

May 3, 1993 Project 305-94.01

Mr. Randy Orlowski Shell Oil Company P.O. Box 4848 Anaheim, California 92803

Re: Former Shell Service Station 2724 Castro Valley Boulevard at Lake Chabot Road Castro Valley, California WIC No 204-1381-0407

Dear Mr. Orlowski:

This letter presents the results of the first quarter 1993 monitoring program for Shell Oil Company (Shell) prepared by Pacific Environmental Group, Inc. (PACIFIC) for the site referenced above (Figures 1 and 2).

FINDINGS

Groundwater monitoring wells were gauged and sampled by Blaine Tech Services, Inc. (Blaine) at the direction of PACIFIC on February 18 and March 13, 1993. Groundwater elevation contours for the sampling date are shown on Figure 2. Table 1 presents groundwater elevation data.

Groundwater analytical data are presented in Tables 2 and 3. Total petroleum hydrocarbons calculated as gasoline (TPH-g), benzene, and TPH calculated as diesel (TPH-d) concentrations for the February 1993 sampling event are shown on Figure 3. Blaine's groundwater sampling report is presented as Attachment A.

Off-site groundwater Monitoring Well OMW-9 was installed on February 11, 1993. The boring log for OMW-9 is presented as Attachment B.

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

Sincerely,

Pacific Environmental/Group, Inc.

Michael Hurd

Senior Geologist

RG 5319

Attachments: Table 1 - Groundwater Elevation Data

Table 2 - Groundwater Analytical Data -Total Petroleum Hydrocarbons

(TPH as Gasoline and BTEX Compounds)

No. 5319

Table 3 - Groundwater Analytical Data -

Total Petroleum Hydrocarbons (TPH as Diesel and Motor Oil)

Figure 1- Site Location Map

Figure 2- Groundwater Elevation Map

Figure 3- TPH-g/Benzene/TPH-d Concentration Map

Attachment A - Groundwater Sampling Report Attachment B - Off-Site Well OMW-9 Boring Log

cc: Mr. Scott Seery, Alameda County Department of Environmental Health

Mr. Rich Hiett, Regional Water Quality Control Board

Dr. Mohsen Mehran, Owner Consultant

Mr. Richard Finn, Larson and Burnham

Mr. Matthew Righetti, Righetti Law Firm

Mr. Richard A. Schoenberger, Esq., Walkup, Shelby, Bastian, Melodia, Kelly, Echeverria and Link

Mr. David Swope, Shell Oil Company

Mr. Jeff Holland, Shell Oil Company

Table 1 Groundwater Elevation Data

Former Shell Service Station 2724 Castro Valley Boulevard at Lake Chabot Road Castro Valley, California

Well Number	Date Gauged	Well Elevation (MSL, feet)	Depth to Water (feet, TOC)	Groundwater Elevation (MSL, feet)
MW-1	02/08/90	99.78	8.39	91.39
	04/20/90		9.21	90.57
	07/30/90		9.21	90.57
	10/25/90		9.44	90.34
	01/15/91		9.11	90.67
	04/19/91	,	5.58	94.20
	07/16/91		7.58	92.20
	10/08/91		8.25	91.53
	02/04/92		8.52	91.26
	04/06/92		6.7 5	93.03
	08/26/92		9.89	89.89
	11/06/92		9.01	90.77
	02/18/93	160.54	4.33	156.21
MW-2	02/08/90	100.83	7.33	93.50
	04/20/90		8.63	92.20
	07/30/90		8.78	92.05
	10/25/90		9.50	91.33
	01/15/91		8.52	92.31
	04/19/91		6.90	93.93
	07/16/91		9.01	91.82
	10/08/91		8.82	92.01
	02/04/92		7.46	93.37
	04/06/92		6.91	93.92
	08/26/92		9.28	91.55
	11/06/92		8.59	92.24
	02/18/93		Well Inaccessible	0
MW-3	02/08/90	101.48	8.91	92.57
	04/20/90		10.20	91.28
	07/30/90		10.61	90.87
	10/25/90		10.00	91.48
	01/15/91		9.74	91.74
	04/19/91		7.92	93.56
	07/16/91		9.40	92.08
	10/08/91		9.62	91.86
	02/04/92		8.74	92.74
	04/06/92		7.12	94.36
	08/26/92		9.58	91.90
-	11/06/92		8.95	92.53
	02/18/93	162.24	6.79	155.45

Table 1 (continued) Groundwater Elevation Data

Former Shell Service Station 2724 Castro Valley Boulevard at Lake Chabot Road Castro Valley, California

Well Number	Date Gauged	Well Elevation (MSL, feet)	Depth to Water (feet, TOC)	Groundwater Elevation (MSL, feet)
MW-5	02/08/90	. 99.90	8.80	91.10
	04/20/90		9.35	90.55
	07/30/90		9.49	90.41
	10/25/90		10.12	89.78
	01/15/91		9.26	90.64
	04/19/91		6.52	93.38
	07/16/91		9.12	90.78
	10/08/91		9.22	90.68
	02/04/92		8.13	91.77
	04/06/92		5.53	94.37
	08/26/92		9.25	90.65
	11/06/92		9.02	90.88
	02/18/93	160.68	3.60	157.08
OMW-6	07/16/91	101.48	8.60	92.88
	10/08/91		8.82	92.66
	02/04/92		7.47	94.01
	04/06/92		5.80	95.68
	08/26/92		9.18	92.30
	11/06/92		8.29	93.19
	02/18/93	162.22	5.83	156.39
MW-7	07/16/91	99.54	8.70	90.84
	10/08/91		8.74	90.80
	02/04/92		7.78	91.76
	04/06/92		5.87	93.67
	08/26/92		8.93	90.61
	11/06/92		8.51	91.03
	02/18/93		Well Inaccessible	9
8-WMO	07/16/91	100.18	8.40	91.78
	10/08/91		8.74	91.44
	02/04/92		8.22	91.96
	04/06/92		6.82	93.36
	08/26/92		9.15	91.03
	11/06/92		8.69	91.49
	02/18/93	160.92	7.59	153.33
OMW-9	03/03/93	158.81	9.16	149.65

MSL = Mean sea level

TOC = Top of casing

Elevations prior to February 18, 1993 are to a temporary bench mark.

Elevations after February 18, 1993 are to MSL.

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

Former Shell Service Station 2724 Castro Valley Boulevard at Lake Chabot Road

Castro Valley, California

Well Number	Date Sampled	TPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)
MW-1	02/09/90	<1,000	0.58	0.63	<0.5	<0.5
	04/20/90	<50	< 0.5	< 0.5	< 0.5	< 0.5
	07/31/90	<50	< 0.5	< 0.5	<0.5	< 0.5
	10/25/90	100	<0.5	< 0.5	<0.5	< 0.6
	01/15/91	60	< 0.5	< 0.5	< 0.5	< 0.5
	01/15/91	<50	< 0.5	< 0.5	< 0.5	< 0.5
	04/19/91	<50	7.7	< 0.5	< 0.5	< 0.5
	04/19/91	<50	7.4	< 0.5	<0.5	< 0.5
	07/16/91	<50	< 0.5	< 0.5	< 0.5	< 0.5
	10/08/91	<50	< 0.5	< 0.5	< 0.5	< 0.5
	02/04/92	<50	< 0.5	< 0.5	<0.5	< 0.5
	04/06/92	50	< 0.5	< 0.5	· <0.5	< 0.5
	08/26/92	<50	< 0.5	< 0.5	< 0.5	< 0.5
	11/12/92	<50	< 0.5	< 0.5	< 0.5	< 0.5
	02/18/93	<50	< 0.5	<0.5	<0.5	<0.5
MW-2	02/09/90	8,600	360	410	6.5	670
	04/20/90	9,100	500	330	110	900
	07/31/90	5,300	550	38	< 0.5	280
	10/25/90	4,800	490	22	21	156
	01/15/91	5,700	320	29	120	530
	04/19/91	3,900	100	77	100	93
	07/16/91	1,800	100	5.8	41	31
	07/16/91	2,700	130	7.6	62	45
	10/08/91	1,000	17 .	< 0.5	25	25
	02/04/92	1,700	190	5.8	18	110
	04/06/92	3,800	930	50	110	190
	05/03/92	2,400	610	8.8	90	< 0.5
	08/26/92	520	36	2.0	12	7.9
	08/26/92(D)	450	33	1.7	11	3.4
	11/12/92	310	30	6.2	5.1	4.3
	11/12/92(D)	360	31	6.5	5.1	4.4
	02/18/93			-Well Inaccess		
MW-3	02/09/90	<1,000	< 0.5	< 0.5	<0.5	<0.5
	04/20/90	<50	< 0.5	< 0.5	< 0.5	< 0.5
	07/31/90	<50	< 0.5	< 0.5	< 0.5	< 0.5
	10/25/90	<50	< 0.5	< 0.5	< 0.6	< 0.6
	01/15/91	<50	< 0.5	<0.5	<0.5	< 0.5
	04/19/91	<50	< 0.5	< 0.5	<0.5	< 0.5

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

Former Shell Service Station 2724 Castro Valley Boulevard at Lake Chabot Road Castro Valley, California

Well Number	Date Sampled	TPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)
MW-3	07/16/91	<50	<0.5	<0.5	<0.5	<0.5
(cont.)	10/08/91	<50	<0.5	< 0.5	<0.5	< 0.5
	02/04/92	<50	4	2	7	3.2
	04/06/92	<50	< 0.5	< 0.5	<0.5	< 0.5
	08/26/82.	<50	< 0.5	< 0.5	<0.5	< 0.5
	11/12/92	<50	< 0.5	< 0.5	< 0.5	< 0.5
	02/18/93	<50	<0.5	<0.5	<0.5	<0.5
MW-5	02/09/90	<1,000	<0.5	<0.5	<0.5	<0.5
	04/20/90	<50	< 0.5	< 0.5	<0.5	< 0.5
	07/31/90	<50	< 0.5	< 0.5	<0.5	< 0.5
	10/25/90	<50	< 0.5	< 0.7	<0.6	< 0.6
	01/15/91	<50	< 0.5	< 0.5	<0.5	<0.5
	04/19/91	<50	< 0.5	< 0.5	< 0.5	< 0.5
	07/16/91	<50	< 0.5	< 0.5	< 0.5	< 0.5
	10/08/91	<50	< 0.5	< 0.5	<0.5	< 0.5
	02/04/92	<50	< 0.5	< 0.5	<0.5	< 0.5
	04/06/92	<50	< 0.5	< 0.5	<0.5	< 0.5
	08/26/92	<50	< 0.5	< 0.5	< 0.5	< 0.5
	11/12/92	<50	< 0.5	< 0.5	<0.5	<0.5
	02/18/93	<50	<0.5	<0.5	<0.5	<0.5
OMW-6	07/16/91	<50	<0.5	<0.5	<0.5	<0.5
_	10/08/91	<50	< 0.5	< 0.5	< 0.5	< 0.5
·	02/04/92	<50	< 0.5	< 0.5	< 0.5	< 0.5
	04/06/92	< 50	< 0.5	< 0.5	< 0.5	< 0.5
	08/26/92	<50	< 0.5	< 0.5	< 0.5	< 0.5
	11/12/92	<50	< 0.5	< 0.5	< 0.5	< 0.5
	02/18/93	<50	< 0.5	< 0.5	<0.5	< 0.5
	02/18/93(D)	<50	<0.5	< 0.5	<0.5	<0.5
MW-7	07/16/91	1,300	440	140	6.9	160
	10/08/91	520	230	36	26	54
	02/04/92	640	130	51	26	79
	04/06/92	80	32	1.7	2.3	4.4
	05/13/92	<50	3.1	1.7	0.9	3.8
	08/26/92	6 3	1.0	< 0.5	2.6	< 0.5
	11/12/92	73	11	< 0.5	3.7	< 0.5
	02/18/93			Well inaccess	ble	

Table 2 (continued) **Groundwater Analytical Data**

Total Petroleum Hydrocarbons (TPH as Gasoline and BTEX Compounds)

Former Shell Service Station 2724 Castro Valley Boulevard at Lake Chabot Road Castro Valley, California

Well Number	Date Sampled	TPH as Gasoline (ppb)	Benzene . (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)
8-WMO	07/16/91	<50	<0.5	0.8	< 0.5	<0.5
	10/08/91	<50	< 0.5	< 0.5	< 0.5	< 0.5
	02/04/92	<50	0.9	1.9	0.6	3.6
	04/06/92	<50	< 0.5	< 0.5	< 0.5	< 0.5
	08/26/92	<50	< 0.5	< 0.5	< 0.5	< 0.5
	11/12/92	<50 ₂₃₃	< 0.5	< 0.5	< 0.5	< 0.5
	02/18/93	1805	<0.5	<0.5	<0.5	<0.5
OMW-9	03/03/93	<50	< 0.5	< 0.5	<0.5	<0.5

ppb = Parts per billion

⁽D) = Duplicate sample

= Concentration due to the presence of a heavier petroleum hydrocarbon range.

Table 3 Groundwater Analytical Data Total Petroleum Hydrocarbons (TPH as Diesel and Motor Oil)

Former Shell Service Station 2724 Castro Valley Boulevard at Lake Chabot Road Castro Valley, California

·	<u></u>		
Well	Dete	TPH as	Motor Oil
Number	Date .	Diesel	=
Number	Sampled	(ppb)	.(ppb)
1 MW-1	02/09/90	NA	NA
	04/20/90	NA	NA
	07/31/90	NA	NA
	10/25/90	<50	NA
	01/15/91	<50	NA
	01/15/91	<50	NA
	04/19/91	<50	NA
	04/19/91	<50	NA
	07/16/91	<50	<50
	10/08/91	<50	<50
	02/04/92	<50	NA
	04/06/92	<50	NA
	08/26/92	51	NA
	11/12/92	<50	NA
	02/18/93	57*	NA
MW-2	02/09/90	4,100	NA
	04/20/90	1,800	NA
	07/31/90	60	NA
	10/25/90	300	NA
	01/15/91	680	NA
	04/19/91	306	NA
	07/16/91	430	<50
	07/16/91	540	<50
	10/08/91	110	<50
	02/04/92	870	NA
	04/06/92	1,000	NA
	05/13/92	570	NA
•	08/26/92	63	NA
	08/26/92(D)	63	NA
	11/12/92	160	NA
	11/12/92(D)	180	NA
	02/18/93	Well Ina	accessible
MW-3	02/09/90	'NA	NA
	04/20/90	NA	NA
	07/31/90	NA	NA
	10/25/90	<50	NA
	01/15/91	<50	NA
	04/19/91	<50	NA

Table 3 (continued) Groundwater Analytical Data Total Petroleum Hydrocarbons (TPH as Diesel and Motor Oil)

Former Shell Service Station 2724 Castro Valley Boulevard at Lake Chabot Road Castro Valley, California

· · · · · · · · · · · · · · · · · · ·			
	_	TPH as	
Well	Date	Diesel	Motor Oil
Number	Sampled	(ppb)	(ppb)
MW-3	07/16/91	<50	1,400
(cont.)	10/08/91	<50	<50
(00:)	02/04/92	<50	NA
	04/06/92	<50	NA
	08/24/92	<50	NA
	11/12/92	< 5 0	NA
	02/18/93	<50	NA
	02, 10,00		
MW-5	02/09/90	NA	NA
	04/20/90	NA	NA
	07/31/90	NA	NA
	10/25/90	<50	NA
•	01/15/91	<50	NA
	04/19/91	<50	NA
	07/16/91	<50	<50
	10/08/91	<50	<50
	02/04/92	<50	√NA
	04/06/92	<50	NA
	08/26/92	< 50	NA
	11/12/92	< 50	NA
	02/18/93	80*	NA
OMW-6	07/16/91	<50	<50
	10/08/91	<50	<50
	02/04/92	<50	NA
	04/06/92	<50	NA
	08/26/92	<50	NA
	11/12/92	<50	NA
	02/18/93	<50	NA
	02/18/93(D)	84*	NA
MW-7	07/16/92	270	1,100
IAIA 4-1			
	10/08/92 02/04/92	<50. *440**	<50 NA
	02/04/92 04/06/92	<50	NA NA
		<50 <50	NA NA
	05/13/92		NA NA
	08/26/92	<50 <50	NA NA
	11/12/92	<50 - Well in:	na accessible
	02/18/93	vven ma	

Table 3 (continued) Groundwater Analytical Data Total Petroleum Hydrocarbons (TPH as Diesel and Motor Oil)

Former Shell Service Station 2724 Castro Valley Boulevard at Lake Chabot Road Castro Valley, California

Well Number	Date Sampled	TPH as Diesel (ppb)	Motor Oil (ppb)	
OMW-8	07/16/91	<50	<50	
	10/08/91	<50	<50	
	02/04/92	<50	NA	
	04/06/92	<50	NA	
	08/26/92	<50	NA	
	11/12/92	<50	NA	
	02/18/93	<50	NA	
OMW-9	03/03/93	71*	NA	

ppb = Parts per billion

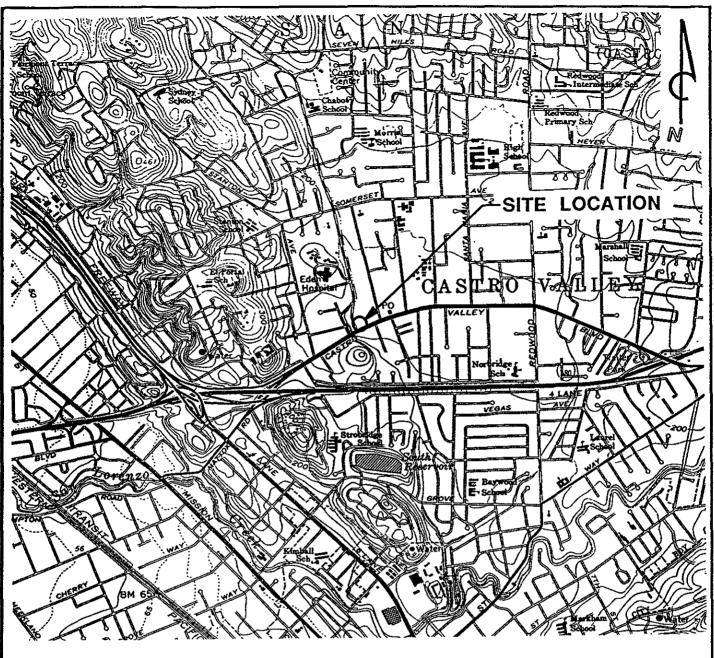
NA = Not analyzed

(D) = Duplicate sample

* Concentration primarily due to the presence of a heavier petroleum hydrocarbon product.

The positive result for TPH-d analysis on this sample appears to be lighter hydrocarbon than diesel.

See individual analytical reports for detection limits.

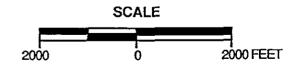




QUADRANGLE LOCATION

REFERENCES:

USGS 7.5 MIN. TOPOGRAPHIC MAP TITLED: HAYWARD, CALIFORNIA DATED: 1959 REVISED: 1980





PACIFIC ENVIRONMENTAL GROUP, INC.

FORMER SHELL SERVICE STATION 2724 Castro Valley Boulevard at Lake Chabot Road

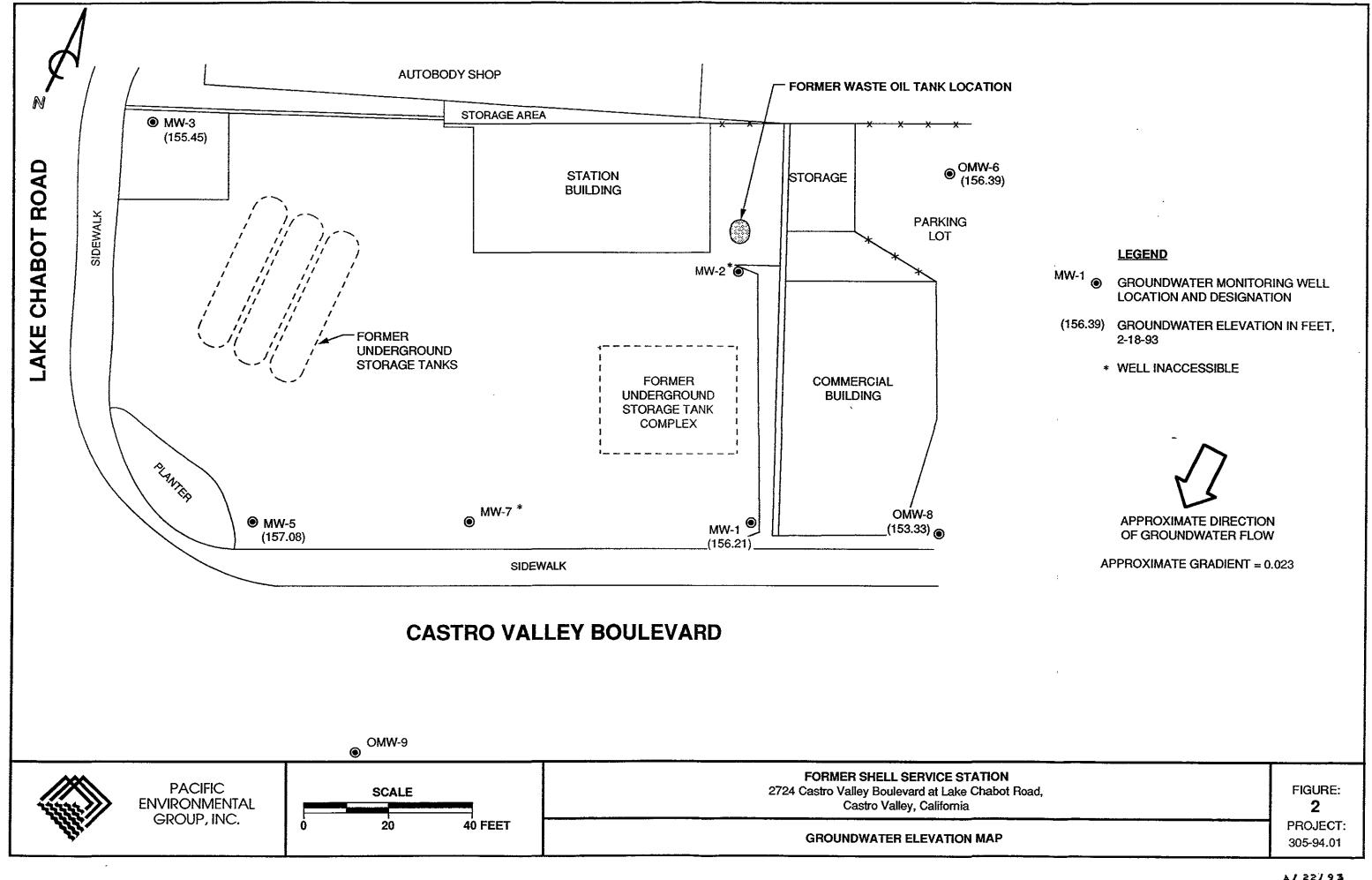
Castro Valley, California

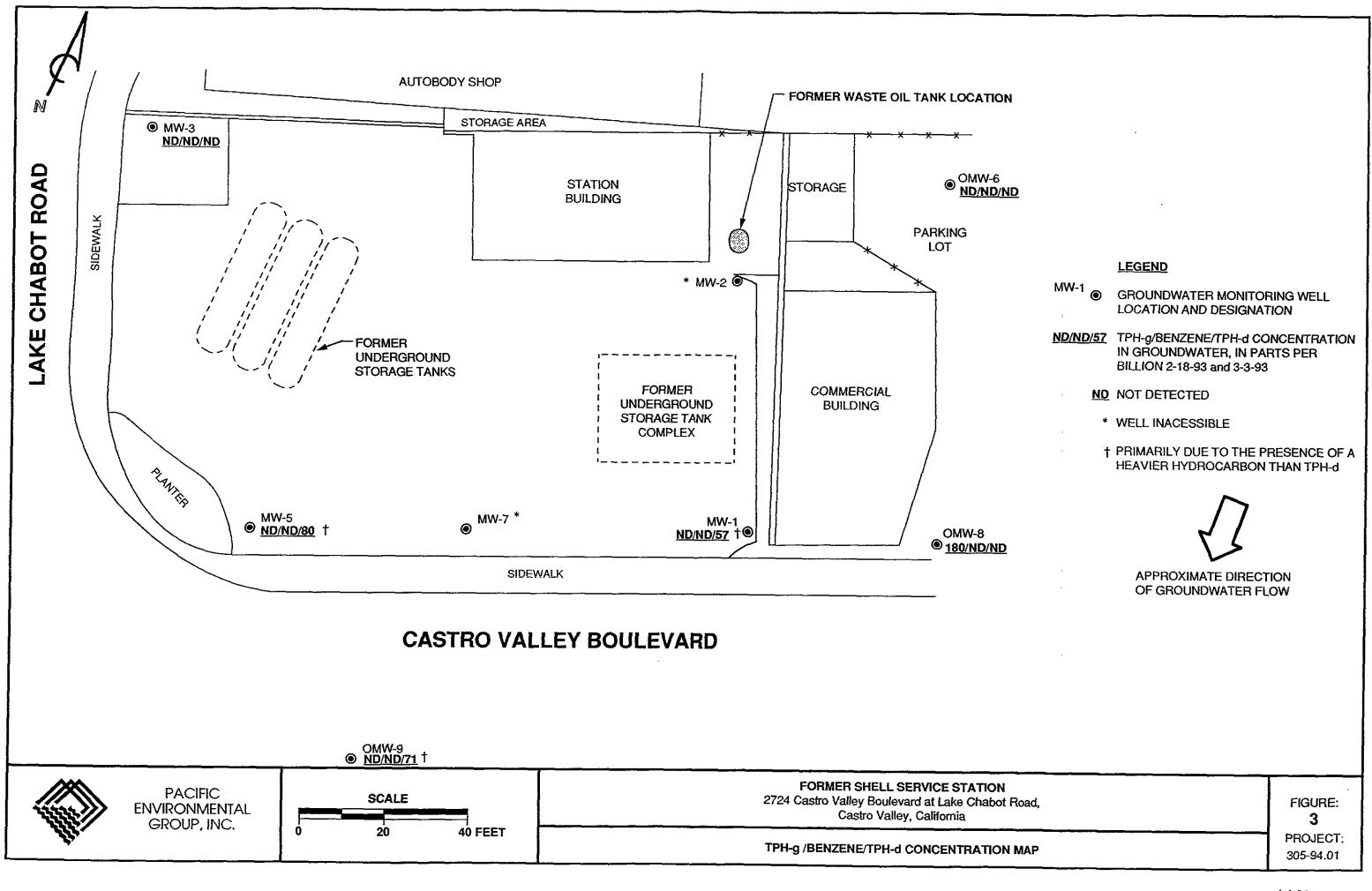
SITE LOCATION MAP

FIGURE:

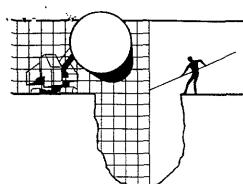
PROJECT: 305-94.01

REORDER NO A54081





ATTACHMENT A GROUNDWATER SAMPLING REPORT



BLAINE TECH SERVICES INC.

985 TIMOTHY DRIVE SAN JOSE, CA 95133 (408) 995-5535 FAX (408) 293-8773



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

Attn: Daniel T. Kirk

SITE: Shell WIC # 204-1381-0407 2724 Castro Valley Blvd. Castro Valley, California

QUARTER: 1st quarter of 1993

QUARTERLY GROUNDWATER SAMPLING REPORT 930218-W-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	02-18-93	TOP OF PIPE	ua sa	NONE			4.33	14.90
MW-2	4	02-18-93	WELL WAS BURIED	•					
мw-3	4	02-18-93	TOP OF PIPE		NONE			6.79	25,65
MW- 5	4	02-18-93	TOP OF PIPE		NONE	~~	·	3.60	22.40
OMW-6 *	4	02-18-93	TOP OF PIPE		NONE			5.83	22.30
MW-7	4	02-18-93	UNABLE TO LOCAT	Ε.					
OMW-8	4	02-18-93	TOP OF PIPE		NONE			7.59	20.22
OMW-9	3	02-18-93	TOP OF PIPE		NONE			9.16	14.42

^{*} Sample "DUP" was a duplicate sample taken from well OMW-6.

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: chain of custody

certified analytical report

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

ATTN: Rhonda Barrick

9302284 SHELL OIL COMPANY CHAIN OF CUSTODY RECORD Dalo: 1 RETAIL ENVIRONMENTAL ENGINEERING - WEST Serial No: Pago Sile Address: 0 Analysis Required LAB: WIC#: CHECK OHE (I) FOX OHLY CIVE TURN AROUND TIME gahashari Yashaw P Shell Engineer: Phone No.: **||** #41 Soll Closelly/Disposal | \$442 C Km Clouity/Disposal Voictile Organics (EPA 8240) TPH (EPA 8015 Mod. Diesel) Soll/Ali Rem, et Sys, 8015 & □ 6482 HOTE Holly tob of toon as Possible of 24/48 hm. 1A1, Commonis: Worse tem, or Sys, O & M U KU TPH (EPA 8015 Mod. BIEX (EPA 8020/602) Preparation Used Test for Disposal Sampled by: Container Size BON SAMPLE Printed Name: MATERIAL CONDITION/ DESCRIPTION COMMENTS Sample ID Date Sludge Wolei conts. 2/18 Grundwork MW-J MW-Dates: 143 Received (signature):
Time: 1608
Dates: 1700 signature):
Time: 1700 signature): Printed Name: Rme: Acc) Printed Name: Date: 2-19-43 filme: 19:25 MICHELE D. AGUILAR Date: Time: llme; THE LABORATORY MUST PROVIDE A COPY OF THIS CHAIN-OF-CUSTODY WITH INVOICE AND RESULTS

ANAMETRIX INC

Environmental & Analytical Chemistry

Part of Inchcape Environmental



MR. GLEN BENNETT

BLAINE TECH

985 TIMOTHY STREET SAN JOSE, CA 95133

Workorder # : 9302284 Date Received : 02/19/93

Project ID : 204-5508-2303

Purchase Order: MOH-B813

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

ANAMETRIX ID	CLIENT SAMPLE ID
9302284- 1	OMW-8
9302284- 2	OMW-6
9302284- 3	MW-3
9302284- 4	MW-5
9302284- 5	MW-1
9302284- 6	DUP
9302284- 7	TB

This report consists of 8 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

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

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

Workorder # : 9302284 Date Received: 02/19/93 Project ID : 204-5508-2303

Purchase Order: MOH-B813 Department : GC Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9302284- 1	OMW-8	WATER	02/18/93	TPHd
9302284- 2	OMW-6	WATER	02/18/93	TPHd
9302284- 3	MW-3	WATER	02/18/93	TPHd
9302284- 4	MW-5	WATER	02/18/93	TPHd
9302284- 5	MW-1	WATER	02/18/93	TPHd
9302284- 6	. DUP	WATER	02/18/93	TPHd
9302284- 1	8-WMO	WATER	02/18/93	TPHg/BTEX
9302284- 2	OMW-6	WATER	02/18/93	TPHg/BTEX
9302284- 3	MW-3	WATER	02/18/93	TPHg/BTEX
9302284- 4	MW-5	WATER	02/18/93	TPHg/BTEX
9302284- 5	MW-1	WATER	02/18/93	TPHg/BTEX
9302284- 6	DUP	WATER	02/18/93	TPHg/BTEX
9302284- 7	ТВ	WATER	02/18/93	TPHg/BTEX

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

MR. GLEN BENNETT

BLAINE TECH

985 TIMOTHY STREET

SAN JOSE, CA 95133

Workorder # : 9302284

Date Received: 02/19/93

Project ID : 204-5508-2303

Purchase Order: MOH-B813

Department : GC Sub-Department: TPH

QA/QC SUMMARY :

- The concentration reported as gasoline for sample OMW-8 is primarily due to the presence of a heavier petroleum product of hydrocarbon range C10-C14.

- The concentrations reported as diesel for samples MW-5, MW-1 and DUP are primarily due to the presence of a heavier petroleum product of hydrocarbon range C18-C30.

Charles 3/4/93
Department Supervisor Date

Reagle Jamson 3/4/93 Chemist Date

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

Anametrix W.O.: 9302284 Project Number: 204-5508-2303

Matrix : WATER Date Released : 03/04/93

Matrix : WATER
Date Sampled : 02/18/93

	Reporting Limit	Sample I.D.# OMW-8	Sample I.D.# OMW-6	Sample I.D.# MW-3	Sample I.D.# MW-5	Sample I.D.# MW-1
COMPOUNDS	(ug/L)	-01	-02	-03	-04	-05
Benzene Toluene Ethylbenzene Total Xylenes TPH as Gasoline * Surrogate Rec Instrument I. Date Analyzed RLMF	D.	ND ND ND ND 180 105% HP4 02/25/93	ND ND ND ND ND 110% HP4 02/25/93	ND ND ND ND ND 113% HP4 02/25/93	ND ND ND ND ND 97% HP4 02/25/93	ND ND ND ND ND 110% HP4 02/25/93

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

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 Tourson 3/4/93 Analyst Date Charlesone 3/4/92 Supervisor Date

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.

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

Anametrix W.O.: 9302284 Project Number: 204-5508-2303

Matrix : WATER Date Released : 03/04/93

Date Sampled : 02/18/93

	Reporting Limit	Sample I.D.# DUP	Sample I.D.# TB	Sample I.D.# BF2501E3	
COMPOUNDS	(ug/L)	-06	-07 	BLANK	
Benzene Toluene Ethylbenzene Total Xylenes TPH as Gasoline * Surrogate Rec Instrument I. Date Analyzed RLMF		ND ND ND ND ND 108% HP4 02/25/93	ND ND ND ND ND 119% HP4 02/25/93	ND ND ND ND ND 125% HP4 02/25/93	

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 Tourson 3/4/93 Analyst Date Cheryl Bulma 3/4/53 Supervisor Date

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

Anametrix W.O.: 9302284 Project Number: 204-5508-2303

Matrix Matrix : WATER
Date Sampled : 02/18/93 Date Released: 03/04/93

Instrument I.D.: HP9

Date Extracted: 02/25/93

Anametrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (ug/L)	Amount Found (ug/L)
9302284-01	OMW-8	03/02/93	50	ND
9302284-02	OMW-6	03/02/93	50	ND
9302284-03	MW-3	03/02/93	50	ND
9302284-04	MW-5	03/03/93	50	80
9302284-05	MW-1	03/02/93	50	57
9302284-06	DUP	03/03/93	50	84
DWBL022593	METHOD BLANK	03/02/93	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.

Peggie Dawson 3

RESULTS - TPH - PAGE 5

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

Anametrix I.D.: 9302284-02 Analyst: D Supervisor: 03 Sample I.D. : 204-5508-2303 OMW-6
Matrix : WATER Date Sampled : 02/18/93

Date Released : 03/04/93 Instrument ID : HP4 Date Analyzed: 02/25/93

COMPOUND	SPIKE AMT (ug/L)	SAMPLE AMT (ug/L)	REC % REC MS MS (ug/L)		REC RPD MD	% REC LIMITS
GASOLINE	500	. 0	578 1168	571 1	.14% -1%	48-149
P-BFB			92%	.	97%	61-139

^{*} Limits established by Anametrix, Inc.

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

Anametrix I.D.: LCSW0225

Sample I.D. : LAB CONTROL SAMPLE Matrix : WATER Analyst : 2D Supervisor : 0 Matrix : WATER Date Sampled : N/A

Date Released: 03/04/93 Date Analyzed: 02/25/93

Instrument I.D.: HP4

COMPOUND	SPIKE AMT. (ug/L)	REC LCS (ug/L)	%REC LCS	% REC LIMITS
GASOLINE	500	404	81%	67-127
SURROGATE			79%	61-139

^{*} Quality control established by Anametrix, Inc.

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

Anametrix I.D.: LCSW0225

Sample I.D. : LAB CONTROL SAMPLE
Matrix : WATER
Date Sampled : N/A Analyst Supervisor

Date Extracted: 02/25/93 Date Released: 03/04/93

Date Analyzed: 03/02/93 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	1280	102%	1410	113%	10%	47-130

^{*}Quality control established by Anametrix, Inc.

9303061 SHELL OIL COMPANY CHAIN OF CUSTODY RECORD Date: Serial No: RETAIL ENVIRONMENTAL ENGINEERING - WEST Page Castrollaller Blok, Castrollaler CA **Analysis Required** AUAMETIKA LAB: WIC#: CHECK ONE (1) BOX ONLY CT/DE TURN AROUND TIME Phone No.:5/0. Shell Engineer: 24 hours | Daniel T- Kirk □ 8441 Fax #:65-6151 48 hours Combination TPH 8015 & BTEX 8020 Consullant Name & Address: Soll Classify/Disposal . . \$442 Blaine Tech Consultant Contact: Water Clossity/Disposal = (EPA 8240) Other Phone No.: 40 g TPH (EPA 8015 Mod. Diesel) Gden Bennott □ 6452 Fax #: 995-5505 TPH (EPA 8015 Mod. Gas) HOTE: Holly lab or soon as Foulble of 24/48 hm. TAT. Water Rem, or Sys. O & M Comments: □ #45 BTEX (EPA 8020/602) Volatile Organics Preparation Used Oiher Y/N Test for Disposor Sampled by We Canera Container Size Composite JOE Correra SAMPLE Asbestos Printed Name: MATERIAL CONDITION/ DESCRIPTION COMMENTS No. of Sample ID \$all Water Studge Date conts. OMW-9 3.3 ser Glen Bennett 3-4-93 9.0. Doler 3-4-72 Received (signchite):
Time: 1945 (WMM) (h. 1944)
Dole: 3-4-73 Received (signchite): ()
Time: 1570 (Mark War Printed Name: Pynted Nome: Date: 3-4-1 Gaerzos Done: /14 Athled Name: Goe Printed Name: Marria Printed Name: Bara Oale: 3 11me: 15:00 Dale:

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

ANAMETRIX INC

Environmental & Analytical Chemistry

Part of Inchcape Environmental



MR. GLEN BENNETT BLAINE TECH 985 TIMOTHY STREET SAN JOSE, CA 95133 Workorder # : 9303061 Date Received : 03/04/93

Project ID : 204-1381-0407

Purchase Order: MOH-B813

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

ANAMETRIX ID	CLIENT SAMPLE ID
9303061- 1	OMW-9

This report consists of 6 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

03-15-93

Date

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

MR. GLEN BENNETT

BLAINE TECH

985 TIMOTHY STREET

SAN JOSE, CA 95133

Workorder # : 9303061 Date Received : 03/04/93

Project ID : 204-1381-0407

Purchase Order: MOH-B813

Department : GC

Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9303061- 1	OMW-9	WATER	03/03/93	TPHd
9303061- 1	OMM-9	WATER	03/03/93	TPHg/BTEX

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

MR. GLEN BENNETT BLAINE TECH

985 TIMOTHY STREET SAN JOSE, CA 95133

Workorder # : 9303061 Date Received: 03/04/93 Project ID: 204-1381-0407 Purchase Order: MOH-B813

Department : GC Sub-Department: TPH

QA/QC SUMMARY :

- The concentration reported as diesel for sample OMW-9 is primarily due to the presence of a heavier petroleum product of hydrocarbon range C18-C30.

Cheul Balma 3/11/53
Department Supervisor Date

rallen Buch 3.11.93

GC/TPH - PAGE 2

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

Anametrix W.O.: 9303061 Project Number : 204-1381-0407

Date Released : 03/11/93

Matrix : WATER
Date Sampled : 03/03/93

	Reporting Limit	Sample I.D.# OMW-9	Sample I.D.# BM0801E3		
COMPOUNDS	(ug/L)	-01	BLANK		
Benzene Toluene Ethylbenzene Total Xylenes TPH as Gasoline	0.5 0.5 0.5 0.5 50	ND ND ND ND ND	ND ND ND ND ND		
<pre>% Surrogate Reco Instrument I.I Date Analyzed RLMF</pre>		139% HP4 03/08/93 1	123% HP4 03/08/93 1		

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

TPHq - Total Petroleum Hydrocarbons as qasoline 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.

Jesh Buch 3.11.93

hey Bulmer 3/11/53

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

Project Number: 204-1381-0407 Date Released: 03/11/93 Anametrix W.O.: 9303061

Matrix : WATER

Instrument I.D.: HP9

Date Sampled: 03/03/93 Date Extracted: 03/04/93

Anametrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (ug/L)	Amount Found (ug/L)
9303061-01	OMW-9	03/09/93	50	71
DWBL030493	METHOD BLANK	03/08/93	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.

una Shor 3/15/93

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

Sample I.D. : LAB CONTROL SAMPLE
Matrix : WATER
Date Sampled : N/A
Date Analyzed : 03/07/93 Anametrix I.D.: LCSW0307 Analyst : CMC Supervisor : CD

Date Released: 03/11/93 Instrument ID: HP4

COMPOUND	SPIKE AMT. (ug/L)	LCS (ug/L)	REC LCS	%REC LIMITS
Benzene Toluene Ethylbenzene TOTAL Xylenes	20.0 20.0 20.0 20.0	20.1 20.5 20.2 20.5	101% 102% 101% 102%	52-133 57-136 56-139 61-139
P-BFB			116%	61-139

^{*} Limits established by Anametrix, 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: 03/04/93
Date Analyzed : 03/08/93

Anametrix I.D.: LCSW0304

Analyst : CMB
Supervisor : CMB
Date Released : 03/11/93
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	810	65%	770	62%	- 5%	47-130

^{*}Quality control established by Anametrix, Inc.

ATTACHMENT B OMW-9 BORING LOG

