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# **1987 Nonmethane Organic Compound And Air Toxics Monitoring Program Final Report Volume 2—Toxic Species**

**1987 Nonmethane Organic Compound  
And Air Toxics Monitoring Program  
Final Report  
Volume 2—Toxic Species**

By

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## PREFACE

This document, 1987 NONMETHANE ORGANIC COMPOUND MONITORING PROGRAM FINAL REPORT VOLUME 2 TOXIC SPECIES, summarizes the data obtained from a program designed to obtain an estimate of the concentration of selected toxic compounds in the ambient air, i.e., screening. The samples were collected primarily for measurement of their nonmethane organic compound (NMOC) concentrations, data which were needed for ozone modeling. Since there was extra gas remaining after the measurements for NMOC had been made, other analyses of the samples were possible. The compounds selected for measurement were those which were thought to be of most concern to risk assessment personnel.

A new measurement method was developed by the Environmental Monitoring and Systems Laboratory (EMSL) and Radian Corporation for these samples: gas chromatography, multidetector (GCMD). In this method, after passing through a chromatographic column, the gas stream is split into two parts. One part passes through two detectors in series, first a photoionization detector (PID) followed by a flame ionization detector (FID). The other part passes through an electron capture detector (ECD). Since most compounds are not sensed equally efficiently by these three detectors, inspection of the simultaneous traces from the detectors frequently permits identification and quantitation of the individual species. The experimental apparatus is described in this document.

The original samples were collected during the 6 to 9 AM time period on week days only during the months June through September. The data cannot be used to calculate 24-hour average concentrations of the species, nor can they be used to infer annual average concentrations. These data should be used only to get an estimate of the kinds and concentrations of putative toxic species in the ambient air of the cities where samples were collected (for other purposes).

During all large measurement programs, many people contribute to their success. It is impossible to acknowledge everyone. However, the following Radian Corporation personnel were especially important to the success of this program: Dave-Paul Dayton, Robert J. Jongleux, Robert A. McAllister, Wendy Moore, Joann Rice, and Denny Wagoner. Their dedication to seeing the project through is greatly appreciated.

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## 8.0 THREE-HOUR AIR TOXICS SUMMARY

The 1987 Nonmethane Organic Compound and Air Toxics Monitoring Program included three-hour ambient air samples at 32 urban sites in the contiguous United States. Volume I presents a description of the equipment and data obtained for the nonmethane organic compound (NMOC) analyses of ambient air samples obtained during 1987. This report, which is Volume II, presents the analytical equipment description, the analytical results, and discussion for those three-hour ambient air samples analyzed for specific air toxic compounds. Samples at 15 of the NMOC sites were analyzed for 37 air toxic compounds, primarily benzene, toluene, xylenes, and halocarbons.

A multidetector gas chromatographic (GC/MD) analytical system, which included a sample interface, was developed and tested for measuring the concentration of 37 toxic compounds in ambient air samples. The sample interface system can deliver equal volumes of ambient air sample from 6-liter Summa<sup>R</sup>-treated canisters under pressure or under vacuum to any analytical device without drying the sample. The sample interface can inject the sample into an analytical device, preconcentrate the sample cryogenically, or inject the sample into an adsorbent bed.

A VARIAN<sup>R</sup> 3700 gas chromatograph was configured with a 30 m x 0.53 mm, DB-624 Megabore fused silica capillary column, followed by a precision splitter which routed one-tenth of the gas through an electron capture detector (ECD), and the remainder through a photoionization detector (PID) in series with a flame ionization detector (FID). Three-hour pressurized ambient air samples obtained during the Summer of 1987 from 15 urban sites, were analyzed on the GC/MD system. One sample from each site was analyzed twice to determine the analytical precision; one duplicate sample from each site was analyzed to determine the sampling and analysis precision. Two samples from each site were analyzed by gas chromatography mass spectrometry (GC/MS) to confirm the accuracy of compound identification.

Calibration was done with in-house standards made from injections of each neat liquid chemical into a heat-traced tube of a 33-L SUMMMA<sup>R</sup>-treated canister, purged with zero air and pressurized to a known pressure for dilution. The calibration gases were humidified to about 70% relative humidity. Daily spans of in-house standards were used to determine calibration factors for quantitation of the target gases. Compound identification was done using retention time (primarily on the FID) along with PID/FID and ECD/FID area count ratios. The percentage coefficient of variation (% CV) of the ratios between the span and the sample for a given compound were also used to aid compound identification.

Eighteen air toxics compounds were identified ranging in concentration from just above the detection limit (0.2 to 0.9 ppbv) to 94.8 ppbv. Compound identification by the GC/MD system was confirmed by GC/MS in 91.4% of the cases.

Precision in terms of absolute percent differences averaged from 10.5 to 46.4 for replicate analyses of the same sample, and from 2.4 to 23.9 for duplicate sample analyses.

## 9.0 AIR TOXICS EQUIPMENT

Radian began the study of air toxics compounds in ambient air samples collected for the Nonmethane Organic Compound (NMOC) Monitoring Program in 1986. For the 1987 monitoring program, NMOC ambient air samples were collected at 32 sites from 6:00 AM to 9:00 AM at about 15 psig in 6-liter (L) stainless steel canisters. For 15 of the NMOC sites, after NMOC completion of the analysis, the samples were also analyzed on the GC/MD system for the compounds listed in Table 10-1. In a related study, Radian began collecting and analyzing 24-hour ambient air samples at 19 sites. The latter samples are analyzed for air toxic compound (Table 10-1) concentrations. The 24-hour samples will continue to be collected and analyzed through September 1988 and will be reported separately. No 3-hour and 24-hour sites were co-located in 1987. In subsequent years co-location of 3-hour samples and 24-hour samples may provide valuable information.

Delivery of the ambient air samples from the canisters to the GC/MD analytical system involved transfer of the sample from the canister under 0.0 to 10.0 psig pressure for the 3-hour samples, and under 0.5 to 14.0 inches Hg vacuum in the case of the 24-hour ambient air samples. Radian Corporation developed a sample interface system which reliably delivers a constant volume of cryogenically preconcentrated ambient air to either the GC/MD or GC/MS without drying the sample. Figure 9-1 is a diagrammatic sketch of the sample interface, gas chromatographic multidetector analytical system, and data transfer system.

The system interface was developed considering contamination, memory effects, and repeatability. The potential for contamination of the ambient air samples was minimized by the design and selection of materials of construction for the interface. The connecting tubing of the interface was 1/8-inch and 1/16-inch o.d. chromatographic-grade stainless steel. Each routing valve, shutoff valve, and fitting was made of 316 stainless steel. The preconcentration trap assemblies were constructed of chromatographic-grade stainless steel and filled with 60/80 mesh glass beads. Daily baseline checks consisted of sampling and analyzing humidified zero-grade air immediately after calibration. Zero air analyses have shown the interface system to remain essentially contamination free.

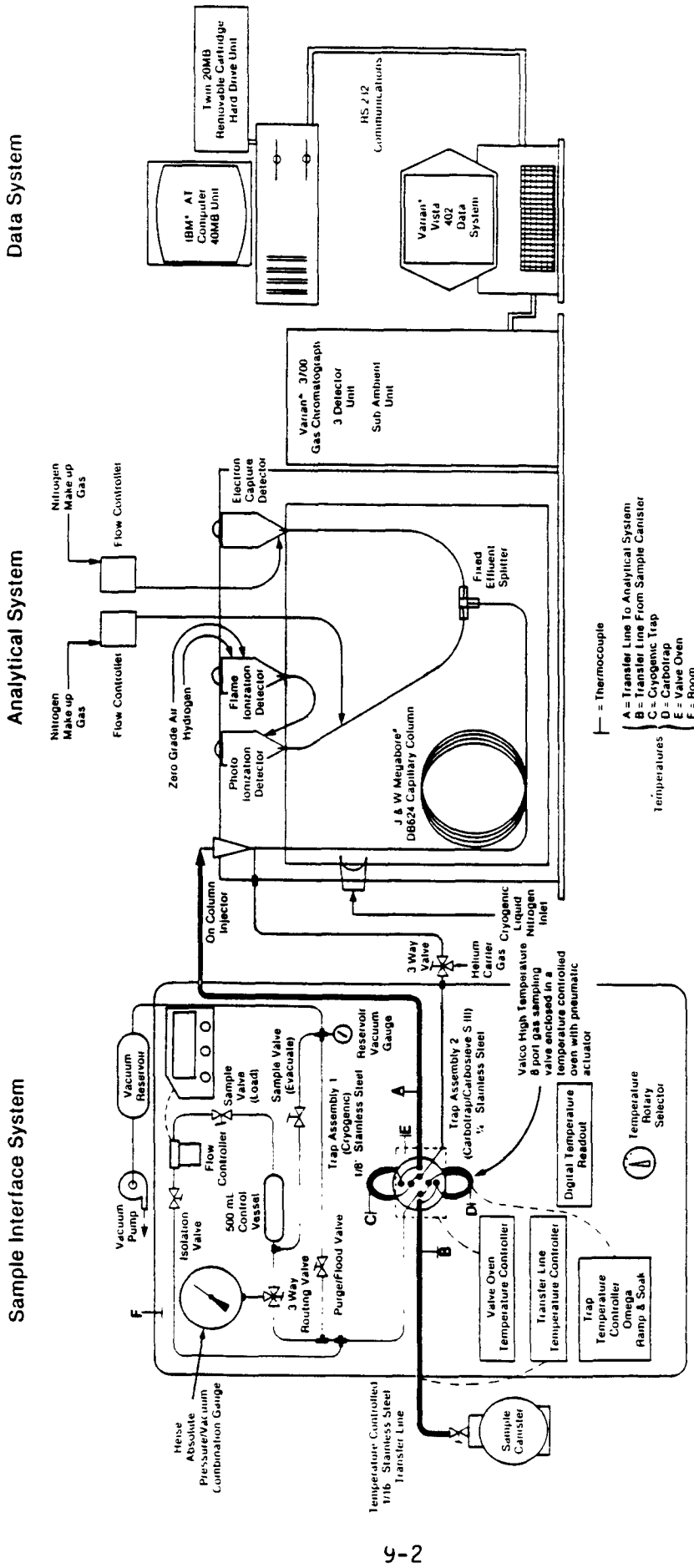


Figure 9-1. Air Toxics Sample Handling, Analytical, and Data Base Management System

The elimination of compound memory from previous samples was achieved by the use of heat-traced temperature controlled components. Each part of the interface which contacted the sample before and after the analytical trap was temperature controlled. The 8-port gas sampling valve was enclosed in an oven and maintained at 160°C with an active temperature controller. Transfer lines were maintained at 160°C with a separate active temperature controller. The analytical sample traps were heated to over 200°C during the thermal desorption cycle to remove any residual compounds.

Repeatability has been accomplished by using a high resolution pressure/vacuum gauge to measure sample loading pressures accurately. Trapping temperature was set at -185°C, and thermal desorption was accomplished by using He carrier gas and a ramp-and-soak temperature controller capable of delivering 25 amperes of electrical current at 120 volts AC to a 1000-watt heater inbedded in a brass block containing the sample trap. Repeated measurements of calibration standards indicated that the samples can be delivered at a constant volume with a precision of less than 6 percent.

A VARIAN<sup>R</sup> 3700 gas chromatograph, configured with a PID, a FID, and an ECD performed the air toxics analyses. A 30-meter DB-624 chromatographic column separated the target compounds having retention times greater than that of methylene chloride. Figure 9-2 shows a diagram of the air toxics multiple detector system. Fused silica was used for the detector-to-detector connections. Helium was used as the carrier gas.

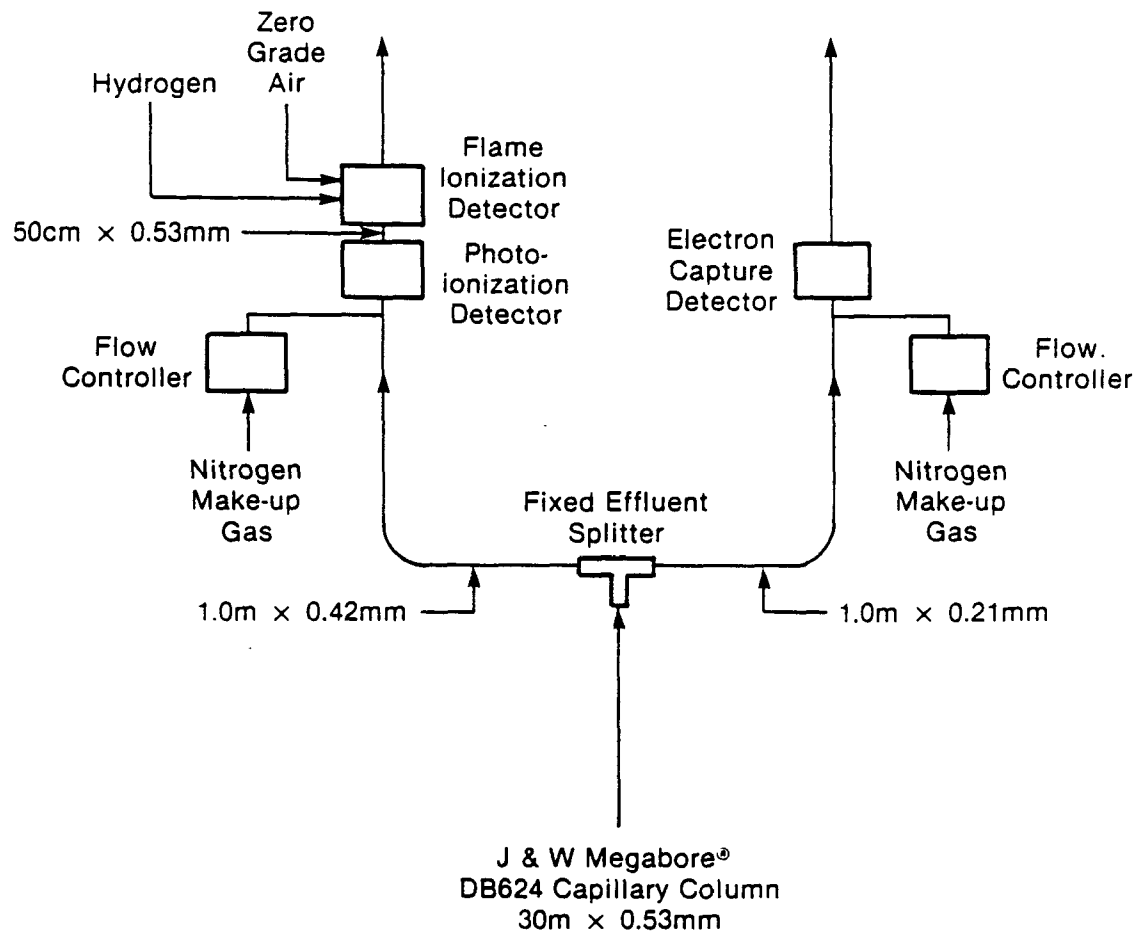


Figure 9-2. Air Toxics Multiple Detector System

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## 10.0 RESULTS

Estimated detection limits for GC/MD and total scan GC/MS analytical systems for target compounds in the Urban Air Toxics Program are given in Table 10-1. Four pairs of compounds coelute on the DB-624 chromatographic column and cannot be separated by the GC/MD system -- benzene/1,2-dichloroethane; n-octane/cis-1,3-dichloropropylene; m-xylene/p-xylene; and styrene/o-xylene. All of these pairs are identified separately on the GC/MS with the exception of m-xylene and p-xylene which have the same mass spectra.

Ten 3-hour ambient air samples were taken for air toxics analyses at each of 15 urban sites. The samples were taken from 6:00 AM to 9:00 AM in evacuated stainless steel canisters and were at 10 to 15 psig at the end of the sampling period. The samples were analyzed first for their NMOC content by the cryogenic preconcentration and flame ionization detection (PDFID) method, and then for air toxics target compounds by the GC/MD method. Two samples from each site were also analyzed by GC/MS as confirmations of the GC/MD analyses.

The appendix contains tables from each site which lists the results from each sample tested. The tables include data for replicate analyses for duplicate analyses, and for GC/MS confirmation on 20% of the samples. Tables A-1 through A-15 list the GC/MD analytical results and Tables A-16 through A-30 give the GC/MS results. Table 10-2 summarizes the air toxics compound identifications for all the 3-hour ambient air samples. Eighteen of the target compounds, or pairs of compounds (for those that coelute) are listed in Table 10-2 by the frequency of identification (number of cases), minimum, maximum, and mean concentrations in parts per billion by volume (ppbv). The most frequently identified compound was toluene, followed by m/p-xylene, styrene/o-xylene, and 1,1,1-trichloroethane. Concentrations ranged from the detection limit to 94.8 ppbv. The data in Table 10-2 do not include the identifications from the replicate analyses.



TABLE 10-1. ESTIMATED DETECTION LIMITS (1987) FOR AIR TOXICS COMPOUNDS

Compound <sup>a</sup>	GC/MD <sup>h</sup> ppbv	Total <sup>i</sup> Scan GC/MS ppbv
Methylene chloride	0.4	0.5
trans-1,2-Dichloroethylene	0.7	0.3
1,1-Dichloroethane	1.3	0.3
Chloroprene	2.6	2.0
Bromochloromethane	1.1	0.4
Chloroform	0.9	0.3
1,1,1-Trichloroethane	0.4	0.3
Carbon tetrachloride	0.6	0.2
Benzene/1,2-Dichloroethane <sup>b</sup>	2.2	0.5
Benzene <sup>c</sup>	0.5	0.2
Trichloroethylene	0.9	0.3
1,2-Dichloropropane	0.6	0.4
Bromodichloromethane	1.4	0.5
trans-1,3-Dichloropropylene	0.6	0.4
Toluene	0.5	0.5
n-Octane/c-1,3-Dichloropropylene <sup>d</sup>	0.4	0.5
cis-1,3-Dichloropropylene <sup>e</sup>	1.0	0.6
1,1,2-Trichloroethane	0.8	0.4
Tetrachloroethylene	0.8	0.4
Dibromochloromethane	1.7	0.2
Chlorobenzene	0.4	0.2
m/p-Xylene <sup>f</sup>	1.2	0.6
Styrene/o-Xylene <sup>g</sup>	0.2	0.3
o-Xylene	0.2	2.7
Bromoform	0.07	0.2
1,1,2,2-Tetrachloroethane	0.03	0.2
m-Dichlorobenzene	0.3	0.2
p-Dichlorobenzene	0.3	0.2
o-Dichlorobenzene	0.4	0.2

<sup>a</sup>The following compounds were not resolved on DB-624 analytical column:  
acetylene, 1,3-butadiene, vinyl chloride, chloroethane, chloromethane,  
propylene, and bromomethane

<sup>b</sup>Benzene and 1,2-dichloroethane coelute on DB-624 column

<sup>c</sup>Quantitated by PID

<sup>d</sup>n-Octane and cis-1,3-dichloropropylene coelute on DB-624 column

<sup>e</sup>Quantitated by ECD

<sup>f</sup>m-Xylene and p-xylene coelute on DB-624 column

<sup>g</sup>Styrene and o-xylene coelute on DB-624 column

<sup>h</sup>The GC/MD interface system samples about 250 mL of air (corrected to  
atmospheric pressure)

<sup>i</sup>The GC/MS interface system samples about 500 mL of air (corrected to  
atmospheric pressure)

TABLE 10-2. COMPOUND IDENTIFICATIONS WITH GC/MD  
FOR 1987 THREE-HOUR AMBIENT AIR SAMPLES

Compound	Cases	Minimum ppbv	Maximum ppbv	Mean ppbv
Methylene chloride	50	1.3	94.8	20.664
trans-1,2-Dichloroethylene	2	1.3	3.2	2.250
1,1-Dichloroethane	3	2.2	4.4	3.100
Chloroprene	1	2.7	2.7	2.700
1,1,1-Trichloroethane	73	0.4	34.9	3.130
Benzene/1,2-Dichloroethane	41	1.3	37.6	5.688
Benzene	55	0.5	18.4	1.867
Trichloroethylene	13	0.9	12.5	3.554
1,2-Dichloropropane	1	11.7	11.7	11.700
Toluene	122	1.3	58.9	7.789
n-Octane/c-1,3-Dichloropropylene	1	2.5	2.5	2.500
cis-1,3-Dichloropropylene	2	1.3	4.0	2.650
Tetrachloroethylene	31	0.5	20.5	4.597
Chlorobenzene	17	0.4	5.1	1.459
m/p-Xylene	107	1.3	76.4	12.488
Styrene/o-Xylene	86	0.2	13.4	1.569
p-Dichlorobenzene	2	0.6	0.8	0.700
o-Dichlorobenzene	1	3.6	3.6	3.600

TABLE 10-3. SUMMARY GC/MD AND GC/MS COMPOUND IDENTIFICATION  
COMPARISONS, 1987 THREE-HOUR AIR TOXICS SAMPLES

GC/MD vs. GC/MS Comparisons	Cases	Percentage
Positive GC/MD - Positive GC/MS	156	17.95
Positive GC/MD - Negative GC/MS	24	2.76
Negative GC/MD - Positive GC/MS	50	5.75
Negative GC/MD - Negative GC/MS	639	73.54
Total	869	
Confirmed Identifications =	91.5%	
Unconfirmed Identifications =	8.5%	

Table 10-3 summarizes the GC/MD and GC/MS compound identification comparisons into four kinds:

- Positive GC/MD - Positive GC/MS;
- Positive GC/MD - Negative GC/MS;
- Negative GC/MD - Positive GC/MS; and
- Negative GC/MD - Negative GC/MS.

There were 156 cases Positive GC/MD - Positive GC/MS comparisons in which a compound identified by the GC/MD system was confirmed by the GC/MS analytical system. The comparisons classified as Negative GC/MD - Negative GC/MS were also considered as positive confirmations. The total positive comparisons expressed in percentage was 91.5. Unconfirmed comparisons included those compounds that were identified by one of the analytical systems, but not by the other. They include those compounds identified by the GC/MD system but not confirmed by the GC/MS (see Table 10-4) and those compounds reported by GC/MS but not identified by the GC/MD system (see Table 10-5). Most of the positive identifications on the GC/MD (see Table 10-4) are several times the GC/MS detection limit. On the other hand, a number of those compounds identified on the GC/MS but not identified by the GC/MD were close to the GC/MS detection limit in concentration.

TABLE 10-4. COMPOUND VALIDATION--POSITIVE GC/MD-NEGATIVE GC/MS IDENTIFICATIONS, 1987 THREE-HOUR AIR TOXICS SAMPLES

Compound	Site	GC/MD ppbv	GC/MS ppbv
Methylene Chloride	BIMA	6.5(H)	<0.5
	FRCA	66.4(M)	<0.5
	FRCA	5.0(M)	<0.5
	SDCA	30.0(M)	<0.5
1,1,1-Trichloroethane	BIMA	2.8(M)	<0.3
	BIMA	1.0(H)	<0.3
	BHAL	2.7(H)	<0.3
	FRCA	0.8(H)	<0.3
	SFCA	1.4(M)	<0.3
Benzene/1,2-Dichloroethane	ATGA	2.4(M)	<0.5
	C1IL	17.4(M)	<0.5
	DEGA	3.1(H)	<0.5
	FRCA	3.6(M)	<0.5
	LIKY	4.4(M)	<0.5
	MNY	3.2(M)	<0.5
	SDCA	4.0(H)	<0.5
	SDCA	3.0(H)	<0.5
Tetrachloroethylene	MNY	11.2(M)	<0.4
Chlorobenzene	BHAL	4.5(H)	<0.2
	BNY	0.4(M)	<0.3
	SDCA	1.3(M)	<0.2
m/p Xylene	BIMA	4.1(H)	<0.6
	C3IL	2.0(M)	<0.6
	DEGA	3.3(H)	<0.6

(H) = High compound identification confidence level.  
(M) = Medium compound identification confidence level.  
(L) = Low compound identification confidence level.

TABLE 10-5. COMPOUND VALIDATION--NEGATIVE GC/MD-POSITIVE GC/MS IDENTIFICATIONS, 1987 THREE-HOUR AIR TOXICS SAMPLES

Compound	Site	GC/MD ppbv	GC/MS ppbv	Compound	Site	GC/MD ppbv	GC/MS ppbv
Methylene Chloride	B2MA	<0.4	2.0	Tetrachloroethylene	B2MA	<0.8	1.2
	BNY	<0.4	2.0		B2MA	<0.8	1.2
	C3IL	<0.4	1.5		C1IL	<0.8	1.2
	C1OH	<0.4	2.0		C1OH	<0.8	1.2
	L1KY	<0.4	2.0		L1KY	<0.3	1.2
	NWNJ	<0.4	3.0				
Chloroform	BNY	<0.9	0.9	Chlorobenzene	C1OH	<0.4	1.0
	BNY	<0.9	0.9	m/p-Xylene	BNY	<1.2	20.0
	MNY	<0.9	0.9	Styrene/o-Xylene	BNY	<0.2	1.0
	NWNJ	<0.9	0.9				
1,1,1-Trichloroethane	ATGA	<0.4	0.9	o-Xylene	ATGA	<0.2	4.0
	BNY	<0.4	0.9		C1IL	<0.2	3.0
	MNY	<0.4	0.9	p-Dichlorobenzene	B2MA	<0.3	0.6
	NWNJ	<0.4	0.9		B2MA	<0.3	0.6
Benzene	ATGA	<0.5	4.0		BNY	<0.3	0.6
	B1MA	<0.5	0.6		BNY	<0.3	0.6
	BNY	<0.5	2.0		BNY	<0.3	0.6
Trichloroethylene	BNY	<0.9	0.9		C1IL	<0.3	0.6
	C1IL	<0.9	1.0		C1IL	<0.3	0.6
	MNY	<0.9	0.9		C1OH	<0.3	1.0
	MNY	<0.9	0.9		C1OH	<0.3	0.6
	NWNJ	<0.9	1.0		L1KY	<0.3	2.0
n-Octane/ cis-1,3-Dichloropropylene	L1KY	<0.4	1.0		L1KY	<0.3	1.0
					NWNJ	<0.3	0.6

## 11.0 QUALITY ASSURANCE

Daily calibrations are made using in-house standards of 37 compounds each at 50 ppbv. Care had to be taken in calculating the concentrations of o-, m-, and p-xylene and toluene because the chloroprene "standard" contained the xylenes as stabilizing agents and toluene as a contaminant. In-house standards were blended in a 33-L SUMMMA<sup>R</sup>-treated canister at 10 ppmv of each of 37 air toxics compounds in zero grade air that had been humidified with HPLC-grade water to approximately 70% relative humidity. Samples from the 33-L canister were used to make up 50 ppbv in-house standards in 6-L stainless steel canisters for use in the daily calibrations of the GC/MD system. After each daily calibration, response factors were calculated for each compound so long as the daily response factors for each compound was within  $\pm 30\%$  of the average calibration factor from previous calibration data.

Reported concentration was quantified using the response of the FID detector. Compound identification was done using the retention time and the ratios of area counts on whichever of the detectors responded to the compounds. Depending on how many, and which detectors responded, the compound identifications were classified as high (H), medium (M), or low (L) confidence level. The uncertainty of the compound identification increased as the confidence-level went from H to M to L.

Precision for the 3-hour air toxics concentrations data involved two analyses of the same ambient sample, one sample from each of 15 sites. For each replicate pair, a mean, a standard deviation (STD), a percent coefficient of variation (%CV), and an absolute percent difference was calculated. The repeated analysis summary statistics are given in the upper part of Table 11-1. The results do not distinguish between compounds identified or sampling sites, but are given for different pairs of confidence levels. The confidence level pairs chosen were H-H, in which there were high levels of confidence in identification for both analyses, H-M, M-L, M-M, M-L, and L-L. An H-M confidence level indicates a high level of confidence level for one analysis (whether the first or second analysis) and a medium level of confidence for the other. An increasing trend is seen in

TABLE 11-1. STATISTICS FOR 1987 THREE-HOUR AMBIENT AIR SAMPLES

Conf. Levels	Cases	Min.		Max.		Mean Average ppbv	Average STD ppbv	% CV		Absolute % Difference		
		Average ppbv	Average ppbv	Average ppbv	Average ppbv			min	max	min	max	
<u>Replicate Analyses</u>												
H-H	25	1.35	36.65	9.296	0.744	0.000	20.985	7.396	0.000	29.667	10.460	
H-M	14	0.30	46.55	5.768	0.439	0.000	47.140	11.690	0.000	66.667	16.531	
H-L	8	0.80	15.45	3.994	0.893	0.000	106.066	32.807	0.000	150.000	46.396	
M-M	15	0.45	35.40	7.545	0.801	0.000	41.595	14.260	3.526	58.824	20.166	
M-L	1	0.50	0.50	0.500	0.000	-	-	-	-	-	-	
L-L	1	9.60	9.60	9.600	0.000	-	-	-	-	-	-	
<u>Duplicate Analyses</u>												
H-H	25	1.35	43.30	8.152	0.594	0.000	30.305	6.093	0.000	42.857	8.617	
H-M	11	0.30	47.60	5.705	0.630	0.000	64.282	16.183	0.000	90.909	22.886	
H-L	4	0.30	15.75	5.163	0.053	0.000	3.822	1.711	0.000	5.405	2.419	
M-M	9	0.45	14.80	3.100	0.519	0.000	26.755	9.646	0.000	37.838	13.642	
M-L	4	0.60	37.70	12.275	1.945	0.000	31.594	16.886	0.000	31.594	23.880	
L-L	0	-	-	-	-	-	-	-	-	-	-	

(H-H) Confidence Level indicates a high level of confidence in compound identification for both analyses.  
(H-M) Confidence Level indicates a high level of confidence in compound identification for one replicate (or duplicate) and a medium level of confidence for the other.  
(H-L) Confidence Level indicates a high level of confidence in compound identification for one replicate (or duplicate) and a low level of confidence for the other.  
(M-M) Confidence Level indicates a medium level of confidence in compound identification for both analyses.  
(M-L) Confidence Level indicates a medium level of confidence in compound identification for one replicate (or duplicate) and a low level of confidence for the other.  
(L-L) Confidence Level indicates a low level of confidence in compound identification for both analyses.

%CV and absolute % difference when the confidence level moves from H-H (7.4% CV, 10.5 absolute % difference) to H-M (11.7% CV, 16.5 absolute % difference) H-H precision levels (7.4% CV, 10.5 absolute % difference), given about with precisions for the M-M confidence level pair (14.3% CV, 20.2 absolute % difference) supports the hypothesis that the precision increases with decreasing confidence level. For the 3-hour air toxics samples the analytical precision appears to be inversely proportional to the confidence level for compound identification. As the confidence level decreases (from H to M to L), the precision appears to increase.

The lower part of Table 11-1 summarizes statistics for duplicate 3-hour ambient air samples. Sampling and analysis precisions are given in terms of % CV and Absolute % Differences for the confidence-level pairs shown. As seen in the replicate pairs discussed above, an inverse relationship is seen between confidence level pairs and precision, e.g. H-H (6.1% CV, 8.6 absolute % difference) and M-M (9.6% CV, 13.6 absolute % difference). The same relationship obtains between H-H (6.1% CV, 8.6 absolute % difference) and H-M (16.2% CV, 22.9 absolute % difference). However, the precisions involving the low compound identification level, L (H-L, and M-L) do not appear to follow the same pattern. On the other hand, the number of cases for the H-L and M-L comparisons is only four each; and therefore, it is felt that these data may not be representative of a possible trend. Additional data for these cases would be necessary to confirm or deny the hypothesis that the precision is inversely proportional to the confidence level (or directly proportional to the probability of making an error in compound identification).

Because the duplicate precision includes both sampling and analysis variability (expressed as precision) and the replicate precision involves only the analytical error, one would expect the duplicate precision to be larger than the replicate precision. This relationship holds for H-M and M-M comparisons but does not hold for H-H and H-L comparisons. These results will be monitored as more 3-hour data become available to be able to distinguish between random behavior and actual differences.



## APPENDIX

TABLE A-1. MULTIPLE DETECTOR SPECIATED THREE-HOUR DATA SUMMARY FOR ATLANTA, GA (ATGA)

Sample Date Sample ID	Concentration, ppbv				
	08/13/87	08/13/87	08/13/87	08/24/87	08/24/87
	2672R	2672D	2683D	2940	2873
Compound, a	GC/MD	GC/MD	GC/MD	GC/MD	GC/MD
Methylene chloride	<0.4b	<0.4b	<0.4b	<0.4b	4.1(H)
trans-1,2-Dichloroethylene	<0.7b	<0.7b	<0.7b	<0.7b	<0.7b
1,1-Dichloroethane	<1.3b	<1.3b	<1.3b	<1.3b	<1.3b
Chloroprene	<2.6b	<2.6b	<2.6b	<2.6b	<2.6b
Bromochloromethane	<1.1b	<1.1b	<1.1b	<1.1b	<1.1b
Chloroform	<0.9b	<0.9b	<0.9b	<0.9b	<0.9b
1,1,1-Trichloroethane	<0.4b	<0.4b	<0.4b	<0.4b	0.4(H)
Carbon tetrachloride	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Benzene/1,2-Dichloroethane	<2.2b,c	<2.2b,c	<2.2b,c	<2.2b,c	<2.2b,c
Benzene	<0.5b,g	<0.5b,g	<0.5b,g	<0.5b,g	<0.5b,g
Trichloroethylene	<0.9b	<0.9b	<0.9b	3.4(H)	<0.9b
1,2-Dichloropropane	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Bromodichloromethane	<1.4b	<1.4b	<1.4b	<1.4b	<1.4b
trans-1,3-Dichloropropylene	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Toluene	<0.5b	<0.5b	<0.5b	1.0(H)	1.1(M)
n-Octane/c-1/3-Dichloropropylene	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d
cis-1,3-Dichloropropylene	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h
1,1,2-Trichloroethane	<0.8b	<0.8b	<0.8b	<0.8b	<0.8b
Tetrachloroethylene	<0.8b	<0.8b	<0.8b	<0.8b	<0.8b
Dibromochloromethane	<1.7b	<1.7b	<1.7b	<1.7b	<1.7b
Chlorobenzene	<0.4b	<0.4b	<0.4b	<0.4b	<0.4b
m/p-Xylene	<1.2b,e	<1.2b,e	<1.2b,e	2.9(H)e	1.5(H)e
Styrene	<0.2b,f	<0.2b,f	<0.2b,f	0.3(H)f	<0.2b,f
o-Xylene	<0.2b,f	<0.2b,f	<0.2b,f	<0.2b,f	<0.2b,f
Bromoform	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h
1,1,2,2-Tetrachloroethane	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h
m-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
p-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
o-Dichlorobenzene	<0.4b	<0.4b	<0.4b	<0.4b	<0.4b

- a The following compounds were not resolved on DB-624 analytical column:  
acetylene, 1,3-butadiene, vinyl chloride, chloromethane, propylene, and bromomethane
- b Compound not detected at estimated method detection limit
- c Benzene and 1,2-Dichloroethane coelute on DB-624 analytical column
- d n-Octane and cis-1,3-Dichloropropylene coelute on DB-624 analytical column
- e m-Xylene and p-Xylene coelute on DB-624 analytical column
- f Styrene and o-Xylene coelute on DB-624 analytical column
- g Quantitated on PID
- h Quantitated on ECD
- (H) High confidence level      (M) Medium confidence level      (L) Low confidence level
- D Duplicate sample
- R Replicate analysis

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(Continued)

TABLE A-1. MULTIPLE DETECTOR SPECIATED THREE-HOUR DATA SUMMARY FOR ATLANTA, GA (ATGA) (Continued)

Sample Date Sample ID	Concentration, ppbv				
	08/28/87 2976	09/02/87 3136	09/03/87 3152	09/09/87 3264	09/16/87 3416
Compound, a	GC/MD	GC/MD	GC/MD	GC/MD	GC/MD
Methylene chloride	<0.4b	32.7(M)	27.4(H)	<0.4b	19.4(H)
trans-1,2-Dichloroethylene	<0.7b	<0.7b	<0.7b	<0.7b	<0.7b
1,1-Dichloroethane	<1.3b	<1.3b	<1.3b	<1.3b	<1.3b
Chloroprene	<2.6b	<2.6b	<2.6b	<2.6b	<2.6b
Bromochloromethane	<1.1b	<1.1b	<1.1b	<1.1b	<1.1b
Chloroform	<0.9b	<0.9b	<0.9b	<0.9b	<0.9b
1,1,1-Trichloroethane	<0.4b	<0.4b	3.0(H)	<0.4b	<0.4b
Carbon tetrachloride	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Benzene/1,2-Dichloroethane	<2.2b,c	<2.2b,c	3.3(H)c	<2.2b,c	<2.2b,c
Benzene	0.5(H)g	<0.5b,g	<0.5b,g	<0.5b,g	0.6(M)g
Trichloroethylene	<0.9b	11.2(M)	12.5(H)	<0.9b	<0.9b
1,2-Dichloropropane	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Bromodichloromethane	<1.4b	<1.4b	<1.4b	<1.4b	<1.4b
trans-1,3-Dichloropropylene	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Toluene	3.0(H)	13.9(M)	11.6(H)	3.1(H)	4.4(H)
n-Octane/c-1/3-Dichloropropylene	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d
cis-1,3-Dichloropropylene	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h
1,1,2-Trichloroethane	<0.8b	<0.8b	<0.8b	<0.8b	<0.8b
Tetrachloroethylene	<0.8b	<0.8b	<0.8b	<0.8b	<0.8b
Dibromochloromethane	<1.7b	<1.7b	<1.7b	<1.7b	<1.7b
Chlorobenzene	<0.4b	<0.4b	<0.4b	<0.4b	<0.4b
m/p-Xylene	5.0(H)e	29.9(M)e	19.2(H)e	5.1(H)e	7.7(H)e
Styrene	0.6(M)f	<0.2b,f	1.8(H)f	0.4(H)f	<0.2b,f
o-Xylene	<0.2b,f	<0.2b,f	f	<0.2b,f	<0.2b,f
Bromoform	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h
1,1,2,2-Tetrachloroethane	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h
m-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
p-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
o-Dichlorobenzene	<0.4b	<0.4b	<0.4b	<0.4b	<0.4b

- a The following compounds were not resolved on DB-624 analytical column:  
acetylene, 1,3-butadiene, vinyl chloride, chloromethane, propylene, and bromomethane
- b Compound not detected at estimated method detection limit
- c Benzene and 1,2-Dichloroethane coelute on DB-624 analytical column; quantitated separately by GC/MS
- d n-Octane and cis-1,3-Dichloropropylene coelute on DB-624 analytical column
- e m-Xylene and p-Xylene coelute on DB-624 analytical column
- f Styrene and o-Xylene coelute on DB-624 analytical column
- g Quantitated on PID
- h Quantitated on ECD
- (H) High confidence level      (M) Medium confidence level      (L) Low confidence level

TABLE A-1. MULTIPLE DETECTOR SPECIATED THREE-HOUR DATA SUMMARY FOR ATLANTA, GA (ATGA) (Continued)

Sample Date Sample ID	Concentration, ppbv	
	09/21/87	09/29/87
	3531	3735
Compound, a	GC/MD	GC/MD
Methylene chloride	24.1(M)	<0.4b
trans-1,2-Dichloroethylene	<0.7b	<0.7b
1,1-Dichloroethane	<1.3b	<1.3b
Chloroprene	<2.6b	<2.6b
Bromochloromethane	<1.1b	<1.1b
Chloroform	<0.9b	<0.9b
1,1,1-Trichloroethane	1.0(H)	<0.4b
Carbon tetrachloride	<0.6b	<0.6b
Benzene/1,2-Dichloroethane	2.4(M)c	<2.2b,c
Benzene	<0.5b,g	<0.5b,g
Trichloroethylene	<0.9b	8.1(H)
1,2-Dichloropropane	<0.6b	<0.6b
Bromodichloromethane	<1.4b	<1.4b
trans-1,3-Dichloropropylene	<0.6b	<0.6b
Toluene	6.1(H)	1.5(H)
n-Octane/c-1/3-Dichloropropylene	<0.4b,d	<0.4b,d
cis-1,3-Dichloropropylene	<1.0b,h	<1.0b,h
1,1,2-Trichloroethane	<0.8b	<0.8b
Tetrachloroethylene	<0.8b	<0.8b
Dibromochloromethane	<1.7b	<1.7b
Chlorobenzene	<0.4b	<0.4b
m/p-Xylene	10.6(H)e	8.5(H)e
Styrene	1.0(M)f	<0.2b,f
o-Xylene	f	<0.2b,f
Bromoform	<0.07b,h	<0.07b,h
1,1,2,2-Tetrachloroethane	<0.03b,h	<0.03b,h
m-Dichlorobenzene	<0.3b	<0.3b
p-Dichlorobenzene	<0.3b	<0.3b
o-Dichlorobenzene	<0.4b	<0.4b

- a The following compounds were not resolved on DB-624 analytical column:  
acetylene, 1,3-butadiene, vinyl chloride, chloromethane, propylene, and bromomethane
- b Compound not detected at estimated method detection limit
- c Benzene and 1,2-Dichloroethane coelute on DB-624 analytical column; quantitated separately by GC/MS
- d n-Octane and cis-1,3-Dichloropropylene coelute on DB-624 analytical column
- e m-Xylene and p-Xylene coelute on DB-624 analytical column
- f Styrene and o-Xylene coelute on DB-624 analytical column
- g Quantitated on PID
- h Quantitated on ECD
- (H) High confidence level                      (M) Medium confidence level

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TABLE A-2. MULTIPLE DETECTOR SPECIATED THREE-HOUR DATA SUMMARY FOR BOSTON, MA (B1MA)

Sample Date Sample ID	Concentration, ppbv				
	08/18/87 2726	08/21/87 2821	08/24/87 2897	08/26/87 2907D	08/26/87 2908D
Compound, a	GC/MD	GC/MD	GC/MD	GC/MD	GC/MD
Methylene chloride	<0.4b	5.3(M)	<0.4b	11.5(M)	<0.4b
trans-1,2-Dichloroethylene	<0.7b	<0.7b	<0.7b	<0.7b	<0.7b
1,1-Dichloroethane	<1.3b	<1.3b	<1.3b	<1.3b	<1.3b
Chloroprene	<2.6b	<2.6b	<2.6b	<2.6b	<2.6b
Bromochloromethane	<1.1b	<1.1b	<1.1b	<1.1b	<1.1b
Chloroform	<0.9b	<0.9b	<0.9b	<0.9b	<0.9b
1,1,1-Trichloroethane	3.0(H)	2.2(H)	0.9(M)	1.2(M)	1.2(H)
Carbon tetrachloride	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Benzene/1,2-Dichloroethane	<2.2b,c	<2.2b,c	<2.2b,c	<2.2b,c	<2.2b,c
Benzene	<0.5b,g	<0.5b,g	<0.5b,g	<0.5b,g	<0.5b,g
Trichloroethylene	<0.9b	<0.9b	<0.9b	<0.9b	<0.9b
1,2-Dichloropropane	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Bromodichloromethane	<1.4b	<1.4b	<1.4b	<1.4b	<1.4b
trans-1,3-Dichloropropylene	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Toluene	<0.5b	1.8(H)	1.1(H)	3.0(H)	2.8(H)
n-Octane/c-1/3-Dichloropropylene	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d
cis-1,3-Dichloropropylene	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h
1,1,2-Trichloroethane	<0.8b	<0.8b	<0.8b	<0.8b	<0.8b
Tetrachloroethylene	<0.8b	<0.8b	<0.8b	1.4(L)	1.4(M)
Dibromochloromethane	<1.7b	<1.7b	<1.7b	<1.7b	<1.7b
Chlorobenzene	<0.4b	<0.4b	<0.4b	<0.4b	<0.4b
m/p-Xylene	<1.2b,e	2.3(H)e	2.7(M)e	4.8(H)e	5.1(H)
Styrene	<0.2b,f	0.3(H)f	<0.2b,f	0.5(M)f	0.7(L)f
o-Xylene	<0.2b,f	f	<0.2b,f	f	f
Bromoform	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h
1,1,2,2-Tetrachloroethane	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h
m-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
p-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
o-Dichlorobenzene	<0.4b	<0.4b	<0.4b	<0.4b	<0.4b

- a The following compounds were not resolved on DB-624 analytical column:  
acetylene, 1,3-butadiene, vinyl chloride, chloroethane, propylene, and bromomethane
- b Compound not detected at estimated method detection limit
- c Benzene and 1,2-Dichloroethane coelute on DB-624 analytical column
- d n-Octane and cis-1,3-Dichloropropylene coelute on DB-624 analytical column
- e m-Xylene and p-Xylene coelute on DB-624 analytical column
- f Styrene and o-Xylene coelute on DB-624 analytical column
- g Quantitated on PID
- h Quantitated on ECD
- (H) High confidence level      (M) Medium confidence level      (L) Low confidence level
- D Duplicate sample

TABLE A-2. MULTIPLE DETECTOR SPECIATED THREE-HOUR DATA SUMMARY FOR BOSTON, MA (B1MA) (Continued)

Sample Date Sample ID	Concentration, ppbv				
	08/26/87	09/02/87	09/08/87	09/14/87	09/17/87
Compound, a	GC/MD	GC/MD	GC/MD	GC/MD	GC/MD
Methylene chloride	<0.4b	27.2(M)	20.0(H)	6.5(H)	<0.4b
trans-1,2-Dichloroethylene	<0.7b	<0.7b	<0.7b	<0.7b	<0.7b
1,1-Dichloroethane	<1.3b	<1.3b	<1.3b	<1.3b	<1.3b
Chloroprene	<2.6b	<2.6b	<2.6b	<2.6b	<2.6b
Bromochloromethane	<1.1b	<1.1b	<1.1b	<1.1b	<1.1b
Chloroform	<0.9b	<0.9b	<0.9b	<0.9b	<0.9b
1,1,1-Trichloroethane	1.2(L)	<0.4b	0.6(M)	2.8(M)	1.0(H)
Carbon tetrachloride	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Benzene/1,2-Dichloroethane	<2.2b,c	<2.2b,c	<2.2b,c	<2.2b,c	<2.2b,c
Benzene	<0.5b,g	<0.5b,g	0.6(M)g	0.5(H)g	<0.5b,g
Trichloroethylene	<0.9b	<0.9b	<0.9b	<0.9b	<0.9b
1,2-Dichloropropane	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Bromodichloromethane	<1.4b	<1.4b	<1.4b	<1.4b	<1.4b
trans-1,3-Dichloropropylene	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Toluene	3.5(H)	4.8(H)	5.8(H)	4.2(H)	2.8(H)
n-Octane/c-1/3-Dichloropropylene	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d
cis-1,3-Dichloropropylene	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h
1,1,2-Trichloroethane	<0.8b	<0.8b	<0.8b	<0.8b	<0.8b
Tetrachloroethylene	1.7(M)	<0.8b	<0.8b	0.8(L)	<0.8b
Dibromochloromethane	<1.7b	<1.7b	<1.7b	<1.7b	<1.7b
Chlorobenzene	<0.4b	<0.4b	<0.4b	<0.4b	<0.4b
m/p-Xylene	5.0(H)b	5.4(H)e	7.7(H)e	6.7(H)e	4.1(H)e
Styrene	0.4(M)f	0.6(M)f	0.7(M)f	0.9(L)f	0.5(M)f
o-Xylene	f	f	f	f	f
Bromoform	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h
1,1,2,2-Tetrachloroethane	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h
m-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
p-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
o-Dichlorobenzene	<0.4b	<0.4b	<0.4b	<0.4b	<0.4b

a The following compounds were not resolved on DB-624 analytical column:

acetylene, 1,3-butadiene, vinyl chloride, chloroethane, propylene, and bromomethane

b Compound not detected at estimated method detection limit

c Benzene and 1,2-Dichloroethane coelute on DB-624 analytical column; quantitated separately by GC/MS

d n-Octane and cis-1,3-Dichloropropylene coelute on DB-624 analytical column

e m-Xylene and p-Xylene coelute on DB-624 analytical column

f Styrene and o-Xylene coelute on DB-624 analytical column

g Quantitated on PID

h Quantitated on ECD

(H) High confidence level

(M) Medium confidence level

(L) Low confidence level

R Replicate Analysis

WHM/004

TABLE A-3. MULTIPLE DETECTOR SPECIATED THREE-HOUR DATA SUMMARY FOR BOSTON, MA (B2MA)

Sample Date Sample ID	Concentration, ppbv				
	08/17/87 2727	08/20/87 2778	08/24/87 2886	09/02/87 3112	09/08/87 3222
Compound, a	GC/MD	GC/MD	GC/MD	GC/MD	GC/MD
Methylene chloride	<0.4b	<0.4b	<0.4b	<0.4b	15.1(H)
trans-1,2-Dichloroethylene	<0.7b	<0.7b	1.3(M)	<0.7b	<0.7b
1,1-Dichloroethane	<1.3b	<1.3b	<1.3b	<1.3b	<1.3b
Chloroprene	<2.6b	<2.6b	<2.6b	<2.6b	<2.6b
Bromochloromethane	<1.1b	<1.1b	<1.1b	<1.1b	<1.1b
Chloroform	<0.9b	<0.9b	<0.9b	<0.9b	<0.9b
1,1,1-Trichloroethane	<0.4b	<0.4b	0.7(M)	0.9(H)	1.4(M)
Carbon tetrachloride	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Benzene/1,2-Dichloroethane	<2.2b,c	<2.2b,c	<2.2b,c	<2.2b,c	<2.2b,c
Benzene	<0.5b,g	<0.5b,g	<0.5b,g	1.2(M)g	0.7(M)g
Trichloroethylene	<0.9b	<0.9b	<0.9b	<0.9b	1.5(L)
1,2-Dichloropropane	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Bromodichloromethane	<1.4b	<1.4b	<1.4b	<1.4b	<1.4b
trans-1,3-Dichloropropylene	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Toluene	<0.5b	3.8(H)	1.8(H)	9.1(H)	5.6(H)
n-Octane/c-1/3-Dichloropropylene	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d
cis-1,3-Dichloropropylene	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h
1,1,2-Trichloroethane	<0.8b	<0.8b	<0.8b	<0.8b	<0.8b
Tetrachloroethylene	<0.8b	<0.8b	<0.8b	<0.8b	<0.8b
Dibromochloromethane	<1.7b	<1.7b	<1.7b	<1.7b	<1.7b
Chlorobenzene	<0.4b	<0.4b	<0.4b	<0.4b	<0.4b
m/p-Xylene	<1.2b,e	<1.2b,e	2.4(H)e	7.0(H)e	8.8(H)e
Styrene	<0.2b,f	<0.2b,f	<0.2b,f	0.6(H)f	0.7(H)f
o-Xylene	<0.2b,f	<0.2b,f	<0.2b,f	f	f
Bromoform	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h
1,1,2,2-Tetrachloroethane	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h
m-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
p-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
o-Dichlorobenzene	<0.4b	<0.4b	<0.4b	<0.4b	<0.4b

- a Compound not resolved on DB-624 analytical column
- b Compound not detected at estimated method detection limit
- c Benzene and 1,2-Dichloroethane coelute on DB-624 analytical column
- d n-Octane and cis-1,3-Dichloropropylene coelute on DB-624 analytical column
- e m-Xylene and p-Xylene coelute on DB-624 analytical column
- f Styrene and o-Xylene coelute on DB-624 analytical column
- g Quantitated on PID
- h Quantitated on ECD
- (H) High confidence level      (M) Medium confidence level      (L) Low confidence level

TABLE A-3. MULTIPLE DETECTOR SPECIATED THREE-HOUR DATA SUMMARY FOR BOSTON, MA (B2MA) (Continued)

Sample Date Sample ID	Concentration, ppbv				
	09/14/87 3364	09/17/87 3486	09/30/87 3801R	09/30/87 3801D	09/30/87 3802D
Compound, a	GC/MD	GC/MD	GC/MD	GC/MD	GC/MD
Methylene chloride	<0.4b	<0.4b	<0.4b	<0.4b	<0.4b
trans-1,2-Dichloroethylene	<0.7b	<0.7b	<0.7b	<0.7b	<0.7b
1,1-Dichloroethane	<1.3b	<1.3b	<1.3b	<1.3b	<1.3b
Chloroprene	<2.6b	<2.6b	<2.6b	<2.6b	<2.6b
Bromochloromethane	<1.1b	<1.1b	<1.1b	<1.1b	<1.1b
Chloroform	<0.9b	<0.9b	<0.9b	<0.9b	<0.9b
1,1,1-Trichloroethane	<0.4b	<0.4b	<0.4b	<0.4b	<0.4b
Carbon tetrachloride	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Benzene/1,2-Dichloroethane	<2.2b,c	<2.2b,c	<2.2b,c	<2.2b,c	<2.2b,c
Benzene	<0.5b,g	<0.5b,g	<0.5b,g	<0.5b,g	<0.5b,g
Trichloroethylene	<0.9b	<0.9b	<0.9b	<0.9b	<0.9b
1,2-Dichloropropane	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Bromodichloromethane	<1.4b	<1.4b	<1.4b	<1.4b	<1.4b
trans-1,3-Dichloropropylene	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Toluene	4.3(M)	7.9(M)	2.7(H)	2.6(H)	2.7(H)
n-Octane/c-1/3-Dichloropropylene	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d
cis-1,3-Dichloropropylene	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h
1,1,2-Trichloroethane	<0.8b	<0.8b	<0.8b	<0.8b	<0.8b
Tetrachloroethylene	<0.8b	<0.8b	<0.8b	<0.8b	<0.8b
Dibromochloromethane	<1.7b	<1.7b	<1.7b	<1.7b	<1.7b
Chlorobenzene	<0.4b	<0.4b	<0.4b	<0.4b	<0.4b
m/p-Xylene	6.8(H)e	11.6(M)e	3.6(H)e	4.8(H)e	3.5(H)e
Styrene	0.9(M)f	<0.2b,f	0.3(H)f	0.7(M)f	0.3(H)f
o-Xylene	f	<0.2b,f	f	f	f
Bromoform	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h
1,1,2,2-Tetrachloroethane	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h
m-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
p-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
o-Dichlorobenzene	<0.4b	<0.4b	<0.4b	<0.4b	<0.4b

a Compound not resolved on DB-624 analytical column

b Compound not detected at estimated method detection limit

c Benzene and 1,2-Dichloroethane coelute on DB-624 analytical column; quantitated separately by GC/MS

d n-Octane and cis-1,3-Dichloropropylene coelute on DB-624 analytical column

e m-Xylene and p-Xylene coelute on DB-624 analytical column

f Styrene and o-Xylene coelute on DB-624 analytical column

g Quantitated on PID

h Quantitated on ECD

(H) High confidence level (M) Medium confidence level (L) Low confidence level

D Duplicate sample

R Replicate analysis

WHM/004

TABLE A-4. MULTIPLE DETECTOR SPECIATED THREE-HOUR DATA SUMMARY FOR BIRMINGHAM, AL (BHAL)

Sample Date Sample ID	Concentration, ppbv				
	08/13/87 2645	08/25/87 2955	08/31/87 3082	09/04/87 3220D	09/04/87 3237D
Compound, a	GC/MD	GC/MD	GC/MD	GC/MD	GC/MD
Methylene chloride	<0.4b	27.2(M)	33.3(M)	<0.4b	<0.4b
trans-1,2-Dichloroethylene	<0.7b	<0.7b	<0.7b	<0.7b	<0.7b
1,1-Dichloroethane	<1.3b	<1.3b	<1.3b	2.2(L)	<1.3b
Chloroprene	<2.6b	<2.6b	<2.6b	<2.6b	<2.6b
Bromochloromethane	<1.1b	<1.1b	<1.1b	<1.1b	<1.1b
Chloroform	<0.9b	<0.9b	<0.9b	<0.9b	<0.9b
1,1,1-Trichloroethane	<0.4b	2.2(M)	<0.4b	0.7(M)	0.6(M)
Carbon tetrachloride	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Benzene/1,2-Dichloroethane	<2.2b,c	6.5(H)c	5.6(H)c	<2.2b,c	<2.2b,c
Benzene	<0.5b,g	2.6(H)g	2.1(H)g	<0.5b,g	<0.5b,s
Trichloroethylene	<0.9b	<0.9b	<0.9b	<0.9b	<0.9b
1,2-Dichloropropane	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Bromodichloromethane	<1.4b	<1.4b	<1.4b	<1.4b	<1.4b
trans-1,3-Dichloropropylene	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Toluene	<0.5b	7.4(H)	7.9(H)	4.4(H)	4.2(H)
n-Octane/c-1/3-Dichloropropylene	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d
cis-1,3-Dichloropropylene	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h
1,1,2-Trichloroethane	<0.8b	<0.8b	<0.8b	<0.8b	<0.8b
Tetrachloroethylene	<0.8b	1.8(H)	<0.8b	<0.8b	<0.8b
Dibromochloromethane	<1.7b	<1.7b	<1.7b	<1.7b	<1.7b
Chlorobenzene	<0.4b	<0.4b	<0.4b	<0.4b	<0.4b
m/p-Xylene	<1.2b,e	13.4(H)e	12.6(H)e	7.7(H)e	8.7(H)e
Styrene	<0.2b,f	1.7(M)f	1.2(H)f	0.7(H)f	0.9(M)f
o-Xylene	<0.2b,f	f	<0.2b,f	<0.2b,f	f
Bromoform	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h
1,1,2,2-Tetrachloroethane	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h
m-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
p-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
o-Dichlorobenzene	<0.4b	<0.4b	<0.4b	<0.4b	<0.4b

- a Compound not resolved on DB-624 analytical column  
b Compound not detected at estimated method detection limit  
c Benzene and 1,2-Dichloroethane coelute on DB-624 analytical column  
d n-Octane and cis-1,3-Dichloropropylene coelute on DB-624 analytical column  
e m-Xylene and p-Xylene coelute on DB-624 analytical column  
f Styrene and o-Xylene coelute on DB-624 analytical column  
g Quantitated on PID  
h Quantitated on ECD  
(H) High confidence level (M) Medium confidence level (L) Low confidence level  
D Duplicate sample  
R Replicate analysis



TABLE A-4. MULTIPLE DETECTOR SPECIATED THREE-HOUR DATA SUMMARY FOR BIRMINGHAM, AL (BHAL) (Continued)

Sample Date Sample ID	Concentration, ppbv				
	09/04/87 3237R	09/10/87 3324	09/11/87 3390	09/21/87 3549	09/22/87 3591
Compound, a	GC/MD	GC/MD	GC/MD	GC/MD	GC/MD
Methylene chloride	<0.4b	<0.4b	<0.4b	<0.4b	<0.4b
trans-1,2-Dichloroethylene	<0.7b	<0.7b	<0.7b	<0.7b	<0.7b
1,1-Dichloroethane	2.7(L)	12.4(L)	<1.3b	<1.3b	<1.3b
Chloroprene	<2.6b	<2.6b	<2.6b	<2.6b	<2.6b
Bromochloromethane	<1.1b	<1.1b	<1.1b	<1.1b	<1.1b
Chloroform	<0.9b	<0.9b	<0.9b	<0.9b	<0.9b
1,1,1-Trichloroethane	0.6(H)	2.7(H)	<0.4b	4.4(H)	<0.4b
Carbon tetrachloride	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Benzene/1,2-Dichloroethane	<2.2b,c	29.2(H)c	<2.2b,c	8.6(M)c	37.6(H)c
Benzene	<0.5b,g	11.0(H)g	0.7(M)g	2.7(M)g	18.4(H)g
Trichloroethylene	<0.9b	<0.9b	<0.9b	<0.9b	<0.9b
1,2-Dichloropropane	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Bromodichloromethane	<1.4b	<1.4b	<1.4b	<1.4b	<1.4b
trans-1,3-Dichloropropylene	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Toluene	4.1(H)	27.6(H)	5.0(H)	25.1(H)	25.1(H)
n-Octane/c-1/3-Dichloropropylene	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d
cis-1,3-Dichloropropylene	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h
1,1,2-Trichloroethane	<0.8b	<0.8b	<0.8b	<0.8b	<0.8b
Tetrachloroethylene	<0.8b	<0.8b	<0.8b	<0.8b	<0.8b
Dibromochloromethane	<1.7b	<1.7b	<1.7b	<1.7b	<1.7b
Chlorobenzene	<0.4b	4.5(H)	<0.4b	0.7(H)	<0.4b
m/p-Xylene	7.7(H)e	44.1(H)e	9.0(H)e	31.1(H)e	37.8(H)e
Styrene	0.7(M)f	4.6(H)f	0.9(M)f	<0.2b,f	5.6(H)f
o-Xylene	<0.2b,f	f	f	<0.2b,f	f
Bromoform	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h
1,1,2,2-Tetrachloroethane	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h
m-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
p-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
o-Dichlorobenzene	<0.4b	<0.4b	<0.4b	<0.4b	<0.4b

- a Compound not resolved on DB-624 analytical column  
b Compound not detected at estimated method detection limit  
c Benzene and 1,2-Dichloroethane coelute on DB-624 analytical column; quantitated separately by GC/MS  
d n-Octane and cis-1,3-Dichloropropylene coelute on DB-624 analytical column  
e m-Xylene and p-Xylene coelute on DB-624 analytical column  
f Styrene and o-Xylene coelute on DB-624 analytical column  
g Quantitated on PID  
h Quantitated on ECD  
(H) High confidence level (M) Medium confidence level (L) Low confidence level

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TABLE A-5. MULTIPLE DETECTOR SPECIATED THREE-HOUR DATA SUMMARY FOR NEW YORK, NY BRONX (BNY)

Sample Date Sample ID	Concentration, ppbv				
	08/18/87	08/21/87	08/24/87	08/24/87	08/24/87
	2761	2817	2905R	2905D	2906D
Compound, a	GC/MD	GC/MD	GC/MD	GC/MD	GC/MD
Methylene chloride	<0.4b	<0.4b	2.7(M)	1.7(M)	2.3(H)
trans-1,2-Dichloroethylene	<0.7b	<0.7b	<0.7b	<0.7b	<0.7b
1,1-Dichloroethane	<1.3b	<1.3b	<1.3b	<1.3b	<1.3b
Chloroprene	<2.6b	<2.6b	<2.6b	<2.6b	<2.6b
Bromochloromethane	<1.1b	<1.1b	<1.1b	<1.1b	<1.1b
Chloroform	<0.9b	<0.9b	<0.9b	<0.9b	<0.9b
1,1,1-Trichloroethane	<0.4b	<0.4b	<0.4b	<0.4b	<0.4b
Carbon tetrachloride	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Benzene/1,2-Dichloroethane	<2.2b,c	<2.2b,c	<2.2b,c	<2.2b,c	<2.2b,c
Benzene	<0.5b,g	<0.5b,g	<0.5b,g	<0.5b,g	<0.5b,g
Trichloroethylene	<0.9b	<0.9b	<0.9b	<0.9b	<0.9b
1,2-Dichloropropane	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Bromodichloromethane	<1.4b	<1.4b	<1.4b	<1.4b	<1.4b
trans-1,3-Dichloropropylene	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Toluene	<0.5b	<0.5b	3.0(H)	3.0(H)	2.7(H)
n-Octane/c-1/3-Dichloropropylene	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d
cis-1,3-Dichloropropylene	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h
1,1,2-Trichloroethane	<0.8b	<0.8b	<0.8b	<0.8b	<0.8b
Tetrachloroethylene	<0.8b	<0.8b	<0.8b	<0.8b	<0.8b
Dibromochloromethane	<1.7b	<1.7b	<1.7b	<1.7b	<1.7b
Chlorobenzene	<0.4b	<0.4b	<0.4b	<0.4b	<0.4b
m/p-Xylene	<1.2b,e	<1.2b,e	2.8(H)e	<1.2b,e	2.7(H)e
Styrene	<0.2b,f	<0.2b,f	0.2(H)f	<0.2b,f	0.3(H)f
o-Xylene	<0.2b,f	<0.2b,f	f	<0.2b,f	f
Bromoform	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h
1,1,2,2-Tetrachloroethane	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h
m-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
p-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
o-Dichlorobenzene	<0.4b	<0.4b	<0.4b	<0.4b	<0.4b

- a Compound not resolved on DB-624 analytical column
- b Compound not detected at estimated method detection limit
- c Benzene and 1,2-Dichloroethane coelute on DB-624 analytical column
- d n-Octane and cis-1,3-Dichloropropylene coelute on DB-624 analytical column
- e m-Xylene and p-Xylene coelute on DB-624 analytical column
- f Styrene and o-Xylene coelute on DB-624 analytical column
- g Quantitated on PID
- h Quantitated on ECD
- (H) High confidence level      (M) Medium confidence level      (L) Low confidence level
- D Duplicate sample
- R Replicate analysis

TABLE A-5. MULTIPLE DETECTOR SPECIATED THREE-HOUR DATA SUMMARY FOR NEW YORK, NY BRONX (BNY) (Continued)

Sample Date Sample ID	Concentration, ppbv				
	08/28/87 2992	08/31/87 3040	09/03/87 3116	09/15/87 3438	09/22/87 3585
Compound, a	GC/MD	GC/MD	GC/MD	GC/MD	GC/MD
Methylene chloride	<0.4b	18.9(H)	21.9(H)	<0.4b	<0.4b
trans-1,2-Dichloroethylene	<0.7b	<0.7b	<0.7b	<0.7b	<0.7b
1,1-Dichloroethane	<1.3b	<1.3b	<1.3b	<1.3b	<1.3b
Chloroprene	<2.6b	<2.6b	<2.6b	<2.6b	<2.6b
Bromochloromethane	<1.1b	<1.1b	<1.1b	<1.1b	<1.1b
Chloroform	<0.9b	<0.9b	<0.9b	<0.9b	<0.9b
1,1,1-Trichloroethane	<0.4b	1.0(M)	2.2(H)	<0.4b	<0.4b
Carbon tetrachloride	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Benzene/1,2-Dichloroethane	<2.2b,c	<2.2b,c	2.8(M)c	2.3(H)c	<2.2b,c
Benzene	<0.5b,g	0.5(M)g	1.0(M)g	0.8(H)g	<0.5b,g
Trichloroethylene	<0.9b	<0.9b	<0.9b	<0.9b	<0.9b
1,2-Dichloropropane	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Bromodichloromethane	<1.4b	<1.4b	<1.4b	<1.4b	<1.4b
trans-1,3-Dichloropropylene	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Toluene	4.1(M)	5.4(H)	11.5(H)	8.7(H)	<0.5b
n-Octane/c-1/3-Dichloropropylene	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d
cis-1,3-Dichloropropylene	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h
1,1,2-Trichloroethane	<0.8b	<0.8b	<0.8b	<0.8b	<0.8b
Tetrachloroethylene	<0.8b	<0.8b	4.0(L)	<0.8b	0.8(L)
Dibromochloromethane	<1.7b	<1.7b	<1.7b	<1.7b	<1.7b
Chlorobenzene	<0.4b	<0.4b	<0.4b	1.2(M)	<0.4b
m/p-Xylene	<1.2b,e	7.9(H)e	14.8(H)e	9.9(H)e	<1.2b,e
Styrene	<0.2b,f	1.2(M)f	1.3(H)f	<0.2b,f	<0.2b,f
o-Xylene	<0.2b,f	f	f	<0.2b,f	<0.2b,f
Bromoform	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h
1,1,2,2-Tetrachloroethane	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h
m-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
p-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
o-Dichlorobenzene	<0.4b	<0.4b	<0.4b	<0.4b	<0.4b

a Compound not resolved on DB-624 analytical column

b Compound not detected at estimated method detection limit

c Benzene and 1,2-Dichloroethane coelute on DB-624 analytical column; quantitated separately by GC/MS

d n-Octane and cis-1,3-Dichloropropylene coelute on DB-624 analytical column

e m-Xylene and p-Xylene coelute on DB-624 analytical column

f Styrene and o-Xylene coelute on DB-624 analytical column

g Quantitated on PID

h Quantitated on ECD

(H) High confidence level

(M) Medium confidence level

(L) Low confidence level

TABLE A-5. MULTIPLE DETECTOR SPECIATED THREE-HOUR DATA SUMMARY FOR NEW YORK, NY BRONX (BNY) (Continued)

Sample Date Sample ID	Concentration, ppbv	
	09/29/87 3742	09/30/87 3770
Compound, a	GC/MD	GC/MD
Methylene chloride	22.0(H)	<0.4b
trans-1,2-Dichloroethylene	<0.7b	<0.7b
1,1-Dichloroethane	<1.3b	<1.3b
Chloroprene	<2.6b	<2.6b
Bromochloromethane	<1.1b	<1.1b
Chloroform	<0.9b	<0.9b
1,1,1-Trichloroethane	4.3(H)	2.3(H)
Carbon tetrachloride	<0.6b	<0.6b
Benzene/1,2-Dichloroethane	<2.2b,c	<2.2b,c
Benzene	<0.5b,g	0.5(M)g
Trichloroethylene	<0.9b	<0.9b
1,2-Dichloropropane	<0.6b	<0.6b
Bromodichloromethane	<1.4b	<1.4b
trans-1,3-Dichloropropylene	<0.6b	<0.6b
Toluene	10.4(H)	6.6(H)
n-Octane/c-1/3-Dichloropropylene	<0.4b,d	<0.4b,d
cis-1,3-Dichloropropylene	<1.0b,h	<1.0b,h
1,1,2-Trichloroethane	<0.8b	<0.8b
Tetrachloroethylene	2.0(L)	<0.8b
Dibromochloromethane	<1.7b	<1.7b
Chlorobenzene	0.4(M)	<0.4b
m/p-Xylene	19.6(H)e	15.7(M)e
Styrene	2.2(H)f	<0.2b,f
o-Xylene	f	<0.2b,f
Bromoform	<0.07b,h	<0.07b,h
1,1,2,2-Tetrachloroethane	<0.03b,h	<0.03b,h
m-Dichlorobenzene	<0.3b	<0.3b
p-Dichlorobenzene	<0.3b	<0.3b
o-Dichlorobenzene	<0.4b	<0.4b

- a Compound not resolved on DB-624 analytical column  
b Compound not detected at estimated method detection limit  
c Benzene and 1,2-Dichloroethane coelute on DB-624 analytical column; quantitated separately by GC/MS  
d n-Octane and cis-1,3-Dichloropropylene coelute on DB-624 analytical column  
e m-Xylene and p-Xylene coelute on DB-624 analytical column  
f Styrene and o-Xylene coelute on DB-624 analytical column  
g Quantitated on PID  
h Quantitated on ECD  
(H) High confidence level      (M) Medium confidence level      (L) Low confidence level

TABLE A-6. MULTIPLE DETECTOR SPECIATED THREE-HOUR DATA SUMMARY FOR CHICAGO, IL STATE OFFICE BLDG. (C11L)

Sample Date Sample ID	Concentration, ppbv				
	08/17/87 2723	08/25/87 2909R	08/25/87 2909D	08/25/87 2910D	09/01/87 3087
Compound, a	GC/MD	GC/MD	GC/MD	GC/MD	GC/MD
Methylene chloride	<0.4b	<0.4b	15.7(H)	<0.4b	20.5(H)
trans-1,2-Dichloroethylene	<0.7b	<0.7b	<0.7b	<0.7b	<0.7b
1,1-Dichloroethane	<1.3b	<1.3b	<1.3b	<1.3b	<1.3b
Chloroprene	<2.6b	<2.6b	<2.6b	<2.6b	<2.6b
Bromochloromethane	<1.1b	<1.1b	<1.1b	<1.1b	<1.1b
Chloroform	<0.9b	<0.9b	<0.9b	<0.9b	<0.9b
1,1,1-Trichloroethane	<0.4b	1.8(H)	<0.4b	1.8(H)	<0.4b
Carbon tetrachloride	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Benzene/1,2-Dichloroethane	<2.2b,c	3.4(H)c	3.6(H)c	3.6(H)c	<2.2b,c
Benzene	<0.5b,g	1.3(H)g	<0.5b,g	1.3(H)g	<0.5b,g
Trichloroethylene	<0.9b	<0.9b	<0.9b	<0.9b	<0.9b
1,2-Dichloropropane	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Bromodichloromethane	<1.4b	<1.4b	<1.4b	<1.4b	<1.4b
trans-1,3-Dichloropropylene	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Toluene	7.3(H)	8.8(H)	9.6(H)	9.1(H)	8.4(H)
n-Octane/c-1/3-Dichloropropylene	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d
cis-1,3-Dichloropropylene	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h
1,1,2-Trichloroethane	<0.8b	<0.8b	<0.8b	<0.8b	<0.8b
Tetrachloroethylene	<0.8b	1.2(M)	2.2(M)	<0.8b	<0.8b
Dibromochloromethane	<1.7b	<1.7b	<1.7b	<1.7b	<1.7b
Chlorobenzene	<0.4b	<0.4b	<0.4b	<0.4b	0.9(M)
m/p-Xylene	<1.2b,e	<1.2b,e	14.4(H)e	12.1(H)e	11.1(H)e
Styrene	<0.2b,f	<0.2b,f	2.2(H)f	1.1(H)f	1.5(M)f
o-Xylene	<0.2b,f	<0.2b,f	f	f	f
Bromoform	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h
1,1,2,2-Tetrachloroethane	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h
m-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
p-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
o-Dichlorobenzene	<0.4b	<0.4b	<0.4b	<0.4b	<0.4b

- a The following compounds were not resolved on DB-624 analytical column:  
acetylene, 1,3-butadiene, vinyl chloride, chloroethane, propylene, and bromomethane
- b Compound not detected at estimated method detection limit
- c Benzene and 1,2-Dichloroethane coelute on DB-624 analytical column
- d n-Octane and cis-1,3-Dichloropropylene coelute on DB-624 analytical column
- e m-Xylene and p-Xylene coelute on DB-624 analytical column
- f Styrene and o-Xylene coelute on DB-624 analytical column
- g Quantitated on PID
- h Quantitated on ECD
- (H) High confidence level      (M) Medium confidence level      (L) Low confidence level
- D Duplicate sample                      R Replicate analysis

(Continued)

TABLE A-6. MULTIPLE DETECTOR SPECIATED THREE-HOUR DATA SUMMARY FOR CHICAGO, IL STATE OFFICE BLDG. (C11L)  
(Continued)

Sample Date Sample ID	Concentration, ppbv				
	09/04/87 3206	09/10/87 3294	09/11/87 3321	09/14/87 3330	09/16/87 3429
Compound, a	GC/MD	GC/MD	GC/MD	GC/MD	GC/MD
Methylene chloride	<0.4b	<0.4b	<0.4b	94.8(M)	<0.4b
trans-1,2-Dichloroethylene	<0.7b	<0.7b	<0.7b	<0.7b	<0.7b
1,1-Dichloroethane	<1.3b	<1.3b	<1.3b	<1.3b	<1.3b
Chloroprene	<2.6b	<2.6b	<2.6b	<2.6b	3.2(H)
Bromochloromethane	<1.1b	<1.1b	<1.1b	<1.1b	<1.1b
Chloroform	<0.9b	<0.9b	<0.9b	<0.9b	<0.9b
1,1,1-Trichloroethane	3.9(H)	0.8(M)	<0.4b	6.5(H)	1.5(M)
Carbon tetrachloride	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Benzene/1,2-Dichloroethane	3.6(H)c	2.2(M)c	<2.2b,c	17.4(M)c	6.1(M)c
Benzene	1.4(H)g	<0.5b,g	<0.5b,g	4.7(M)g	<0.5b,g
Trichloroethylene	<0.9b	<0.9b	1.0(M)	<0.9b	<0.9b
1,2-Dichloropropane	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Bromodichloromethane	<1.4b	<1.4b	<1.4b	<1.4b	<1.4b
trans-1,3-Dichloropropylene	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Toluene	7.3(H)	5.6(H)	58.9(H)	47.1(H)	17.3(H)
n-Octane/c-1/3-Dichloropropylene	<0.4b,d	<0.4b,d	2.5(H)d	<0.4b,d	<0.4b,d
cis-1,3-Dichloropropylene	<1.0b,h	<1.0b,h	1.3(H)h	<1.0b,h	<1.0b,h
1,1,2-Trichloroethane	<0.8b	<0.8b	<0.8b	<0.8b	<0.8b
Tetrachloroethylene	0.9(M)	<0.8b	<0.8b	<0.8b	2.1(M)
Dibromochloromethane	<1.7b	<1.7b	<1.7b	<1.7b	<1.7b
Chlorobenzene	<0.4b	<0.4b	5.1(M)	<0.4b	<0.4b
m/p-Xylene	9.7(H)e	6.2(H)e	25.5(H)e	58.0(H)e	17.5(H)e
Styrene	0.9(H)f	0.6(M)f	2.7(M)f	9.4(M)f	1.5(M)f
o-Xylene	f	f	f	f	f
Bromoform	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h
1,1,2,2-Tetrachloroethane	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h
m-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
p-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
o-Dichlorobenzene	<0.4b	<0.4b	<0.4b	<0.4b	<0.4b

- a The following compounds were not resolved on DB-624 analytical column:  
acetylene, 1,3-butadiene, vinyl chloride, chloroethane, propylene, and bromomethane
- b Compound not detected at estimated method detection limit
- c Benzene and 1,2-Dichloroethane coelute on DB-624 analytical column; quantitated separately by GC/MS
- d n-Octane and cis-1,3-Dichloropropylene coelute on DB-624 analytical column
- e m-Xylene and p-Xylene coelute on DB-624 analytical column
- f Styrene and o-Xylene coelute on DB-624 analytical column
- g Quantitated on PID
- h Quantitated on ECD
- (H) High confidence level      (M) Medium confidence level      (L) Low confidence level

WHM/004

TABLE A-6. MULTIPLE DETECTOR SPECIATED THREE-HOUR DATA SUMMARY FOR CHICAGO, IL STATE OFFICE BLDG. (C11L)  
(Continued)

Sample Date Sample ID	09/14/87 3552	09/22/87 3551
Compound, a	GC/MD	GC/MD
Methylene chloride	8.2(M)	<0.4b
trans-1,2-Dichloroethylene	<0.7b	<0.7b
1,1-Dichloroethane	<1.3b	<1.3b
Chloroprene	<2.6b	<2.6b
Bromochloromethane	<1.1b	<1.1b
Chloroform	<0.9b	<0.9b
1,1,1-Trichloroethane	3.3(H)	1.3(M)
Carbon tetrachloride	<0.6b	<0.6b
Benzene/1,2-Dichloroethane	3.8(M)c	4.4(H)c
Benzene	<0.5b,g	1.9(H)g
Trichloroethylene	1.0(M)	<0.9b
1,2-Dichloropropane	<0.6b	<0.6b
Bromodichloromethane	<1.4b	<1.4b
trans-1,3-Dichloropropylene	<0.6b	<0.6b
Toluene	11.4(H)	10.7(H)
n-Octane/c-1/3-Dichloropropylene	<0.4b,d	<0.4b,d
cis-1,3-Dichloropropylene	<1.0b,h	<1.0b,h
1,1,2-Trichloroethane	<0.8b	<0.8b
Tetrachloroethylene	<0.8b	<0.8b
Dibromochloromethane	<1.7b	<1.7b
Chlorobenzene	<0.4b	<0.4b
m/p-Xylene	16.6(H)e	13.7(H)e
Styrene	<0.2b,f	1.2(M)f
o-Xylene	<0.2b,f	f
Bromoform	<0.07b,h	<0.07b,h
1,1,2,2-Tetrachloroethane	<0.03b,h	<0.03b,h
m-Dichlorobenzene	<0.3b	<0.3b
p-Dichlorobenzene	<0.3b	<0.3b
o-Dichlorobenzene	<0.4b	<0.4b

- a The following compounds were not resolved on DB-624 analytical column:  
acetylene, 1,3-butadiene, vinyl chloride, chloroethane, propylene, and bromomethane
- b Compound not detected at estimated method detection limit
- c Benzene and 1,2-Dichloroethane coelute on DB-624 analytical column; quantitated separately by GC/MS
- d n-Octane and cis-1,3-Dichloropropylene coelute on DB-624 analytical column
- e m-Xylene and p-Xylene coelute on DB-624 analytical column
- f Styrene and o-Xylene coelute on DB-624 analytical column
- g Quantitated on PID
- h Quantitated on ECD
- (H) High confidence level      (M) Medium confidence level      (L) Low confidence level

WHM/004

TABLE A-7. MULTIPLE DETECTOR SPECIATED THREE-HOUR DATA SUMMARY FOR CHICAGO, IL SEARS TOWER (C3IL)

Sample Date Sample ID	Concentration, ppbv				
	08/18/87	08/19/87	08/28/87	09/02/87	09/04/87
	2759	2819	2997	3122	3209
Compound, a	GC/MD	GC/MD	GC/MD	GC/MD	GC/MD
Methylene chloride	<0.4b	<0.4b	<0.4b	<0.4b	<0.4b
trans-1,2-Dichloroethylene	<0.7b	<0.7b	<0.7b	<0.7b	<0.7b
1,1-Dichloroethane	<1.3b	<1.3b	<1.3b	<1.3b	<1.3b
Chloroprene	<2.6b	<2.6b	<2.6b	<2.6b	<2.6b
Bromochloromethane	<1.1b	<1.1b	<1.1b	<1.1b	<1.1b
Chloroform	<0.9b	<0.9b	<0.9b	<0.9b	<0.9b
1,1,1-Trichloroethane	15.7(M)	34.9(H)	0.9(H)	2.2(H)	0.9(H)
Carbon tetrachloride	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Benzene/1,2-Dichloroethane	<2.2b,c	<2.2b,c	<2.2b,c	<2.2b,c	<2.2b,c
Benzene	<0.5b,g	<0.5b,g	<0.5b,g	<0.5b,g	<0.5b,g
Trichloroethylene	<0.9b	<0.9b	<0.9b	<0.9b	<0.9b
1,2-Dichloropropane	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Bromodichloromethane	<1.4b	<1.4b	<1.4b	<1.4b	<1.4b
trans-1,3-Dichloropropylene	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Toluene	4.4(H)	7.3(H)	<0.5b	1.7(H)	0.9(H)
n-Octane/c-1/3-Dichloropropylene	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d
cis-1,3-Dichloropropylene	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h
1,1,2-Trichloroethane	<0.8b	<0.8b	<0.8b	<0.8b	<0.8b
Tetrachloroethylene	<0.8b	<0.8b	<0.8b	<0.8b	<0.8b
Dibromochloromethane	<1.7b	<1.7b	<1.7b	<1.7b	<1.7b
Chlorobenzene	<0.4b	<0.4b	<0.4b	<0.4b	<0.4b
m/p-Xylene	<1.2b,e	<1.2b,e	1.3(M)e	<1.2b,e	<1.2b,e
Styrene/o-xylene	<0.2b,f	6.9(M)f	<0.2b,f	<0.2b,f	0.5(M)f
o-Xylene	<0.2b,f	f	<0.2b,f	<0.2b,f	f
Bromoform	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h
1,1,2,2-Tetrachloroethane	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h
m-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
p-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
o-Dichlorobenzene	<0.4b	3.6(M)	<0.4b	<0.4b	<0.4b

- a The following compounds were not resolved on DB-624 analytical column:  
acetylene, 1,3-butadiene, vinyl chloride, chloroethane, chloromethane, propylene, and bromomethane
- b Compound not detected at estimated method detection limit
- c Benzene and 1,2-Dichloroethane coelute on DB-624 analytical column
- d n-Octane and cis-1,3-Dichloropropylene coelute on DB-624 analytical column
- e m-Xylene and p-Xylene coelute on DB-624 analytical column
- f Styrene and o-Xylene coelute on DB-624 analytical column
- g Quantitated on PID
- h Quantitated on ECD
- (H) High confidence level      (M) Medium confidence level      (L) Low confidence level



TABLE A-7. MULTIPLE DETECTOR SPECIATED THREE-HOUR DATA SUMMARY FOR CHICAGO, IL SEARS TOWER (C31L)  
(Continued)

Sample Date Sample ID	Concentration, ppbv				
	09/10/87 3273D	09/10/87 3274D	09/10/87 3274R	09/11/87 3311	09/14/87 3328
Compound, a	GC/MD	GC/MD	GC/MD	GC/MD	GC/MD
Methylene chloride	<0.4b	<0.4b	<0.4b	<0.4b	<0.4b
trans-1,2-Dichloroethylene	<0.7b	<0.7b	<0.7b	<0.7b	<0.7b
1,1-Dichloroethane	<1.3b	<1.3b	<1.3b	<1.3b	<1.3b
Chloroprene	<2.6b	<2.6b	<2.6b	<2.6b	<2.6b
Bromochloromethane	<1.1b	<1.1b	<1.1b	<1.1b	<1.1b
Chloroform	<0.9b	<0.9b	<0.9b	<0.9b	<0.9b
1,1,1-Trichloroethane	1.2(M)	1.5(H)	1.5(H)	3.3(H)	<0.4b
Carbon tetrachloride	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Benzene/1,2-Dichloroethane	<2.2b,c	<2.2b,c	<2.2b,c	<2.2b,c	<2.2b,c
Benzene	<0.5b,g	<0.5b,g	<0.5b,g	<0.5b,g	<0.5b,g
Trichloroethylene	<0.9b	<0.9b	<0.9b	<0.9b	<0.9b
1,2-Dichloropropane	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Bromodichloromethane	<1.4b	<1.4b	<1.4b	<1.4b	<1.4b
trans-1,3-Dichloropropylene	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Toluene	0.5(M)	<0.5b	<0.5b	3.8(H)	6.6(M)
n-Octane/c-1/3-Dichloropropylene	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d
cis-1,3-Dichloropropylene	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h
1,1,2-Trichloroethane	<0.8b	<0.8b	<0.8b	<0.8b	<0.8b
Tetrachloroethylene	<0.8b	<0.8b	<0.8b	<0.8b	<0.8b
Dibromochloromethane	<1.7b	<1.7b	<1.7b	<1.7b	<1.7b
Chlorobenzene	<0.4b	<0.4b	<0.4b	<0.4b	<0.4b
m/p-Xylene	<1.2b,e	<1.2b,e	<1.2b,e	<1.2b,e	<1.2b,e
Styrene	<0.2b,f	<0.2b,f	<0.2b,f	<0.2b,f	<0.2b,f
o-Xylene	<0.2b,f	<0.2b,f	<0.2b,f	<0.2b,f	<0.2b,f
Bromoform	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h
1,1,2,2-Tetrachloroethane	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h
m-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
p-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
o-Dichlorobenzene	<0.4b	<0.4b	<0.4b	<0.4b	<0.4b

- a The following compounds were not resolved on DB-624 analytical column:  
acetylene, 1,3-butadiene, vinyl chloride, chloroethane, chloromethane, propylene, and bromomethane
- b Compound not detected at estimated method detection limit
- c Benzene and 1,2-Dichloroethane coelute on DB-624 analytical column; quantitated separately by GC/MS
- d n-Octane and cis-1,3-Dichloropropylene coelute on DB-624 analytical column
- e m-Xylene and p-Xylene coelute on DB-624 analytical column
- f Styrene and o-Xylene coelute on DB-624 analytical column
- g Quantitated on PID
- h Quantitated on ECD
- (H) High confidence level      (M) Medium confidence level      (L) Low confidence level
- D Duplicate sample
- R Replicate analysis

WHM/004

(Continued)

TABLE A-7. MULTIPLE DETECTOR SPECIATED THREE-HOUR DATA SUMMARY FOR CHICAGO, IL SEARS TOWER (C31L)  
(Continued)

Sample Date Sample ID	Concentration, ppbv	
	09/14/87 3332	09/16/87 3427
Compound, a	GC/MD	GC/MD
Methylene chloride	<0.4b	<0.4b
trans-1,2-Dichloroethylene	<0.7b	<0.7b
1,1-Dichloroethane	<1.3b	<1.3b
Chloroprene	<2.6b	<2.6b
Bromochloromethane	<1.1b	<1.1b
Chloroform	<0.9b	<0.9b
1,1,1-Trichloroethane	2.6(M)	5.3(h)
Carbon tetrachloride	<0.6b	<0.6b
Benzene/1,2-Dichloroethane	<2.2b,c	<2.2b,c
Benzene	<0.5b,g	<0.5b,g
Trichloroethylene	<0.9b	<0.9b
1,2-Dichloropropane	<0.6b	<0.6b
Bromodichloromethane	<1.4b	<1.4b
trans-1,3-Dichloropropylene	<0.6b	<0.6b
Toluene	2.6(H)	2.1(H)
n-Octane/c-1/3-Dichloropropylene	<0.4b,d	<0.4b,d
cis-1,3-Dichloropropylene	<1.0b,h	<1.0b,h
1,1,2-Trichloroethane	<0.8b	<0.8b
Tetrachloroethylene	<0.8b	0.8(M)
Dibromochloromethane	<1.7b	<1.7b
Chlorobenzene	<0.4b	<0.4b
m/p-Xylene	3.1(M)e	2.0(M)e
Styrene	<0.2b,f	0.2(L)f
o-Xylene	<0.2b,f	0.2(L)f
Bromoform	<0.07b,h	<0.07b,h
1,1,2,2-Tetrachloroethane	<0.03b,h	<0.03b,h
m-Dichlorobenzene	<0.3b	<0.3b
p-Dichlorobenzene	<0.3b	<0.3b
o-Dichlorobenzene	<0.4b	<0.4b

- a Compound not resolved on DB-624 analytical column  
b Compound not detected at estimated method detection limit  
c Benzene and 1,2-Dichloroethane coelute on DB-624 analytical column; quantitated separately by GC/MS  
d n-Octane and cis-1,3-Dichloropropylene coelute on DB-624 analytical column  
e m-Xylene and p-Xylene coelute on DB-624 analytical column  
f Styrene and o-Xylene coelute on DB-624 analytical column  
g Quantitated on PID  
h Quantitated on ECD  
(H) High confidence level (M) Medium confidence level (L) Low confidence level

WHM/004

TABLE A-8. MULTIPLE DETECTOR SPECIATED THREE-HOUR DATA SUMMARY FOR CINCINNATI, OH (C10H)

Sample Date Sample ID	Concentration, ppbv				
	08/17/87 2746	08/27/87 3004	08/28/87 2985	09/03/87 3183	09/08/87 32390
Compound, a	GC/MD	GC/MD	GC/MD	GC/MD	GC/MD
Methylene chloride	<0.4b	<0.4b	14.1(H)	<0.4b	50.7(M)
trans-1,2-Dichloroethylene	<0.7b	<0.7b	<0.7b	<0.7b	<0.7b
1,1-Dichloroethane	<1.3b	<1.3b	<1.3b	<1.3b	<1.3b
Chloroprene	<2.6b	<2.6b	<2.6b	<2.6b	<2.6b
Bromochloromethane	<1.1b	<1.1b	<1.1b	<1.1b	<1.1b
Chloroform	<0.9b	<0.9b	<0.9b	<0.9b	<0.9b
1,1,1-Trichloroethane	<0.4b	8.8(H)	<0.4b	1.9(H)	1.3(M)
Carbon tetrachloride	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Benzene/1,2-Dichloroethane	<2.2b,c	<2.2b,c	<2.2b,c	<2.2b,c	2.5(M)c
Benzene	<0.5b,g	<0.5b,g	<0.5b,g	<0.5b,g	<0.5b,g
Trichloroethylene	<0.9b	<0.9b	<0.9b	<0.9b	<0.9b
1,2-Dichloropropane	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Bromodichloromethane	<1.4b	<1.4b	<1.4b	<1.4b	<1.4b
trans-1,3-Dichloropropylene	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Toluene	<0.5b	9.6(H)	3.1(H)	5.4(H)	7.6(H)
n-Octane/c-1/3-Dichloropropylene	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d
cis-1,3-Dichloropropylene	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h
1,1,2-Trichloroethane	<0.8b	<0.8b	<0.8b	<0.8b	<0.8b
Tetrachloroethylene	<0.8b	<0.8b	0.5(M)	<0.8b	<0.8b
Dibromochloromethane	<1.7b	<1.7b	<1.7b	<1.7b	<1.7b
Chlorobenzene	<0.4b	0.8(M)	<0.4b	0.6(M)	0.5(M)
m/p-Xylene	<1.2b,e	12.3(H)e	5.6(H)e	6.8(H)e	13.9(H)e
Styrene	<0.2b,f	3.7(H)f	0.6(H)f	0.6(H)f	1.1(M)f
o-Xylene	<0.2b,f	f	f	f	f
Bromoform	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h
1,1,2,2-Tetrachloroethane	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h
m-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
p-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
o-Dichlorobenzene	<0.4b	<0.4b	<0.4b	<0.4b	<0.4b

- a The following compounds were not resolved on DB-624 analytical column:  
acetylene, 1,3-butadiene, vinyl chloride, chloroethane, chloromethane, propylene, and bromomethane
- b Compound not detected at estimated method detection limit
- c Benzene and 1,2-Dichloroethane coelute on DB-624 analytical column
- d n-Octane and cis-1,3-Dichloropropylene coelute on DB-624 analytical column
- e m-Xylene and p-Xylene coelute on DB-624 analytical column
- f Styrene and o-Xylene coelute on DB-624 analytical column
- g Quantitated on PID
- h Quantitated on ECD
- (H) High confidence level      (M) Medium confidence level      (L) Low confidence level
- D Duplicate sample

TABLE A-8. MULTIPLE DETECTOR SPECIATED THREE-HOUR DATA SUMMARY FOR CINCINNATI, OH (CIOH) (Continued)

Sample Date Sample ID	Concentration, ppbv				
	09/08/87	09/08/87	09/10/87	09/14/87	09/23/87
	3240R	3240D	3289	3350	3579
Compound, a	GC/MD	GC/MD	GC/MD	GC/MD	GC/MD
Methylene chloride	48.6(M)	44.5(H)	37.6(H)	<0.4b	<0.4b
trans-1,2-Dichloroethylene	<0.7b	<0.7b	<0.7b	<0.7b	<0.7b
1,1-Dichloroethane	<1.3b	<1.3b	<1.3b	<1.3b	<1.3b
Chloroprene	<2.6b	<2.6b	<2.6b	<2.6b	<2.6b
Bromochloromethane	<1.1b	<1.1b	<1.1b	<1.1b	<1.1b
Chloroform	<0.9b	<0.9b	<0.9b	<0.9b	<0.9b
1,1,1-Trichloroethane	1.6(M)	1.5(M)	4.2(H)	1.4(M)	<0.4b
Carbon tetrachloride	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Benzene/1,2-Dichloroethane	2.7(M)c	2.5(M)c	6.4(M)c	3.3(M)c	<2.2b,c
Benzene	<0.5b,g	<0.5b,g	<0.5b,g	<0.5b,g	<0.5b,g
Trichloroethylene	<0.9b	<0.9b	<0.9b	<0.9b	<0.9b
1,2-Dichloropropane	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Bromodichloromethane	<1.4b	<1.4b	<1.4b	<1.4b	<1.4b
trans-1,3-Dichloropropylene	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Toluene	8.5(H)	7.8(H)	20.5(H)	8.3(H)	<0.5b
n-Octane/c-1/3-Dichloropropylene	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d
cis-1,3-Dichloropropylene	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h
1,1,2-Trichloroethane	<0.8b	<0.8b	<0.8b	<0.8b	<0.8b
Tetrachloroethylene	<0.8b	<0.8b	5.5(M)	1.0(L)	<0.8b
Dibromochloromethane	<1.7b	<1.7b	<1.7b	<1.7b	<1.7b
Chlorobenzene	0.5(M)	0.4(M)	1.5(L)	<0.4b	<0.4b
m/p-Xylene	14.7(H)e	13.3(H)e	29.7(H)e	11.7(H)e	9.2(M)e
Styrene	1.4(M)f	1.0(H)f	3.3(M)f	1.3(M)f	<0.2b,f
o-Xylene	f	f	f	f	<0.2b,f
Bromoform	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h
1,1,2,2-Tetrachloroethane	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h
m-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
p-Dichlorobenzene	<0.3b	<0.3b	<0.3b	0.8(L)	<0.3b
o-Dichlorobenzene	<0.4b	<0.4b	<0.4b	<0.4b	<0.4b

- a The following compounds were not resolved on DB-624 analytical column:  
acetylene, 1,3-butadiene, vinyl chloride, chloroethane, chloromethane, propylene, and bromomethane
- b Compound not detected at estimated method detection limit
- c Benzene and 1,2-Dichloroethane coelute on DB-624 analytical column; quantitated separately by GC/MS
- d n-Octane and cis-1,3-Dichloropropylene coelute on DB-624 analytical column
- e m-Xylene and p-Xylene coelute on DB-624 analytical column
- f Styrene and o-Xylene coelute on DB-624 analytical column
- g Quantitated on PID
- h Quantitated on ECD
- (H) High confidence level      (M) Medium confidence level      (L) Low confidence level
- D Duplicate sample              R Replicate sample

TABLE A-9. MULTIPLE DETECTOR SPECIATED THREE-HOUR DATA SUMMARY FOR DECATUR, GA (DEGA)

Sample Date Sample ID	Concentration, ppbv				
	08/14/87 2677	08/14/87 2676	08/18/87 2762	08/24/87 2941	08/28/87 3017
Compound, a	GC/MD	GC/MD	GC/MD	GC/MD	GC/MD
Methylene chloride	<0.4b	<0.4b	<0.4b	<0.4b	<0.4b
trans-1,2-Dichloroethylene	<0.7b	<0.7b	<0.7b	<0.7b	<0.7b
1,1-Dichloroethane	<1.3b	<1.3b	<1.3b	<1.3b	<1.3b
Chloroprene	<2.6b	<2.6b	<2.6b	<2.6b	2.7(M)
Bromochloromethane	<1.1b	<1.1b	<1.1b	<1.1b	<1.1b
Chloroform	<0.9b	<0.9b	<0.9b	<0.9b	<0.9b
1,1,1-Trichloroethane	<0.4b	<0.4b	<0.4b	<0.4b	<0.4b
Carbon tetrachloride	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Benzene/1,2-Dichloroethane	<2.2b,c	<2.2b,c	<2.2b,c	<2.2b,c	<2.2b,c
Benzene	<0.5b,g	<0.5b,g	<0.5b,g	<0.5b,g	1.0(H)g
Trichloroethylene	<0.9b	<0.9b	<0.9b	<0.9b	<0.9b
1,2-Dichloropropane	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Bromodichloromethane	<1.4b	<1.4b	<1.4b	<1.4b	<1.4b
trans-1,3-Dichloropropylene	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Toluene	<0.5b	<0.5b	<0.5b	1.2(M)	3.6(H)
n-Octane/c-1/3-Dichloropropylene	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d
cis-1,3-Dichloropropylene	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h
1,1,2-Trichloroethane	<0.8b	<0.8b	<0.8b	<0.8b	<0.8b
Tetrachloroethylene	<0.8b	<0.8b	<0.8b	<0.8b	<0.8b
Dibromochloromethane	<1.7b	<1.7b	<1.7b	<1.7b	<1.7b
Chlorobenzene	<0.4b	<0.4b	<0.4b	<0.4b	<0.4b
m/p-Xylene	<1.2b,e	<1.2b,e	<1.2b,e	<1.2b,e	4.4(H)e
Styrene	<0.2b,f	<0.2b,f	<0.2b,f	<0.2b,f	0.4(H)f
o-Xylene	<0.2b,f	<0.2b,f	<0.2b,f	<0.2b,f	f
Bromoform	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h
1,1,2,2-Tetrachloroethane	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h
m-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
p-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
o-Dichlorobenzene	<0.4b	<0.4b	<0.4b	<0.4b	<0.4b

- a The following compounds were not resolved on DB-624 analytical column:  
acetylene, 1,3-butadiene, vinyl chloride, chloroethane, chloromethane, propylene, and bromomethane
- b Compound not detected at estimated method detection limit
- c Benzene and 1,2-Dichloroethane coelute on DB-624 analytical column
- d n-Octane and cis-1,3-Dichloropropylene coelute on DB-624 analytical column
- e m-Xylene and p-Xylene coelute on DB-624 analytical column
- f Styrene and o-Xylene coelute on DB-624 analytical column
- g Quantitated on PID
- h Quantitated on ECD
- (H) High confidence level      (M) Medium confidence level      (L) Low confidence level

(Continued)

TABLE A-9. MULTIPLE DETECTOR SPECIATED THREE-HOUR DATA SUMMARY FOR DECATUR, GA (DEGA) (Continued)

Sample Date Sample ID	Concentration, ppbv				
	09/03/87 3155D	09/03/87 3155R	09/03/87 3193D	09/04/87 3165	09/11/87 3336
Compound, a	GC/MD	GC/MD	GC/MD	GC/MD	GC/MD
Methylene chloride	<0.4b	31.7(H)	28.0(L)	<0.4b	<0.4b
trans-1,2-Dichloroethylene	<0.7b	<0.7b	<0.7b	<0.7b	<0.7b
1,1-Dichloroethane	<1.3b	<1.3b	<1.3b	<1.3b	<1.3b
Chloroprene	<2.6b	<2.6b	<2.6b	<2.6b	<2.6b
Bromochloromethane	<1.1b	<1.1b	<1.1b	<1.1b	<1.1b
Chloroform	<0.9b	<0.9b	<0.9b	<0.9b	<0.9b
1,1,1-Trichloroethane	1.3(M)	1.4(H)	1.4(M)	<0.4b	<0.4b
Carbon tetrachloride	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Benzene/1,2-Dichloroethane	3.2(H)c	3.5(M)c	3.1(H)c	<2.2b,c	<2.2b,c
Benzene	1.1(H)g	1.1(M)g	1.7(H)g	<0.5b,g	<0.5b,g
Trichloroethylene	<0.9b	<0.9b	<0.9b	<0.9b	<0.9b
1,2-Dichloropropane	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Bromodichloromethane	<1.4b	<1.4b	<1.4b	<1.4b	<1.4b
trans-1,3-Dichloropropylene	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Toluene	8.7(H)	10.1(H)	8.8(H)	1.4(H)	2.2(H)
n-Octane/c-1/3-Dichloropropylene	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d
cis-1,3-Dichloropropylene	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h
1,1,2-Trichloroethane	<0.8b	<0.8b	<0.8b	<0.8b	<0.8b
Tetrachloroethylene	<0.8b	<0.8b	<0.8b	<0.8b	<0.8b
Dibromochloromethane	<1.7b	<1.7b	<1.7b	<1.7b	<1.7b
Chlorobenzene	<0.4b	<0.4b	<0.4b	<0.4b	<0.4b
m/p-Xylene	13.3(H)e	15.8(H)e	13.5(H)e	2.8(H)e	3.3(H)e
Styrene	1.4(M)f	1.4(H)f	1.4(M)f	0.2(H)f	0.3(H)f
o-Xylene	f	f	f	f	f
Bromoform	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h
1,1,2,2-Tetrachloroethane	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h
m-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
p-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
o-Dichlorobenzene	<0.4b	<0.4b	<0.4b	<0.4b	<0.4b

- a The following compounds were not resolved on DB-624 analytical column:  
acetylene, 1,3-butadiene, vinyl chloride, chloroethane, chloromethane, propylene, and bromomethane
- b Compound not detected at estimated method detection limit
- c Benzene and 1,2-Dichloroethane coelute on DB-624 analytical column; quantitated separately by GC/MS
- d n-Octane and cis-1,3-Dichloropropylene coelute on DB-624 analytical column
- e m-Xylene and p-Xylene coelute on DB-624 analytical column
- f Styrene and o-Xylene coelute on DB-624 analytical column
- g Quantitated on PID
- h Quantitated on ECD
- (H) High confidence level      (M) Medium confidence level      (L) Low confidence level
- D Duplicate sample
- R Replicate analysis

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TABLE A-10. MULTIPLE DETECTOR SPECIATED THREE-HOUR DATA SUMMARY FOR FRESNO, CA (FRCA)

Sample Date Sample ID	Concentration, ppbv				
	08/25/87 2917	08/26/87 2956	08/27/87 3001	08/28/87 3033	08/31/87 3054
Compound, a	GC/MD	GC/MD	GC/MD	GC/MD	GC/MD
Methylene chloride	10.7(M)	<0.4b	<0.4b	<0.4b	5.8(M)
trans-1,2-Dichloroethylene	<0.7b	<0.7b	<0.7b	<0.7b	<0.7b
1,1-Dichloroethane	<1.3b	<1.3b	<1.3b	<1.3b	<1.3b
Chloroprene	<2.6b	<2.6b	<2.6b	<2.6b	<2.6b
Bromochloromethane	<1.1b	<1.1b	<1.1b	<1.1b	<1.1b
Chloroform	<0.9b	<0.9b	<0.9b	<0.9b	<0.9b
1,1,1-Trichloroethane	<0.4b	<0.4b	<0.4b	2.3(H)	1.4(H)
Carbon tetrachloride	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Benzene/1,2-Dichloroethane	3.1(M)c	<2.2b,c	<2.2b,c	3.6(H)c	<2.2b,c
Benzene	<0.5b,g	<0.5b,g	0.6(H)g	1.3(H)g	0.7(M)g
Trichloroethylene	<0.9b	<0.9b	<0.9b	<0.9b	1.3(M)
1,2-Dichloropropane	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Bromodichloromethane	<1.4b	<1.4b	<1.4b	<1.4b	<1.4b
trans-1,3-Dichloropropylene	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Toluene	8.1(H)	4.8(H)	4.8(H)	8.7(H)	5.3(H)
n-Octane/c-1/3-Dichloropropylene	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d
cis-1,3-Dichloropropylene	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h
1,1,2-Trichloroethane	<0.8b	<0.8b	<0.8b	<0.8b	<0.8b
Tetrachloroethylene	2.0(M)	<0.8b	<0.8b	1.9(H)	<0.8b
Dibromochloromethane	<1.7b	<1.7b	<1.7b	<1.7b	<1.7b
Chlorobenzene	<0.4b	1.3(H)	<0.4b	<0.4b	<0.4b
m/p-Xylene	12.9(H)e	13.9(H)e	<1.2b,e	13.9(H)e	8.4(H)e
Styrene	1.5(H)f	1.6(H)f	1.3(H)f	1.2(H)f	<0.2b,f
o-Xylene	f	f	f	f	<0.2b,f
Bromoform	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h
1,1,2,2-Tetrachloroethane	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h
m-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
p-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
o-Dichlorobenzene	<0.4b	<0.4b	<0.4b	<0.4b	<0.4b

- a The following compounds were not resolved on DB-624 analytical column:  
acetylene, 1,3-butadiene, vinyl chloride, chloroethane, chloromethane, propylene, and bromomethane
- b Compound not detected at estimated method detection limit
- c Benzene and 1,2-Dichloroethane coelute on DB-624 analytical column
- d n-Octane and cis-1,3-Dichloropropylene coelute on DB-624 analytical column
- e m-Xylene and p-Xylene coelute on DB-624 analytical column
- f Styrene and o-Xylene coelute on DB-624 analytical column
- g Quantitated on PID
- h Quantitated on ECD
- (H) High confidence level      (M) Medium confidence level      (L) Low confidence level

TABLE A-10. MULTIPLE DETECTOR SPECIATED THREE-HOUR DATA SUMMARY FOR FRESNO, CA (FRCA) (Continued)

Sample Date Sample ID	Concentration, ppbv				
	09/03/87 3146R	09/03/87 3146D	09/03/87 3147D	09/08/87 3243	09/14/87 3356
Compound, a	GC/MD	GC/MD	GC/MD	GC/MD	GC/MD
Methylene chloride	<0.4b	<0.4b	<0.4b	66.4(M)	5.0(M)
trans-1,2-Dichloroethylene	<0.7b	<0.7b	<0.7b	<0.7b	<0.7b
1,1-Dichloroethane	<1.3b	<1.3b	<1.3b	<1.3b	<1.3b
Chloroprene	<2.6b	<2.6b	<2.6b	<2.6b	<2.6b
Bromochloromethane	<1.1b	<1.1b	<1.1b	<1.1b	<1.1b
Chloroform	<0.9b	<0.9b	<0.9b	<0.9b	<0.9b
1,1,1-Trichloroethane	1.4(M)	1.5(H)	1.7(M)	<0.4b	0.8(H)
Carbon tetrachloride	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Benzene/1,2-dichloroethane	7.5(M)c	8.4(M)c	9.0(H)c	3.6(M)c	1.3(M)c
Benzene	<0.5b,g	<0.5b,g	3.4(H)g	<0.5b,g	<0.5b,g
Trichloroethylene	<0.9b	<0.9b	<0.9b	<0.9b	<0.9b
1,2-Dichloropropane	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Bromodichloromethane	<1.4b	<1.4b	<1.4b	<1.4b	<1.4b
trans-1,3-Dichloropropylene	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Toluene	18.8(H)	21.2(H)	24.5(H)	8.1(H)	3.2(H)
n-Octane/c-1/3-dichloropropylene	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d
cis-1,3-Dichloropropylene	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h
1,1,2-Trichloroethane	<0.8b	<0.8b	<0.8b	<0.8b	<0.8b
Tetrachloroethylene	0.8(M)	1.0(M)	<0.8b	<0.8b	<0.8b
Dibromochloromethane	<1.7b	<1.7b	<1.7b	<1.7b	<1.7b
Chlorobenzene	<0.4b	<0.4b	<0.4b	<0.4b	<0.4b
m/p-Xylene	34.2(H)e	39.1(H)e	47.5(H)e	15.4(H)e	5.6(H)e
Styrene	2.5(H)f	3.1(H)f	3.7(H)f	1.4(H)f	0.5(M)f
o-Xylene	f	f	f	f	f
Bromoform	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h
1,1,2,2-Tetrachloroethane	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h
m-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
p-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
o-Dichlorobenzene	<0.4b	<0.4b	<0.4b	<0.4b	<0.4b

- a The following compounds were not resolved on DB-624 analytical column:  
acetylene, 1,3-butadiene, vinyl chloride, chloroethane, chloromethane, propylene, and bromomethane
- b Compound not detected at estimated method detection limit
- c Benzene and 1,2-Dichloroethane coelute on DB-624 analytical column; quantitated separately by GC/MS
- d n-Octane and cis-1,3-Dichloropropylene coelute on DB-624 analytical column
- e m-Xylene and p-Xylene coelute on DB-624 analytical column
- f Styrene and o-Xylene coelute on DB-624 analytical column
- g Quantitated on PID
- h Quantitated on ECD
- (H) High confidence level      (M) Medium confidence level      (L) Low confidence level
- D Duplicate sample
- R Replicate analysis

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TABLE A-11. MULTIPLE DETECTOR SPECIATED THREE-HOUR DATA SUMMARY FOR LOUISVILLE, KY (L1KY)

Sample Date Sample ID	Concentration, ppbv				
	08/14/87 2667	08/18/87 2771	08/20/87 2838	08/26/87 2958	09/01/87 3088
Compound, a	GC/MD	GC/MD	GC/MD	GC/MD	GC/MD
Methylene chloride	<0.4b	<0.4b	<0.4b	<0.4b	11.5(M)
trans-1,2-Dichloroethylene	<0.7b	<0.7b	<0.7b	<0.7b	<0.7b
1,1-Dichloroethane	<1.3b	<1.3b	<1.3b	<1.3b	<1.3b
Chloroprene	<2.6b	<2.6b	<2.6b	<2.6b	<2.6b
Bromochloromethane	<1.1b	<1.1b	<1.1b	<1.1b	<1.1b
Chloroform	<0.9b	<0.9b	<0.9b	<0.9b	<0.9b
1,1,1-Trichloroethane	<0.4b	7.5(H)	2.3(H)	1.3(M)	1.8(M)
Carbon tetrachloride	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Benzene/1,2-Dichloroethane	<2.2b,c	<2.2b,c	2.3(M)c	<2.2b,c	<2.2b,c
Benzene	<0.5b,g	<0.5b,g	0.7(M)g	0.5(M)g	0.6(M)g
Trichloroethylene	<0.9b	<0.9b	<0.9b	<0.9b	<0.9b
1,2-Dichloropropane	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Bromodichloromethane	<1.4b	<1.4b	<1.4b	<1.4b	<1.4b
trans-1,3-Dichloropropylene	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Toluene	<0.5b	<0.5b	6.3(H)	3.4(H)	6.3(H)
n-Octane/c-1/3-Dichloropropylene	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d
cis-1,3-Dichloropropylene	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h
1,1,2-Trichloroethane	<0.8b	<0.8b	<0.8b	<0.8b	<0.8b
Tetrachloroethylene	<0.8b	<0.8b	<0.8b	<0.8b	<0.8b
Dibromochloromethane	<1.7b	<1.7b	<1.7b	<1.7b	<1.7b
Chlorobenzene	<0.4b	<0.4b	<0.4b	<0.4b	<0.4b
m/p-Xylene	<1.2b,e	<1.2b,e	10.6(H)e	6.0(H)e	12.7(H)e
Styrene	<0.2b,f	<0.2b,f	1.4(H)f	0.9(M)f	1.1(H)f
o-Xylene	<0.2b,f	<0.2b,f	f	f	f
Bromoform	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h
1,1,2,2-Tetrachloroethane	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h
m-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
p-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
o-Dichlorobenzene	<0.4b	<0.4b	<0.4b	<0.4b	<0.4b

- a The following compounds were not resolved on DB-624 analytical column:  
acetylene, 1,3-butadiene, vinyl chloride, chloroethane, chloromethane, propylene, and bromomethane
- b Compound not detected at estimated method detection limit
- c Benzene and 1,2-Dichloroethane coelute on DB-624 analytical column
- d n-Octane and cis-1,3-Dichloropropylene coelute on DB-624 analytical column
- e m-Xylene and p-Xylene coelute on DB-624 analytical column
- f Styrene and o-Xylene coelute on DB-624 analytical column
- g Quantitated on PID
- h Quantitated on ECD
- (H) High confidence level      (M) Medium confidence level      (L) Low confidence level

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(Continued)

TABLE A-11. MULTIPLE DETECTOR SPECIATED THREE-HOUR DATA SUMMARY FOR LOUISVILLE, KY (L1KY) (Continued)

Sample Date Sample ID	Concentration, ppbv				
	09/10/87 3282	09/10/87 3282R	09/18/87 3472	09/22/87 3548	09/23/87 3583
Compound, a	GC/MD	GC/MD	GC/MD	GC/MD	GC/MD
Methylene chloride	19.1(M)	52.1(M)	13.9(H)	<0.4b	15.0(M)
trans-1,2-Dichloroethylene	<0.7b	<0.7b	<0.7b	<0.7b	<0.7b
1,1-Dichloroethane	<1.3b	<1.3b	<1.3b	<1.3b	<1.3b
Chloroprene	<2.6b	<2.6b	<2.6b	<2.6b	<2.6b
Bromochloromethane	<1.1b	<1.1b	<1.1b	<1.1b	<1.1b
Chloroform	<0.9b	<0.9b	<0.9b	<0.9b	<0.9b
1,1,1-Trichloroethane	<0.4b	2.8(H)	16.0(H)	18.0(H)	4.9(H)
Carbon tetrachloride	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Benzene/1,2-Dichloroethane	5.5(M)c	4.5(M)c	<2.2b,c	4.4(M)c	5.0(M)c
Benzene	1.5(M)g	1.4(M)g	<0.5b,g	1.2(M)g	1.5(M)g
Trichloroethylene	<0.9b	<0.9b	<0.9b	11.7(H)	<0.9b
1,2-Dichloropropane	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Bromodichloromethane	<1.4b	<1.4b	<1.4b	<1.4b	<1.4b
trans-1,3-Dichloropropylene	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Toluene	13.1(H)	12.2(H)	10.3(H)	15.4(H)	14.6(H)
n-Octane/c-1/3-Dichloropropylene	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d
cis-1,3-Dichloropropylene	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h
1,1,2-Trichloroethane	<0.8b	<0.8b	<0.8b	<0.8b	<0.8b
Tetrachloroethylene	<0.8b	2.1(H)	<0.8b	<0.8b	0.8(M)
Dibromochloromethane	<1.7b	<1.7b	<1.7b	<1.7b	<1.7b
Chlorobenzene	<0.4b	0.7(H)	<0.4b	<0.4b	1.0(H)
m/p-Xylene	32.0(H)e	30.0(H)e	25.2(M)e	76.4(M)e	26.6(H)e
Styrene	3.9(H)f	3.6(M)f	<0.2b,f	13.4(H)f	3.7(H)f
o-Xylene	f	f	f	f	f
Bromoform	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h
1,1,2,2-Tetrachloroethane	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h
m-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
p-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
o-Dichlorobenzene	<0.4b	<0.4b	<0.4b	<0.4b	<0.4b

- a The following compounds were not resolved on DB-624 analytical column:  
acetylene, 1,3-butadiene, vinyl chloride, chloroethane, chloromethane, propylene, and bromomethane
- b Compound not detected at estimated method detection limit
- c Benzene and 1,2-Dichloroethane coelute on DB-624 analytical column; quantitated separately by GC/MS
- d n-Octane and cis-1,3-Dichloropropylene coelute on DB-624 analytical column
- e m-Xylene and p-Xylene coelute on DB-624 analytical column
- f Styrene and o-Xylene coelute on DB-624 analytical column
- g Quantitated on PID
- h Quantitated on ECD
- (H) High confidence level      (M) Medium confidence level      (L) Low confidence level
- R Replicate analysis

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TABLE A-12. MULTIPLE DETECTOR SPECIATED THREE-HOUR DATA SUMMARY FOR NEW YORK, NY MANHATTAN (MNY)

Sample Date Sample ID	Concentration, ppbv				
	08/19/87 2777	08/21/87 2823	08/28/87 3012	09/01/87 3095	09/03/87 3171
Compound, a	GC/MD	GC/MD	GC/MD	GC/MD	GC/MD
Methylene chloride	<0.4b	3.6(H)	<0.4b	14.4(H)	<0.4b
trans-1,2-Dichloroethylene	<0.7b	<0.7b	<0.7b	<0.7b	<0.7b
1,1-Dichloroethane	<1.3b	<1.3b	<1.3b	<1.3b	<1.3b
Chloroprene	<2.6b	<2.6b	<2.6b	<2.6b	<2.6b
Bromochloromethane	<1.1b	<1.1b	<1.1b	<1.1b	<1.1b
Chloroform	<0.9b	<0.9b	<0.9b	<0.9b	<0.9b
1,1,1-Trichloroethane	<0.4b	1.9(H)	2.9(H)	1.3(M)	<0.4b
Carbon tetrachloride	<0.6b	<0.6b	<0.6b	0.6(M)	<0.6b
Benzene/1,2-Dichloroethane	<2.2b,c	<2.2b,c	<2.2b,c	<2.2b,c	<2.2b,c
Benzene	<0.5b,g	<0.5b,g	<0.5b,g	<0.5b,g	<0.5b,g
Trichloroethylene	<0.9b	<0.9b	<0.9b	<0.9b	<0.9b
1,2-Dichloropropane	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Bromodichloromethane	<1.4b	<1.4b	<1.4b	<1.4b	<1.4b
trans-1,3-Dichloropropylene	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Toluene	<0.5b	2.3(H)	5.2(H)	3.7(H)	2.5(H)
n-Octane/c-1/3-Dichloropropylene	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d
cis-1,3-Dichloropropylene	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h
1,1,2-Trichloroethane	<0.8b	<0.8b	<0.8b	<0.8b	<0.8b
Tetrachloroethylene	<0.8b	3.8(M)	3.8(M)	4.0(M)	2.1(M)
Dibromochloromethane	<1.7b	<1.7b	<1.7b	<1.7b	<1.7b
Chlorobenzene	<0.4b	<0.4b	<0.4b	0.5(M)	<0.4b
m/p-Xylene	<1.2b,e	2.6(M)e	6.8(M)e	5.4(M)e	4.1(H)e
Styrene	<0.2b,f	<0.2b,f	0.7(M)f	0.8(M)f	0.5(M)f
o-Xylene	<0.2b,f	<0.2b,f	f	f	f
Bromoform	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h
1,1,2,2-Tetrachloroethane	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h
m-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
p-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
o-Dichlorobenzene	<0.4b	<0.4b	<0.4b	<0.4b	<0.4b

- a The following compounds were not resolved on DB-624 analytical column:  
acetylene, 1,3-butadiene, vinyl chloride, chloroethane, chloromethane, propylene, and bromomethane
- b Compound not detected at estimated method detection limit
- c Benzene and 1,2-Dichloroethane coelute on DB-624 analytical column
- d n-Octane and cis-1,3-Dichloropropylene coelute on DB-624 analytical column
- e m-Xylene and p-Xylene coelute on DB-624 analytical column
- f Styrene and o-Xylene coelute on DB-624 analytical column
- g Quantitated on PID
- h Quantitated on ECD
- (H) High confidence level      (M) Medium confidence level      (L) Low confidence level

TABLE A-12. MULTIPLE DETECTOR SPECIATED THREE-HOUR DATA SUMMARY FOR NEW YORK, NY MANHATTAN (MNY)  
(Continued)

Sample Date Sample ID	Concentration, ppbv				
	09/15/87 3424	09/18/87 3538R	09/18/87 3538D	09/18/87 3539D	09/29/87 3744
Compound, a	GC/MD	GC/MD	GC/MD	GC/MD	GC/MD
Methylene chloride	22.5(H)	<0.4b	34.4(M)	<0.4b	<0.4b
trans-1,2-Dichloroethylene	<0.7b	<0.7b	<0.7b	<0.7b	<0.7b
1,1-Dichloroethane	<1.3b	<1.3b	<1.3b	<1.3b	<1.3b
Chloroprene	<2.6b	<2.6b	<2.6b	<2.6b	<2.6b
Bromochloromethane	<1.1b	<1.1b	<1.1b	<1.1b	<1.1b
Chloroform	<0.9b	<0.9b	<0.9b	<0.9b	<0.9b
1,1,1-Trichloroethane	<0.4b	<0.4b	3.4(M)	3.4(M)	<0.4b
Carbon tetrachloride	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Benzene/1,2-Dichloroethane	<2.2b,c	3.2(M)c	2.5(H)c	2.7(M)c	3.2(M)c
Benzene	<0.5b,g	0.9(M)g	1.6(H)g	<0.5b,g	<0.5b,g
Trichloroethylene	<0.9b	<0.9b	<0.9b	<0.9b	<0.9b
1,2-Dichloropropane	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Bromodichloromethane	<1.4b	<1.4b	<1.4b	<1.4b	<1.4b
trans-1,3-Dichloropropylene	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Toluene	15.2(H)	8.6(H)	7.0(H)	8.1(H)	8.7(H)
n-Octane/c-1/3-Dichloropropylene	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d
cis-1,3-Dichloropropylene	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h
1,1,2-Trichloroethane	<0.8b	<0.8b	<0.8b	<0.8b	<0.8b
Tetrachloroethylene	11.2(M)	10.2(M)	5.8(M)	12.0(M)	5.6(M)
Dibromochloromethane	<1.7b	<1.7b	<1.7b	<1.7b	<1.7b
Chlorobenzene	<0.4b	<0.4b	<0.4b	<0.4b	0.6(H)
m/p-Xylene	18.1(H)e	14.1(H)e	8.3(H)e	8.2(H)e	9.8(H)e
Styrene	2.3(M)f	<0.2b,f	0.8(H)f	0.8(H)f	<0.2b,f
o-Xylene	f	<0.2b,f	f	f	<0.2b,f
Bromoform	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h
1,1,2,2-Tetrachloroethane	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h
m-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
p-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
o-Dichlorobenzene	1.5(M)	<0.4b	<0.4b	<0.4b	<0.4b

- a The following compounds were not resolved on DB-624 analytical column:  
acetylene, 1,3-butadiene, vinyl chloride, chloroethane, chloromethane, propylene, and bromomethane
- b Compound not detected at estimated method detection limit
- c Benzene and 1,2-Dichloroethane coelute on DB-624 analytical column; quantitated separately by GC/MS
- d n-Octane and cis-1,3-Dichloropropylene coelute on DB-624 analytical column
- e m-Xylene and p-Xylene coelute on DB-624 analytical column
- f Styrene and o-Xylene coelute on DB-624 analytical column
- g Quantitated on PID
- h Quantitated on ECD
- (H) High confidence level      (M) Medium confidence level      (L) Low confidence level
- D Duplicate sample
- R Replicate analysis

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TABLE A-13. MULTIPLE DETECTOR SPECIATED THREE-HOUR DATA SUMMARY FOR NEWARK, NJ (NWNJ)

Sample Date Sample ID	Concentration, ppbv				
	08/12/87 2680R	08/12/87 2680D	08/12/87 2648D	08/18/87 2776	08/21/87 2895
Compound, a	GC/MD	GC/MD	GC/MD	GC/MD	GC/MD
Methylene chloride	<0.4b	<0.4b	<0.4b	5.9(M)	<0.4b
trans-1,2-Dichloroethylene	<0.7b	<0.7b	<0.7b	<0.7b	<0.7b
1,1-Dichloroethane	<1.3b	<1.3b	<1.3b	<1.3b	<1.3b
Chloroprene	<2.6b	<2.6b	<2.6b	<2.6b	<2.6b
Bromochloromethane	<1.1b	<1.1b	<1.1b	<1.1b	<1.1b
Chloroform	<0.9b	<0.9b	<0.9b	<0.9b	<0.9b
1,1,1-Trichloroethane	<0.4b	<0.4b	<0.4b	<0.4b	2.2(H)
Carbon tetrachloride	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Benzene/1,2-Dichloroethane	<2.2b,c	<2.2b,c	<2.2b,c	<2.2b,c	<2.2b,c
Benzene	<0.5b,g	<0.5b,g	<0.5b,g	<0.5b,g	<0.5b,g
Trichloroethylene	<0.9b	<0.9b	<0.9b	<0.9b	<0.9b
1,2-Dichloropropane	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Bromodichloromethane	<1.4b	<1.4b	<1.4b	<1.4b	<1.4b
trans-1,3-Dichloropropylene	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Toluene	12.9(H)	11.3(H)	<0.5b	2.9(H)	7.9(H)
n-Octane/c-1/3-Dichloropropylene	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d
cis-1,3-Dichloropropylene	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h
1,1,2-Trichloroethane	<0.8b	<0.8b	<0.8b	<0.8b	<0.8b
Tetrachloroethylene	<0.8b	<0.8b	<0.8b	<0.8b	1.2(H)
Dibromochloromethane	<1.7b	<1.7b	<1.7b	<1.7b	<1.7b
Chlorobenzene	<0.4b	<0.4b	<0.4b	<0.4b	<0.4b
m/p-Xylene	<1.2b,e	<1.2b,e	<1.2b,e	3.8(H)e	7.8(H)e
Styrene	<0.2b,f	<0.2b,f	<0.2b,f	<0.2b,f	1.1(H)f
o-Xylene	<0.2b,f	<0.2b,f	<0.2b,f	<0.2b,f	f
Bromoform	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h
1,1,2,2-Tetrachloroethane	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h
m-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
p-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
o-Dichlorobenzene	<0.4b	<0.4b	<0.4b	<0.4b	<0.4b

a The following compounds were not resolved on DB-624 analytical column:

acetylene, 1,3-butadiene, vinyl chloride, chloroethane, chloromethane, propylene, and bromomethane

b Compound not detected at estimated method detection limit

c Benzene and 1,2-Dichloroethane coelute on DB-624 analytical column

d n-Octane and cis-1,3-Dichloropropylene coelute on DB-624 analytical column

e m-Xylene and p-Xylene coelute on DB-624 analytical column

f Styrene and o-Xylene coelute on DB-624 analytical column

g Quantitated on PID

h Quantitated on ECD

(H) High confidence level

(M) Medium confidence level

(L) Low confidence level

D Duplicate sample

R Replicate analysis

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(Continued)

TABLE A-13. MULTIPLE DETECTOR SPECIATED THREE-HOUR DATA SUMMARY FOR NEWARK, NJ (NWNJ) (Continued)

Sample Date Sample ID	Concentration, ppbv				
	08/24/87 2912	08/25/87 2927	09/01/87 3133	09/16/87 3465	09/17/87 3523
Compound, a	GC/MD	GC/MD	GC/MD	GC/MD	GC/MD
Methylene chloride	<0.4b	<0.4b	<0.4b	10.6(H)	<0.4b
trans-1,2-Dichloroethylene	<0.7b	<0.7b	<0.7b	<0.7b	<0.7b
1,1-Dichloroethane	<1.3b	<1.3b	<1.3b	<1.3b	<1.3b
Chloroprene	<2.6b	<2.6b	<2.6b	<2.6b	<2.6b
Bromochloromethane	<1.1b	<1.1b	<1.1b	<1.1b	<1.1b
Chloroform	<0.9b	<0.9b	<0.9b	<0.9b	<0.9b
1,1,1-Trichloroethane	1.5(H)	<0.4b	<0.4b	<0.4b	<0.4b
Carbon tetrachloride	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Benzene/1,2-Dichloroethane	<2.2b,c	<2.2b,c	<2.2b,c	3.2(H)c	<2.2b,c
Benzene	0.5(M)g	<0.5b,g	<0.5b,g	1.4(H)g	<0.5b,g
Trichloroethylene	<0.9b	<0.9b	<0.9b	<0.9b	<0.9b
1,2-Dichloropropane	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Bromodichloromethane	<1.4b	<1.4b	<1.4b	<1.4b	<1.4b
trans-1,3-Dichloropropylene	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Toluene	3.7(H)	20.0(H)	7.3(H)	16.4(H)	11.7(M)
n-Octane/c-1/3-Dichloropropylene	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d
cis-1,3-Dichloropropylene	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h
1,1,2-Trichloroethane	<0.8b	<0.8b	<0.8b	<0.8b	<0.8b
Tetrachloroethylene	<0.8b	<0.8b	16.7(M)	20.5(H)	<0.8b
Dibromochloromethane	<1.7b	<1.7b	<1.7b	<1.7b	<1.7b
Chlorobenzene	<0.4b	1.5(M)	1.1(M)	<0.4b	<0.4b
m/p-Xylene	<1.2b,e	26.9(H)e	13.9(H)e	16.4(M)e	16.6(M)e
Styrene	<0.2b,f	<0.2b,f	1.6(H)f	2.0(L)f	<0.2b,f
o-Xylene	f	<0.2b,f	f	f	<0.2b,f
Bromoform	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h
1,1,2,2-Tetrachloroethane	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h
m-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
p-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
o-Dichlorobenzene	<0.4b	<0.4b	<0.4b	<0.4b	<0.4b

- a The following compounds were not resolved on DB-624 analytical column:  
acetylene, 1,3-butadiene, vinyl chloride, chloroethane, chloromethane, propylene, and bromomethane
- b Compound not detected at estimated method detection limit
- c Benzene and 1,2-Dichloroethane coelute on DB-624 analytical column; quantitated separately by GC/MS
- d n-Octane and cis-1,3-Dichloropropylene coelute on DB-624 analytical column
- e m-Xylene and p-Xylene coelute on DB-624 analytical column
- f Styrene and o-Xylene coelute on DB-624 analytical column
- g Quantitated on PID
- h Quantitated on ECD
- (H) High confidence level      (M) Medium confidence level      (L) Low confidence level

TABLE A-14. MULTIPLE DETECTOR SPECIATED THREE-HOUR DATA SUMMARY FOR SAN DIEGO, CA (SDCA)

Sample Date Sample ID	Concentration, ppbv				
	08/14/87 2675	08/17/87 2712	08/20/87 2856D	08/20/87 2857D	08/20/87 2857R
Compound, a	GC/MD	GC/MD	GC/MD	GC/MD	GC/MD
Methylene chloride	<0.4b	<0.4b	<0.4b	<0.4b	<0.4b
trans-1,2-Dichloroethylene	<0.7b	<0.7b	<0.7b	<0.7b	<0.7b
1,1-Dichloroethane	<1.3b	<1.3b	<1.3b	<1.3b	<1.3b
Chloroprene	<2.6b	<2.6b	<2.6b	<2.6b	<2.6b
Bromochloromethane	<1.1b	<1.1b	<1.1b	<1.1b	<1.1b
Chloroform	<0.9b	<0.9b	<0.9b	<0.9b	<0.9b
1,1,1-Trichloroethane	<0.4b	<0.4b	<0.4b	<0.4b	<0.4b
Carbon tetrachloride	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Benzene/1,2-Dichloroethane	<2.2b,c	<2.2b,c	<2.2b,c	<2.2b,c	<2.2b,c
Benzene	<0.5b,g	<0.5b,g	<0.5b,g	<0.5b,g	<0.5b,g
Trichloroethylene	<0.9b	<0.9b	<0.9b	<0.9b	<0.9b
1,2-Dichloropropane	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Bromodichloromethane	<1.4b	<1.4b	<1.4b	<1.4b	<1.4b
trans-1,3-Dichloropropylene	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Toluene	<0.5b	1.8(H)	<0.5b	6.6(H)	<0.5b
n-Octane/c-1/3-Dichloropropylene	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d
cis-1,3-Dichloropropylene	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h
1,1,2-Trichloroethane	<0.8b	<0.8b	<0.8b	<0.8b	<0.8b
Tetrachloroethylene	<0.8b	<0.8b	<0.8b	<0.8b	<0.8b
Dibromochloromethane	<1.7b	<1.7b	<1.7b	<1.7b	<1.7b
Chlorobenzene	<0.4b	<0.4b	<0.4b	<0.4b	<0.4b
m/p-Xylene	<1.2b,e	3.8(H)e	<1.2b,e	<1.2b,e	<1.2b,e
Styrene	<0.2b,f	0.3(H)f	<0.2b,f	<0.2b,f	<0.2b,f
o-Xylene	<0.2b,f	<0.2b,f	<0.2b,f	<0.2b,f	<0.2b,f
Bromoform	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h
1,1,2,2-Tetrachloroethane	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h
m-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
p-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
o-Dichlorobenzene	<0.4b	<0.4b	<0.4b	<0.4b	<0.4b

- a The following compounds were not resolved on DB-624 analytical column:  
acetylene, 1,3-butadiene, vinyl chloride, chloroethane, chloromethane, propylene, and bromomethane
- b Compound not detected at specified method detection limit
- c Benzene and 1,2-Dichloroethane coelute on DB-624 analytical column
- d n-Octane and cis-1,3-Dichloropropylene coelute on DB-624 analytical column
- e m-Xylene and p-Xylene coelute on DB-624 analytical column
- f Styrene and o-Xylene coelute on DB-624 analytical column
- g Quantitated on PID
- h Quantitated on ECD
- (H) High confidence level      (M) Medium confidence level      (L) Low confidence level
- D Duplicate sample
- R Replicate analysis

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(Continued)

TABLE A-14. MULTIPLE DETECTOR SPECIATED THREE-HOUR DATA SUMMARY FOR SAN DIEGO, CA (SDCA) (Continued)

Sample Date Sample ID	Concentration, ppbv				
	08/27/87 3013	08/31/87 3058	09/01/87 3075	09/09/87 3292	09/14/87 3352
Compound, a	GC/MD	GC/MD	GC/MD	GC/MD	GC/MD
Methylene chloride	<0.4b	<0.4b	25.4(H)	<0.4b	30.0(M)
trans-1,2-Dichloroethylene	<0.7b	<0.7b	<0.7b	<0.7b	<0.7b
1,1-Dichloroethane	<1.3b	<1.3b	<1.3b	<1.3b	<1.3b
Chloroprene	<2.6b	<2.6b	<2.6b	<2.6b	<2.6b
Bromochloromethane	<1.1b	<1.1b	<1.1b	<1.1b	<1.1b
Chloroform	<0.9b	<0.9b	<0.9b	<0.9b	<0.9b
1,1,1-Trichloroethane	1.1(H)	1.4(M)	2.2(M)	3.7(H)	<0.4b
Carbon tetrachloride	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Benzene/1,2-Dichloroethane	<2.2b,c	<2.2b,c	3.2(H)c	4.0(H)c	3.0(H)c
Benzene	0.5(M)g	0.5(H)g	1.2(H)g	1.2(H)g	1.1(H)g
Trichloroethylene	<0.9b	<0.9b	<0.9b	<0.9b	<0.9b
1,2-Dichloropropane	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Bromodichloromethane	<1.4b	<1.4b	<1.4b	<1.4b	<1.4b
trans-1,3-Dichloropropylene	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Toluene	3.4(H)	3.9(M)	7.6(H)	10.4(H)	7.6(H)
n-Octane/c-1/3-Dichloropropylene	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d
cis-1,3-Dichloropropylene	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h
1,1,2-Trichloroethane	<0.8b	<0.8b	<0.8b	<0.8b	<0.8b
Tetrachloroethylene	<0.8b	2.2(M)	<0.8b	3.2(L)	<0.8b
Dibromochloromethane	<1.7b	<1.7b	<1.7b	<1.7b	<1.7b
Chlorobenzene	<0.4b	<0.4b	<0.4b	<0.4b	1.3(M)
m/p-Xylene	5.4(H)e	6.8(M)e	12.8(H)e	19.6(H)e	12.8(H)e
Styrene	0.6(M)f	0.7(M)f	1.1(H)f	1.6(M)f	1.1(H)f
o-Xylene	<0.2b,f	<0.2b,f	f	f	f
Bromoform	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h
1,1,2,2-Tetrachloroethane	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h
m-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
p-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
o-Dichlorobenzene	<0.4b	<0.4b	<0.4b	<0.4b	<0.4b

- a The following compounds were not resolved on DB-624 analytical column:  
acetylene, 1,3-butadiene, vinyl chloride, chloroethane, chloromethane, propylene, and bromomethane
- b Compound not detected at estimated method detection limit
- c Benzene and 1,2-Dichloroethane coelute on DB-624 analytical column; quantitated separately by GC/MS
- d n-Octane and cis-1,3-Dichloropropylene coelute on DB-624 analytical column
- e m-Xylene and p-Xylene coelute on DB-624 analytical column
- f Styrene and o-Xylene coelute on DB-624 analytical column
- g Quantitated on PID
- h Quantitated on ECD
- (H) High confidence level      (M) Medium confidence level      (L) Low confidence level



TABLE A-15. MULTIPLE DETECTOR SPECIATED THREE-HOUR DATA SUMMARY FOR SAN FRANCISCO, CA (SFCA)

Concentration, ppbv					
Sample Date	08/12/87	08/17/87	08/19/87	08/21/87	08/21/87
Sample ID	2646	2742	2787	2861R	2861D
Compound, a	GC/MD	GC/MD	GC/MD	GC/MD	GC/MD
Methylene chloride	<0.4b	<0.4b	<0.4b	<0.4b	<0.4b
trans-1,2-Dichloroethylene	<0.7b	<0.7b	<0.7b	<0.7b	<0.7b
1,1-Dichloroethane	<1.3b	<1.3b	<1.3b	<1.3b	<1.3b
Chloroprene	<2.6b	<2.6b	<2.6b	<2.6b	<2.6b
Bromochloromethane	<1.1b	<1.1b	<1.1b	<1.1b	<1.1b
Chloroform	<0.9b	<0.9b	<0.9b	<0.9b	<0.9b
1,1,1-Trichloroethane	<0.4b	<0.4b	<0.4b	<0.4b	<0.4b
Carbon tetrachloride	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Benzene/1,2-Dichloroethane	<2.2b,c	<2.2b,c	<2.2b,c	<2.2b,c	<2.2b,c
Benzene	<0.5b,g	<0.5b,g	<0.5b,g	<0.5b,g	<0.5b,g
Trichloroethylene	<0.9b	<0.9b	<0.9b	<0.9b	<0.9b
1,2-Dichloropropane	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Bromodichloromethane	<1.4b	<1.4b	<1.4b	<1.4b	<1.4b
trans-1,3-Dichloropropylene	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Toluene	<0.5b	1.6(M)	<0.5b	<0.5b	<0.5b
n-Octane/c-1/3-Dichloropropylene	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d
cis-1,3-Dichloropropylene	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h
1,1,2-Trichloroethane	<0.8b	<0.8b	<0.8b	<0.8b	<0.8b
Tetrachloroethylene	<0.8b	<0.8b	<0.8b	<0.8b	<0.8b
Dibromochloromethane	<1.7b	<1.7b	<1.7b	<1.7b	<1.7b
Chlorobenzene	<0.4b	<0.4b	<0.4b	<0.4b	<0.4b
m/p-Xylene	<1.2b,e	<1.2b,e	2.7(H)e	<1.2b,e	<1.2b,e
Styrene	<0.2b,f	<0.2b,f	<0.2b,f	<0.2b,f	<0.2b,f
o-Xylene	<0.2b,f	<0.2b,f	<0.2b,f	<0.2b,f	<0.2b,f
Bromoform	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h
1,1,2,2-Tetrachloroethane	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h
m-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
p-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
o-Dichlorobenzene	<0.4b	<0.4b	<0.4b	<0.4b	<0.4b

- a The following compounds were not resolved on DB-624 analytical column:  
acetylene, 1,3-butadiene, vinyl chloride, chloroethane, chloromethane, propylene, and bromomethane
- b Compound not detected at estimated method detection limit
- c Benzene and 1,2-Dichloroethane coelute on DB-624 analytical column
- d n-Octane and cis-1,3-Dichloropropylene coelute on DB-624 analytical column
- e m-Xylene and p-Xylene coelute on DB-624 analytical column
- f Styrene and o-Xylene coelute on DB-624 analytical column
- g Quantitated on PID
- h Quantitated on ECD
- (H) High confidence level      (M) Medium confidence level      (L) Low confidence level
- D Duplicate sample
- R Replicate analysis

TABLE A-15. MULTIPLE DETECTOR SPECIATED THREE-HOUR DATA SUMMARY FOR SAN FRANCISCO, CA (SFCA) (Continued)

Sample Date Sample ID	Concentration, ppbv				
	08/21/87	08/25/87	09/01/87	09/04/87	09/08/87
	2862D	2924	3080	3180	3235
Compound, a	GC/MD	GC/MD	GC/MD	GC/MD	GC/MD
Methylene chloride	<0.4b	5.6(H)	<0.4b	<0.4b	<0.4b
trans-1,2-Dichloroethylene	<0.7b	<0.7b	<0.7b	<0.7b	<0.7b
1,1-Dichloroethane	<1.3b	<1.3b	<1.3b	<1.3b	<1.3b
Chloroprene	<2.6b	<2.6b	<2.6b	<2.6b	<2.6b
Bromochloromethane	<1.1b	<1.1b	<1.1b	<1.1b	<1.1b
Chloroform	<0.9b	<0.9b	<0.9b	<0.9b	<0.9b
1,1,1-Trichloroethane	<0.4b	0.8(M)	<0.4b	<0.4b	1.4(M)
Carbon tetrachloride	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Benzene/1,2-Dichloroethane	<2.2b,c	<2.2b,c	<2.2b,c	<2.2b,c	2.7(M)c
Benzene	<0.5b,g	<0.5b,g	<0.5b,g	<0.5b,g	0.9(M)g
Trichloroethylene	<0.9b	<0.9b	<0.9b	<0.9b	<0.9b
1,2-Dichloropropane	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Bromodichloromethane	<1.4b	<1.4b	<1.4b	<1.4b	<1.4b
trans-1,3-Dichloropropylene	<0.6b	<0.6b	<0.6b	<0.6b	<0.6b
Toluene	<0.5b	2.3(H)	2.5(H)	1.5(H)	8.2(H)
n-Octane/c-1/3-Dichloropropylene	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d	<0.4b,d
cis-1,3-Dichloropropylene	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h	<1.0b,h
1,1,2-Trichloroethane	<0.8b	<0.8b	<0.8b	<0.8b	<0.8b
Tetrachloroethylene	<0.8b	<0.8b	<0.8b	<0.8b	<0.8b
Dibromochloromethane	<1.7b	<1.7b	<1.7b	<1.7b	<1.7b
Chlorobenzene	<0.4b	<0.4b	0.4(M)	<0.4b	<0.4b
m/p-Xylene	<1.2b,e	3.7(H)e	4.1(H)e	2.5(H)e	9.7(H)e
Styrene	<0.2b,f	0.4(H)f	0.4(H)f	0.2(H)f	0.9(H)f
o-Xylene	<0.2b,f	<0.2b,f	<0.2b,f	<0.2b,f	<0.2b,f
Bromoform	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h	<0.07b,h
1,1,2,2-Tetrachloroethane	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h	<0.03b,h
m-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
p-Dichlorobenzene	<0.3b	<0.3b	<0.3b	<0.3b	<0.3b
o-Dichlorobenzene	<0.4b	<0.4b	<0.4b	<0.4b	<0.4b

- a The following compounds were not resolved on DB-624 analytical column:  
acetylene, 1,3-butadiene, vinyl chloride, chloroethane, chloromethane, propylene, and bromomethane
- b Compound not detected at estimated method detection limit
- c Benzene and 1,2-Dichloroethane coelute on DB-624 analytical column; quantitated separately by GC/MS
- d n-Octane and cis-1,3-Dichloropropylene coelute on DB-624 analytical column
- e m-Xylene and p-Xylene coelute on DB-624 analytical column
- f Styrene and o-Xylene coelute on DB-624 analytical column
- g Quantitated on PID
- h Quantitated on ECD
- (H) High confidence level      (M) Medium confidence level      (L) Low confidence level
- D Duplicate sample

WHM/004

TABLE A-16. MASS SPECTROMETRY SPECIATED THREE-HOUR DATA SUMMARY FOR ATLANTA, GA (ATGA)

Sample Date Sample ID	Concentration, ppbv	
	09/02/87	09/21/87
	3136	3531
Compound	GC/MS	GC/MS
Acetylene	a	a
1,3-Butadiene	<40.0b	<40.0b
Vinyl chloride	<1.0b	<1.0b
Chloroethane	<1.6b	<1.6b
Chloromethane	<1.0b	<1.0b
Propylene	<1.5b	<1.5b
Bromomethane	<0.6b	<0.6b
Methylene chloride	4.0	2.0
trans-1,2-Dichloroethylene	<0.3b	<0.3b
1,1-Dichloroethane	<0.3b	<0.3b
Chloroprene	<2.0b	<2.0b
Bromochloromethane	<0.4b	<0.4b
Chloroform	<0.3b	<0.3b
1,1,1-Trichloroethane	0.9	0.9
Carbon tetrachloride	<0.2b	<0.2b
1,2-Dichloroethane	<0.5b	<0.5b
Benzene	4.0	2.0
Trichloroethylene	9.0	0.9
1,2-Dichloropropane	<0.4b	<0.4b
Bromodichloromethane	<0.5b	<0.5b
trans-1,3-Dichloropropylene	<0.4b	<0.4b
Toluene	11.0	6.0
n-Octane	<0.5b	<0.5b
cis-1,3-Dichloropropylene	<0.6b	<0.6b
1,1,2-Trichloroethane	<0.4b	<0.4b
Tetrachloroethylene	<0.4b	1.2
Dibromochloromethane	<0.2b	<0.2b
Chlorobenzene	<0.2b	<0.2b
m/p-Xylene	40.0c	20.0c
Styrene	<0.3b	<0.3b
o-Xylene	4.0	<2.7b
Bromoform	<0.2b	<0.2b
1,1,2,2-Tetrachloroethane	<0.2b	<0.2b
m-Dichlorobenzene	<0.2b	<0.2b
p-Dichlorobenzene	<0.2b	0.6
o-Dichlorobenzene	<0.2b	<0.2b

- a Below mas spectrometry range  
 b Compound not detected at estimated method detection limit  
 c m-Xylene and p-xylene coelute on DB-624 analytical column and have identical mass spectra

WHM/004

TABLE A-17. MASS SPECTROMETRY SPECIATED THREE-HOUR DATA SUMMARY FOR BOSTON, MA (B1MA)

Sample Date Sample ID	Concentration, ppbv	
	09/14/87 3353	09/17/87 3452
Compound	GC/MS	GC/MS
Acetylene	a	a
1,3-Butadiene	<40.0b	<40.0b
Vinyl chloride	<1.0b	<1.0b
Chloroethane	<1.6b	<1.6b
Chloromethane	<1.0b	<1.0b
Propylene	<1.5b	<1.5b
Bromomethane	<0.6b	<0.6b
Methylene chloride	<0.5b	<0.5b
trans-1,2-Dichloroethylene	<0.3b	<0.3b
1,1-Dichloroethane	<0.3b	<0.3b
Chloroprene	<2.0b	<2.0b
Bromochloromethane	<0.4b	<0.4b
Chloroform	<0.3b	<0.3b
1,1,1-Trichloroethane	<0.3b	<0.3b
Carbon tetrachloride	<0.2b	<0.2b
1,2-Dichloroethane	<0.5b	<0.5b
Benzene	0.6	<0.2b
Trichloroethylene	<0.3b	<0.3b
1,2-Dichloropropane	<0.4b	<0.4b
Bromodichloromethane	<0.5b	<0.5b
trans-1,3-Dichloropropylene	<0.4b	<0.4b
Toluene	2.0	0.9
n-Octane	<0.5b	<0.5b
cis-1,3-Dichloropropylene	<0.6b	<0.6b
1,1,2-Trichloroethane	<0.4b	<0.4b
Tetrachloroethylene	1.2	<0.4b
Dibromochloromethane	<0.2b	<0.2b
Chlorobenzene	<0.2b	<0.2b
m/p-Xylene	4.0c	<0.6b,c
Styrene	<0.3b	<0.3b
o-Xylene	<2.7b	<2.7b
Bromoform	<0.2b	<0.2b
1,1,2,2-Tetrachloroethane	<0.2b	<0.2b
m-Dichlorobenzene	<0.2b	<0.2b
p-Dichlorobenzene	<0.2b	<0.2b
o-Dichlorobenzene	<0.2b	<0.2b

a Below mass spectrometry range

b Compound not detected at estimated method detection limit

c m-Xylene and p-Xylene coelute on DB-624 analytical column and have identical mass spectra

WHM/004

TABLE A-18. MASS SPECTROMETRY SPECIATED THREE-HOUR DATA SUMMARY FOR BOSTON, MA (B2MA)

Sample Date	09/14/87	09/17/87
Sample ID	3364	3486
Compound	GC/MS	GC/MS
Acetylene	a	a
1,3-Butadiene	<40.0b	<40.0b
Vinyl chloride	<1.0b	<1.0b
Chloroethane	<1.6b	<1.6b
Chloromethane	<1.0b	<1.0b
Propylene	<1.5b	<1.5b
Bromomethane	<0.6b	<0.6b
Methylene chloride	<0.5b	2.0
trans-1,2-Dichloroethylene	<0.3b	<0.3b
1,1-Dichloroethane	<0.3b	<0.3b
Chloroprene	<2.0b	<2.0b
Bromochloromethane	<0.4b	<0.4b
Chloroform	<0.3b	<0.3b
1,1,1-Trichloroethane	<0.3b	0.9
Carbon tetrachloride	<0.2b	<0.2b
1,2-Dichloroethane	<0.5b	<0.5b
Benzene	2.0	2.0
Trichloroethylene	<0.3b	<0.3b
1,2-Dichloropropane	<0.4b	<0.4b
Bromodichloromethane	<0.5b	<0.5b
trans-1,3-Dichloropropylene	<0.4b	<0.4b
Toluene	3.0	4.0
n-Octane	<0.5b	<0.5b
cis-1,3-Dichloropropylene	<0.6b	<0.6b
1,1,2-Trichloroethane	<0.4b	<0.4b
Tetrachloroethylene	1.2	1.2
Dibromochloromethane	<0.2b	<0.2b
Chlorobenzene	<0.2b	<0.2b
m/p-Xylene	13.0c	17.0c
Styrene	0.9	<0.3b
o-Xylene	<2.7b	<2.7b
Bromoform	<0.2b	<0.2b
1,1,2,2-Tetrachloroethane	<0.2b	<0.2b
m-Dichlorobenzene	<0.2b	<0.2b
p-Dichlorobenzene	0.6	0.6
o-Dichlorobenzene	<0.2b	<0.2b

a Below mass spectrometry range

b Compound not detected at specified estimated detection limit

c m-Xylene and p-xylene have identical mass spectra

WHM/004

TABLE A-19. MASS SPECTROMETRY SPECIATED THREE-HOUR DATA SUMMARY FOR BIRMINGHAM, AL (BHAL)

Sample Date	09/10/87	09/11/87
Sample ID	3324	3390
Compound	GC/MS	GC/MS
Acetylene	a	a
1,3-Butadiene	<40.0b	<40.0b
Vinyl chloride	<1.0b	<1.0b
Chloroethane	<1.6b	<1.6b
Chloromethane	<1.0b	<1.0b
Propylene	10.0	<1.5b
Bromomethane	<0.6b	<0.6b
Methylene chloride	5.0	<0.5b
trans-1,2-Dichloroethylene	<0.3b	<0.3b
1,1-Dichloroethane	<0.3b	<0.3b
Chloroprene	<2.0b	<2.0b
Bromochloromethane	<0.4b	<0.4b
Chloroform	<0.3b	<0.3b
1,1,1-Trichloroethane	<0.3b	<0.3b
Carbon tetrachloride	<0.2b	<0.2b
1,2-Dichloroethane	<0.5b	<0.5b
Benzene	19.0	1.0
Trichloroethylene	<0.3b	<0.3b
1,2-Dichloropropane	<0.4b	<0.4b
Bromodichloromethane	<0.5b	<0.5b
trans-1,3-Dichloropropylene	<0.4b	<0.4b
Toluene	13.4	3.0
n-Octane	<0.5b	<0.5b
cis-1,3-Dichloropropylene	<0.6b	<0.6b
1,1,2-Trichloroethane	<0.4b	<0.4b
Tetrachloroethylene	<0.4b	<0.4b
Dibromochloromethane	<0.2b	<0.2b
Chlorobenzene	<0.2b	<0.2b
m/p-Xylene	39.0c	15.0c
Styrene	<0.3b	<0.3b
o-Xylene	5.0	<2.7b
Bromoform	<0.2b	<0.2b
1,1,2,2-Tetrachloroethane	<0.2b	<0.2b
m-Dichlorobenzene	<0.2b	<0.2b
p-Dichlorobenzene	<0.2b	<0.2b
o-Dichlorobenzene	<0.2b	<0.2b

a Below mass spectrometry range

b Compound not detected at specified estimated detection limit

c m-Xylene and p-xylene have identical mass spectra

WHM/004

TABLE A-20. MASS SPECTROMETRY SPECIATED THREE-HOUR DATA SUMMARY FOR NEW YORK, NY BRONX (BNY)

Sample Date	09/22/87	09/29/87
Sample ID	3585	3742
Compound	GC/MS	GC/MS
Acetylene	a	a
1,3-Butadiene	<40.0b	<40.0b
Vinyl chloride	<1.0b	<1.0b
Chloroethane	<1.6b	<1.6b
Chloromethane	<1.0b	<1.0b
Propylene	<1.5b	<1.5b
Bromomethane	<0.6b	<0.6b
Methylene chloride	2.0	2.0
trans-1,2-Dichloroethylene	<0.3b	<0.3b
1,1-Dichloroethane	<0.3b	<0.3b
Chloroprene	<2.0b	<2.0b
Bromochloromethane	<0.4b	<0.4b
Chloroform	0.9	0.9
1,1,1-Trichloroethane	0.9	1.0
Carbon tetrachloride	<0.2b	<0.2b
1,2-Dichloroethane	<0.5b	<0.5b
Benzene	2.0	2.0
Trichloroethylene	0.9	0.9
1,2-Dichloropropane	<0.4b	<0.4b
Bromodichloromethane	<0.5b	<0.5b
trans-1,3-Dichloropropylene	<0.4b	<0.4b
Toluene	8.0	9.0
n-Octane	<0.5b	<0.5b
cis-1,3-Dichloropropylene	<0.6b	<0.6b
1,1,2-Trichloroethane	<0.4b	<0.4b
Tetrachloroethylene	1.2	1.0
Dibromochloromethane	<0.2b	<0.2b
Chlorobenzene	<0.2b	<0.2b
m/p-Xylene	20.0e	33.0e
Styrene	1.0	<0.3b
o-Xylene	<2.7b	3.6
Bromoform	<0.2b	<0.2b
1,1,2,2-Tetrachloroethane	<0.2b	<0.2b
m-Dichlorobenzene	<0.2b	<0.2b
p-Dichlorobenzene	0.6	0.6
o-Dichlorobenzene	<0.2b	<0.2b

a Below mass spectrometry range

b Compound not detected at specified estimated detection limit

c m-Xylene and p-xylene coelute on DB-624 analytical column and have identical mass spectra

WHM/004

TABLE A-21. MASS SPECTROMETRY SPECIATED THREE-HOUR DATA SUMMARY FOR CHICAGO, IL STATE OFFICE BLDG. (C11L)

Sample Date Sample ID	Concentration, ppbv	
	09/14/87 3330	09/21/87 3552
Compound	GC/MS	GC/MS
Acetylene	a	a
1,3-Butadiene	<40.0b	<40.0b
Vinyl chloride	<1.0b	<1.0b
Chloroethane	<1.6b	<1.6b
Chloromethane	<1.0b	<1.0b
Propylene	<1.5b	<1.5b
Bromomethane	<0.6b	<0.6b
Methylene chloride	3.0	2.0
trans-1,2-Dichloroethylene	<0.3b	<0.3b
1,1-Dichloroethane	<0.3b	<0.3b
Chloroprene	<2.0b	<2.0b
Bromochloromethane	<0.4b	<0.4b
Chloroform	<0.3b	<0.3b
1,1,1-Trichloroethane	1.0	0.9
Carbon tetrachloride	<0.2b	<0.2b
Benzene/1,2-Dichloroethane	<0.5b	<0.5b
Benzene	4.0c	4.0c
Trichloroethylene	1.0	0.9
1,2-Dichloropropane	<0.4b	<0.4b
Bromodichloromethane	<0.5b	<0.5b
trans-1,3-Dichloropropylene	<0.4b	<0.4b
Toluene	13.0	10.0
n-Octane/c-1/3-Dichloropropylene	<0.5b	<0.5b
cis-1,3-Dichloropropylene	<0.6b	<0.6b
1,1,2-Trichloroethane	<0.4b	<0.4b
Tetrachloroethylene	<0.4b	1.2
Dibromochloromethane	<0.2b	<0.2b
Chlorobenzene	<0.2b	<0.2b
m/p-Xylene	32.0c	27.0c
Styrene	<0.3b	<0.3b
o-Xylene	3.0	3.0
Bromoform	<0.2b	<0.2b
1,1,2,2-Tetrachloroethane	<0.2b	<0.2b
m-Dichlorobenzene	<0.2b	<0.2b
p-Dichlorobenzene	0.6	0.6
o-Dichlorobenzene	<0.2b	<0.2b

- a Below mass spectrometry range
- b Compound not detected at specified estimated method detection limit
- c m-Xylene and p-Xylene coelute on DB-624 analytical column and have identical mass spectra

WHM/004



TABLE A-22. MASS SPECTROMETRY SPECIATED THREE-HOUR DATA SUMMARY FOR CHICAGO, IL SEARS TOWER (C31L)

Sample Date	09/11/87	09/16/87
Sample ID	3311	3427
Compound	GC/MS	GC/MS
Acetylene	a	a
1,3-Butadiene	<40.0b	<40.0b
Vinyl chloride	<1.0b	<1.0b
Chloroethane	<1.6b	<1.6b
Chloromethane	<1.0b	<1.0b
Propylene	<1.5b	<1.5b
Bromomethane	<0.6b	<0.6b
Methylene chloride	<0.5b	1.5
trans-1,2-Dichloroethylene	<0.3b	<0.3b
1,1-Dichloroethane	<0.3b	<0.3b
Chloroprene	<2.0b	<2.0b
Bromochloromethane	<0.4b	<0.4b
Chloroform	<0.3b	<0.3b
1,1,1-Trichloroethane	0.9	0.9
Carbon tetrachloride	<0.2b	<0.2b
1,2-Dichloroethane	<0.5b	<0.5b
Benzene	<0.2b	<0.2b
Trichloroethylene	<0.3b	<0.3b
1,2-Dichloropropane	<0.4b	<0.4b
Bromodichloromethane	<0.5b	<0.5b
trans-1,3-Dichloropropylene	<0.4b	<0.4b
Toluene	2.0	0.9
n-Octane	<0.5b	<0.5b
cis-1,3-Dichloropropylene	<0.6b	<0.6b
1,1,2-Trichloroethane	<0.4b	<0.4b
Tetrachloroethylene	<0.4b	1.2
Dibromochloromethane	<0.2b	<0.2b
Chlorobenzene	<0.2b	<0.2b
m/p-Xylene	11.0c	<0.6b, c
Styrene	<0.3b	<0.3b
o-Xylene	<2.7b	<2.7b
Bromoform	<0.2b	<0.2b
1,1,2,2-Tetrachloroethane	<0.2b	<0.2b
m-Dichlorobenzene	<0.2b	<0.2b
p-Dichlorobenzene	<0.2b	<0.2b
o-Dichlorobenzene	<0.2b	<0.2b

a Below mass spectrometry range

b Compound not detected at specified estimated method detection limit

c m-Xylene and p-xylene coelute on DB-624 analytical column and have identical mass spectra

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TABLE A-23. MASS SPECTROMETRY SPECIATED THREE-HOUR DATA SUMMARY FOR CINCINNATI, OH (C10H)

Sample Date Sample ID	09/10/87 3289	09/14/87 3350
Compound	GC/MS	GC/MS
Acetylene	a	a
1,3-Butadiene	<40.0b	<40.0b
Vinyl chloride	<1.0b	<1.0b
Chloroethane	<1.6b	<1.6b
Chloromethane	5.0	<1.0b
Propylene	<1.5b	<1.5b
Bromomethane	<0.6b	<0.6b
Methylene chloride	7.0	2.0
trans-1,2-Dichloroethylene	<0.3b	<0.3b
1,1-Dichloroethane	<0.3b	<0.3b
Chloroprene	<2.0b	<2.0b
Bromochloromethane	<0.4b	<0.4b
Chloroform	0.9	<0.3b
1,1,1-Trichloroethane	1.0	0.9
Carbon tetrachloride	<0.2b	<0.2b
1,2-Dichloroethane	<0.5b	<0.5b
Benzene	5.0	3.0
Trichloroethylene	0.9	<0.3b
1,2-Dichloropropane	<0.4b	<0.4b
Bromodichloromethane	<0.5b	<0.5b
trans-1,3-Dichloropropylene	<0.4b	<0.4b
Toluene	15.0	8.0
n-Octane	<0.5b	<0.5b
cis-1,3-Dichloropropylene	<0.6b	<0.6b
1,1,2-Trichloroethane	<0.4b	<0.4b
Tetrachloroethylene	2.0	1.2
Dibromochloromethane	<0.2b	<0.2b
Chlorobenzene	1.0	<0.2b
m/p-Xylene	34.0c	25.0c
Styrene	3.0	3.0
o-Xylene	<2.7b	3.0
Bromoform	<0.2b	<0.2b
1,1,2,2-Tetrachloroethane	<0.2b	<0.2b
m-Dichlorobenzene	<0.2b	<0.2b
p-Dichlorobenzene	1.0	0.6
o-Dichlorobenzene	<0.2b	<0.2b

a Below mass spectrometry range

b Compound not detected at specified estimated method detection limit

c m-Xylene and p-xylene coelute on DB-624 analytical column and have identical mass spectra

WHM/004

TABLE A-24. MASS SPECTROMETRY SPECIATED THREE-HOUR DATA SUMMARY FOR DECATUR, GA (DEGA)

Sample Date Sample ID	Concentration, ppbv	
	09/03/87 3193D	09/11/87 3336
Compound	GC/MS	GC/MS
Acetylene	a	a
1,3-Butadiene	<40.0b	<40.0b
Vinyl chloride	<1.0b	<1.0b
Chloroethane	<1.6b	<1.6b
Chloromethane	<1.0b	<1.0b
Propylene	<1.5b	<1.5b
Bromomethane	<0.6b	<0.6b
Methylene chloride	<0.5b	<0.5b
trans-1,2-Dichloroethylene	<0.3b	<0.3b
1,1-Dichloroethane	<0.3b	<0.3b
Chloroprene	<2.0b	<2.0b
Bromochloromethane	<0.4b	<0.4b
Chloroform	<0.3b	<0.3b
1,1,1-Trichloroethane	0.9	<0.3b
Carbon tetrachloride	<0.2b	<0.2b
1,2-Dichloroethane	<0.5b	<0.5b
Benzene	0.6	<0.2b
Trichloroethylene	<0.3b	<0.3b
1,2-Dichloropropane	<0.4b	<0.4b
Bromodichloromethane	<0.5b	<0.5b
trans-1,3-Dichloropropylene	<0.4b	<0.4b
Toluene	3.0	0.9
n-Octane	<0.5b	<0.5b
cis-1,3-Dichloropropylene	<0.6b	<0.6b
1,1,2-Trichloroethane	<0.4b	<0.4b
Tetrachloroethylene	<0.4b	<0.4b
Dibromochloromethane	<0.2b	<0.2b
Chlorobenzene	<0.2b	<0.2b
m/p-Xylene	11.0c	<0.6b,c
Styrene	<0.3b	<0.3b
o-Xylene	<2.7b	<2.7b
Bromoform	<0.2b	<0.2b
1,1,2,2-Tetrachloroethane	<0.2b	<0.2b
m-Dichlorobenzene	<0.2b	<0.2b
p-Dichlorobenzene	<0.2b	<0.2b
o-Dichlorobenzene	<0.2b	<0.2b

- a The mass spectrometer cannot analyze for acetylene  
 b Compound not detected at specified estimated method detection limit  
 c m-Xylene and p-Xylene coelute on DB-624 column and have identical mass spectra  
 D Duplicate sample

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TABLE A-25. MASS SPECTROMETRY SPECIATED THREE-HOUR DATA SUMMARY FOR FRESNO, CA (FRCA)

Sample Date Sample ID	Concentration, ppbv	
	09/08/87	09/14/87
	3243	3356
Compound	GC/MS	GC/MS
Acetylene	a	a
1,3-Butadiene	<40.0b	<40.0b
Vinyl chloride	<1.0b	<1.0b
Chloroethane	<1.6b	<1.6b
Chloromethane	<1.0b	<1.0b
Propylene	<1.5b	<1.5b
Bromomethane	<0.6b	<0.6b
Methylene chloride	<0.5b	<0.5b
trans-1,2-Dichloroethylene	<0.3b	<0.3b
1,1-Dichloroethane	<0.3b	<0.3b
Chloroprene	<2.0b	<2.0b
Bromochloromethane	<0.4b	<0.4b
Chloroform	<0.3b	<0.3b
1,1,1-Trichloroethane	<0.3b	<0.3b
Carbon tetrachloride	<0.2b	<0.2b
1,2-Dichloroethane	<0.5b	<0.5b
Benzene	2.0	0.6
Trichloroethylene	<0.3b	<0.3b
1,2-Dichloropropane	<0.4b	<0.4b
Bromodichloromethane	<0.5b	<0.5b
trans-1,3-Dichloropropylene	<0.4b	<0.4b
Toluene	5.0	1.0
n-Octane	<0.5b	<0.5b
cis-1,3-Dichloropropylene	<0.6b	<0.6b
1,1,2-Trichloroethane	<0.4b	<0.4b
Tetrachloroethylene	<0.4b	<0.4b
Dibromochloromethane	<0.2b	<0.2b
Chlorobenzene	<0.2b	<0.2b
m/p-Xylene	20.0c	2.0c
Styrene	<0.3b	<0.3b
o-Xylene	<2.7b	<2.7b
Bromoform	<0.2b	<0.2b
1,1,2,2-Tetrachloroethane	<0.2b	<0.2b
m-Dichlorobenzene	<0.2b	<0.2b
p-Dichlorobenzene	<0.2b	<0.2b
o-Dichlorobenzene	<0.2b	<0.2b

a The mass spectrometer cannot analyze for acetylene

b Compound not detected at specified estimated method detection limit

c m-Xylene and p-Xylene coelute on DB-624 column and have identical mass spectra

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TABLE A-26. MASS SPECTROMETRY SPECIATED THREE-HOUR DATA SUMMARY FOR LOUISVILLE, KY (L1KY)

Sample Date Sample ID	Concentration, ppbv	
	09/22/87 3548	09/23/87 3583
Compound	GC/MS	GC/MS
Acetylene	a	a
1,3-Butadiene	<40.0b	<40.0b
Vinyl chloride	<1.0b	<1.0b
Chloroethane	<1.6b	<1.6b
Chloromethane	<1.0b	<1.0b
Propylene	<1.5b	<1.5b
Bromomethane	<0.6b	<0.6b
Methylene chloride	2.0	<0.5b
trans-1,2-Dichloroethylene	<0.3b	<0.3b
1,1-Dichloroethane	<0.3b	<0.3b
Chloroprene	<2.0b	<2.0b
Bromochloromethane	<0.4b	<0.4b
Chloroform	<0.3b	<0.3b
1,1,1-Trichloroethane	7.0	1.0
Carbon tetrachloride	<0.2b	<0.2b
1,2-Dichloroethane	<0.5b	<0.5b
Benzene	2.0	2.0
Trichloroethylene	7.0	0.9
1,2-Dichloropropane	<0.4b	<0.4b
Bromodichloromethane	<0.5b	<0.5b
trans-1,3-Dichloropropylene	<0.4b	<0.4b
Toluene	9.0	11.0
n-Octane	<0.5b	1.0
cis-1,3-Dichloropropylene	<0.6b	<0.6b
1,1,2-Trichloroethane	<0.4b	<0.4b
Tetrachloroethylene	1.2	<0.4b
Dibromochloromethane	<0.2b	<0.2b
Chlorobenzene	<0.2b	<0.2b
m/p-Xylene	54.0c	34.0c
Styrene	<0.3b	<0.3b
o-Xylene	9.0	4.0
Bromoform	<0.2b	<0.2b
1,1,2,2-Tetrachloroethane	<0.2b	<0.2b
m-Dichlorobenzene	<0.2b	<0.2b
p-Dichlorobenzene	2.0	1.0
o-Dichlorobenzene	<0.2b	<0.2b

a The mass spectrometer cannot analyze for acetylene

b Compound not detected at specified estimated method detection limit

c m-Xylene and p-Xylene coelute on DB-624 column and have identical mass spectra

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TABLE A-27. MASS SPECTROMETRY SPECIATED THREE-HOUR DATA SUMMARY FOR NEW YORK, NY MANHATTAN (MNY)

Sample Date Sample ID	09/15/87 3424	09/29/87 3744
Compound	GC/MS	GC/MS
Acetylene	a	a
1,3-Butadiene	<40.0b	<40.0b
Vinyl chloride	<1.0b	<1.0b
Chloroethane	<1.6b	<1.6b
Chloromethane	<1.0b	<1.0b
Propylene	<1.5b	<1.5b
Bromomethane	<0.6b	<0.6b
Methylene chloride	3.0	2.0
trans-1,2-Dichloroethylene	<0.3b	<0.3b
1,1-Dichloroethane	<0.3b	<0.3b
Chloroprene	<2.0b	<2.0b
Bromochloromethane	<0.4b	<0.4b
Chloroform	<0.3b	0.9
1,1,1-Trichloroethane	0.9	0.9
Carbon tetrachloride	<0.2b	<0.2b
1,2-Dichloroethane	<0.5b	<0.5b
Benzene	3.0	2.0
Trichloroethylene	0.9	0.9
1,2-Dichloropropane	<0.4b	<0.4b
Bromodichloromethane	<0.5b	<0.5b
trans-1,3-Dichloropropylene	<0.4b	<0.4b
Toluene	15.0	8.0
n-Octane	<0.5b	<0.5b
cis-1,3-Dichloropropylene	<0.6b	<0.6b
1,1,2-Trichloroethane	<0.4b	<0.4b
Tetrachloroethylene	<0.4b	4.0
Dibromochloromethane	<0.2b	<0.2b
Chlorobenzene	<0.2b	<0.2b
m/p-Xylene	33.0c	21.0c
Styrene	<0.3b	<0.3b
o-Xylene	3.0	<2.7b
Bromoform	<0.2b	<0.2b
1,1,2,2-Tetrachloroethane	<0.2b	<0.2b
m-Dichlorobenzene	<0.2b	<0.2b
p-Dichlorobenzene	<0.2b	0.6
o-Dichlorobenzene	<0.2b	<0.2b

a The mass spectrometer cannot analyze for acetylene

b Compound not detected at specified estimated method detection limit

c m-Xylene and p-Xylene coelute on DB-624 column and have identical mass spectra

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TABLE A-28. MASS SPECTROMETRY SPECIATED THREE-HOUR DATA SUMMARY FOR NEWARK, NJ (NWNJ)

Sample Date Sample ID	Concentration, ppbv	
	09/01/87	09/17/87
	3133	3523
Compound	GC/MS	GC/MS
Acetylene	a	a
1,3-Butadiene	<40.0b	<40.0b
Vinyl chloride	<1.0b	<1.0b
Chloroethane	<1.6b	<1.6b
Chloromethane	<1.0b	<1.0b
Propylene	<1.5b	<1.5b
Bromomethane	<0.6b	<0.6b
Methylene chloride	1.5	3.0
trans-1,2-Dichloroethylene	<0.3b	<0.3b
1,1-Dichloroethane	<0.3b	<0.3b
Chloroprene	<2.0b	<2.0b
Bromochloromethane	<0.4b	<0.4b
Chloroform	0.9	<0.3b
1,1,1-Trichloroethane	<0.3b	0.9
Carbon tetrachloride	<0.2b	<0.2b
1,2-Dichloroethane	<0.5b	<0.5b
Benzene	2.0	2.0
Trichloroethylene	<0.3b	1.0
1,2-Dichloropropane	<0.4b	<0.4b
Bromodichloromethane	<0.5b	<0.5b
trans-1,3-Dichloropropylene	<0.4b	<0.4b
Toluene	6.0	9.0
n-Octane	<0.5b	<0.5b
cis-1,3-Dichloropropylene	<0.6b	<0.6b
1,1,2-Trichloroethane	<0.4b	<0.4b
Tetrachloroethylene	12.0	4.0
Dibromochloromethane	<0.2b	<0.2b
Chlorobenzene	<0.2b	<0.2b
m/p-Xylene	18.0c	23.0c
Styrene	<0.3b	1.0
o-Xylene	<2.7b	<2.7b
Bromoform	<0.2b	<0.2b
1,1,2,2-Tetrachloroethane	<0.2b	<0.2b
m-Dichlorobenzene	<0.2b	<0.2b
p-Dichlorobenzene	<0.2b	0.6
o-Dichlorobenzene	<0.2b	<0.2b

- a The mass spectrometer cannot analyze for acetylene  
 b Compound not detected at specified estimated method detection limit  
 c m-Xylene and p-Xylene coelute on DB-624 column and have identical mass spectra

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TABLE A-29. MASS SPECTROMETRY SPECIATED THREE-HOUR DATA SUMMARY FOR SAN DIEGO, CA (SDCA)

Sample Date Sample ID	Concentration, ppbv	
	09/09/87	09/14/87
	3292	3352
Compound	GC/MS	GC/MS
Acetylene	a	a
1,3-Butadiene	<40.0b	<40.0b
Vinyl chloride	<1.0b	<1.0b
Chloroethane	<1.6b	<1.6b
Chloromethane	<1.0b	<1.0b
Propylene	<1.5b	<1.5b
Bromomethane	<0.6b	<0.6b
Methylene chloride	1.5	<0.5b
trans-1,2-Dichloroethylene	<0.3b	<0.3b
1,1-Dichloroethane	<0.3b	<0.3b
Chloroprene	<2.0b	<2.0b
Bromochloromethane	<0.4b	<0.4b
Chloroform	<0.3b	<0.3b
1,1,1-Trichloroethane	0.9	<0.3b
Carbon tetrachloride	<0.2b	<0.2b
1,2-Dichloroethane	<0.5b	<0.5b
Benzene	1.0	2.0
Trichloroethylene	<0.3b	<0.3b
1,2-Dichloropropane	<0.4b	<0.4b
Bromodichloromethane	<0.5b	<0.5b
trans-1,3-Dichloropropylene	<0.4b	<0.4b
Toluene	5.0	5.0
n-Octane	<0.5b	<0.5b
cis-1,3-Dichloropropylene	<0.6b	<0.6b
1,1,2-Trichloroethane	<0.4b	<0.4b
Tetrachloroethylene	1.2	<0.4b
Dibromochloromethane	<0.2b	<0.2b
Chlorobenzene	<0.2b	<0.2b
m/p-Xylene	18.0c	17.0c
Styrene	<0.3b	<0.3b
o-Xylene	<2.7b	<2.7b
Bromoform	<0.2b	<0.2b
1,1,2,2-Tetrachloroethane	<0.2b	<0.2b
m-Dichlorobenzene	<0.2b	<0.2b
p-Dichlorobenzene	0.6	<0.2b
o-Dichlorobenzene	<0.2b	<0.2b

- a The mass spectrometer cannot analyze for acetylene  
b Compound not detected at specified estimated method detection limit  
c m-Xylene and p-Xylene coelute on DB-624 column

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TABLE A-30. MASS SPECTROMETRY SPECIATED THREE-HOUR DATA SUMMARY FOR SAN FRANCISCO, CA (SFCA)

Sample Date Sample ID	Concentration, ppbv	
	09/04/87	09/08/87
	3180	3235
Compound	GC/MS	GC/MS
Acetylene	a	a
1,3-Butadiene	<40.0b	<40.0b
Vinyl chloride	<1.0b	<1.0b
Chloroethane	<1.6b	<1.6b
Chloromethane	<1.0b	<1.0b
Propylene	<1.5b	<1.5b
Bromomethane	<0.6b	<0.6b
Methylene chloride	<0.5b	<0.5b
trans-1,2-Dichloroethylene	<0.3b	<0.3b
1,1-Dichloroethane	<0.3b	<0.3b
Chloroprene	<2.0b	<2.0b
Bromochloromethane	<0.4b	<0.4b
Chloroform	<0.3b	<0.3b
1,1,1-Trichloroethane	<0.3b	<0.3b
Carbon tetrachloride	<0.2b	<0.2b
1,2-Dichloroethane	<0.5b	<0.5b
Benzene	<0.2b	2.0
Trichloroethylene	<0.3b	<0.3b
1,2-Dichloropropane	<0.4b	<0.4b
Bromodichloromethane	<0.5b	<0.5b
trans-1,3-Dichloropropylene	<0.4b	<0.4b
Toluene	2.0	4.0
n-Octane	<0.5b	<0.5b
cis-1,3-Dichloropropylene	<0.6b	<0.6b
1,1,2-Trichloroethane	<0.4b	<0.4b
Tetrachloroethylene	<0.4b	<0.4b
Dibromochloromethane	<0.2b	<0.2b
Chlorobenzene	<0.2b	<0.2b
m/p-Xylene	4.0c	19.0c
Styrene	<0.3b	3.0
o-Xylene	<2.7b	<2.7b
Bromoform	<0.2b	<0.2b
1,1,2,2-Tetrachloroethane	<0.2b	<0.2b
m-Dichlorobenzene	<0.2b	<0.2b
p-Dichlorobenzene	<0.2b	<0.2b
o-Dichlorobenzene	<0.2b	<0.2b

- a The mass spectrometer cannot analyze for acetylene  
 b Compound not detected at specified estimated method detection limit  
 c m-Xylene and p-Xylene coelute on DB-624 column

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**TECHNICAL REPORT DATA**  
(Please read Instructions on the reverse before completing)

1. REPORT NO. EPA-450/4-88-012	2.	3. RECIPIENT'S ACCESSION NO.
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16. ABSTRACT  Samples of air were collected at 15 sites in the U.S. during June through September, 1987 on weekdays from 0600-0900 hours. Some of the samples were analyzed for 28 putative toxic compounds by a gas chromatographic, multi-detector procedure. Verification of compound identify was by mass spectrometer. Data from all the samples (about 10 per site) are reported. A description of the apparatus used is given together with results from the QA program also carried out.		
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