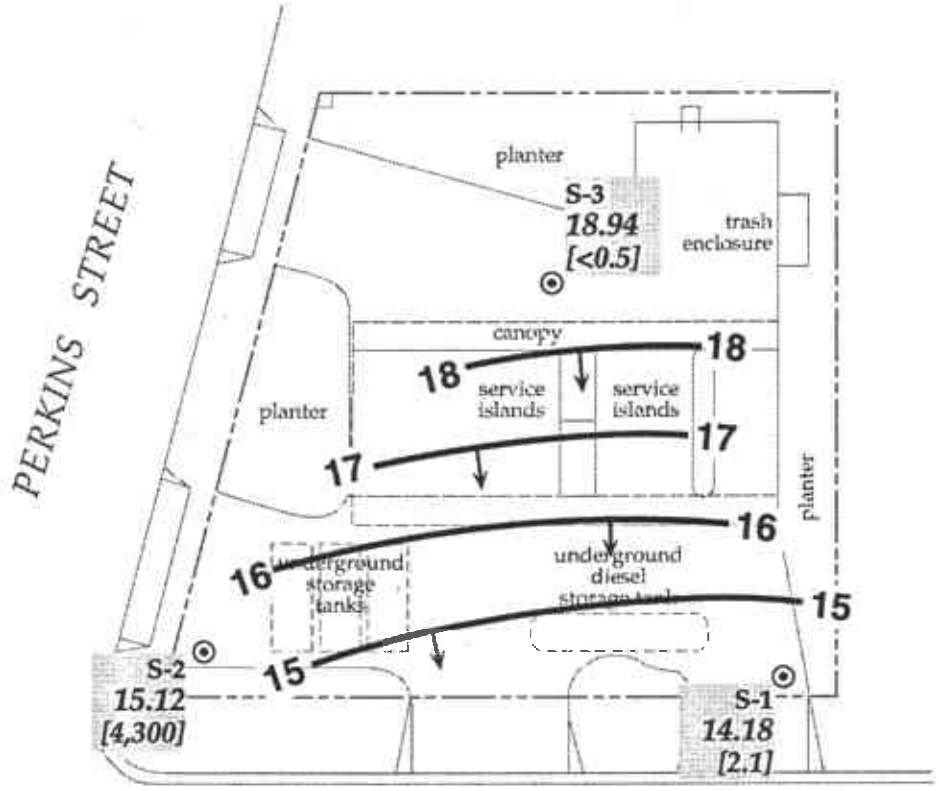


Figure 1. Site Location Map - Shell Service Station WIC #204-5510-0204, 350 Grand Avenue, Oakland, California



EXPLANATION

- ⊙S-1 -Monitoring well
- *14.18* Ground water elevation, ft above mean sea level (msl)
- *[<0.5]* Benzene concentrations in parts per billion (ppb)
- —15 Ground water elevation contour, ft above msl, approximately located
- → Inferred ground water flow direction

N

0 40 ft

Base map from GeoStrategies Inc.

Figure 2. Monitoring Well Location, Ground Water Elevation, and Benzene Concentrations in Ground Water - April 12, 1995 - Shell Service Station WIC #204-5510-0204, 350 Grand Avenue, Oakland, California

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

Well ID	Date	Top-of-Casing Elevation	Depth to Water (ft)	Ground Water Elevation (ft above msl)
S-1	01/23/91	20.84	9.73	11.11
	04/25/91		7.37	13.47
	07/19/91		8.92	11.92
	10/09/91		9.62	11.22
	01/23/92		8.94	11.90
	04/27/92		7.06	13.78
	07/10/92		8.31	12.53
	10/06/92		9.55	11.29
	01/06/93		9.86	10.98
	04/26/93		6.30	14.54
	07/20/93		8.78	12.06
	10/18/93		9.20	11.64
	01/07/94		9.53	11.31
	04/11/94		8.50	12.34
	07/14/94		8.45	12.39
	07/19/94		9.07	11.77
	10/06/94		11.68	9.16
	01/04/95		8.51	12.33
	04/12/95		**6.66**	**14.18**
S-2	01/23/91	21.24	10.55	10.69
	04/25/91		8.24	13.00
	07/19/91		9.55	11.69
	10/09/91		10.26	10.98
	01/23/92		9.51	11.73
	04/27/92		7.83	13.41
	07/10/92		8.57	12.67
	10/06/92		9.49	11.75
	01/06/93		8.56	12.68
	04/26/93		6.84	14.40
	07/20/93		8.52	12.72
	10/18/93		9.36	11.88
	01/07/94		8.37	12.87
	04/11/94		6.96	14.28
	07/14/94		7.49	13.75
	07/19/94		8.02	13.22
	10/06/94		11.00	10.24
	01/04/94		8.07	13.17
	04/12/95		**6.12**	**15.12**
S-3	01/23/91	22.70	14.67	8.03
	04/25/91		12.96	9.74
	07/19/91		12.45	10.25

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

Well ID	Date	Top-of-Casing Elevation	Depth to Water (ft)	Ground Water Elevation (ft above msl)
	10/09/91		12.98	9.72
	01/23/92		13.06	9.64
	04/27/92		7.25	15.45
	07/10/92		8.46	14.24
	10/06/92		11.77	10.93
	01/06/93		12.53	10.17
	04/26/93		4.28	18.42
	07/20/93		5.70	17.00
	10/18/93		10.30	12.40
	01/07/94		12.40	10.30
	04/11/94		10.94	11.76
	07/14/94		7.90	14.80
	07/19/94		8.12	14.58
	10/06/94		12.15	10.55
	01/04/95		11.18	11.52
	04/12/95		**3.76**	**18.94**

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

Sample ID	Date	Depth to Water (ft)	TPH-D	TPH-G	B	E	T	X
			← parts per billion (µg/L) →					
WELLS								
S-1	01/23/91	9.73	<50	<50	<0.5	<0.5	<0.5	<0.5
	04/25/91	7.37	<50	<50	<0.5	<0.5	<0.5	<0.5
	07/19/91	8.92	<50	<50	6.8	<0.5	<0.5	<0.5
	10/09/91	9.62	260[a]	120	10	<0.5	<0.5	<0.5
	01/23/92	8.94	<50	<50	<0.5	<0.5	<0.5	<0.5
	04/27/92	7.06	70[b]	<50	1.2	<0.5	<0.5	<0.5
	07/10/92	8.31	930	<50	13	<0.5	<0.5	<0.5
	10/06/92	9.55	110	62	<0.5	<0.5	<0.5	<0.5
	01/06/93	9.86	81	85	1.1	<0.5	<0.5	<0.5
	04/26/93	6.30	53[c]	<50	<0.5	<0.5	<0.5	<0.5
	04/26/93[dup]	6.30	53[c]	<50	<0.5	<0.5	<0.5	<0.5
	07/20/93	8.78	140	<50	<0.5	<0.5	<0.5	<0.5
	10/18/93	9.20	210	<50	<0.5	<0.5	<0.5	<0.5
	01/07/94	9.53	<50	<50	1.4	0.55	1.5	2.8
	01/07/94[dup]	9.53	53	<50	1.2	<0.5	1.5	2.7
	04/11/94	8.50	320	<50	2.8	<0.5	<0.5	<0.5
	04/11/94[dup]	8.50	220	<50	2.6	<0.5	<0.5	<0.5
	07/19/94	9.07	110	<50	<0.5	<0.5	<0.5	<0.5
	10/06/94	11.68	370	110	1.4	<0.5	<0.5	<0.5
	01/04/95	8.51	1,000	120	2.5	1.5	<0.5	1.7
	04/12/95	6.66	290	<50	2.1	<0.5	<0.5	<0.5
	04/12/95[dup]	6.66	480	<50	<0.5	<0.5	<0.5	<0.5
S-2	01/23/91	10.55	1,200	2,500	550	33	15	42
	04/25/91	8.24	20,000[b]	32,000	2,900	1,400	480	2,300
	07/19/91	9.55	30,000[b]	21,000	4,700	1,200	430	2,400
	10/09/91	10.26	32,000[b]	29,000	6,300	1,700	510	2,400
	01/23/92	9.51	36,000[b]	31,000	5,800	2,000	480	2,700
	04/27/92	7.83	12,000[b]	21,000[d]	4,800	1,600	320	1,400

Table 2. Analytic Results for Ground Water, Former Shell Service Station, WIC #204-5510-0303, 5755 Broadway, Oakland, California (continued)

Sample ID	Date	Depth to Water (ft)	TPH-D	TPH-G	B	E	T	X
			← parts per billion (µg/L) →					
	07/10/92	8.57	3,700[e]	31,000	7,500	3,400	940	3,500
	10/06/92	9.49	4,500[e]	57,000	9,300	4,000	1,200	4,900
	01/06/93	8.56	5,600	55,000	5,600	3,000	360	3,000
	04/26/93	6.84	9,400[e]	32,000	10,000	4,400	500	3,600
	07/20/93	8.52	8,400[e]	25,000	5,800	2,700	300	1,400
	07/20/93[dup]	8.52	8,900[e]	25,000	5,900	2,800	310	1,400
	10/18/93	9.36	18,000[e]	23,000	3,700	2,100	200	1,600
	10/18/93[dup]	9.36	14,000[e]	28,000	3,700	2,100	210	1,600
	01/07/94	8.37	22,000[e]	120,000	6,900	3,100	400	2,600
	04/11/94	6.96	17,000[e]	34,000	4,800	1,900	170	880
	07/19/94	8.02	---	23,000	4,300	1,100	210	1,000
	07/19/94[dup]	8.02	---	29,000	4,700	1,200	270	1,200
	10/06/94	11.00	---	61,000	4,600	1,900	290	1,900
	10/06/94[dup]	11.00	---	52,000	5,200	2,100	270	1,900
	01/04/95	8.07	---	23,000	4,500	1,300	49	500
	01/04/95[dup]	8.07	---	18,000	3,800	1,100	33	390
	04/12/95	**6.12**	**---**	**29,000**	**4,300**	**990**	**210**	**700**
S-3	01/23/91	14.67	---	<50	<0.5	<0.5	<0.5	<0.5
	04/25/91	12.96	---	<50	<0.5	<0.5	<0.5	<0.5
	07/19/91	12.45	---	<50	<0.5	<0.5	<0.5	<0.5
	10/09/91	12.98	---	<50	<0.5	<0.5	<0.5	<0.5
	01/23/92	13.06	---	<50	<0.5	<0.5	<0.5	<0.5
	04/27/92	7.25	100	<50	<0.5	<0.5	<0.5	<0.5
	07/10/92	8.46	68	<50	<0.5	<0.5	<0.5	<0.5
	10/06/92	11.77	<10	<50	<0.5	<0.5	<0.5	<0.5
	01/06/93	12.53	<10	<50	<0.5	<0.5	<0.5	<0.5
	04/26/93	4.28	69	<50	<0.5	<0.5	<0.5	<0.5
	07/20/93	5.70	120	<50	<0.5	<0.5	0.6	<0.5
	10/18/93	10.30	160	<50	<0.5	<0.5	<0.5	<0.5

Table 2. Analytic Results for Ground Water, Former Shell Service Station, WIC #204-5510-0303, 5755 Broadway, Oakland, California (continued)

Sample ID	Date	Depth to Water (ft)	TPH-D	TPH-G	B	E	T	X
			← parts per billion (µg/L) →					
	01/07/94[f]	12.40	58	160	59	4.9	26	22
	04/11/94	10.94	<50	<50	<0.52	<0.5	<0.5	<0.5
	07/19/94	8.12	110[a]	<50	<0.5	<0.5	<0.5	<0.5
	10/06/94	12.15	<50	<50	<0.5	<0.5	<0.5	<0.5
	01/04/95	11.18	<50	<50	<0.5	<0.5	<0.5	<0.5
	04/12/95	**3.76**	**110**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**
HP-1	01/27/93		14,000	22,000	2,500	1,400	130	140
HP-2	01/27/93		---	<50	<0.5	<0.5	4.4	<0.5
HP-3	01/27/93		---	<50	<0.5	<0.5	<0.5	<0.5
Trip Blank	01/23/91		---	<50	<0.5	<0.5	<0.5	<0.5
	04/25/91		---	---	---	---	---	---
	07/19/91		---	<50	<0.5	<0.5	<0.5	<0.5
	10/09/91		---	---	---	---	---	---
	01/23/92		<50	<50	<0.5	<0.5	<0.5	<0.5
	04/26/93		<50	<50	<0.5	<0.5	<0.5	<0.5
	07/20/93		---	<50	<0.5	<0.5	<0.5	<0.5
	10/18/93		<50	<50	<0.5	<0.5	<0.5	<0.5
	01/07/94		<50	<50	<0.5	<0.5	<0.5	<0.5
	04/11/94		<50	<50	<0.5	<0.5	<0.5	<0.5
	07/19/94		<50	<50	<0.5	<0.5	<0.5	<0.5
	10/06/94		---	<50	<0.5	<0.5	<0.5	<0.5
	01/04/95		---	<50	<0.5	<0.5	<0.5	<0.5
	04/12/95		**—**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**
DTSC MCLs				NE	1	680	100[g]	1,750

Table 2. Analytic Results for Ground Water, Former Shell Service Station, WIC #204-5510-0303, 5755 Broadway, Oakland, California (continued)

Abbreviations:

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
E = Ethylbenzene by EPA Method 8020
T = Toluene by EPA Method 8020
X = Xylenes by EPA Method 8020
--- = Not analyzed
DTSC MCLs = California Department of Toxic Substances Control maximum contaminant levels for drinking water
NE = Not established
<n = Not detected at detection limits of n ppb
dup = Duplicate sample
HP = Hydropunch ground water sample

Notes:

a = compounds detected and calculated as diesel are not characteristic of the standard diesel chromatographic pattern
b = Compounds detected and calculated as diesel appear to be the less volatile constituents of gasoline
c = Concentration reported as diesel primarily due to the presence of a heavier petroleum product, possibly motor oil
d = Compounds detected and calculated as gasoline are not characteristic of the standard gasoline chromatographic pattern
e = Concentration reported as diesel is primarily due to the presence of lighter petroleum product, possibly gasoline
f = TPH-G/BETX concentrations anomalous with historical data. Lab verified concentrations.
g = DTSC recommended action level for drinking water; MCL not established

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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

May 2, 1995

Shell Oil Company
P.O. Box 4023
Concord, CA 94524

Attn: Daniel T. Kirk

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

QUARTER:
2nd quarter of 1995

QUARTERLY GROUNDWATER SAMPLING REPORT 950412-H-3

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 site is performed in accordance with specific directions from the professional consulting firm overseeing work at the site on Shell's behalf.

Sample Containers

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

Sampling

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

Following collection, samples are promptly placed in an ice chest containing pre-frozen 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: Grady Glasser

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-1 *	4/12/95	TOB	--	NONE	--	--	6.66	17.62
S-2	4/12/95	TOB	--	NONE	--	--	6.12	15.02
S-3	4/12/95	TOB	--	NONE	--	--	3.76	15.02

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

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: 950417-453

Date: 4/12/95
Page 1 of 1

Site Address: 350 Grand Avenue, Oakland

WIC#: 204-5510-0204

Shell Engineer: Dan Kirk — Phone No.: (510) 675-6168 Fax #: 675-6172

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: TNH

Printed Name: TROY N. HORNER

LAB: SEQUOIA

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	950417 MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
S-1	4/12	1				5		X				X							1	
S-2	4/12	2				3						X							2	
S-3	4/12	3				5		X				X							3	
DUP	4/12	4				5		X				X							4	
TB	4/12	5				2						X							5	

Analysis Required

CHECK ONE (1) BOX ONLY — C1/D1

- Quarterly Monitoring [X] 6441
- Site Investigation [ ] 6441
- Soil Classify/Disposal [ ] 6442
- Water Classify/Disposal [ ] 6443
- Soil/Air Rem. or Syt. O & M [ ] 6462
- Water Rem. or Syt. O & M [ ] 6463
- Other [ ]

TURN AROUND TIME

- 24 hours [ ]
- 48 hours [ ]
- 10 days [X] (Normal)
- Other [ ] ____

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

Relinquished By (signature):	Printed Name: TROY N. HORNER	Date: 4/13/95 Time: 1400	Received (signature):	Printed Name:	Date: 4/13/95 Time: 1615
Relinquished By (signature):	Printed Name: William Simmons Jr	Date: 4/13/95 Time:	Received (signature):	Printed Name:	Date: Time:
Relinquished By (signature):	Printed Name:	Date: Time:	Received (signature):	Printed Name: Tony McMahon	Date: Time:

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

Sequoia Analytical

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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Blaine Technical Services
985 Timothy Drive
San Jose, CA 95133
Attention: Jim Keller

Project: Shell, Oakland, 950412-H3

Enclosed are the results from samples received at Sequoia Analytical on April 13, 1995. The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE COLLECTED	TEST METHOD
9504947 -01	LIQUID, S-1	04/12/95	TPHD_W Extractable TPH
9504947 -01	LIQUID, S-1	04/12/95	TPHGBW Purgeable TPH/BTEX
9504947 -02	LIQUID, S-2	04/12/95	TPHGBW Purgeable TPH/BTEX
9504947 -03	LIQUID, S-3	04/12/95	TPHD_W Extractable TPH
9504947 -03	LIQUID, S-3	04/12/95	TPHGBW Purgeable TPH/BTEX
9504947 -04	LIQUID, DUP	04/12/95	TPHD_W Extractable TPH
9504947 -04	LIQUID, DUP	04/12/95	TPHGBW Purgeable TPH/BTEX
9504947 -05	LIUQID, TB	04/12/95	TPHGBW Purgeable TPH/BTEX

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 Technical Services	Client Proj. ID: Shell, Oakland, 950412-H3	Sampled: 04/12/95
985 Timothy Drive	Sample Descript: S-1	Received: 04/13/95
San Jose, CA 95133	Matrix: LIQUID	Extracted: 04/19/95
	Analysis Method: EPA 8015 Mod	Analyzed: 04/20/95
Attention: Jim Keller	Lab Number: 9504947-01	Reported: 04/27/95

QC Batch Number: GC0419950HBPEXB
Instrument ID: GCHP4B

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel	50	290
Chromatogram Pattern:		
Unidentified HC		C9-C24

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	75

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Suzanne Chin
Project Manager

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Blaine Technical Services	Client Proj. ID: Shell, Oakland, 950412-H3	Sampled: 04/12/95
985 Timothy Drive	Sample Descript: S-1	Received: 04/13/95
San Jose, CA 95133	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 04/22/95
Attention: Jim Keller	Lab Number: 9504947-01	Reported: 04/27/95

QC Batch Number: GC042195BTEX03B
Instrument ID: GCHP03

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Benzene	**0.50**	**2.1**
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	98

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

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Project Manager

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Blaine Technical Services	Client Proj. ID: Shell, Oakland, 950412-H3	Sampled: 04/12/95
985 Timothy Drive	Sample Descript: S-2	Received: 04/13/95
San Jose, CA 95133	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 04/25/95
Attention: Jim Keller	Lab Number: 9504947-02	Reported: 04/27/95

QC Batch Number: GC042495BTEX21A
Instrument ID: GCHP21

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	**5000**	**29000**
Benzene	**50**	**4300**
Toluene	**50**	**210**
Ethyl Benzene	**50**	**990**
Xylenes (Total)	**50**	**700**
Chromatogram Pattern:		**Gas**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	77

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Suzanne Chin
Project Manager

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Blaine Technical Services	Client Proj. ID: Shell, Oakland, 950412-H3	Sampled: 04/12/95
985 Timothy Drive	Sample Descript: S-3	Received: 04/13/95
San Jose, CA 95133	Matrix: LIQUID	Extracted: 04/19/95
	Analysis Method: EPA 8015 Mod	Analyzed: 04/20/95
Attention: Jim Keller	Lab Number: 9504947-03	Reported: 04/27/95

QC Batch Number: GC0419950HBPEXB
Instrument ID: GCHP4B

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel	50	110
Chromatogram Pattern:		
Unidentified HC		**C11-C24**

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	86

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

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Project Manager

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Blaine Technical Services	Client Proj. ID: Shell, Oakland, 950412-H3	Sampled: 04/12/95
985 Timothy Drive	Sample Descript: S-3	Received: 04/13/95
San Jose, CA 95133	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 04/22/95
Attention: Jim Keller	Lab Number: 9504947-03	Reported: 04/27/95

QC Batch Number: GC042195BTEX02B
Instrument ID: GCHP02

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	96

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Suzanne Chin
Project Manager

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Blaine Technical Services	Client Proj. ID: Shell, Oakland, 950412-H3	Sampled: 04/12/95
985 Timothy Drive	Sample Descript: DUP	Received: 04/13/95
San Jose, CA 95133	Matrix: LIQUID	Extracted: 04/19/95
	Analysis Method: EPA 8015 Mod	Analyzed: 04/21/95
Attention: Jim Keller	Lab Number: 9504947-04	Reported: 04/27/95

QC Batch Number: GC0419950HBPEXB
Instrument ID: GCHP5B

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel	50	480
Chromatogram Pattern:		
Unidentified HC		C9-C24

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	113

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Suzanne Chin
Project Manager

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Blaine Technical Services	Client Proj. ID: Shell, Oakland, 950412-H3	Sampled: 04/12/95
985 Timothy Drive	Sample Descript: DUP	Received: 04/13/95
San Jose, CA 95133	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 04/22/95
Attention: Jim Keller	Lab Number: 9504947-04	Reported: 04/27/95

QC Batch Number: GC042195BTEX03B
Instrument ID: GCHP03

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	84

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Suzanne Chin
Project Manager

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Blaine Technical Services	Client Proj. ID: Shell, Oakland, 950412-H3	Sampled: 04/12/95
985 Timothy Drive	Sample Descript: TB	Received: 04/13/95
San Jose, CA 95133	Matrix: LIUQID	
	Analysis Method: 8015Mod/8020	Analyzed: 04/22/95
Attention: Jim Keller	Lab Number: 9504947-05	Reported: 04/27/95

QC Batch Number: GC042195BTEX03B
Instrument ID: GCHP03

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	84

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

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Project Manager

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Blaine Tech Services, Inc.	Client Project ID:	Shell, Oakland, 950412-H3	
985 Timothy Drive	Matrix:	Liquid	
San Jose, CA 95133			
Attention: Jim Keller	Work Order #:	9504947 -01, 04-05	Reported: Apr 28, 1995

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC042195BTEX03B	GC042195BTEX03B	GC042195BTEX03B	GC042195BTEX03B
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	R. Vincent	R. Vincent	R. Vincent	R. Vincent
MS/MSD #:	950474403	950474403	950474403	950474403
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	4/21/95	4/21/95	4/21/95	4/21/95
Analyzed Date:	4/21/95	4/21/95	4/21/95	4/21/95
Instrument I.D.#:	GCHP3	GCHP3	GCHP3	GCHP3
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	8.2	8.1	8.1	24
MS % Recovery:	82	81	81	80
Dup. Result:	9.0	8.2	7.8	25
MSD % Recov.:	90	82	78	83
RPD:	9.3	1.2	3.8	4.1
RPD Limit:	0-50	0-50	0-50	0-50
LCS #:	-	-	-	-
Prepared Date:	-	-	-	-
Analyzed Date:	-	-	-	-
Instrument I.D.#:	-	-	-	-
Conc. Spiked:	-	-	-	-
LCS Result:	-	-	-	-
LCS % Recov.:	-	-	-	-
MS/MSD LCS 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.

** MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

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Blaine Tech Services, Inc.	Client Project ID:	Shell, Oakland, 950412-H3	
985 Timothy Drive	Matrix:	Liquid	
San Jose, CA 95133			
Attention: Jim Keller	Work Order #:	9504947-03	Reported: Apr 28, 1995

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC042195BTEX02B	GC042195BTEX02B	GC042195BTEX02B	GC042195BTEX02B
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	R. Vincent	R. Vincent	R. Vincent	R. Vincent
MS/MSD #:	950474402	950474402	950474402	950474402
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	4/21/95	4/21/95	4/21/95	4/21/95
Analyzed Date:	4/21/95	4/21/95	4/21/95	4/21/95
Instrument I.D.#:	GCHP2	GCHP2	GCHP2	GCHP2
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	8.8	8.7	8.7	26
MS % Recovery:	88	87	87	87
Dup. Result:	9.0	8.9	8.9	29
MSD % Recov.:	90	89	89	97
RPD:	2.2	2.3	2.3	11
RPD Limit:	0-50	0-50	0-50	0-50
LCS #:	-	-	-	-
Prepared Date:	-	-	-	-
Analyzed Date:	-	-	-	-
Instrument I.D.#:	-	-	-	-
Conc. Spiked:	-	-	-	-
LCS Result:	-	-	-	-
LCS % Recov.:	-	-	-	-
MS/MSD LCS Control Limits	71-133	72-128	72-130	71-120

SEQUOIA ANALYTICAL

Suzanne Chin
Project Manager

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Blaine Tech Services, Inc.	Client Project ID:	Shell, Oakland, 950412-H3	
985 Timothy Drive	Matrix:	Liquid	
San Jose, CA 95133			
Attention: Jim Keller	Work Order #:	9504947-02	Reported: Apr 28, 1995

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC042495BTEX21A	GC042495BTEX21A	GC042495BTEX21A	GC042495BTEX21A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	J. Minkel	J. Minkel	J. Minkel	J. Minkel
MS/MSD #:	950493104	950493104	950493104	950493104
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	4/24/95	4/24/95	4/24/95	4/24/95
Analyzed Date:	4/24/95	4/24/95	4/24/95	4/24/95
Instrument I.D.#:	GCHP21	GCHP21	GCHP21	GCHP21
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	9.9	9.9	9.8	29
MS % Recovery:	99	99	98	97
Dup. Result:	9.6	9.1	9.0	27
MSD % Recov.:	96	91	90	90
RPD:	3.1	8.4	8.5	7.1
RPD Limit:	0-50	0-50	0-50	0-50
LCS #:	-	-	-	-
Prepared Date:	-	-	-	-
Analyzed Date:	-	-	-	-
Instrument I.D.#:	-	-	-	-
Conc. Spiked:	-	-	-	-
LCS Result:	-	-	-	-
LCS % Recov.:	-	-	-	-
MS/MSD LCS 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.	Client Project ID:	Shell, Oakland, 950412-H3	
985 Timothy Drive	Matrix:	Liquid	
San Jose, CA 95133			
Attention: Jim Keller	Work Order #:	9504947-01, 03-04	Reported: Apr 28, 1995

QUALITY CONTROL DATA REPORT

Analyte:	Diesel
QC Batch#:	GC0419950HBPEXB
Analy. Method:	EPA 8015M
Prep. Method:	EPA 3510
Analyst:	B. Ali
MS/MSD #:	950483401
Sample Conc.:	N.D.
Prepared Date:	4/19/95
Analyzed Date:	4/21/95
Instrument I.D.#:	GCHP4
Conc. Spiked:	600 µg/L
Result:	480
MS % Recovery:	80
Dup. Result:	470
MSD % Recov.:	78
RPD:	2.1
RPD Limit:	0-50

LCS #:	BLK041995
Prepared Date:	4/19/95
Analyzed Date:	4/20/95
Instrument I.D.#:	GCHP4
Conc. Spiked:	600 µg/L
LCS Result:	430
LCS % Recov.:	72

MS/MSD LCS Control Limits	38-122

SEQUOIA ANALYTICAL

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Project Manager

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