added to file 8-5-94 by TE

Mobil Oil Corporation

90 MAY 11 AM 10: 53

3800 WEST ALAMEDA AVENUE, SUITE 700 BURBANK, CALIFORNIA 91505-4331

May 9, 1990

Mr. Rafat Shahid Alameda County Health Care Services 80 Swan Way, Room 200 Oakland, CA 94621 mobil oil corporation former s/s 10-E6A 100 MacARTHUR BOULEVARD 946/0 OAKLAND, CALIFORNIA BP S/S 11102

Dear Mr. Shahid:

Enclosed for your review is the Preliminary Site Investigation Report, dated May 2, 1990, for subject location. Please note that MW-2, downgradient of the tank field, was ND for BTEX.

We propose to monitor and sample the wells quarterly for two more quarters. The evaluation of whether additional investigation is necessary or if case closure is warranted can be made as results of the sampling are obtained during this period.

If you have any questions, please feel free to contact me at (818) 953-2519.

Sincerely,

David M. Noe, P.E.

Groundwater Projects Engineer

DMN:st enclosure

CC: Mr. Tom Callahan (w/ enclosure)
 RWQCB - SF Bay Region
 1800 Harrison Street, Room 700
 Oakland, CA 94607

Mr. Bill Hollis (w/ enclosure)
BP Oil Company
2868 Prospect Park Drive, Suite 360
Rancho Cordova, CA 95670-6020

S. Pao - Burbank (w/o)

ALTON GEOSCIENCE, INC.

QUARTERLY GROUND WATER MONITORING AND SAMPLING REPORT

for

Former Mobil Service Station 10-E6A 100 MacArthur Boulevard Oakland, California

Project No. 30-063

May 2, 1990

GROUND WATER MONITORING AND SAMPLING REPORT

Former Mobil Service Station 10-E6A 100 MacArthur Boulevard Oakland, California May 2, 1990

Alton Geoscience Project No. 30-063

INTRODUCTION

This report presents the results and findings of the recent quarterly ground water monitoring and sampling activities performed by Alton Geoscience, Inc. at former Mobil Service Station 10-E6A, located at 100 MacArthur Boulevard, Oakland, California.

PROJECT BACKGROUND

During the removal of the 280-gallon waste oil tank in September 1988, a product sheen was discovered on the ground water encountered in the tank cavity. Analysis of a soil sample collected from the tank backfill material showed a concentration of 65,000 parts per million (ppm) of total oil and grease (TOG). Based on this finding, the Alameda County Department of Environmental Health (ACDEH) requested that a site assessment be performed to determine the impact of TOG level on the subsurface soil and/or ground water.

In order to assess the lateral and vertical extent of soil and/or ground water contamination at the site, Mobil Oil Corporation retained Alton Geoscience to conduct a site investigation, drill three soil borings, and install Ground Water Monitoring Wells MW-1, MW-2, and MW-3. Soil and ground water samples were collected during installation of the wells and analyzed for the required hydrocarbon constituents. A report dated December 20, 1989, presenting the findings of the site investigation, was submitted to the appropriate regulatory agencies for review. Based on the findings of this investigation, a quarterly ground water monitoring and sampling program was proposed for a period of at least three quarters.

FIELD PROCEDURES

On April 3, 1990, Alton Geoscience monitored and sampled Ground Water Monitoring Wells MW-1, MW-2 and MW-3, in accordance with the requirements and procedures of the Regional Water Quality Control Board (RWQCB) and the Alameda County Department of Environmental Health (ACDEH). Prior to purging and sampling, the ground water level in each well was

measured from the top of casing to the nearest 0.01 foot using an electronic sounder. Ground water samples were collected using a hand bailer and visually inspected for the presence of free product or sheen.

Each well was purged of the required casing volumes or until stabilization of pH, temperature, and conductivity was achieved, prior to sample collection. The water sampling field survey forms are included in Appendix A. Ground water samples for laboratory analyses were collected using a clean Teflon bailer, and then decanted into the appropriate containers for delivery to a state-certified laboratory, following proper sample preservation and chain of custody procedures.

DISCUSSION OF RESULTS

The results of the ground water monitoring and laboratory analysis of water samples are summarized in Table 1. The official laboratory reports and chain of custody records are presented in Appendix B.

A ground water elevation contour map, based on the April 3, 1990 ground water monitoring data, is shown in Figure 1. The ground water flow direction is to the southwest, with a gradient of 0.068 foot/foot, consistent with the results of the previous monitoring event.

Field observation of the ground water samples indicated no free product or sheen present in any of the wells. Evaluation of the results of ground water sampling and analysis indicated the following:

- Comparison of previous and recent analytical results for MW-1 indicated an increase in the BTEX concentrations and the presence of total petroleum hydrocarbons as gasoline (TPH-G), which previously was not detected. It is important to note that MW-1 is upgradient from the fuel storage tanks and product piping but is less than 10 feet from the former waste oil tank location.
- No detectable levels of benzene, toluene, ethylbenzene, and xylenes (BTEX) were found in the samples from MW-2 and MW-3 in this monitoring event. Benzene was detected in MW-2 in the previous sampling event at a level above the state primary maximum contaminant level (MCL) for drinking water.

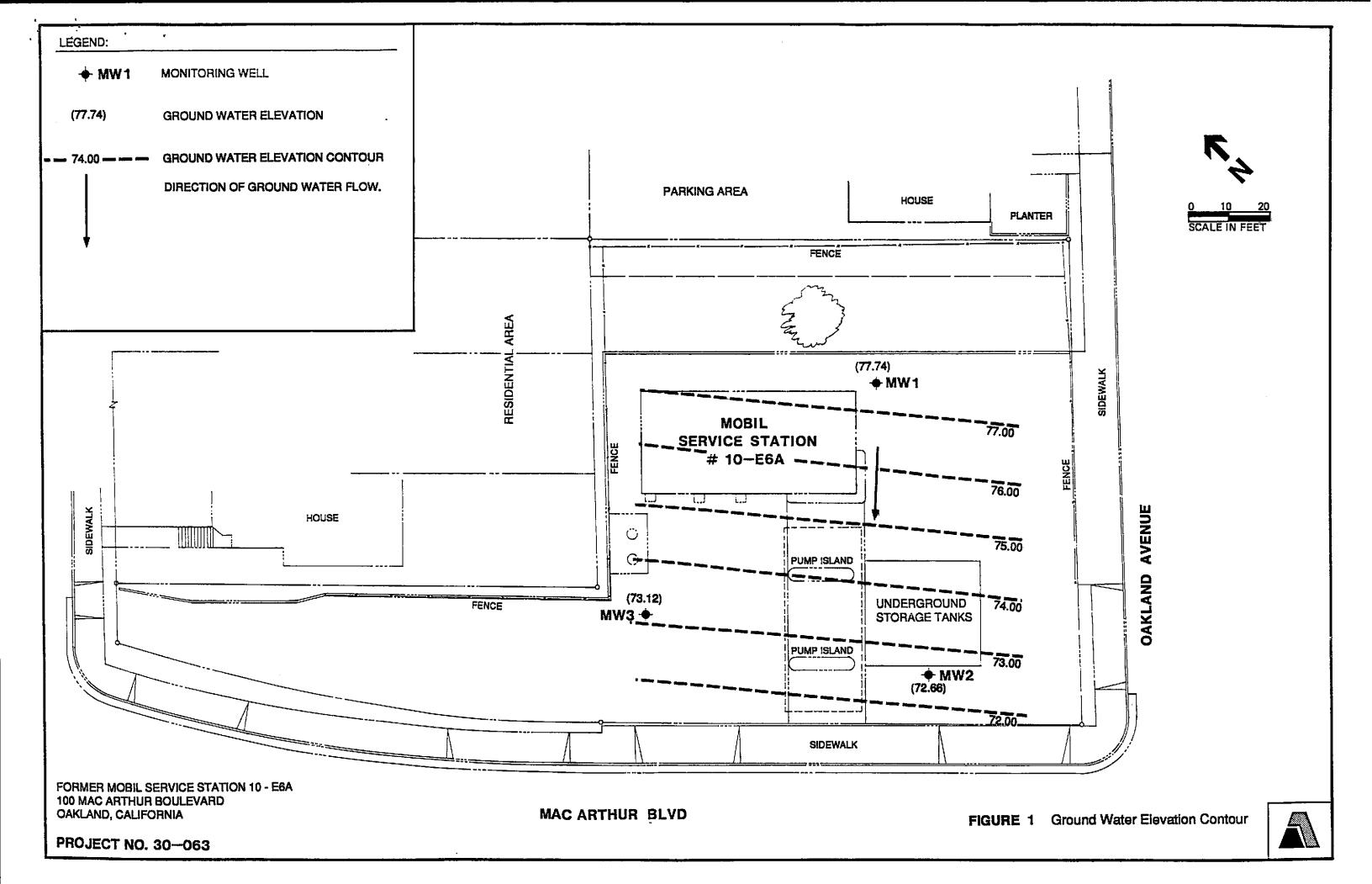
Table 1: Summary of Results of Ground Water Sampling
Project Number : 30-063
Concentrations in parts per billion (pph)

MELL	DATE OF SAMPLING/ MONITORING	DEPTH ID WATER	FREE PRODUCT THICKNESS (ft)	GROUND WATER ELEVATION (ft above msl)	TPH-6 (8015)	TPH-D (8015)	HVQC (B010/ 610)	TOG (503E/ 503D)	B (8020/ 602)	T (B020/ 602)	E (B020/ 602)	X (8020/ 602)	ORG-P6 (DHS METHOD)	ANALYTICAL LAB
NN-1	11/04/89	13.21	•••	76.99	ND(500	***	0.9*	ND(5000	3.4	0.6	NDKO.3	NDCO.3		SAL
MW-1	11/11/89	13.32		76.88		•••	***	**-			***			***
HW-I	04/03/90	12.46	***	77.74	B20			***	64	1.9	23	34		AI
MW-2	11/04/89	15.84	***	72.07	ND(500				6.5	ND(0.3	ND(0.3	NDK0.3		SAL
NW-2	11/11/89	14.75	***	73.16		***	***			***		***		***
NW-2	04/03/90	15.25		72.66	ND<100		··· • •	***	NDKO.5	ND<0.5	NDC0.5	ND<0.5	***	AI
MW-3	11/04/89	15.40		71.62	ND(500	***			ND(0.3	ND(0.3	MD(0.3	ND(0.3		SAL
MW-3	11/11/89	14.10	***	72.92										
MW-3	04/03/90	13.90	***	73.12	ND(100			NDC5000	ND(0.5	ND(0.5	ND<0.5	NDC0.5		AI

EXPLANATION	TO ABBREVIATIONS:			
TPH-6	: Total Petroleum Hydrocarbons as Gasoline (EPA method BO15 modified)	E	: Ethylbenzene (EPA method 8020)	SAL: Superior Analytical Laboratory
		I	: Iylenes (EFA method 8020)	AI : Anametrix Inc.
TPH-D	: Total Petroleum Hydrocarbons as Diesel (EPA method 8015 modified)	ORG-Pb	: Organic lead (EPA method 7420)	SA : Sequoia Analytical
706	: Total Gil and Grease (EPA method 503D&503E)		: Not analyzed	
HYDC	: Halogenated Volatile Organic Constituents	NDC	: Not detected at method dection limit shown	
B	: Benzene (EPA method 8020)	NA	: Not applicable	
ī	: Toluene (EPA method 8020)	ft above msl	: Feet above Mean Sea Level	

NOTES:

- 1. Depth to Water level measured from top of well casing in feet
- 2. * * 1,2 Dichloroethane



APPENDIX A WATER SAMPLING FORMS

ALTON GEOSCIENCE, INC. Well Development and Water Sampling Field Survey

Project # 30-0	063 Site: Mac	CArthur, Oak	land Date	e: <u>4/3</u>	/90
Well: MW-l	Sampling	Team: Wi	lliam Shipp	<u> </u>	
Well Developme	nt Method:				
Sampling Metho	d: Bailer				
Describe Equip	ment Before Sa and deionized wate	mpling Ther.	is Well:_	Triple R	insed with
Well Development/W	ett Sampling Data				
Total Well Depth: 32.70 fee	et Time:	12:40	Water Before		12.46
Water Column	Casing Diamet 2-inch 4-inc		e Fac	ctor	Volume to Purge
20.24' feet x	0.16 0.65	13.2		3	39.6
Depth Purging Depth Purging Depth Purging Depth		t. Tim	e Purgino	g Begins	3:
Time Volume		looo luctivity	I	Note	<u>28</u>
12:50 8 12:55 16 1:10 24 1:15 32 1:25 40 Time Field Park	9.31 7.90 7.59 7.52 7.49 ameter Measure	1.13 1.17 1.23 1.21 1.20	70.7 67.6 67.7 67.5 67.6	light of lig	gray, cloudy gray, cloudy gray, cloudy gray, cloudy gray, cloudy
	Rep #1_	Rep 12	Rer	3	Rep #4
pH Conductivity Temperature (F)	7.90 1.17 67.6	7.59 1.23 67.7		.52 .21 .5	7.49 1.20 67.6
Presample Colle	ection Gallons	Purged:	40		
Time Sample Co.	llection Begin	s:	1:27		
Time Sample Co	llection Ends:		1:35		
Total Gallons I	Purged:		42		
Comments:					

X1000

ALTON GEOSCIENCE, INC. Well Development and Water Sampling Field Survey

Project 30-063 Site: MacArthur, Oakland Date: 4/3/90
Well: MW-2 Sampling Team: William Shipp
Well Development Method:
Sampling Method: Bailer
Describe Equipment Before Sampling This Well: Triple rinsed with TSP, tap water, and deionized water.
Well Development/ Well Sampling Data
Total Well Depth: 32.15 feet Time: 1:35 Water level Before Pumping: 15.25
Water Casing Diameter Volume Column 2-inch 4-inch Volume Factor to Purge
16.9 feet x 0.16 (0.65) 10.98 3 33
Depth Purging From: feet. Time Purging Begins:
Notes on Initial Discharge:
Time Volume pH Conductivity T Notes
1:52 9 8.01 4.14 71.8 cloudy 1:57 15 7.50 4.03 70.2 cloudy 2:02 21 7.48 4.07 69.9 light brown turbid
2:02 21 7.48 4.07 69.9 light brown turbid 2:07 7.50 4.01 69.7 light brown turbid
Time Field Parameter Measurement Begins: 1:35
Rep 11 Rep 12 Rep 13 Rep 14
pil 8.01 7.50 7.48 7.50 Conductivity 4.14 4.03 4.07 4.01 Temperature (F) 71.8 70.2 69.9 69.7
Presample Collection Gallons Purged: 27
Time Sample Collection Begins: 2:07
Time Sample Collection Ends: 2:15
Total Gallons Purged: 29
Comments:

x1000

ALTON GEOSCIENCE, INC. Well Development and Water Sampling Field Survey

Project 30-063	Site: _	MacArthur, Oak	land Date:	4/3/90
Well:MW-3	Samplin	g Team: Wi	lliam Shipp	
Well Development	Method:			
Sampling Method:	Bailer	· · · · · · · · · · · · · · · · · · ·	- · · · · · · · · · · · · · · · · · · ·	
Describe Equipme TSP, tap water, and	nt Before ! deionized wa	Sampling Thi ter.	s Well: T	ciple rinsed with
Well Development/Well	Sampling Data			
Total Well Depth: 32.21 feet	Time	<u>2:30</u>	Water le Before Pu	evel imping: <u>13.90</u>
	asing Diame -inch 4-i		e Facto	Volume or to Purge
18.31 feet x 0	.16 (0.1	11.9	3	36
Depth Purging Fr			Purging E	Begins:
Time Volume	pH Cor	x1000 nductivity	I	Notes
2:37 2:43 2:50 2:55 22 2:55 29	8.01 7.83 7.65 7.60	0.94 0.83 0.83 0.87	73.9 71.1 70.7 70.3	clear clear clear clear
Time Field Param	——— meter Measum	rement Begin	18: 2:30	
	Rep_11_	Rep_12	Rep	Rep. 14
pN Conductivity Temperature (F)	8.01 0.94 73.9	7.83 0.83 71.1	7.65 0.83 70.7	7.60 0.8. 70.3
Presample Collec	tion Gallo	ns Purged:	20	
Time Sample Coll	ection Beg	ins:	3:01	
Time Sample Coll	ection End	s:	3:15	
Total Gallons Pu	rged:		31	
Comments:				

APPENDIX B

LABORATORY REPORTS CHAIN OF CUSTODY RECORDS

Environmental & Analytical Chemistry 1961 Concourse Drive, Suite E, San Jose, CA 95131 (408) 432-8192 • Fax (408) 432-8198



Matt Hopwood Alton Geoscience 1170 Burnett Avenue Suite S Concord, CA 94520

April 13, 1990 Anametrix W.O.#: 9004032 Date Received : 04/04/90 Project Number: 30-063

Dear Mr. Hopwood:

Your samples have been received for analysis. The REPORT SUMMARY lists your sample identifications and the analytical methods you requested. The following sections are included in this report: RESULTS and QUALITY ASSURANCE.

NOTE: Amounts reported are net values, i.e. corrected for method blank contamination.

If there is any more that we can do, please give us a call. Thank you for using ANAMETRIX, INC.

Sincerely,

ANAMETRIX, INC.

Burt Sutherland Laboratory Director

BWS/dmt

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

Client : Alton Geoscience Anametrix W.O.#: 9004032 Address : 1170 Burnett Avenue Date Received : 04/04/90 Suite S Purchase Order#: N/A City : Concord, CA 94520 Project No. : 30-063 Attn. : Matt Hopwood Date Released : 04/13/90					
Anametri	x Sample I.D.	Date Matrix Sampled	Date Method Extract		
RESULTS					
9004032- 9004032- 9004032- 9004032-	01 MW-1 02 MW-2	WATER 04/03/90 WATER 04/03/90 WATER 04/03/90 WATER 04/03/90	O TPHg O TPHg	04/10/90 HP10 04/09/90 N/A 04/06/90 N/A 0 04/09/90 N/A	
QUALITY	ASSURANCE (QA)				
10B0410H	03 METHOD BLANK	WATER N/A	8010	04/10/90 HP10	

ORGANIC ANALYSIS DATA SHEET - EPA METHOD 601/8010 ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 30-063 MW-3

Anametrix I.D.: 9004032-03 Analyst: MK Supervisor: MG Matrix : WATER Date sampled : 04/03/90

Date analyzed: 04/10/90 Dilution : NONE Date released : 04/13/90 Instrument ID : HP10

CAS #	Compound Name	Reporting Limit (ug/l)	Amount Found (ug/l)
74-87-3 74-83-9 75-71-8 75-01-4 75-00-3 75-09-2 75-69-4 75-35-4 75-34-3 156-59-2 156-60-5 67-66-3 76-13-1 107-06-2 71-55-6 56-23-5 75-27-4 78-87-5 10061-02-6 79-01-6 124-48-1 79-00-5 100-75-8 75-25-2 127-18-4 79-34-5 108-90-7 95-50-1 541-73-1 106-46-7	* Chloromethane * Bromomethane * Dichlorodifluoromethane * Vinyl Chloride * Chloroethane * Methylene Chloride * Trichlorofluoromethane * 1,1-Dichloroethene * 1,1-Dichloroethene * Trans-1,2-Dichloroethene * Chloroform # Trichlorotrifluoroethane * 1,2-Dichloroethane * 1,1,1-Trichloroethane * 1,1,1-Trichloroethane * 1,2-Dichloropropane * Trans-1,3-Dichloropropene * Trichloroethene * Dibromochloromethane * 1,1,2-Trichloroethane * 1,1,2-Trichloroethane * 1,1,2-Trichloropropene * Trichloroethene * 1,1,2-Trichloroethane * 1,1,2-Trichloroethane * 1,1,2-Trichloropropene * 1,1,2-Trichloroethane * 1,1,2-Trichloroethane * 1,1,2-Trichloroethane * 1,1,2,2-Tetrachloroethane * Chlorobenzene * 1,1,2,1-Trichlorobenzene * 1,2-Dichlorobenzene * 1,3-Dichlorobenzene * 1,4-Dichlorobenzene	1 0.1 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5	ND N
1	% Surrogate Recovery	j 51 - 136%	84%

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

^{*} A 601/8010 approved compound (Federal Register, 10/26/84). # A compound added by Anametrix, Inc.

ANALYSIS DATA SHEET - PETROLEUM HYDROCARBON COMPOUNDS ANAMETRIX, INC. (408) 432-8192

Sample I.D.: 30-063 MW-1 Anametrix I.D.: 9004032-01

Matrix: WATER

Date sampled: 04/03/90

Date anl.TPHg: 04/09/90

Analyst: GV

Supervisor: TC

Date released: 04/13/90

Date ext.TPHd: N/A Date ext. TOG : N/A Date anl.TPHd: N/A Date anl. TOG : N/A

CAS #	Compound Name	Reporting Limit (ug/l)	Amount Found (ug/l)
71-43-2 108-88-3 100-41-4 1330-20-7	Benzene Toluene Ethylbenzene Total Xylenes TPH as Gasoline	0.5 0.5 0.5 1 50	64 1.9 23 24 820

ND - Below reporting limit.

TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID

using EPA Method 5030.

BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.

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

ANALYSIS DATA SHEET - PETROLEUM HYDROCARBON COMPOUNDS ANAMETRIX, INC. (408) 432-8192

Anametrix I.D.: 9004032-02 Sample I.D. : 30-063 MW-2 Analyst : GV Supervisor : T

Matrix : WATER Date sampled: 04/03/90 Date anl. TPHg: 04/06/90

Date released : 04/13/90 Date ext.TPHd: N/A Date ext. TOG : N/A
Date anl. TOG : N/A Date anl.TPHd: N/A

	Compound Name	Reporting	Amount
		Limit	Found
CAS #		(ug/l)	(ug/l)
71-43-2 108-88-3 100-41-4 1330-20-7	Benzene Toluene Ethylbenzene Total Xylenes TPH as Gasoline	0.5 0.5 0.5 1 50	ND ND ND ND

ND - Below reporting limit.

TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID

using EPA Method 5030.

BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.

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

ANALYSIS DATA SHEET - PETROLEUM HYDROCARBON COMPOUNDS ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 30-063 MW-3 Anametrix I.D.: 9004032-03 Analyst : Matrix : WATER G.V. TC Date sampled: 04/03/90 Supervisor Date released : 04/13/90 Date ext. TOG : 04/09/90 Date anl. TOG : 04/09/90 Date anl.TPHg: 04/07/90 Date ext.TPHd: N/A Date anl. TPHd: N/A

	Compound Name	Reporting	Amount
		Limit	Found
CAS #		(ug/l)	(ug/l)
71-43-2 108-88-3 100-41-4 1330-20-7	Benzene Toluene Ethylbenzene Total Xylenes TPH as Gasoline Total Oil & Grease	0.5 0.5 0.5 1 50	ND ND ND ND ND ND

ND - Below reporting limit. TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID

using EPA Method 5030.

TOG - Total Oil & Grease is determined by Standard Method 503E.

BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.

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

ORGANIC ANALYSIS DATA SHEET - EPA METHOD 601/8010 ANAMETRIX, INC. (408) 432-8192

Sample I.D. : METHOD BLANK

Anametrix I.D.: 10B0410H03
Analyst: Mk
Supervisor: Ms
Date released: 04/13/90 Matrix : WATER
Date sampled : N/A

Date analyzed: 04/10/90 Dilution : NONE Instrument ID : HP10

CAS #	Compound Name	Reporting Limit (ug/l)	Amount Found (ug/l)
74-87-3 74-83-9 75-71-8 75-01-4 75-09-2 75-09-2 75-69-4 75-35-4 75-34-3 156-59-2 156-60-5 67-66-3 76-13-1 107-06-2 71-55-6 56-23-5 75-27-4 78-87-5 10061-02-6 79-01-6 124-48-1 79-00-5 100-75-8 75-25-2 127-18-4 79-34-5 108-90-7 95-50-1 541-73-1 106-46-7	* Chloromethane * Bromomethane * Dichlorodifluoromethane * Vinyl Chloride * Chloroethane * Methylene Chloride * Trichlorofluoromethane * 1,1-Dichloroethene * 1,1-Dichloroethane * Cis-1,2-Dichloroethene * Trans-1,2-Dichloroethene * Chloroform # Trichlorotrifluoroethane * 1,2-Dichloroethane * 1,1,1-Trichloroethane * 1,1,1-Trichloroethane * 1,2-Dichloromethane * 1,2-Dichloromethane * 1,2-Dichloropropane * Trans-1,3-Dichloropropene * Trichloroethene * Dibromochloromethane * 1,1,2-Trichloroethane * 1,1,2-Trichloroethane * 1,1,2-Trichloroethane * 1,1,2-Trichloroethane * 1,1,2-Trichloroethane * 1,1,2-Trichloroethane * 1,1,2,2-Tetrachloroethane * Chlorobenzene * 1,2-Dichlorobenzene * 1,3-Dichlorobenzene * 1,4-Dichlorobenzene	1 0.1 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5	ND N
1	% Surrogate Recovery	51-136%	92%

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

A compound added by Anametrix, Inc.

A 601/8010 approved compound (Federal Register, 10/26/84).

1170 BURNETT A	EOSCIENCE VE., STE. S 4520 (415) 682-1582	CHAIN of CUS	STODY RECO	DRD DATE	e: 4/3/90 dratory: /	DUEBY: 4/18/90 Anametrix
PROJECT NUMBER / MANA PROJECT NAME / ADDRES		ERS SIGNATURE: William		-	SOIL ANALYS	SIS WATER ANALYSIS
PROJECT NAME / ADDRESS REMARKS OR SPECIAL INS	S: Mob; (STRUCTIONS:			TYPE & NUMBER OF CONTAINERS		25 G. /BTEX Oil & Grase SO36 (Organia
			SAMPLE TYPE:	- -l		7 /2 /2
SAMPLE SAMPLE NUMBER DATE/TIME	LOCATION/ DESCRIPTION	SAMPLE MATRIX	GRAB COM	2.		1 100 Hal.
nw-1 4/3/90	MW-1	Water		3×40×6		\rightarrow
mω-2	Mω-2 Mω-3 Mω-3			3 × 40 ml		
MW-3	Mw-3			6×40ml		
mw3 V	Mω-3_			2×1 liter		<u> </u>
	,					
					<u> </u>	
SIGNATURE 1. Welliam Shape	inclus	CHAIN OF GIVE DATES/TIMES	SIGNATURE	Gr		INCLUSIVE DATES/TIMES 4-4-40 /1:50
2 Jahr Momph	1 4-4-9 -	0 10135	5 <i>C</i>	<u></u>		