Weiss Associates Environmental and Geologic Services

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

December 20, 1994

eva chu
Alameda County Department of
Environmental Health
Hazardous Materials Division
1131 Harbor Bay Parkway, 2nd Floor
Alameda, CA 94502-6577

Re: Shell Service Station
WIC #204-0072-0403
1601 Webster Street
Alameda, California 94501
WA Job #81-0434-104

Dear Ms. chu:

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 2652.d. Included below are descriptions and results of activities performed in the fourth quarter 1994 and proposed work for the first quarter 1995.

Fourth Quarter 1994 Activities:

- WA submitted a revised workplan for ground water oxygenation to you on November 22, 1994. We subsequently received your approval on December 5, 1994 to implement ground water oxygenation at the site.

- Blaine Tech Services, Inc. (BTS) of San Jose, California measured ground water depths and collected water samples from the site wells. BTS' report describing these sampling activities and presenting analytic results for ground water is included as Attachment A.

- WA compiled the ground water elevation and analytic data (Tables 1 and 2) and prepared a ground water elevation contour map (Figure 2).

Anticipated First Quarter 1995 Activities:

- WA will implement ground water remediation at the site by January 30, 1995 as stated in your December 5, 1994 workplan approval letter.
- WA will submit a report presenting the results of the first quarter 1995 ground water sampling and depth measurements. The report will include tabulated chemical analytic results and a ground water elevation contour map.

Conclusions and Recommendations:

WA recommends continued ground water sampling according to the frequencies described in our second quarter 1994 report. These sampling frequencies include sampling MW-1 and S-1 annually for total petroleum hydrocarbons as gasoline (TPH-G), benzene, ethylbenzene, toluene and xylenes (BETX) and halogenated volatile organic compounds (HVOC's) and sampling MW-2 and MW-3 quarterly for TPH-G, BETX and HVOC's. This frequency is sufficient to monitor hydrocarbon and dissolved oxygen concentrations and the ground water flow direction at the site.

Please call if you have any questions.

DO should be measured quarterly in all wells.

Sincerely,
Weiss Associates

REGISTERED GEOLOGIST
JAMES W. CARMODY
No. EG 1576
CERTIFIED
ENGINEERING
GEOLOGIST
STATE OF CALIFORNIA

J. Michael Asport
Staff Scientist I

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

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

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

JMA/JWC:kam
[illegible].DOC

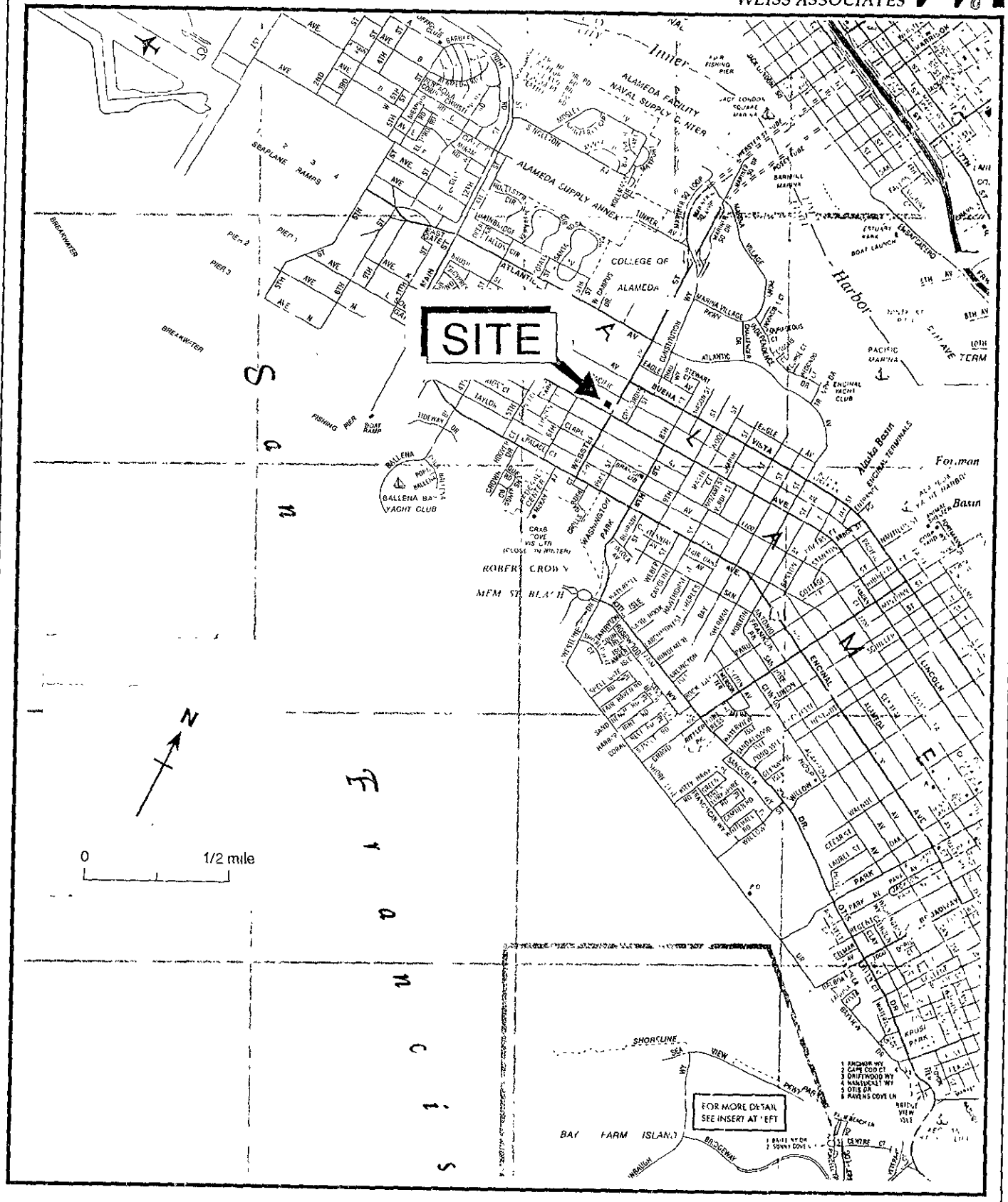

Figure 1. Site Location Map - Shell Service Station, WIC# 204-0072-0403, 1601 Webster Street, Alameda, CA

8/20/90

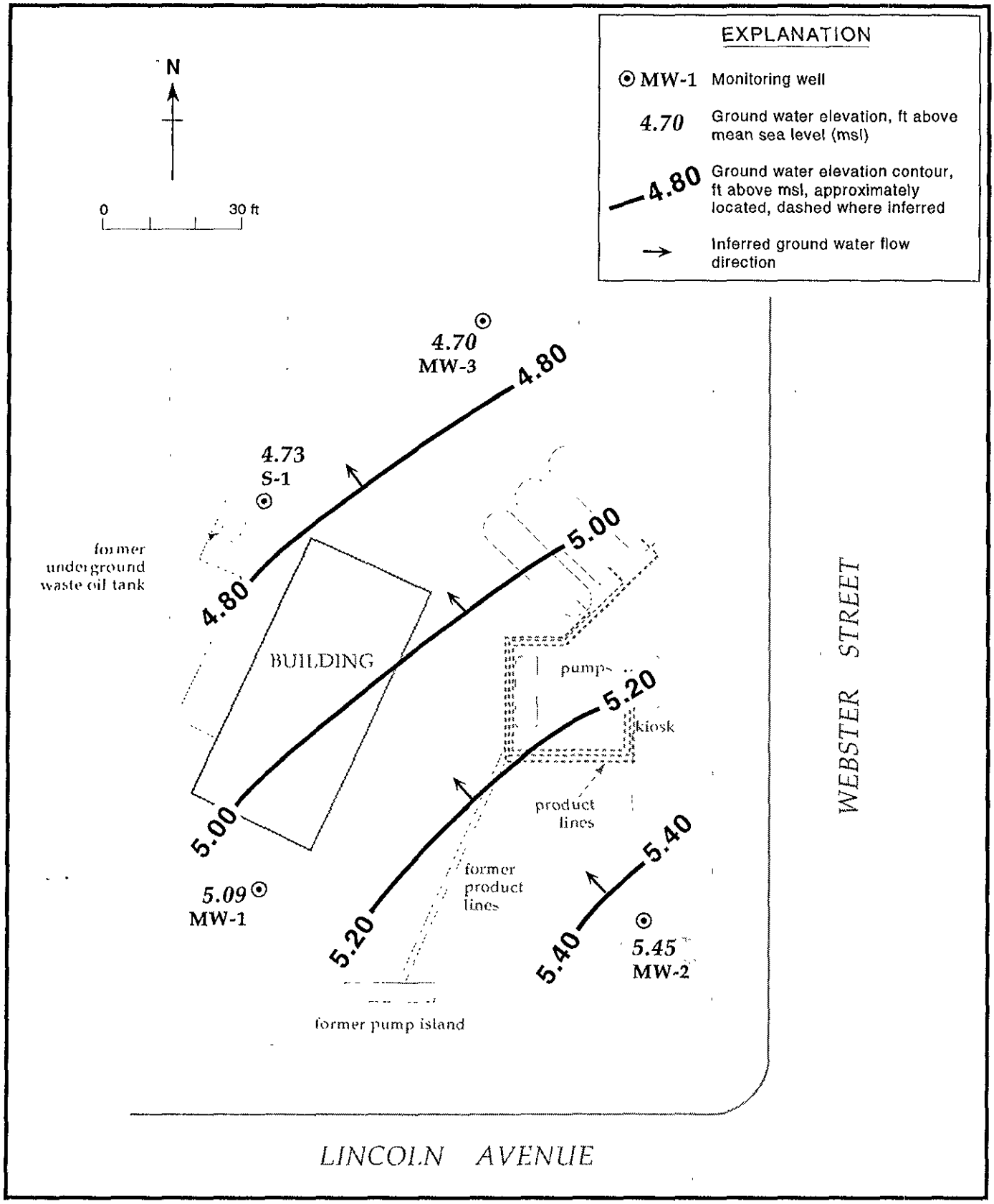

Figure 2. Monitoring Well Locations and Ground Water Elevations - October 6, 1994 - Shell Service Station WIC #204-0072-0403, 1601 Webster Street, Alameda, California

Table 1. Ground Water Elevations - Shell Service Station WIC #204-0072-0403, 1601 Webster Street Alameda, California

Well ID	Date	Top-of-Casing Elevation (ft above msl)	Depth to Water (ft)	Ground Water Elevation (ft above msl)
MW-1	04/11/90	**13.80**	8.22	5.58
	07/18/90		9.14	4.66
	10/18/90		10.37	3.43
	01/25/91		10.41	3.39
	04/11/91		7.37	6.43
	07/18/91		8.86	4.94
	10/17/91		10.47	3.33
	01/24/92		9.18	4.62
	04/23/92		6.95	6.85
	07/22/92		8.01	5.79
	10/02/92		9.81	3.99
	01/05/93		7.26	6.54
	04/08/93	**13.80**[a]	5.85	7.95
	07/20/93		6.83	6.97
	10/15/93		8.07	5.73
	01/07/94		7.82	5.98
	04/13/94		6.91	6.89
	07/26/94		7.51	6.29
	10/06/94		**8.71**	**5.09**
MW-2	04/11/90	**13.20**	7.69	5.51
	07/18/90		8.56	4.64
	10/18/90		9.76	3.44
	01/25/91		9.78	3.42
	04/11/91		6.87	6.33
	07/18/91		8.27	4.93
	10/17/91		9.89	3.31
	01/24/92		8.60	4.60
	04/23/92		6.48	6.72
	07/02/92		7.37	5.83
	10/02/92		9.20	4.00
	01/05/93		6.80	6.40
	04/08/93	**13.20**[a]	5.40	7.80
	07/20/93		6.05	7.15
	10/15/93		7.04	6.16
	01/07/94		6.99	6.21
	04/13/94		6.20	7.00
	07/26/94		6.63	6.57
	10/06/94		**7.75**	**5.45**
MW-3	04/08/93	**12.80**	5.48	7.32
	07/20/93		6.38	6.42
	10/15/93		7.53	5.27

— Table 1 continued on next page —

Table 1. Ground Water Elevations - Shell Service Station WIC #204-0072-0403, 1601 Webster Street Alameda, California (continued)

Well ID	Date	Top-of-Casing Elevation (ft above msl)	Depth to Water (ft)	Ground Water Elevation (ft above msl)
	01/07/94		7.38	5.42
	04/13/94		6.50	6.30
	07/26/94		7.00	5.80
	10/06/94		**8.10**	**4.70**
S-1	09/11/89	**13.77**	9.82	3.95
	04/11/90		8.41	5.36
	07/18/90		9.31	4.46
	10/18/90		10.43	3.34
	01/25/91		10.49	3.28
	04/11/91		7.68	6.09
	07/18/91		8.95	4.82
	10/17/91		10.62	3.15
	01/24/92		9.32	4.45
	04/23/92		7.27	6.50
	07/02/92		8.19	5.58
	10/02/92		9.95	3.82
	01/05/93		7.64	6.13
	04/08/93	**13.74**[a]	6.10	7.64
	07/20/93		7.18	6.56
	10/15/93		8.39	5.35
	01/07/94		8.19	5.55
	04/13/94		7.22	6.52
	07/26/94		7.82	5.92
	10/06/94		**9.01**	**4.73**

Notes:

a = Top of casing resurveyed on March 30, 1993

Table 2. Analytic Results for Ground Water - Shell Service Station, WIC #204-0072-0403, 1601 Webster Street, Alameda, California

Sample ID	Date Sampled	Depth to Water (ft)	TPH-G	TPH-D	B	E	T	X	c-1,2-DCE	1,2-DCA	TOG
			← parts per billion (µg/L) →								
MW-1	04-11-90	8.22	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10,000
	07-18-90	9.14	<50	---	<0.5	<0.5	<0.5	<0.5	3	<0.5	<5,000
	10-18-90	10.37	<50	---	<0.5	<0.5	<0.5	<0.5	7.9	<0.5	<5,000
	01-25-91	10.41	<50	---	<0.5	<0.5	<0.5	<0.5	5.6	<0.5	---
	04-11-91	7.37	<50	---	<0.5	<0.5	<0.5	<0.5	0.9	<0.5	---
	07-18-91	8.86	<50	---	<0.5	<0.5	<0.5	<0.5	4.4	<0.5	---
	10-17-91	10.47	<50	---	<0.5	<0.5	<0.5	<0.5	7.2	<0.5	---
	01-24-92	9.18	<50	---	<0.5	<0.5	<0.5	<0.5	1.4	<0.5	---
	04-23-92	6.95	<50		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	---
	07-02-92	8.01	<50	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	---
	10-02-92	9.81	<50	---	<0.5	<0.5	<0.5	<0.5	2	<0.5	---
	01-05-93	7.26	<50	---	<0.5	<0.5	<0.5	<0.5	2	<0.5	---
	04-08-93[a]	5.85	<50	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	---
	07-20-93[b]	6.83	<50	---	<0.5	<0.5	<0.5	<0.5	0.76	<0.5	---
	10-15-93	8.07	<50	---	<0.5	<0.5	<0.5	<0.5	0.71	<0.5	---
	01-07-94	7.82	<50	---	<0.5	<0.5	<0.5	<0.5	3.1	0.85	---
	04-13-94	6.91	<50	---	<0.5	<0.5	<0.5	<0.5	3.6	0.95	---
	07-26-94	7.51	<50	---	<0.5	<0.5	<0.5	<0.5	<0.4	<0.4	---
	10-06-94[c]	**8.71**	**<50**	**---**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.4**	**<0.4**	**---**
MW-2	04-11-90	7.69	580	430	20	1.2	4.9	73	<0.5	1.1	<10,000
	07-18-90	8.56	1,400	---	110	71	310	310	<0.5	0.7	<5,000
	10-18-90	9.76	1,900	1,300[d]	110	89	470	400	<0.5	0.9	<5,000
	01-25-91	9.78	8,100	---	430	480	1,200	2,600	<0.5	0.8	---
	04-11-91	6.87	2,600	---	130	250	150	330	<0.5	<0.5	---
	07-15-91	8.27	1,300	---	100	84	59	120	<0.5	0.8	---
	10-17-91	9.89	2,100	---	180	150	260	520	<0.5	0.6	---
	01-24-92	8.60	7,100	---	450	960	450	1,600	110	<0.5	---
	04-23-92	6.48	16,000	---	320	650	740	2,600	<2.5	<2.5	---
	07-02-92	7.37	33,000	---	2,500	2,000	3,700	9,600	<50	<50	---
	10-02-92	9.20	7,000	---	960	570	650	1,200	<50	<50	---
	01-05-93	6.80	8,900	---	550	600	500	1,900	<2	<2	---

— Table 2 continued on next page —

Table 2. Analytic Results for ground Water - Shell Service Station, WIC #204-0072-0403, 1601 Webster Street Alameda, California (continued)

Sample ID	Date Sampled	Depth to Water (ft)	TPH-G	TPH-D	B	E	T	X	c-1,2-DCE	1,2-DCA	TOG
			← parts per billion (µg/L) →								
	04-08-93	5.40	13,000	---	670	900	580	2,900	0.68	<0.5	---
	04-08-93[dup]	5.40	13,000	---	830	1,100	740	3,700	0 64	<0.5	---
	07-20-93	6.05	10,000	---	1,200	1,100	630	4,000	0.87	<0.5	---
	07-20-93[dup]	6.05	12,000	---	1,200	1,100	600	3,800	0.80	<0.5	---
	10-15-93	7.04	24,000	---	1,400	1,200	3,400	5,200	<0.5	<0.5	---
	10-15-93[dup]	7.04	19,000	---	1,200	1,000	2,800	4,400	<0.5	<0.5	---
	01-07-94	6.99	27,000	---	1,300	1,900	2,700	7,900	<10	<10	---
	01-07-94[dup]	6.99	33,000	---	1,100	1,700	2,300	6,900	<10	<10	---
	04-13-94	6.20	16,000	---	460	820	93	2,700	<25	<25	---
	04-13-94[dup]	6.20	18,000	---	500	880	100	3,000	<25	<25	---
	07-26-94	6.63	25,000	---	1,600	1,500	1,500	6,800	<0.4	<0.4	---
	07-26-94[dup]	6.63	28,000	---	1,700	1,600	1,600	7,300	<0.4	<0.4	---
	10-06-94	**7.75**	**15,000**	**---**	**850**	**1,000**	**650**	**4,000**	**<0.4**	**<0.4**	**---**
	10-06-94[dup]	**7.75**	**17,000**	**---**	**1000**	**1,200**	**630**	**4,500**	**<0.4**	**<0.4**	**---**
MW-3	02-25-93	5.37	58	140	<0.5	2.5	<0.5	6.4	<0.5	1.5	<5,000
	04-08-93	5.48	<50	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	---
	07-20-93[e]	6.38	<50	---	1.2	<0.5	<0.5	<0.5	<0.5	2.8	---
	10-15-93[f]	7.53	60	---	<0.5	<0.5	<0.5	<0.5	<0.5	0.55	---
	01-07-94	7.38	74	---	<0.5	<0.5	<0.5	0.76	<0.5	0.91	---
	04-13-94	6.50	<50	---	<0.5	<0.5	<0.5	<0.5	<1.3	<1.3	---
	07-26-94	7.00	750[g]	---	<0.5	<0.5	<0.5	<0.5	<0.4	<0.4	---
	10-06-94	**8.10**	**1,900[g]**	**---**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.4**	**<0.4**	**---**
S-1	09-04-87[h]		---	---	<5	<5	<5	<5	<0 5	<0.5	---
	09-11-89[i]	9.82	<50	<100	<0.5	<1	<1	<3	<0.5	<0.5	<1,000
	04-11-90	8.41	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10,000
	07-18-90	9.31	<50	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5,000
	10-18-90	10.43	<50	---	<0 5	<0.5	<0.5	<0.5	<0.5	<0.5	<5,000
	01-25-91	10.49	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---
	04-11-91	7.68	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---
	07-18-91	8.95	<50	---	<0 5	<0.5	<0.5	<0.5	---	---	---
	10-17-91	10.62	<50	---	<0.5	<0.5	<0.5	<5	---	---	---

— Table 2 continued on next page —

Table 2 Analytic Results for ground Water - Shell Service Station, WIC #204-0072-0403, 1601 Webster Street Alameda, California (continued)

Sample ID	Date Sampled	Depth to Water (ft)	TPH-G	TPH-D	B	E	T	X	c-1,2-DCE	1,2-DCA	TOG
			← parts per billion (µg/L) →								
	01-24-92	9.32	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---
	04-23-92	7.27	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---
	07-02-92	8.19	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---
	10-02-92	9.95	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---
	01-05-93	7 64	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---
	04-08-93	6.10	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---
	07-20-93	7.18	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---
	10-15-93	8.39	<50	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	---
	01-07-94	8 19	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---
	04-13-94	7.22	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---
	07-26-94	7.82	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---
	10-06-94	**9.01**	**<50**	**---**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.4**	**<0.4**	**---**
Trip Blank	07-18-90		<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---
	10-18-90		<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---
	01-25-91		<50	---	<0.5	<0.5	<0.5	0 8	---	---	---
	04-11-91		<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---
	07-18-91		<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---
	10-17-91		<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---
	01-24-92		<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---
	04-23-92		<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---
	07-02-92		<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---
	10-02-92		<50	---	<0.5	<0.5	<0.5	<0 5	---	---	---
	01-05-93		<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---
	04-08-93		<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---
	07-20-93		<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---
	10-15-93		<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---
	01-07-94		<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---
	04-13-94		<50	---	<0.5	<0.5	<0.5[j]	<0.5	---	---	---
	07-26-94		<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---
	10-06-94		**<50**	**---**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**---**	**---**	**---**
DTSC MCLs			NE	NE	1	680	100[k]	1,750	6.0	0.5	NE

— Table 2 continued on next page —

Table 2. Analytic Results for ground Water - Shell Service Station, WIC #204-0072-0403, 1601 Webster Street Alameda, 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 602, 624, or 8020
E = Ethylbenzene by EPA Method 602, 624, or 8020
T = Toluene by EPA Method 602, 624, or 8020
X = Xylenes by EPA Method 602, 624, or 8020
c-1,2-DCE = cis-1,2-dichloroethene by EPA Method 601 or 624
1,2-DCA = 1,2-dichloroethane by EPA Method 601 or 624
TOG = Total non-polar oil and grease by American Public Health Association Standard Method 503E
<n = Not detected at detection limit of n ppb
DTSC MCL = California Department of Toxic Substances Control maximum contaminant level for drinking water
NE = Not established
--- = Not analyzed
dup = Duplicate sample

Notes:

a = Chloroform detected at 0 0071 ppm by EPA Method 8010
b = Chloroform detected at 1.1 ppb by EPA Method 8010
c = Trichloroethylene detected at 1.7ppb.
d = Compounds detected and calculated as diesel appear to be the less volatile constituents of gasoline
e = Chloroform detected at 1.5 ppb by EPA Method 8010
f = Chloroform detected at 3.6 ppb by Method 8010
g = The result for Gasoline in and unknown hydrocarbon which consists of a single peak.
h = 0 12 ppm acetone detected by EPA Method 624; no other volatile organic compounds detected
i = Metals detected by EPA Method 6010; 0.020 ppm chromium, 0.060 ppm lead and 0.030 ppm zinc; no cadmium detected above detection limit of 0.010 ppm; no PCBs or semi-volatile compounds detected by EPA Method 625
j = 0.54 ppb Toluene detected in equipment blank
k = DTSC recommended action level for drinking water; 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

October 28, 1994

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

Attn: Daniel T. Kirk

SITE:
Shell WIC #204-0072-0403
1601 Webster Street
Alameda, California

QUARTER:
4th quarter of 1994

QUARTERLY GROUNDWATER SAMPLING REPORT 941006-J-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 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 site is performed in accordance with specific directions from the professional consulting firm overseeing work at the site on Shell's behalf.

Sample Containers

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

Sampling

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

Following collection, samples are promptly placed in an ice chest containing prefrozen blocks of an inert ice substitute such as Blue Ice or Super Ice. The samples are maintained in either an ice chest or a refrigerator until delivered into the custody of the laboratory.

Sample Designations

All sample containers are identified with a site designation and a discrete sample identification number specific to that particular groundwater well. Additional standard notations (e.g. time, date, sampler) are also made on the label.

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 National Environmental Testing, Inc. in Santa Rosa, California. NET is a California Department of Health Services certified Hazardous Materials Testing Laboratory and is listed as DOHS HMTL #178.

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)
MW-1	10/6/94	TOC	–	NONE	--	–	8.71	20.75
MW-2 *	10/6/94	TOC	ODOR	NONE	–	–	7.75	19.85
MW-3	10/6/94	TOC	--	NONE	–	–	8.10	19.43
S-1	10/6/94	TOC	–	NONE	--	–	9.01	19.83

* Sample DUP was a duplicate sample taken from well MW-2.

3098

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: 941006J1

Date: 10/06/94
Page 1 of 1

Site Address: 1601 Webster Street, Alameda

WIC#: 204-0072-0403

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:

Printed Name: JEAN GATINEAU

LAB: NET

CHECK ONE (1) BOX ONLY	CT/DT	TURN AROUND TIME
Quarterly Monitoring [X]	5461	24 hours [ ]
Site Investigation [ ]	5441	48 hours [ ]
Soil Classify/Disposal [ ]	5442	16 days [X] (Normal)
Water Classify/Disposal [ ]	5443	Other [ ]
Soil/Air Rem. or Sys. O & M [ ]	5452	NOTE: Notify Lab as soon as Possible of 24/48 hrs. TAT.
Water Rem. or Sys. O & M [ ]	5453	
Other [ ]		

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	8010	TDS	Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
MW-1	10/06			X		8						X	X	X						
MW-2	↓			↓		8						↓	↓	↓						
MW-3	↓			↓		8						↓	↓	↓						
S-1	↓			↓		8						↓	↓	↓						
EIB,	↓			↓		7						↓	↓	↓					(10/11/94 [illegible])	
DUP	↓			↓		7						↓	↓	↓					Seals intact AL	
TIB,	↓			↓		2						↓								

Relinquished By (signature):	Printed Name:	Date / Time:	Received (signature):	Printed Name:	Date / Time:
Jean Gatineau	JEAN GATINEAU	Date: 10/7/94 Time: 1100	GP Lumbre	GP LUMBRE	Date: 10/7 Time: 11:00
GP Lumbre	GP LUMBRE	Date: 10/7 Time: 17:00	A Lope via NCS	Anny Lope	Date: 10/8/94 Time: 08:30
		Date: Time:			Date: Time:

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

NATIONAL ENVIRONMENTAL TESTING, INC.

Santa Rosa Division
435 Tesconi Circle
Santa Rosa, CA 95401
Tel: (707) 526-7200
Fax: (707) 526-9623

Jim Keller
Blaine Tech Services
985 Timothy Dr.
San Jose, CA 95133

Date: 10/21/1994
NET Client Acct. No: 1821
NET Pacific Job No: 94.04747
Received: 10/08/1994

Client Reference Information

SHELL, 1601 Webster St., Alameda, 941006J1

Sample analysis in support of the project referenced above has been completed and results are presented on following pages. Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Approved by:

Judy Ridley
Project Coordinator

Jim Hoch
Operations Manager

Enclosure(s)

Client Name: Blaine Tech Services
Client Acct: 1821
NET Job No: 94.04747

Date: 10/21/1994
ELAP Cert: 1386
Page: 2

Ref: SHELL, 1601 Webster St., Alameda, 941006J1

SAMPLE DESCRIPTION: MW-1
Date Taken: 10/06/1994
Time Taken:
NET Sample No: 219273

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed
Tot. Dissolved Solids (TFR)	430,000		10,000	ug/L	160.1		10/12/1994
TPH (Gas/BTXE,Liquid)							
METHOD 5030/M8015	--						10/15/1994
DILUTION FACTOR*	1						10/15/1994
as Gasoline	ND		50	ug/L	5030		10/15/1994
Carbon Range:	--						10/15/1994
METHOD 8020 (GC,Liquid)	--						10/15/1994
Benzene	ND		0.5	ug/L	8020		10/15/1994
Toluene	ND		0.5	ug/L	8020		10/15/1994
Ethylbenzene	ND		0.5	ug/L	8020		10/15/1994
Xylenes (Total)	ND		0.5	ug/L	8020		10/15/1994
SURROGATE RESULTS	--						10/15/1994
Bromofluorobenzene (SURR)	105			% Rec.	5030		10/15/1994

Ref: SHELL, 1601 Webster St., Alameda, 941006J1

SAMPLE DESCRIPTION: MW-1
Date Taken: 10/06/1994
Time Taken:
NET Sample No: 219273

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed
METHOD 8010 (GC,Liquid)							
DILUTION FACTOR*	1						10/12/1994
Bromodichloromethane	ND		0.4	ug/L	8010		10/12/1994
Bromoform	ND		0.4	ug/L	8010		10/12/1994
Bromomethane	ND		0.4	ug/L	8010		10/12/1994
Carbon tetrachloride	ND		0.4	ug/L	8010		10/12/1994
Chlorobenzene	ND		0.4	ug/L	8010		10/12/1994
Chloroethane	ND		0.4	ug/L	8010		10/12/1994
2-Chloroethylvinyl ether	ND		1.0	ug/L	8010		10/12/1994
Chloroform	ND		0.4	ug/L	8010		10/12/1994
Chloromethane	ND		0.4	ug/L	8010		10/12/1994
Dibromochloromethane	ND		0.4	ug/L	8010		10/12/1994
1,2-Dichlorobenzene	ND		0.4	ug/L	8010		10/12/1994
1,3-Dichlorobenzene	ND		0.4	ug/L	8010		10/12/1994
1,4-Dichlorobenzene	ND		0.4	ug/L	8010		10/12/1994
Dichlorodifluoromethane	ND		0.4	ug/L	8010		10/12/1994
1,1-Dichloroethane	ND		0.4	ug/L	8010		10/12/1994
1,2-Dichloroethane	ND		0.4	ug/L	8010		10/12/1994
1,1-Dichloroethene	ND		0.4	ug/L	8010		10/12/1994
trans-1,2-Dichloroethene	ND		0.4	ug/L	8010		10/12/1994
1,2-Dichloropropane	ND		0.4	ug/L	8010		10/12/1994
cis-1,3-Dichloropropene	ND		0.4	ug/L	8010		10/12/1994
trans-1,3-Dichloropropene	ND		0.4	ug/L	8010		10/12/1994
Methylene chloride	ND		10	ug/L	8010		10/12/1994
1,1,2,2-Tetrachloroethane	ND		0.4	ug/L	8010		10/12/1994
Tetrachloroethene	ND		0.4	ug/L	8010		10/12/1994
1,1,1-Trichloroethane	ND		0.4	ug/L	8010		10/12/1994
1,1,2-Trichloroethane	ND		1	ug/L	8010		10/12/1994
Trichloroethene	1.7		0.4	ug/L	8010		10/12/1994
Trichlorofluoromethane	ND		0.4	ug/L	8010		10/12/1994
Vinyl chloride	ND		0.4	ug/L	8010		10/12/1994
SURROGATE RESULTS	--						10/12/1994
1,4-Difluorobenzene (SURR)	95			% Rec.			10/12/1994
Bromochloromethane (SURR)	97			% Rec.			10/12/1994

Ref: SHELL, 1601 Webster St., Alameda, 941006J1

SAMPLE DESCRIPTION: MW-2
Date Taken: 10/06/1994
Time Taken:
NET Sample No: 219274

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed
Tot. Dissolved Solids (TFR)	580,000		10,000	ug/L	160.1		10/12/1994
TPH (Gas/BTXE,Liquid)							
METHOD 5030/M8015	--						10/15/1994
DILUTION FACTOR*	100						10/15/1994
as Gasoline	15,000		5000	ug/L	5030		10/15/1994
Carbon Range:	C5-C12						10/15/1994
METHOD 8020 (GC,Liquid)	--						10/15/1994
Benzene	850		50	ug/L	8020		10/15/1994
Toluene	650		50	ug/L	8020		10/15/1994
Ethylbenzene	1,000		50	ug/L	8020		10/15/1994
Xylenes (Total)	4,000		50	ug/L	8020		10/15/1994
SURROGATE RESULTS	--						10/15/1994
Bromofluorobenzene (SURR)	113			% Rec.	5030		10/15/1994

Ref: SHELL, 1601 Webster St., Alameda, 941006J1

SAMPLE DESCRIPTION: MW-2
Date Taken: 10/06/1994
Time Taken:
NET Sample No: 219274

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed
METHOD 8010 (GC,Liquid)							
DILUTION FACTOR*	1						10/12/1994
Bromodichloromethane	ND		0.4	ug/L	8010		10/12/1994
Bromoform	ND		0.4	ug/L	8010		10/12/1994
Bromomethane	ND		0.4	ug/L	8010		10/12/1994
Carbon tetrachloride	ND		0.4	ug/L	8010		10/12/1994
Chlorobenzene	ND		0.4	ug/L	8010		10/12/1994
Chloroethane	ND		0.4	ug/L	8010		10/12/1994
2-Chloroethylvinyl ether	ND		1.0	ug/L	8010		10/12/1994
Chloroform	ND		0.4	ug/L	8010		10/12/1994
Chloromethane	ND		0.4	ug/L	8010		10/12/1994
Dibromochloromethane	ND		0.4	ug/L	8010		10/12/1994
1,2-Dichlorobenzene	ND		0.4	ug/L	8010		10/12/1994
1,3-Dichlorobenzene	ND		0.4	ug/L	8010		10/12/1994
1,4-Dichlorobenzene	ND		0.4	ug/L	8010		10/12/1994
Dichlorodifluoromethane	ND		0.4	ug/L	8010		10/12/1994
1,1-Dichloroethane	ND		0.4	ug/L	8010		10/12/1994
1,2-Dichloroethane	ND		0.4	ug/L	8010		10/12/1994
1,1-Dichloroethene	ND		0.4	ug/L	8010		10/12/1994
trans-1,2-Dichloroethene	ND		0.4	ug/L	8010		10/12/1994
1,2-Dichloropropane	ND		0.4	ug/L	8010		10/12/1994
cis-1,3-Dichloropropene	ND		0.4	ug/L	8010		10/12/1994
trans-1,3-Dichloropropene	ND		0.4	ug/L	8010		10/12/1994
Methylene chloride	ND		10	ug/L	8010		10/12/1994
1,1,2,2-Tetrachloroethane	ND		0.4	ug/L	8010		10/12/1994
Tetrachloroethene	ND		0.4	ug/L	8010		10/12/1994
1,1,1-Trichloroethane	ND		0.4	ug/L	8010		10/12/1994
1,1,2-Trichloroethane	ND		1	ug/L	8010		10/12/1994
Trichloroethene	ND		0.4	ug/L	8010		10/12/1994
Trichlorofluoromethane	ND		0.4	ug/L	8010		10/12/1994
Vinyl chloride	ND		0.4	ug/L	8010		10/12/1994
SURROGATE RESULTS	--						10/12/1994
1,4-Difluorobenzene (SURR)	MI			% Rec.			10/12/1994
Bromochloromethane (SURR)	110			% Rec.			10/12/1994

Client Name: Blaine Tech Services
Client Acct: 1821
NET Job No: 94.04747

Date: 10/21/1994
ELAP Cert: 1386
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Ref: SHELL, 1601 Webster St., Alameda, 941006J1

SAMPLE DESCRIPTION: MW-3
Date Taken: 10/06/1994
Time Taken:
NET Sample No: 219275

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed
Tot. Dissolved Solids (TFR)	600,000		10,000	ug/L	160.1		10/12/1994
TPH (Gas/BTXE,Liquid)							
METHOD 5030/M8015	--						10/17/1994
DILUTION FACTOR*	1						10/17/1994
as Gasoline	1,900	G1	50	ug/L	5030		10/17/1994
Carbon Range:	C5-C6						10/17/1994
METHOD 8020 (GC,Liquid)	--						10/17/1994
Benzene	ND		0.5	ug/L	8020		10/17/1994
Toluene	ND		0.5	ug/L	8020		10/17/1994
Ethylbenzene	ND		0.5	ug/L	8020		10/17/1994
Xylenes (Total)	ND		0.5	ug/L	8020		10/17/1994
SURROGATE RESULTS	--						10/17/1994
Bromofluorobenzene (SURR)	118			% Rec.	5030		10/17/1994

G1 : The result for Gasoline is an unk. HC which consists of a single peak.

Ref: SHELL, 1601 Webster St., Alameda, 941006J1

SAMPLE DESCRIPTION: MW-3
Date Taken: 10/06/1994
Time Taken:
NET Sample No: 219275

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed
METHOD 8010 (GC,Liquid)							
DILUTION FACTOR*	1						10/12/1994
Bromodichloromethane	ND		0.4	ug/L	8010		10/12/1994
Bromoform	ND		0.4	ug/L	8010		10/12/1994
Bromomethane	ND		0.4	ug/L	8010		10/12/1994
Carbon tetrachloride	ND		0.4	ug/L	8010		10/12/1994
Chlorobenzene	ND		0.4	ug/L	8010		10/12/1994
Chloroethane	ND		0.4	ug/L	8010		10/12/1994
2-Chloroethylvinyl ether	ND		1.0	ug/L	8010		10/12/1994
Chloroform	ND		0.4	ug/L	8010		10/12/1994
Chloromethane	ND		0.4	ug/L	8010		10/12/1994
Dibromochloromethane	ND		0.4	ug/L	8010		10/12/1994
1,2-Dichlorobenzene	ND		0.4	ug/L	8010		10/12/1994
1,3-Dichlorobenzene	ND		0.4	ug/L	8010		10/12/1994
1,4-Dichlorobenzene	ND		0.4	ug/L	8010		10/12/1994
Dichlorodifluoromethane	ND		0.4	ug/L	8010		10/12/1994
1,1-Dichloroethane	ND		0.4	ug/L	8010		10/12/1994
1,2-Dichloroethane	ND		0.4	ug/L	8010		10/12/1994
1,1-Dichloroethene	ND		0.4	ug/L	8010		10/12/1994
trans-1,2-Dichloroethene	ND		0.4	ug/L	8010		10/12/1994
1,2-Dichloropropane	ND		0.4	ug/L	8010		10/12/1994
cis-1,3-Dichloropropene	ND		0.4	ug/L	8010		10/12/1994
trans-1,3-Dichloropropene	ND		0.4	ug/L	8010		10/12/1994
Methylene chloride	ND		10	ug/L	8010		10/12/1994
1,1,2,2-Tetrachloroethane	ND		0.4	ug/L	8010		10/12/1994
Tetrachloroethene	ND		0.4	ug/L	8010		10/12/1994
1,1,1-Trichloroethane	ND		0.4	ug/L	8010		10/12/1994
1,1,2-Trichloroethane	ND		1	ug/L	8010		10/12/1994
Trichloroethene	ND		0.4	ug/L	8010		10/12/1994
Trichlorofluoromethane	ND		0.4	ug/L	8010		10/12/1994
Vinyl chloride	ND		0.4	ug/L	8010		10/12/1994
SURROGATE RESULTS	--						10/12/1994
1,4-Difluorobenzene (SURR)	83			% Rec.			10/12/1994
Bromochloromethane (SURR)	101			% Rec.			10/12/1994

Ref: SHELL, 1601 Webster St., Alameda, 941006J1

SAMPLE DESCRIPTION: S-1
Date Taken: 10/06/1994
Time Taken:
NET Sample No: 219276

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed
Tot. Dissolved Solids (TFR)	550,000		10,000	ug/L	160.1		10/12/1994
TPH (Gas/BTXE,Liquid)							
METHOD 5030/M8015	--						10/16/1994
DILUTION FACTOR*	1						10/16/1994
as Gasoline	ND		50	ug/L	5030		10/16/1994
Carbon Range:	--						10/16/1994
METHOD 8020 (GC,Liquid)	--						10/16/1994
Benzene	ND		0.5	ug/L	8020		10/16/1994
Toluene	ND		0.5	ug/L	8020		10/16/1994
Ethylbenzene	ND		0.5	ug/L	8020		10/16/1994
Xylenes (Total)	ND		0.5	ug/L	8020		10/16/1994
SURROGATE RESULTS	--						10/16/1994
Bromofluorobenzene (SURR)	102			% Rec.	5030		10/16/1994

Ref: SHELL, 1601 Webster St., Alameda, 941006J1

SAMPLE DESCRIPTION: S-1
Date Taken: 10/06/1994
Time Taken:
NET Sample No: 219276

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed
METHOD 8010 (GC,Liquid)							
DILUTION FACTOR*	1						10/12/1994
Bromodichloromethane	ND		0.4	ug/L	8010		10/12/1994
Bromoform	ND		0.4	ug/L	8010		10/12/1994
Bromomethane	ND		0.4	ug/L	8010		10/12/1994
Carbon tetrachloride	ND		0.4	ug/L	8010		10/12/1994
Chlorobenzene	ND		0.4	ug/L	8010		10/12/1994
Chloroethane	ND		0.4	ug/L	8010		10/12/1994
2-Chloroethylvinyl ether	ND		1.0	ug/L	8010		10/12/1994
Chloroform	ND		0.4	ug/L	8010		10/12/1994
Chloromethane	ND		0.4	ug/L	8010		10/12/1994
Dibromochloromethane	ND		0.4	ug/L	8010		10/12/1994
1,2-Dichlorobenzene	ND		0.4	ug/L	8010		10/12/1994
1,3-Dichlorobenzene	ND		0.4	ug/L	8010		10/12/1994
1,4-Dichlorobenzene	ND		0.4	ug/L	8010		10/12/1994
Dichlorodifluoromethane	ND		0.4	ug/L	8010		10/12/1994
1,1-Dichloroethane	ND		0.4	ug/L	8010		10/12/1994
1,2-Dichloroethane	ND		0.4	ug/L	8010		10/12/1994
1,1-Dichloroethene	ND		0.4	ug/L	8010		10/12/1994
trans-1,2-Dichloroethene	ND		0.4	ug/L	8010		10/12/1994
1,2-Dichloropropane	ND		0.4	ug/L	8010		10/12/1994
cis-1,3-Dichloropropene	ND		0.4	ug/L	8010		10/12/1994
trans-1,3-Dichloropropene	ND		0.4	ug/L	8010		10/12/1994
Methylene chloride	ND		10	ug/L	8010		10/12/1994
1,1,2,2-Tetrachloroethane	ND		0.4	ug/L	8010		10/12/1994
Tetrachloroethene	ND		0.4	ug/L	8010		10/12/1994
1,1,1-Trichloroethane	ND		0.4	ug/L	8010		10/12/1994
1,1,2-Trichloroethane	ND		1	ug/L	8010		10/12/1994
Trichloroethene	ND		0.4	ug/L	8010		10/12/1994
Trichlorofluoromethane	ND		0.4	ug/L	8010		10/12/1994
Vinyl chloride	ND		0.4	ug/L	8010		10/12/1994
SURROGATE RESULTS	--						10/12/1994
1,4-Difluorobenzene (SURR)	94			% Rec.			10/12/1994
Bromochloromethane (SURR)	104			% Rec.			10/12/1994

Ref: SHELL, 1601 Webster St., Alameda, 941006J1

SAMPLE DESCRIPTION: E.B.
Date Taken: 10/06/1994
Time Taken:
NET Sample No: 219277

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed
Tot. Dissolved Solids (TFR)	ND		10,000	ug/L	160.1		10/12/1994
TPH (Gas/BTXE,Liquid)							
METHOD 5030/M8015	--						10/16/1994
DILUTION FACTOR*	1						10/16/1994
as Gasoline	ND		50	ug/L	5030		10/16/1994
Carbon Range:	--						10/16/1994
METHOD 8020 (GC,Liquid)	--						10/16/1994
Benzene	ND		0.5	ug/L	8020		10/16/1994
Toluene	ND		0.5	ug/L	8020		10/16/1994
Ethylbenzene	ND		0.5	ug/L	8020		10/16/1994
Xylenes (Total)	ND		0.5	ug/L	8020		10/16/1994
SURROGATE RESULTS	--						10/16/1994
Bromofluorobenzene (SURR)	103			% Rec.	5030		10/16/1994

Ref: SHELL, 1601 Webster St., Alameda, 941006J1

SAMPLE DESCRIPTION: E.B.
Date Taken: 10/06/1994
Time Taken:
NET Sample No: 219277

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed
METHOD 8010 (GC,Liquid)							
DILUTION FACTOR*	1						10/12/1994
Bromodichloromethane	ND		0.4	ug/L	8010		10/12/1994
Bromoform	ND		0.4	ug/L	8010		10/12/1994
Bromomethane	ND		0.4	ug/L	8010		10/12/1994
Carbon tetrachloride	ND		0.4	ug/L	8010		10/12/1994
Chlorobenzene	ND		0.4	ug/L	8010		10/12/1994
Chloroethane	ND		0.4	ug/L	8010		10/12/1994
2-Chloroethylvinyl ether	ND		1.0	ug/L	8010		10/12/1994
Chloroform	ND		0.4	ug/L	8010		10/12/1994
Chloromethane	ND		0.4	ug/L	8010		10/12/1994
Dibromochloromethane	ND		0.4	ug/L	8010		10/12/1994
1,2-Dichlorobenzene	ND		0.4	ug/L	8010		10/12/1994
1,3-Dichlorobenzene	ND		0.4	ug/L	8010		10/12/1994
1,4-Dichlorobenzene	ND		0.4	ug/L	8010		10/12/1994
Dichlorodifluoromethane	ND		0.4	ug/L	8010		10/12/1994
1,1-Dichloroethane	ND		0.4	ug/L	8010		10/12/1994
1,2-Dichloroethane	ND		0.4	ug/L	8010		10/12/1994
1,1-Dichloroethene	ND		0.4	ug/L	8010		10/12/1994
trans-1,2-Dichloroethene	ND		0.4	ug/L	8010		10/12/1994
1,2-Dichloropropane	ND		0.4	ug/L	8010		10/12/1994
cis-1,3-Dichloropropene	ND		0.4	ug/L	8010		10/12/1994
trans-1,3-Dichloropropene	ND		0.4	ug/L	8010		10/12/1994
Methylene chloride	ND		10	ug/L	8010		10/12/1994
1,1,2,2-Tetrachloroethane	ND		0.4	ug/L	8010		10/12/1994
Tetrachloroethene	ND		0.4	ug/L	8010		10/12/1994
1,1,1-Trichloroethane	ND		0.4	ug/L	8010		10/12/1994
1,1,2-Trichloroethane	ND		1	ug/L	8010		10/12/1994
Trichloroethene	ND		0.4	ug/L	8010		10/12/1994
Trichlorofluoromethane	ND		0.4	ug/L	8010		10/12/1994
Vinyl chloride	ND		0.4	ug/L	8010		10/12/1994
SURROGATE RESULTS	--						10/12/1994
1,4-Difluorobenzene (SURR)	92			% Rec.			10/12/1994
Bromochloromethane (SURR)	104			% Rec.			10/12/1994

Ref: SHELL, 1601 Webster St., Alameda, 941006J1

SAMPLE DESCRIPTION: DUP
Date Taken: 10/06/1994
Time Taken:
NET Sample No: 219278

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed
Tot. Dissolved Solids (TFR)	580,000		10,000	ug/L	160.1		10/12/1994
TPH (Gas/BTXE,Liquid)							
METHOD 5030/M8015	--						10/17/1994
DILUTION FACTOR*	100						10/17/1994
as Gasoline	17,000		5000	ug/L	5030		10/17/1994
Carbon Range:	C5-C14						10/17/1994
METHOD 8020 (GC,Liquid)	--						10/17/1994
Benzene	1,000		50	ug/L	8020		10/17/1994
Toluene	630		50	ug/L	8020		10/17/1994
Ethylbenzene	1,200		50	ug/L	8020		10/17/1994
Xylenes (Total)	4,500		50	ug/L	8020		10/17/1994
SURROGATE RESULTS	--						10/17/1994
Bromofluorobenzene (SURR)	119			% Rec.	5030		10/17/1994

Ref: SHELL, 1601 Webster St., Alameda, 941006J1

SAMPLE DESCRIPTION: DUP
Date Taken: 10/06/1994
Time Taken:
NET Sample No: 219278

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed
METHOD 8010 (GC,Liquid)							
DILUTION FACTOR*	1						10/12/1994
Bromodichloromethane	ND		0.4	ug/L	8010		10/12/1994
Bromoform	ND		0.4	ug/L	8010		10/12/1994
Bromomethane	ND		0.4	ug/L	8010		10/12/1994
Carbon tetrachloride	ND		0.4	ug/L	8010		10/12/1994
Chlorobenzene	ND		0.4	ug/L	8010		10/12/1994
Chloroethane	ND		0.4	ug/L	8010		10/12/1994
2-Chloroethylvinyl ether	ND		1.0	ug/L	8010		10/12/1994
Chloroform	ND		0.4	ug/L	8010		10/12/1994
Chloromethane	ND		0.4	ug/L	8010		10/12/1994
Dibromochloromethane	ND		0.4	ug/L	8010		10/12/1994
1,2-Dichlorobenzene	ND		0.4	ug/L	8010		10/12/1994
1,3-Dichlorobenzene	ND		0.4	ug/L	8010		10/12/1994
1,4-Dichlorobenzene	ND		0.4	ug/L	8010		10/12/1994
Dichlorodifluoromethane	ND		0.4	ug/L	8010		10/12/1994
1,1-Dichloroethane	ND		0.4	ug/L	8010		10/12/1994
1,2-Dichloroethane	ND		0.4	ug/L	8010		10/12/1994
1,1-Dichloroethene	ND		0.4	ug/L	8010		10/12/1994
trans-1,2-Dichloroethene	ND		0.4	ug/L	8010		10/12/1994
1,2-Dichloropropane	ND		0.4	ug/L	8010		10/12/1994
cis-1,3-Dichloropropene	ND		0.4	ug/L	8010		10/12/1994
trans-1,3-Dichloropropene	ND		0.4	ug/L	8010		10/12/1994
Methylene chloride	ND		10	ug/L	8010		10/12/1994
1,1,2,2-Tetrachloroethane	ND		0.4	ug/L	8010		10/12/1994
Tetrachloroethene	ND		0.4	ug/L	8010		10/12/1994
1,1,1-Trichloroethane	ND		0.4	ug/L	8010		10/12/1994
1,1,2-Trichloroethane	ND		1	ug/L	8010		10/12/1994
Trichloroethene	ND		0.4	ug/L	8010		10/12/1994
Trichlorofluoromethane	ND		0.4	ug/L	8010		10/12/1994
Vinyl chloride	ND		0.4	ug/L	8010		10/12/1994
SURROGATE RESULTS	--						10/12/1994
1,4-Difluorobenzene (SURR)	SR	MI		% Rec.			10/12/1994
Bromochloromethane (SURR)	101			% Rec.			10/12/1994

MI: Matrix interference suspected.

Ref: SHELL, 1601 Webster St., Alameda, 941006J1

SAMPLE DESCRIPTION: T.B.
Date Taken: 10/06/1994
Time Taken:
NET Sample No: 219279

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed
TPH (Gas/BTXE,Liquid)							
METHOD 5030/M8015	--						10/17/1994
DILUTION FACTOR*	1						10/17/1994
as Gasoline	ND		50	ug/L	5030		10/17/1994
Carbon Range:	--						10/17/1994
METHOD 8020 (GC,Liquid)	--						10/17/1994
Benzene	ND		0.5	ug/L	8020		10/17/1994
Toluene	ND		0.5	ug/L	8020		10/17/1994
Ethylbenzene	ND		0.5	ug/L	8020		10/17/1994
Xylenes (Total)	ND		0.5	ug/L	8020		10/17/1994
SURROGATE RESULTS	--						10/17/1994
Bromofluorobenzene (SURR)	107			% Rec.	5030		10/17/1994

Ref: SHELL, 1601 Webster St., Alameda, 941006J1

CONTINUING CALIBRATION VERIFICATION STANDARD REPORT

Parameter	CCV Standard % Recovery	CCV Standard Amount Found	CCV Standard Amount Expected	Units	Date Analyzed	Analyst Initials
TPH (Gas/BTXE,Liquid)						
as Gasoline	97.0	0.97	1.00	mg/L	10/15/1994	lss
Benzene	107.2	5.36	5.00	ug/L	10/15/1994	lss
Toluene	93.6	4.68	5.00	ug/L	10/15/1994	lss
Ethylbenzene	93.8	4.69	5.00	ug/L	10/15/1994	lss
Xylenes (Total)	96.7	14.5	15.0	ug/L	10/15/1994	lss
Bromofluorobenzene (SURR)	110.0	110	100	% Rec.	10/15/1994	lss
TPH (Gas/BTXE,Liquid)						
as Gasoline	88.0	0.88	1.00	mg/L	10/16/1994	lss
Benzene	111.8	5.59	5.00	ug/L	10/16/1994	lss
Toluene	99.6	4.98	5.00	ug/L	10/16/1994	lss
Ethylbenzene	103.0	5.15	5.00	ug/L	10/16/1994	lss
Xylenes (Total)	96.7	14.5	15.0	ug/L	10/16/1994	lss
Bromofluorobenzene (SURR)	115.0	115	100	% Rec.	10/16/1994	lss
TPH (Gas/BTXE,Liquid)						
as Gasoline	111.0	1.11	1.00	mg/L	10/17/1994	aal
Benzene	105.8	5.29	5.00	ug/L	10/17/1994	aal
Toluene	90.0	4.50	5.00	ug/L	10/17/1994	aal
Ethylbenzene	102.2	5.11	5.00	ug/L	10/17/1994	aal
Xylenes (Total)	94.7	14.2	15.0	ug/L	10/17/1994	aal
Bromofluorobenzene (SURR)	89.0	89	100	% Rec.	10/17/1994	aal

Ref: SHELL, 1601 Webster St., Alameda, 941006J1

CONTINUING CALIBRATION VERIFICATION STANDARD REPORT

Parameter	CCV Standard % Recovery	CCV Standard Amount Found	CCV Standard Amount Expected	Units	Date Analyzed	Analyst Initials
METHOD 8010 (GC,Liquid)						
Bromodichloromethane	98.0	19.6	20.0	ug/L	10/12/1994	lss
Bromoform	96.0	19.2	20.0	ug/L	10/12/1994	lss
Bromomethane	90.5	18.1	20.0	ug/L	10/12/1994	lss
Carbon tetrachloride	100.0	20.0	20.0	ug/L	10/12/1994	lss
Chlorobenzene	104.0	20.8	20.0	ug/L	10/12/1994	lss
Chloroethane	107.0	21 4	20.0	ug/L	10/12/1994	lss
2-Chloroethylvinyl ether	73.5	14.7	20.0	ug/L	10/12/1994	lss
Chloroform	109.0	21.8	20.0	ug/L	10/12/1994	lss
Chloromethane	81.0	16.2	20.0	ug/L	10/12/1994	lss
Dibromochloromethane	103.0	20.6	20.0	ug/L	10/12/1994	lss
1,2-Dichlorobenzene	101.0	20.2	20.0	ug/L	10/12/1994	lss
1,3-Dichlorobenzene	98.0	19.6	20.0	ug/L	10/12/1994	lss
1,4-Dichlorobenzene	106.5	21.3	20.0	ug/L	10/12/1994	lss
Dichlorodifluoromethane	91.0	18.2	20.0	ug/L	10/12/1994	lss
1,1-Dichloroethane	100.5	20.1	20.0	ug/L	10/12/1994	lss
1,2-Dichloroethane	99.0	19.8	20.0	ug/L	10/12/1994	lss
1,1-Dichloroethene	89.0	17.8	20.0	ug/L	10/12/1994	lss
trans-1,2-Dichloroethene	94.0	18.8	20.0	ug/L	10/12/1994	lss
1,2-Dichloropropane	96.0	19.2	20.0	ug/L	10/12/1994	lss
cis-1,3-Dichloropropene	94.5	18.9	20.0	ug/L	10/12/1994	lss
trans-1,3-Dichloropropene	103.0	20.6	20.0	ug/L	10/12/1994	lss
Methylene chloride	84.5	16.9	20.0	ug/L	10/12/1994	lss
1,1,2,2-Tetrachloroethane	100.0	20.0	20.0	ug/L	10/12/1994	lss
Tetrachloroethene	100.0	20.0	20.0	ug/L	10/12/1994	lss
1,1,1-Trichloroethane	99.5	19.9	20.0	ug/L	10/12/1994	lss
1,1,2-Trichloroethane	103.0	20.6	20.0	ug/L	10/12/1994	lss
Trichloroethene	94.5	18.9	20.0	ug/L	10/12/1994	lss
Trichlorofluoromethane	96.0	19.2	20.0	ug/L	10/12/1994	lss
Vinyl chloride	91.0	18.2	20.0	ug/L	10/12/1994	lss
1,4-Difluorobenzene (SURR)	100.0	100	100	% Rec.	10/12/1994	lss
Bromochloromethane (SURR)	110.0	110	100	% Rec.	10/12/1994	lss

Ref: SHELL, 1601 Webster St., Alameda, 941006J1

METHOD BLANK REPORT

Parameter	Method Blank Amount Found	Reporting Limit	Units	Date Analyzed	Analyst Initials
Tot. Dissolved Solids (TFR)	ND	10	mg/L	10/12/1994	mee
TPH (Gas/BTXE,Liquid)					
as Gasoline	ND	0.05	mg/L	10/15/1994	lss
Benzene	ND	0.5	ug/L	10/15/1994	lss
Toluene	ND	0.5	ug/L	10/15/1994	lss
Ethylbenzene	ND	0.5	ug/L	10/15/1994	lss
Xylenes (Total)	ND	0.5	ug/L	10/15/1994	lss
Bromofluorobenzene (SURR)	97		% Rec.	10/15/1994	lss
TPH (Gas/BTXE,Liquid)					
as Gasoline	ND	0.05	mg/L	10/16/1994	lss
Benzene	ND	0.5	ug/L	10/16/1994	lss
Toluene	ND	0.5	ug/L	10/16/1994	lss
Ethylbenzene	ND	0.5	ug/L	10/16/1994	lss
Xylenes (Total)	ND	0.5	ug/L	10/16/1994	lss
Bromofluorobenzene (SURR)	96		% Rec.	10/16/1994	lss
TPH (Gas/BTXE,Liquid)					
as Gasoline	ND	0.05	mg/L	10/17/1994	aal
Benzene	ND	0.5	ug/L	10/17/1994	aal
Toluene	ND	0.5	ug/L	10/17/1994	aal
Ethylbenzene	ND	0.5	ug/L	10/17/1994	aal
Xylenes (Total)	ND	0.5	ug/L	10/17/1994	aal
Bromofluorobenzene (SURR)	97		% Rec.	10/17/1994	aal

Ref: SHELL, 1601 Webster St., Alameda, 941006J1

METHOD BLANK REPORT

Parameter	Method Blank Amount Found	Reporting Limit	Units	Date Analyzed	Analyst Initials
METHOD 8010 (GC,Liquid)					
Bromodichloromethane	ND	0.4	ug/L	10/12/1994	lss
Bromoform	ND	0.4	ug/L	10/12/1994	lss
Bromomethane	ND	0.4	ug/L	10/12/1994	lss
Carbon tetrachloride	ND	0.4	ug/L	10/12/1994	lss
Chlorobenzene	ND	0.4	ug/L	10/12/1994	lss
Chloroethane	ND	0.4	ug/L	10/12/1994	lss
2-Chloroethylvinyl ether	ND	1.0	ug/L	10/12/1994	lss
Chloroform	ND	0.4	ug/L	10/12/1994	lss
Chloromethane	ND	0.4	ug/L	10/12/1994	lss
Dibromochloromethane	ND	0.4	ug/L	10/12/1994	lss
1,2-Dichlorobenzene	ND	0.4	ug/L	10/12/1994	lss
1,3-Dichlorobenzene	ND	0.4	ug/L	10/12/1994	lss
1,4-Dichlorobenzene	ND	0.4	ug/L	10/12/1994	lss
Dichlorodifluoromethane	ND	0.4	ug/L	10/12/1994	lss
1,1-Dichloroethane	ND	0.4	ug/L	10/12/1994	lss
1,2-Dichloroethane	ND	0.4	ug/L	10/12/1994	lss
1,1-Dichloroethene	ND	0.4	ug/L	10/12/1994	lss
trans-1,2-Dichloroethene	ND	0.4	ug/L	10/12/1994	lss
1,2-Dichloropropane	ND	0.4	ug/L	10/12/1994	lss
cis-1,3-Dichloropropene	ND	0.4	ug/L	10/12/1994	lss
trans-1,3-Dichloropropene	ND	0.4	ug/L	10/12/1994	lss
Methylene chloride	ND	10	ug/L	10/12/1994	lss
1,1,2,2-Tetrachloroethane	ND	0.4	ug/L	10/12/1994	lss
Tetrachloroethene	ND	0.4	ug/L	10/12/1994	lss
1,1,1-Trichloroethane	ND	0.4	ug/L	10/12/1994	lss
1,1,2-Trichloroethane	ND	0.4	ug/L	10/12/1994	lss
Trichloroethene	ND	0.4	ug/L	10/12/1994	lss
Trichlorofluoromethane	ND	0.4	ug/L	10/12/1994	lss
Vinyl chloride	ND	0.4	ug/L	10/12/1994	lss
1,4-Difluorobenzene (SURR)	96		% Rec.	10/12/1994	lss
Bromochloromethane (SURR)	104		% Rec.	10/12/1994	lss

Ref: SHELL, 1601 Webster St., Alameda, 941006J1

MATRIX SPIKE / MATRIX SPIKE DUPLICATE

Parameter	Matrix Spike % Rec.	Matrix Spike Dup % Rec.	RPD	Spike Amount	Sample Conc.	Matrix Spike Conc.	Matrix Spike Dup. Conc.	Units	Date Analyzed	Analyst Initials
TPH (Gas/BTXE,Liquid)										
as Gasoline	99.0	108.0	8.6	1.00	ND	0.99	1.08	mg/L	10/15/1994	lss
Benzene	91.0	108.0	17.0	31.1	ND	28.3	33.6	ug/L	10/15/1994	lss
Toluene	101.5	109.6	7.7	90.4	ND	91.8	99.1	ug/L	10/15/1994	lss
TPH (Gas/BTXE,Liquid)										
as Gasoline	90.0	109.0	19.0	1.00	ND	0.90	1.09	mg/L	10/16/1994	lss
Benzene	102.6	116.1	12.3	27.3	ND	28.0	31.7	ug/L	10/16/1994	lss
Toluene	102.7	109.0	6.0	87.9	ND	90.3	95.8	ug/L	10/16/1994	lss
TPH (Gas/BTXE,Liquid)										
as Gasoline	102.0	112.0	9.3	1.00	ND	1.02	1.12	mg/L	10/17/1994	aal
Benzene	92.6	99.7	7.4	33.7	ND	31.2	33.6	ug/L	10/17/1994	aal
Toluene	93.7	101.0	7.4	98.8	ND	92.6	99.8	ug/L	10/17/1994	aal
TPH (Gas/BTXE,Liquid)										
as Gasoline	88.0	100.0	12.7	1.00	ND	0 88	1.00	mg/L	10/17/1994	aal
Benzene	80.4	86.4	7.2	33.7	ND	27.1	29.1	ug/L	10/17/1994	aal
Toluene	88.5	96.1	8.2	98.8	ND	87.4	94.9	ug/L	10/17/1994	aal

Ref: SHELL, 1601 Webster St., Alameda, 941006J1

MATRIX SPIKE / MATRIX SPIKE DUPLICATE

Parameter	Matrix Spike % Rec.	Matrix Spike Dup % Rec.	RPD	Spike Amount	Sample Conc.	Matrix Spike Conc.	Matrix Spike Dup. Conc.	Units	Date Analyzed	Analyst Initials
METHOD 8010 (GC,Liquid)										
Chlorobenzene	100.0	100.0	0.0	20.0	ND	20	20	ug/L	10/12/1994	lss
1,1-Dichloroethene	90.0	85.0	5 7	20.0	ND	18	17	ug/L	10/12/1994	lss
Trichloroethene	96.5	91.5	5.3	20.0	1.7	21	20	ug/L	10/12/1994	lss

Ref: SHELL, 1601 Webster St., Alameda, 941006J1

LABORATORY CONTROL SAMPLE REPORT

Parameter	LCS % Recovery	RPD	LCS Amount Found	LCS Amount Expected	Units	Date Analyzed	Analyst Initials
Tot. Dissolved Solids (TFR)	98.3		983	1,000	mg/L	10/12/1994	mee

NET® KEY TO ABBREVIATIONS and METHOD REFERENCES

<	:	Less than; When appearing in results column indicates analyte not detected at the value following. This datum supercedes the listed Reporting Limit.
*	:	Reporting Limits are a function of the dilution factor for any given sample. Actual reporting limits and results have been multiplied by the listed dilution factor. **Do not** multiply the reporting limits or reported values by the dilution factor.
dw	:	Result expressed as dry weight.
mean	:	Average; sum of measurements divided by number of measurements.
mg/Kg (ppm)	:	Concentration in units of milligrams of analyte per kilogram of sample, wet-weight basis (parts per million).
mg/L	:	Concentration in units of milligrams of analyte per liter of sample.
mL/L/hr	:	Milliliters per liter per hour.
MPN/100 mL	:	Most probable number of bacteria per one hundred milliliters of sample.
N/A	:	Not applicable.
NA	:	Not analyzed.
ND	:	Not detected; the analyte concentration is less than the applicable listed reporting limit.
NTU	:	Nephelometric turbidity units.
RPD	:	Relative percent difference, 100 [Value 1 - Value 2]/mean value.
SNA	:	Standard not available.
ug/Kg (ppb)	:	Concentration in units of micrograms of analyte per kilogram of sample, wet-weight basis (parts per billion).
ug/L	:	Concentration in units of micrograms of analyte per liter of sample.
umhos/cm	:	Micromhos per centimeter.

Method References

Methods 100 through 493: see "Methods for Chemical Analysis of Water & Wastes", U.S. EPA, 600/4-79-020, Rev. 1983.

Methods 601 through 625: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants" U.S. EPA, 40 CFR, Part 136, Rev. 1988.

Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", U.S. EPA SW-846, 3rd edition, 1986., Rev. 1, December 1987.

SM: see "Standard Methods for the Examination of Water & Wastewater, 17th Edition, APHA, 1989.

Revised September, 1993
abb.93

COOLER RECEIPT FORM

Project: Shell, Alameda 941006-J1 Log No: 3098
Cooler received on: 10-8-94 and checked on 10-8-94 by J. Sorensen
(signature)

Were custody papers present?..... (YES) NO
Were custody papers properly filled out?..... (YES) NO
Were the custody papers signed?..... (YES) NO
Was sufficient ice used?..... (YES) NO 1.3°C
Did all bottles arrive in good condition (unbroken)?..... (YES) NO
Did bottle labels match COC?..... (YES) NO
Were proper bottles used for analysis indicated?..... (YES) NO
Correct preservatives used?..... (YES) NO
VOA vials checked for headspace bubbles?..... (YES) NO
Note which voas (if any) had bubbles:*

Sample descriptor:	Number of vials:
TB	2 of 2

*All VOAs with headspace bubbles have been set aside so they will not be used for analysis..... YES NO

List here all other jobs received in the same cooler:

Client Job #	NET log #

(coolerrec)