Epigene International
CONSULTING GEOLOGISTS

February 29, 1996

Mr. J. W. Silveira
J. W. Silveira Company
499 Embarcadero
Oakland, CA 94606

Subject: Quarterly Monitoring Report for Site Located at 2301 East 12th Street, Oakland, First Quarter 1996

Dear Mr. Silveira,

The purpose of this report is to provide data regarding the results of investigations that have been carried out at the subject site during the second quarter of 1995. The site is located at the southwest corner of the intersection of East 12th Street and 23rd Ave. in Oakland. The location of the site is shown on Figure 1. A site plan is shown on Figure 2. The former tenant at the site, Alejo Auto Repair Shop vacated the property in June 1994. The site was vacant until January of this year. The new tenant is Discount Brakes & Tires.

GROUNDWATER GRADIENT

In the past, groundwater elevations for the project wells were relative to an assumed elevation for the top of casing of MW-1. The top of casing elevations were resurveyed on June 20, 1995 using an automatic level. The elevations are now tied to a City of Oakland sea level datum.

Gauging of the depth to groundwater was carried out for each project well on February

15, 1996 prior to any purging of the wells. An electronic probe was used to measure the depth to groundwater from the surveyed mark on the top of the casing. The probe is calibrated to hundredths of a foot. Several of the wells had significant vapor pressure and up to 2 hours were required for the water level in the wells to stabilize. The groundwater elevations were calculated and are presented on Figure 3. Groundwater elevation contours are also plotted on Figure 3.

In addition to the contouring, a direction and slope of the gradient was also calculated by a graphical solution to a three-point problem based on the groundwater elevations of MW-1, MW-5 and MW-6. The results of this calculation are plotted on Figure 3. The direction of the gradient is generally consistent with the groundwater elevation contouring and most of the more recent previous calculations.

GROUNDWATER SAMPLING

Groundwater samples were collected on February 15 from all of the project wells. The wells were purged of approximately five casing volumes prior to sampling by bailing or pumping with a purge pump. Purge water was placed in new 55 gallon drums and left on the site. The samples were collected using a dedicated bailer for each well. The samples were placed in appropriate sample containers provided by the laboratory. After labeling each sample, it was stored in a cooled ice chest and transferred to a State certified laboratory under chain-of-custody control.

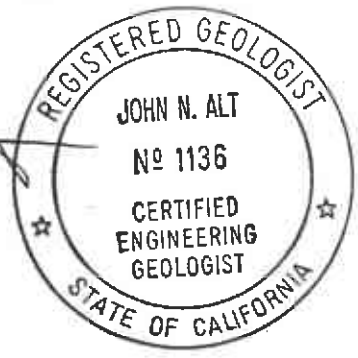
The requested analysis for each sample was based on the original Workplan, amendment and the results of the past quarter sampling and analysis. The results of the water samples are summarized on tables for each well in Appendix B which also includes the results of previous data for each well. In addition, LUFT metals were run for the samples from MW-2, MW-3 and EW-1. These results are included in Appendix A.

The Certified Laboratory Report and chain-of custody documentation are included in Appendix A. Significant levels of contamination continue to be present in all of the project wells. Summary graphs showing concentrations of contamination for each well through time are presented in Appendix C.

Other work for the site during next quarter will include the installation of the additional wells as outlined in the Remedial Action Plan. The wells will be installed, developed and sampled by the end of this month. Additional engineering of the proposed remediation system will be required as the new tenant is utilizing the space originally designated for the installation of the system.

The increasing presence of the chlorinated hydrocarbons is somewhat of a mystery as the highest concentrations are in the upgradient wells. It may be appropriate to collect grab samples of the groundwater in the rear of the building to assess whether or not this contamination is originating off site. A more detailed schedule for the installation of a remediation will be provided to Mr. Barney Chan at the end of next week after discussions with you and your tenant to identify an appropriate location for the remediation system. Should you have any questions, please contact the undersigned.

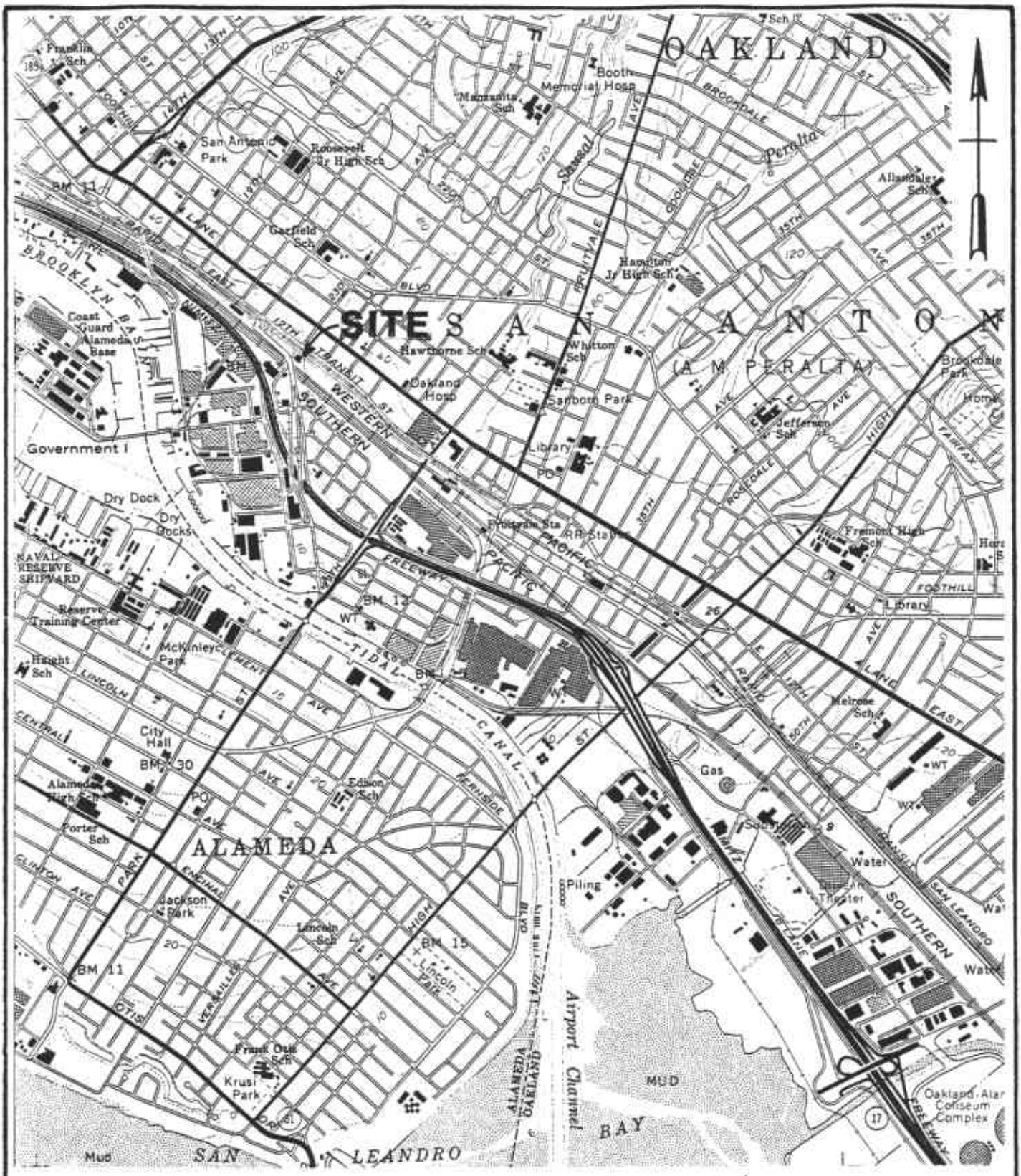
Sincerely,



John N. Alt, CEG No. 1136

Attachments

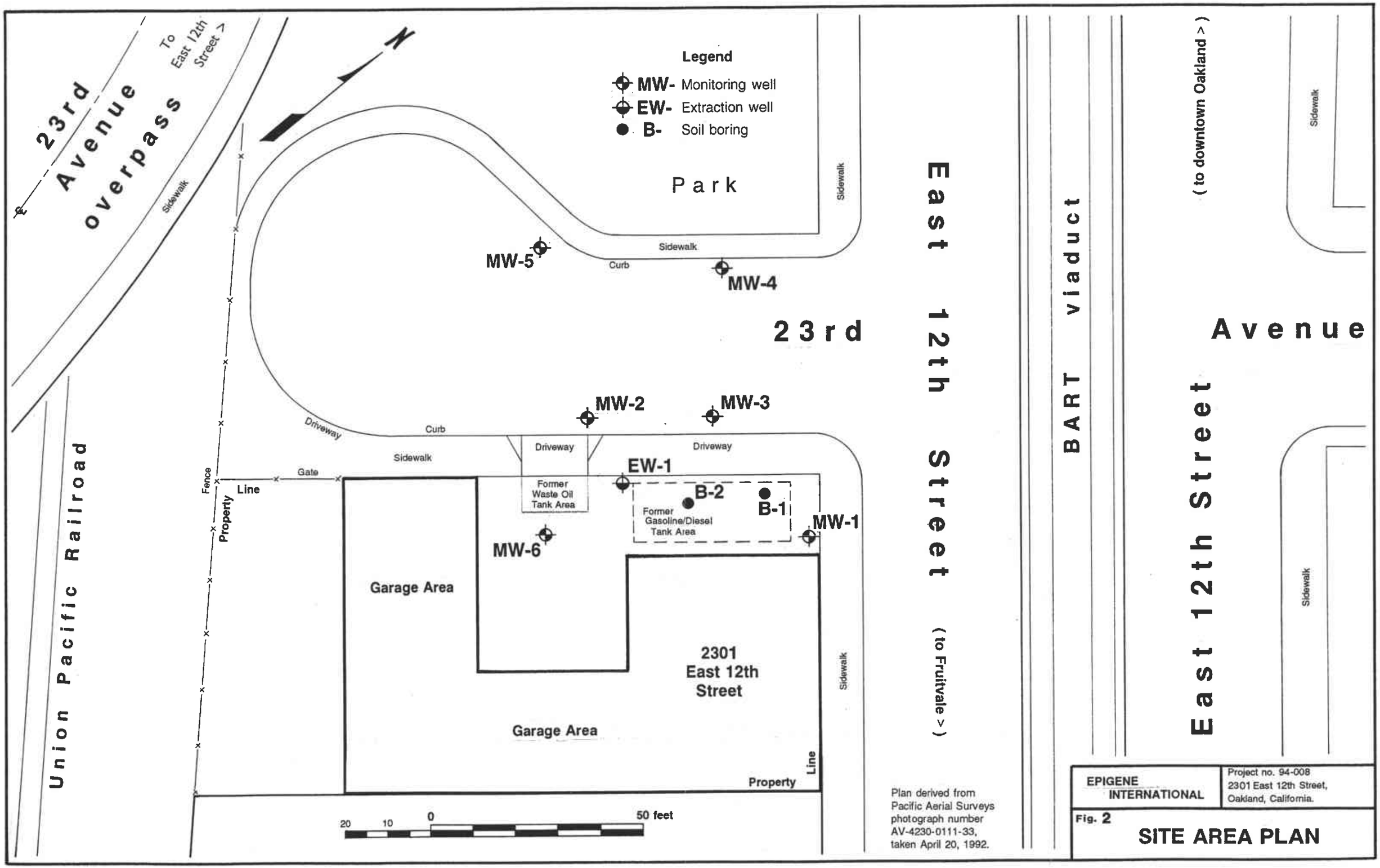
cc: Mr. Barney Chan, Alameda County Dept. of Environmental Health
Mr. Robert Shapiro, Esq.

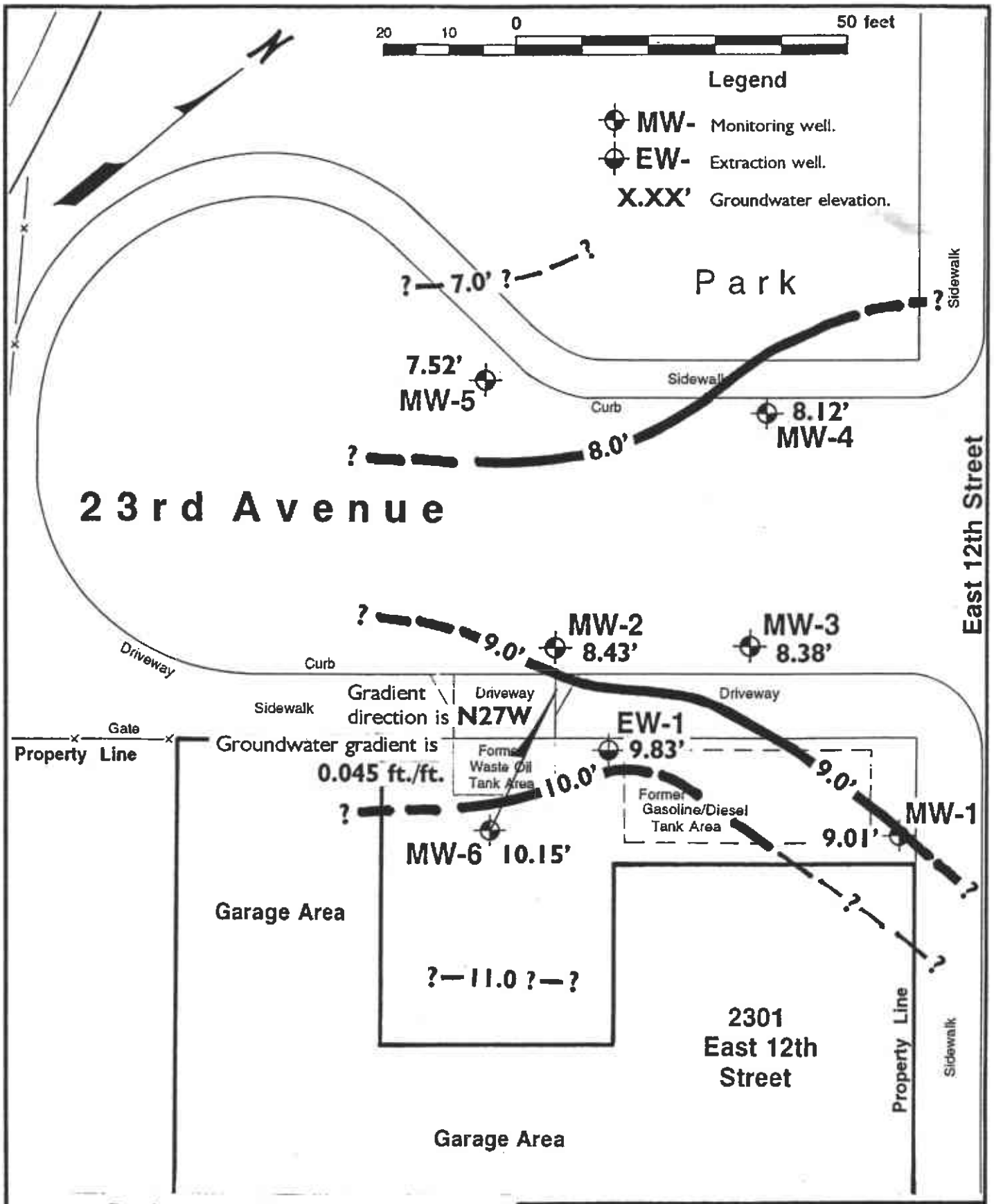


EPIGENE INTERNATIONAL | East 12th Street, Oakland, California.

Fig. 1

SITE LOCATION MAP


23rd Avenue overpass
To East 12th Street >
Sidewalk
Legend
MW- Monitoring well
EW- Extraction well
B- Soil boring
Park
Sidewalk
Sidewalk
Curb
MW-5
MW-4
23rd Avenue
East 12th Street
(to downtown Oakland >)
(to Fruitvale >)
BART viaduct
Sidewalk
MW-2
MW-3
Driveway
Curb
Driveway
Sidewalk
Driveway
Fence
Gate
Line
Property
Former Waste Oil Tank Area
EW-1
B-2
B-1
Former Gasoline/Diesel Tank Area
MW-1
MW-6
Garage Area
2301 East 12th Street
Garage Area
Sidewalk
Line
Property
East 12th Street
Sidewalk
Union Pacific Railroad
20 10 0 50 feet
Plan derived from Pacific Aerial Surveys photograph number AV-4230-0111-33, taken April 20, 1992.
EPIGENE INTERNATIONAL
Project no. 94-008
2301 East 12th Street, Oakland, California.
Fig. 2
SITE AREA PLAN



Depths to groundwater measured on

February 15, 1996.

Groundwater gradient value and direction is calculated from groundwater elevations in Monitoring Wells 1, 5, and 6.

EPIGENE INTERNATIONAL	Project No. 96-008 2301 East 12th Street, Oakland, California.
Fig.	**GROUNDWATER GRADIENT**

APPENDIX A

CERTIFIED LABORATORY REPORT

McCAMPBELL ANALYTICAL INC. | 110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

Epigene International 38750 Paseo Padre Pkwy, # A11 Fremont, CA 94536	Client Project ID: # 96-008; 2301 E. 12th, Oakland	Date Sampled: 02/15/96
		Date Received: 02/17/96
	Client Contact: John Alt	Date Extracted: 02/17/96
	Client P.O:	Date Analyzed: 02/17/96

Diesel Range (C10-C23) Extractable Hydrocarbons as Diesel *

EPA methods modified 8015, and 3550 or 3510; California RWQCB (SF Bay Region) method GCFID(3550) or GCFID(3510)

Lab ID	Client ID	Matrix	TPH(d)+	% Recovery Surrogate
61601	EW-1	W	2400,d,a,h	98
61602	MW-1	W	16,000,d,g,h	105
61603	MW-2	W	11,000d,g,h	102
61604	MW-3	W	9400,d,h	102
61605	MW-4	W	940,d,g,h	104
61606	MW-5	W	2200,d,b,h	105
61607	MW-6	W	1500,d,a,h	98
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		W	50 ug/L	
		S	1.0 mg/kg	

* water samples are reported in ug/L, soil samples in mg/kg, and all TCLP and STLC extracts in mg/L

cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract.

+ The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant); d) gasoline range compounds are significant; e) medium boiling point pattern that does not match diesel (?); f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~ 5 vol. % sediment.

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC. | 110 2nd Avenue South, #D7, Pacheco, CA 94553
Telc: 510-798-1620 Fax: 510-798-1622

Epigene International 38750 Paseo Padre Pkwy, # A11 Fremont, CA 94536	Client Project ID: # 96-008; 2301 E. 12th, Oakland	Date Sampled: 02/15/96
		Date Received: 02/17/96
	Client Contact: John Alt	Date Extracted: 02/17/96
	Client P.O:	Date Analyzed: 02/17/96

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with BTEX*
EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g)+	Benzene	Toluene	Ethylben-zene	Xylenes	% Rec. Surrogate
61601	EW-1	W	5000,j,h	270	7.5	50	20	117#
61602	MW-1	W	11,000,a,h	1400	25	130	81	103
61603	MW-2	W	25,000,a,h	1700	93	490	440	101
61604	MW-3	W	8100,j,b,h	62	13	50	33	103
61605	MW-4	W	3400,d,b,h	ND	ND	ND	ND	101
61606	MW-5	W	4400,c,d,b,h	61	5.3	34	ND	102
61607	MW-6	W	3900c,b,h	460	11	110	23	103
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		W	50 ug/L	0.5	0.5	0.5	0.5	
		S	1.0 mg/kg	0.005	0.005	0.005	0.005	

* water and vapor samples are reported in ug/L, soil samples in mg/kg, and all TCLP extracts in mg/L

cluttered chromatogram; sample peak coelutes with surrogate peak

+ The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~ 5 vol. % sediment; j) no recognizable pattern.

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC. | 110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

Epigene International 38750 Paseo Padre Pkwy, # A11 Fremont, CA 94536	Client Project ID: # 96-008; 2301 E. 12th, Oakland	Date Sampled: 02/15/96
		Date Received: 02/17/96
	Client Contact: John Alt	Date Extracted: 02/17/96
	Client P.O:	Date Analyzed: 02/18/96

Volatile Halocarbons

EPA method 601 or 8010

Lab ID	61601	61602	61603	61604
Client ID	EW-1	MW-1	MW-2	MW-3
Matrix	W	W	W	W
Compound	Concentration*			
Bromodichloromethane	ND< 1.0	ND	ND< 2.5	ND
Bromoform(b)	ND< 1.0	ND	ND< 2.5	ND
Bromomethane	ND< 1.0	ND	ND< 2.5	ND
Carbon Tetrachloride(c)	ND< 1.0	ND	ND< 2.5	ND
Chlorobenzene	ND< 1.0	ND	4.8	ND
Chloroethane	1.0	ND	ND< 2.5	ND
2-Chloroethyl Vinyl Ether(d)	ND< 1.0	ND	ND< 2.5	ND
Chloroform (e)	ND< 1.0	ND	ND< 2.5	ND
Chloromethane	ND< 1.0	ND	ND< 2.5	ND
Dibromochloromethane	ND< 1.0	ND	ND< 2.5	ND
1,2-Dichlorobenzene	ND< 1.0	ND	ND< 2.5	ND
1,3-Dichlorobenzene	ND< 1.0	ND	ND< 2.5	ND
1,4-Dichlorobenzene	ND< 1.0	ND	ND< 2.5	ND
Dichlorodifluoromethane	ND< 1.0	ND	ND< 2.5	ND
1,1-Dichloroethane	ND< 1.0	ND	ND< 2.5	ND
1,2-Dichloroethane	ND< 1.0	ND	ND< 2.5	ND
1,1-Dichloroethene	ND< 1.0	ND	ND< 2.5	ND
cis 1,2-Dichloroethene	17	0.82	ND< 2.5	7.3
trans 1,2-Dichloroethene	6.4	ND	ND< 2.5	2.6
1,2-Dichloropropane	ND< 1.0	ND	ND< 2.5	ND
cis 1,3-Dichloropropene	ND< 1.0	ND	ND< 2.5	ND
trans 1,3-Dichloropropene	ND< 1.0	ND	ND< 2.5	ND
Methylene Chloride(f)	ND< 2.0	ND	ND< 2.5	ND
1,1,2,2-Tetrachloroethane	ND< 1.0	ND	ND< 2.5	ND
Tetrachloroethene	ND< 1.0	ND	ND< 2.5	ND
1,1,1-Trichloroethane	ND< 1.0	ND	ND< 2.5	ND
1,1,2-Trichloroethane	ND< 1.0	ND	ND< 2.5	ND
Trichloroethene	33	24	ND< 2.5	9.3
Trichlorofluoromethane	ND< 1.0	ND	ND< 2.5	ND
Vinyl Chloride(g)	2.3	ND	ND< 2.5	ND
% Recovery Surrogate	111	113	119	110
Comments	h	h	h	h

* water and vapor samples are reported in ug/L, soil samples in ug/kg and all TCLP extracts in ug/L.

Reporting limit unless otherwise stated: water/TCLP extracts, ND< 0.5ug/L; soil, ND< 5ug/kg

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis

(b) tribromomethane; (c) tetrachloromethane; (d) (2-chloroethoxy) ethene; (e) trichloromethane; (f) dichloromethane; (g) chloroethene; (h) a lighter than water immiscible sheen is present; (i) liquid sample that contains greater than ~ 5 vol. % sediment.

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.	110 2nd Avenue South, #D7, Pacheco, CA 94553 Tele: 510-798-1620 Fax: 510-798-1622

Epigene International 38750 Paseo Padre Pkwy, # A11 Fremont, CA 94536	Client Project ID: # 96-008; 2301 E. 12th, Oakland	Date Sampled: 02/15/96
		Date Received: 02/17/96
	Client Contact: John Alt	Date Extracted: 02/17/96
	Client P.O:	Date Analyzed: 02/18/96

Volatile Halocarbons

EPA method 601 or 8010

Lab ID	61605	61606	61607	
Client ID	MW-4	MW-5	MW-6	
Matrix	W	W	W	
Compound	Concentration*			
Bromodichloromethane	ND	ND	ND< 2.5	
Bromoform(b)	ND	ND	ND< 2.5	
Bromomethane	ND	ND	ND< 2.5	
Carbon Tetrachloride(c)	ND	ND	ND< 2.5	
Chlorobenzene	ND	0.57	ND< 2.5	
Chloroethane	ND	ND	ND< 2.5	
2-Chloroethyl Vinyl Ether(d)	ND	ND	ND< 2.5	
Chloroform (e)	ND	ND	ND< 2.5	
Chloromethane	ND	ND	ND< 2.5	
Dibromochloromethane	ND	ND	ND< 2.5	
1,2-Dichlorobenzene	ND	ND	ND< 2.5	
1,3-Dichlorobenzene	ND	ND	ND< 2.5	
1,4-Dichlorobenzene	ND	ND	ND< 2.5	
Dichlorodifluoromethane	ND	ND	ND< 2.5	
1,1-Dichloroethane	ND	ND	ND< 2.5	
1,2-Dichloroethane	ND	ND	ND< 2.5	
1,1-Dichloroethene	ND	ND	ND< 2.5	
cis 1,2-Dichloroethene	1.8	7.7	110	
trans 1,2-Dichloroethene	0.79	ND	25	
1,2-Dichloropropane	ND	ND	ND< 2.5	
cis 1,3-Dichloropropene	ND	ND	ND< 2.5	
trans 1,3-Dichloropropene	ND	ND	ND< 2.5	
Methylene Chloride(f)	ND	ND	ND< 5.0	
1,1,2,2-Tetrachloroethane	ND	ND	ND< 2.5	
Tetrachloroethene	ND	ND	ND< 2.5	
1,1,1-Trichloroethane	ND	ND	ND< 2.5	
1,1,2-Trichloroethane	ND	ND	ND< 2.5	
Trichloroethene	ND	ND	160	
Trichlorofluoromethane	ND	ND	ND< 2.5	
Vinyl Chloride(g)	ND	5.3	46	
% Recovery Surrogate	113	115	116	
Comments	h	h	h	

* water and vapor samples are reported in ug/L, soil samples in ug/kg and all TCLP extracts in ug/L.
Reporting limit unless otherwise stated: water/TCLP extracts, ND< 0.5ug/L; soil, ND< 5ug/kg
ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis
(b) tribromomethane; (c) tetrachloromethane; (d) (2-chloroethoxy) ethene; (e) trichloromethane; (f) dichloromethane; (g) chloroethene; (h) a lighter than water immiscible sheen is present; (i) liquid sample that contains greater than ~ 5 vol. % sediment.

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.	110 2nd Avenue South, #D7, Pacheco, CA 94553 Telc: 510-798-1620 Fax: 510-798-1622

Epigene International 38750 Paseo Padre Pkwy, # A11 Fremont, CA 94536	Client Project ID: # 96-008; 2301 E. 12th, Oakland	Date Sampled: 02/15/96
		Date Received: 02/17/96
	Client Contact: John Alt	Date Extracted: 02/17/96
	Client P.O:	Date Analyzed: 02/17/96

Total Recoverable Petroleum Hydrocarbons as Oil & Grease (with Silica Gel Clean-up) by Scanning IR Spectrometry*

EPA method 418.1 or 9073; Standard Methods 5520 C&F

Lab ID	Client ID	Matrix	TRPH+
61601	EW-1	W	4.2,h
61603	MW-2	W	20,h
61604	MW-3	W	12,h
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		W	1.0 mg/L
		S	10 mg/kg

* water samples are reported in mg/L and soils in mg/kg

surrogate diluted out of range

+ At the laboratory's discretion, one positive sample may be run by direct injection chromatography with FID detection. The following comments pertain to this GC result: a) gasoline-range compounds (C6-C12) are present; b) diesel range compounds (C10-C23) are present; c) oil-range compounds (> C18) are present; d) other patterned solvent (?); e) isolated peaks; f) GC compounds are absent or insignificant relative to TRPH inferring that complex biologically derived molecules (lipids?)are the source of IR absorption; h) a lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~ 5 vol. % sediment.

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

Epigene International 38750 Paseo Padre Pkwy, # A11 Fremont, CA 94536	Client Project ID: # 96-008; 2301 E. 12th, Oakland	Date Sampled: 02/15/96 Date Received: 02/17/96
	Client Contact: John Alt	Date Extracted: 02/20/96
	Client P.O:	Date Analyzed: 02/22/96

LUFT Metals*

EPA analytical methods 6010/200.7, 239.2+

Lab ID	Client ID	Matrix	Extraction°	Cadmium	Chromium	Lead	Nickel	Zinc	% Rec. Surrogate
61601	EW-1	W	TTLC	ND	0.005	ND	0.052	ND	104
61603	MW-1	W	TTLC	ND	0.007	0.049	0.061	0.025	104
61604	MW-3	W	TTLC	ND	0.018	0.009	0.059	0.021	107
Reporting Limit unless other-wise stated; ND means not detected above the reporting limit	S	TTLC	0.5 mg/kg	0.5	3.0	2.0	1.0		
	W	TTLC	0.01 mg/L	0.005	0.005	0.02	0.01		
	---	STLC,TCLP	0.01 mg/L	0.05	0.2	0.05	0.05		

* soil samples are reported in mg/kg, and water samples and all STLC & TCLP extracts in mg/L

+ Lead is analysed using EPA method 6010 (ICP)for soils, STLC & TCLP extracts and method 239.2 (AA Furnace) for water samples

o EPA extraction methods 1311(TCLP), 3010/3020(water,TTLC), 3040(organic matrices,TTLC), 3050(solids,TTLC); STLC from CA Title 22

surrogate diluted out of range; N/A means surrogate not applicable to this analysis

i) liquid sample that contains greater than ~ 2 vol. % sediment; this sediment is extracted with the liquid, in accordance with EPA methodologies and can significantly effect reported metal concentrations.

DHS Certification No. 1644

Edward Hamilton, Lab Director

CHAIN OF CUSTODY

Epigene International
CONSULTING GEOLOGISTS

38750 Paseo Padre Parkway, Suite A-11
Fremont, California, 94536
Business: (510) 791-1986 FAX: (510) 791-3306

Laboratory:	McCampbell Analytical Inc.
	110 2nd Avenue South #D7
	Pacheco, CA 94553
	(510) 798-1620
Contact:	Ed Hamilton

Contact: John Alt	Sampler: JA/MD/MM
Project Name: 2301 E. 12th OAKLAND CA	
Project no. 96-008	Date: 2/15/96

Analyses Requested

Sample I.D.	Date/Time Sampled	Matrix Desc.	Container No. of	Container Type	Lab. #	TPH/Gasoline	BTEX	TPH/Diesel	601/8010	602/8020	5 CAM	Oil & Grease			Comments
1. MW-3	2/15/96 1400	H_2O	2	VOAS		X	X		X						61604
2. "	1400	↓	1	liter bottle				X							
3. "	1400		1	liter bottle								X			
4. "	1400		1	Plastic bottle							X				
5. MW-4	1210		2	VOAS		X	X		X						61605
6. "	1210		1	liter bottle				X							
7. MW-5	1200		2	VOAS		X	X		X						61606
8. "	1200		1	liter bottle				X							
9. MW-6	1115		2	VOAS		X	X		X						61607
10. "	↓ 1115	↓	1	liter bottle				X							

Relinquished by: John Alt	Date: 2/17/96	Time: 12:30 PM	Received by: [signature]	Date: 2/17/96	Time: 12:30 pm
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by:	Date:	Time:

Turnaround Time: STANDARD

Additional Comments: VOAS have HCl, Plastic bottles HNO_3

ICE/T° ✓ PRESERVATIVE ✓ VOAS O&G METALS OTHER ✓✓✓
GOOD CONDITION ✓ APPROPRIATE
HEAD SPACE ABSENT ✓ CONTAINERS ✓

Page 2 of 2

5859AEIX75

CHAIN OF CUSTODY

Laboratory:	McCampbell Analytical Inc.
	110 2nd Avenue South #D7
	Pacheco, CA 94553
	(510) 798-1620
Contact:	Ed Hamilton

Epigene International
CONSULTING GEOLOGISTS
38750 Paseo Padre Parkway, Suite A-11
Fremont, California, 94536
Business: (510) 791-1988 FAX: (510) 791-3306

Contact: John Alt	Sampler: JWA/MD/APA
Project Name: 2301 E. 12th, Oak CA.	
Project no. 96-008	Date: 2/15/96

Sample I.D.	Date/Time Sampled	Matrix Desc.	Container No. of	Container Type	Lab. #	TPH/Gasoline	BTEX	TPH/Diesel	601/8010	602/8020	5 CAM	Oil & Grease	Comments
1. EW-1	2/15/96 1030	H_2O	2	VOAs		X	X		X				
2. "			1	liter bottle				X					61601
3. "			1	"							X		
4. "	↓		1	Plastic bottle						X			
5. MW-1	1300		2	VOAs		X	X		X				
6. "	1300		1	liter bottle				X					61602
7. MW-2	1430		2	VOAs		X	X		X				
8.	1430		1	liter bottle				X					
9.	1430		1	liter bottle							X		61603
10.	↓ 1430	↓	1	Plastic bottle						X			

Relinquished by: [signature]	Date: 2/17/96	Time: 12:30	Received by: [signature]	Date: 2/17/96	Time: 12:30 PM
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by:	Date:	Time:

Turnaround Time: STANDARD

Additional Comments: VOAs have HCl, Plastic bottles HNO_3

ICE/T° ✓ GOOD CONDITION ✓ HEAD SPACE ABSENT ✓ PRESERVATIVE APPROPRIATE ✓ CONTAINERS ✓

APPENDIX B

SUMMARY TABLES

Table 1A-Summary of Hydrocarbon Concentrations (in PPB) Detected in MW-1

Sampling Date	TPH Diesel	TPH Gasoline	Benzene	Toluene	Ethyl-benzene	Xylenes	TRPH*
7/27/92	360	1800	600	5.1	13	18	ND
11/6/92	670	8000	2400	6.1	41	ND	NA
3/2/93	1100	5600	3800	ND	120	ND	NA
5/26/93	1700	4800	3400	44	140	150	NA
8/27/93	1200	8400	2300	35	180	57	ND
12/23/93	ND	7800	29	16	5.8	26	NA
3/27/94	2600	10,000	2400	84	310	280	NA
6/24/94	1500	9000	2300	44	260	170	NA
10/16/94	2000	10,000	2100	35	250	140	NA
2/13/95	2500	16,000	3200	110	460	260	NA
6/20/95	3500	18,000	2600	87	450	220	NA
10/16/95	2700	13,000	2200	63	220	110	NA
2/15/96	16,000	11,000	1400	25	130	81	NA

MW-1 is a 2 inch PVC well installed 12/23/91 to a total depth of 28 feet.

NOTE: NA is not analyzed; ND is not detected above detection limits which are typically 50 PPB for diesel and gasoline and 0.5 PPB for BTEX; *TRPH is Total Recoverable Petroleum Hydrocarbons as oil and grease. Results for TRPH is presented in PPM with a detection limit of 5 PPM.

Table 1B-Summary of Volatile Halocarbon Concentrations (in PPB) Detected in MW-1

Sampling Date	Chloro-benzene	Chloro-ethane	1,2-Di Chloro-ethane	Cis 1,2 Dichloro-ethene	Trans 1,2 Dichloro-ethene	PCE	TCE	Vinyl Chloride
7/27/92	NA	NA	NA	NA	NA	NA	NA	NA
11/6/92	NA	NA	NA	NA	NA	NA	NA	NA
3/2/93	ND	ND	ND	ND	ND	ND	5.8	ND
5/26/93	ND	ND	ND	ND	ND	ND	6.8	ND
8/27/93	ND	ND	ND	1.1	ND	5.4	ND	ND
12/23/94	NA	NA	NA	NA	NA	NA	NA	NA
3/27/94	NA	NA	NA	NA	NA	NA	NA	NA
6/24/94	NA	NA	NA	NA	NA	NA	NA	NA
10/16/94	NA	NA	NA	NA	NA	NA	NA	NA
2/13/95	ND	ND	ND	1.3	ND	ND	ND	ND
6/20/95	ND	1.1	ND	1.1	ND	ND	6.5	ND
10/16/95	ND	ND	ND	0.84	ND	ND	2.5	ND
2/15/96	ND	ND	ND	0.82	ND	ND	24	ND

NOTE: Table presents only those compounds that have been detected in any of the site wells; data from EPA Method either 8010 or 8240; NA is not analyzed; ND is not detected above detection limits which are typically 0.5 PPB.

Table 2A-Summary of Hydrocarbon Concentrations (in PPB) Detected in MW-2

Sampling Date	TPH Diesel	TPH Gasoline	Benzene	Toluene	Ethyl-benzene	Xylenes	TRPH*
7/27/92	1500	20,000	110	6	37	39	ND
11/6/92	17,000	19,000	2800	120	790	1100	NA
3/2/93	37,000	14,000	3800	110	950	1100	NA
5/26/93	6000	11,000	5200	140	1000	990	32
8/27/93	5400	16,000	1700	120	640	710	ND
12/23/93	720	18,000	87	79	42	400	NA
3/27/94	6100	17,000	2100	100	630	750	ND
6/24/94	3000	15,000	2000	72	550	520	7.9
10/16/94	5300	15,000	1500	81	410	520	13
2/13/95	4900	18,000	2000	120	660	900	20
6/20/95	6600	30,000	1300	85	510	520	11
10/16/95	31,000	19,000	1500	92	400	330	11
2/15/96	11,000	25,000	1700	93	490	440	20

MW- 2 is a 2 inch PVC well installed 7/8/92 to a total depth of 19 feet.

NOTE: NA is not analyzed; ND is not detected above detection limits which are typically 50 PPB for diesel and gasoline and 0.5 PPB for BTEX; *TRPH is Total Recoverable Petroleum Hydrocarbons as oil and grease. Results for TRPH is presented in PPM with a detection limit of 5 PPM.

Table 2B-Summary of Volatile Halocarbons Concentrations (in PPB) Detected in MW-2

Sampling Date	Chloro-benzene	Chloro-ethane	1,2-Di Chloro-ethane	Cis 1,2 Dichloro-ethene	Trans 1,2 Dichloro-ethene	PCE	TCE	Vinyl Chloride
7/27/92	NA	NA	NA	NA	NA	NA	NA	NA
11/6/92	NA	NA	NA	NA	NA	NA	NA	NA
3/2/93	ND	ND	ND	ND	ND	ND	ND	ND
5/26/93	9.8	ND	ND	2.7	2.7	ND	ND	ND
8/27/93	10	1.3	0.66	3.2	ND	ND	ND	2.2
12/23/93	4.3	ND	ND	1.0	ND	ND	ND	1.5
3/27/94	ND	ND	ND	ND	ND	ND	ND	ND
6/24/94	6.5	ND	ND	ND	ND	ND	ND	ND
10/16/94	5.7	1.1	ND	0.73	ND	ND	ND	1.0
2/13/95	12	ND	ND	ND	ND	ND	ND	ND
6/20/95	7.9	1.5	1.4	1.0	ND	ND	ND	2.1
10/16/95	5.1	ND	ND	ND	ND	ND	ND	ND
2/15/96	4.8	ND	ND	ND	ND	ND	ND	ND

NOTE: Table presents only those compounds that have been detected in any of the site wells; data from EPA Method either 8010 or 8240; NA is not analyzed; ND is not detected above detection limits which are typically 2.5 PPB for this well.

Table 3A-Summary of Hydrocarbon Concentrations (in PPB) Detected in MW-3

Sampling Date	TPH Diesel	TPH Gasoline	Benzene	Toluene	Ethyl-benzene	Xylenes	TRPH*
7/27/92	4000	8800	150	8.6	88	13	ND
11/6/92	21,000	10,000	78	3.1	830	13	NA
3/2/93	9300	3900	120	ND	240	37	NA
5/26/93	4400	7400	570	4.1	640	8.4	ND
8/27/93	8200	7100	180	15	110	9.4	ND
12/23/93	230	7900	30	14	12	62	NA
3/27/94	4300	5700	180	10	100	24	ND
6/24/94	1500	8400	230	13	93	7.6	NA
10/16/94	2700	6300	140	8.7	68	25	7.3
2/13/95	1600	7500	220	17	110	22	8.3
6/20/95	13,000	11,000	310	23	160	63	8.5
10/16/95	1900	4700	120	6.7	32	16	8.3
2/15/96	9400	8100	62	13	50	33	12

MW-3 is a 2 inch PVC well installed 7/8/92 to a total depth of 19 feet.

NOTE: NA is not analyzed; ND is not detected above detection limits which are typically 50 PPB for diesel and gasoline and 0.5 PPB for BTEX; *TRPH is Total Recoverable Petroleum Hydrocarbons as oil and grease. Results for TRPH is presented in PPM with a detection limit of 5 PPM.

Table 3B-Summary of Volatile Halocarbons Concentrations (in PPB) Detected in MW-3

Sampling Date	Chloro-benzene	Chloro-ethane	1,2-Di Chloro-ethane	Cis 1,2 Dichloro-ethene	Trans 1,2 Dichloro-ethene	PCE	TCE	Vinyl Chloride
7/27/92	NA	NA	NA	NA	NA	NA	NA	NA
11/6/92	NA	NA	NA	NA	NA	NA	NA	NA
3/2/93	ND	ND	ND	ND	ND	ND	ND	ND
5/26/93	NA	NA	NA	NA	NA	NA	NA	NA
8/27/93	ND	ND	ND	ND	ND	ND	16	ND
12/23/93	NA	NA	NA	NA	NA	NA	NA	NA
3/27/94	ND	ND	ND	ND	ND	ND	6	ND
6/24/94	ND	ND	ND	6.0	1.5	ND	ND	ND
10/16/94	ND	ND	ND	8.4	2.1	ND	12	ND
2/13/95	ND	ND	ND	4.3	1.3	ND	5.1	ND
6/20/95	ND	0.5	ND	4.9	1.7	ND	5.7	ND
10/16/95	ND	ND	ND	7.1	2.0	ND	7.8	ND
2/15/96	ND	ND	ND	7.3	2.6	ND	9.3	ND

NOTE: Table presents only those compounds that have been detected in any of the site wells; data from EPA Method either 8010 or 8240; NA is not analyzed; ND is not detected above detection limits which are typically 0.5 PPB.

Table 4A-Summary of Hydrocarbon Concentrations (in PPB) Detected in MW-4

Sampling Date	TPH Diesel	TPH Gasoline	Benzene	Toluene	Ethyl-benzene	Xylenes	TRPH*
3/27/94	1800	2200	19	1.2	2.9	12	NA
6/24/94	420	2300	2.9	1.6	2.8	4.6	NA
10/16/94	900	3500	3.8	2	5.2	24	NA
2/13/95	630	2600	100	100	3.8	7.1	NA
6/20/95	1100	3000	31	3.4	6.1	12	NA
10/16/95	1100	2000	43	2.3	8.4	6.9	NA
2/15/96	940	3400	ND	ND	ND	ND	NA

MW-4 is a 2 inch PVC well installed 3/18/94 to a total depth of 20 feet.

NOTE: NA is not analyzed; ND is not detected above detection limits which are typically 50 PPB for diesel and gasoline and 0.5 PPB for BTEX; *TRPH is Total Recoverable Petroleum Hydrocarbons as oil and grease. Results for TRPH is presented in PPM with a detection limit of 5 PPM.

Table 4B-Summary of Volatile Halocarbons Concentrations (in PPB) Detected in MW-4

Sampling Date	Chloro-benzene	Chloro-ethane	1,2-Di Chloro-ethane	Cis 1,2 Dichloro-ethene	Trans 1,2 Dichloro-ethene	PCE	TCE	Vinyl Chloride
3/27/94	NA	NA	NA	NA	NA	NA	NA	NA
6/24/94	NA	NA	NA	NA	NA	NA	NA	NA
10/16/94	ND	ND	0.67	0.71	ND	ND	ND	ND
2/13/95	ND	ND	ND	ND	ND	ND	ND	ND
6/20/95	ND	ND	ND	2.2	1.0	ND	ND	ND
10/16/95	ND	ND	ND	1.3	ND	ND	ND	ND
2/15/96	ND	ND	ND	1.8	0.79	ND	ND	ND

NOTE: Table presents only those compounds that have been detected in any of the site wells; data from EPA Method either 8010 or 8240; NA is not analyzed; ND is not detected above detection limits which are typically 0.5 PPB.

Table 5A-Summary of Hydrocarbon Concentrations (in PPB) Detected in MW-5

Sampling Date	TPH Diesel	TPH Gasoline	Benzene	Toluene	Ethyl-benzene	Xylenes	TRPH*
3/27/94	870	2900	71	ND	27	15	NA
6/24/94	950	6100	220	12	38	24	NA
10/16/94	1100	4300	120	5.1	27	13	NA
2/13/95	1200	4600	130	7.9	38	29	NA
6/20/95	1000	6000	140	6.7	27	29	NA
10/16/95	940	2000	43	2.3	8.4	6.9	NA
2/15/96	2200	4400	61	5.3	34	ND	NA

MW-5 is a 2 inch PVC well installed 3/17/94 to a total depth of 20 feet.

NOTE: NA is not analyzed; ND is not detected above detection limits which are typically 50 PPB for diesel and gasoline and 0.5 PPB for BTEX; *TRPH is Total Recoverable Petroleum Hydrocarbons as oil and grease. Results for TRPH is presented in PPM with a detection limit of 5 PPM.

Table 5B-Summary of Volatile Haolcarbons Concentrations (in PPB) Detected in MW-5

Sampling Date	Chloro-benzene	Chloro-ethane	1,2-Di Chloro-ethane	Cis 1,2 Dichloro-ethene	Trans 1,2 Dichloro-ethene	PCE	TCE	Vinyl Chloride
3/27/94	NA	NA	NA	NA	NA	NA	NA	NA
6/24/94	0.53	ND	ND	11	3.1	ND	ND	7.5
10/16/94	0.66	ND	ND	16	4.2	ND	ND	9.6
2/13/95	ND	ND	ND	20	5.1	ND	ND	8.4
6/20/95	0.95	ND	ND	12	4.1	ND	ND	10
10/16/95	0.54	ND	ND	9.8	2.9	ND	2.0	7.6
2/15/96	0.57	ND	ND	7.7	ND	ND	ND	5.3

NOTE: Table presents only those compounds that have been detected in any of the site wells; data from EPA Method either 8010 or 8240; NA is not analyzed; ND is not detected above detection limits which are typically 0.5 PPB.

Table 6A-Summary of Hydrocarbon Concentrations (in PPB) Detected in MW-6

Sampling Date	TPH Diesel	TPH Gasoline	Benzene	Toluene	Ethyl-benzene	Xylenes	TRPH*
3/27/94	1000	5000	1100	17	180	41	NA
6/24/94	660	8000	1200	21	210	54	NA
10/16/94	850	6300	870	14	140	49	NA
2/13/95	1000	5500	1000	17	210	55	NA
6/20/95	1400	9100	1300	24	240	79	NA
10/16/95	770	3000	590	8.8	84	24	2.8
2/15/96	1500	3900	460	11	110	23	NA

MW-6 is a 2 inch PVC well installed 3/17/94 to a total depth of 20 feet.

NOTE: NA is not analyzed; ND is not detected above detection limits which are typically 50 PPB for diesel and gasoline and 0.5 PPB for BTEX; *TRPH is Total Recoverable Petroleum Hydrocarbons as oil and grease. Results for TRPH is presented in PPM with a detection limit of 5 PPM.

Table 6B-Summary of Volatile Halocarbons Concentrations (in PPB) Detected in MW-6

Sampling Date	Chloro-benzene	Chloro-ethane	1,2-Di Chloro-ethane	Cis 1,2 Dichloro-ethene	Trans 1,2 Dichloro-ethene	PCE	TCE	Vinyl Chloride
3/27/94	NA	NA	NA	NA	NA	NA	NA	NA
6/24/94	NA	NA	NA	NA	NA	NA	NA	NA
10/16/94	NA	NA	NA	NA	NA	NA	NA	NA
2/13/95	ND	ND	ND	40	13	ND	99	87
6/20/95	ND	ND	ND	26	17	ND	29	130
10/16/95	ND<5	ND<5	ND<5	75	16	ND<5	110	54
2/15/96	ND	ND	ND	110	25	ND	160	46

NOTE: Table presents only those compounds that have been detected in any of the site wells; data from EPA Method either 8010 or 8240; NA is not analyzed; ND is not detected above detection limits which are typically 2.5 PPB for this well.

Table 7A-Summary of Hydrocarbon Concentrations (in PPB) Detected in EW-1

Sampling Date	TPH Diesel	TPH Gasoline	Benzene	Toluene	Ethyl-benzene	Xylenes	TRPH*
3/27/94	920	1200	270	6.2	30	13	ND
6/24/94	1200	4600	410	5.6	78	22	NA
10/16/94	1200	4900	310	5.2	30	32	6.4
2/13/95	1000	3900	380	5.9	41	22	ND
6/20/95	1800	7800	710	14	260	52	6.5
10/16/95	940	3200	310	3.3	32	16	5.5
2/15/96	2400	5000	270	7.5	50	20	4.2

EW-1 is a 4 inch PVC well installed 3/16/94 to a total depth of 30 feet.

NOTE: NA is not analyzed; ND is not detected above detection limits which are typically 50 PPB for diesel and gasoline and 0.5 PPB for BTEX; *TRPH is Total Recoverable Petroleum Hydrocarbons as oil and grease. Results for TRPH is presented in PPM with a detection limit of 5 PPM.

Table 7B-Summary of Volatile Halocarbons Concentrations (in PPB) Detected in EW-1

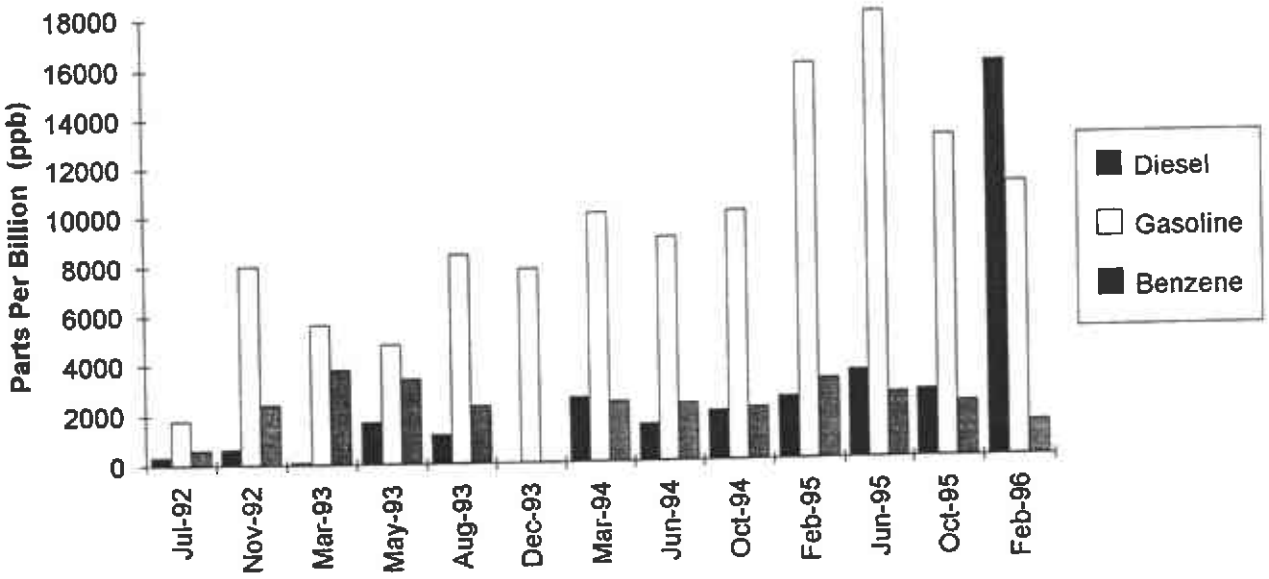
Sampling Date	Chloro-benzene	Chloro-ethane	1,2-Di Chloro-ethane	Cis 1,2 Dichloro-ethene	Trans 1,2 Dichloro-ethene	PCE	TCE	Vinyl Chloride
3/27/94	ND	ND	ND	ND	ND	ND	40	ND
6/24/94	ND	ND	1.3	42	11	ND	68	3.2
10/16/94	ND	ND	ND	36	ND	ND	74	ND
2/13/95	ND	ND	ND	13	4.4	ND	53	ND
6/20/95	ND	2.0	ND	4.3	2.0	ND	6.0	2.8
10/16/95	ND <2.0	ND <2.0	ND <2.0	24	7.1	ND <2.0	46	ND <2.0
2/15/96	ND	1.0	ND	17	6.4	ND	33	2.3

NOTE: Table presents only those compounds that have been detected in any of the site wells; data from EPA Method either 8010 or 8240; NA is not analyzed; ND is not detected above detection limits which are typically 2.0 PPB for this well.

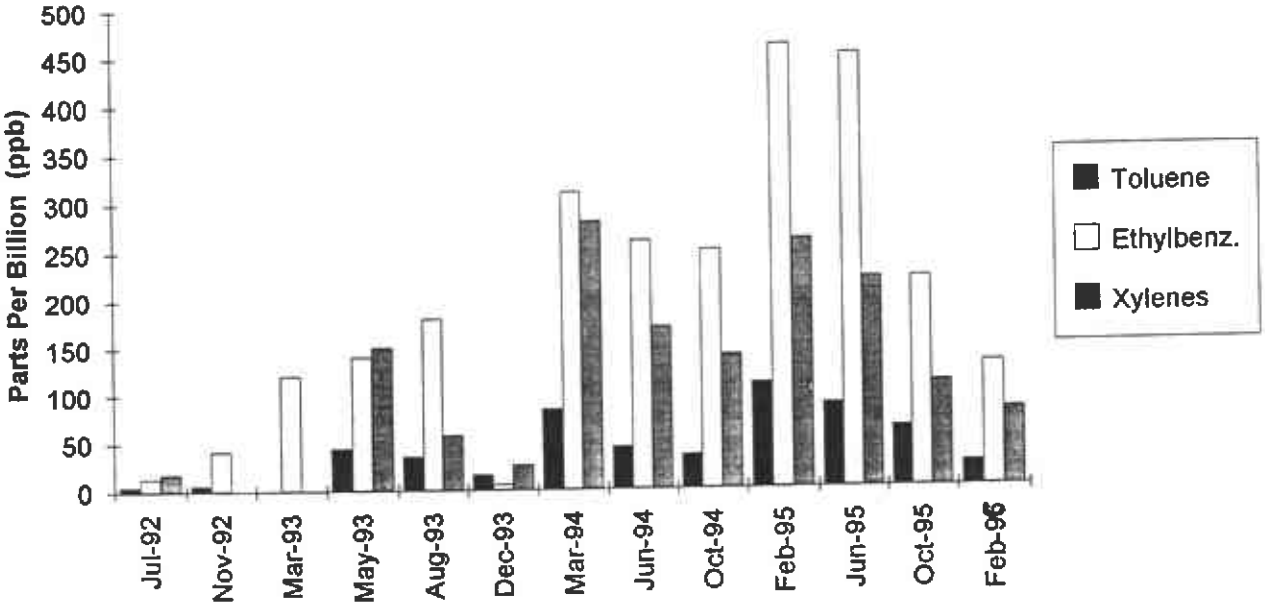
APPENDIX C

SUMMARY GRAPHS OF CONTAMINATION

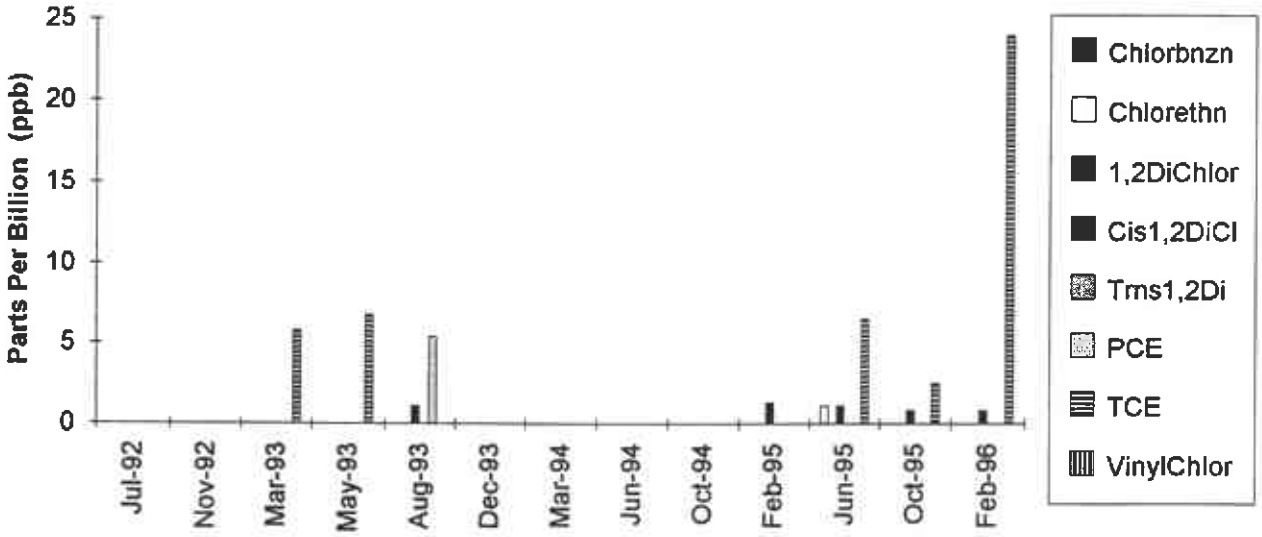
MW-1: TPH as Diesel, TPH as Gasoline, and Benzene Concentrations



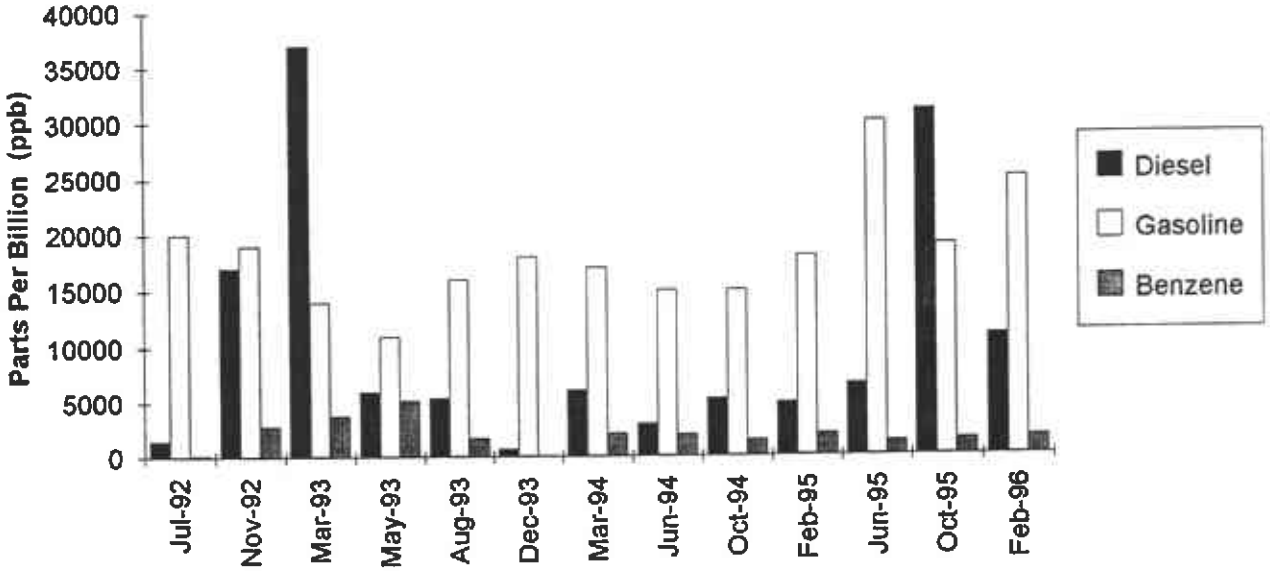
MW-1: Toluene, Ethylbenzene, and Xylenes Concentrations



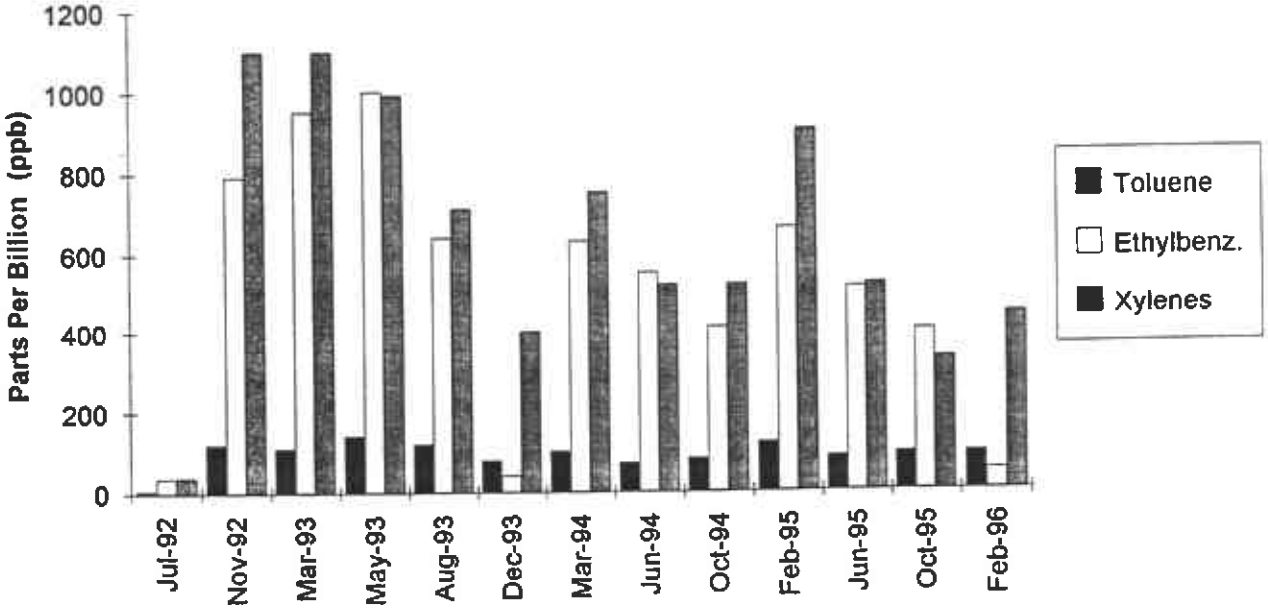
MW-1: Volatile Halocarbons Concentrations: Chlorobenzene; Chloroethane; 1,2 Dichloroethane; Cis 1,2 Dichloroethene; Trans 1,2 Dichloroethene; PCE; TCE; Vinyl Chloride



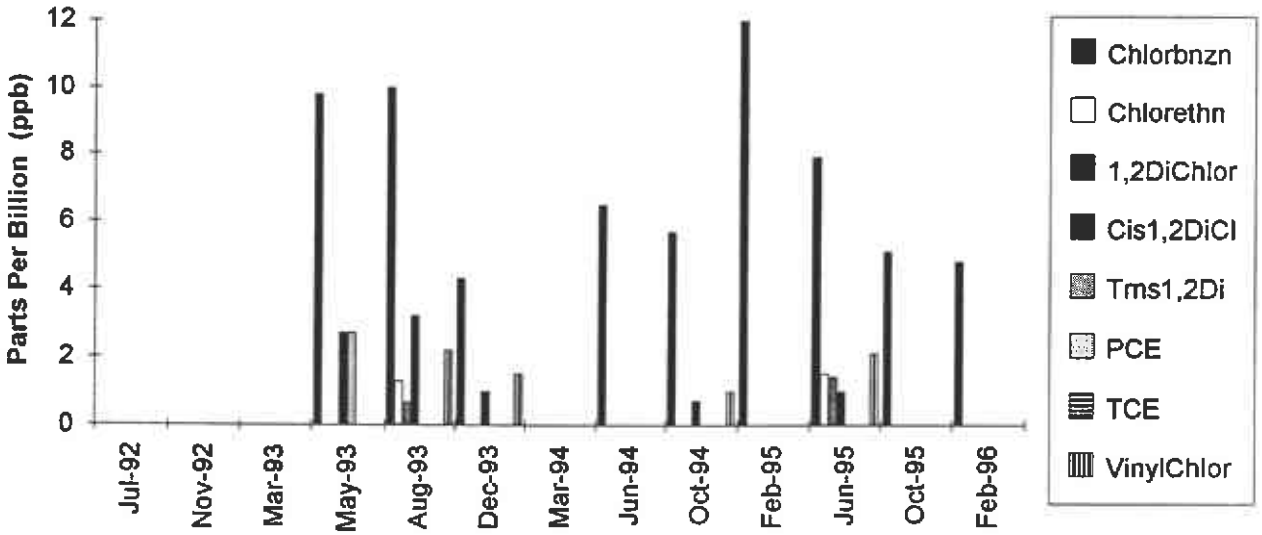
MW-2: TPH as Diesel, TPH as Gasoline, and Benzene Concentrations



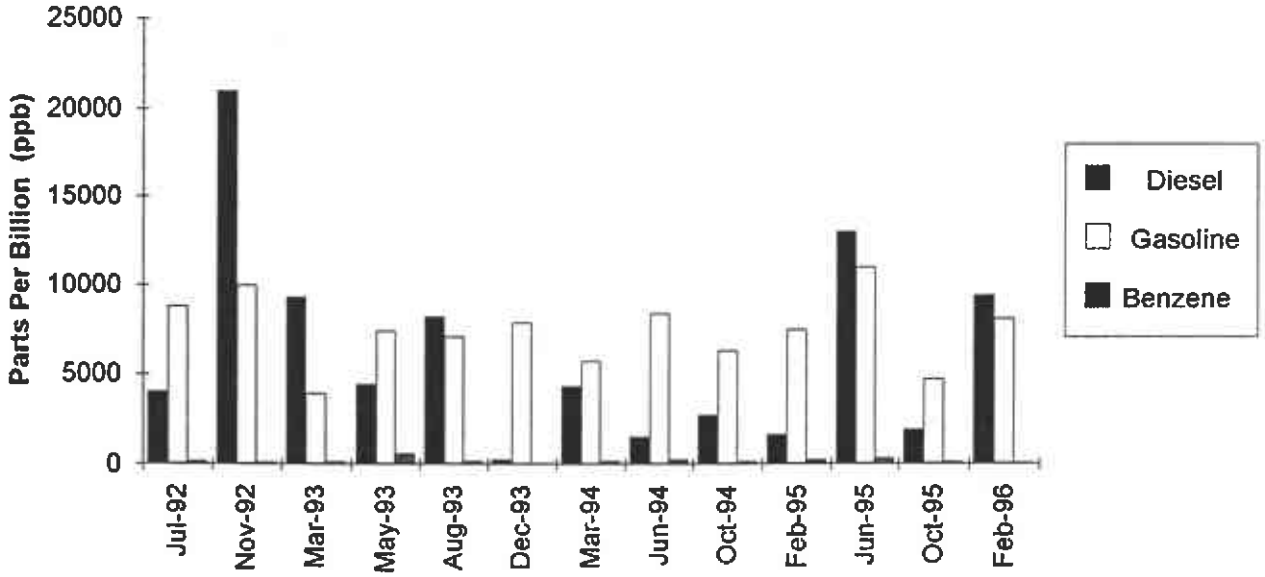
MW-2: Toluene, Ethylbenzene, and Xylenes Concentrations



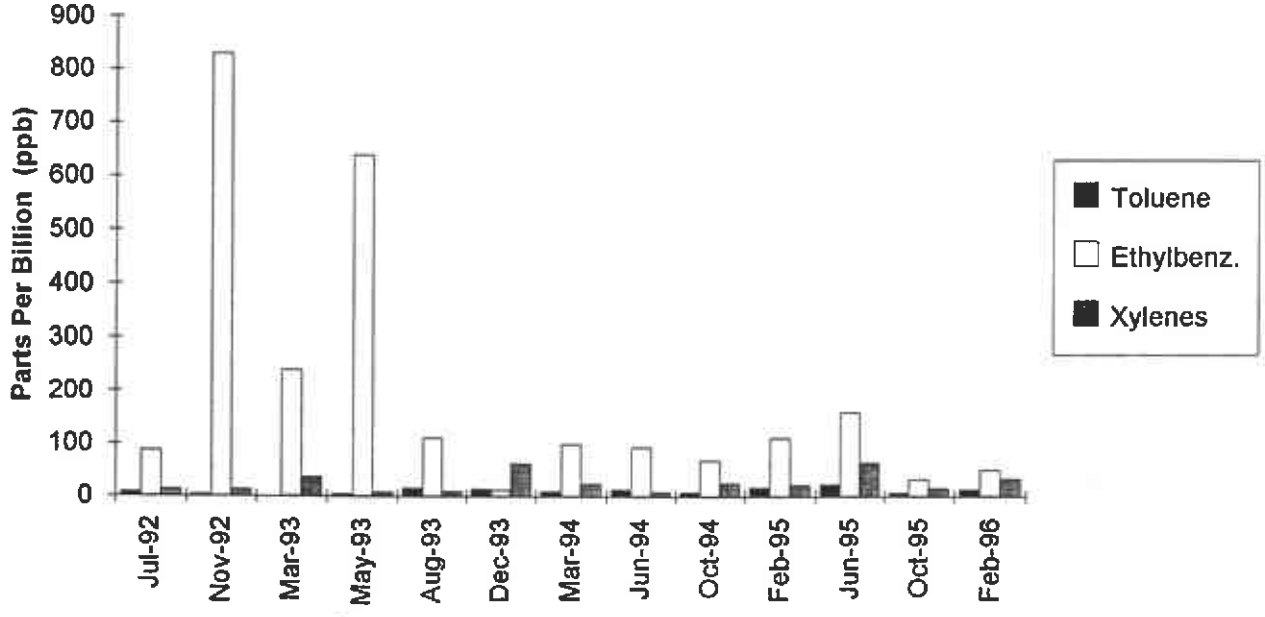
MW-2: Volatile Halocarbons Concentrations: Chlorobenzene; Chloroethane; 1,2 Dichloroethane; Cis 1,2 Dichloroethene; Trans 1,2 Dichloroethene; PCE; TCE; Vinyl Chloride



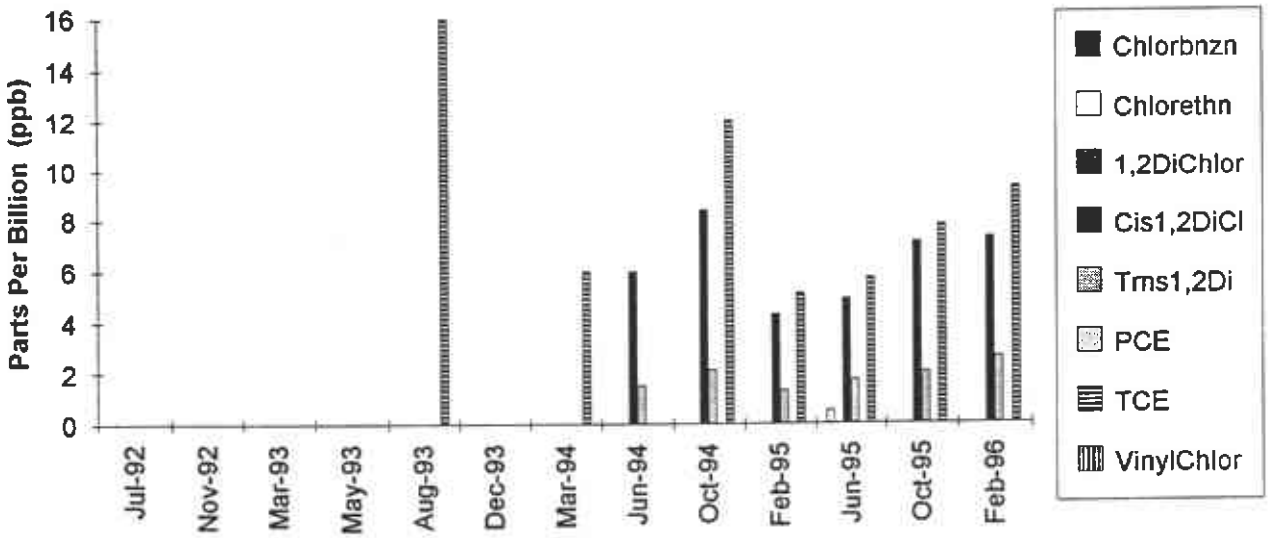
MW-3: TPH as Diesel, TPH as Gasoline, and Benzene Concentrations



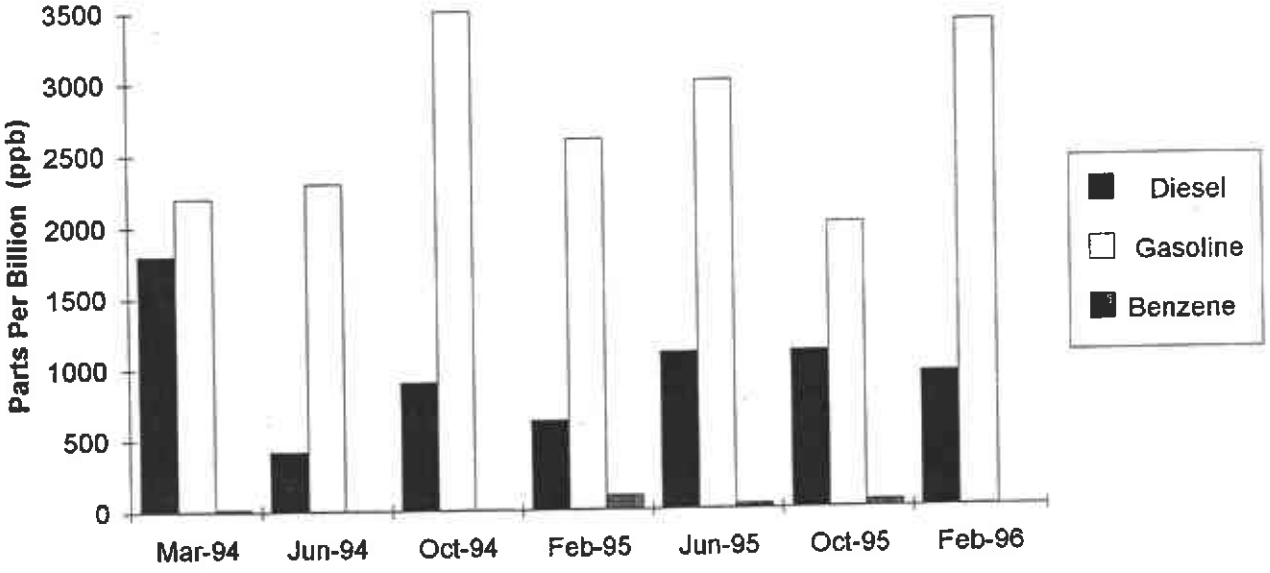
MW-3: Toluene, Ethylbenzene, and Xylenes Concentrations



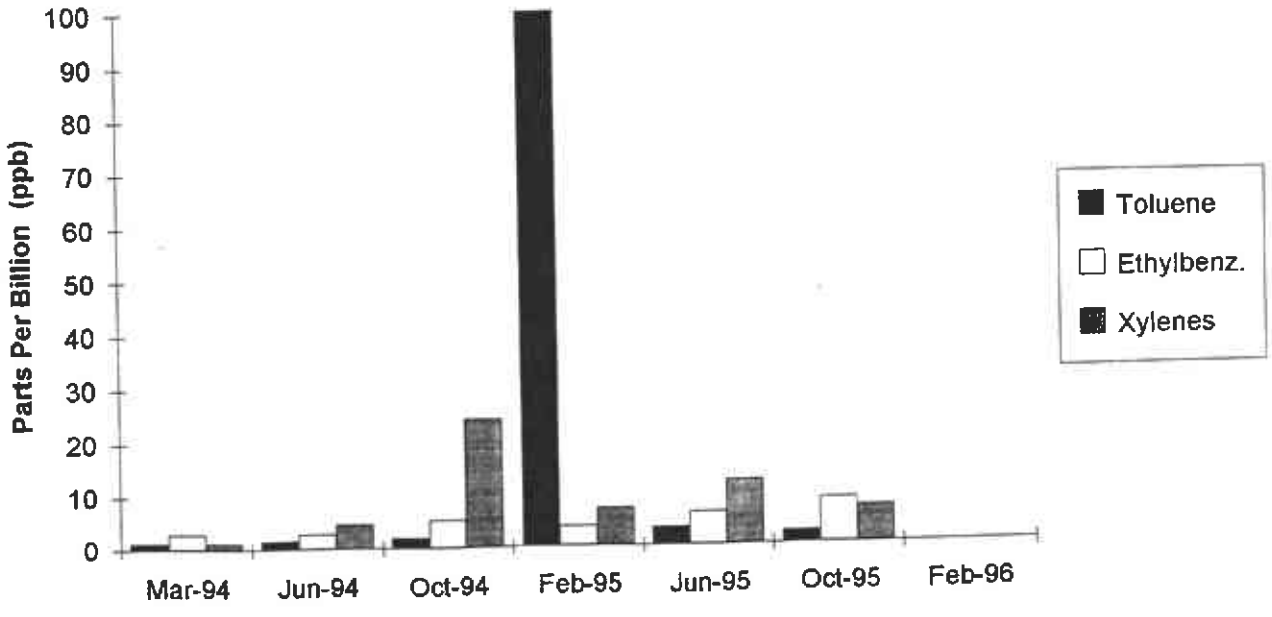
MW-3: Volatile Halocarbons Concentrations: Chlorobenzene; Chloroethane; 1,2 Dichloroethane; Cis 1,2 Dichloroethene; Trans 1,2 Dichloroethene; PCE; TCE; Vinyl Chloride



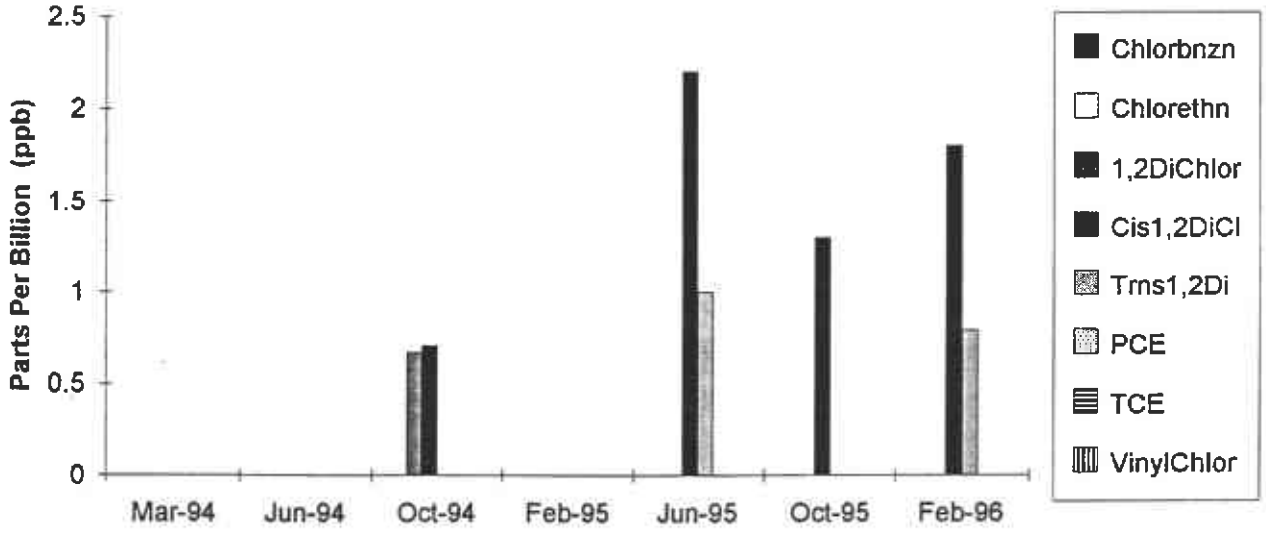
MW-4: TPH as Diesel, TPH as Gasoline, and Benzene Concentrations



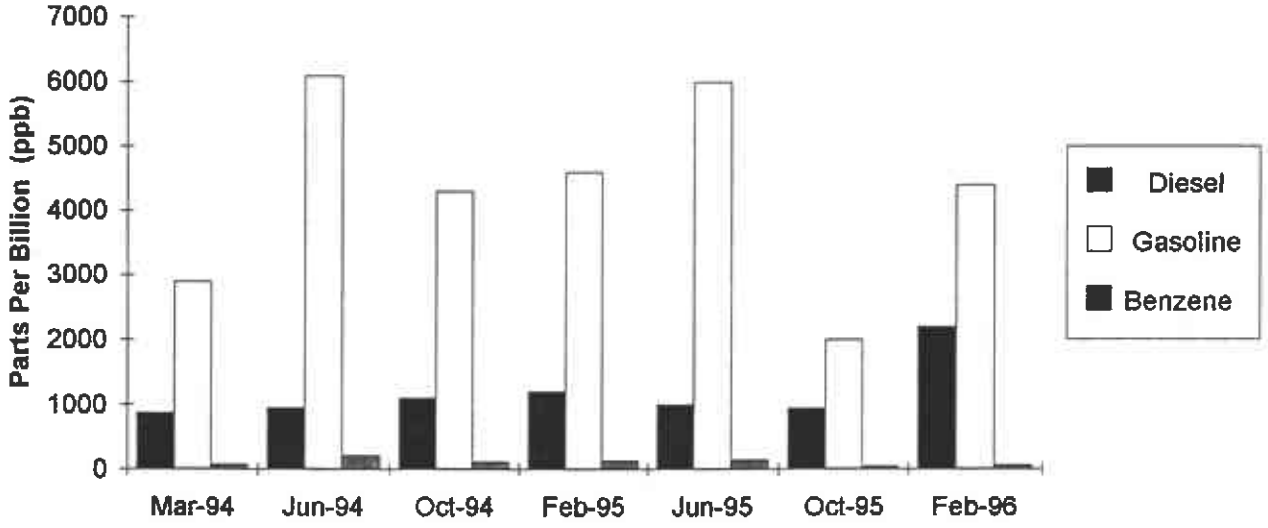
MW-4: Toluene, Ethylbenzene, and Xylenes Concentrations



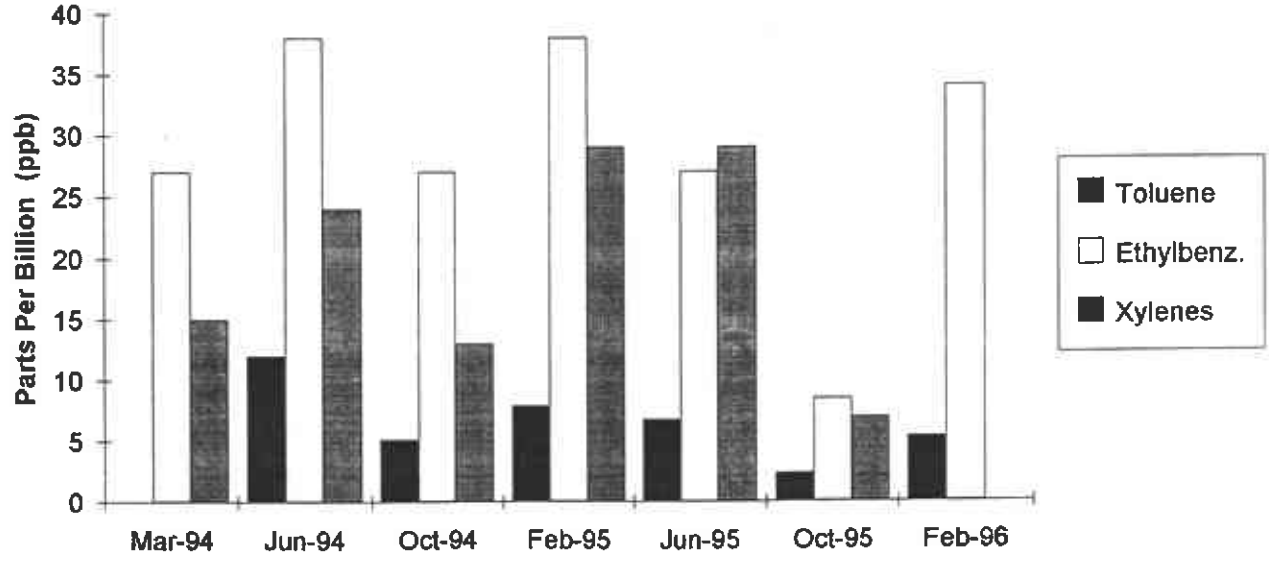
MW-4: Volatile Halocarbons Concentrations: Chlorobenzene; Chloroethane; 1,2 Dichloroethane; Cis 1,2 Dichloroethene; Trans 1,2 Dichloroethene; TCE; PCE; Vinyl Chloride



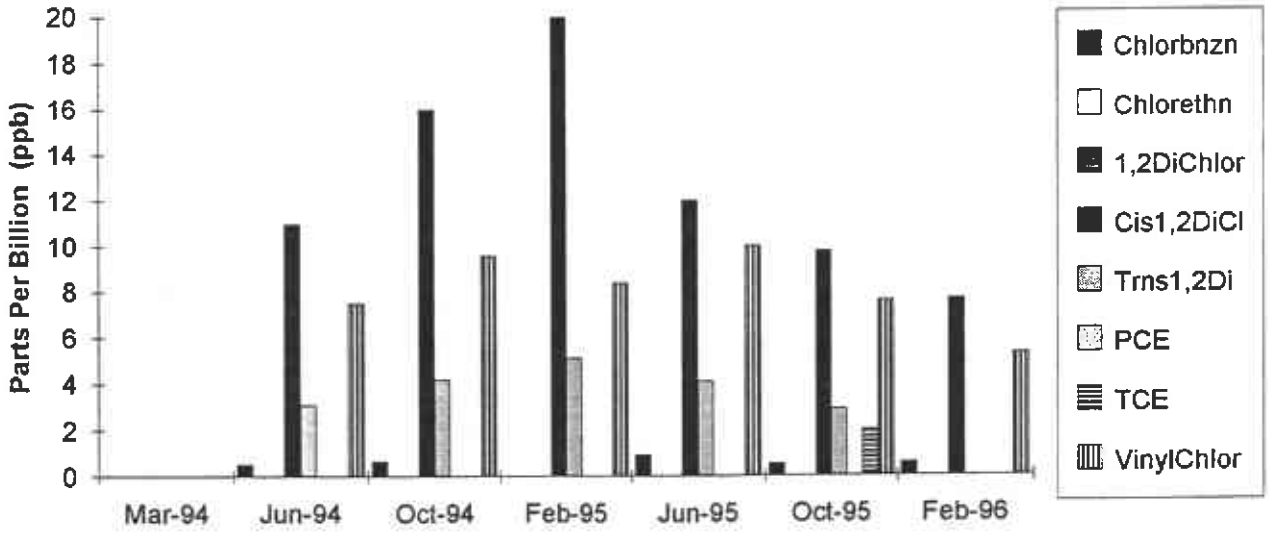
MW-5: TPH as Diesel, TPH as Gasoline, and Benzene Concentrations



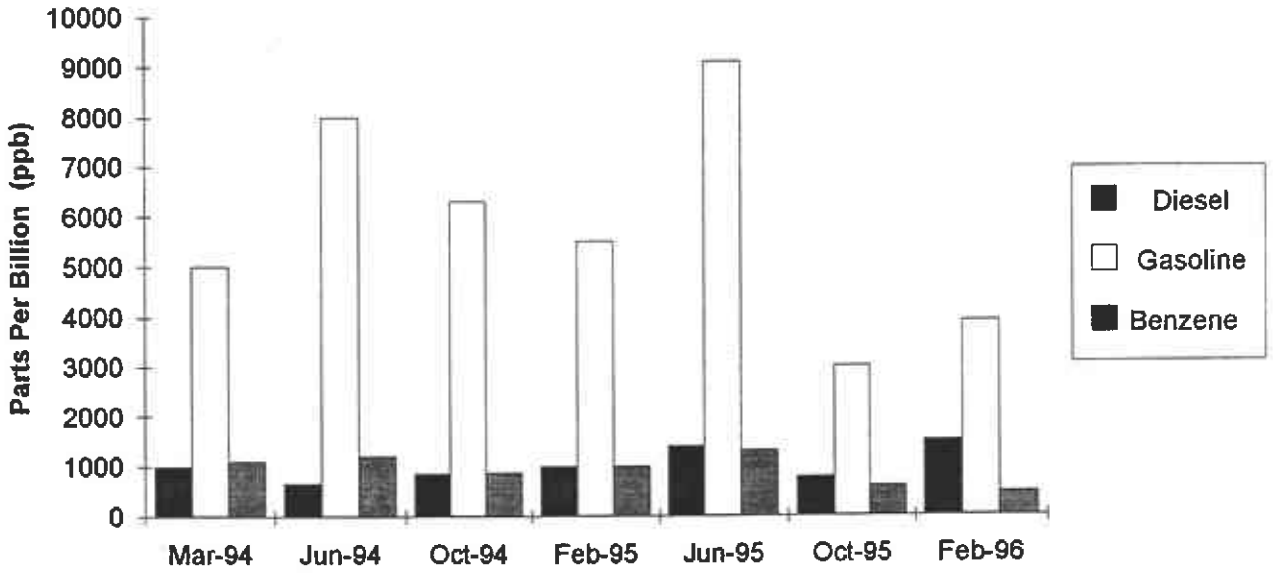
MW-5: Toluene, Ethylbenzene, and Xylenes Concentrations



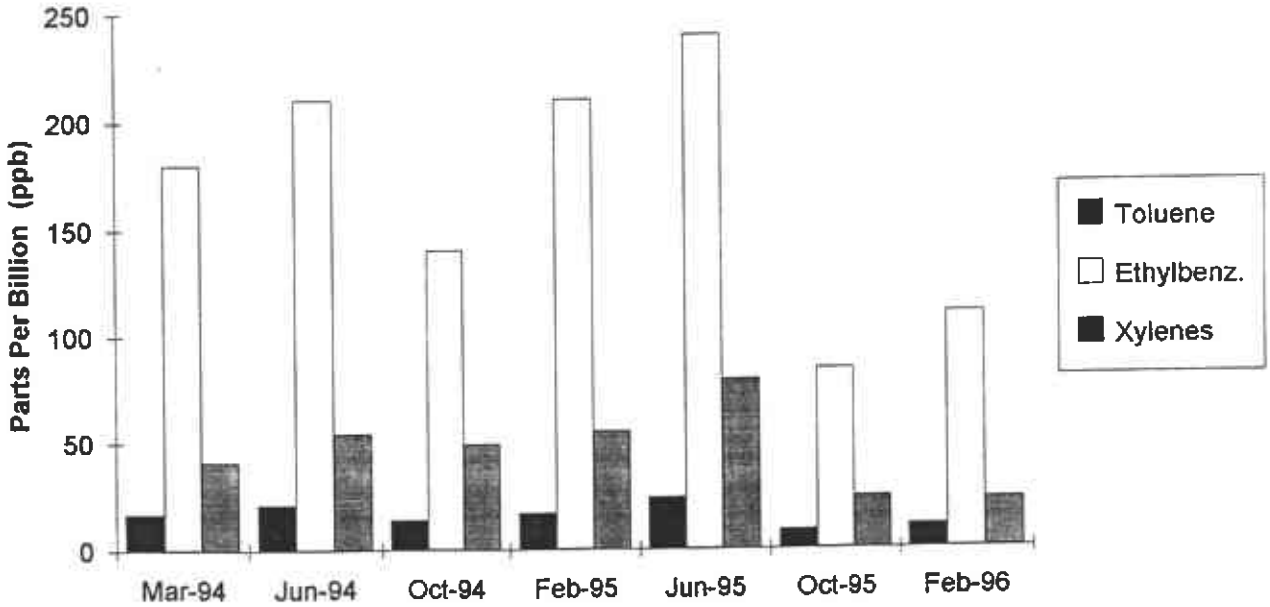
MW-5: Volatile Halocarbons Concentrations: Chlorobenzene; Chloroethane; 1,2 Dichloroethane; Cis 1,2 Dichloroethene; Trans 1,2 Dichloroethene; TCE; PCE; Vinyl Chloride



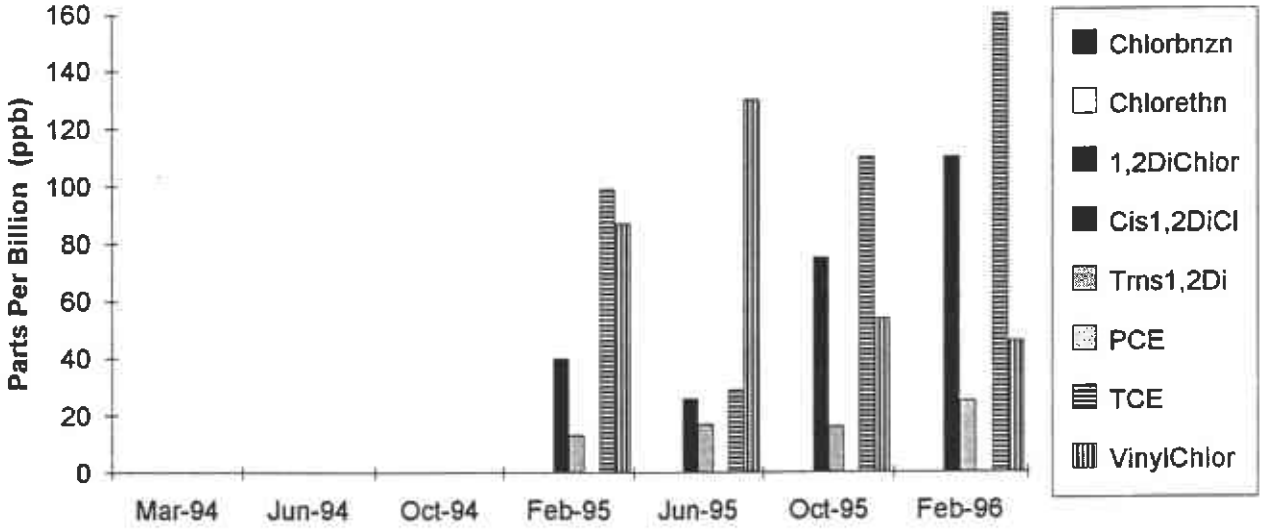
MW-6: TPH as Diesel, TPH as Gasoline, and Benzene Concentrations



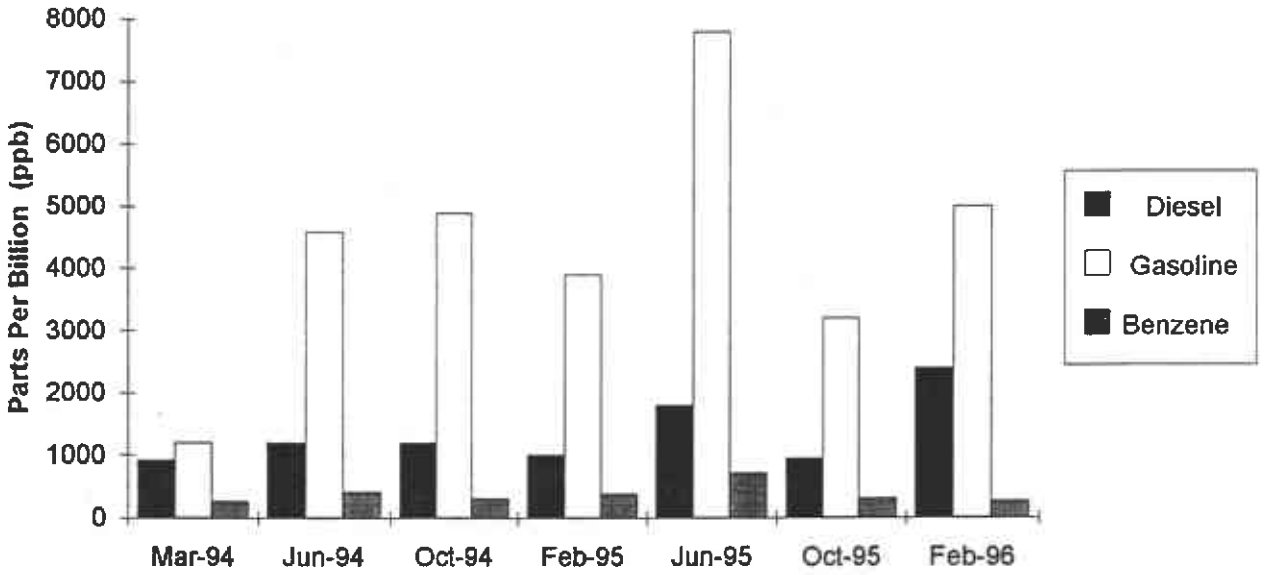
MW-6: Toluene, Ethylbenzene, and Xylenes Concentrations



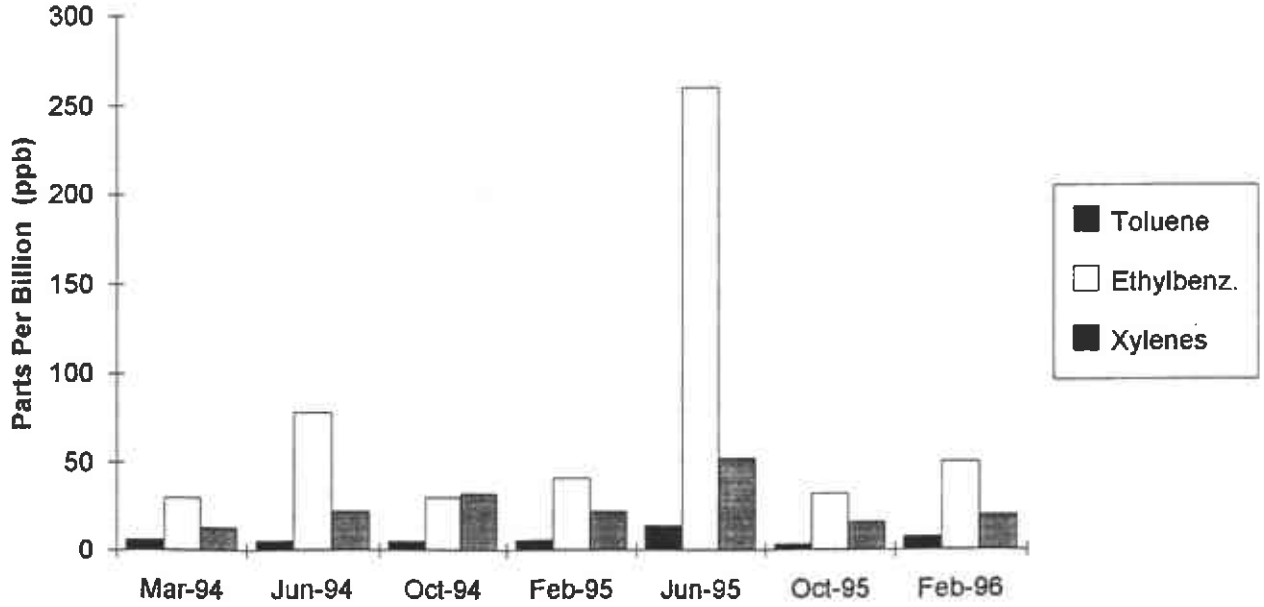
MW-6: Volatile Halocarbons Concentrations: Chlorobenzene; Chloroethane; 1,2 Dichloroethane; Cis 1,2 Dichloroethene; Trans 1,2 Dichloroethene; TCE; PCE; Vinyl Chloride



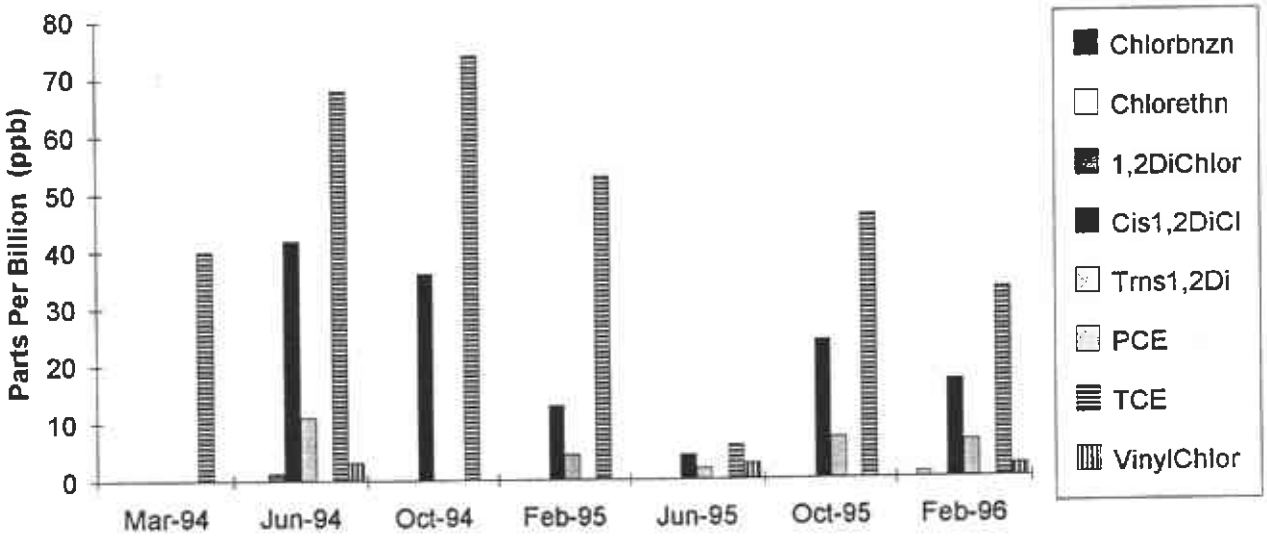
EW-1: TPH as Diesel, TPH as Gasoline, and Benzene Concentrations



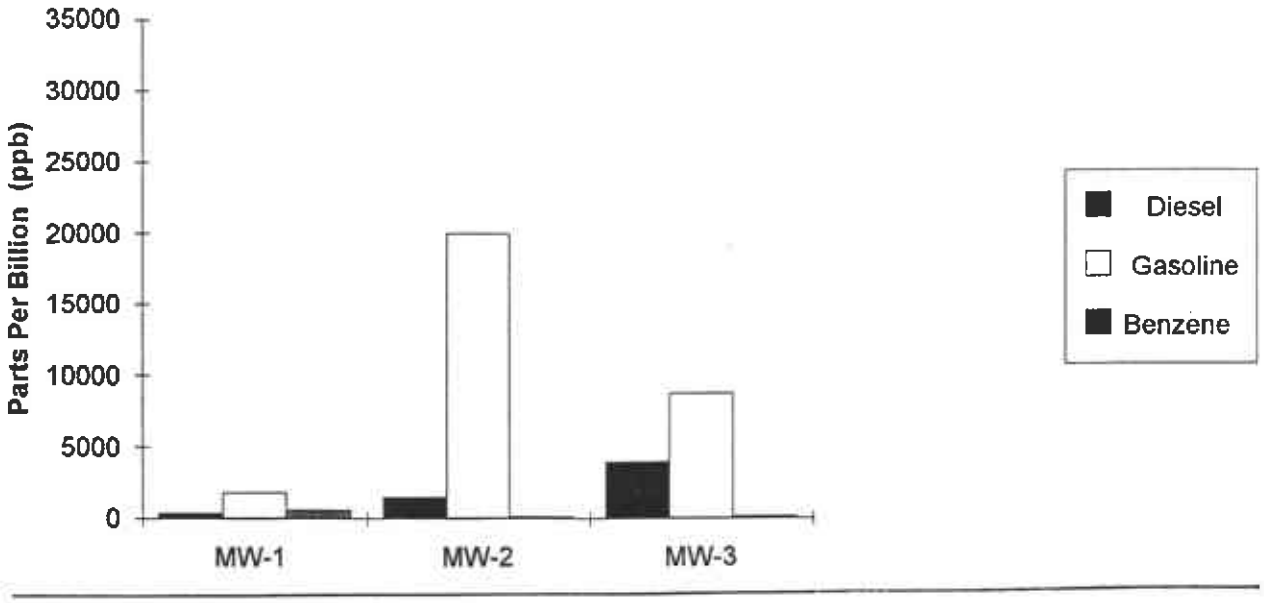
EW-1: Toluene, Ethylbenzene, and Xylenes Concentrations



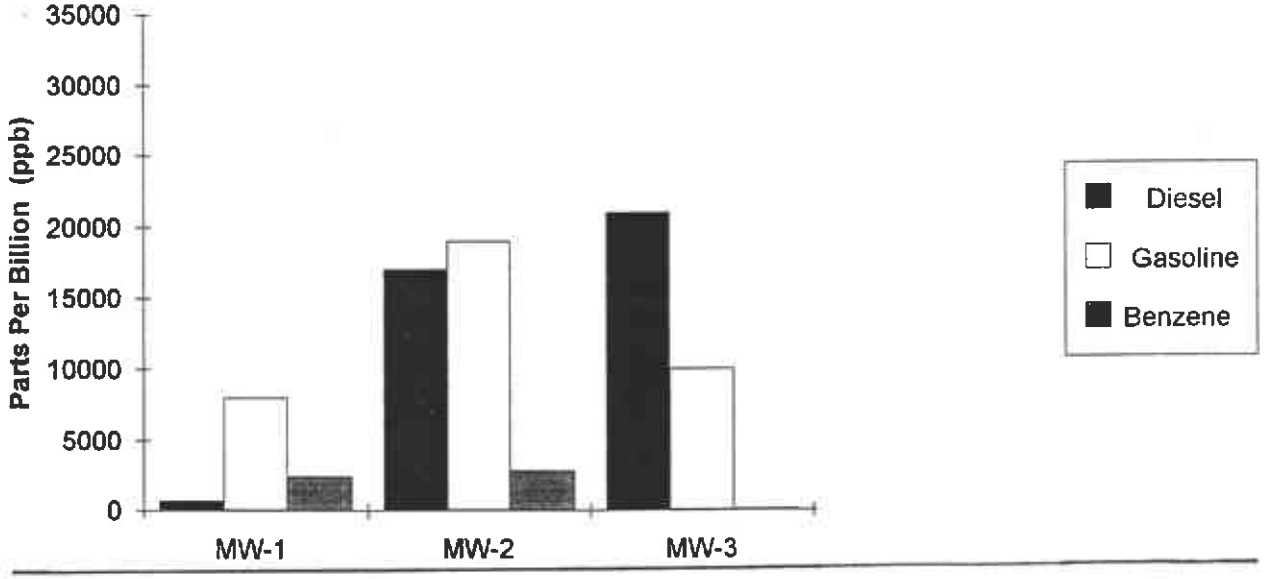
EW-1: Volatile Halocarbons Concentrations: Chlorobenzene; Chloroethane; 1,2 Dichloroethane; Cis 1,2 Dichloroethene; Trans 1,2 Dichloroethene; TCE; PCE; Vinyl Chloride



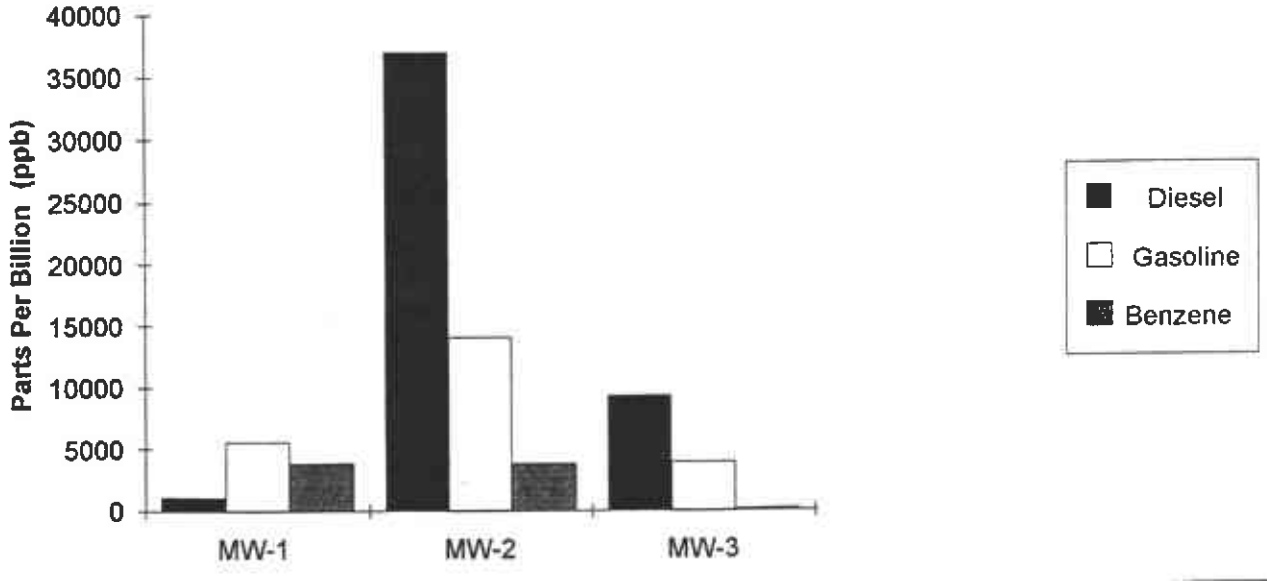
TPH as Diesel, TPH as Gasoline, and Benzene Concentrations,
July 27, 1992



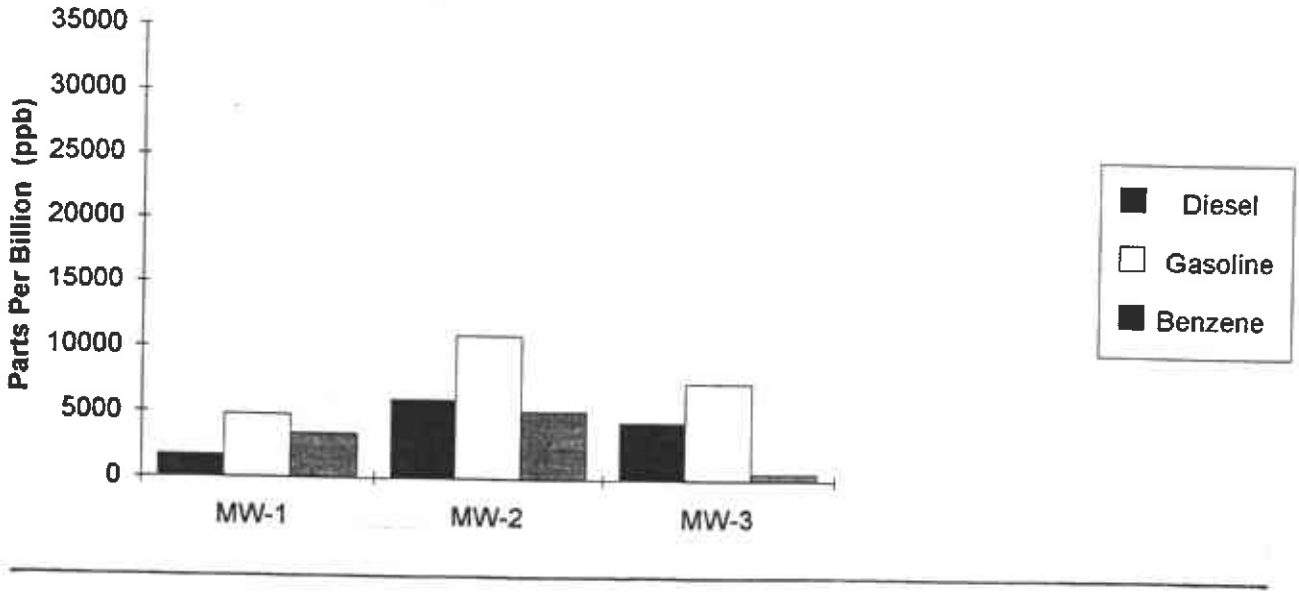
November 6, 1992



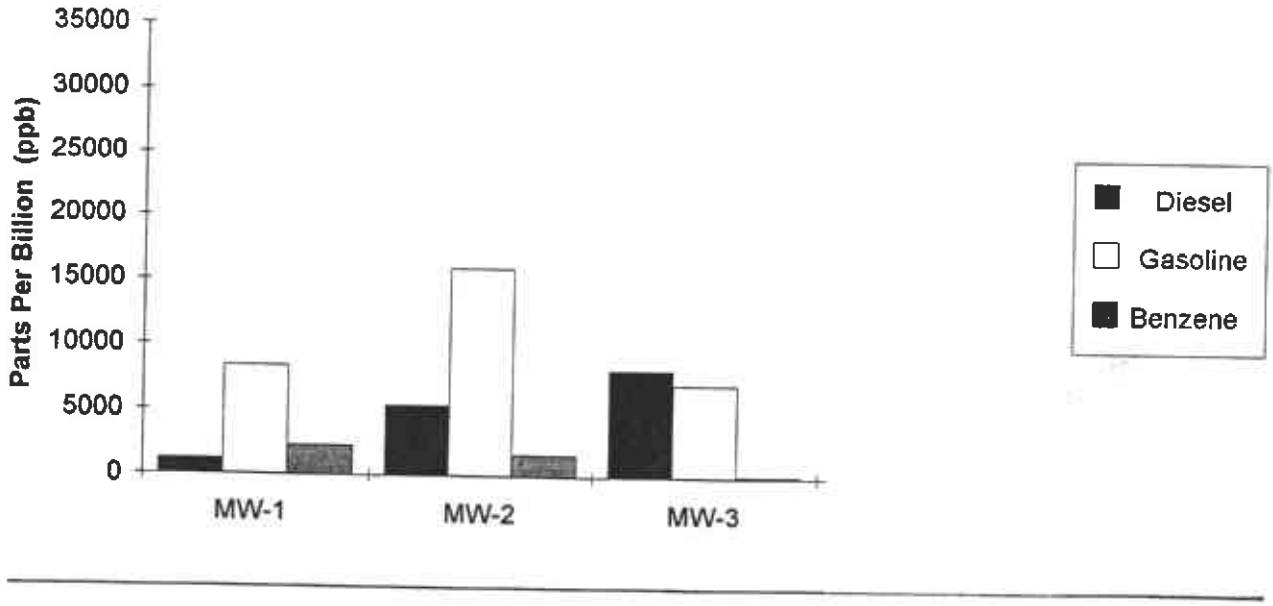
March 2, 1993



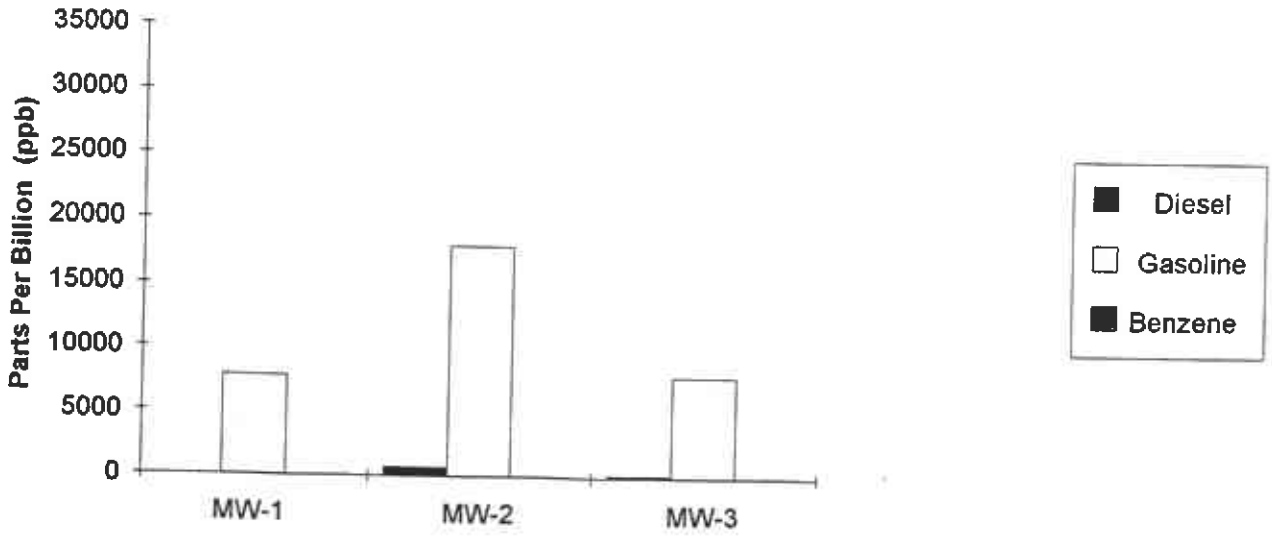
TPH as Diesel, TPH as Gasoline, and Benzene Concentrations, May 26, 1993



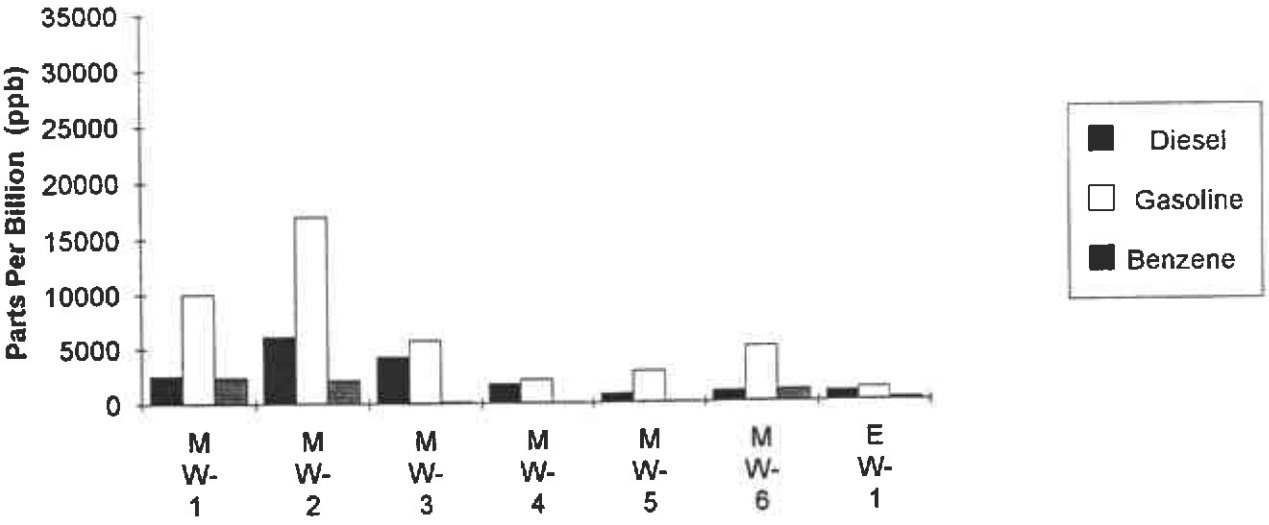
August 27, 1993



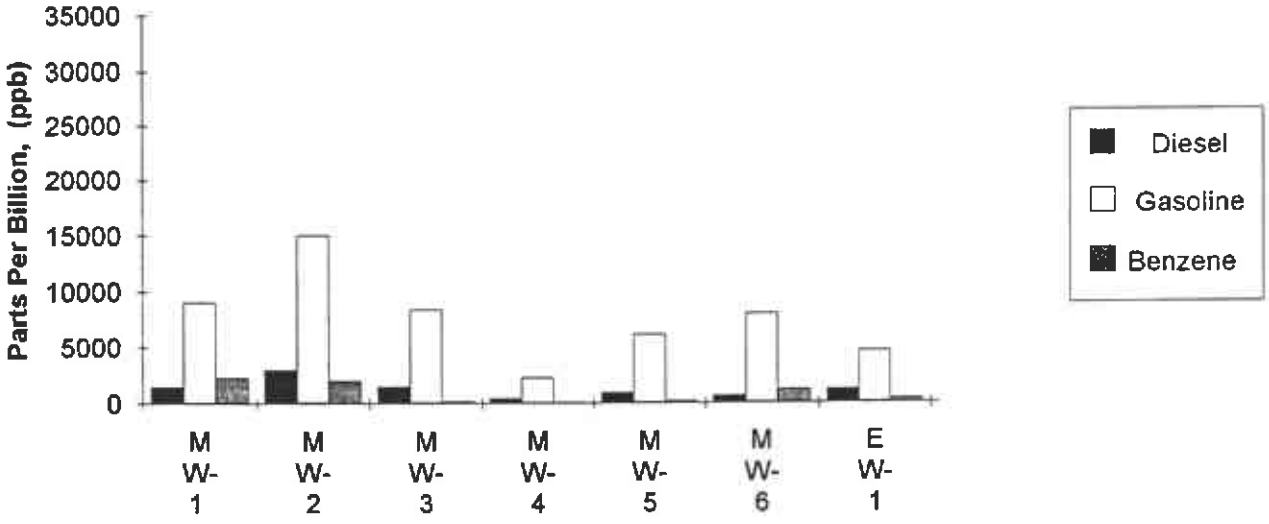
December 23, 1993



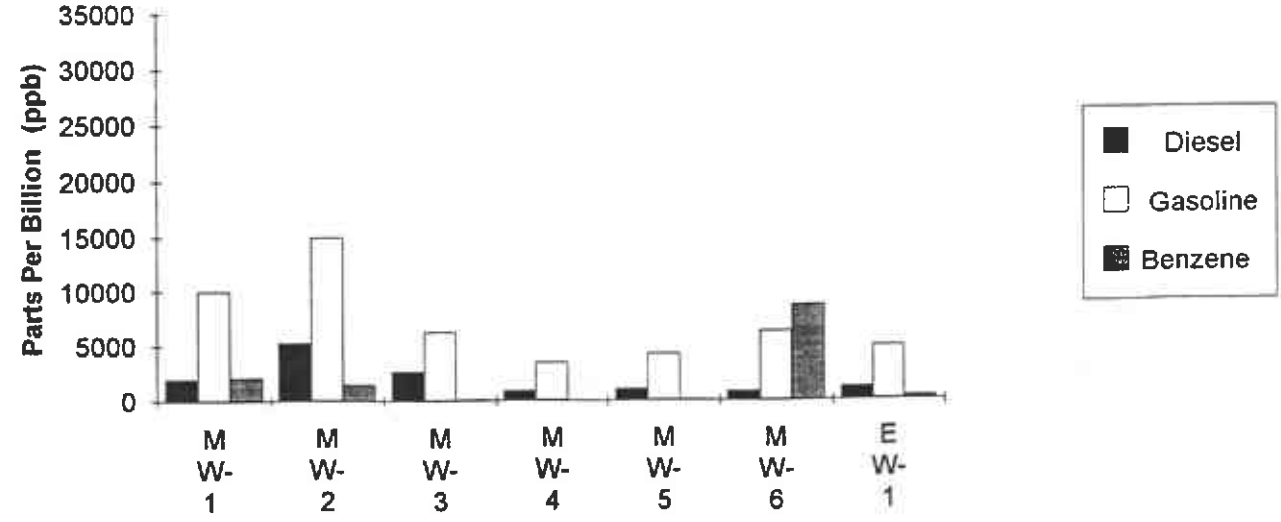
TPH as Diesel, TPH as Gasoline, and Benzene Concentrations, March 27, 1994



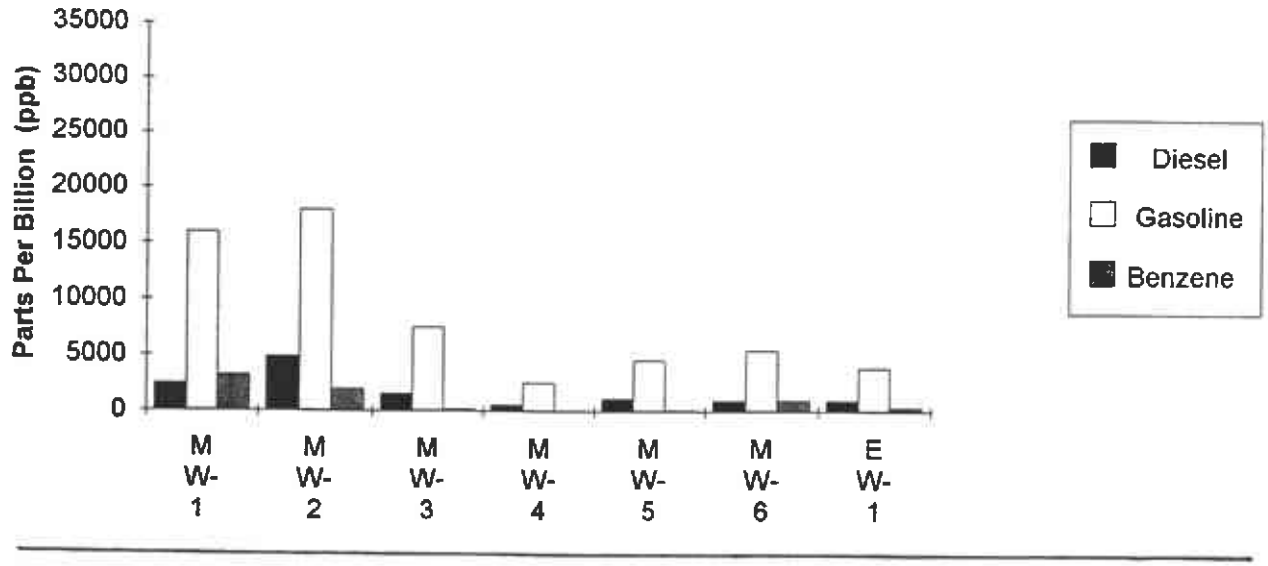
June 24, 1994



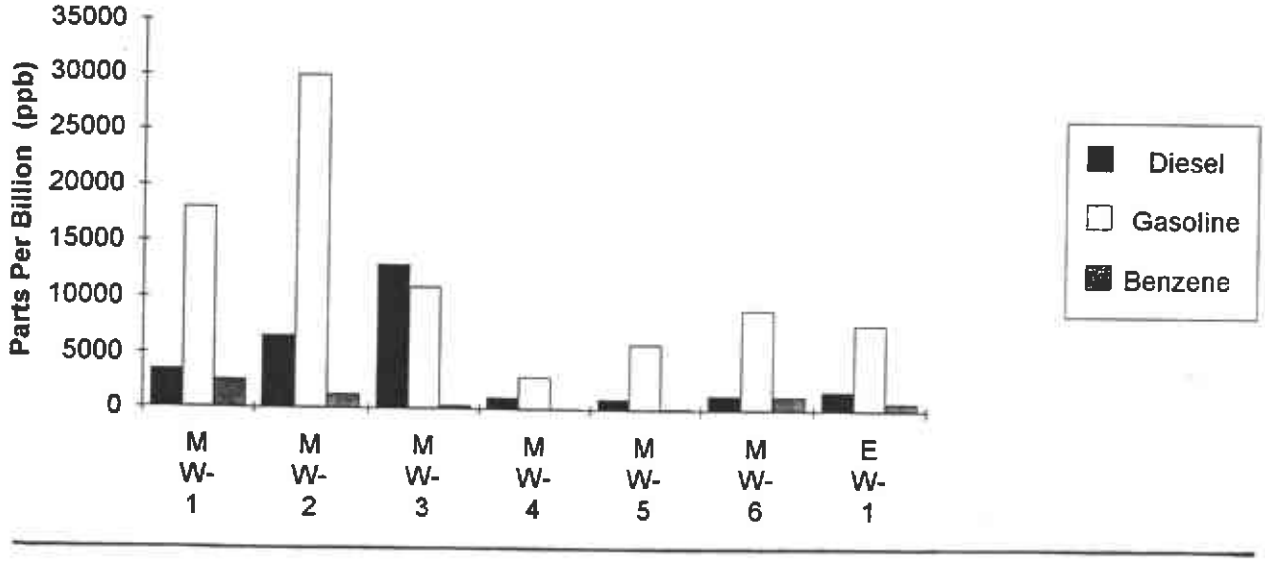
October 16, 1994



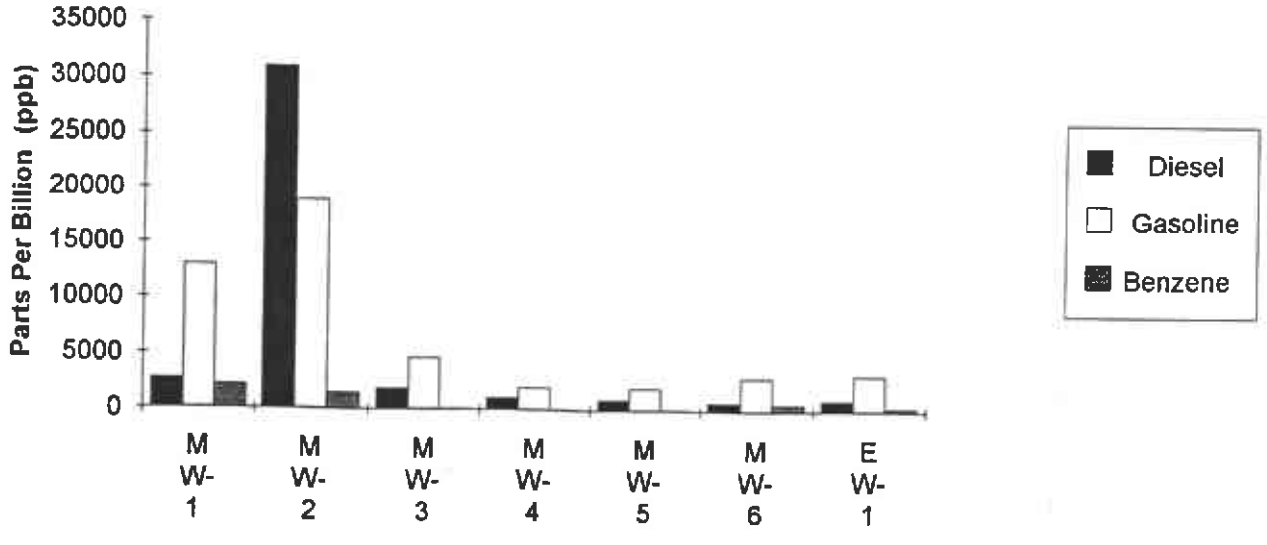
TPH as Diesel, TPH as Gasoline, and Benzene Concentrations, February 13, 1995



June 20, 1995



October 16, 1995



TPH as Diesel, TPH as Gasoline, and Benzene Concentrations, February 15, 1996