

QUARTERLY MONITORING REPORT

4th Quarter, 1997

PROJECT SITE:

MOTOR PARTNERS
1234 40TH AVE., OAKLAND, CALIFORNIA
StID #3682

PREPARED FOR:

Mr. Bill Owens
2221 Olympic Blvd.
Walnut Creek, CA 94595
510-935-3840

#

3682

SUBMITTED TO:

Mr. Barney Chan
Environmental Health
Alameda County
1131 Harbor Bay Pkwy
Alameda, CA 94502-6577

PREPARED BY:

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Fremont, CA 94536
(510) 791-7157

PROJECT NO. 1004.95

December 16, 1997

Aquatic & Environmental Applications

07 070 03 7115 01

December 16, 1997

REF: 1004-4Q.97

Mr. Barney Chan
Environmental Health
Alameda County
1131 Harbor Bay Pkwy
Alameda, CA 94502-6577

**SUBJECT: REPORT OF QUARTERLY MONITORING AT 1234 40TH AVE.,
OAKLAND, CA**

Dear Barney:

I have enclosed a copy of the Quarterly Monitoring report prepared for the Motor Partners site, 1234 40th Ave., Oakland, California. The groundwater sampling results are presented for the fourth quarterly monitoring period in 1997.

The results of this sampling event indicate that hydrocarbon contamination is present in groundwater samples from three of the wells (MW-1, MW-3, and MW-4), with the highest levels reported from MW-1. Concentrations of hydrocarbons in the samples were in the same range as those of the previous monitoring period.

Please note that samples from each of the wells were analyzed for dissolved oxygen, redox, nitrate, sulfate, iron, total phosphorus, and ammonia in addition to the petroleum hydrocarbon parameters of previous quarterly monitoring events. The results of the additional parameters will be presented in another report along with recommendations for enhancing natural attenuation at the site.

If you have any questions or comments regarding the report, please give me a call.

Sincerely,



Gary Rogers, Ph.D.

cc Bill Owens

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INTRODUCTION

PROJECT DESCRIPTION

This report discusses the results of quarterly sampling for the fourth quarter in 1997 at the Motor Partners site, 1234 40th Ave., Oakland, California.

SITE LOCATION AND DESCRIPTION

The project site is known as Motor Partners, 1234 40th Avenue, Oakland, California (Figure 1), located in a commercial/light industrial area. The elevation of the site is approximately 30 feet above mean sea level.

Motor Partners is located at 1234 40th Avenue near Nimitz Highway (880) in the Fruitvale District of Oakland, California (Figure 1). The BART rail tracks are about 500 feet west of the site and San Leandro Bay is less than one mile to the southwest.

Motor Partners utilized the site for auto repair shops. Two underground storage tanks were maintained outside the 1234 40th Avenue building. A 1,000-gallon underground gasoline tank and a 500-gallon underground waste oil tank were located below the sidewalk (Figure 2). No reliable records exist to determine if inventory was lost.

Previous Subsurface Investigations

On Oct. 12, 1990, Semco, Inc. of Modesto, California removed both the 1,000-gallon gasoline tank and the 500-gallon waste oil tank. The concentration of total petroleum hydrocarbons in the gasoline range (TPH-G) below the 1,000-gallon tank was 1,600 mg/Kg. The TPH-G and TPH-D concentrations below the 500-gallon tank were 570 mg/Kg and 650 mg/Kg, respectively. There was no record of groundwater in the excavations. The excavations were backfilled to grade with original spoils.

In January, 1994, SEMCO re-excavated the area to remove contaminated soil, and dispose of the contaminated backfill. During the course of over excavation, it was noted that contamination extended beneath the building and into the street. Utilities prevented further excavation. The over excavation was halted and samples taken from the sidewalls of each excavation. An extraction well casing was installed in each excavation. Clean imported soil was used to backfill the two areas and the sidewalk was resurfaced with Christy boxes housing the two extraction casings.



GARY ROGERS, PH.D. ENVIRONMENTAL CONSULTANT 38053 DAVY CT., FREMONT, CA 94536 (510) 791 7157	DESCRIPTION	Site Location		TITLE	1
	PROJECT LOCATION	Motor Partners 1231 40th Ave Oakland CA			
DRAWN BY JLR	DRAWING DATE 12 10 97	PROJECT NUMBER 1507	FILE NAME 10 1 497 1.W	SCALE / MAGNITUDE 1:1	

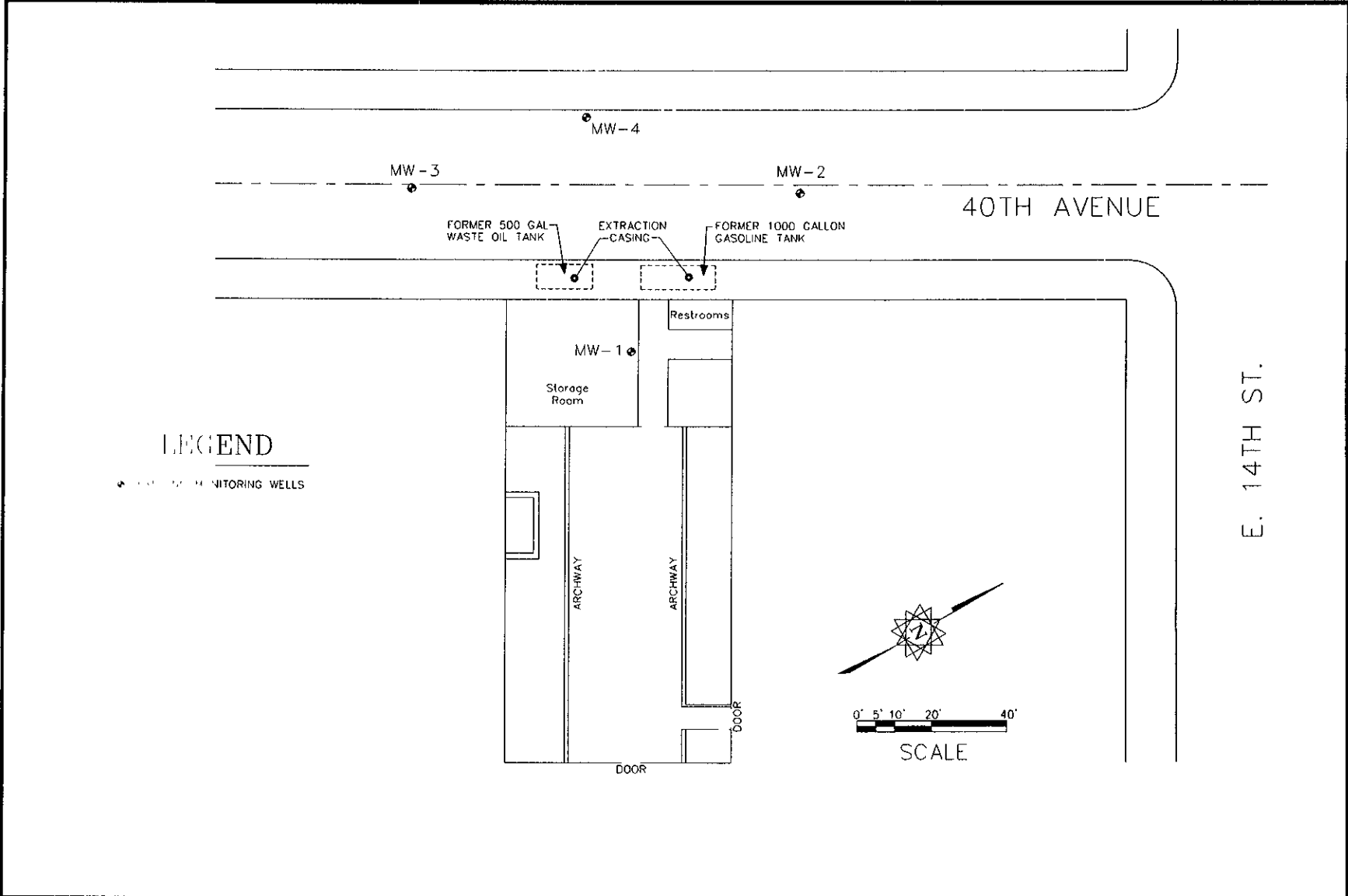
Motor Partners 1231 40th Ave Oakland CA
Quarterly Monitoring Report

December 10, 1997
10 101 497 1

Motor Partners 1234 40th Ave. Oakland CA
 Quarterly Monitoring Report

3

December 14, 1997
 P.L. 1007 24 95



GARY ROGERS, PH.D. ENVIRONMENTAL CONSULTANT 38053 DAVY CT FREMONT, CA 94536 (510) 791-7157	DRAWN BY GLR	PROJECT NUMBER 1004	DESCRIPTION Site Layout	FIGURE 2	
	DRAWING DATE 12/16/97	FILE NAME 1004-497.DWG			
	REVISION BY	PROJECT MANAGER GLR	PROJECT/LOCATION Motor Partners 1234 40th Ave., Oakland		
	REVISION BY	CHECKED BY			

Sampling conducted on January 11, 1994 indicated levels of TPH-gasoline for the former waste oil tank area between 100 and 700 ppm. Levels of TPH-gasoline for the former gasoline tank area ranged from 150 to 1,200 ppm.

GROWTH Environmental completed soil borings at the property between May and June of 1994. Eleven borings were drilled and three monitoring wells were installed. Both soil and groundwater samples were collected from the borings. Soil and groundwater contamination was found in nearly every boring. Levels of TPH-D up to 2,700 ppm were observed on the west side of the building. A sample from inside the building had a TPH-D level of 520 ppm.

Groundwater samples had highest concentrations near the former tank excavations. The highest level of TPH-G was 64,000 ppb. BTEX compounds were found in groundwater samples from all the borings.

The monitoring wells were sampled on June 17, 1994 and December 7, 1994. Contamination was reported in all three wells. Levels of TPH-G were up to 17,000 ppb and Benzene levels were up to 1,200 ppb in MW-1.

A quarterly monitoring sampling event was completed on November 29, 1995. All of the wells showed increased TPH-G and BTEX levels when compared to the previous sampling event. TPH-G levels were up to 67,000 ppb in MW-1. The groundwater gradient was calculated to be in a southwesterly direction.

Additional geoprobe borings were completed along 40th Avenue between November, 1995 and February, 1996 to determine the extent of contamination.

On February 1, 1996, Bay Area Exploration drilled a soil boring across the street from the former underground storage tank excavations at the Motor Partners site (location shown in Figure 3). A two-inch groundwater monitoring well (MW-4) was installed in the boring. The monitoring well was installed according to State of California Water Resource Control Board standards to a depth of 25 feet below grade surface (bgs) and screened from 5 to 25 feet bgs.

GEOLOGY AND HYDROGEOLOGY

Regional Geology.

The site is located on the East Bay Plain about 1.0 mile west of the Oakland Hills, about 1.0 mile east of the San Francisco Bay, and about 0.5 miles north of San Leandro Bay. The nearest cross street is 14th Street.

The site rests on Quaternary Deposits of various physical and compositional properties. The predominant formation is the Temescal Formation consisting of contemporaneous alluvial units of different origin, lithology, and physical properties. The material ranges from irregularly bedded clay, silt, sand and gravel to lenses of clay, silt, sand, and gravel with Claremont Chert.

The Hayward Fault is approximately 1.5 miles East of the site and is an active historic Fault. The Hayward Fault is the only active fault in the Oakland East Quadrangle.

Regional Hydrogeology.

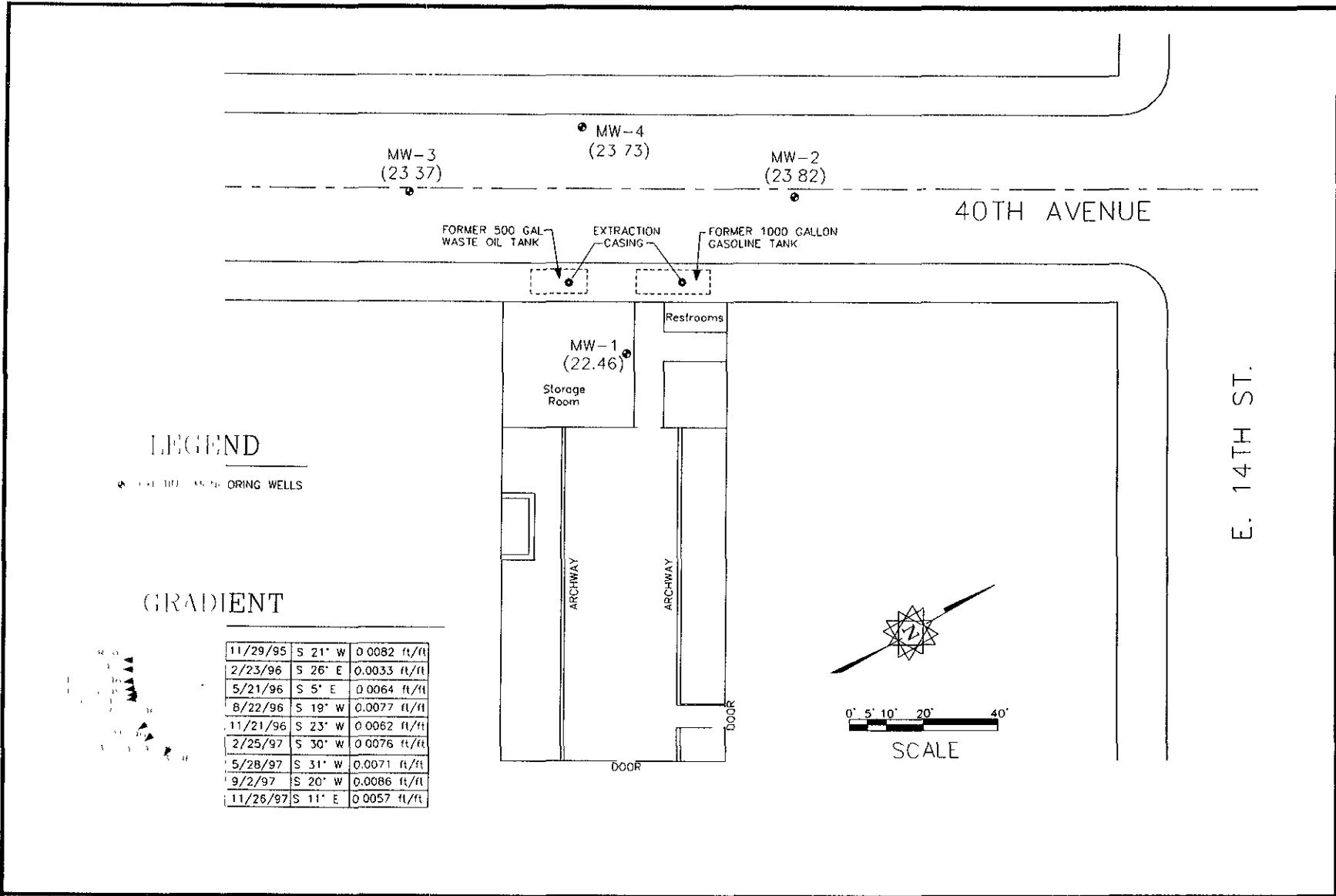
The site is located within the East Bay Plain which makes up the ground water reservoir in the area. The water bearing capacity varies within the area due to the juxtaposed positions of the various types of soils and strata encountered underneath the East Bay Plain.

In General the water bearing capacities of the Younger Alluvium range from moderately permeable to low permeable soils. Below the Younger Alluvium at a depth of approximately 70 feet lies the Older Alluvium, which yields large to small quantities of well water.

Site Geology. The site soils were characterized using the United Soil Classification System (USCS). During on-site subsurface drilling, CEC (GROWTH) encountered up to two feet of baserock (fill) followed by a 4 to 5 foot layer of dark sandy clay (CL). Below the dark clay to a depth between 7 and 15 feet, a grey sandy gravel was found. Below the sandy gravel the soil varied between a clayey sand to a sandy silty clay (SC). The gravels are poorly sorted, angular to rounded clasts ranging in size from 0.2 cm to 3.0 cm.

Site Hydrogeology. The depth of first water ranged from 8 to 10 feet below the ground surface (bgs) in the borings. Groundwater was encountered within the grey clayey sandy gravel layers.

Motor Partners 1234 40th Ave Oakland CA
 Quarterly Monitoring Report



December 16, 1997
 Title: 1004-497

GARY ROGERS, Ph.D. ENVIRONMENTAL CONSULTANT 38053 DAVY CT. FREMONT, CA 94536 (510) 797-7157	DRAWN BY GLR	PROJECT NUMBER 1004	DESCRIPTION Groundwater Gradient	FIGURE 3	
	DRAWING DATE 12/16/97	FILE NAME 1004-497.DWG			
	REVISION BY	PROJECT MANAGER GLR	PROJECT LOCATION Motor Partners 1234 40th Ave., Oakland		
	REVISION BY	CHECKED BY			

Table 1
Monitoring Well Construction Data for Motor Partners Site
1234 40th Ave., Oakland, California

	MW-1	MW-2	MW-3	MW-4
Date Drilled	6/15/94	6/14/94	6/14/94	2/1/96
Total Depth	22.5 ft.	22.0 ft.	23.0 ft.	23.0 ft.
Bore Diameter	10 inches	10 inches	10 inches	10 inches
Casing Diameter	2 inch	2 inch	2 inch	2 inch
Well Seal Type	Bentonite Pellets	Bentonite Pellets	Bentonite Pellets	Bentonite Pellets
Well Seal Interval	5.0 - 6.0 bgs	5.0 - 6.0 bgs	5.0 - 6.0 bgs	3.0 - 4.0 bgs
Filter Pack Material	2/14 Lonestar Sand	2/14 Lonestar Sand	2/14 Lonestar Sand	2/14 Lonestar Sand
Filter Pack Interval	6.0 - 17.0 bgs	9.0 - 20.0 bgs	6.5 - 20.0 bgs	4.0 - 25.0 bgs
Screen Slot Size	0.020 in.	0.020 in.	0.020 in.	0.010 in.
Screened Interval	7.0 - 17.0 bgs	10.0 - 20.0 bgs	7.0 - 20.0 bgs	5.0 - 25.0 bgs
Well Elevation ¹	31.44 ft.	31.06 ft.	31.43 ft.	31.37 ft.

¹TOC -Top of Casing Elevations for MW-1, MW-2, MW-3, and MW-4 were surveyed on 8/22/96 by Kier & Wright Civil Engineers & Surveyors, Inc.

GROUNDWATER MONITORING

GROUNDWATER ELEVATION MEASUREMENTS

The static water level was measured in all four monitoring wells (MW-1, MW-2, MW-3, and MW-4) on November 26, 1997 and the depths were recorded to the nearest 0.01 foot using an electronic water level sounder. All of the results were recorded on Quarterly Monitoring Data Sheets presented in Appendix B.

MONITORING WELL SAMPLING

The monitoring wells were purged by withdrawing a minimum of three casing volumes from each well using a 2" submersible pump. The purging continued until the turbidity was less than 100 NTU and the temperature, electric conductivity, and pH were relatively stable. Samples were collected when the water levels recovered to at least 80% of the original static level.

A groundwater sample was collected with a disposable Teflon bailer and placed in two 40-ml VOA's and one one-liter amber bottle. The samples were labeled and stored on ice until delivered under a chain of custody to the state certified laboratory. Samples from all four wells (MW-1, MW-2, MW-3, and MW-4) were analyzed for total petroleum hydrocarbons as diesel (TPH-D), using EPA methods modified 8015; as gasoline (TPH-G) using EPA methods 8015/5030; and benzene, toluene, ethylbenzene, and xylenes (BTEX) using EPA methods 8020.

ANALYTICAL RESULTS

GROUNDWATER HYDRAULIC CONDITIONS

Groundwater Elevation. The groundwater elevation data for the monitoring wells is presented in Table 2. Based on groundwater level measurements collected on November 26, 1997, the depth to groundwater in the wells ranged from 6.64 to 7.98 feet below the top of the casing. The groundwater elevations for the wells were as follows; MW-1 was 23.46 feet above mean sea level (msl), MW-2 was 23.82 feet above msl, MW-3 was 23.37 feet above msl, and MW-4 was 23.73 feet above msl.

Groundwater Flow Direction and Gradient. Groundwater flow direction was calculated using three wells (MW-1, MW-2, and MW-3). Groundwater flow direction trended to the southwest (S 11°E) at a gradient of 0.0057 ft/ft. The flow direction and gradient are shown in Figure 3.

LABORATORY DATA

A summary of the analytical results for the monitoring well sampling is presented in Table 3. Copies of all the analytical data sheets from ChromaLab, Inc. are presented in Appendix A.

Table 2
Groundwater Elevation Results at Motor Partners Site
1234 40th Ave., Oakland, California

	DATE	MW-1	MW-2	MW-3	MW-4	GRADIENT
TOC		31.44 ft	31.06 ft	30.43 ft.	30.37	
SWL	11/29/95	10.13	9.31	9.53		S 21° W
GSE		21.31	21.75	20.90		0.0082 ft/ft
SWL	2/23/96	4.59	3.77	3.56	3.17	S 26° E
GSE		26.85	27.29	26.87	27.20	0.0033 ft/ft
SWL	5/21/96	6.04	5.24	5.29	4.68	S 5° E
GSE		25.40	25.82	25.14	25.69	0.0064 ft/ft
SWL	8/22/96	8.46	7.66	7.88	7.10	S 19° W
GSE		22.98	23.40	22.55	23.27	0.0077 ft/ft
SWL	11/21/96	8.44	7.73	7.76	7.31	S 23° W
GSE		23.00	23.33	22.67	23.06	0.0062 ft/ft
SWL	2/25/97	6.53	5.78	5.97	5.06	S 30° W
GSE		24.91	25.28	24.46	25.31	0.0076 ft/ft
SWL	5/28/97	8.08	7.38	7.53	6.94	S 31° W
GSE		23.36	23.68	22.90	23.43	0.0071 ft/ft
SWL	9/2/97	9.08	8.24	9.26	7.84	S 20° W
GSE		22.36	22.82	21.17	22.53	0.0086 ft/ft
SWL	11/26/97	7.98	7.24	7.06	6.64	S 11° E
GSE		23.46	23.82	23.37	23.73	0.0057 ft/ft

TOC - Top of Casing Elevations for MW-1, MW-2, MW-3, and MW-4 were surveyed on 8/22/96 by Kier & Wright Civil Engineers & Surveyors, Inc

SWL - Static Water Level (ft)

GSE - Groundwater Surface Elevation (feet relative to mean sea level)

Table 3
Quarterly Groundwater Sampling Results at Motor Partners
1234 40th Ave., Oakland, California

Sample I.D. Number	Date Collected	TPH-D ($\mu\text{g/L}$)	TPH-G ($\mu\text{g/L}$)	MTBE ($\mu\text{g/L}$)	Benzene ($\mu\text{g/L}$)	Toluene ($\mu\text{g/L}$)	Ethyl Benzene ($\mu\text{g/L}$)	Total Xylenes ($\mu\text{g/L}$)
MW-1	6/17/94	2,400	17,000		1,200	220	1,000	2,600
	11/29/95	53,000	67,000		860	180	1,300	3,100
	2/23/96	25,000	16,000		360	ND	370	740
	5/21/96	650	11,000		290	37	600	1,300
	8/22/96	ND	13,000		270	51	540	1,400
	11/21/96	5,500	15,000		810	79	680	1,700
	2/25/97	3,900	15,000		430	36	760	1,200
	5/28/97	3,700	7,600		110	15	370	870
	9/2/97	8,200	18,000	ND	1,300	81	1,300	2,800
	11/26/97	14,000	24,000	81	760	75	660	2,100
California Drinking Water MCL		None Listed	None Listed	None Listed	1.0	1,000	680	1,750
Reporting Limit		50	50	5	0.5	0.5	0.5	1.0

Notes: All results in $\mu\text{g/l}$ (ppb)
 ND = Not Detected
 NA = Not Analyzed

Table 3 Continued
Quarterly Groundwater Sampling Results at Motor Partners
1234 40th Ave., Oakland, California

Sample I.D. Number	Date Collected	TPH-D ($\mu\text{g/L}$)	TPH-G ($\mu\text{g/L}$)	MTBE ($\mu\text{g/L}$)	Benzene ($\mu\text{g/L}$)	Toluene ($\mu\text{g/L}$)	Ethyl Benzene ($\mu\text{g/L}$)	Total Xylenes ($\mu\text{g/L}$)
MW-2	6/17/94	370	990		ND	1.3	2.3	4.4
	12/07/94	ND	170		2.1	0.70	0.60	1.7
	11/29/95	200	400		ND	ND	ND	3
	2/23/96	ND	500		ND	ND	ND	ND
	5/21/96	ND	62		ND	ND	ND	1
	8/22/96	ND	120		0.58	0.62	ND	0.62
	11/21/96	89	89		0.60	0.78	ND	ND
	2/25/97	ND	250		1.2	1.0	ND	ND
	5/28/97	ND	ND		ND	ND	ND	ND
	9/2/97	ND	220	ND	ND	1.2	0.80	1.7
	11/26/97	ND	ND	ND	ND	ND	ND	ND
California Drinking Water MCL		None Listed	None Listed	None Listed	1.0	1,000	680	1,750
Reporting Limit		50	50	5	0.5	0.5	0.5	1.0

Notes: All results in $\mu\text{g/l}$ (ppb)
 ND = Not Detected
 NA = Not Analyzed

Table 3 Continued
Quarterly Groundwater Sampling Results at Motor Partners
1234 40th Ave., Oakland, California

Sample I.D. Number	Date Collected	TPH-D ($\mu\text{g/L}$)	TPH-G ($\mu\text{g/L}$)	MTBE ($\mu\text{g/L}$)	Benzene ($\mu\text{g/L}$)	Toluene ($\mu\text{g/L}$)	Ethyl Benzene ($\mu\text{g/L}$)	Total Xylenes ($\mu\text{g/L}$)
MW-3	6/17/95	2,200	9,500		330	40	100	74
	12/07/94	1,700	7,500		380	42	130	72
	11/29/95	14,000	9,000		300	49	300	16
	2/23/96	14,000	13,000		270	83	260	67
	5/21/96	350	6,600		220	48	160	66
	8/22/96	ND	4,800		120	34	44	44
	11/21/96	3,300	8,700		220	51	150	68
	2/25/97	ND	8,200		260	57	200	72
	5/28/97	1,800	7,000		140	22	44	31
	9/2/97	ND	8,100	65	240	50	170	72
	11/26/97	4,100	5,600	44	140	22	9.6	31
California Drinking Water MCL		None Listed	None Listed	None Listed	1.0	1,000	680	1,750
Reporting Limit		50	50	5	0.5	0.5	0.5	1.0

Notes: All results in $\mu\text{g/l}$ (ppb)
 ND = Not Detected
 NA = Not Analyzed

Table 3 Continued
Quarterly Groundwater Sampling Results at Motor Partners
1234 40th Ave., Oakland, California

Sample I.D. Number	Date Collected	TPH-D ($\mu\text{g/L}$)	TPH-G ($\mu\text{g/L}$)	MTBE ($\mu\text{g/L}$)	Benzene ($\mu\text{g/L}$)	Toluene ($\mu\text{g/L}$)	Ethyl Benzene ($\mu\text{g/L}$)	Total Xylenes ($\mu\text{g/L}$)
MW-4	2/23/96	3,000	6,000		58	36	6	28
	5/21/96	78	1,200		18	2.5	6.2	12
	8/22/96	ND	400		8.6	3.4	1.8	2.6
	11/21/96	87	170		3.6	1.1	1.7	2.3
	2/25/97	ND	120		5.4	0.64	0.93	0.80
	5/28/97	55	150		5.6	0.64	4.4	8.8
	9/2/97	ND	100	ND	3.2	ND	ND	0.7
	11/26/97	ND	240	ND	6.8	ND	1.8	10
California Drinking Water MCL		None Listed	None Listed	None Listed	1.0	1,000	680	1,750
Reporting Limit		50	50	5	0.5	0.5	0.5	1.0

Notes: All results in $\mu\text{g/l}$ (ppb)
 ND = Not Detected
 NA = Not Analyzed

SUMMARY AND RECOMMENDATIONS

The four monitoring wells at the Motor Partners site were sampled for the fourth quarter, 1997. The results of the sampling indicate that hydrocarbon contamination is present in groundwater samples from three of the wells (MW-1, MW-3, and MW-4). Concentrations of hydrocarbons in the same range as the results from the previous monitoring period.

TPH-Gasoline and Benzene contamination exists on the property. The highest concentrations reported from the four wells were from the groundwater sample collected at MW-1 (inside the building). Groundwater flow direction for this sampling period was shown to be in a southeasterly direction.

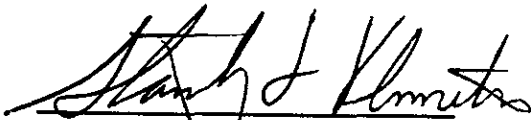
In addition to the petroleum hydrocarbon parameters discussed above, samples were collected from each of the wells for analysis of dissolved oxygen, redox, nitrate, sulfate, iron, total phosphorus, and ammonia. The results of these additional parameters will be presented in another report along with recommendations for enhancing natural attenuation at the site.

Phase II investigation activities are on-going at the site. It is recommended that quarterly groundwater sampling be continued.

LIMITATIONS

This report has been prepared in accordance with generally accepted environmental, geological and engineering practices. No warranty, either expressed or implied is made as to the professional advice presented herein. The analysis, conclusions, and recommendations contained in this report are based upon site conditions as they existed at the time of the investigation and they are subject to change.

The conclusions presented in this report are professional opinions based solely upon visual observations of the site and vicinity, and interpretation of available information as described in this report. The scope of services performed in execution of this investigation may not be appropriate to satisfy the needs of other users and any use or reuse of this document or its findings, conclusions or recommendations presented herein is at the sole risk of the said user.



Stanley L. Klemetson Ph.D., P.E.
P.E No. 40087



APPENDIX A

Analytical Results

CHROMALAB, INC.

Environmental Services (SDB)

December 8, 1997

Submission #: 9711408

ROGERS ENVIRONMENTAL SERVICES

Atten: Gary Rogers

Project: MOTOR PARTNERS
Received: November 26, 1997

Project#: 1004.95

re: One sample for Gasoline BTEX MTBE analysis.
Method: SW846 8020A Nov 1990 / 8015Mod


Client Sample ID: MW-1

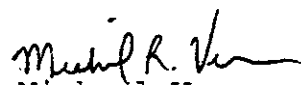
Spl#: 159986
Sampled: November 26, 1997

Matrix: WATER
Run#: 10062

Analyzed: December 5, 1997

ANALYTE	RESULT (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE (%)	DILUTION FACTOR
GASOLINE	24000	500	N.D.	90	10
MTBE	81	50	N.D.	101	10
BENZENE	760	5.0	N.D.	107	10
TOLUENE	75	5.0	N.D.	104	10
ETHYL BENZENE	660	5.0	N.D.	101	10
XYLENES	2100	5.0	N.D.	98	10


Marianne Alexander
Gas/BTEX Supervisor


Michael Verona
Operations Manager

510-791-7157

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

PM V132 O: BTEXQC0220
ALEXANDM 16 26

CHROMALAB, INC.

Environmental Services (SDB)

December 8, 1997

Submission #: 9711408

ROGERS ENVIRONMENTAL SERVICES

Atten: Gary Rogers

Project: MOTOR PARTNERS

Project#: 1004.95

Received: November 26, 1997

re: One sample for Gasoline BTEX MTBE analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: MW-2

Spl#: 159984


Matrix: WATER


Sampled: November 26, 1997

Run#:10052

Analyzed: December 5, 1997

ANALYTE	RESULT (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE (%)	DILUTION FACTOR
GASOLINE	N.D.	50	N.D.	111	1
MTBE	N.D.	5.0	N.D.	102	1
BENZENE	N.D.	0.50	N.D.	96	1
TOLUENE	N.D.	0.50	N.D.	91	1
ETHYL BENZENE	N.D.	0.50	N.D.	92	1
XYLENES	N.D.	0.50	N.D.	89	1


Marianne Alexander
Gas/BTEX Supervisor


Michael Verona
Operations Manager

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(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

PM V132 O: BTEXQC0220
ALEXANDM 18 26

CHROMALAB, INC.

Environmental Services (SDB)

December 8, 1997

Submission #: 9711408

ROGERS ENVIRONMENTAL SERVICES

Atten: Gary Rogers

Project: MOTOR PARTNERS

Project#: 1004.95

Received: November 26, 1997

re: One sample for Gasoline BTEX MTBE analysis.

Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: MW-3

Spl#: 159985

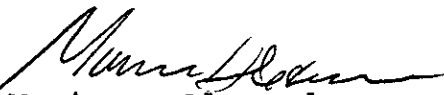
Matrix: WATER

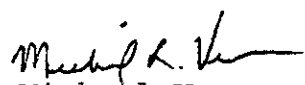
Sampled: November 26, 1997

Run#:10062

Analyzed: December 5, 1997

ANALYTE	RESULT (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE (%)	DILUTION FACTOR
GASOLINE	5600	250	N.D.	90	5
MTBE	44	25	N.D.	101	5
BENZENE	140	2.5	N.D.	107	5
TOLUENE	22	2.5	N.D.	104	5
ETHYL BENZENE	9.6	2.5	N.D.	101	5
XYLENES	31	2.5	N.D.	98	5


Marianne Alexander
Gas/BTEX Supervisor


Michael Verona
Operations Manager

CHROMALAB, INC.

Environmental Services (SDB)

December 8, 1997

Submission #: 9711408

ROGERS ENVIRONMENTAL SERVICES

Atten: Gary Rogers

Project: MOTOR PARTNERS
Received: November 26, 1997

Project#: 1004.95

re: One sample for Gasoline BTEX MTBE analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: MW-4

Spl#: 159987

Matrix: WATER

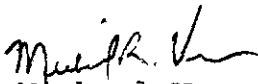
Sampled: November 26, 1997

Run#:10052

Analyzed: December 5, 1997

ANALYTE	RESULT (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE (%)	DILUTION FACTOR
GASOLINE	240	50	N.D.	111	1
MTBE	N.D.	5.0	N.D.	102	1
BENZENE	6.8	0.50	N.D.	96	1
TOLUENE	N.D.	0.50	N.D.	91	1
ETHYL BENZENE	1.8	0.50	N.D.	92	1
XYLENES	10	0.50	N.D.	89	1


Marianne Alexander
Gas/BTEX Supervisor


Michael Verona
Operations Manager

CHROMALAB, INC.

Environmental Services (SDB)

December 5, 1997

Submission #: 9711408

ROGERS ENVIRONMENTAL SERVICES
2657 Bailey Ct.
Fremont, CA 94536

Attn: Gary Rogers

RE: Analysis for project MOTOR PARTNERS, number 1004.95.

REPORTING INFORMATION

Samples were received cold and in good condition on November 26, 1997. They were refrigerated upon receipt and analyzed as described in the attached report. ChromaLab followed EPA or equivalent methods for all testing reported.

No discrepancies were observed or difficulties encountered with the testing.

Motor oil was found in sample MW-1.

Motor oil was found in sample MW-3.



Bruce Havlik
Chemist



Alex Tam
Semivolatiles Supervisor

CHROMALAB, INC.

Environmental Services (SDB)

December 5, 1997

Submission #: 9711408

ROGERS ENVIRONMENTAL SERVICES

Atten: Gary Rogers

Project: MOTOR PARTNERS
Received: November 26, 1997

Project#: 1004.95


re: 4 samples for TPH - Diesel analysis.
Method: EPA 8015M


Sampled: November 26, 1997 Matrix: WATER Run#: 9971 Extracted: December 2, 1997
Analyzed: December 3, 1997

Spl#	CLIENT SPL ID	DIESEL (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE (%)	DILUTION FACTOR
159984	MW-2	N.D.	50	N.D.	65.0	1

Sampled: November 26, 1997 Matrix: WATER Run#: 9971 Extracted: December 2, 1997
Analyzed: December 5, 1997

Spl#	CLIENT SPL ID	DIESEL (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE (%)	DILUTION FACTOR
159985	MW-3	4100	50	N.D.	65.0	1
Note: Hydrocarbon reported does not match the pattern of our Diesel standard. Estimated concentration due to overlapping fuel patterns.						
159986	MW-1	14000	250	N.D.	65.0	5
Note: Hydrocarbon reported has characteristics of weathered/aged Diesel. Estimated concentration due to overlapping fuel patterns.						
159987	MW-4	N.D.	50	N.D.	65.0	1


Bruce Havlik
Chemist


Alex Tam
Semivolatiles Supervisor

APPENDIX B

Quarterly Monitoring Data Sheets

Quarterly Monitoring Data Sheet

Date: <u>11/26/97</u> Project Location: <u>Motor Partners Site</u> <u>1234 40th Ave., Oakland</u> Sampler: <u>G. Rogers</u>	Well Diameter: <u>2 Inches</u> Well ID: <u>MW-1</u> Well Type: <u>Monitoring Well</u> Total Depth as Built: <u>19 ft</u> Screened Interval: <u>7 ft to 17 ft</u>
Water Level Data	Purge Calculation (Min 3 Casing Volumes)
Time Depth Sounded: <u>11:10 AM</u> Measured Depth to Water: <u>7.98 ft.</u> Measured Total Depth: <u>16.8 ft.</u>	gal/ft X ft = gal X 3 = gal <u>0.163</u> X <u>8.8</u> = <u>1.4</u> X 3 = <u>4.3</u>

Purge Data

Time	Flowrate (gpm)	Volume (gal)	Temp (°F)	EC (µs/cm)	pH	Turbidity (NTU)
11:15		0	62.9	643	7.46	175
11:18		2	65.1	698	6.99	152
11:22		4	65.2	726	7.02	27
11:25		6	65.0	750	6.75	29

Observations/Comments:

Inside Building

Laboratory Analysis:

Sample at 1:10 PM
 Water depth - 7.92 ft.
 Analyze for TPH-D, TPH-G, BTEX, and MTBE

Data for Volume Calculation:

1 cu. ft. = 7.48 gal = 62.4 lbs (approx)	1 gal = 0.134 cu. ft. = 8.34 lbs (approx)
2" well = 0.163 gal/linear ft.	3" well = 0.367 gal/linear ft
4" well = 0.653 gal/linear ft	6" well = 1.469 gal/linear ft

Quarterly Monitoring Data Sheet

Date: <u>11/26/97</u>				Well Diameter: <u>2 Inches</u> Well ID: <u>MW-2</u>			
Project Location: <u>Motor Partners Site</u>				Well Type: <u>Monitoring Well</u>			
<u>1234 40th Ave., Oakland</u>				Total Depth as Built: <u>22 ft</u>			
Sampler: <u>G. Rogers</u>				Screened Interval: <u>10 ft to 20 ft</u>			
Water Level Data				Purge Calculation (Min 3 Casing Volumes)			
Time Depth Sounded: <u>10:00 AM</u>				gal/ft X ft = gal X 3 = gal			
Measured Depth to Water: <u>7.24 ft.</u>				0.163 X 12.4 = 2.0 X 3 = 6.0			
Measured Total Depth: <u>19.6 ft.</u>							
Purge Data							
Time	Flowrate (gpm)	Volume (gal)	Temp (°F)	EC (µs/cm)	pH	Turbidity (NTU)	
10:03		0	60.6	382	7.60	48	
10:10		2	62.1	513	7.47	55	
10:20		4	64.2	578	7.68	89	
10:33		6	64.0	580	7.49	70	
Observations/Comments:							
Overcast, raining							
Laboratory Analysis:							
Sample at 12:35 PM							
Water depth - 7.18 ft.							
Analyze for TPH-D, TPH-G, BTEX and MTBE							
Data for Volume Calculation:							
1 cu. ft. = 7.48 gal = 62.4 lbs (approx)				1 gal = 0.134 cu. ft. = 8.34 lbs (approx)			
2" well = 0.163 gal/linear ft.				3" well = 0.367 gal/linear ft			
4" well = 0.653 gal/linear ft				6" well = 1.469 gal/linear ft			

Quarterly Monitoring Data Sheet

Date: <u>11/26/97</u> Project Location: <u>Motor Partners Site</u> <u>1234 40th Ave., Oakland</u> Sampler: <u>G. Rogers</u>	Well Diameter: <u>2 Inches</u> Well ID: <u>MW-3</u> Well Type: <u>Monitoring Well</u> Total Depth as Built: <u>23 ft</u> Screened Interval: <u>7 ft to 20 ft</u>
Water Level Data	Purge Calculation (Min 3 Casing Volumes)
Time Depth Sounded: <u>10:45 AM</u> Measured Depth to Water: <u>7.06 ft.</u> Measured Total Depth: <u>19.4 ft.</u>	gal/ft X ft = gal X 3 = gal <u>0.163</u> X <u>12.3</u> = <u>2.0</u> X 3 = <u>6.0</u>

Purge Data

Time	Flowrate (gpm)	Volume (gal)	Temp (°F)	EC (µs/cm)	pH	Turbidity (NTU)
10:47		0	63.5	657	7.35	88
10:52		2	64.8	738	7.04	152
10:57		4	63.8	750	7.22	139
11:03		6	63.9	761	7.25	180

Observations/Comments:

Overcast, raining

Laboratory Analysis:

Sample at 12:55 PM
 Water depth - 6.94 ft.
 Analyze for TPH-D, TPH-G, BTEX and MTBE

Data for Volume Calculation:

1 cu. ft. = 7.48 gal = 62.4 lbs (approx)	1 gal = 0.134 cu. ft = 8.34 lbs (approx)
2" well = 0.163 gal/linear ft	3" well = 0.367 gal/linear ft
4" well = 0.653 gal/linear ft	6" well = 1.469 gal/linear ft

Quarterly Monitoring Data Sheet							
Date: <u>11/26/97</u>				Well Diameter: <u>2 Inches</u> Well ID: <u>MW-4</u>			
Project Location: <u>Motor Partners Site</u> <u>1234 40th Ave., Oakland</u>				Well Type: <u>Monitoring Well</u>			
Sampler: <u>G. Rogers</u>				Total Depth as Built: <u>25 ft</u>			
				Screened Interval: <u>5 ft to 25 ft</u>			
Water Level Data				Purge Calculation (Min 3 Casing Volumes)			
Time Depth Sounded: <u>11:30 AM</u>				gal/ft X ft = gal X 3 = gal			
Measured Depth to Water: <u>6.64 ft.</u>				0.163 X 17.6 = 2.9 X 3 = 8.6			
Measured Total Depth: <u>24.2 ft.</u>							
Purge Data							
Time	Flowrate (gpm)	Volume (gal)	Temp (°F)	EC (µs/cm)	pH	Turbidity (NTU)	
11:35		0	63.0	657	7.64	110	
11:40		2	65.9	631	7.35	23	
11:43		4	66.0	639	7.33	21	
11:46		6	66.3	676	7.25	6	
11:50		8	66.1	670	6.95	7.8	
11:54		10	66.4	659	7.07	1.3	
Observations/Comments:							
Partly Cloudy							
Laboratory Analysis:							
Sample at 1:35 PM							
Water depth - 6.69 ft.							
Analyze for TPH-D, TPH-G, BTEX and MTBE							
Data for Volume Calculation:							
1 cu. ft. = 7.48 gal = 62.4 lbs (approx)				1 gal = 0.134 cu. ft. = 8.34 lbs (approx)			
2" well = 0.163 gal/linear ft.				3" well = 0.367 gal/linear ft			
4" well = 0.653 gal/linear ft.				6" well = 1.469 gal/linear ft.			