A Department of Ecology Report

WASHINGTON STATE DEPARTMENT OF ECOLOGY

Lakewood/Plaza Cleaners
February 2, 1998

Summary

This document is one in a series describing the results of ground water sampling at Lakewood/Plaza Cleaners. Ecology has conducted semi-annual ground water sampling at the site since 1991. The objective of this sampling is to collect ground water quality data for the Toxics Cleanup Program to evaluate the effectiveness of Lakewood supply wells H1 and H2 (Figure 1) to contain and remove contaminated ground water caused by Plaza Cleaners. Samples were collected on February 2, 1998 from one municipal well (H2) and four monitoring wells: MW-16A, MW-20A, MW-20B, and MW-27. All samples were analyzed for volatile organics (VOAs). The quality assurance review and laboratory reporting sheets are presented in Appendix A.

Monitoring wells MW-20B and MW-16A, as well as municipal well H2, continue to have elevated PERC concentrations. PERC concentrations in these wells were: MW-20B (456 µg/L), MW-16A (36 µg/L) and H2 (11 µg/L). Cis-1,2-DCE was also detected in wells MW-20B and MW-16A at concentrations of 12 µg/L and 2 µg/L, respectively. TCE was detected in MW-20B at a concentration of 7 µg/L. Model Toxic Control Act (MTCA) cleanup levels were exceeded for PERC (5.0 µg/L) in MW-20B, MW-16A and H2. Overall, concentrations are similar to those reported in previous sample rounds.

by Pamela B. Marti
August 1998

Waterbody No. WA-12-1115GW
(Segment No. 05-12-GW)

Ecology Report #98-325

Results

Field Observations

Table 1 lists field observations for each of the sampled wells: static water level, pH, specific conductance, temperature, purged volume, well depth, and the geologic unit. The specific conductance in well MW-20B (510 umhos/cm), which is screened in a fine-grained till unit, was approximately two times greater than the other wells. Specific conductance readings are typically higher for water from fine-grained units.

Laboratory Results

Table 2 summarizes laboratory results. The highest concentrations of tetrachloroethene (PERC) and cis-1,2-dichloroethene (cis-1,2-DCE) occurred in well MW-20B with 456 µg/L and 12 µg/L, respectively. Trichloroethene (TCE) was detected in MW-20B at an estimated concentration of 7 µg/L. PERC and cis-1,2-DCE were also detected in MW-16A with concentrations of 36 µg/L and 2 µg/L, respectively. Municipal well H2 had a PERC concentration of 11 µg/L. PERC, TCE and cis-1,2-DCE were detected below the practical quantitation limit of 1 µg/L in the following wells: PERC in well MW-20A; TCE in wells MW-16A and H2; and cis-1,2-DCE in well H2.

Table 3 shows PERC, TCE, and cis-1,2-DCE concentrations for sampling events from January 1991 through February 1998. PERC and cis-1,2-DCE concentrations continue to be elevated in well MW-20B and MW-16A. Municipal wells H1/H2, which were added to the monitoring program in 1995, also have elevated PERC concentrations. Figure 2 shows PERC concentrations for MW-20B and MW-16A between 1984 and 1998. Since 1984, PERC concentrations in both wells have varied substantially. PERC concentrations decreased initially in MW-20B from March 1985 (4800 ppb) to May 1985 (570 ppb). After May 1985, concentrations have ranged between 86 ppb and 1200 ppb. Over the monitoring period PERC concentrations in MW-16A have varied between 3 ppb and 110 ppb.

Methods

Ground Water Sampling

Samples were collected on February 2, 1998 from municipal well H2 and four monitoring wells: MW-16A, MW-20A, MW-20B, and MW-27 (Figure 1). Prior to sample collection, static water level measurements were obtained using an electronic water level probe. The probe was rinsed with deionized water after each use. All monitoring wells were purged a minimum of three well volumes and until pH,

temperature, and specific conductance readings stabilized. Purge water was discharged to storm drains or to the ground near each well. All monitoring wells were purged and sampled using dedicated bladder pumps, except for MW-20B. Well MW-20B was purged and sampled with a decontaminated teflon bailer. Municipal well H2, which pumps continuously, was sampled from a tap nearest the well. Samples collected for volatile organics were free of headspace and preserved with two drops of 1:1 hydrochloric acid.

The bailer was pre-cleaned with a Liquinox® wash and sequential rinses of hot tap water, 10% nitric acid, distilled/deionized water, and pesticide-grade acetone. After cleaning, the bailer was air-dried and wrapped in aluminum foil. Chain-of-custody procedures were followed in accordance with Manchester Laboratory protocol (Ecology, 1994).

Quality Assurance Samples

Quality control samples collected in the field for ground water monitoring consisted of a blind duplicate sample. A blind duplicate sample was collected from well MW-16A. Duplicate samples are two sets of samples collected from a well simultaneously and submitted to the laboratory with different identification. In addition to quality control samples collected in the field, laboratory quality control samples consisted of matrix spikes, matrix spike duplicates and surrogate compound recoveries. Volatile organic samples were analyzed using EPA SW-846 Method 8260 (U.S. EPA, 1986).

The quality of the data is acceptable for use. Volatile organic analyses were performed by the Manchester Laboratory. Karin Feddersen of the Manchester Laboratory conducted the quality assurance review. Duplicate samples collected at MW-16A provide an estimate of combined sampling and laboratory precision. The numeric comparison of duplicate results is expressed as the relative percent difference or RPD. RPDs are the ratio of the difference and the mean of the duplicate results expressed as a percentage. The RPD for PERC was 3%. All surrogate, matrix spike and spike duplicate recoveries are within acceptable limits for the samples.

Bibliography

CH2M HILL, 1990a. Sampling and Analysis Plan Remedial Action - Lakewood.

------, 1990b. Technical Memorandum from Lisa Dally Wilson to Ann Williamson RE: Groundwater Sampling at Lakewood (April 1990). Project No. SEA69018RA.FQ.

Marti, P., 1991. Lakewood/Plaza Cleaners Monitoring Round I - January, 1991. Department of Ecology - Environmental Investigations.

------, 1991. Lakewood/Plaza Cleaners Monitoring Round II - May, 1991. Department of Ecology - Environmental Investigations.

------, 1992. Lakewood/Plaza Cleaners Monitoring Round III - November, 1991. Department of Ecology - Environmental Investigations.

------, 1992. Lakewood/Plaza Cleaners Monitoring Round IV - May, 1992. Department of Ecology - Environmental Investigations.

------, 1993. Lakewood/Plaza Cleaners Monitoring Round V - December, 1992. Department of Ecology - Environmental Investigations.

------, 1993. Lakewood/Plaza Cleaners Monitoring Round VI - May, 1993. Department of Ecology - Environmental Investigations.

------, 1994. Lakewood/Plaza Cleaners Monitoring Round VII - December, 1993. Department of Ecology - Environmental Investigations.

------, 1994. Lakewood/Plaza Cleaners Monitoring Round VIII - April, 1994. Department of Ecology - Environmental Investigations.

------, 1995. Lakewood/Plaza Cleaners Monitoring Round IX - November, 1994. Department of Ecology - Environmental Investigations.

------, 1995. Lakewood/Plaza Cleaners Monitoring - July 11, 12 & 14, 1995. Department of Ecology - Environmental Investigations.

------, 1996. Lakewood/Plaza Cleaners Monitoring - January 17-18, 1996. Department of Ecology - Environmental Investigations.

------, 1997. Lakewood/Plaza Cleaners Monitoring - July 31, 1996. Department of Ecology - Environmental Investigations.

------, 1997. Lakewood/Plaza Cleaners Monitoring - January 9, 1997. Department of Ecology - Environmental Investigations.

------, 1997. Lakewood/Plaza Cleaners Monitoring - July 23-24, 1997. Department of Ecology - Environmental Investigations.

U.S. Environmental Protection Agency, 1986. Test Methods for Evaluating Solid Waste, SW-846. Office of Emergency Response, Washington, D.C., 1986.

Washington State Department of Ecology, 1994. Manchester Environmental Laboratory - Laboratory Users Manual. Edited by D. Huntamer and J. Hyre.

Contacts

Pam Marti — Washington State Department of Ecology
Environmental Investigations and Laboratory Services
Toxics Investigations Section
(360) 407-6768

For additional copies of this publication, please contact Ecology's Publications Distribution Office at (360) 407-7472 and refer to publication number 98-325.

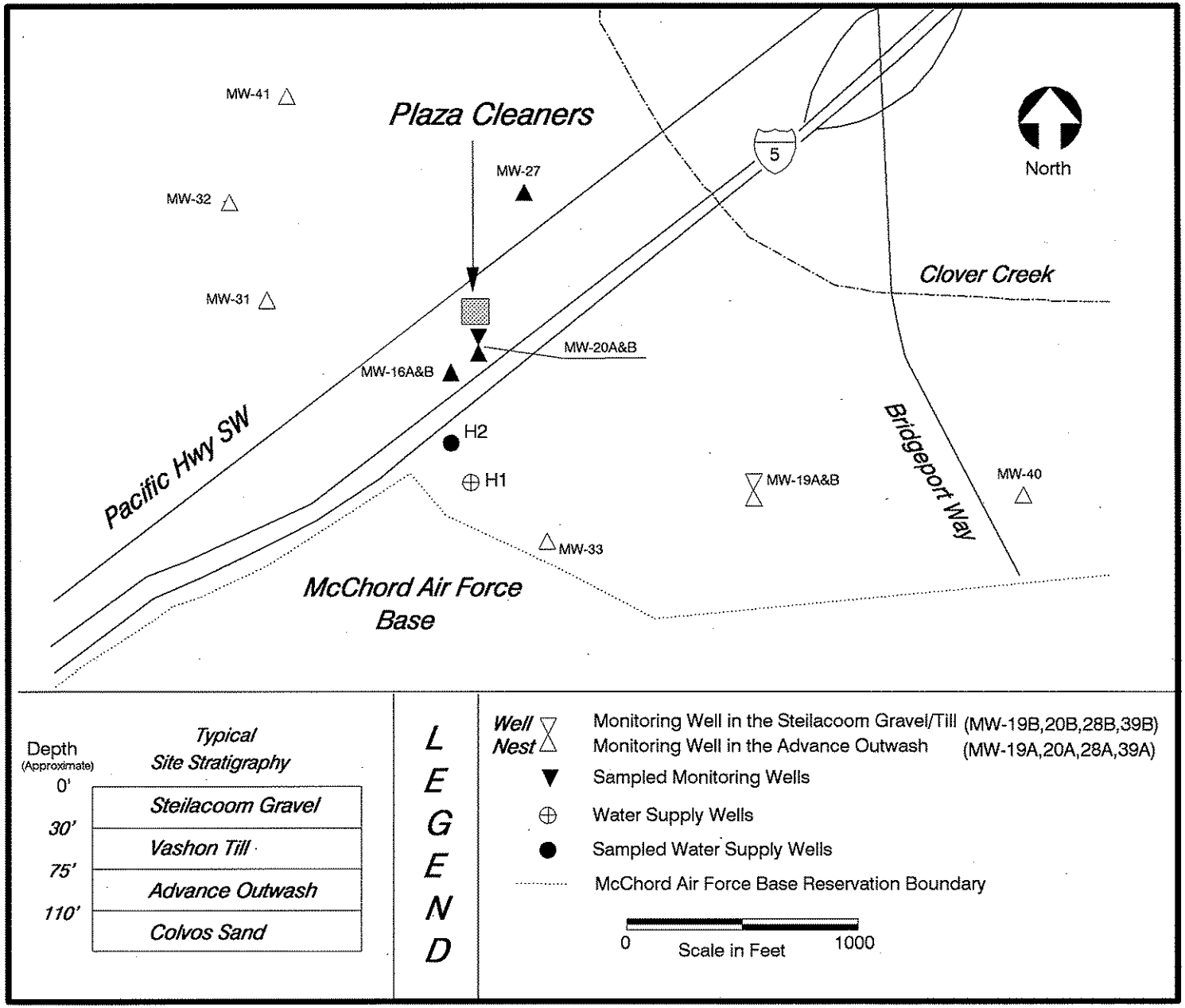


Figure 1: Well Location Map - Lakewood/Plaza Cleaners

Table 1: Field Parameter Results for February, 1998

Monitoring Well	Total Depth (Feet)	Geologic Unit Screened	Depth to Water (Feet)	pH (s.u.)	Specific Conductance (umhos/cm)	Temperature (°C)	Purge Volume (gallons)
MW-16A	109	Advance Outwash	33.82	6.8	250	9.7	147
MW-19A	97.5	Advance Outwash	---	---	---	---	---
MW-20A	97.3	Advance Outwash	25.5	7.7	200	10.5	35
MW-20B	50.4	Vashon Till	25.28	6.6	510	10.8	13
MW-27	96.4	Advance Outwash	++	6.3	195	9.8	30
MW-31	91.5	Advance Outwash	++	---	---	---	---
MW-33	99.3	Advance Outwash	++	---	---	---	---
H2	110	Advance Outwash	++	6.5	182	8.5	>1000

++ = Dedicated pump obstructs water-level measurement.

Table 2: Summary of Analytes Detected in Samples Collected February 2, 1998

Geologic Unit Screened	Vashon Till	Advance Outwash							
							Upgradient Wells		Municipal
Monitoring Well	MW-20B	MW-16A	MW-16B (Duplicate)	MW-20A	MW-27	MW-31	MW-33	MW-19A	Well H2
Volatile Organics: (ug/L)									
Tetrachloroethene (PERC)	**456**	**36**	**35**	**0.43 J**	1 U	--	--	--	**11**
Trichloroethene (TCE)	**7 J**	**0.7 J**	**0.79 J**	1 U	1 U	--	--	--	**0.36 J**
cis-1,2-Dichloroethene (cis-1,2-DCE)	**12**	**1.9 J**	**2 J**	1 U	1 U	--	--	--	**0.28 J**
1,1,1-Trichloroethane	10 U	1 U	1 U	**0.13 J**	1 U	--	--	--	1 U

U = The analyte was not detected at or above the reported value.
J = The analyte was positively identified. The associated numerical result is an estimate.
-- = Not Tested
= The analyte was positively identified.

Table 3: Summary of Sample Results (ug/L) from January 1991 to February 1998

Well	January 1991			May 1991			November 1991			May 1992			December 1992		
Number	PERC	TCE	cis-1,2-DCE	PERC	TCE	cis-1,2-DCE	PERC	TCE	cis-1,2-DCE	PERC	TCE	cis-1,2-DCE	PERC	TCE	cis-1,2-DCE
MW-16A	28	1 J	2.4 J	26	0.6 J	2	2.7 J	1 U	0.6 J	7	1 U	1	9 J	0.3 J	0.8 J
MW-20A	1 U	1 U	1 U	0.4 J	1 U	1 U	0.4 J	1 U	1 U	0.5 J	1 U	1 U	0.8 J	1 UJ	1 UJ
MW-20B	1100 D	18	33	752	16	30	120	2.6 J	6.7	940	13	32	340 J	14 J	20 J
MW-21	2.1 J	1 U	1 J	2	1 U	0.7 J	2.2 J	1 U	1.0 J	2	1 U	0.6 J	2	0.2 J	0.3 J
MW-27	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 UJ	1 UJ
MW-28A	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-31	1 J	1 U	1.9 J	0.6 J	1 U	2	0.9 J	1 U	2.2 J	0.8 J	1 U	1	0.5 J	1 UJ	0.9 J
MW-32	1 J	1 U	1.1 J	1	1 U	2	0.6 J	1 U	0.6 J	0.7 J	1 U	1	0.7 J	1 UJ	0.5 J
MW-41	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 UJ	1 UJ
MW-19A	--	--	--	--	--	--	1 U	0.5 J	1 U	--	--	--	1 UJ	1 UJ	1 UJ
MW-33	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-40	1 U	1 U	1 U	--	--	--	1 U	1 U	1 U	--	--	--	1 UJ	1 UJ	1 UJ
H1/H2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Well	May 1993			December 1993			April 1994			November 1994			July 1995		
Number	PERC	TCE	cis-1,2-DCE	PERC	TCE	cis-1,2-DCE	PERC	TCE	cis-1,2-DCE	PERC	TCE	cis-1,2-DCE	PERC	TCE	cis-1,2-DCE
MW-16A	44	10 U	2 J	13	0.3 J	0.7 J	33	0.6	1.4	9.7	0.3 J	0.5 J	27	0.5 J	0.8 J
MW-20A	10 U	10 U	10 U	0.3 J	1 U	1 U	0.4	0.2 U	0.2 U	0.3 J	1 U	1 U	0.4 J	1 U	1 U
MW-20B	700 D	12	21	187	50 U	8.2 J	472	8.6 J	12.6	86	50 U	3 J	340 D	8.4	17
MW-21	1 J	10 U	10 U	1.6	1 U	0.4 J	1.5	0.2 J	0.3	1.8	0.2 J	0.3 J	--	--	--
MW-27	10 U	10 U	10 U	1 U	1 U	1 U	0.2 U	0.2 U	0.2 U	1 U	1 U	1 U	1 U	1 U	1 U
MW-28A	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U	1 U
MW-31	10 U	10 U	10 U	0.8 J	1 U	1.2 J	0.7	0.2 U	1.0	0.8 J	1 U	1	0.6 J	1 U	0.5 J
MW-32	10 U	10 U	10 U	0.7 J	1 U	0.6 J	0.7	0.2 U	0.6	0.6 J	1 U	0.5 J	0.7 J	1 U	0.5 J
MW-41	10 U	10 U	10 U	1 U	1 U	1 U	0.2 U	0.2 U	0.2 U	1 U	1 U	1 U	1 U	1 U	1 U
MW-19A	--	--	--	1 U	0.4	1 U	0.2 U	0.5	0.2 U	--	--	--	1 U	0.4 J	1 U
MW-33	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U	1 U
MW-40	--	--	--	1 U	1 U	1 U	0.2 U	0.2 U	0.2 U	--	--	--	1 U	1 U	1 U
H1/H2	--	--	--	--	--	--	--	--	--	--	--	--	9	0.3 J	1 U

U = The analyte was not detected at or above the reported result.
J = The analyte was positively identified. The associated numerical result is an estimate.
UJ = The analyte was not detected at or above the reported estimated result.
D = Analysis performed at secondary dilution.
E = The concentration of the associated value exceeds the known calibration range.
-- = Not Tested
= The analyte was positively identified.

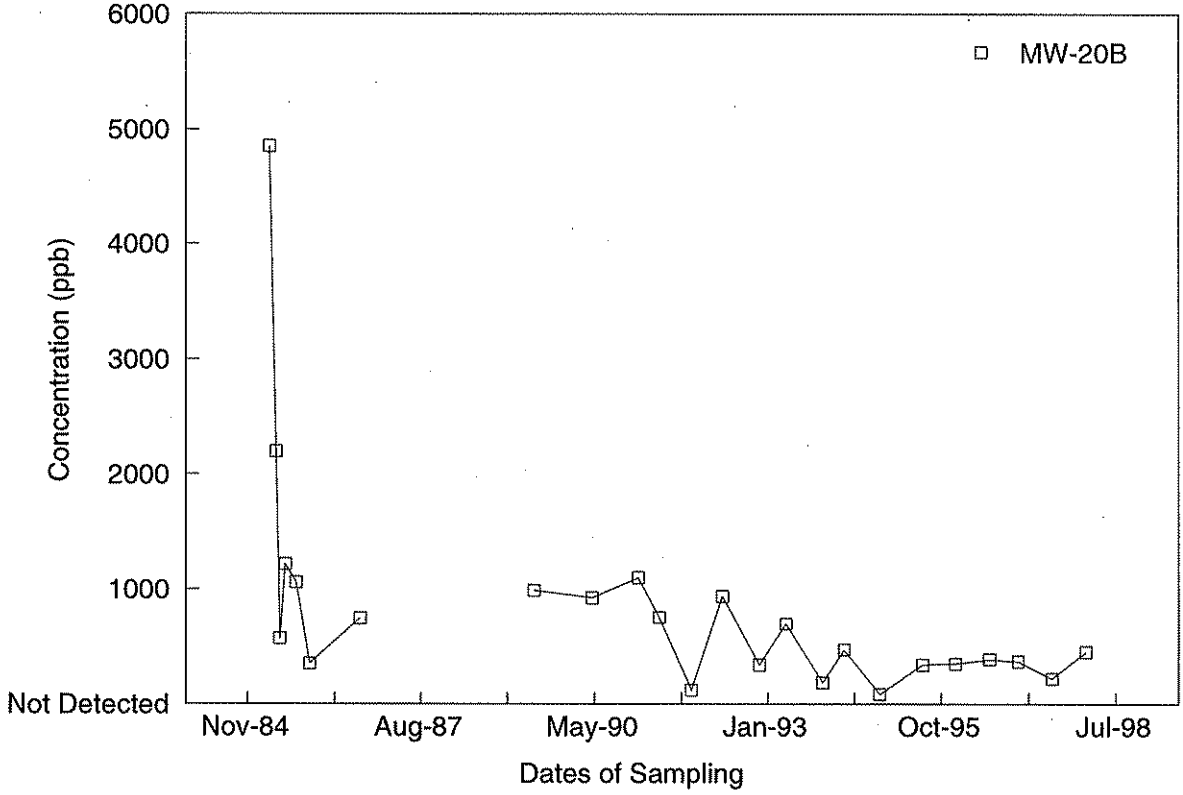
Table 3 continued: Summary of Sample Results (ug/L) from January 1991 to February 1998

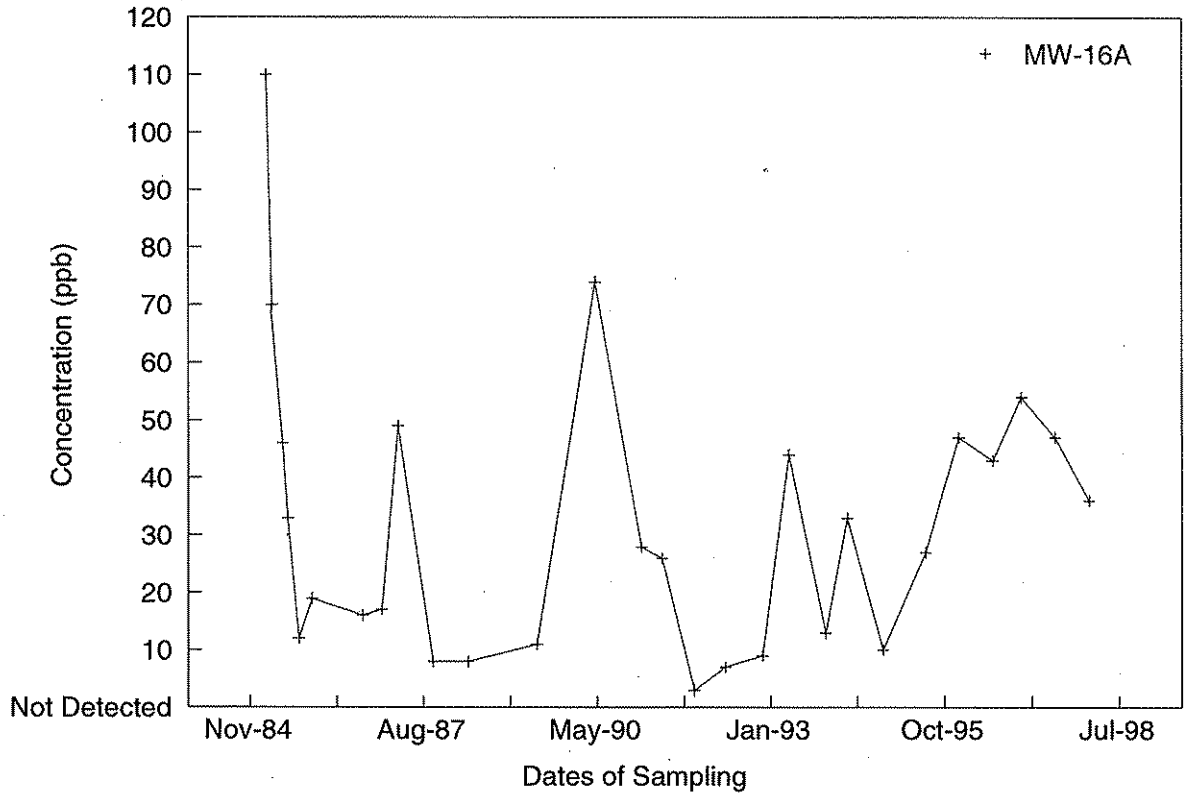
Well	January 1996			July 1996			January 1997			July 1997			February 1998		
Number	PERC	TCE	cis-1,2-DCE	PERC	TCE	cis-1,2-DCE	PERC	TCE	cis-1,2-DCE	PERC	TCE	cis-1,2-DCE	PERC	TCE	cis-1,2-DCE
MW-16A	47 E	0.8 J	1.5	43	0.7 J	1.9	54	1.1	3.1	47	0.7 J	2.5	36	0.7 J	2 J
MW-20A	0.2 J	1 U	1 U	0.4 J	1 U	1 U	0.4 J	1 U	1 U	0.3 J	1 U	2 U	0.4 J	1 U	1 U
MW-20B	353	7.2	15	387	7.6	15	373	100 U	6.4 J	222	4	6.4	456	7 J	12
MW-21	--	--	--	Well Decommissioned											
MW-27	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U
MW-28A	1 U	1 U	1 U	Well Decommissioned											
MW-31	0.6 J	1 U	0.7 J	--	--	--	--	--	--	0.9 J	1 U	0.9 J	--	--	--
MW-32	0.8 J	1 U	0.6 J	--	--	--	--	--	--	--	--	--	--	--	--
MW-41	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--
MW-19A	--	--	--	--	--	--	--	--	--	1 U	0.3 J	2 U	--	--	--
MW-33	--	--	--	1 U	1 U	1 U	--	--	--	1 U	1 U	2 U	--	--	--
MW-40	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
H1/H2	8.4	0.2 J	0.2 J	0.14 J	1 U	1 U	18	0.4 J	0.4 J	8.8	0.3 J	0.6 J	11	0.4 J	0.3 J

U = The analyte was not detected at or above the reported result.
J = The analyte was positively identified. The associated numerical result is an estimate.
UJ = The analyte was not detected at or above the reported estimated result.
D = Analysis performed at secondary dilution.
E = The concentration of the associated value exceeds the known calibration range.
-- = Not Tested
= The analyte was positively identified.

Figure 2

PERC Concentrations for Wells MW-20B and MW-16A from 1984 to 1998





APPENDIX A

Analytical Results
Lakewood/Plaza Cleaners
February 2, 1998

Manchester Environmental Laboratory

7411 Beach Dr E, Port Orchard Washington 98366

CASE NARRATIVE

May 4, 1998

Subject:	**Plaza Cleaners**
Samples:	97068080 through 97068085
Project ID:	108198
Project Officer:	P. Marti
By:	Karin Feddersen KF

VOLATILE ORGANIC ANALYSIS

SUMMARY:

The data is usable as reported.

ANALYTICAL METHODS:

Volatile organic compounds were analyzed using Manchester modification of the EPA Method 8260 purge-trap procedure with capillary GC/MS analysis. Typical QA/QC procedures were performed on the sample.

BLANKS:

Low levels of certain target compounds were detected in the laboratory blanks. These compounds are considered native to the sample if their concentration is at least five times greater than the amount detected in the associated blank. Results for these compounds are reported as estimates in the corresponding samples.

SURROGATES:

Surrogate recoveries were within acceptable limits for the samples.

HOLDING TIMES:

The samples were analyzed within the recommended 14 day holding time.

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE:

Aliquots of sample 98068084 were spiked and analyzed as matrix spikes. All recoveries were within acceptable limits of 50% to 150%.

DATA QUALIFIER CODES:

U	-	The analyte was not detected at or above the reported value.
J	-	The analyte was positively identified. The associated numerical value is an estimate.
UJ	-	The analyte was not detected at or above the reported estimated result.
REJ	-	The data are unusable for all purposes.
NAF	-	Not analyzed for.
N	-	There is evidence the analyte is present in the sample.
NJ	-	There is evidence that the analyte is present. The associated numerical result is an estimate.
E	-	This qualifier is used when the concentration of the associated value exceeds the known calibration range.
bold	-	The analyte was present in the sample. (Visual Aid to locate detected compounds on report sheet.)

Manchester Environmental Laboratory

Department of Ecology

Analysis Report for

Volatile Organic Analysis

Project Name: Plaza Cleaners **LIMS Project ID:** 1081-98

Sample: 98068080 **Date Received:** 02/03/98 **Method:** SW8260
Field ID: H2 **Matrix:** Water
Project Officer: Pam Marti **Date Analyzed:** 02/12/98 **Units:** ug/L

Analyte	Result	Qualifier	Analyte	Result	Qualifier
Dichlorodifluoromethane	1	U	Cis-1,3-Dichloropropene	1.1	U
Chloromethane	1	U	4-Methyl-2-Pentanone	2	U
Vinyl Chloride	1	U	1,1-Dichloropropanone	1	U
Bromomethane	1	U	Toluene	1	U
Chloroethane	1	U	Trans-1,3-Dichloropropene	.94	U
Trichlorofluoromethane	1	U	Ethylmethacrylate	1	U
Ethyl Ether	1	U	1,1,2-Trichloroethane	1	U
1,1,2 Trichlorotrifluoroethane	1	U	1,3-Dichloropropane	1	U
1,1-Dichloroethene	1	U	2-Hexanone	1	U
Acetone	4	U	**Tetrachloroethene**	**11**	
Methyl Iodide	1	U	Dibromochloromethane	1	U
Carbon Disulfide	2	U	1,2-Dibromoethane (EDB)	1	U
Allyl Chloride	1	U	Chlorobenzene	1	U
Methylene Chloride	1	U	1,1,1,2-Tetrachloroethane	1	U
Acrylonitrile	1	U	Ethylbenzene	1	U
2-Methyoxy-2-Methylpropane	1	U	m & p-Xylene	2	U
Trans-1,2-Dichloroethene	1	U	o-Xylene	1	U
1,1-Dichloroethane	1	U	Styrene	1	U
2-Butanone	2	U	Bromoform	2	U
Cis-1,2-Dichloroethene	**.28**	**J**	Isopropylbenzene (Cumene)	1	U
2,2-Dichloropropane	1	U	1,1,2,2-Tetrachloroethane	1	U
Methyl acrylate	1	U	Trans-1,4-Dichloro-2-butene	1	U
Methyacrilonitrile	1	U	1,2,3-Trichloropropane	1	U
Bromochloromethane	1	U	Bromobenzene	1	U
Chloroform	**.099**	**J**	n-Propylbenzene	1	U
Tetrahydrofuran	1	U	2-Chlorotoluene	1	U
1,1,1-Trichloroethane	1	U	1,3,5-Trimethylbenzene	1	U
1-Chlorobutane	1	U	4-Chlorotoluene	1	U
1,1-Dichloropropene	1	U	Tert-Butylbenzene	1	U
Carbon Tetrachloride	1	U	1,2,4-Trimethylbenzene	1	U
1,2-Dichloroethane	1	U	Pentachloroethane	1	U
Benzene	1	U	Sec-Butylbenzene	1	U
Trichloroethene	**.36**	**J**	p-Isopropyltoluene	1	U
1,2-Dichloropropane	1	U	1,3-Dichlorobenzene	1	U
Methyl Methacrylate	1	U	1,4-Dichlorobenzene	1	U
Dibromomethane	1	U	n-Butylbenzene	1	U
Bromodichloromethane	1	U	1,2-Dichlorobenzene	1	U
2-Nitropropane	1	U	Hexachloroethane	1	U

Authorized By: _____ Release Date: 5/4/98 Page: 1

Manchester Environmental Laboratory

Department of Ecology

Analysis Report for

Volatile Organic Analysis

Project Name: Plaza Cleaners **LIMS Project ID:** 1081-98

Sample: 98068080 **Date Received:** 02/03/98 **Method:** SW8260
Field ID: H2 **Matrix:** Water
Project Officer: Pam Marti **Date Analyzed:** 02/12/98 **Units:** ug/L

Analyte	Result	Qualifier
1,2-Dibromo-3-Chloropropane	2	U
1,2,4-Trichlorobenzene	1	U
Hexachlorobutadiene	1	U
Naphthalene	1	U
1,2,3-Trichlorobenzene	1	U

Surrogate Recoveries

1,2-Dichloroethane-D4	**108**	**%**
1,4-Difluorobenzene	**100**	**%**
Toluene-D8	**97**	**%**
p-Bromofluorobenzene	**96**	**%**
1,2-Dichlorobenzene-D4	**99**	**%**

Authorized By: _____ Release Date: 5/14/98

Manchester Environmental Laboratory

Department of Ecology

Analysis Report for

Volatile Organic Analysis

Project Name: Plaza Cleaners **LIMS Project ID:** 1081-98

Sample: 98068081 **Date Received:** 02/03/98 **Method:** SW8260
Field ID: MW-16A **Matrix:** Water
Project Officer: Pam Marti **Date Analyzed:** 02/12/98 **Units:** ug/L

Analyte	Result	Qualifier	Analyte	Result	Qualifier
Dichlorodifluoromethane	5	U	Cis-1,3-Dichloropropene	5.3	U
Chloromethane	5	U	4-Methyl-2-Pentanone	10	U
Vinyl Chloride	5	U	1,1-Dichloropropanone	5	U
Bromomethane	5	U	Toluene	5	U
Chloroethane	5	U	Trans-1,3-Dichloropropene	4.7	U
Trichlorofluoromethane	5	U	Ethylmethacrylate	5	U
Ethyl Ether	5	U	1,1,2-Trichloroethane	5	U
1,1,2 Trichlorotrifluoroethane	5	U	1,3-Dichloropropane	5	U
1,1-Dichloroethene	5	U	2-Hexanone	5	U
Acetone	**7.4**	**J**	**Tetrachloroethene**	**36**	
Methyl Iodide	5	U	Dibromochloromethane	5	U
Carbon Disulfide	10	U	1,2-Dibromoethane (EDB)	5	U
Allyl Chloride	5	U	Chlorobenzene	5	U
Methylene Chloride	**6**	**J**	1,1,1,2-Tetrachloroethane	5	U
Acrylonitrile	5	U	Ethylbenzene	5	U
2-Methyoxy-2-Methylpropane	5	U	m & p-Xylene	10	U
Trans-1,2-Dichloroethene	5	U	o-Xylene	5	U
1,1-Dichloroethane	5	U	Styrene	5	U
2-Butanone	10	U	Bromoform	10	U
Cis-1,2-Dichloroethene	**1.9**	**J**	Isopropylbenzene (Cumene)	5	U
2,2-Dichloropropane	5	U	1,1,2,2-Tetrachloroethane	5	U
Methyl acrylate	5	U	Trans-1,4-Dichloro-2-butene	5	U
Methyacrilonitrile	5	U	1,2,3-Trichloropropane	5	U
Bromochloromethane	5	U	Bromobenzene	5	U
Chloroform	5	U	n-Propylbenzene	5	U
Tetrahydrofuran	5	U	2-Chlorotoluene	5	U
1,1,1-Trichloroethane	5	U	1,3,5-Trimethylbenzene	5	U
1-Chlorobutane	5	U	4-Chlorotoluene	5	U
1,1-Dichloropropene	5	U	Tert-Butylbenzene	5	U
Carbon Tetrachloride	5	U	1,2,4-Trimethylbenzene	5	U
1,2-Dichloroethane	5	U	Pentachloroethane	5	U
Benzene	5	U	Sec-Butylbenzene	5	U
Trichloroethene	**.7**	**J**	p-Isopropyltoluene	5	U
1,2-Dichloropropane	5	U	1,3-Dichlorobenzene	5	U
Methyl Methacrylate	5	U	1,4-Dichlorobenzene	5	U
Dibromomethane	5	U	n-Butylbenzene	5	U
Bromodichloromethane	5	U	1,2-Dichlorobenzene	5	U
2-Nitropropane	5	U	Hexachloroethane	5	U

Authorized By: _____ Release Date: 5/6/98

Manchester Environmental Laboratory

Department of Ecology

Analysis Report for

Volatile Organic Analysis

Project Name: Plaza Cleaners **LIMS Project ID:** 1081-98

Sample: 98068081 **Date Received:** 02/03/98 **Method:** SW8260
Field ID: MW-16A **Matrix:** Water
Project Officer: Pam Marti **Date Analyzed:** 02/12/98 **Units:** ug/L

Analyte	Result	Qualifier
1,2-Dibromo-3-Chloropropane	10	U
1,2,4-Trichlorobenzene	5	U
Hexachlorobutadiene	5	U
Naphthalene	5	U
1,2,3-Trichlorobenzene	5	U

Surrogate Recoveries

1,2-Dichloroethane-D4	**110**	**%**
1,4-Difluorobenzene	**101**	**%**
Toluene-D8	**96**	**%**
p-Bromofluorobenzene	**95**	**%**
1,2-Dichlorobenzene-D4	**100**	**%**

Authorized By: _____ Release Date: 5/4/98

Manchester Environmental Laboratory

Department of Ecology

Analysis Report for

Volatile Organic Analysis

Project Name: Plaza Cleaners **LIMS Project ID:** 1081-98

Sample: 98068082 **Date Received:** 02/03/98 **Method:** SW8260
Field ID: MW-16B **Matrix:** Water
Project Officer: Pam Marti **Date Analyzed:** 02/12/98 **Units:** ug/L

Analyte	Result	Qualifier	Analyte	Result	Qualifier
Dichlorodifluoromethane	5	U	Cis-1,3-Dichloropropene	5.3	U
Chloromethane	5	U	4-Methyl-2-Pentanone	10	U
Vinyl Chloride	5	U	1,1-Dichloropropanone	5	U
Bromomethane	5	U	Toluene	5	U
Chloroethane	5	U	Trans-1,3-Dichloropropene	4.7	U
Trichlorofluoromethane	5	U	Ethylmethacrylate	5	U
Ethyl Ether	5	U	1,1,2-Trichloroethane	5	U
1,1,2 Trichlorotrifluoroethane	5	U	1,3-Dichloropropane	5	U
1,1-Dichloroethene	5	U	2-Hexanone	5	U
Acetone	**13**	**J**	**Tetrachloroethene**	**35**	
Methyl Iodide	5	U	Dibromochloromethane	5	U
Carbon Disulfide	10	U	1,2-Dibromoethane (EDB)	5	U
Allyl Chloride	5	U	Chlorobenzene	5	U
Methylene Chloride	**7.2**	**J**	1,1,1,2-Tetrachloroethane	5	U
Acrylonitrile	5	U	Ethylbenzene	5	U
2-Methyoxy-2-Methylpropane	5	U	m & p-Xylene	10	U
Trans-1,2-Dichloroethene	5	U	o-Xylene	5	U
1,1-Dichloroethane	5	U	Styrene	5	U
2-Butanone	**2.5**	**J**	Bromoform	10	U
Cis-1,2-Dichloroethene	**2**	**J**	Isopropylbenzene (Cumene)	5	U
2,2-Dichloropropane	5	U	1,1,2,2-Tetrachloroethane	5	U
Methyl acrylate	5	U	Trans-1,4-Dichloro-2-butene	5	U
Methyacrilonitrile	5	U	1,2,3-Trichloropropane	5	U
Bromochloromethane	5	U	Bromobenzene	5	U
Chloroform	5	U	n-Propylbenzene	5	U
Tetrahydrofuran	5	U	2-Chlorotoluene	5	U
1,1,1-Trichloroethane	5	U	1,3,5-Trimethylbenzene	5	U
1-Chlorobutane	5	U	4-Chlorotoluene	5	U
1,1-Dichloropropene	5	U	Tert-Butylbenzene	5	U
Carbon Tetrachloride	5	U	1,2,4-Trimethylbenzene	5	U
1,2-Dichloroethane	5	U	Pentachloroethane	5	U
Benzene	5	U	Sec-Butylbenzene	5	U
Trichloroethene	**.79**	**J**	p-Isopropyltoluene	5	U
1,2-Dichloropropane	5	U	1,3-Dichlorobenzene	5	U
Methyl Methacrylate	5	U	1,4-Dichlorobenzene	5	U
Dibromomethane	5	U	n-Butylbenzene	5	U
Bromodichloromethane	5	U	1,2-Dichlorobenzene	5	U
2-Nitropropane	5	U	Hexachloroethane	5	U

Authorized By: _____ Release Date: 5/4/98 Page: 1

Manchester Environmental Laboratory

Department of Ecology

Analysis Report for

Volatile Organic Analysis

Project Name: Plaza Cleaners **LIMS Project ID:** 1081-98

Sample: 98068082 **Date Received:** 02/03/98 **Method:** SW8260
Field ID: MW-16B **Matrix:** Water
Project Officer: Pam Marti **Date Analyzed:** 02/12/98 **Units:** ug/L

Analyte	Result	Qualifier
1,2-Dibromo-3-Chloropropane	10	U
1,2,4-Trichlorobenzene	5	U
Hexachlorobutadiene	5	U
Naphthalene	5	U
1,2,3-Trichlorobenzene	5	U

Surrogate Recoveries

1,2-Dichloroethane-D4	**109**	**%**
1,4-Difluorobenzene	**100**	**%**
Toluene-D8	**96**	**%**
p-Bromofluorobenzene	**96**	**%**
1,2-Dichlorobenzene-D4	**101**	**%**

Authorized By: _____ Release Date: 5/14/98

Manchester Environmental Laboratory

Department of Ecology

Analysis Report for

Volatile Organic Analysis

Project Name: Plaza Cleaners **LIMS Project ID:** 1081-98

Sample: 98068083 **Date Received:** 02/03/98 **Method:** SW8260
Field ID: MW-27 **Matrix:** Water
Project Officer: Pam Marti **Date Analyzed:** 02/12/98 **Units:** ug/L

Analyte	Result	Qualifier	Analyte	Result	Qualifier
Dichlorodifluoromethane	1	U	Cis-1,3-Dichloropropene	1.1	U
Chloromethane	1	U	4-Methyl-2-Pentanone	2	U
Vinyl Chloride	1	U	1,1-Dichloropropanone	1	U
Bromomethane	1	U	Toluene	1	U
Chloroethane	1	U	Trans-1,3-Dichloropropene	.94	U
Trichlorofluoromethane	1	U	Ethylmethacrylate	1	U
Ethyl Ether	1	U	1,1,2-Trichloroethane	1	U
1,1,2 Trichlorotrifluoroethane	1	U	1,3-Dichloropropane	1	U
1,1-Dichloroethene	1	U	2-Hexanone	1	U
Acetone	4	U	Tetrachloroethene	1	U
Methyl Iodide	1	U	Dibromochloromethane	1	U
Carbon Disulfide	2	U	1,2-Dibromoethane (EDB)	1	U
Allyl Chloride	1	U	Chlorobenzene	1	U
Methylene Chloride	1	U	1,1,1,2-Tetrachloroethane	1	U
Acrylonitrile	1	U	Ethylbenzene	1	U
2-Methyoxy-2-Methylpropane	1	U	m & p-Xylene	2	U
Trans-1,2-Dichloroethene	1	U	o-Xylene	1	U
1,1-Dichloroethane	1	U	Styrene	1	U
2-Butanone	2	U	Bromoform	2	U
Cis-1,2-Dichloroethene	1	U	Isopropylbenzene (Cumene)	1	U
2,2-Dichloropropane	1	U	1,1,2,2-Tetrachloroethane	1	U
Methyl acrylate	1	U	Trans-1,4-Dichloro-2-butene	1	U
Methyacrilonitrile	1	U	1,2,3-Trichloropropane	1	U
Bromochloromethane	1	U	Bromobenzene	1	U
Chloroform	1	U	n-Propylbenzene	1	U
Tetrahydrofuran	1	U	2-Chlorotoluene	1	U
1,1,1-Trichloroethane	1	U	1,3,5-Trimethylbenzene	1	U
1-Chlorobutane	1	U	4-Chlorotoluene	1	U
1,1-Dichloropropene	1	U	Tert-Butylbenzene	1	U
Carbon Tetrachloride	1	U	1,2,4-Trimethylbenzene	1	U
1,2-Dichloroethane	1	U	Pentachloroethane	1	U
Benzene	1	U	Sec-Butylbenzene	1	U
Trichloroethene	1	U	p-Isopropyltoluene	1	U
1,2-Dichloropropane	1	U	1,3-Dichlorobenzene	1	U
Methyl Methacrylate	1	U	1,4-Dichlorobenzene	1	U
Dibromomethane	1	U	n-Butylbenzene	1	U
Bromodichloromethane	1	U	1,2-Dichlorobenzene	1	U
2-Nitropropane	1	U	Hexachloroethane	1	U

Authorized By: _____ Release Date: 5/4/98

Manchester Environmental Laboratory

Department of Ecology

Analysis Report for

Volatile Organic Analysis

Project Name: Plaza Cleaners **LIMS Project ID:** 1081-98

Sample: 98068083 **Date Received:** 02/03/98 **Method:** SW8260
Field ID: MW-27 **Matrix:** Water
Project Officer: Pam Marti **Date Analyzed:** 02/12/98 **Units:** ug/L

Analyte	Result	Qualifier
1,2-Dibromo-3-Chloropropane	2	U
1,2,4-Trichlorobenzene	1	U
Hexachlorobutadiene	1	U
Naphthalene	1	U
1,2,3-Trichlorobenzene	1	U

Surrogate Recoveries

1,2-Dichloroethane-D4	**108**	**%**
1,4-Difluorobenzene	**100**	**%**
Toluene-D8	**97**	**%**
p-Bromofluorobenzene	**94**	**%**
1,2-Dichlorobenzene-D4	**99**	**%**

Authorized By: _____ Release Date: 5/4/98

Manchester Environmental Laboratory

Department of Ecology

Analysis Report for

Volatile Organic Analysis

Project Name: Plaza Cleaners **LIMS Project ID:** 1081-98

Sample: 98068084 **Date Received:** 02/03/98 **Method:** SW8260
Field ID: MW-20A **Matrix:** Water
Project Officer: Pam Marti **Date Analyzed:** 02/12/98 **Units:** ug/L

Analyte	Result	Qualifier	Analyte	Result	Qualifier
Dichlorodifluoromethane	1	U	Cis-1,3-Dichloropropene	1.1	U
Chloromethane	1	U	4-Methyl-2-Pentanone	2	U
Vinyl Chloride	1	U	1,1-Dichloropropanone	1	U
Bromomethane	1	U	Toluene	1	U
Chloroethane	1	U	Trans-1,3-Dichloropropene	.94	U
Trichlorofluoromethane	1	U	Ethylmethacrylate	1	U
Ethyl Ether	1	U	1,1,2-Trichloroethane	1	U
1,1,2 Trichlorotrifluoroethane	1	U	1,3-Dichloropropane	1	U
1,1-Dichloroethene	1	U	2-Hexanone	1	U
Acetone	4	U	**Tetrachloroethene**	**.43**	**J**
Methyl Iodide	1	U	Dibromochloromethane	1	U
Carbon Disulfide	2	U	1,2-Dibromoethane (EDB)	1	U
Allyl Chloride	1	U	Chlorobenzene	1	U
Methylene Chloride	1	U	1,1,1,2-Tetrachloroethane	1	U
Acrylonitrile	1	U	Ethylbenzene	1	U
2-Methyoxy-2-Methylpropane	1	U	**m & p-Xylene**	**.12**	**J**
Trans-1,2-Dichloroethene	1	U	o-Xylene	1	U
1,1-Dichloroethane	1	U	Styrene	1	U
2-Butanone	2	U	Bromoform	2	U
Cis-1,2-Dichloroethene	1	U	Isopropylbenzene (Cumene)	1	U
2,2-Dichloropropane	1	U	1,1,2,2-Tetrachloroethane	1	U
Methyl acrylate	1	U	Trans-1,4-Dichloro-2-butene	1	U
Methyacrilonitrile	1	U	1,2,3-Trichloropropane	1	U
Bromochloromethane	1	U	Bromobenzene	1	U
Chloroform	1	U	n-Propylbenzene	1	U
Tetrahydrofuran	1	U	2-Chlorotoluene	1	U
1,1,1-Trichloroethane	**.13**	**J**	1,3,5-Trimethylbenzene	1	U
1-Chlorobutane	1	U	4-Chlorotoluene	1	U
1,1-Dichloropropene	1	U	Tert-Butylbenzene	1	U
Carbon Tetrachloride	1	U	1,2,4-Trimethylbenzene	1	U
1,2-Dichloroethane	1	U	Pentachloroethane	1	U
Benzene	1	U	Sec-Butylbenzene	1	U
Trichloroethene	1	U	p-Isopropyltoluene	1	U
1,2-Dichloropropane	1	U	1,3-Dichlorobenzene	1	U
Methyl Methacrylate	1	U	1,4-Dichlorobenzene	1	U
Dibromomethane	1	U	n-Butylbenzene	1	U
Bromodichloromethane	1	U	1,2-Dichlorobenzene	1	U
2-Nitropropane	1	U	Hexachloroethane	1	U

Authorized By: _____ Release Date: 5/14/98 Page: 1

Manchester Environmental Laboratory

Department of Ecology

Analysis Report for

Volatile Organic Analysis

Project Name: Plaza Cleaners **LIMS Project ID:** 1081-98

Sample: 98068084 **Date Received:** 02/03/98 **Method:** SW8260
Field ID: MW-20A **Matrix:** Water
Project Officer: Pam Marti **Date Analyzed:** 02/12/98 **Units:** ug/L

Analyte	Result	Qualifier
1,2-Dibromo-3-Chloropropane	2	U
1,2,4-Trichlorobenzene	1	U
Hexachlorobutadiene	1	U
Naphthalene	1	U
1,2,3-Trichlorobenzene	1	U

Surrogate Recoveries

1,2-Dichloroethane-D4	**109**	**%**
1,4-Difluorobenzene	**99**	**%**
Toluene-D8	**97**	**%**
p-Bromofluorobenzene	**95**	**%**
1,2-Dichlorobenzene-D4	**99**	**%**

Authorized By: _____ Release Date: 5/4/98

Manchester Environmental Laboratory

Department of Ecology

Analysis Report for

Volatile Organic Analysis

Project Name: Plaza Cleaners **LIMS Project ID:** 1081-98

Sample: 98068084 (Matrix Spike - LMX1) **Date Received:** 02/03/98 **Method:** SW8260
Field ID: MW-20A **Matrix:** Water
Project Officer: Pam Marti **Date Analyzed:** 02/12/98 **Units:** % Recovery

Analyte	Result	Qualifier	Analyte	Result	Qualifier
Dichlorodifluoromethane	71		Cis-1,3-Dichloropropene	89	
Chloromethane	91		4-Methyl-2-Pentanone	96	
Vinyl Chloride	109		1,1-Dichloropropanone	91	
Bromomethane	88		Toluene	93	
Chloroethane	111		Trans-1,3-Dichloropropene	80	
Trichlorofluoromethane	130		Ethylmethacrylate	87	
Ethyl Ether	107		1,1,2-Trichloroethane	95	
1,1,2 Trichlorotrifluoroethane	129		1,3-Dichloropropane	92	
1,1-Dichloroethene	116		2-Hexanone	96	
Acetone	110		Tetrachloroethene	100	
Methyl Iodide	112		Dibromochloromethane	90	
Carbon Disulfide	87		1,2-Dibromoethane (EDB)	97	
Allyl Chloride	101		Chlorobenzene	101	
Methylene Chloride	62		1,1,1,2-Tetrachloroethane	99	
Acrylonitrile	101		Ethylbenzene	100	
2-Methyoxy-2-Methylpropane	86		m & p-Xylene	102	
Trans-1,2-Dichloroethene	101		o-Xylene	100	
1,1-Dichloroethane	101		Styrene	97	
2-Butanone	99		Bromoform	74	
Cis-1,2-Dichloroethene	98		Isopropylbenzene (Cumene)	111	
2,2-Dichloropropane	90		1,1,2,2-Tetrachloroethane	89	
Methyl acrylate	94		Trans-1,4-Dichloro-2-butene	95	
Methyacrilonitrile	88		1,2,3-Trichloropropane	91	
Bromochloromethane	96		Bromobenzene	96	
Chloroform	100		n-Propylbenzene	111	
Tetrahydrofuran	79		2-Chlorotoluene	111	
1,1,1-Trichloroethane	106		1,3,5-Trimethylbenzene	109	
1-Chlorobutane	107		4-Chlorotoluene	114	
1,1-Dichloropropene	102		Tert-Butylbenzene	113	
Carbon Tetrachloride	112		1,2,4-Trimethylbenzene	109	
1,2-Dichloroethane	109		Pentachloroethane	94	
Benzene	83		Sec-Butylbenzene	113	
Trichloroethene	105		p-Isopropyltoluene	114	
1,2-Dichloropropane	96		1,3-Dichlorobenzene	99	
Methyl Methacrylate	81		1,4-Dichlorobenzene	99	
Dibromomethane	99		n-Butylbenzene	110	
Bromodichloromethane	89		1,2-Dichlorobenzene	100	
2-Nitropropane	59		Hexachloroethane	85	

Authorized By: _____ Release Date: 5/4/98

Manchester Environmental Laboratory

Department of Ecology

Analysis Report for

Volatile Organic Analysis

Project Name: Plaza Cleaners **LIMS Project ID:** 1081-98

Sample: 98068084 (Matrix Spike - LMX1) **Date Received:** 02/03/98 **Method:** SW8260
Field ID: MW-20A **Matrix:** Water
Project Officer: Pam Marti **Date Analyzed:** 02/12/98 **Units:** % Recovery

Analyte	Result	Qualifier
1,2-Dibromo-3-Chloropropane	75	
1,2,4-Trichlorobenzene	95	
Hexachlorobutadiene	95	
Naphthalene	100	
1,2,3-Trichlorobenzene	96	

Surrogate Recoveries

1,2-Dichloroethane-D4	112	%
1,4-Difluorobenzene	99	%
Toluene-D8	96	%
p-Bromofluorobenzene	97	%
1,2-Dichlorobenzene-D4	99	%

Authorized By: _____ Release Date: 5/4/98

Manchester Environmental Laboratory

Department of Ecology

Analysis Report for

Volatile Organic Analysis

Project Name: Plaza Cleaners **LIMS Project ID:** 1081-98

Sample: 98068084 (Matrix Spike - LMX2) **Date Received:** 02/03/98 **Method:** SW8260
Field ID: MW-20A **Matrix:** Water
Project Officer: Pam Marti **Date Analyzed:** 02/12/98 **Units:** % Recovery

Analyte	Result	Qualifier	Analyte	Result	Qualifier
Dichlorodifluoromethane	73		Cis-1,3-Dichloropropene	94	
Chloromethane	88		4-Methyl-2-Pentanone	108	
Vinyl Chloride	117		1,1-Dichloropropanone	64	
Bromomethane	95		Toluene	93	
Chloroethane	115		Trans-1,3-Dichloropropene	82	
Trichlorofluoromethane	133		Ethylmethacrylate	86	
Ethyl Ether	103		1,1,2-Trichloroethane	100	
1,1,2 Trichlorotrifluoroethane	133		1,3-Dichloropropane	94	
1,1-Dichloroethene	116		2-Hexanone	94	
Acetone	106		Tetrachloroethene	106	
Methyl Iodide	114		Dibromochloromethane	93	
Carbon Disulfide	91		1,2-Dibromoethane (EDB)	97	
Allyl Chloride	112		Chlorobenzene	106	
Methylene Chloride	63		1,1,1,2-Tetrachloroethane	101	
Acrylonitrile	96		Ethylbenzene	106	
2-Methyoxy-2-Methylpropane	85		m & p-Xylene	107	
Trans-1,2-Dichloroethene	102		o-Xylene	105	
1,1-Dichloroethane	104		Styrene	101	
2-Butanone	97		Bromoform	75	
Cis-1,2-Dichloroethene	100		Isopropylbenzene (Cumene)	117	
2,2-Dichloropropane	92		1,1,2,2-Tetrachloroethane	90	
Methyl acrylate	94		Trans-1,4-Dichloro-2-butene	94	
Methyacrilonitrile	88		1,2,3-Trichloropropane	88	
Bromochloromethane	97		Bromobenzene	99	
Chloroform	101		n-Propylbenzene	115	
Tetrahydrofuran	76		2-Chlorotoluene	115	
1,1,1-Trichloroethane	110		1,3,5-Trimethylbenzene	112	
1-Chlorobutane	114		4-Chlorotoluene	115	
1,1-Dichloropropene	108		Tert-Butylbenzene	118	
Carbon Tetrachloride	115		1,2,4-Trimethylbenzene	113	
1,2-Dichloroethane	110		Pentachloroethane	91	
Benzene	89		Sec-Butylbenzene	117	
Trichloroethene	109		p-Isopropyltoluene	118	
1,2-Dichloropropane	100		1,3-Dichlorobenzene	99	
Methyl Methacrylate	83		1,4-Dichlorobenzene	100	
Dibromomethane	101		n-Butylbenzene	115	
Bromodichloromethane	94		1,2-Dichlorobenzene	101	
2-Nitropropane	59		Hexachloroethane	89	

Authorized By: _____ Release Date: 5/4/98

Manchester Environmental Laboratory

Department of Ecology

Analysis Report for

Volatile Organic Analysis

Project Name: Plaza Cleaners **LIMS Project ID:** 1081-98

Sample: 98068084 (Matrix Spike - LMX2) **Date Received:** 02/03/98 **Method:** SW8260
Field ID: MW-20A **Matrix:** Water
Project Officer: Pam Marti **Date Analyzed:** 02/12/98 **Units:** % Recovery

Analyte	Result	Qualifier
1,2-Dibromo-3-Chloropropane	80	
1,2,4-Trichlorobenzene	95	
Hexachlorobutadiene	100	
Naphthalene	99	
1,2,3-Trichlorobenzene	96	

Surrogate Recoveries

1,2-Dichloroethane-D4	110	%
1,4-Difluorobenzene	99	%
Toluene-D8	98	%
p-Bromofluorobenzene	100	%
1,2-Dichlorobenzene-D4	99	%

Authorized By: _____ Release Date: 5/14/98

Manchester Environmental Laboratory

Department of Ecology

Analysis Report for

Volatile Organic Analysis

Project Name: Plaza Cleaners

LIMS Project ID: 1081-98

Sample: 98068085
Field ID: MW-20B
Project Officer: Pam Marti

Date Received: 02/03/98
Date Analyzed: 02/12/98

Method: SW8260
Matrix: Water
Units: ug/L

Analyte	Result	Qualifier	Analyte	Result	Qualifier
Dichlorodifluoromethane	10	U	Cis-1,3-Dichloropropene	11	U
Chloromethane	10	U	4-Methyl-2-Pentanone	20	U
Vinyl Chloride	10	U	1,1-Dichloropropanone	10	U
Bromomethane	10	U	Toluene	10	U
Chloroethane	10	U	Trans-1,3-Dichloropropene	9.4	U
Trichlorofluoromethane	10	U	Ethylmethacrylate	10	U
Ethyl Ether	10	U	1,1,2-Trichloroethane	10	U
1,1,2 Trichlorotrifluoroethane	10	U	1,3-Dichloropropane	10	U
1,1-Dichloroethene	10	U	2-Hexanone	10	U
Acetone	40	U	**Tetrachloroethene**	**456**	
Methyl Iodide	10	U	Dibromochloromethane	10	U
Carbon Disulfide	20	U	1,2-Dibromoethane (EDB)	10	U
Allyl Chloride	10	U	Chlorobenzene	10	U
Methylene Chloride	13	U	1,1,1,2-Tetrachloroethane	10	U
Acrylonitrile	10	U	Ethylbenzene	10	U
2-Methyoxy-2-Methylpropane	10	U	m & p-Xylene	20	U
Trans-1,2-Dichloroethene	10	U	o-Xylene	10	U
1,1-Dichloroethane	10	U	Styrene	10	U
2-Butanone	20	U	Bromoform	20	U
Cis-1,2-Dichloroethene	**12**		Isopropylbenzene (Cumene)	10	U
2,2-Dichloropropane	10	U	1,1,2,2-Tetrachloroethane	10	U
Methyl acrylate	10	U	Trans-1,4-Dichloro-2-butene	10	U
Methyacrilonitrile	10	U	1,2,3-Trichloropropane	10	U
Bromochloromethane	10	U	Bromobenzene	10	U
Chloroform	10	U	n-Propylbenzene	10	U
Tetrahydrofuran	10	U	2-Chlorotoluene	10	U
1,1,1-Trichloroethane	10	U	1,3,5-Trimethylbenzene	10	U
1-Chlorobutane	10	U	4-Chlorotoluene	10	U
1,1-Dichloropropene	10	U	Tert-Butylbenzene	10	U
Carbon Tetrachloride	10	U	1,2,4-Trimethylbenzene	10	U
1,2-Dichloroethane	10	U	Pentachloroethane	10	U
Benzene	10	U	Sec-Butylbenzene	10	U
Trichloroethene	**7**	**J**	p-Isopropyltoluene	10	U
1,2-Dichloropropane	10	U	1,3-Dichlorobenzene	10	U
Methyl Methacrylate	10	U	1,4-Dichlorobenzene	10	U
Dibromomethane	10	U	n-Butylbenzene	10	U
Bromodichloromethane	10	U	1,2-Dichlorobenzene	10	U
2-Nitropropane	10	U	Hexachloroethane	10	U

Authorized By: _____ Release Date: 5/4/98

Manchester Environmental Laboratory

Department of Ecology

Analysis Report for

Volatile Organic Analysis

Project Name: Plaza Cleaners

LIMS Project ID: 1081-98

Sample: 98068085
Field ID: MW-20B
Project Officer: Pam Marti

Date Received: 02/03/98
Date Analyzed: 02/12/98

Method: SW8260
Matrix: Water
Units: ug/L

Analyte	Result	Qualifier
1,2-Dibromo-3-Chloropropane	20	U
1,2,4-Trichlorobenzene	10	U
Hexachlorobutadiene	10	U
Naphthalene	10	U
1,2,3-Trichlorobenzene	10	U

Surrogate Recoveries

1,2-Dichloroethane-D4	**111**	**%**
1,4-Difluorobenzene	**100**	**%**
Toluene-D8	**97**	**%**
p-Bromofluorobenzene	**96**	**%**
1,2-Dichlorobenzene-D4	**98**	**%**

Authorized By: _____ Release Date: 5/4/98

Manchester Environmental Laboratory

Department of Ecology

Analysis Report for

Volatile Organic Analysis

Project Name: Plaza Cleaners **LIMS Project ID:** 1081-98

Sample: OVBW8043 **Method:** SW8260

Matrix: Water

Project Officer: Pam Marti **Date Analyzed:** 02/12/98 **Units:** ug/L

Analyte	Result	Qualifier	Analyte	Result	Qualifier
Dichlorodifluoromethane	1	U	Chloroacetonitrile	1	U
Chloromethane	1	U	Cis-1,3-Dichloropropene	1	U
Vinyl Chloride	1	U	4-Methyl-2-Pentanone	2	U
Bromomethane	1	U	1,1-Dichloropropanone	1.1	U
Chloroethane	1	U	**Toluene**	**.035**	**J**
Trichlorofluoromethane	1	U	Trans-1,3-Dichloropropene	.94	U
Ethyl Ether	1	U	Ethylmethacrylate	1	U
1,1,2 Trichlorotrifluoroethane	1	U	1,1,2-Trichloroethane	1	U
1,1-Dichloroethene	1	U	1,3-Dichloropropane	1	U
Acetone	**2.7**	**J**	2-Hexanone	1	U
Methyl Iodide	1	U	Tetrachloroethene	1	U
Carbon Disulfide	1	U	Dibromochloromethane	1	U
Allyl Chloride	1	U	1,2-Dibromoethane (EDB)	1	U
Methylene Chloride	**1.3**		Chlorobenzene	1	U
Acrylonitrile	1	U	1,1,1,2-Tetrachloroethane	1	U
2-Methyoxy-2-Methylpropane	1	U	Ethylbenzene	1	U
Trans-1,2-Dichloroethene	1	U	**m & p-Xylene**	**.042**	**J**
1,1-Dichloroethane	1	U	o-Xylene	1	U
2-Butanone	2	U	Styrene	1	U
Cis-1,2-Dichloroethene	1	U	Bromoform	2	U
2,2-Dichloropropane	1	U	Isopropylbenzene (Cumene)	1	U
Methyl acrylate	1	U	1,1,2,2-Tetrachloroethane	1	U
Methyacrilonitrile	1	U	Trans-1,4-Dichloro-2-butene	1	U
Bromochloromethane	1	U	1,2,3-Trichloropropane	1	U
Chloroform	1	U	Bromobenzene	1	U
Tetrahydrofuran	1	U	n-Propylbenzene	1	U
1,1,1-Trichloroethane	1	U	2-Chlorotoluene	1	U
1-Chlorobutane	1	U	1,3,5-Trimethylbenzene	1	U
1,1-Dichloropropene	1	U	4-Chlorotoluene	1	U
Carbon Tetrachloride	1	U	Tert-Butylbenzene	1	U
1,2-Dichloroethane	1	U	1,2,4-Trimethylbenzene	1	U
Benzene	**.24**	**J**	Pentachloroethane	1	U
Trichloroethene	1	U	Sec-Butylbenzene	1	U
1,2-Dichloropropane	1	U	p-Isopropyltoluene	1	U
Methyl Methacrylate	1	U	1,3-Dichlorobenzene	1	U
Dibromomethane	1	U	1,4-Dichlorobenzene	1	U
Bromodichloromethane	1	U	n-Butylbenzene	1	U
2-Nitropropane	1	U	1,2-Dichlorobenzene	1	U

Authorized By: _____ Release Date: 5/14/98

Manchester Environmental Laboratory

Department of Ecology

Analysis Report for

Volatile Organic Analysis

Project Name: Plaza Cleaners **LIMS Project ID:** 1081-98

Sample: OVBW8043 **Method:** SW8260

Matrix: Water

Project Officer: Pam Marti **Date Analyzed:** 02/12/98 **Units:** ug/L

Analyte	Result	Qualifier
Hexachloroethane	1	U
1,2-Dibromo-3-Chloropropane	2	U
1,2,4-Trichlorobenzene	1	U
Hexachlorobutadiene	1	U
Naphthalene	**.057**	**J**
1,2,3-Trichlorobenzene	1	U

Surrogate Recoveries

1,2-Dichloroethane-D4	**108**	**%**
1,4-Difluorobenzene	**100**	**%**
Toluene-D8	**96**	**%**
p-Bromofluorobenzene	**95**	**%**
1,2-Dichlorobenzene-D4	**96**	**%**

Authorized By: _____ Release Date: 5/4/98