



Handwritten: *reviewed 7-7-93 SAS*

April 15, 1993

Scott Seery
Alameda County Department of
Environmental Health
80 Swan Way, Room 200
Oakland, CA 94621

Re: Shell Service Station
WIC #204-5508-3301
6039 College Avenue
Oakland, California
WA Job #81-618-203

Dear Mr. Seery:

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 first quarter 1993 and proposed work for the second quarter 1993.

First Quarter 1993 Activities:

- Blaine Tech Services, Inc. (BTS) of San Jose, California measured depths to ground water in the five site wells and collected ground water samples from four of the five site wells. Well MW-4 contained floating hydrocarbons and was not sampled. BTS' report describing these activities and 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 pursued an encroachment permit from the City of Oakland and a right of entry (ROE) agreement with the downgradient property owner to drill additional downgradient borings and monitoring wells.

Anticipated Second Quarter 1993 Activities:

- **WA will submit a report presenting the results of second quarter 1993 ground water sampling and ground water depth measurements. The report will include tabulated chemical analytic results and a ground water elevation contour map.**
- **Pending receipt of an encroachment permit and a completed right-of-entry agreement, WA will drill the additional borings/wells to define the extent of hydrocarbon-bearing soil and ground water between source area well MW-4 and clean downgradient well MW-5 as required by the ACDEH.**
- **Since the majority of positive total petroleum hydrocarbons as diesel (TPH-D) responses are attributed by the analytic laboratory to hydrocarbons that are lighter than diesel, WA will no longer analyze for TPH-D.**

Conclusions and Recommendations:

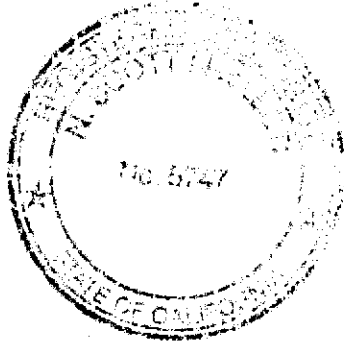
WA recommends continued to monitoring of dissolved hydrocarbon concentrations in ground water. We will make additional recommendations once the proposed investigation has been completed.

Scott Seery
April 15, 1993

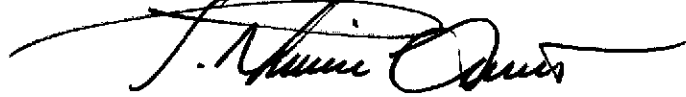
3

Weiss Associates 

Please call if you have any questions.



Sincerely,
Weiss Associates



J. Michael Asport
Technical Assistant



Joseph P. Theisen, C.E.G.
Senior Hydrogeologist

JMA/JPT:jma

J:\SHELL\600\QMRPTS\618QMMA3.WP

Attachments: Figures
Table
A - BTS' Ground Water Monitoring Report

cc: Dan Kirk, Shell Oil Company, P.O. Box 5278, Concord, CA 94520
Tom Callaghan, San Francisco Bay Regional Water Quality Control Board, 2101 Webster
Street, Oakland, CA 94612

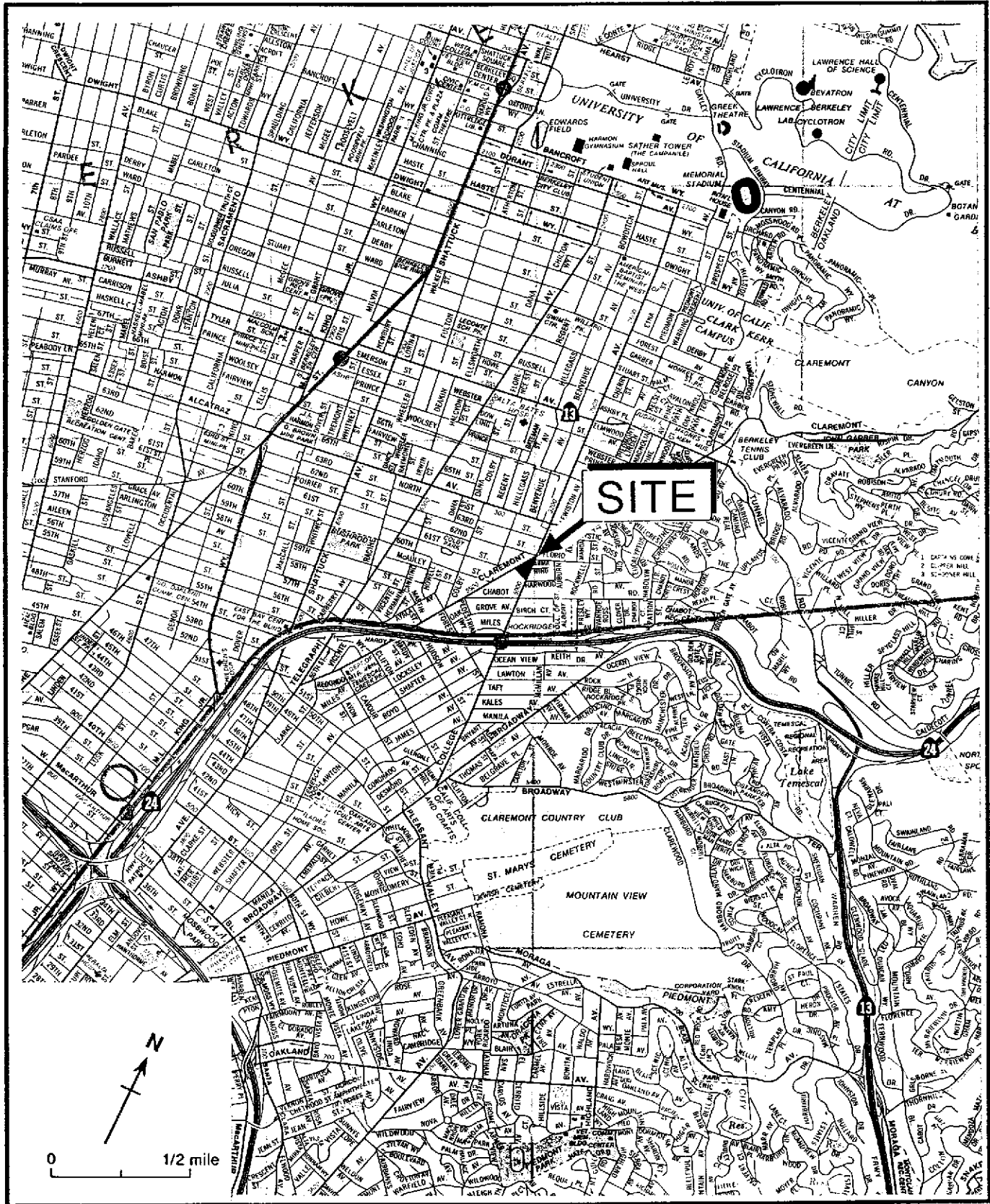


Figure 1. Site Location Map - Shell Service Station WIC #204-5508-3301, 6039 College Avenue, Oakland, California

EXPLANATION

- ⊙ MW-1 Monitoring well
- 183.79 Ground water elevation, ft above mean sea level
- 181 Ground water elevation contour, ft above mean sea level, approximately located, dashed where inferred
- Inferred ground water flow direction

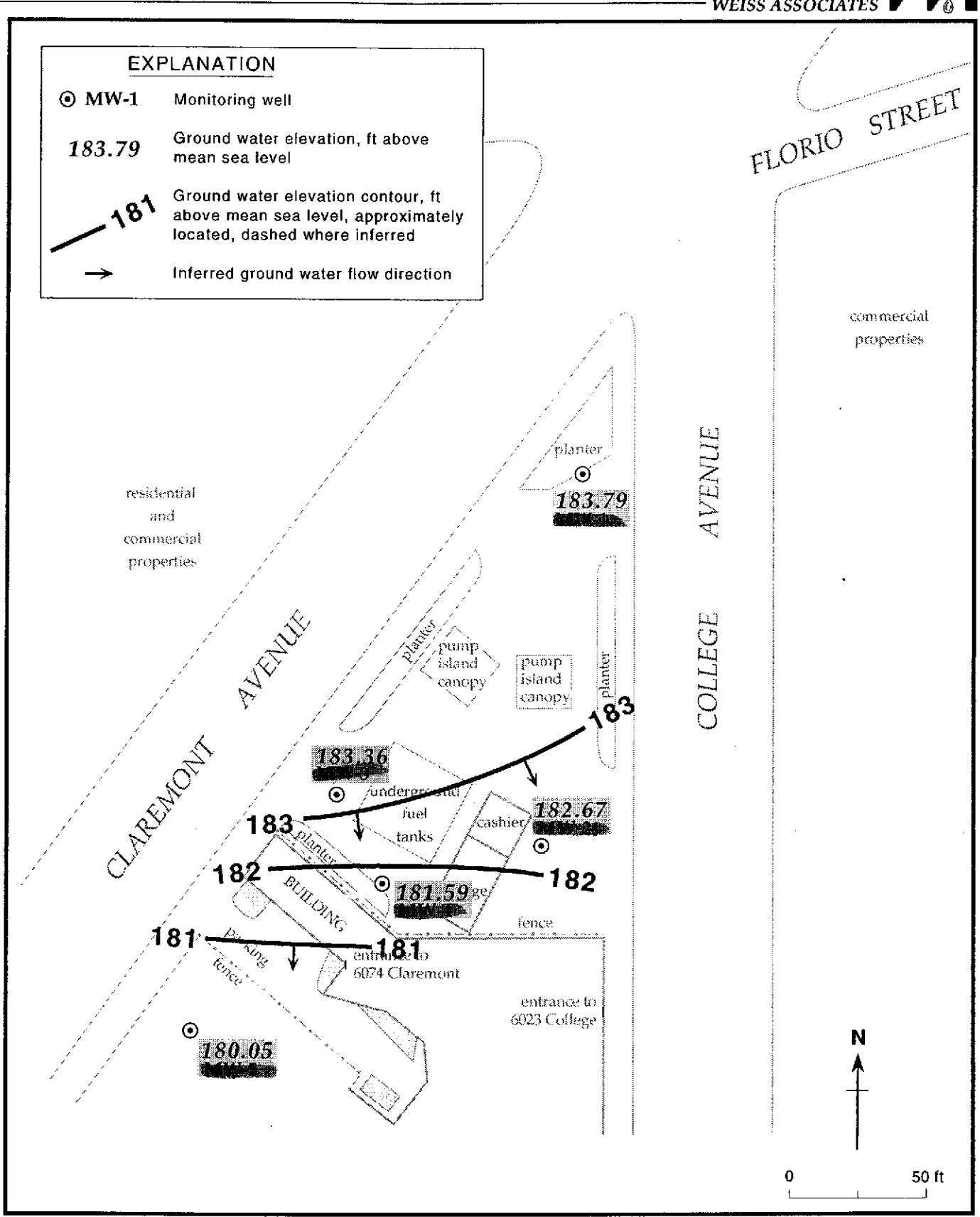


Figure 2. Monitoring Well Locations and Ground Water Elevation Contours - February 12, 1993 - Shell Service Station WIC #204-5510-0303, 6039 College Avenue, Oakland, California

Table 1. Ground Water Elevations - Shell Service Station WIC #204-5508-3301, 6039 College Avenue, Oakland, California

Well ID	Date	Top-of-Casing Elevation (ft above msl)	Depth to Water (ft)	Floating Hydrocarbon Thickness (ft)	Ground Water Elevation (ft above msl)
MW-1	06/03/91	195.89	17.82		178.07
	08/30/91		19.87		176.02
	11/22/91		20.58		175.31
	03/18/92		13.55		182.34
	05/28/92		17.08		178.81
	08/19/92		19.07		176.82
	11/17/92		20.11		175.78
	02/12/93		12.10		183.79
MW-2	06/03/91	194.27	17.00		177.27
	08/30/91		18.95		175.32
	11/22/91		19.55		174.72
	03/18/92		12.91		181.36
	05/28/92		16.25		178.02
	08/19/92		18.21		176.06
	11/17/92		19.15		175.12
	02/12/93		11.60		182.67
MW-3	06/03/91	192.52	15.84		176.68
	08/30/91		17.79		174.73
	11/22/91		18.40		174.12
	03/18/92		12.03		180.49
	05/28/92		15.16		177.36
	08/19/92		17.03		175.49
	11/17/92		17.94		174.58
	02/12/93		9.16		183.36
MW-4	06/03/91	193.37	16.77		176.60
	08/30/91		18.71		174.66
	11/22/91		—		—
	03/18/92 ^a		13.15	0.24	180.41
	05/28/92 ^a		16.22	0.12	177.25
	08/19/92 ^a		18.05	0.09	175.39
	11/17/92		18.89		174.48
	02/12/93		11.78	<0.01	181.59
MW-5	08/30/91	190.35	16.74		173.61
	11/22/91		17.27		173.08
	03/18/92		11.28		179.07
	05/28/92 ^b		—		—
	08/19/92		15.99		174.36
	11/17/92		16.84		173.51
02/12/93	10.30		180.05		

— Table 1 continues on next page —

Table 1. Ground Water Elevations - Shell Service Station WIC #204-5508-3301, 6039 College Avenue, Oakland, California (continued)

Notes:

- a = Corrected for floating hydrocarbons by the relation: Corrected ground water elevation = (Top-of-Casing Elevation) - (depth to water) + (0.8 x floating hydrocarbon thickness)**
- b = Well inaccessible**
- = Data not available**
-

Table 2. Analytic Results for Ground Water - Shell Service Station WIC #204-5508-3301, 6039 College Avenue, Oakland, California

Well ID	Date Sampled	Depth to Water (ft)	TPH-G	TPH-D	TPH-MO	B E T X			
						parts per million (mg/L)			
MW-1	06/03/91	17.82	ND	ND	ND	ND	ND	ND	ND
	08/30/91	19.87	ND	0.52	ND	ND	ND	ND	ND
	11/22/91	20.58	<0.05	<0.05	<0.5	<0.0005	<0.0005	<0.0005	<0.0005
	03/18/92	13.55	<0.03	<0.05	---	<0.0003	<0.0003	<0.0003	<0.0003
	05/28/92	17.08	<0.05	<0.05	---	<0.0005	<0.0005	<0.0005	<0.0005
	08/19/92	19.07	<0.05	<0.05	---	<0.0005	<0.0005	<0.0005	<0.0005
	11/17/92	20.11	<0.05	<0.05	---	<0.0005	<0.0005	<0.0005	<0.0005
	02/12/93	12.10	<0.05	<0.05	---	<0.0005	<0.0005	<0.0005	<0.0005
MW-2	06/03/91	17.00	ND	ND	ND	ND	ND	ND	ND
	08/30/91	18.95	ND	ND	ND	ND	ND	ND	ND
	11/22/91	19.55	<0.05	<0.05	<0.5	<0.0005	<0.0005	<0.0005	<0.0005
	03/18/92	12.91	<0.03	---	---	<0.0003	<0.0003	<0.0003	<0.0003
	05/28/92	16.25	<0.05	---	---	<0.0005	<0.0005	<0.0005	<0.0005
	08/19/92	18.21	<0.05	---	---	<0.0005	0.0012	0.0020	0.0019
	11/17/92	19.15	<0.05	---	---	<0.0005	0.0012	0.0020	0.0019
	02/12/93 ^a	11.60	<0.05	---	---	<0.0005	<0.0005	<0.0005	<0.0005
02/12/93	11.60	<0.05	---	---	<0.0005	<0.0005	<0.0005	<0.0005	
MW-3	06/03/91	15.84	1.7	0.69	ND	0.26	0.098	0.013	0.024
	08/30/91	17.79	0.87	0.37	0.5	0.044	0.01	0.0061	0.0029
	11/22/91	18.40	0.31	0.14	0.5	0.018	0.0033	0.0012	0.0029
	03/18/92	12.03	67.1	1.9	20	0.62	0.22	0.028	0.038
	05/28/92	15.16	2.3	1.1 ^b	4.6	0.20	0.071	0.009	0.017
	08/19/92	17.03	5.7	1.0 ^b	1.8	0.071	0.052	0.077	0.13
	11/17/92	17.94	3.6	0.16 ^b	1.2	0.016	0.024	0.0086	0.050
	02/12/93	9.16	4.7	0.56	ND	0.82	0.13	0.058	0.077
MW-4	06/03/91	16.77	0.67	1.1	ND	0.24	0.0016	0.0023	0.0023
	08/30/91	18.71	0.57	0.28	2.0	0.064	0.0009	0.0018	0.0009
	11/22/91 ^c	---	---	---	---	---	---	---	---
	03/18/92 ^c	13.15	---	---	---	---	---	---	---
	05/28/92 ^c	16.22	---	---	---	---	---	---	---
	08/19/92 ^c	18.05	---	---	---	---	---	---	---
	11/17/92 ^c	18.89	---	---	---	---	---	---	---
	02/12/93 ^c	11.78	---	---	---	---	---	---	---
MW-5	08/30/91	16.74	ND	0.08	ND	ND	ND	ND	ND
	11/22/91	17.27	<0.05	<0.05	<0.5	<0.0005	<0.0005	<0.0005	<0.0005
	03/18/92	11.28	<0.03	<0.05	---	<0.0003	<0.0003	<0.0003	<0.0003
	05/28/92 ^d	---	---	---	---	---	---	---	---
	08/19/92	15.99	<0.05	<0.05	---	<0.0005	<0.0005	<0.0005	<0.0005
	11/17/92	16.84	<0.05	<0.05	---	<0.0005	<0.0005	<0.0005	<0.0005
02/12/93	10.30	<0.05	<0.05	---	<0.0005	<0.0005	<0.0005	<0.0005	

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Weiss Associates



Table 2. Analytic Results for Ground Water - Shell Service Station WIC #204-5508-3301, 6039 College Avenue, Oakland, California (continued)

Well ID	Date Sampled	Depth to Water (ft)	TPH-G	TPH-D	TPH-MO	B	E	T	X
			-----parts per million (ng/L)-----						
Bailer	08/19/92		<0.05	---	---	<0.0005	<0.0005	<0.0005	<0.0005
Blank	11/17/92		<0.05	---	---	<0.0005	<0.0005	<0.0005	<0.0005
Trip	06/03/91		ND	---	---	ND	ND	ND	ND
Blank	08/30/91		ND	---	---	ND	ND	ND	ND
	03/18/92		<0.03	<0.05	---	<0.0003	<0.0003	<0.0003	<0.0003
	05/28/92		<0.05	---	---	<0.0005	<0.0005	<0.0005	<0.0005
	08/19/92		<0.05	---	---	<0.0005	<0.0005	<0.0005	<0.0005
	11/17/92		<0.05	---	---	<0.0005	<0.0005	<0.0005	<0.0005
	02/12/93		<0.05	---	---	<0.0005	<0.0005	<0.0005	<0.0005
DTSC MCLs			NE	NE	NE	0.001	0.680	0.10 ^e	1.750

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
 TPH-MO = Total petroleum hydrocarbons as motor oil by 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
 NE = Not established
 DTSC MCLs = California Department of Toxic Substances Control maximum contaminant levels for drinking water
 --- = Not analyzed or measured
 <n = Not detected at detection limits of n ppm
 ND = Not detected, detection limit not known

Notes:

a = Duplicate sample
 b = Concentration reported as diesel is primarily due to the presence of a lighter petroleum product, possibly gasoline or kerosene
 c = Well not sampled due to floating hydrocarbons
 d = Well inaccessible and not sampled
 e = DTSC recommended action level; MCL not established



Table 3. Floating Hydrocarbon Removal - Shell Service Station WIC #204-5508-3301, 6039 College Avenue, Oakland, California

Well ID	Date	Floating Hydrocarbon Thickness (ft)	Volume of Floating Hydrocarbons Removed (gal).	Cumulative Volume of Hydrocarbons Removed (gal)
MW-4 ^a	01/15/92	---	0.52	0.52
	02/15/92	---	0.52	1.04
	03/18/92	0.24	---	1.04
	04/29/92	---	0.25	1.29
	05/28/92	0.12	0.03	1.32
	08/19/92	0.09	0.16	1.48
	11/17/92	---	0.16	1.64
	02/12/93	<0.01	---	1.64

a = Petrotrap passive floating hydrocarbon skimmer installed in well
--- = Not measured or no hydrocarbons bailed

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

March 4, 1993

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

Attn: Daniel T. Kirk

SITE:
Shell WIC # 204-5508-3301
6039 College Ave.
Oakland, California

QUARTER:
1st quarter of 1993

QUARTERLY GROUNDWATER SAMPLING REPORT 930212-A-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 the 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.

TABLE OF WELL GAUGING DATA

WELL I.D.	WELL DIAMETER (inches)	DATA COLLECTION DATE	MEASUREMENTS REFERENCED TO	QUALITATIVE OBSERVATIONS (sheen)	DEPTH TO FIRST IMMISCIBLE LIQUID (FPZ) (feet)	THICKNESS OF IMMISCIBLE LIQUID ZONE (feet)	VOLUME OF IMMISCIBLES REMOVED (ml)	DEPTH TO WATER (feet)	DEPTH TO WELL BOTTOM (feet)
MW-1	4	02-12-93	TOP OF PIPE	--	NONE	--	--	12.10	24.68
MW-2 *	4	02-12-93	TOP OF PIPE	--	NONE	--	--	11.60	24.28
MW-3	4	02-12-93	TOP OF PIPE	--	NONE	--	--	9.16	27.49
MW-4	4	02-12-93	TOP OF PIPE	FREE PRODUCT	--	<0.01	--	11.78	--
MW-5	4	02-12-93	TOP OF PIPE	--	NONE	--	--	10.30	28.52

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

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 dewateres 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

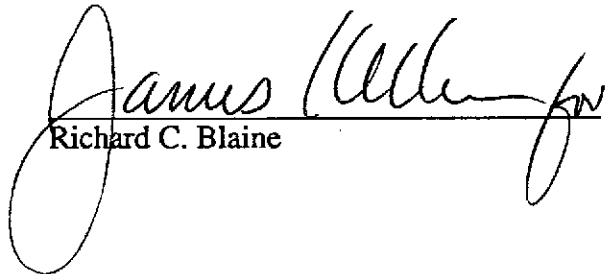
Blaine Tech Services, Inc. performs specialized environmental sampling and documentation as an independent third party. In order to avoid compromising the objectivity necessary for the proper and disinterested performance of this work, Blaine Tech Services, Inc.

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/kkl

attachments: chain of custody
certified analytical report

cc: Weiss Associates
5500 Shellmound Street
Emeryville, CA 94608-2411
ATTN: Kristina Koltavary



SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: _____

Date: 2-12-93
Page 1 of 1

Silo Address: 6039 College OAK

WIC#: 204 5508 3301

Shell Engineer: Daniel Kirk
Phone No.: 510
Fax #: 675 6171

Consultant Name & Address: Blain Tech Services

Consultant Contact: Glen Bennett
Phone No.: 408
Fax #: 995-5555

Complaints:

Sampled by: Jeff Curtis

Printed Name: Jeff Curtis

Analysis Required

TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal	Combination TPH 8015 & BTEX 8020	TPH motor oil	Asbestos	Container Size	Preparation Used	Composite Y/N
/	/	/	/	/	/	/	/	/	/	/

LAB: ANAMETRIX

CHECK ONE (1) BOX ONLY	CI/DI	TURN AROUND TIME
Quantity Monitoring <input checked="" type="checkbox"/> 6441		24 hours <input type="checkbox"/>
Site Investigation <input type="checkbox"/> 6442		48 hours <input type="checkbox"/>
Soil Classify/Disposal <input type="checkbox"/> 6443		16 days <input checked="" type="checkbox"/> (Normal)
Water Classify/Disposal <input type="checkbox"/> 6443		Other <input type="checkbox"/>
Soil/Air Rem. of Sys. O & M <input type="checkbox"/> 6462		
Water Rem. of Sys. O & M <input type="checkbox"/> 6463		
Other <input type="checkbox"/>		

NOTE: Hally Lab as soon as Possible of 24/48 hr. 1st.

Sample ID	Date	Sludge	Soil	Water	Air	No. of conlt.
① MW1	2/12			✓		4
② MW2	2/12					3
③ MW3	2/12					5
④ MW5	2/12					4
⑤ DUP	2/12					3
⑥ TRIP	2/12			✓		2

MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
ground water	

Relinquished by (signature): <i>Jeff Curtis</i>	Printed Name: Jeff Curtis	Date: 2-16-93	Time: 11:00	Received (signature): <i>Remy S. Carrizosa</i>	Printed Name: Remy S. Carrizosa	Date: 2-16-93	Time: 11:20
Relinquished by (signature): <i>Remy S. Carrizosa</i>	Printed Name: Remy S. Carrizosa	Date: 2-16-93	Time: 11:20	Received (signature): <i>Michael Aguilar</i>	Printed Name: MICHAEL AGUILAR	Date: 2-16-93	Time: 11:20
Relinquished by (signature):	Printed Name:	Date:	Time:	Received (signature):	Printed Name:	Date:	Time:

9302205 10/35 (18)



MR. GLEN BENNETT
BLAINE TECH
985 TIMOTHY STREET
SAN JOSE, CA 95133

Workorder # : 9302205
Date Received : 02/16/93
Project ID : 204-5508-3301
Purchase Order: MOH-B813


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

ANAMETRIX ID	CLIENT SAMPLE ID
9302205- 1	MW-1
9302205- 2	MW-2
9302205- 3	MW-3
9302205- 4	MW-5
9302205- 5	DUP
9302205- 6	TRIP

This report consists of 9 pages not including the cover letter, and is organized in sections according to the specific Anamatrix 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 Anamatrix 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.

Anamatrix 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 Anamatrix.



Sarah Schoen, Ph.D.
Laboratory Director

3-3-93
Date

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

MR. GLEN BENNETT
BLAINE TECH
985 TIMOTHY STREET
SAN JOSE, CA 95133

Workorder # : 9302205
Date Received : 02/16/93
Project ID : 204-5508-3301
Purchase Order: MOH-B813
Department : GC
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9302205- 1	MW-1	WATER	02/12/93	TPHd
9302205- 3	MW-3	WATER	02/12/93	TPHd
9302205- 4	MW-5	WATER	02/12/93	TPHd
9302205- 1	MW-1	WATER	02/12/93	TPHg/BTEX
9302205- 2	MW-2	WATER	02/12/93	TPHg/BTEX
9302205- 3	MW-3	WATER	02/12/93	TPHg/BTEX
9302205- 4	MW-5	WATER	02/12/93	TPHg/BTEX
9302205- 5	DUP	WATER	02/12/93	TPHg/BTEX
9302205- 6	TRIP	WATER	02/12/93	TPHg/BTEX

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

MR. GLEN BENNETT
BLAINE TECH
985 TIMOTHY STREET
SAN JOSE, CA 95133

Workorder # : 9302205
Date Received : 02/16/93
Project ID : 204-5508-3301
Purchase Order: MOH-B813
Department : GC
Sub-Department: TPH

QA/QC SUMMARY :

- The concentration reported as diesel for sample MW-3 is primarily due to the presence of a lighter petroleum product, possibly gasoline or kerosene.

Cheryl Bealmer 3/2/93
Department Supervisor Date

Charles Bealmer _____
Chemist Date

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

Anamatrix W.O.: 9302205
Matrix : WATER
Date Sampled : 02/12/93

Project Number : 204-5508-3301
Date Released : 03/02/93

Reporting Limit	Sample I.D.# MW-1	Sample I.D.# MW-2	Sample I.D.# MW-3	Sample I.D.# MW-5	Sample I.D.# DUP	
COMPOUNDS (ug/L)	-01	-02	-03	-04	-05	
Benzene	0.5	ND	ND	820	ND	ND
Toluene	0.5	ND	ND	58	ND	ND
Ethylbenzene	0.5	ND	ND	130	ND	ND
Total Xylenes	0.5	ND	ND	77	ND	ND
TPH as Gasoline	50	ND	ND	4700	ND	ND
% Surrogate Recovery	122%	120%	112%	120%	121%	
Instrument I.D.	HP4	HP4	HP4	HP4	HP4	
Date Analyzed	02/18/93	02/18/93	02/18/93	02/18/93	02/18/93	
RLMF	1	1	25	1	1	

- 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.

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

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

Charles Birch 3-2-93
Analyst Date

Cheryl Belmer 3/2/93
Supervisor Date

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

Anamatrix W.O.: 9302205
Matrix : WATER
Date Sampled : 02/12/93

Project Number : 204-5508-3301
Date Released : 03/02/93

COMPOUNDS	Reporting Limit (ug/L)	Sample I.D.# TRIP	Sample I.D.# BF1801E3
Benzene	0.5	ND	ND
Toluene	0.5	ND	ND
Ethylbenzene	0.5	ND	ND
Total Xylenes	0.5	ND	ND
TPH as Gasoline	50	ND	ND
% Surrogate Recovery		112%	102%
Instrument I.D.		HP4	HP4
Date Analyzed		02/18/93	02/18/93
RLMF		1	1

- 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.

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

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

Charles M. Burch 3-2-93
Analyst Date

Cheryl Balma 3/2/93
Supervisor Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS AS DIESEL
ANAMETRIX, INC. (408) 432-8192

Anamatrix W.O.: 9302205
Matrix : WATER
Date Sampled : 02/12/93
Date Extracted: 02/19/93

Project Number : 204-5508-3301
Date Released : 03/02/93
Instrument I.D.: HP9

Anamatrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (ug/L)	Amount Found (ug/L)
9302205-01	MW-1	02/25/93	50	ND
9302205-03	MW-3	02/25/93	50	560
9302205-04	MW-5	02/25/93	50	ND
DWBL021993	METHOD.BLANK	02/25/93	50	ND

Note : Reporting limit is obtained by multiplying the dilution factor times 50 ug/L.

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

TPHd - Total Petroleum Hydrocarbons as diesel is determined by GCFID following sample extraction by EPA Method 3510.

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

Charles M. Burch 3-2-93
Analyst Date

Charles Balmer 3/2/93
Supervisor Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS AS MOTOR OIL
 ANAMETRIX, INC. (408) 432-8192

Anamatrix W.O.: 9302205
 Matrix : WATER
 Date Sampled : 02/12/93
 Date Extracted: 02/19/93

Project Number : 204-5508-3301
 Date Released : 03/02/93
 Instrument I.D.: HP9

Anamatrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (ug/L)	Amount Found (ug/L)
9302205-03	MW-3	02/25/93	50	ND
DWBL021993	METHOD.BLANK	02/25/93	50	ND

Note : Reporting limit is obtained by multiplying the dilution factor times 50 ug/L.
 ND - Not detected at or above the practical quantitation limit for the method.
 TPHd - Total Petroleum Hydrocarbons as motor oil is determined by GCFID following sample extraction by EPA Method 3510.
 All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Charlton Burch 3.2.93
 Analyst Date

Cheryl Buerger 3/2/93
 Supervisor Date

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

Sample I.D. : 204-5508-3301 MW-1
 Matrix : WATER
 Date Sampled : 02/12/93
 Date Analyzed : 02/18/93

Anamatrix I.D. : 9302205-01
 Analyst : *CMB*
 Supervisor : *CS*
 Date Released : 03/02/93
 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	617	123%	590	118%	-4%	48-149
P-BFB				94%		95%		61-139

* Limits established by Anamatrix, 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
 Date Sampled : N/A
 Date Analyzed : 02/18/93

Anamatrix I.D. : LCSW0218
 Analyst : *CMB*
 Supervisor :
 Date Released : 03/02/93
 Instrument I.D.: HP4

COMPOUND	SPIKE AMT. (ug/L)	REC LCS (ug/L)	%REC LCS	% REC LIMITS
GASOLINE	500	523	105%	67-127
SURROGATE			89%	61-139

* Quality control established by Anamatrix, Inc.

TOTAL EXTRACTABLE HYDROCARBON LABORATORY CONTROL SAMPLE REPORT
 EPA METHOD 3510 WITH GC/FID
 ANAMETRIX, INC. (408) 432-8192

Sample I.D. : LAB CONTROL SAMPLE
 Matrix : WATER
 Date Sampled : N/A
 Date Extracted: 02/19/93
 Date Analyzed : 02/25/93

Anamatrix I.D. : LCSW0219
 Analyst : *CMB*
 Supervisor : *07*
 Date Released : 03/01/93
 Instrument I.D.: HP9

COMPOUND	SPIKE AMT (ug/L)	LCS REC (ug/L)	% REC LCS	LCSD REC (ug/L)	% REC LCSD	RPD	% REC LIMITS
DIESEL	1250	780	62%	880	70%	12%	47-130

*Quality control established by Anamatrix, Inc.