Fax: 510-547-5043 Phone: 510-450-6000

93 OCT 18 PM 3: 54

October 11, 1993

Julliet Shin
Alameda County Department
of Environmental Health
Hazardous Materials Division
80 Swan Way, Room 200
Oakland, CA 94621-1426

Re: Shell Service Station WIC #204-0072-0403 1601 Webster Street Alameda, California 94501 WA Job #81-434-203

#### Dear Ms. Shin:

This letter describes recently completed and anticipated activities at the Shell service station referenced above (Figure 1). This status report satisfies the quarterly reporting requirements prescribed by California Administrative Code Title 23 Waters, Chapter 3, Subchapter 16, Article 5, Section 265.d. Included below are descriptions and results of activities performed in the third quarter 1993 and proposed work for the fourth quarter 1993.

#### Third Ouarter 1993 Activities:

- Blaine Tech Services, Inc. (BTS) of San Jose, California measured ground water depths and collected water samples from the four site wells. BTS' report describing these sampling activities and presenting analytic results for ground water is included as Attachment A.
- Weiss Associates (WA) compiled the ground water elevation and analytic data (Tables 1 and 2) and prepared a ground water elevation contour map (Figure 2).
- WA received a request for additional investigation at the site from Alameda County Department of Environmental Health on July 27, 1993. WA submitted a response letter on September 21, 1993.

Julliet Shin October 11, 1993



## Anticipated Fourth Ouarter 1993 Activities:

 WA will submit a report presenting the results of the fourth quarter 1993 ground water sampling and depth measurements. The report will include tabulated chemical analytic results and a ground water elevation contour map.

#### Conclusions and Recommendations:

Since the petroleum hydrocarbon concentrations in downgradient well MW-3 were near or below Department of Toxic Substances Control Maximum Contaminant Levels (MCLs), WA does not recommend any additional investigation at this time. Instead, WA recommends continued ground water sampling to monitor hydrocarbon concentrations and ground water flow direction. WA will reassess the need for additional investigation if site conditions change. Since cis-1,2-dichloroethene (DCE) is detected at similar concentrations in upgradient wells MW-1 and MW-2, it appears that the DCE is originating upgradient of the Shell site.



Please call if you have any questions.

No. 5747

J. Michael Asport
Technical Assistant

N. Scott MacLeod, R.G.

Project Geologist

JMA/JPT:jma

J:\SHELL\425\QMRPTS\434QMAU3.WP

Attachments:

**Figures** 

Tables

A - BTS Associates' Ground Water Monitoring Report

cc: Dan Kirk, Shell Oil Company, P.O. Box 5278, Concord, California 94520-9998
Lester Feldman, Regional Water Quality Control Board - San Francisco Bay, 2101 Webster Street, Suite 500, Oakland, California 94612

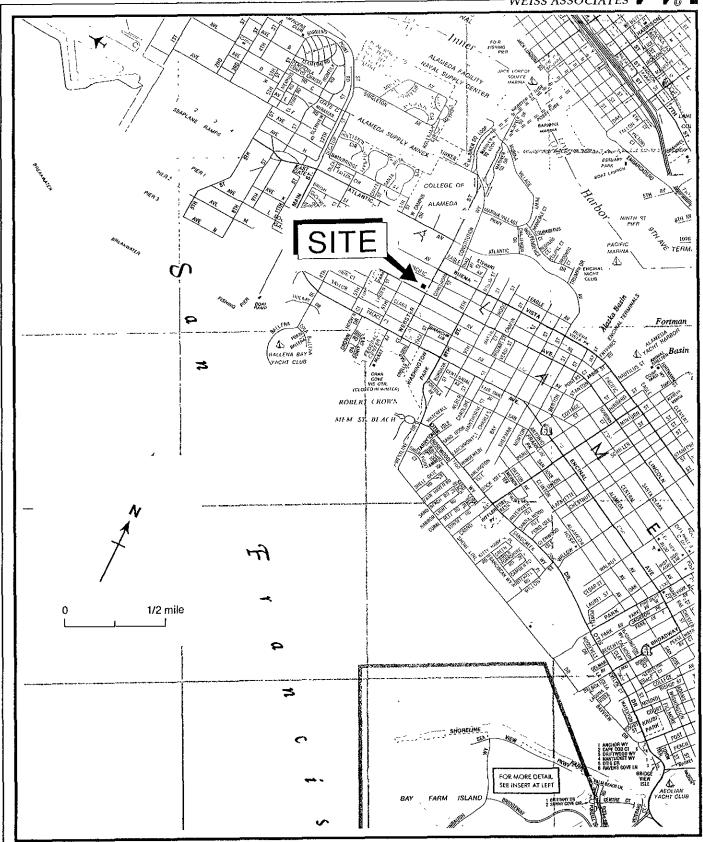


Figure 1. Site Location Map - Shell Service Station, WIC# 204-0072-0403, 1601 Webster Street, Alameda, CA

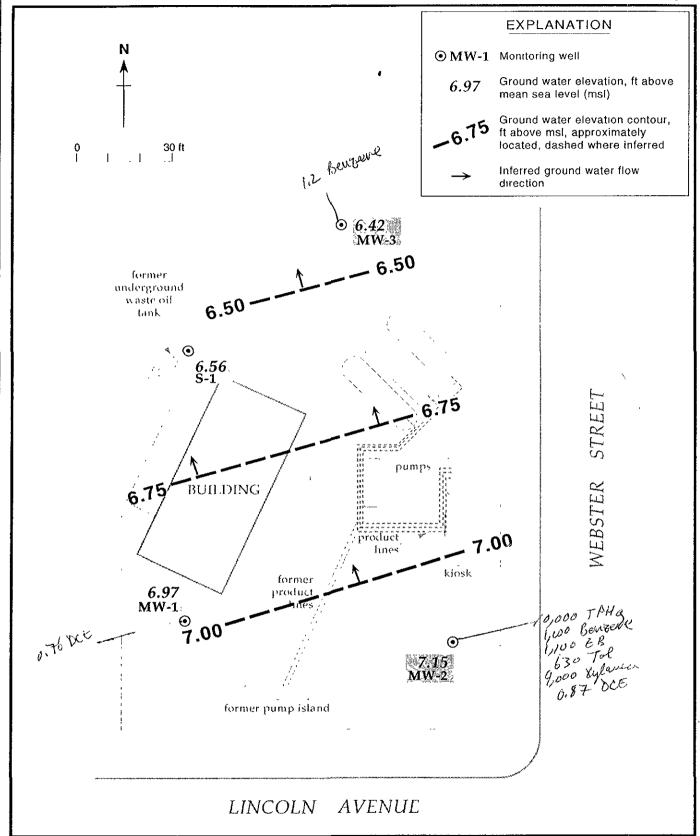


Figure 2. Monitoring Well Locations and Ground Water Elevations - July 20, 1993 - Shell Service Station WIC #204-0072-0403, 1601 Webster Street, Alameda, California

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	45.58
	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 <sup>a</sup>	5.85	7.95
	07/20/93		6,83	697
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
	10-17-19		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	4.0
	01-05-93		6.80	6.4
	04-08-93	13.20 <sup>a</sup>	5.40	7.80
	07/20/93		6.05	7.15
MW-3	04-08-93	12.80	5.48	7.32
	07/20/93		6.38	6.42
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

<sup>--</sup> Table 1 continues 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)
	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 <sup>a</sup>	6.10	7.64
	07/20/93		建设6.5. <b>7.18</b> .2.5.0	6.56

Note:

a = Top of casing resurveyed on March 30, 1993

Sample	Date	Depth to Water	TPH-G	TPH-D	В	E	Ţ	X	c-1,2- DCE	1,2-DCA	TOG
ID	Sampled	(ft)	<			part	s per billio	n (ug/L)			>
Mi-1	04-11-90	8.22	<50	<50	≪0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10,000
	07-18- <del>9</del> 0	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- <del>9</del> 1	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	
	04-08-93ª	5.85	< <del>5</del> 0		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	07+20-93 <sup>f</sup>	6.83	<b>50</b>		0.5	200.00 <b>.5</b> 4	<0.5	**************************************	0.76	<b>-0.5</b>	
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 <sup>b</sup>	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	
	04-08-93	5.40	13,000		670	900	580	2,900	0.68	<0.5	
	04-08-93 <sup>dup</sup>	5.40	13,000		830	1,100	740	3,700	0.64	<0.5	
	07-20-93	6.05	10,000	Jan Baada Jalij	1,200	1,100	630	4,000	0.87	<0.5	والمعالية والمراجعة والمراجعة
	07/20/93 <sup>dup</sup>	6,05	12,000		1,200	1,100	600	3,800	0.80	<0.5	
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	6,38	<50		1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2	<0.5	<b>40.5</b>	<b>40.5</b>	<b>: :0.5</b>	2.8	
s-1	09-04-87 <sup>d</sup>				<b>&lt;</b> 5	<5	<5	<5	<0.5	<0.5	
	09-11-89 <sup>6</sup>	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	<b>₹0.5</b>	<5,000
	01-25-91	10.49	<50		<0.5	<0.5	<0.5	<0.5	70.2	~0.5	
	04-11-91	7.68	<50	•••	<0.5	<0.5	<0.5	<0.5		_	

<sup>--</sup> Table 2 continues on next page --



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

Sample	Date	Depth to Water	TPH-G	TPH-D	В	Ε	Ţ	x	c-1,2- DCE	1,2-DCA	TOG
ĮĎ	Sampled	(ft)	<b>&lt;</b>			part	s per billio	on (ug/L)			>
	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			
	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	<b>*50</b>		<0.5	<0.5	0.5	<b>40.5</b>			
Trip	07-18-90		<50		<0.5	<0.5	<0.5	<0.5		**-	
Blank	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		<b>50</b> (5.5)		0.5	<0.5	<0.5	<b>&lt;0.5</b>			
			NE	NE		680	100 <sup>h</sup>	1,750	6.0	0.5	NE

<sup>--</sup> Table 2 continues on next page --

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

#### Abbreviations:

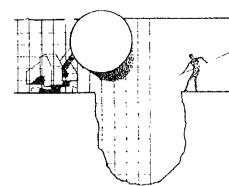
- TPH-G = Total petroleum hydrocarbons as gasoline by Modified EPA Method 8015
- TPH-D = Total petroleum hydrocarbons as diesel by Modified EPA Method 8015
- B = Benzene by EPA Method 602, 624, or 8020
- E = Ethylbenzene by EPA Method 602, 624, or 8020
- T = Toluene by EPA Method 602, 624, or 8020
- 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</pre>
- 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 = Compounds detected and calculated as diesel appear to be the less volatile constituents of gasoline.
- c = Chloroform detected at 0.017 ppm and bromodichlorome at 0.0007 ppm by EPA Method 8010
- d = 0.12 ppm acetone detected by EPA Method 624; no other volatile organic compounds detected
- e = 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.
- f = Chloroform detected at 1.1 ppb by EPA Method 8010.
- g = Chloroform detected at 1.5 ppb by EPA Method 8010.
- h = 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

August 3, 1993

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

Attn: Daniel T. Kirk

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

QUARTER: 3rd quarter of 1993

## **QUARTERLY GROUNDWATER SAMPLING REPORT 930720-A-1**

This report contains data collected during routine inspection, gauging and sampling of groundwater monitoring wells performed by Blaine Tech Services, Inc. in reponse 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 may be removed in cases where more evacuation is needed to achieve stabilization of water parameters. Less than three case volumes of 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.

#### 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. Either the requested analyses or the specific analytes are written on the sample label (e.g. TPH-G, BTEX).

## Chain of Custody

Samples are continuously maintained in an appropriate cooled container while in our custody and until delivered to the laboratory under a standard Shell Oil Company chain of custody. If the samples are taken charge of by a different party (such as another person from our office, a courier, etc.) prior to being delivered to the laboratory, appropriate release and acceptance records are made on the chain of custody (time, date, and signature of the person releasing the samples followed by the time, date and signature of the person accepting custody of the samples).

#### Hazardous Materials Testing Laboratory

The samples obtained at this site were delivered to Anametrix, Inc. in San Jose, California. Anametrix, Inc. is a California Department of Health Services certified Hazardous Materials Testing Laboratory and is listed as DOHS HMTL #1234.

#### **Objective Information Collection**

Blaine Tech Services, Inc. performs specialized environmental sampling and documentation as an independent third party. In order to avoid compromising the objectivity necessary for the proper and disinterested performance of this work, Blaine Tech Services, Inc. performs no consulting and does not become involved in the marketing or installation of remedial systems of any kind. Blaine Tech Services, Inc. is concerned only with the generation of objective information, not with the use of that information to support evaluations and recommendations concerning the environmental condition of the site. Even the straightforward interpretation of objective analytical data is better performed by interested regulatory agencies, and those engineers and geologists who are engaged in the work of providing professional opinions about the site and proposals to perform additional investigation or design remedial systems.

#### Reportage

Submission of this report and the attached laboratory report to interested regulatory agencies is handled by the consultant in charge of the project. Any professional evaluations or recommendations will be made by the consultant under separate cover.

Please call if we can be of any further assistance.

Richard C. Blaine

RCB/lpn

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	7/20/93	TOC		NONE	-		6.83	20.77
MW-2 *	7/20/93	TOC	ODOR	NONE	-		6.05	19.87
MW-3	7/20/93	TOC		NONE	_	_	6.38	19,42
S-1	7/20/93	TOC		NONE	-		7.18	19.84

<sup>\*</sup> Sample DUP was a duplicate sample taken from well MW-2.

9307213 (18) (16) 8 2:00

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1961 Concourse Drive San Jose, CA 95131

Tel: 408-432-8192 Fax: 408-432-8198

MR. JIM KELLER BLAINE TECH 985 TIMOTHY DRIVE SAN JOSE, CA 95133 Workorder # : 9307213 Date Received: 07/22/93

Project ID : 204-0072-0403

Purchase Order: MOH-B813

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

ANAMETRIX ID	CLIENT SAMPLE ID
9307213- 1	MW 1
9307213- 2	MW 2
9307213- 3	MW 3
9307213- 4	S-1
9307213- 5	DUPE
9307213- 6	TRIP

This report consists of 16 pages not including the cover letter, and is organized in sections according to the specific Anametrix laboratory group or section which performed the analysis(es) and generated the data. The Report Summary that precedes each section will help you determine which Anametrix group is responsible for those test results, and will bear the signatures of the department supervisor and the chemist who have reviewed the analytical data. Please refer all questions to the department supervisor who signed the form.

Anametrix is certified by the California Department of Health Services (DHS) to perform environmental testing under Certificate Number 1234. A detailed list of the approved fields of testing can be obtained by calling our office, or the DHS Environmental Laboratory Accreditation Program at (415)540-2800.

If you have any further questions or comments on this report, please give us a call as soon as possible. Thank you for using Anametrix.

Sarah Schoen, Ph.D.

Laboratory Director

## ANAMETRIX REPORT DESCRIPTION GC

## Organic Analysis Data Sheets (OADS)

OADS forms contain tabulated results for target compounds. The OADS are grouped by method and, within each method, organized sequentially in order of increasing Anametrix ID number.

## Surrogate Recovery Summary (SRS)

SRS forms contain quality assurance data. An SRS form will be printed for each method, <u>if</u> the method requires surrogate compounds. They will list surrogate percent recoveries for all samples and any method blanks. Any surrogate recovery outside the established limits will be flagged with an "\*", and the total number of surrogates outside the limits will be listed in the column labelled "Total Out".

## Matrix Spike Recovery Form (MSR)

MSR forms contain quality assurance data. They summarize percent recovery and relative percent difference information for matrix spikes and matrix spike duplicates. This information is a statement of both accuracy and precision. Any percent recovery or relative percent difference outside established limits will be flagged with an "\*", and the total number outside the limits will be listed at the bottom of the page. Not all reports will contain an MSR form.

#### Qualifiers

Anametrix uses several data qualifiers (Q) in its report forms. These qualifiers give additional information on the compounds reported. They should help a data reviewer to verify the integrity of the analytical results. The following is a list of qualifiers and their meanings:

- U Indicates that the compound was analyzed for, but was not detected at or above the specified reporting limit.
- B Indicates that the compound was detected in the associated method blank.
- J Indicates that the compound was detected at an amount below the specified reporting limit. Consequently, the amount should be considered an approximate value. Tentatively identified compounds will always have a "J" qualifier because they are not included in the instrument calibration.
- E Indicates that the reported amount exceeded the linear range of the instrument calibration.
- D Indicates that the compound was detected in an analysis performed at a secondary dilution.

Absence of a qualifier indicates that the compound was detected at a concentration at or above the specified reporting limit.

#### REPORTING CONVENTIONS

- Due to a size limitation in our data processing step, only the first eight (8) characters of your project ID and sample ID will be printed on the report forms. However, the report cover letter and report summary pages display up to twenty (20) characters of your project and sample IDs.
- Amounts reported are gross values, i.e., not corrected for method blank contamination.

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

MR. JIM KELLER BLAINE TECH

985 TIMOTHY DRIVE SAN JOSE, CA 95133 Workorder # : 9307213
Date Received : 07/22/93
Project ID : 204-0072-0403
Purchase Order: MOH-B813
Department : GC
Sub-Department: VOA

#### SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9307213- 1	MW 1	WATER	07/20/93	8010
9307213- 2	MW 2	WATER	07/20/93	8010
9307213- 3	MM 3	WATER	07/20/93	8010
9307213- 5	DUPE	WATER	07/20/93	8010

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

MR. JIM KELLER BLAINE TECH 985 TIMOTHY DRIVE SAN JOSE, CA 95133 Workorder # : 9307213 Date Received: 07/22/93

Project ID : 204-0072-0403

Purchase Order: MOH-B813

Department : GC Sub-Department: VOA

QA/QC SUMMARY :

- No QA/QC problems encountered for samples.

Department Supervisor

Memarzadeh 8/3/93

GC/VOA- PAGE 2

: 9307213-01 Anametrix ID : 204-0072

Project ID Sample ID : TIM Analyst : MW 1 Matrix : WATER
Date Sampled : 7/20/93
Date Analyzed : 8/ 1/93
Instrument ID : HP24 : Cb Supervisor

Dilution Factor: 1.0

Conc. Units : ug/L

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CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
75-71-8 74-87-3 75-01-4 74-83-9 75-00-3 75-69-4 76-13-1 75-35-4 75-09-2 156-60-5 75-34-3 156-59-2 67-66-3 71-55-6 56-23-5 107-06-2 79-01-6 78-87-5 75-27-4 110-75-8 10061-01-5 10061-02-6 79-00-5 127-18-4 124-48-1 108-90-7 75-25-2 79-34-5 541-73-1 106-46-7 95-50-1	Dichlorodifluoromethane Chloromethane Vinyl chloride Bromomethane Chloroethane Trichlorofluoromethane Trichlorotrifluoroethane 1,1-Dichloroethene Methylene chloride trans-1,2-Dichloroethene 1,1-Dichloroethane cis-1,2-Dichloroethene Chloroform 1,1,1-Trichloroethane Carbon tetrachloride 1,2-Dichloroethane Trichloroethene 1,2-Dichloropropane Bromodichloromethane 2-Chloroethylvinylether cis-1,3-Dichloropropene trans-1,3-Dichloropropene 1,1,2-Trichloroethane Tetrachloroethene Dibromochloromethane Chlorobenzene Bromoform 1,1,2,2-Tetrachloroethane 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,2-Dichlorobenzene 1,2-Dichlorobenzene	1.00 .550 .550 .550 .550 .550 .550 .550	NO E	ממממממממממממממ מממממממממ

Anametrix ID : 9307213-02

?roject ID Sample ID : 204-0072 : MW 2 : TM Analyst Supervisor : WATER **Matrix** 

Date Sampled : 7/20/93
Date Analyzed : 8/ 1/93
Instrument ID : HP24 Dilution Factor : 1.0

Conc. Units : ug/L

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CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
75-71-8 74-87-3 75-01-4 74-83-9 75-00-3 75-69-4 76-13-1 75-35-4 75-09-2 156-60-5 75-34-3 156-59-2 67-66-3 71-55-6 56-23-5 107-06-2 79-01-6 78-87-5 75-27-4 110-75-8 10061-01-5 10061-02-6 79-00-5 127-18-4 124-48-1 108-90-7 75-25-2 79-34-5 541-73-1 106-46-7 95-50-1	Dichlorodifluoromethane Chloromethane Vinyl chloride Bromomethane Chloroethane Trichlorofluoromethane Trichlorotrifluoroethane 1,1-Dichloroethene Methylene chloride trans-1,2-Dichloroethene 1,1-Dichloroethane cis-1,2-Dichloroethene Chloroform 1,1,1-Trichloroethane Carbon tetrachloride 1,2-Dichloroethane Trichloroethene 1,2-Dichloropropane Bromodichloromethane 2-Chloroethylvinylether cis-1,3-Dichloropropene trans-1,3-Dichloropropene 1,1,2-Trichloroethane Tetrachloroethene Dibromochloromethane Chlorobenzene Bromoform 1,1,2,2-Tetrachloroethane 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,2-Dichlorobenzene	.50 .50 .50 .50 .50 .50 .50 .50 .50		ממממממממממממממ ממממממממ

: 9307213-03 : TM : D : 204-0072 Anametrix ID Project ID

: MW 3 Analyst Sample ID Supervisor : WATER Matrix

Dilution Factor: 1.0

Date Sampled : 7/20/93 Date Analyzed : 8/ 1/93 Instrument ID : HP24 Conc. Units : ug/L

		REPORTING	AMOUNT	
CAS No.	COMPOUND NAME	T1TMT.T.	DETECTED	\
75-71-8 74-87-3 75-01-4 74-83-9 75-00-3 75-69-4 76-13-1 75-35-4 75-09-2 156-60-5 75-34-3 156-59-2 67-66-3 71-55-6 56-23-5 107-06-2 79-01-6 78-87-5 75-27-4 110-75-8 10061-01-5 10061-02-6 79-00-5 127-18-4	Dichlorodifluoromethane Chloromethane Vinyl chloride Bromomethane Chloroethane Trichlorofluoromethane Trichlorotrifluoroethane 1,1-Dichloroethene Methylene chloride trans-1,2-Dichloroethene 1,1-Dichloroethane cis-1,2-Dichloroethene Chloroform 1,1,1-Trichloroethane Carbon tetrachloride 1,2-Dichloroethane Trichloroethane Trichloroethane 1,2-Dichloropropane Bromodichloromethane 2-Chloroethylvinylether cis-1,3-Dichloropropene trans-1,3-Dichloropropene 1,1,2-Trichloroethane Tetrachloroethene	1.0 1.50 .550 .550 .550 .550 .550 .550	DETECTED  ND ND ND ND ND ND ND ND ND ND ND ND ND N	ם ממממממ ממ ממממממממ סמ
124-48-1 108-90-7 75-25-2 79-34-5	Dibromochloromethane Chlorobenzene Bromoform 1.1.2.2-Tetrachloroethane	.50 .50 .50 .50 .50	ND ND ND ND ND ND	ט ט ט ט
541-73-1 106-46-7 95-50-1	1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,2-Dichlorobenzene	1.0	ND ND	บ็

Anametrix ID : 9307213-05

Project ID : 204-0072
Sample ID : DUPE
Matrix : WATER
Date Sampled : 7/20/93
Date Analyzed : 8/ 1/93
Instrument ID : HP24 : TM : Çp Analyst Supervisor

Dilution Factor: 1.0

Conc. Units : ug/L

				<del></del>
CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
75-71-8 74-87-3 75-01-4 74-83-9 75-00-3 75-69-4 76-13-1 75-35-4 75-09-2 156-60-5 75-34-3 156-59-2 67-66-3 71-55-6 56-23-5 107-06-2 79-01-6 78-87-5 75-27-4	Dichlorodifluoromethane Chloromethane Vinyl chloride Bromomethane Chloroethane Trichlorofluoromethane Trichlorotrifluoroethane 1,1-Dichloroethene Methylene chloride trans-1,2-Dichloroethene 1,1-Dichloroethane cis-1,2-Dichloroethene Chloroform 1,1,1-Trichloroethane Carbon tetrachloride 1,2-Dichloroethane Trichloroethane			ממממממממממ סממממממממ
110-75-8 10061-01-5 10061-02-6 79-00-5 127-18-4 124-48-1 108-90-7 75-25-2	cis-1,3-Dichloropropene trans-1,3-Dichloropropene 1,1,2-Trichloroethane Tetrachloroethene Dibromochloromethane Chlorobenzene Bromoform 1,1,2,2-Tetrachloroethane	.50 .50 .50 .50 .50 .50	ND ND ND ND ND ND ND ND	0 0 0 0 0 0 0
79-34-5 541-73-1 106-46-7 95-50-1	1,1,2,2-letrachroroethane 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,2-Dichlorobenzene	1.0 1.0 1.0	ND ND ND	U U U

Anametrix ID Project ID Sample ID : 204-00 : 24B0801H01

Analyst : 17 : BLK801 : *ip* Supervisor : WATER Matrix

Date Sampled Date Analyzed Dilution Factor: 1.0

: 0/ 0/ 0 : 8/ 1/93 : HP24 Conc. Units : ug/L Instrument ID

				<b></b>
CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q 
75-71-8 74-87-3 75-01-4 74-83-9 75-00-3 75-69-4 76-13-1 75-35-4 75-09-2 156-60-5 75-34-3 156-59-2 67-66-3 71-55-6 56-23-5 107-06-2 79-01-6 78-87-5 75-27-4 110-75-8 10061-01-5 10061-02-6 79-00-5 127-18-4	Dichlorodifluoromethane Chloromethane Vinyl chloride Bromomethane Chloroethane Trichlorofluoromethane Trichlorotrifluoroethane 1,1-Dichloroethene Methylene chloride trans-1,2-Dichloroethene 1,1-Dichloroethane cis-1,2-Dichloroethene Chloroform 1,1,1-Trichloroethane Carbon tetrachloride 1,2-Dichloroethane Trichloroethane Trichloroethane 1,2-Dichloropropane Bromodichloromethane 2-Chloroethylvinylether cis-1,3-Dichloropropene trans-1,3-Dichloropropene 1,1,2-Trichloroethane Tetrachloroethene			מממממממממממממממממ Q
124-48-1 108-90-7 75-25-2 79-34-5 541-73-1 106-46-7 95-50-1	Dibromochloromethane Chlorobenzene Bromoform 1,1,2,2-Tetrachloroethane 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,2-Dichlorobenzene	.50 .50 .50 .50 1.0 1.0	ND ND ND ND ND ND ND ND	ט ט ט ט ט ט ט ט ט ט ט ט ט ט ט ט ט ט ט

## SURROGATE RECOVERY SUMMARY -- EPA METHOD 8010 ANAMETRIX, INC. (408)432-8192

Anametrix ID : 9307213

Project ID : 204-0072 Matrix : LIQUID Analyst : 7 1 Supervisor : ip

SAMPLE ID	SU1.	SU2	SU3
BLK801 MW 1 MW 2 MW 3 DUPE	84 87 88 88 88		
	BLK801 MW 1 MW 2 MW 3	BLK801 84 MW 1 87 MW 2 88 MW 3 88	BLK801 84 87 88 88 88

QC LIMITS (51-136) SU1 = Chlorofluorobenzene

\* Values outside of Anametrix QC limits

#### LABORATORY CONTROL SAMPLE EPA METHOD 601/8010 ANAMETRIX, INC. (408) 432-8192

Anametrix I.D.: WO080193

Project/Case : LABORATORY CONTROL SAMPLE
Matrix : WATER
SDG/Batch : N/A Analyst : Tr Supervisor : CP Instrument I.D.: HP24 Date analyzed : 08/01/93

COMPOUND	SPIKE AMOUNT (ug/L)	AMOUNT RECOVERED (ug/L)	PERCENT RECOVERY	%RECOVERY LIMITS
FREON 113 1,1-DICHLOROETHENE trans-1,2-DICHLOROETHENE 1,1-DICHLOROETHANE cis-1,2-DICHLOROETHENE 1,1,1-TRICHLOROETHANE TRICHLOROETHENE TETRACHLOROETHENE CHLOROBENZENE 1,3-DICHLOROBENZENE 1,4-DICHLOROBENZENE 1,2-DICHLOROBENZENE	10 10 10 10 10 10 10 10 10	10.7 7.8 10.3 10.4 9.9 10.3 10.2 10.1 10.4 9.8 10.2 10.3	107% 78% 102% 104% 99% 103% 102% 101% 103% 103%	34 - 128 63 - 133 55 - 145 49 - 121 66 - 168 72 - 143 63 - 147 60 - 133 70 - 148 49 - 139 70 - 133 69 - 140

<sup>\*</sup> Limits based on data generated by Anametrix, Inc., August, 1992.

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

MR. JIM KELLER BLAINE TECH 985 TIMOTHY DRIVE

SAN JOSE, CA 95133

Workorder # : 9307213
Date Received : 07/22/93
Project ID : 204-0072-0403
Purchase Order: MOH-B813
Department : GC
Sub-Department: TPH

#### SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9307213- 1	MW 1	WATER	07/20/93	TPHgBTEX
9307213- 2	MW 2	WATER	07/20/93	TPHgBTEX
9307213- 3	MW 3	WATER	07/20/93	ТРНЭВТЕХ
9307213- 4	S-1	WATER	07/20/93	TPHgBTEX
9307213- 5	DUPE	WATER	07/20/93	TPHgBTEX
9307213- 6	TRIP	WATER	07/19/93	TPHgBTEX

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

MR. JIM KELLER
BLAINE TECH
985 TIMOTHY DRIVE

985 TIMOTHY DRIVE SAN JOSE, CA 95133

Workorder # : 9307213 Date Received : 07/22/93

Project ID : 204-0072-0403

Purchase Order: MOH-B813

Department : GC Sub-Department: TPH

QA/QC SUMMARY :

- No QA/QC problems encountered for these samples.

Chend Britmen
Department Supervisor

Date

<u>feggie Davison 7/29/93</u> Chemist Date

#### ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS (GASOLINE WITH BTEX) ANAMETRIX, INC. - (408) 432-8192

Project Number : 204-0072-0403 Date Released : 07/29/93 Anametrix W.O.: 9307213

: WATER Matrix

Date Sampled : 07/20/93

	Reporting Limit	Sample I.D.# MW 1	Sample I.D.# MW 2	Sample I.D.# MW 3	Sample I.D.# S-1	Sample I.D.# DUPE
COMPOUNDS	(ug/L)	-01	-02	-03	-04	-05
Benzene Toluene Ethylbenzene Total Xylenes TPH as Gasoline % Surrogate Reco Instrument I.I Date Analyzed RLMF		ND ND ND ND ND 90% HP4 07/26/93	1200 630 1100 4000 10000 106% HP4 07/27/93	1.2 ND ND ND ND 95% HP4	ND ND ND ND ND 92% HP4 07/27/93	1200 600 1100 3800 12000 100% HP4 07/27/93
11211		-	2 0	-	_	3.0

ND - Not detected at or above the practical quantitation limit for the method.

TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using modified EPA Method 8015 following sample purge and trap by EPA Method 5030.

BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA Method 8020 following sample purge and trap by EPA Method 5030.

RLMF - Reporting Limit Multiplication Factor.

Anametrix control limits for surrogate p-Bromofluorobenzene recovery are 61-139%.

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

Reggie Dawson 1/2

Date

#### ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS (GASOLINE WITH BTEX) ANAMETRIX, INC. - (408) 432-8192

Anametrix W.O.: 9307213 Project Number: 204-0072-0403

Matrix : WATER
Date Sampled : 07/19/93 Date Released: 07/29/93

	Reporting Limit		Sample I.D.# BL2601E2		
COMPOUNDS	(ug/L)	-06 	BLANK	 	
Benzene Toluene Ethylbenzene Total Xylenes TPH as Gasoline % Surrogate Reco Instrument I.I Date Analyzed RLMF	D	ND ND ND ND ND 89% HP4 07/26/93	ND ND ND ND ND 93% HP4 07/26/93		

ND - Not detected at or above the practical quantitation limit for the method.

TPHq - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using modified EPA Method 8015 following sample purge and trap by EPA Method 5030.

BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA Method 8020 following sample purge and trap by EPA Method 5030.

RLMF - Reporting Limit Multiplication Factor.

Anametrix control limits for surrogate p-Bromofluorobenzene recovery are 61-139%.

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

Analyst Davison 7/29/93
Date

## TOTAL VOLATILE HYDROCARBON MATRIX SPIKE REPORT EPA METHOD 5030 WITH GC/FID ANAMETRIX, INC. (408) 432-8192

Anametrix I.D.: 07213-04

Sample I.D. : 204-0072-0403 S-1
Matrix : WATER
Date Sampled : 07/20/93
Date Analyzed : 07/27/93 Analyst : RP Supervisor : 09 Date Released : 07/29/93 Instrument ID : HP4

COMPOUND	SPIKE AMT (ug/L)	SAMPLE AMT (ug/L)	REC % MS (ug/L)	REC MS	REC % MD (ug/L)	REC MD	RPD	% REC LIMITS	
GASOLINE	500	0	440	88%	470	94%	7%	48-149	
P-BFB			~	888		89%		61-139	

<sup>\*</sup> Limits established by Anametrix, Inc.

#### TOTAL VOLATILE HYDROCARBON LABORATORY CONTROL SAMPLE REPORT EPA METHOD 5030 WITH GC/FID ANAMETRIX, INC. (408) 432-8192

Sample I.D. : LAB CONTROL SAMPLE Matrix : WATER Anametrix I.D. : ML2602E1

Analyst : FA Supervisor : CF Date Released : 07/29/93 Instrument I.D.: HP4 Date Sampled : N/A
Date Analyzed : 07/27/93

COMPOUND	SPIKE AMT. (ug/L)	REC LCS (ug/L)	%REC LCS	% REC LIMITS
GASOLINE	500	460	92%	67-127
p-BFB			91%	61-139

<sup>\*</sup> Quality control established by Anametrix, Inc.