CWM CHEMICAL SERVICES, INC.

CHICAGO INCINERATOR FACILITY

CHICAGO, ILLINOIS

FINAL
RCRA FACILITY INVESTIGATION REPORT

APPENDIX Q

VOLUME 4 OF 5
FEBRUARY 1995

CWM CHEMICAL SERVICES, INC.
CHICAGO INCINERATOR FACILITY
FINAL RCRA FACILITY INVESTIGATION REPORT
February 1995

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APPENDIX Q
FINAL REPORT
SAMPLING FOR AIR EMISSIONS
FROM GROUND SURFACES

Dames & Moore Job 13963-052

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1.0 INTRODUCTION

This report presents the results of sampling of air emissions from former solid waste management units (SWMUs) at the CWMCS Chicago Incinerator facility. This effort was performed to determine the potential for air emissions from ground surfaces at the former SWMUs, and the consequent risk to receptors measured in groundwater at the former SWMUs. Volatile organic compounds (VOCs) were detected in samples collected during the RCRA Facility Investigation (RFI) and may be a possible emission source from the facility. The work described in this report has been done to complete outstanding risk assessment issues previously described in the Human Health and Ecological Risk Assessments submitted to USEPA as part of the RFI Report. This work has been performed in accordance with the approved Air Quality Assurance Project Plan (QAPjP) developed for this sampling effort.

2.0 SAMPLE PROTOCOL

Samples were collected at designated sample locations as described in the approved QAPjP. These locations are shown on Figures 1A and 1B included in Appendix A. As shown on Figure 1A, SWMU 1 was divided into two portions; SWMU 1A and SWMU 1B. SWMUs 1A, 1B, 4, and 6 were each divided into a uniform grid. Twenty-one locations within each SWMU were selected for sampling in accordance with the guidance document included in the Air QAPjP.

Samples from each SWMU were collected in accordance with the Air QAPjP procedures. In addition to the 21 samples per SWMU, duplicates, field blanks, cylinder blanks, and background samples were collected. Five duplicate and five field blanks were collected in SWMU 1. Three duplicate and three field blanks were collected from SWMU 4 and 6. Three background samples (collected approximately 100 feet north of the CWM facility) and nine cylinder blanks were also collected. One cylinder blank for each cylinder of sweep air was collected for analysis to verify that the sweep air was free of VOCs.

Six separate sampling trips were needed to collect all of the samples. Three sampling trips were completed in 1993. However, above normal levels of precipitation in 1993 delayed the project until 1994. The last three trips were completed in 1994, the final effort in early June. A summary of the samples collected is presented in Table 2-1.

TABLE 2-1

SUMMARY OF AIR EMISSION SAMPLES COLLECTED

SWMU #1A	SWMU #1B	SWMU 4	SWMU 6
CI-AR-940522-1A/005-00X	CI-AR-940424-1B/003-00X	CI-AR-931008-04/003-00X	CI-AR-931008-06/002-00X
CI-AR-940522-1A/027-00X	CI-AR-940424-1B/005-00X	CI-AR-930515-04/015-00X	CI-AR-930515-06/025-00X
CI-AR-940522-1A/028-00X	CI-AR-940424-1B/016-00X	CI-AR-931008-04/023-00X	CI-AR-931008-06/041-00X
CI-AR-940522-1A/034-00X	CI-AR-940424-1B/019-00X	CI-AR-931007-04/032-00X	CI-AR-931007-06/044-00X
CI-AR-940522-1A/036-00X	CI-AR-940424-1B/046-00X	CI-AR-931007-04/040-00X	CI-AR-931007-06/045-00X
CI-AR-940522-1A/041-00X	CI-AR-940424-1B/047-00X	CI-AR-930515-04/057-00X	CI-AR-930515-06/055-00X
CI-AR-940522-1A/046-00X	CI-AR-940424-1B/057-00X	CI-AR-930515-04/060-00X	CI-AR-930515-06/060-00X
CI-AR-940522-1A/049-00X	CI-AR-940424-1B/059-00X	CI-AR-930515-04/072-00X	CI-AR-930515-06/068-00X
CI-AR-940522-1A/074-00X	CI-AR-940424-1B/073-00X	CI-AR-930515-04/074-00X	CI-AR-930515-06/075-00X
CI-AR-940522-1A/091-00X	CI-AR-940424-1B/086-00X	CI-AR-931007-04/091-00X	CI-AR-931007-06/079-00X
CI-AR-940523-1A/105-00X	CI-AR-940424-1B/088-00X	CI-AR-931007-04/094-00X	CI-AR-931007-06/083-00X
CI-AR-940522-1A/109-00X	CI-AR-940424-1B/114-00X	CI-AR-930515-04/105-00X	CI-AR-930515-06/084-00X
CI-AR-931008-1A/117-00X	CI-AR-940424-1B/116-00X	CI-AR-931007-04/112-00X	CI-AR-931007-06/087-00X
CI-AR-940523-1A/120-00X	CI-AR-940424-1B/117-00X	CI-AR-931007-04/113-00X	CI-AR-931007-06/089-00X
CI-AR-940523-1A/143-00X	CI-AR-940424-1B/131-00X	CI-AR-930514-04/117-00X	CI-AR-930514-06/104-00X
CI-AR-940523-1A/145-00X	CI-AR-940424-1B/143-00X	CI-AR-930801-04/123-00X	CI-AR-930801-06/113-00X
CI-AR-940424-1A/154-00X	CI-AR-940422-1B/151-00X	CI-AR-930514-04/130-00X	CI-AR-930514-06/115-00X
CI-AR-931008-1A/158-00X	CI-AR-940424-1B/155-00X	CI-AR-930514-04/133-00X	CI-AR-930514-06/133-00X
CI-AR-940523-1A/159-00X	CI-AR-940424-1B/159-00X	CI-AR-930514-04/145-00X	CI-AR-930514-06/156-00X
CI-AR-940523-1A/163-00X	CI-AR-940422-1B/161-00X	CI-AR-930514-04/148-00X	CI-AR-930514-06/161-00X
CI-AR-940523-1A/167-00X	CI-AR-940422-1B/167-00X	CI-AR-930801-04/151-00X	CI-AR-930801-06/162-00X
Duplicate Samples			
CI-AR-940522-1A/091-FD5	CI-AR-940424-1B/073-FD3	CI-AR-930514-04/148-FD1	CI-AR-940602-06/161-FD8
CI-AR-940522-1A/041-FD6	CI-AR-940522-1B/167-FD4	CI-AR-930515-04/015-FD2	CI-AR-940602-06/068-FD9
CI-AR-940523-1A/163-FD7		CI-AR-931007-04/112-DP	CI-AR-940603-06/045-FD0
Field Blanks			
CI-AR-931008-1A/FB-00X	CI-AR-940425-1B/FB-00X	CI-AR-930514-00/000-FBX	CI-AR-940602-06/FB-00X
CI-AR-940522-1A/FB-00X		CI-AR-930801-04/FB-00X	CI-AR-940603-06/FB-00X
CI-AR-940522-1A/FB2-00X		CI-AR-931007-04/FB-00X	CI-AR-940603-06/FB2-00X
CI-AR-940523-1A/FB-00X			

Cylinder Blanks	Background Samples
CI-AR-930514-00/000-CBX	CI-AR-940523-00/BG1-00X
CI-AR-930515-00/000-CB2	CI-AR-940523-00/BG2-00X
CI-AR-930801-04/CB-00X	CI-AR-940523-00/BG3-00X
CI-AR-931008-04/CB1-00X	
CI-AR-931008-04/CB2-00X	
CI-AR-940424-1B/CB3-00X	
CI-AR-940424-1B/CB4-00X	
CI-AR-940425-1A/CB5-00X	
CI-AR-940522-1A/CB6-00X	

3.0 SAMPLE COLLECTION METHODS

Each vapor phase sample was collected with the isolation flux chamber. These time composited samples were collected at the preapproved locations. A description of the equipment used, sampling procedures, and documentation of field activities follows.

3.1 Equipment

Two isolation flux chambers were used in the investigation. Each unit is constructed of two stainless steel hemispheres, an inner and an outer chamber held together with a stainless steel ring. The outer chamber measures 14-inches in diameter, and the inner chamber measures 12-inches in diameter. The unit is constructed with a vacuum seal between the two chambers. On the outside of each flux chamber are two handles, one port that penetrates the outer chamber, and three ports that penetrate both chambers. The first port is used to remove air and induce a vacuum between the two chambers. The other three ports are used separately to inject the sweep air and extract air samples, provide a valve fitting or pressure relief, and provide an opening to insert a temperature sensor. A perforated purge gas inlet tube is coiled on the inside of the inner hemisphere to assure uniform mixing. The bottom of the unit has a serrated bottom edge that is pushed into the ground approximately 3/4-inch at each sample location.

Air samples were collected in Summa Canisters provided by the analytical laboratory (Enseco, Inc. - Air Toxics Laboratory). Teflon tubing was connected to fittings on the Summa Canisters and flux chamber. Threaded fittings were used at each connection to assure air tight seals.

3.2 Sampling Procedures

Equipment was inspected and decontaminated at the start of each work day prior to sampling. The inspection included checking to ensure that a vacuum was present between the two chambers. If not, a vacuum pump was used to extract air, and induce a vacuum. Summa canisters were also inspected for damage during shipment, and the vacuum in each canister was

checked in the field. This field measurement was compared to the laboratory measurement taken prior to shipment. If no discrepancy was observed the canister was deemed acceptable for sample collection.

Decontamination at the start of each work day and between sampling locations consisted of washing the unit with soap and water. A brush was used to remove soil particles stuck to the serrated edge. This was followed by a rinse with distilled water. A spray bottle was used to rinse the inside of the chamber. The unit was then allowed to air dry and covered with aluminum foil for transportation to the next sampling location.

At each sample location, the isolation flux chamber was placed on the ground. The handles were used to press the unit into the ground approximately 3/4-inch so that the serrated edge was below ground surface. The temperature sensor was attached to the flux chamber to measure the temperature inside the chamber. A second gauge was used to measure ambient temperatures. A cylinder of sweep air was connected to the isolation flux chamber. A regulator was placed on the cylinder to control the rate at which the sweep gas entered the inner chamber. This regulator was calibrated so that the sweep air entered the chamber at a rate of 3 liters per minute.

The sample collection procedure was initiated by injecting the sweep air into the chamber. Ambient temperatures and the temperatures inside the chamber were measured and recorded at the beginning of each sample composite collection procedure. The flow rate was monitored continuously, and temperature inside and outside the chamber was recorded at five minute intervals. The chamber design allowed the pressure and temperature inside the chamber to remain constant so that representative air samples containing vapors emitted from the ground could be collected. These conditions were allowed to stabilize for twenty minutes at which time the air samples were collected. Summa canisters were labeled as described in section 2.3. The 6 liter summa canisters were connected to the exhaust vent with teflon tubing and a threaded connector. The valve was slowly opened for the collection of the 3-minute sample. Once the summa canisters were full, the valve was sealed, the tubing disconnected and the canister set

aside. Subsequently, prior to shipment the pressure was checked again to ensure that no vacuum remained in the canister. The summa were then packed for shipment to the laboratory and the chain of custody was prepared as described in section 2.3. The sweep gas was disconnected and the isolation flux chamber was decontaminated prior to collection of the next sample.

3.3 Documentation of Field Activities

A daily field log was maintained and all filed activities were recorded. Information included in the daily field log included the following:

1. Name of sampler(s);
2. Date and time of sample collection;
3. Sample identification number, location, and description;
4. Field observations (i.e. weather condition), and any unusual conditions encountered;
5. A summary of the activities conducted each day.

Chain of custodies were completed for every package submitted to the laboratory for analysis. Vacuum gauge readings for each summa canister were also recorded on work sheets. The work sheets were kept with the canisters since both laboratory and field measurements were recorded. This data was included with the laboratory results as backup documentation, and subsequently was included in the data review process.

Two sample labels were placed on each canister. The first label contained the laboratory canister ID number, the sample location, the date sampled, the name of the person collecting the sample, the initial pressure (vacuum before sampling), the final pressure (after sampling), the date the canister was cleaned by the laboratory, and the date the vacuum initial pressure was checked. The canister laboratory ID number was a unique number used to track individual canisters as part of the internal laboratory QA/QC process. The second sample identification

label was placed on each canister by the person collecting the sample. This label included the sample identification code, the sample location, the samplers name, date of collection, time of collection, canister ID number. The sample code was a unique identification code that contained specific information with respect to the facility and this portion of the RFI.

4.0 LABORATORY RESULTS

All samples collected were analyzed by Enseco, Inc. - Air Toxics Laboratory in accordance with the procedures specified in the approved QAPjP. These samples were analyzed for the TO-14 list of volatile organic compounds (VOCs) described in the Air QAPjP. Enseco provided Dames & Moore with laboratory reports and the necessary backup documentation to complete a Quality Assurance/Data Validation review. (Although tentatively identified compounds (TICs) were identified as part of the analysis, these TICs were eliminated through the data validation review.) Results of this review and summary tables of the laboratory results are presented in Appendix B.

5.0 AIR EMISSIONS CALCULATIONS

Validated laboratory data was used to calculate the emission rate of each VOC included in the TO-14 list. These emission rates were calculated in accordance with the procedures listed in the USEPA Guidance Document entitled "measurement of Gaseous Emission Rates from land Surfaces Using and Emission Isolation Flux Chamber". Emission ratio for each SWMU (1A, 1B, 4 and 6) were calculated using values of half the detection limit for each respective parameter. (See Appendix C.)

From these emissions values, parameters yielding positive detections were selected for dispersion modeling estimates at potential off-site (downwind) receptor locations. The USEPA Screen 2 model was utilized for this effort. The maximum one-hour exposure concentration for a hypothetical receptor using the most conservative inputs to the model (i.e. highest atmospheric stability and wind speed) were computed for each detected parameter. Subsequently, an annual average concentration using less conservative inputs (lower stability and wind speed) were computed. These values are tabulated in Appendix D.

6.0 RISK ASSESSMENT CALCULATIONS

Potential health risks associated with air emissions from SWMUs subject to the RFI at the CWMCS Chicago Incinerator facility were evaluated using two complementary approaches. First, worst-case 1-hour ambient air concentrations were estimated (Table 6-1) by combining empirical measurements of vapor emissions from each SWMU with a screening level air dispersion model (EPA's SCREEN2 model). The significance of these predicted air concentrations for short-term health effects was qualitatively evaluated by comparing them with the following short-term exposure limits, in order of preference: EPA subchronic inhalation Reference Concentrations (RfCs); American Conference of Governmental Industrial Hygienists (ACGIH); or Occupational Safety and Health Administration (OSHA) Short-term Exposure Limits (STELs) (Tables 6-2 and 6-3). Second, worst-case annual average ambient air concentrations were estimated as above, by combining empirical measurements of vapor emissions from each SWMU with EPA's SCREEN2 screening level air dispersion model. The significance of these predicted air concentrations for longer-term health effects was qualitatively evaluated by comparing them to EPA toxicity factors for cancer (i.e., Unit Risk Values (URVs) and noncancer (i.e., chronic RfCs) health effects, as appropriate and where available (Tables 6-2 and 6-4). Worst-case conditions included the assumption that a receptor (i.e., a human being) was located 100 meters from an SWMU, and that worst-case meteorological conditions prevailed (i.e, high atmospheric stability and low wind speed).

The qualitative comparisons are useful in that ratios less than one are indicative of a low likelihood for adverse health effects even under the extreme conditions assumed. They represent a conservative screening level approach for determining whether a particular chemical has a potential for causing adverse health effects using wherever possible EPA toxicity factors. The limitation of this approach is that it does not account for simultaneous exposure to multiple chemicals, or to chemicals via multiple pathways. Thus, a quantitative risk analysis was conducted to address these concerns.

For the quantitative risk analysis, noncancer Hazard Index (HI) values from short-term or long-term exposure were calculated (Table 6-5) for all receptors evaluated in the Baseline Human Health Risk Assessment using the assumptions and exposure parameters defined in that document. The risk of cancer was not evaluated for the short-term exposure scenario because of the implausible combination of extremes (concentration and duration) that would be required. A subchronic or chronic RfC represents an air concentration (in mg/m^3) that is not expected to cause adverse health effects in humans, including sensitive subpopulations, over either a period of up to 7 years of exposure, or a lifetime of exposure, respectively. An ACGIH or OSHA STEL corresponds to a workplace air concentration that should not be exceeded during any 15-minute period. In view of the fact that these occupational exposure limits were designed to protect adults, primarily males, an uncertainty factor of 100 was introduced to be protective of sensitive populations.

The quantitative risk analysis included an evaluation of cancer risks from long-term exposure (Table 6-6) for all receptors evaluated in the Baseline Human Health Risk Assessment using the assumptions and exposure parameters defined in that document. An inhalation URV represents an air concentration that EPA believes corresponds to its estimate of upper-bound excess lifetime cancer risk to an exposed individual of one in one million (1×10^{-6}).

Qualitative comparisons of predicted worst-case one-hour air concentrations (Table 6-1) with subchronic RfCs (Table 6-2) are summarized in Table 6-3. Since subchronic RfCs were not available for 1,1-dichloroethene, trans-1,3-dichloropropene, and vinyl chloride, other short-term exposure limits for occupational settings were adopted. An uncertainty factor of 100 was introduced to these short-term exposure limits to ensure that the derived RfCs are protective of sensitive subpopulations. These data show that the worst-case one-hour concentration predicted for all chemicals does not exceed their subchronic RfC. Hence, adverse non-cancer effects from short-term exposure to the predicted one-hour average air concentration are not expected based on these comparisons. Qualitative comparisons of predicted worst-case annual average air concentrations (Table 6-1) with chronic RfCs and URVs (Table 6-2) are summarized in Table 6-4. These data show that the worst-case annual average air concentration predicted for all

chemicals does not exceed their chronic RfC or URV. Hence, adverse cancer and non-cancer effects from long-term exposure to the predicted annual average air concentration are not expected based on these comparisons.

Since this qualitative approach does not account for simultaneous exposure to multiple chemicals, cancer risks and non-cancer hazard index (HI) values were calculated for all receptors (current remediation worker, current security worker, current incineration worker, and hypothetical future worker with a 25-year exposure duration) using reasonable maximum exposure (RME) assumptions outlined in the Baseline HHRA. Subchronic inhalation RfCs in mg/kg-day (Table 6-2) and predicted worst-case one-hour air concentrations (Table 6-1) were used to quantify HI values for current and future receptors from short-term exposure to vapor emissions from the SWMUs. Table 6-5 shows that HI estimates were well below unity for all receptors evaluated, confirming the previous finding that exposure to non-carcinogenic chemical vapors in air are not expected to cause adverse effects in exposed populations now or in the future.

Similarly, chronic inhalation RfCs in mg/kg-day (Table 6-2), inhalation cancer slope factors (Table 6-2) and predicted worst-case annual average air concentrations (Table 6-1) were used to quantify HI values and cancer risk estimates for current and future receptors from long-term exposure to vapor emissions from the SWMUs. Table 6-6 shows that HI estimates were well below unity and upper bound cancer risk estimates were less than $1x10^{-6}$ for all receptors evaluated. These results confirm that potential levels of exposure to current and future workers from vapor emissions from the CWMCS SWMUs are well below USEPA's point of departure risk level.

TABLE 6-1
CONCENTRATION OF ORGANIC CHEMICALS IN AIR ABOVE CWMCS SWMUs

Chemical	Predicted Worst-Case One-Hour Concentration ($\mu g/m^3$)[a]	Predicted Worst-Case Average Annual Concentration ($\mu g/m^3$)[b]
BASIN A		
1,2-Dichlorobenzene	0.0836	0.0022
1,1-Dichloroethene	0.1462	0.0039
trans-1,2-Dichloropropene	0.0537	0.0014
Toluene	0.0418	0.0011
BASIN B		
1,1-Dichloroethene	0.0836	0.0022
1,2,4-Trimethylbenzene	0.0527	0.0014
Acetone	0.1416	0.0037
Dichloromethane (Methylene chloride)	0.0698	0.0018
Toluene	0.0409	0.0011
Trichloroethene	0.1101	0.0029
Vinyl chloride	0.0393	0.0010
Basin 6		
1,2-Dichlorobenzene	0.1045	0.0027

[a] Predicted using the SCREEN2 Model using all combinations of atmospheric stability and wind speed. Maximum concentrations associated with atmospheric stability = 6 and wind speed = 1 m/sec. Distance to maximum 1-hour concentration is 100 m.

[b] Predicted using the SCREEN2 Model using average atmospheric stability and wind speed conditions (atmospheric stability = 4 and wind speed = 4 m/sec. Annual average concentration equals maximum 1-hour concentration times 0.214 (Turner, 1970). Distance to annual average concentration is 100 m.

TABLE 6-2
TOXICITY CONSTANTS FOR CHEMICALS IN AIRBORNE EMISSIONS FROM CWMCS SWMUs

Chemical	Subchronic[a] Inhalation Reference Concentration (mg/m^3) [Reference Dose][b]	Uncertainty Factor	Chronic Inhalation Reference Concentration (mg/m^3) [Reference Dose][b]	Uncertainty Factor	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$ [Unit Risk Value]	Weight of Evidence[e]
Acetone	NA[c]	NA	NA	NA	NA	D
1,2-Dichlorobenzene	2.0 [H] 0.57 mg/kg-day	100	0.2 [H] 0.057 mg/kg-day	1000	NA	D
1,1-Dichloroethene	40 [d] 11.4 mg/kg-day 0.114 mg/kg-day[g]	100[g]	NA	NA	1.75×10^{-1} [I] [5.0×10^{-5} $(\mu g/m^3)^{-1}$]	C
Dichloromethane (Methylene chloride)	3.0 [I] 0.86 mg/kg-day	100	0.86 [I] [3.0 mg/m^3]	100	1.6×10^{-3} [I] [4.7×10^{-7} $(\mu g/m^3)^{-1}$]	B2
trans-1,3-Dichloropropene	45 [e] 12.9 mg/kg-day 0.129 mg/kg-day[g]	100[g]	NA	NA	1.3×10^{-1} [e] [3.7×10^{-5} $(\mu g/m^3)^{-1}$]	B2
1,2,4-Trimethylbenzene	NA	NA	NA	NA	NA	NA
Toluene	NA	NA	0.4 [I] 0.11 mg/kg-day	300	NA	D
Trichloroethene	NA	NA	NA	NA	NA	NA
Vinyl chloride	13 [f] 3.7 mg/kg-day 0.037 mg/kg-day[g]	100[g]	NA	NA	2.9×10^{-1} [H] [8.4×10^{-5} $(\mu g/m^3)^{-1}$]	A

[a] All subchronic inhalation reference concentrations are from USEPA (1994).

[b] Reference concentrations were converted to mg/kg-day by multiplying by the adult inhalation rate of 20 m^3/day and dividing by the adult body weight of 70 kg.

c A reference concentration or inhalation cancer slope factor is not available for that chemical (all NA values in table) in either IRIS (USEPA, 1994) or HEAST (USEPA, 1994).

d Source: National Research Council, 1984. *Emergency and Continuous Exposure Limits for Selected Airborne Contaminants*, Vol. 2, National Academy Press.

e Source: Province of Alberta, Occupational Exposure Limits, Short-term Exposure Limit.

f Source: OSHA, 29 CFR, Part 1910.1017.

g An uncertainty factor of 100 was applied to these short-term exposure limits to be ensure that derived RfCs are protective of sensitive populations.

H Source of toxicity constant is *Health Effects Assessment Summary Tables* (USEPA, 1994).

I Source of toxicity constant is USEPA's IRIS on-line database (USEPA, 1994).

* Group A - Human Carcinogen (sufficient evidence of carcinogenicity in humans)

Group B - Probable Human Carcinogen (B1-limited evidence of carcinogenicity in humans; B2-sufficient evidence of carcinogenicity in animals with inadequate or lack of evidence in humans)

Group C - Possible Human Carcinogen (limited evidence of carcinogenicity in the animals and inadequate or lack of human data)

Group D - Not Classifiable as to Human Carcinogenicity (inadequate or no evidence)

TABLE 6-3

COMPARISON OF PREDICTED WORST-CASE ONE-HOUR AIR CONCENTRATIONS WITH SUBCHRONIC INHALATION TOXICITY CONSTANTS

Chemical	Worst-Case One-Hour Concentration ($\mu g/m^3$)[a]	Subchronic Inhalation Reference Concentration ($\mu g/m^3$)[b]	Maximum 1-Hour Air Concentration Exceeds Subchronic RfC or URV?
BASIN A			
1,2-Dichlorobenzene	0.0836	2000	No
1,1-Dichloroethene	0.1462	1140	No
trans-1,3-Dichloropropene	0.0537	1290	No
Toluene	0.0418	NA[c]	NA
BASIN B			
1,1-Dichloroethene	0.0836	1140	No
1,2,4-Tirmethylbenzene	0.0527	NA	NA
Acetone	0.1416	NA	NA
Dichloromethane	0.0698	3000	No
Toluene	0.0409	NA	NA
Trichloroethene	0.1101	NA	NA
Vinyl chloride	0.0393	370	No
BASIN 6			
1,2-Dichlorobenzene	0.1045	2000	No

[a] Predicted worst-case one-hour air concentrations are listed in Table 6-1.

[b] Subchronic reference concentrations are listed in Table 6-2.

[c] A subchronic reference concentration was not available for that compound.

TABLE 6-4

COMPARISON OF PREDICTED WORST-CASE ANNUAL AVERAGE AIR CONCENTRATIONS WITH CHRONIC INHALATION TOXICITY CONSTANTS

Chemical	Predicted Worst-Case Annual Average Air Concentration ($\mu g/m^3$)[a]	Chronic Inhalation Reference Concentration (RfC) ($\mu g/m^3$)[b]	Inhalation Unit Risk Value (URV) ($\mu g/m^3$)[c]	Predicted Worst-Case Annual Average Air Concentration Exceeds Chronic RfC?	Predicted Worst-Case Annual Average Air Concentration Exceeds URV?
BASIN A					
1,2-Dichlorobenzene	0.0022	200	NA[d]	No	NA
1,1-Dichloroethene	0.0039	NA	0.02	NA	No
trans-1,3-Dichloropropene	0.0014	NA	0.03	NA	No
Toluene	0.0011	400	NA	NA	NA
BASIN B					
1,1-Dichloroethene	0.0022	NA	0.02	NA	No
1,2,4-Tirmethylbenzene	0.0014	NA	NA	NA	NA
Acetone	0.0037	NA	NA	NA	NA
Dichloromethane	0.0018	3000	2.1	No	No
Toluene	0.0011	400	NA	NA	NA
Trichloroethene	0.0029	NA	NA	NA	NA
Vinyl chloride	0.0010	NA	0.01	NA	No
BASIN 6					
1,2-Dichlorobenzene	0.0027	200	NA	No	NA

[a] Predicted annual average air concentrations are listed in Table 6-1.
[b] Chronic reference concentrations are listed in Table 6-2.
[c] Unit risk in $\mu g/m^3$ equals target risk level ($1x10^{-6}$) divided by unit risk value $(\mu g/m^3)^{-1}$, which are listed in Table 6-2.
[d] A chronic inhalation reference concentration or inhalation unit risk value was not available for that compound.

TABLE 6-5

NON-CANCER HAZARD INDEX VALUES FOR CURRENT AND FUTURE RECEPTORS FROM SHORT-TERM EXPOSURES TO VAPOR EMISSIONS FROM CWMCS SWMUs

Receptor/Scenario	Cumulative Hazard Index[b]
Current remediation workers - RME/Worst-case 1-Hour[a]	$1x10^{-4}$
Current security workers - RME/Worst-case 1-Hour	$8x10^{-5}$
Current incineration workers - RME/Worst-case 1-Hour	$8x10^{-5}$
Future worker (25-yr exposure duration) - RME/Worst-case 1-Hour	$7x10^{-4}$

[a] Based on RME exposure parameters and the worst-case predicted one-hour air concentration.

[b] Derived using subchronic RfCs from Table 6-2.

TABLE 6-6

CANCER RISKS AND NON-CANCER HAZARD INDEX VALUES FOR CURRENT AND FUTURE RECEPTORS FROM LONG-TERM EXPOSURES TO VAPOR EMISSIONS FROM CWMCS SWMUs

Receptor/Scenario	Cumulative Hazard Index[b]	Cumulative Risk[c]
Current remediation workers - RME/Worst-case annual average[a]	$3x10^{-6}$	$7x10^{-9}$
Current security workers - RME/Worst-case annual average	$2x10^{-6}$	$3x10^{-8}$
Current incineration workers - RME/Worst-case annual average	$2x10^{-6}$	$3x10^{-8}$
Future worker (25-yr exposure duration) - RME/Worst-case annual average	$2x10^{-5}$	$1x10^{-7}$

[a] Based on RME exposure parameters and the worst-case predicted annual average air concentration.

[b] Derived using the chronic reference concentrations (mg/kg-day) listed in Table 6-2.

[c] Derived using the inhalation cancer slope factors $(mg/kg\text{-}day)^{-1}$ listed in Table 6-2.

APPENDICES

APPENDICES

APPENDIX A

APPENDIX A
FIGURES

APPENDIX B

APPENDIX B
VALIDATED LABORATORY RESULTS

DATA VALIDATION REVIEW
PROJECT: CWM CHEMICAL SERVICES, INC.
CHICAGO INCINERATOR FACILITY
CHICAGO, ILLINOIS
DATE SAMPLES COLLECTED: MAY 14 AND 15, 1993
JOB NO.: 13963-055-192

LAB REPORT No.: 100752 & 100758

1.0 INTRODUCTION

Eleven (11) ambient air samples, two (2) field-duplicate samples, one (1) field-blank sample and two (2) canister-blank samples were collected and submitted to Enseco Air Toxics Laboratory (Enseco) of City of Industry, California. A list of all samples included in this review are provided in Section 2.0 of this report. All samples were analyzed for Volatile Organic Compounds (VOCs) plus mass-spectral library searches for extraneous chromatographic peaks following USEPA Method TO-14.

A data validation/quality assurance review was performed on all samples prepared under a modified Contract Laboratory Program (CLP) Data Deliverable Format. Data were examined to assess data usability and compliance relative to CLP-I data-package deliverable requirements. The organic data quality review is based upon the following parameters:

* • Hold Times
* • Blank Contaminants
* • GC/MS Performance Check (Tuning) Summary
* • Initial and Continuing Calibration Results
* • Internal Standard Area Performance
* • Laboratory Control Sample and Laboratory Control Sample Duplicate Summaries:
* • Target Compound Identification and Quantitation
  • Tentatively Identified Compounds Evaluation

* All criteria were met for this parameter

Overall, the data quality is good. Details of the data validation review are presented in the narrative section of the report. Summary tables have been provided. Data qualifiers have been placed next to the results so that the data user can quickly assess the qualitative and/or quantitative reliability of the reported result. This report was prepared to provide a critical review of the laboratory analysis and reported chemical results. Quality assurance reviews of laboratory-generated data routinely identify problems

associated with analytical measurements, even from the most experienced and capable laboratories.

This review has been performed in accordance with the requirements specified in the Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, dated September 1986 and revised June 1988 and with guidance from the USEPA CLP National Functional Guidelines for Organic Data Review dated December 1990 and revised June 1991.

2.0 SAMPLES INCLUDED IN REVIEW

Sample ID	Lab ID	Date Collected	Test Requested
	Laboratory Report No. 100752		
CIAR930514-04/148-00X	100752-001	5/14/93	VOC+10
CIAR930514-04/148-FD1	100752-002	5/14/93	VOC+10
CIAR930514-04/133-00X	100752-003	5/14/93	VOC+10
CIAR930514-04/117-00X	100752-004	5/14/93	VOC+10
CIAR930514-04/130-00X	100752-005	5/14/93	VOC+10
CIAR930514-04/145-00X	100752-006	5/14/93	VOC+10
CIAR930514-00/000-CBX	100752-007	5/14/93	VOC+10
CIAR930514-00/000-FBX	100752-008	5/14/93	VOC+10
	Laboratory Report No. 100758		
CIAR930515-04/105-00X	100758-001	5/15/93	VOC+10
CIAR930515-04/060-00X	100758-002	5/15/93	VOC+10
CIAR930515-04/074-00X	100758-003	5/15/93	VOC+10
CIAR930515-04/057-00X	100758-004	5/15/93	VOC+10
CIAR930515-04/072-00X	100758-005	5/15/93	VOC+10
CIAR930515-04/015-00X	100758-006	5/15/93	VOC+10
CIAR930515-04/015-FD1	100758-007	5/15/93	VOC+10
CIAR930515-04/000-CB2	100758-008	5/15/93	VOC+10

Legend:

VOC+10 = Volatile Organic Compounds plus Forward Library Searches

3.0 GENERAL COMMENTS

With regard to the data deliverables, most of the requirements were met with the exception of the following deficiencies. These deficiencies have been corrected by the data reviewer and no additional action is required by the laboratory. Please note that these deficiencies do not impact data usability.

- The internal standard summary form (CLP Form-8) was not completed by the laboratory for data sets 100752 and 100758. The internal standard form was completed by the data reviewer and no additional action is required by the laboratory.

- The retention times of the tentatively identified compounds is not reported on the CLP-Form Is.

- Several tentatively identified compounds (TICs) were not reported on the summary pages (CLP Form-I) by the laboratory since these TICs were identified as common laboratory contaminants. Following the CLP format, all TICs should be reported by the laboratory with possible laboratory or field contaminats flagged (B). Since these TICs would be negated during the data validation review, no additional action is required.

4.0 DATA QUALIFIERS

The data validation review has identified aspects of the analytical data that require qualification. To confidently use any of the data within the data set, the data user should understand the limitations and qualifications presented. With regard to data usability, the following qualifiers are offered based upon the data provided.

Hold Times:

- All samples were analyzed within the 14 day hold time requirement.

Blank Contaminants:

- No volatile target compounds above 0.2 ppb (v/v) were identified in the laboratory (method) and/or field blank samples.

- No target compounds above 0.2 ppb(v/v) were identified during the canister cleaning certification analyses; however, volatile TICs at retention times 6.9, 11.6, 17.0 and 20.2 minutes were noted in each of the canisters analyzed. All TICs identified were less than 10 percent of the peak area of the nearest

internal standard and therefore, identification and quantitation of these peaks is not required by the laboratory.

GC/MS Performance Check (Tuning) Summary:

- The bromofluorobenzene (BFB) tuning compound for the volatile organic compound analyses were reported within control limits.

Initial and Continuing Calibration Results:

- All initial and continuing calibration response factors are greater than 0.05 and fall within control limits.

- All percent differences (%D) between the initial and continuing calibration response factors fell within acceptable control limits and no data qualifiers are required.

Internal Standards Area Performance:

- The volatile internal standard area counts and retention times fell within control limits for all project samples.

Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (LCSD) Summaries:

- The VOC spike (LCS/LCSD) recoveries and relative percent difference (RPD) between duplicate analyses fell within acceptable control limits providing a positive indication of the overall accuracy and precision associated with the laboratory analyses.

- Samples CIAR930514-04/148-00X and CIAR930514-04/148-FD1 in data set 100752 and CIAR930515-04/015-00X and CIAR930514-04/015-FD2 in data set 100758 were submitted to the laboratory as blind field-duplicate samples. The reported results replicated well providing a positive indication of the laboratory and field precision.

Target Compound Identification and Quantitation:

- No errors in target compound identification and/or quantitation were identified during the data validation review.

Tentatively Identified Compounds:

- The validity of the Tentatively Identified Compounds (TICs) were evaluated based upon the mass-spectral data provided as well as the identifications made by the laboratory, and the following comments are offered:

  - The majority of the volatile TICs identified in field samples CIAR930514-04/148-00X, CIAR930514-04/148-FD1 and CIAR930514-04/133-00X (data set 100752) and CIAR930515-04/015-00X and CIAR930515-04/015-FD2 (data set 100758), consist of unknown branched alkenes, substituted benzenes and dienes.

- The following ambient air samples contained TICs which have an area greater than 10 percent of the nearest internal standard and which were not reported by the laboratory since these TICs were identified as common laboratory contaminants:

Sample ID	Ret.Time	TIC	Estimated Conc.ppb(v/v)
CIAR930514-04/148-00X	18.1 min.	Unknown diene	4.0 J
CIAR930514-04/148-FD1	11.6 min.	Siloxane	6.0 J
	16.9 min.	Unknown	5.0 J
CIAR930515-04/105-00X	11.6 min.	Siloxane	10.0 J
	16.9 min.	Unknown	4.0 J
CIAR930515-04/060-00X	11.6 min.	Siloxane	22.0 J
	16.9 min.	Unknown	19.0 J
	20.4 min.	Unknown	4.0 J
CIAR930515-04/074-00X	11.6 min.	Siloxane	10.0 J
	16.9 min.	Unknown	9.0 J
CIAR930515-04/057-00X	11.6 min.	Siloxane	20.0 J
	16.9 min.	Unknown	25.0 J
	20.4 min.	Unknown	4.0 J
CIAR930515-04/015-00X	11.6 min.	Siloxane	17.0 J
	20.4 min.	Unknown	8.0 J
CIAR930515-04/015-FD2	11.6 min.	Siloxane	5.0 J
	16.9 min.	Unknown	4.0 J
	20.4 min.	Unknown	4.0 J

TABLE 1
SUMMARY OF AMBIENT AIR ANALYTICAL RESULTS
CWM CHEMICAL SERVICES, INC.
CHICAGO INCINERATOR FACILITY
CHICAGO, ILLINOIS
ENSECO DATA SET No. 100752

Dames and Moore Sample ID	CIAR930514 04/148-00X	CIAR930514 04/148-FDI	CIAR930514 04/133-00X	CIAR930514 04/117-00X	CIAR930514 04/130-00X	CIAR930514 04/145-00X	CIAR930514 00/000-CBX	CIAR930514 00/000-FBX
Laboratory ID	100752-0001	100752-0002	100752-0003	100752-0004	100752-0005	100752-0006	100752-0007	100752-0008
Date Sample Collected	05/14/93	05/14/93	05/14/93	05/14/93	05/14/93	05/14/93	05/14/93	05/14/93
Dilution Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Summa Canister No.	A-127	A-123	A-135	A-126	A-172	A-157	A-142	A-147
Units	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)
VOLATILE ORGANIC COMPOUNDS								
Dichlorodifluoromethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloromethane	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
1,2-Dichloro-1,1,2,2-tetrafluoroethene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Vinyl Chloride	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Bromomethane	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
Chloroethane	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Trichlorofluoromethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1,2-Trichloro-1,2,2-trifluoroethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Acetone	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Methylene Chloride	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
1,1-Dichloroethane	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
cis-1,2-Dichloroethene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloroform	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1,1-Trichloroethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Carbon Tetrachloride	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Benzene	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
1,2-Dichloroethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Trichloroethene	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
1,2-Dichloropropane	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U
cis-1,3-Dichloropropene	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
4-Methyl-2-Pentanone	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Toluene	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
trans-1,3-Dichloropropene	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
1,1,2-Trichloroethane	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
Tetrachloroethene	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
1,2-Dibromomethane (EDB)	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chlorobenzene	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Ethylbenzene	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
p,m-Xylenes	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
o-Xylene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	7.0 U	7.0 U	7.0 U	7.0 U	7.0 U	7.0 U	7.0 U	7.0 U
1,1,2,2-Tetrachloroethane	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Benzyl chloride	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,3,5-Trimethylbenzene	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
1,2,4-Trimethylbenzene	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
1,3-Dichlorobenzene	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
1,4-Dichlorobenzene	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
1,2-Dichlorobenzene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,2,4-Trichlorobenzene	7.0 U	7.0 U	7.0 U	7.0 U	7.0 U	7.0 U	7.0 U	7.0 U
Hexachlorobutadiene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U

continued next page (see notes on last page of table)

TABLE 1 (continued)
SUMMARY OF AMBIENT AIR ANALYTICAL RESULTS
CWM CHEMICAL SERVICES, INC.
CHICAGO INCINERATOR FACILITY
CHICAGO, ILLINOIS
ENSECO DATA SET No. 100758

Dames and Moore Sample ID	CIAR930515 04/105-00X	CIAR930515 04/060-00X	CIAR930515 04/074-00X	CIAR930515 04/057-00X	CIAR930515 04/072-00X	CIAR930515 04/015-00X	CIAR930515 04/015-FD2	CIAR930515 04/000-CB2
Laboratory ID	100758-0001	100758-0002	100758-0003	100758-0004	100758-0005	100758-0006	100758-0007	100758-0008
Date Sample Collected	05-15-93	05-15-93	05-15-93	05-15-93	05-15-93	05-15-93	05-15-93	05-15-93
Dilution Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Summa Canister No.	A-049	A-044	A-057	A-50	A-132(9303B)	A-061	A-136(9397B)	A-128(9299B)
Units	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)
VOLATILE COMPOUNDS								
Dichlorodifluoromethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloromethane	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
1,2-Dichloro-1,1,2,2-tetrafluoroethene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Vinyl Chloride	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Bromomethane	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
Chloroethane	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Trichlorofluoromethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1,2-Trichloro-1,2,2-trifluoroethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Acetone	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Methylene Chloride	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
1,1-Dichloroethane	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
cis-1,2-Dichloroethene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloroform	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1,1-Trichloroethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Carbon Tetrachloride	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Benzene	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
1,2-Dichloroethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Trichloroethene	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
1,2-Dichloropropane	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U
cis-1,3-Dichloropropene	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
4-Methyl-2-Pentanone	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Toluene	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
trans-1,3-Dichloropropene	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
1,1,2-Trichloroethane	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
Tetrachloroethene	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
1,2-Dibromomethane (EDB)	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chlorobenzene	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Ethylbenzene	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
p,m-Xylenes	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
o-Xylene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	7.0 U	7.0 U	7.0 U	7.0 U	7.0 U	7.0 U	7.0 U	7.0 U
1,1,2,2-Tetrachloroethane	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Benzyl chloride	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,3,5-Trimethylbenzene	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
1,2,4-Trimethylbenzene	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
1,3-Dichlorobenzene	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
1,4-Dichlorobenzene	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
1,2-Dichlorobenzene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,2,4-Trichlorobenzene	7.0 U	7.0 U	7.0 U	7.0 U	7.0 U	7.0 U	7.0 U	7.0 U
Hexachlorobutadiene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U

continued next page (see notes on last page of table)

TABLE 1 (continued)
SUMMARY OF AMBIENT AIR ANALYTICAL RESULTS
CWM CHEMICAL SERVICES, INC.
CHICAGO INCINERATOR FACILITY
CHICAGO, ILLINOIS
ENSECO DATA SET No. 100752 and 100758

NOTES:

U	: Compound was not detected at laboratory reported method detection limit.
UJ	: This analyte was not detected, but the quantitation limit is estimated due to limitations identified during the QA review.
J	: Quantitation is approximate due to limitations identified during the quality assurance review.
B	: This result is qualitatively suspect since this compound was detected in a field and/or laboratory blank at a similar concentration.
R	: Unreliable result. Compound may or may not be present.

DATA VALIDATION REVIEW
PROJECT: CWM CHEMICAL SERVICES, INC.
CHICAGO INCINERATOR FACILITY
CHICAGO, ILLINOIS
DATE SAMPLES COLLECTED: AUGUST 1, 1993
JOB NO.: 13963-055-192

LAB REPORT No.: 101889

1.0 INTRODUCTION

Two (2) ambient air samples, one (1) field-blank sample and one (1) canister-blank sample were collected and submitted to Enseco Air Toxics Laboratory (Enseco) of City of Industry, California. A list of all samples included in this review are provided in Section 2.0. All samples were analyzed for Volatile Organic Compounds (VOCs) plus mass-spectral library searches for extraneous chromatographic peaks following USEPA Method TO-14.

A data validation/quality assurance review was performed on all samples prepared under a modified Contract Laboratory Program (CLP) Data Deliverable Format. Data were examined to assess data usability and compliance relative to CLP-I data-package deliverable requirements. The organic data quality review is based upon the following parameters:

* • Hold Times
* • Blank Contaminants
* • GC/MS Performance Check (Tuning) Summary
* • Initial and Continuing Calibration Results
* • Internal Standard Area Performance
* • Laboratory Control Sample and Laboratory Control Sample Duplicate Summaries:
* • Target Compound Identification and Quantitation
  • Tentatively Identified Compounds Evaluation

* All criteria were met for this parameter

Overall, the data quality is good. Details of the data validation/quality assurance review are presented in the narrative section of the report. Summary tables have been provided. Data qualifiers have been placed next to the results so that the data user can quickly assess the qualitative and/or quantitative reliability of the reported result. This report was prepared to provide a critical review of the laboratory analysis and reported chemical results. Quality assurance reviews of laboratory-generated data routinely identify

problems associated with analytical measurements, even from the most experienced and capable laboratories.

This review has been performed in accordance with the requirements specified in the Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, dated September 1986 and revised June 1988 and with guidance from the USEPA CLP National Functional Guidelines for Organic Data Review dated December 1990 and revised June 1991.

2.0 SAMPLES INCLUDED IN REVIEW

Sample ID	Lab ID	Date Collected	Test Requested
	Laboratory Report No. 101889		
CIAR930801-04/151-00X	101889-001	8/01/93	VOC+10
CIAR930801-04/123-00X	101889-002	8/01/93	VOC+10
CIAR930801-04/FB-00X	101889-003	8/01/93	VOC+10
CIAR930801-04/CB-00X	101889-004	8/01/93	VOC+10

Legend:

VOC+10 = Volatile Organic Compounds plus Forward Library Searches

3.0 GENERAL COMMENTS

With regard to the data deliverables, most of the requirements were met with the exception of the following deficiencies. These deficiencies have been corrected by the data reviewer and no additional action is required by the laboratory. Please note that these deficiencies do not impact data usability.

- The internal standard summary form (CLP Form-8) was not completed by the laboratory as required. The internal standard form was completed by the data reviewer and no additional action is required by the laboratory.

- The retention time of the tentatively identified compounds is not reported on the CLP-Form Is.

- Several tentatively identified compounds (TICs) were not reported by the laboratory since these TICs were identified as common laboratory contaminants. Following the CLP format, all TICs should be reported by the laboratory and flagged (B) to indicate possible laboratory or field contamination. Since these TICs would be negated during the data validation review, no additional action is required by the laboratory.

4.0 DATA QUALIFIERS

The data validation review has identified aspects of the analytical data that require qualification. To confidently use any of the data within the data set, the data user should understand the limitations and qualifications presented. With regard to data usability, the following qualifiers are offered based upon the data provided.

Hold Times:

- All samples were analyzed within the 14 day hold time requirement.

Blank Contaminants:

- No target compounds above 0.2 ppb(v/v) or tentatively identified compounds were identified during the canister cleaning certification analyses.

- No volatile target compounds were identified in the laboratory (method) and/or field-blank samples.

- Volatile TICs at retention times 12.3, 17.6 and 20.6 minutes were noted in the field blank sample CIAR930801-04/FB-00X. Positive TICs observed in the ambient air samples at these retention times are qualitatively question-

able and have not been reported by the laboratory since they represent possible laboratory and/or field contamination.

GC/MS Performance Check (Tuning) Summary:

- The bromofluorobenzene (BFB) tuning compound for the volatile organic compound analyses were reported within control limits.

Initial and Continuing Calibration Results:

- All initial and continuing calibration response factors and relative percent differences between response factors fell within acceptable control limits.

Internal Standards Area Performance:

- The volatile internal standard area counts and retention times fell within control limits for all project samples.

Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (LCSD) Summaries:

- The VOC spike (LCS/LCSD) recoveries and relative percent difference (RPD) between duplicate analyses fell within acceptable control limits providing a positive indication of the overall accuracy and precision associated with the analyses.

Target Compound Identification and Quantitation:

- No errors in target compound identification and/or quantitation were identified during the data validation review.

Tentatively Identified Compounds:

- The validity of the Tentatively Identified Compounds (TICs) were evaluated based upon the mass-spectral data provided as well as the identifications made by the laboratory, and the following comments are offered:

  - No TICs were reported for the volatile samples in data set 101889.

- The following ambient air samples contained TICs which have an area greater than 10 percent of the nearest internal standard and which were not reported by the laboratory since these TICs were identified as common laboratory contaminants:

Sample ID	Retention Time	TIC	Estimated Conc.ppb(v/v)
CIAR930801-04/151-00X	17.9 min.	Unknown	5.0 J
CIAR930801-04/123-00X	12.2 min.	Unknown	7.0 J
	18.1 min.	Unknown	7.0 J

TABLE 1
SUMMARY OF AMBIENT AIR ANALYTICAL RESULTS
CWM CHEMICAL SERVICES, INC.
CHICAGO INCINERATOR FACLITY
CHICAGO, ILLINOIS
ENSECO DATA SET No. 101889

Dames and Moore Sample ID	CIAR930801 04/151-00X		CIAR930801 04/123-00X		CIAR930801 04/FB-00X		CIAR930801 04/CB-00X	
Laboratory ID	101889-0001		101889-0002		101889-0003		101889-0004	
Date Sample Collected	08/01/93		08/01/93		08/01/93		08/01/93	
Dilution Factor	1.0		1.0		1.0		1.0	
Summa Canister No.	A-165(9336B)		A-162(9333B)		A-154(9325B)		A-156(9327B)	
Units	ppb(v/v)		ppb(v/v)		ppb(v/v)		ppb(v/v)	
VOLATILE COMPOUNDS								
Dichlorodifluoromethane	2.0	U	2.0	U	2.0	U	2.0	U
Chloromethane	2.5	U	2.5	U	2.5	U	2.5	U
1,2-Dichloro-1,1,2,2-tetrafluoroethene	2.0	U	2.0	U	2.0	U	2.0	U
Vinyl Chloride	2.5	U	2.5	U	2.5	U	2.5	U
Bromomethane	3.0	U	3.0	U	3.0	U	3.0	U
Chloroethane	5.0	U	5.0	U	5.0	U	5.0	U
Trichlorofluoromethane	1.0	U	1.0	U	1.0	U	1.0	U
1,1-Dichloroethene	2.0	U	2.0	U	2.0	U	2.0	U
1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	U	2.0	U	2.0	U	2.0	U
Acetone	10	U	10	U	10	U	10	U
Methylene Chloride	4.0	U	4.0	U	4.0	U	4.0	U
1,1-Dichloroethane	2.5	U	2.5	U	2.5	U	2.5	U
cis-1,2-Dichloroethene	2.0	U	2.0	U	2.0	U	2.0	U
Chloroform	2.0	U	2.0	U	2.0	U	2.0	U
1,1,1-Trichloroethane	2.0	U	2.0	U	2.0	U	2.0	U
Carbon Tetrachloride	2.0	U	2.0	U	2.0	U	2.0	U
Benzene	3.0	U	3.0	U	3.0	U	3.0	U
1,2-Dichloroethane	2.0	U	2.0	U	2.0	U	2.0	U
Trichloroethene	2.5	U	2.5	U	2.5	U	2.5	U
1,2-Dichloropropane	8.0	U	8.0	U	8.0	U	8.0	U
cis-1,3-Dichloropropene	3.0	U	3.0	U	3.0	U	3.0	U
4-Methyl-2-Pentanone	10	U	10	U	10	U	10	U
Toluene	3.0	U	3.0	U	3.0	U	3.0	U
trans-1,3-Dichloropropene	3.0	U	3.0	U	3.0	U	3.0	U
1,1,2-Trichloroethane	3.0	U	3.0	U	3.0	U	3.0	U
Tetrachloroethene	3.0	U	3.0	U	3.0	U	3.0	U
1,2-Dibromomethane (EDB)	2.0	U	2.0	U	2.0	U	2.0	U
Chlorobenzene	2.5	U	2.5	U	2.5	U	2.5	U
Ethylbenzene	2.5	U	2.5	U	2.5	U	2.5	U
p,m-Xylenes	5.0	U	5.0	U	5.0	U	5.0	U
o-Xylene	5.0	U	5.0	U	5.0	U	5.0	U
Styrene	7.0	U	7.0	U	7.0	U	7.0	U
1,1,2,2-Tetrachloroethane	4.0	U	4.0	U	4.0	U	4.0	U
Benzyl chloride	2.0	U	2.0	U	2.0	U	2.0	U
1,3,5-Trimethylbenzene	2.5	U	2.5	U	2.5	U	2.5	U
1,2,4-Trimethylbenzene	3.0	U	3.0	U	3.0	U	3.0	U
1,3-Dichlorobenzene	3.0	U	3.0	U	3.0	U	3.0	U
1,4-Dichlorobenzene	4.0	U	4.0	U	4.0	U	4.0	U
1,2-Dichlorobenzene	5.0	U	5.0	U	5.0	U	5.0	U
1,2,4-Trichlorobenzene	7.0	U	7.0	U	7.0	U	7.0	U
Hexachlorobutadiene	5.0	U	5.0	U	5.0	U	5.0	U

Notes:

U Not detected at laboratory reported method detection limit.
UJ Method detection limit estimated due to limitations identified during the quality assurance (QA) review.
J Estimated value due to limitations identified during the quality assurance (QA) review.
B Analyte detected in laboratory and/or field blank at similar concentrations. May be attributed to laboratory and/or field contamination.
NA Not Analyzed/Not Applicable

DATA VALIDATION REVIEW
PROJECT: CWM CHEMICAL SERVICES, INC.
CHICAGO INCINERATOR FACILITY
CHICAGO, ILLINOIS
DATE SAMPLES COLLECTED: OCTOBER 7 and 8, 1993
JOB NO.: 13963-055-192

LAB REPORT No.: 102943 and 102970

1.0 INTRODUCTION

Ten (10) ambient air samples, one (1) field-duplicate sample, two (2) field-blank samples and two (2) canister-blank samples were collected and submitted to Enseco Air Toxics Laboratory (Enseco) of City of Industry, California. A list of all samples included in this review are provided in Section 2.0. All samples were analyzed for Volatile Organic Compounds (VOCs) plus mass-spectral library searches for extraneous chromatographic peaks following USEPA Method TO-14.

A data validation/quality assurance review was performed on all samples prepared under a modified Contract Laboratory Program (CLP) Data Deliverable Format. Data were examined to assess data usability and compliance relative to CLP-I data-package deliverable requirements. The organic data quality review is based upon the following parameters:

- * Hold Times
- Blank Contaminants
- * GC/MS Performance Check (Tuning) Summary
- Initial and Continuing Calibration Results
- * Internal Standard Area Performance
- * Laboratory Control Sample and Laboratory Control Sample Duplicate Summaries:
- * Target Compound Identification and Quantitation
- Tentatively Identified Compounds Evaluation

* All criteria were met for this parameter

Overall, the data quality is good. Details of the data validation/quality assurance review are presented in the narrative section of the report. Summary tables have been provided. Data qualifiers have been placed next to the results so that the data user can quickly assess the qualitative and/or quantitative reliability of the reported result. This report was prepared to provide a critical review of the laboratory analysis and reported chemical results. Quality assurance reviews of laboratory-generated data routinely identify

problems associated with analytical measurements, even from the most experienced and capable laboratories.

This review has been performed in accordance with the requirements specified in the Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, dated September 1986 and revised June 1988 and with guidance from the USEPA CLP National Functional Guidelines for Organic Data Review dated December 1990 and revised June 1991.

2.0 SAMPLES INCLUDED IN REVIEW

Sample ID	Lab ID	Date Collected	Test Requested
	Laboratory Report No. 102943		
CIAR931007-04/032-00X	102943-001	10/07/93	VOC+10
CIAR931007-04/091-00X	102943-002	10/07/93	VOC+10
CIAR931007-04/094-00X	102943-003	10/07/93	VOC+10
CIAR931007-04/112-00X	102943-004	10/07/93	VOC+10
CIAR931007-04/112-DP	102943-005	10/07/93	VOC+10
CIAR931007-04/113-00X	102943-006	10/07/93	VOC+10
CIAR931007-04/040-00X	102943-007	10/07/93	VOC+10
CIAR931007-04/FB-00X	102943-008	10/07/93	VOC+10
	Laboratory Report No. 102970		
CIAR1008-04/CB1-00X	102970-001	10/08/93	VOC+10
CIAR1008-04/CB2-00X	102970-002	10/08/93	VOC+10
CIAR1008-04/005-00X	102970-003	10/08/93	VOC+10
CIAR1008-04/023-00X	102970-004	10/08/93	VOC+10
CIAR1008-1A/158-00X	102970-005	10/08/93	VOC+10
CIAR1008-1A/117-00X	102970-006	10/08/93	VOC+10
CIAR1008-1A/FB-00X	102970-007	10/08/93	VOC+10

Legend:

VOC+10 = Volatile Organic Compounds plus Forward Library Searches

3.0 GENERAL COMMENTS

With regard to the data deliverables, most of the requirements were met with the exception of the following deficiencies. These deficiencies have been corrected by the data reviewer and no additional action is required by the laboratory. Please note that these deficiencies do not impact data usability.

- The internal standard summary form (CLP Form-8) was not completed by the laboratory for data sets 102943 and 102970 as required. The internal standard form was completed by the data reviewer and no additional action is required by the laboratory.

- The retention time of the tentatively identified compounds is not reported on the CLP-Form Is.

- Several tentatively identified compounds (TICs) were not reported by the laboratory since these TICs were identified as common laboratory contaminants. Following the CLP format, all TICs should be reported by the laboratory and flagged (B) to indicate possible laboratory or field contamination. Since these TICs would be negated during the data validation review, no additional action is required by the laboratory.

4.0 DATA QUALIFIERS

The data validation review has identified aspects of the analytical data that require qualification. To confidently use any of the data within the data set, the data user should understand the limitations and qualifications presented. With regard to data usability, the following qualifiers are offered based upon the data provided.

Hold Times:

- All samples were analyzed within the 14 day hold time requirement.

Blank Contaminants:

- No volatile target compounds were identified in the laboratory (method), canister-blank and/or field-blank samples.

- A TIC was identified in field-blank sample CIAR931007-04/FB-00X at retention time 20.4 minutes. This TIC was identified as 1-phenyl-ethanone. All field sample TICs in data set 102943, identified as 1-phenyl-ethanone at a similar retention time are regarded as qualitatively questionable and have

been flagged (B) on the laboratory summary pages. The following TIC results have been qualified:

Sample ID	TIC	Estimated Conc. (ppb)	Qualifier
CIAR931007-04/032-00X	1-Phenyl ethanone	13	B
CIAR931007-04/091-00X	"	11	B
CIAR931007-04/094-00X	"	5.1	B
CIAR931007-04/112-00X	"	10	B
CIAR931007-04/113-00X	"	15	B

- Numerous (10) TICs were identified in field-blank sample CIAR1008-1A/FB-00X associated with data set 102970. A TIC identified as 1-phenyl-ethanone at retention time 20.4 minutes was also identified in field sample CIAR1008-04/005-00X. This positive TIC result is qualitatively questionable and has been flagged (B) on the laboratory summary pages.

- No target compounds above 0.2 ppb(v/v) were identified during the canister cleaning certification analyses; however, a volatile TIC at retention time 17.5 minutes was identified in the QC batch associated with Summa® Canisters A-005 and A-198 while a TIC at retention time 22.3 minutes was identified in the QC blanks associated with Summa® Canisters A-011, A-183, A-135 and A-127. All field sample TICs identified at similar retention times are regarded as qualitatively questionable and have been flagged (B) on the laboratory summary pages. The following TICs have been qualified:

Sample ID	Data Set	TIC/Retention Time
CIAR1008-04/005-00X	102970	Terpene/17.24 min.

GC/MS Performance Check (Tuning) Summary:

- The bromofluorobenzene (BFB) tuning compound for the volatile organic compound analyses were reported within control limits.

Initial and Continuing Calibration Results:

- Due to the high difference (%D >40 but < 90) between the initial and continuing calibration response factors, the detection limits of the following compounds may be higher than reported and have been flagged (UJ) estimated on the laboratory report summary pages and on the summary table.

Compound	Data Set	Associated Sample
Carbon tetrachloride	102943	All Ambient Air Samples

Compound	Data Set	Associated Sample
1,2,4-Trichlorobenzene	102943	All Ambient Air Samples
	102970	All Ambient Air Samples
Hexachlorobutadiene	102943	All Ambient Air Samples
	102970	All Ambient Air Samples
Trichlorofluoromethane	102970	All Ambient Air Samples

- Due to the very high difference (%D >90) between the initial and continuing calibration response factors, all positive results for the following volatile compounds have been flagged (J) estimated. The actual detection limits are regarded as unreliable (compound may or may not be present) and have been flagged (R) on the laboratory report summary pages and on the summary table.

Compound	Data Set	Associated Sample
Trichlorofluoromethane	102943	All Ambient Air Samples

Internal Standards Area Performance:

- The volatile internal standard area counts and retention times fell within control limits for all project samples.

Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (LCSD) Summaries:

- The VOC spike (LCS/LCSD) recoveries and relative percent difference (RPD) between duplicate analyses fell within acceptable control limits providing a positive indication of the overall accuracy and precision associated with the analyses.

Target Compound Identification and Quantitation:

- No errors in target compound identification and/or quantitation were identified during the data validation review.

Tentatively Identified Compounds:

- The validity of the Tentatively Identified Compounds (TICs) were evaluated based upon the mass-spectral data provided as well as the identifications made by the laboratory, and the following comments are offered:

- The majority of the volatile TICs identified in data set 102943 consist of unknown alkenes and 1-phenyl ethanone. All positive 1-phenyl ethanone results are qualitatively questionable and may be due to laboratory and/or field contamination.

- The majority of the volatile TICs identified in data set 102970 consist of unknown dienes, phenyl ethanone, branched alkenes and substituted alkanes.

- The following ambient air samples contained TICs which have an area greater than 10 percent of the nearest internal standard and which were not reported by the laboratory since these TICs were identified as common laboratory contaminants:

Sample ID	Retention Time	TICs	Estimated Conc.ppb(v/v)
CIAR931007-04/032-00X	20.62 min.	Unknown	7.0 J
CIAR931007-04/091-00X	20.6 min.	Unknown	7.0 J
CIAR931007-04/094-00X	20.6 min.	Unknown	5.0 J
CIAR931007-04/112-DP	20.6 min.	Unknown	4.0 J
CIAR931007-04/113-00X	20.6 min.	Unknown	6.0 J
CIAR931007-04/FB-00X	20.6 min.	Unknown	4.0 J
CIAR1008-04/CB1-00X	12.4 min.	Siloxane	5.0 J
	16.4 min.	Unknown	9.0 J
	17.3 min.	Unknown	13.0 J
CIAR1008-04/CB2-00X	11.2 min.	Unknown	9.0 J
	20.6 min.	Unknown	4.0 J
CIAR1008-04/005-00X	12.3 min.	Siloxane	10.0 J
	16.6 min.	Unknown	4.0 J
	17.8 min.	Unknown	7.0 J
	20.6 min.	Unknown	5.0 J
CIAR1008-1A/158-00X	20.6 min.	Unknown	4.0 J
CIAR1008-1A/FB-00X	20.4 min.	Phenyl ethanone	4.0 J
	20.6 min.	Unknown	5.0 J

TABLE 1
SUMMARY OF AMBIENT AIR ANALYTICAL RESULTS
CWM CHEMICAL SERVICES, INC.
CHICAGO INCINERATOR FACILITY
CHICAGO, ILLINOIS
ENSECO DATA SET No. 102943

Dames and Moore Sample ID	CIAR931007 04/032-00X	CIAR931007 04/091-00X	CIAR931007 04/094-00X	CIAR931007 04/112-00X	CIAR931007 04/112-DP	CIAR931007 04/113-00X	CIAR931007 04/040-00X	CIAR931007 04/FB-00X
Laboratory ID	102943-0001	102943-0002	102943-0003	102943-0004	102943-0005	102943-0006	102943-0007	102943-0008
Date Sample Collected	10-07-93	10-07-93	10-07-93	10-07-93	10-07-93	10-07-93	10-07-93	10-07-93
Dilution Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Summa Canister No.	SS-4	542	9119B	9150B	57	9139B	9123B	9120B
Units	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)
VOLATILE COMPOUNDS								
Dichlorodifluoromethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloromethane	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
1,2-Dichloro-1,1,2,2-tetrafluoroethene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Vinyl Chloride	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Bromomethane	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
Chloroethane	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Trichlorofluoromethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1,2-Trichloro-1,2,2-trifluoroethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Acetone	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Methylene Chloride	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
1,1-Dichloroethane	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
cis-1,2-Dichloroethene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloroform	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1,1-Trichloroethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Carbon Tetrachloride	2.0 UJ	2.0 UJ	2.0 UJ	2.0 UJ	2.0 UJ	2.0 UJ	2.0 UJ	2.0 UJ
Benzene	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
1,2-Dichloroethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Trichloroethene	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
1,2-Dichloropropane	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U
cis-1,3-Dichloropropene	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
4-Methyl-2-Pentanone	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Toluene	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
trans-1,3-Dichloropropene	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
1,1,2-Trichloroethane	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
Tetrachloroethene	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
1,2-Dibromomethane (EDB)	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chlorobenzene	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Ethylbenzene	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
p,m-Xylenes	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
o-Xylene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	7.0 U	7.0 U	7.0 U	7.0 U	7.0 U	7.0 U	7.0 U	7.0 U
1,1,2,2-Tetrachloroethane	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Benzyl chloride	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,3,5-Trimethylbenzene	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
1,2,4-Trimethylbenzene	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
1,3-Dichlorobenzene	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
1,4-Dichlorobenzene	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
1,2-Dichlorobenzene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,2,4-Trichlorobenzene	7.0 UJ	7.0 UJ	7.0 UJ	7.0 UJ	7.0 UJ	7.0 UJ	7.0 UJ	7.0 UJ
Hexachlorobutadiene	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ

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TABLE 1 (continued)
SUMMARY OF AMBIENT AIR ANALYTICAL RESULTS
CWM CHEMICAL SERVICES, INC.
CHICAGO INCINERATOR FACILITY
CHICAGO, ILLINOIS
ENSECO DATA SET No. 102970

Dames and Moore Sample ID	CIAR1008	CIAR1008	CIAR1008	CIAR1008	CIAR1008	CIAR1008	CIAR1008
	04/CB1-00X	04/CB2-00X	04/005-00X	04/023-00X	1A/158-00X	1A/117-00X	1A/FB-00X
Laboratory ID	102970-0001	102970-0002	102970-0003	102970-0004	102970-0005	102970-0006	102970-0007
Date Sample Collected	10-08-93	10-08-93	10-08-93	10-08-93	10-08-93	10-08-93	10-08-93
Dilution Factor	1.0	1.0	1.5	1.0	1.0	1.0	1.0
Summa Canister No.	A-011	A-044	A-005	A-183(9391B)	A-135(9306B)	A-127(9298B)	A198(9616B)
Units	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)
VOLATILE COMPOUNDS							
Dichlorodifluoromethane	2.0 U	2.0 U	3.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloromethane	2.5 U	2.5 U	2.8 U	2.5 U	2.5 U	2.5 U	2.5 U
1,2-Dichloro-1,1,2,2-tetrafluoroethene	2.0 U	2.0 U	3.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Vinyl Chloride	2.5 U	2.5 U	2.8 U	2.5 U	2.5 U	2.5 U	2.5 U
Bromomethane	3.0 U	3.0 U	4.5 U	3.0 U	3.0 U	3.0 U	3.0 U
Chloroethane	5.0 U	5.0 U	7.5 U	5.0 U	5.0 U	5.0 U	5.0 U
Trichlorofluoromethane	1.0 UJ	1.0 UJ	1.5 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ
1,1-Dichloroethene	2.0 U	2.0 U	3.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1,2-Trichloro-1,2,2-trifluoroethane	2.0 U	2.0 U	3.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Acetone	10.0 U	10.0 U	15.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Methylene Chloride	4.0 U	4.0 U	6.0 U	4.0 U	4.0 U	4.0 U	4.0 U
1,1-Dichloroethane	2.5 U	2.5 U	3.8 U	2.5 U	2.5 U	2.5 U	2.5 U
cis-1,2-Dichloroethene	2.0 U	2.0 U	3.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloroform	2.0 U	2.0 U	3.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1,1-Trichloroethane	2.0 U	2.0 U	3.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Carbon Tetrachloride	2.0 U	2.0 U	3.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Benzene	3.0 U	3.0 U	4.5 U	3.0 U	3.0 U	3.0 U	3.0 U
1,2-Dichloroethane	2.0 U	2.0 U	3.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Trichloroethene	2.5 U	2.5 U	2.8 U	2.5 U	2.5 U	2.5 U	2.5 U
1,2-Dichloropropane	8.0 U	8.0 U	12.0 U	8.0 U	8.0 U	8.0 U	8.0 U
cis-1,3-Dichloropropene	3.0 U	3.0 U	4.5 U	3.0 U	3.0 U	3.0 U	3.0 U
4-Methyl-2-Pentanone	10.0 U	10.0 U	15.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Toluene	3.0 U	3.0 U	4.5 U	3.0 U	3.0 U	3.0 U	3.0 U
trans-1,3-Dichloropropene	3.0 U	3.0 U	4.5 U	3.0 U	3.0 U	3.0 U	3.0 U
1,1,2-Trichloroethane	3.0 U	3.0 U	4.5 U	3.0 U	3.0 U	3.0 U	3.0 U
Tetrachloroethene	3.0 U	3.0 U	4.5 U	3.0 U	3.0 U	3.0 U	3.0 U
1,2-Dibromomethane (EDB)	2.0 U	2.0 U	3.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chlorobenzene	2.5 U	2.5 U	3.8 U	2.5 U	2.5 U	2.5 U	2.5 U
Ethylbenzene	2.5 U	2.5 U	3.8 U	2.5 U	2.5 U	2.5 U	2.5 U
p,m-Xylenes	5.0 U	5.0 U	7.5 U	5.0 U	5.0 U	5.0 U	5.0 U
o-Xylene	5.0 U	5.0 U	7.5 U	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	7.0 U	7.0 U	10.0 U	7.0 U	7.0 U	7.0 U	7.0 U
1,1,2,2-Tetrachloroethane	4.0 U	4.0 U	6.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Benzyl chloride	2.0 U	2.0 U	3.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,3,5-Trimethylbenzene	2.5 U	2.5 U	3.8 U	2.5 U	2.5 U	2.5 U	2.5 U
1,2,4-Trimethylbenzene	3.0 U	3.0 U	4.5 U	3.0 U	3.0 U	3.0 U	3.0 U
1,3-Dichlorobenzene	3.0 U	3.0 U	4.5 U	3.0 U	3.0 U	3.0 U	3.0 U
1,4-Dichlorobenzene	4.0 U	4.0 U	6.0 U	4.0 U	4.0 U	4.0 U	4.0 U
1,2-Dichlorobenzene	5.0 U	5.0 U	7.5 U	5.0 U	5.0 U	5.0 U	5.0 U
1,2,4-Trichlorobenzene	7.0 UJ	7.0 UJ	10.0 UJ	7.0 UJ	7.0 UJ	7.0 UJ	7.0 UJ
Hexachlorobutadiene	5.0 UJ	5.0 UJ	7.5 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ

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TABLE 1 (continued)
SUMMARY OF AMBIENT AIR ANALYTICAL RESULTS
CWM CHEMICAL SERVICES, INC.
CHICAGO INCINERATOR FACILITY
CHICAGO, ILLINOIS
ENSECO DATA SET No. 102943 and 102970

NOTES:

U	:	Compound was not detected at laboratory reported method detection limit.
UJ	:	This analyte was not detected, but the quantitation limit is estimated due to limitations identified during the QA review.
J	:	Quantitation is approximate due to limitations identified during the quality assurance review.
B	:	This result is qualitatively suspect since this compound was detected in a field and/or laboratory blank at a similar concentration.
R	:	Unreliable result. Compound may or may not be present.

DATA VALIDATION REVIEW
PROJECT: CWM CHEMICAL SERVICES, INC.
CHICAGO INCINERATOR FACILITY
CHICAGO, ILLINOIS
DATE SAMPLES COLLECTED: APRIL 24, 1994
JOB NO.: 13963-055-192

LAB REPORT No.: 105333

1.0 INTRODUCTION

Nineteen (19) ambient air samples, one (1) field-duplicate sample, one (1) field-blank sample and three (3) canister-blank samples were collected and submitted to Enseco Air Toxics Laboratory (Enseco) of City of Industry, California. A list of all samples included in this review are provided in Section 2.0. All samples were analyzed for Volatile Organic Compounds (VOCs) plus mass-spectral library searches for extraneous chromatographic peaks following USEPA Method TO-14.

A data validation/quality assurance review was performed on all samples prepared under a modified Contract Laboratory Program (CLP) Data Deliverable Format. Data were examined to assess data usability and compliance relative to CLP-I data-package deliverable requirements. The organic data quality review is based upon the following parameters:

*	•	Hold Times
	•	Blank Contaminants
*	•	GC/MS Performance Check (Tuning) Summary
	•	Initial and Continuing Calibration Results
*	•	Internal Standard Area Performance
*	•	Laboratory Control Sample and Laboratory Control Sample Duplicate Summaries:
*	•	Target Compound Identification and Quantitation
	•	Tentatively Identified Compounds Evaluation

* All criteria were met for this parameter

Overall, the data quality is good. Details of the data validation/quality assurance review are presented in the narrative section of the report. Summary tables have been provided. Data qualifiers have been placed next to the results so that the data user can quickly assess the qualitative and/or quantitative reliability of the reported result. This report was prepared to provide a critical review of the laboratory analysis and reported chemical results. Quality assurance reviews of laboratory-generated data routinely identify

problems associated with analytical measurements, even from the most experienced and capable laboratories.

This review has been performed in accordance with the requirements specified in the Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, dated September 1986 and revised June 1988 and with guidance from the USEPA CLP National Functional Guidelines for Organic Data Review dated December 1990 and revised June 1991.

2.0 SAMPLES INCLUDED IN REVIEW

Sample ID	Lab ID	Date Collected	Test Requested
CIAR940424-1B/003-00X	105333-001	04/24/94	VOC+10
CIAR940424-1B/005-00X	105333-002	04/24/94	VOC+10
CIAR940424-1B/019-00X	105333-003	04/24/94	VOC+10
CIAR940424-1B/CB3-00X	105333-004	04/24/94	VOC+10
CIAR940424-1B/016-00X	105333-005	04/24/94	VOC+10
CIAR940424-1B/046-00X	105333-006	04/24/94	VOC+10
CIAR940424-1B/047-00X	105333-007	04/24/94	VOC+10
CIAR940424-1B/057-00X	105333-008	04/24/94	VOC+10
CIAR940424-1B/059-00X	105333-009	04/24/94	VOC+10
CIAR940424-1B/CB4-00X	105333-010	04/24/94	VOC+10
CIAR940424-1B/073-00X	105333-011	04/24/94	VOC+10
CIAR940424-1B/073-FD3	105333-012	04/24/94	VOC+10
CIAR940424-1B/086-00X	105333-013	04/24/94	VOC+10
CIAR940424-1B/088-00X	105333-014	04/24/94	VOC+10
CIAR940424-1B/114-00X	105333-015	04/24/94	VOC+10
CIAR940424-1B/116-00X	105333-016	04/24/94	VOC+10
CIAR940424-1B/117-00X	105333-017	04/24/94	VOC+10
CIAR940424-1B/131-00X	105333-018	04/24/94	VOC+10
CIAR940424-1B/143-00X	105333-019	04/24/94	VOC+10
CIAR940424-1B/155-00X	105333-020	04/24/94	VOC+10
CIAR940424-1B/159-00X	105333-021	04/24/94	VOC+10
CIAR940424-1B/154-00X	105333-022	04/24/94	VOC+10
CIAR940425-1B/CB5-00X	105333-023	04/25/94	VOC+10
CIAR940425-1B/FB-00X	105333-024	04/25/94	VOC+10

Legend:

VOC+10 = Volatile Organic Compounds plus Forward Library Searches

3.0 GENERAL COMMENTS

With regard to the data deliverables, most of the requirements were met with the exception of the following deficiencies. These deficiencies have been corrected by the data reviewer and no additional action is required by the laboratory. Please note that these deficiencies do not impact data usability.

- The canister cleaning verification blank was not provided for Summa® Canister Nos. A-122 (Sample CIAR940424-1B/154-00X) and A-187 (Sample CIAR940424-1B/FB-00X). Based upon the raw data provided, both canisters were cleaned on April 7, 1994.

- The date of sample collection was reported by the laboratory as April 24, 1994 for all field samples on the "Sample Description Information" page (unnumbered). The correct date of sample collection for field samples CIAR940425-1A/CB5-00X and CIAR940425-1B/FB-00X is April 25, 1994 (as noted on chain-of-custody). The correction has been made by the data reviewer and no additional action is required by the laboratory.

- The retention time of the tentatively identified compounds is not reported on the CLP-Form Is.

- Target compounds whose concentrations are less than the laboratory reported method detection limit (MDL) have been reported as ND (not detected) by Enseco. Under the CLP format, these compounds would be reported by the laboratory as estimated values and flagged (J). Since a modified CLP format was requested, no additional action is required by the laboratory.

- Several tentatively identified compounds (TICs) were not reported by the laboratory since these TICs were identified as common laboratory contaminants. Following the CLP format, all TICs should be reported by the laboratory and flagged (B) to indicate possible laboratory or field contamination. Since these TICs would be negated during the data validation review, there is no impact on data usability and no additional action is required by the laboratory.

4.0 DATA QUALIFIERS

The data validation review has identified aspects of the analytical data that require qualification. To confidently use any of the data within the data set, the data user should understand the limitations and qualifications presented. With regard to data usability, the following qualifiers are offered based upon the data provided.

Hold Times:

- All samples were analyzed within the 14 day hold time requirement.

Blank Contaminants:

- No volatile target compounds above 0.2 ppb(v/v) were identified in the laboratory (method) blank and/or field-blank samples.

- Although there is no reason to question the validity of the positive methylene chloride results in samples CIAR940424-1B/073-00X, -1B/073-FD3, -1B/086-00X, -1B/114-00X and -1B/143-00X, it should be noted that methylene chloride is a common laboratory contaminant.

- The volatile target compound, trichloroethene (TCE) was identified in the April 7, 1994 Summa® canister cleaning QC batch. The canister was re-analyzed and no TCE was detected above 0.2 ppb(v/v). However, due to the concentration of TCE initially detected, the positive TCE results (less than 5 times the blank concentration) in field samples CIAR940424-1B/131-00X and CIAR940424-1B/154-00X, are regarded as qualitatively questionable and have been flagged (B) on the laboratory summary pages and on the data summary table.

- Tentatively identified compounds were found during the canister cleaning certification analyses at retention times 13 minutes and 20.8 minutes. All TICs identified were less than 10 percent of the peak area of the nearest internal standard and identification and quantitation was therefore, not required by the laboratory.

GC/MS Performance Check (Tuning) Summary:

- The bromofluorobenzene (BFB) tuning compound for the volatile organic compound analyses were reported within control limits.

Initial and Continuing Calibration Results:

- Due to the high difference (%D >40 but < 90) between the initial and continuing calibration response factors, all positive results for the following volatile compounds have been flagged (J) estimated. The actual detection limit may be higher than reported and have been flagged (UJ) estimated on the laboratory report summary pages and on the summary table.

Compound	Associated Sample
1,2,4-Trichlorobenzene	Samples 105333-0001 through 105333-0012

Internal Standards Area Performance:

- The volatile internal standard area counts and retention times fell within control limits for all project samples.

Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (LCSD) Summaries:

- The VOC spike (LCS/LCSD) recoveries and relative percent difference (RPD) between duplicate analyses fell within acceptable control limits providing a positive indication of the overall accuracy and precision associated with the analyses.

- Samples CIAR940424-1B/073-00X and CIAR940424-1B/073-FD3 were submitted to the laboratory as blind field-duplicate samples. The positive VOC results replicated well providing a positive indication of the laboratory and field precision.

Target Compound Identification and Quantitation:

- No errors in target compound identification and/or quantitation were identified during the data validation review.

- The following ambient air samples contained target compounds whose concentrations are less than the MDL but greater than 1.0 ppb (v/v) which have been reported as ND by the laboratory. Following CLP convention, the laboratory would report these estimated concentrations with a (J) qualifier. However, the samples were analyzed following EPA Method TO-14 and a modified CLP data deliverable was requested; therefore, no further action is required by the laboratory. This data is provided for informational purposes only. It should be noted that acetone and TCE were identified in the field-blank sample; therefore, all positive acetone and TCE results less

than 5 times the blank concentration are regarded as qualitatively questionable and have been flagged (B).

Sample ID	Retention Time	VOCs	Conc.(ppb)
CIAR940424-1B/003-00X	4.55 min.	Acetone	1.9 JB
CIAR940424-1B/005-00X	4.55 min.	Acetone	2.9 JB
CIAR940424-1B/019-00X	4.55 min.	Acetone	2.6 JB
CIAR940424-1B/016-00X	4.55 min.	Acetone	1.5 JB
CIAR940424-1B/046-00X	4.55 min.	Acetone	5.1 JB
CIAR940424-1B/057-00X	4.55 min.	Acetone	3.8 JB
CIAR940424-1B/057-00X	7.72 min.	Benzene	7.6 J
CIAR940424-1B/073-00X	4.55 min.	Acetone	4.5 JB
CIAR940424-1B/073-FD3	4.55 min.	Acetone	5.3 JB
	8.76 min.	Trichloroethene	1.7 JB
CIAR940424-1B/086-00X	4.55 min.	Acetone	5.0 JB
	2.90 min.	Vinyl chloride	1.1 J
CIAR940424-1B/088-00X	4.55 min.	Acetone	2.1 JB
	14.3 min.	m,p-Xylene	1.3 J
CIAR940424-1B/114-00X	4.55 min.	Acetone	2.0 JB
	8.76 min.	Trichloroethene	1.3 JB
	11.9 min.	Tetrachloroethene	1.3 J
CIAR940424-1B/116-00X	4.55 min.	Acetone	2.4 JB
CIAR940424-1B/117-00X	4.55 min.	Acetone	6.4 JB
	18.9 min.	Toluene	1.0 J
	14.3 min.	m,p-Xylene	2.5 J
CIAR940424-1B/131-00X	4.55 min.	Acetone	4.5 JB
CIAR940424-1B/143-00X	4.55 min.	Acetone	4.0 JB
CIAR940424-1B/155-00X	4.55 min.	Acetone	3.1 JB
	4.35 min.	1,1-Dichloroethene	1.0 J
CIAR940424-1B/159-00X	4.55 min.	Acetone	1.3 JB
CIAR940424-1B/154-00X	4.55 min.	Acetone	6.1 JB
CIAR940424-1B/FB-00X	4.55 min.	Acetone	2.9 J
	8.77 min.	Trichloroethene	1.3 J

Tentatively Identified Compounds:

- The validity of the Tentatively Identified Compounds (TICs) were evaluated based upon the mass-spectral data provided as well as the identifications made by the laboratory, and the following comments are offered:

  - No TICs were identified in the majority of samples. One TIC, identified as a cycloalkane at an estimated concentration of 7.9 ppb was detected in sample CIAR940424-1B/047-00X and an unknown alkene at an estimated concentration of 7.9 ppb was detected in sample CIAR940424-1B/117-00X.

- The following ambient air samples contained TICs which have an area greater than 10 percent of the nearest internal standard and which were not

reported by the laboratory since these TICs were identified as common laboratory contaminants:

Sample ID	Retention Time	TICs	Estimated Conc. ppb (v/v)
CIAR940424-1B/143-00X	12.3 min.	Siloxane	11 J
	18.1 min.	Unknown	5 J
CIAR940424-1B/155-00X	7.24 min.	Unknown	19 J
	12.9 min.	Siloxane	8 J
	17.8 min.	Unknown	22 J
CIAR940424-1B/159-00X	17.8 min.	Unknown	5 J
CIAR940424-1B/154-00X	12.3 min.	Siloxane	21 J
	17.8 min.	Unknown	8 J

TABLE 1
SUMMARY OF AMBIENT AIR ANALYTICAL RESULTS
CWM CHEMICAL SERVICES, INC.
CHICAGO INCINERATOR FACILITY
CHICAGO, ILLINOIS
ENSECO DATA SET No. 105333

Dames and Moore Sample ID	CIAR940424 1B/003-00X	CIAR940424 1B/005-00X	CIAR940424 1B/019-00X	CIAR940424 1B/CB3-00X	CIAR940424 1B/016-00X	CIAR940424 1B/046-00X	CIAR940424 1B/047-00X	CIAR940424 1B/057-00X
Laboratory ID	105333-0001	105333-0002	105333-0003	105333-0004	105333-0005	105333-0006	105333-0007	105333-0008
Date Sample Collected	04/24/94	04/24/94	04/24/94	04/24/94	04/24/94	04/24/94	04/24/94	04/24/94
Dilution Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Summa Canister ID	A-294	9232B	A-270	A-295	9634B	9356B	9628B	9631B
Units	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)
VOLATILE COMPOUNDS								
Dichlorodifluoromethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloromethane	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
1,2-Dichloro-1,1,2,2-tetrafluoroethene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Vinyl Chloride	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bromomethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloroethane	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Trichlorofluoromethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1-Dichloroethene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1,2-Trichloro-1,2,2-trifluoroethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Acetone	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Methylene Chloride	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1-Dichloroethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
cis-1,2-Dichloroethene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloroform	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1,1-Trichloroethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Carbon Tetrachloride	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Benzene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dichloroethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Trichloroethene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	13	2.0 U	2.0 U
1,2-Dichloropropane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
cis-1,3-Dichloropropene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
4-Methyl-2-Pentanone	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Toluene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
trans-1,3-Dichloropropene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1,2-Trichloroethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Tetrachloroethene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dibromomethane (EDB)	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chlorobenzene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Ethylbenzene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
p,m-Xylenes	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
o-Xylene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1,2,2-Tetrachloroethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Benzyl chloride	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,3,5-Trimethylbenzene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2,4-Trimethylbenzene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,3-Dichlorobenzene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,4-Dichlorobenzene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dichlorobenzene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2,4-Trichlorobenzene	4.0 UJ	4.0 UJ	4.0 UJ	4.0 UJ	4.0 UJ	4.0 UJ	4.0 UJ	4.0 UJ
Hexachlorobutadiene	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U

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TABLE 1 (continued)
SUMMARY OF AMBIENT AIR ANALYTICAL RESULTS
CWM CHEMICAL SERVICES, INC.
CHICAGO INCINERATOR FACILITY
CHICAGO, ILLINOIS
ENSECO DATA SET No. 105333

Dames and Moore Sample ID	CIAR940424 1B/059-00X	CIAR940424 1B/CB4-00X	CIAR940424 1B/073-00X	CIAR940424 1B/073-FD3	CIAR940424 1B/086-00X	CIAR940424 1B/088-00X	CIAR940424 1B/114-00X	CIAR940424 1B/116-00X
Laboratory ID	105333-0009	105333-0010	105333-0011	105333-0012	105333-0013	105333-0014	105333-0015	105333-0016
Date Sample Collected	04/24/94	04/24/94	04/24/94	04/24/94	04/24/94	04/24/94	04/24/94	04/24/94
Dilution Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Summa Canister ID	9717B	9713B	9714B	9722B	9306B	9301B	9239B	9251B
Units	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)
VOLATILE COMPOUNDS								
Dichlorodifluoromethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloromethane	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
1,2-Dichloro-1,1,2,2-tetrafluoroethene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Vinyl Chloride	2.0	2.0 U	18	20	2.0 U	2.0 U	2.0 U	2.0 U
Bromomethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloroethane	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Trichlorofluoromethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1-Dichloroethene	3.3	2.0 U	24	26	2.2	2.0 U	2.3	2.0 U
1,1,2-Trichloro-1,2,2-trifluoroethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Acetone	32	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Methylene Chloride	2.0 U	2.0 U	29	29	3.7	2.0 U	2.3	2.0 U
1,1-Dichloroethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
cis-1,2-Dichloroethene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloroform	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1,1-Trichloroethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Carbon Tetrachloride	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Benzene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dichloroethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Trichloroethene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dichloropropane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
cis-1,3-Dichloropropene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
4-Methyl-2-Pentanone	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Toluene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	3.2	2.0 U	2.0 U
trans-1,3-Dichloropropene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1,2-Trichloroethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Tetrachloroethene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dibromomethane (EDB)	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chlorobenzene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Ethylbenzene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
p,m-Xylenes	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
o-Xylene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1,2,2-Tetrachloroethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Benzyl chloride	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,3,5-Trimethylbenzene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2,4-Trimethylbenzene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,3-Dichlorobenzene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,4-Dichlorobenzene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dichlorobenzene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2,4-Trichlorobenzene	4.0 UJ	4.0 UJ	4.0 UJ	4.0 UJ	4.0 U	4.0 U	4.0 U	4.0 U
Hexachlorobutadiene	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U

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TABLE 1 (continued)
SUMMARY OF AMBIENT AIR ANALYTICAL RESULTS
CWM CHEMICAL SERVICES, INC.
CHICAGO INCINERATOR FACILITY
CHICAGO, ILLINOIS
ENSECO DATA SET No. 105333

Dames and Moore Sample ID	CIAR940424 1B/117-00X	CIAR940424 1B/131-00X	CIAR940424 1B/143-00X	CIAR940424 1B/155-00X	CIAR940424 1B/159-00X	CIAR940424 1B/154-00X	CIAR940425 1B/CB5-00X	CIAR940425 1B/FB-00X
Laboratory ID	105333-0017	105333-0018	105333-0019	105333-0020	105333-0021	105333-0022	105333-0023	105333-0024
Date Sample Collected	04/24/94	04/24/94	04/24/94	04/24/94	04/24/94	04/24/94	04/25/94	04/25/94
Dilution Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Summa Canister ID	9344B	9336B	9331B	9318B	A-262	A-122	A-268	A-187
Units	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)
VOLATILE COMPOUNDS								
Dichlorodifluoromethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloromethane	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
1,2-Dichloro-1,1,2,2-tetrafluoroethene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Vinyl Chloride	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bromomethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloroethane	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Trichlorofluoromethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1-Dichloroethene	2.0 U	2.0 U	4.0	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1,2-Trichloro-1,2,2-trifluoroethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Acetone	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Methylene Chloride	2.0 U	2.0 U	2.2	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1-Dichloroethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
cis-1,2-Dichloroethene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloroform	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1,1-Trichloroethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Carbon Tetrachloride	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Benzene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dichloroethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Trichloroethene	13	4.0 B	2.0 U	2.0 U	2.0 U	7.3 B	2.0 U	2.0 U
1,2-Dichloropropane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
cis-1,3-Dichloropropene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
4-Methyl-2-Pentanone	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Toluene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
trans-1,3-Dichloropropene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1,2-Trichloroethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Tetrachloroethene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dibromomethane (EDB)	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chlorobenzene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Ethylbenzene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
p,m-Xylenes	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
o-Xylene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1,2,2-Tetrachloroethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Benzyl chloride	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,3,5-Trimethylbenzene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2,4-Trimethylbenzene	2.4	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,3-Dichlorobenzene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,4-Dichlorobenzene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dichlorobenzene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2,4-Trichlorobenzene	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Hexachlorobutadiene	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U

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TABLE 1 (continued)
SUMMARY OF AMBIENT AIR ANALYTICAL RESULTS
CWM CHEMICAL SERVICES, INC.
CHICAGO INCINERATOR FACILITY
CHICAGO, ILLINOIS
ENSECO DATA SET No. 105333

NOTES

U : Compound was not detected at the laboratory reported method detection limit.
UJ : This analyte was not detected, but the quantitation limit is estimated due to limitations identified during the QA review.
J : Quantitation is approximate due to limitations identified during the quality assurance review (data validation).
B : This result is qualitatively suspect since this compound was detected in a field and/or laboratory blank at a similar concentration.
R : Unreliable result. Comound may or may not be detected.

DATA VALIDATION REVIEW
PROJECT: CWM CHEMICAL SERVICES, INC.
CHICAGO INCINERATOR FACILITY
CHICAGO, ILLINOIS
DATE SAMPLES COLLECTED: MAY 22 and 23, 1994
JOB NO.: 13963-055-192

LAB REPORT No.: 105633

1.0 INTRODUCTION

Twenty four (24) ambient air samples, four (4) field-duplicate samples, three (3) field-blank samples and one (1) canister-blank sample were collected and submitted to Enseco Air Toxics Laboratory (Enseco) of City of Industry, California. A list of all samples included in this review are provided in Section 2.0. All samples were analyzed for Volatile Organic Compounds (VOCs) plus mass-spectral library searches for extraneous chromatographic peaks following USEPA Method TO-14.

A data validation/quality assurance review was performed on all samples prepared under a modified Contract Laboratory Program (CLP) Data Deliverable Format. Data were examined to assess data usability and compliance relative to CLP-I data-package deliverable requirements. The organic data quality review is based upon the following parameters:

*	•	Hold Times
	•	Blank Contaminants
*	•	GC/MS Performance Check (Tuning) Summary
	•	Initial and Continuing Calibration Results
*	•	Internal Standard Area Performance
*	•	Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (LCSD) Summaries:
*	•	Target Compound Identification and Quantitation
	•	Tentatively Identified Compounds Evaluation

* All criteria were met for this parameter

Overall, the data quality is good. Details of the data validation/quality assurance review are presented in the narrative section of the report. Summary tables have been provided. Data qualifiers have been placed next to the results so that the data user can quickly assess the qualitative and/or quantitative reliability of the reported result. This report was prepared to provide a critical review of the laboratory analysis and reported chemical results. Quality assurance reviews of laboratory-generated data routinely identify

problems associated with analytical measurements, even from the most experienced and capable laboratories.

This review has been performed in accordance with the requirements specified in the Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, dated September 1986 and revised June 1988 and with guidance from the USEPA CLP National Functional Guidelines for Organic Data Review dated December 1990 and revised June 1991.

2.0 SAMPLES INCLUDED IN REVIEW

Sample ID	Lab ID	Date Collected	Test Requested
CIAR940522-1B/161-00X	105633-0001	05/22/94	VOC+10
CIAR940522-1B/167-00X	105633-0002	05/22/94	VOC+10
CIAR940522-1B/167-FD3	105633-0003	05/22/94	VOC+10
CIAR940522-1B/151-00X	105633-0004	05/22/94	VOC+10
CIAR940522-1B/FB-00X	105633-0005	05/22/94	VOC+10
CIAR940522-1A/005-00X	105633-0006	05/22/94	VOC+10
CIAR940522-1A/046-00X	105633-0007	05/22/94	VOC+10
CIAR940522-1A/074-00X	105633-0008	05/22/94	VOC+10
CIAR940522-1A/091-00X	105633-0009	05/22/94	VOC+10
CIAR940522-1A/091-FD5	105633-0010	05/22/94	VOC+10
CIAR940522-1A/049-00X	105633-0011	05/22/94	VOC+10
CIAR940522-1A/034-FD3	105633-0012	05/22/94	VOC+10
CIAR940522-1A/036-00X	105633-0013	05/22/94	VOC+10
CIAR940522-1A/FB2-00X	105633-0014	05/22/94	VOC+10
CIAR940522-1A/041-00X	105633-0015	05/22/94	VOC+10
CIAR940522-1A/041-00X	105633-0016	05/22/94	VOC+10
CIAR940522-1A/027-00X	105633-0017	05/22/94	VOC+10
CIAR940522-1A/028-00X	105633-0018	05/22/94	VOC+10
CIAR940522-1A/109-00X	105633-0019	05/22/94	VOC+10
CIAR940522-1A/CB6-00X	105633-0020	05/22/94	VOC+10
CIAR940523-00/BG3-00X	105633-0021	05/23/94	VOC+10
CIAR940523-00/BG2-00X	105633-0022	05/23/94	VOC+10
CIAR940523-00/BG1-00X	105633-0023	05/23/94	VOC+10
CIAR940523-1A/143-00X	105633-0024	05/23/94	VOC+10
CIAR940523-1A/145-00X	105633-0025	05/23/94	VOC+10
CIAR940523-1A/159-00X	105633-0026	05/23/94	VOC+10
CIAR940523-1A/105-00X	105633-0027	05/23/94	VOC+10
CIAR940523-1A/120-00X	105633-0028	05/23/94	VOC+10
CIAR940523-1A/163-00X	105633-0029	05/23/94	VOC+10
CIAR940523-1A/163-FD7	105633-0030	05/23/94	VOC+10
CIAR940523-1A/FB-00X	105633-0031	05/23/94	VOC+10
CIAR940523-1A/167-00X	105633-0032	05/23/94	VOC+10

Legend:
VOC+10 = Volatile Organic Compounds plus Forward Library Searches

3.0 GENERAL COMMENTS

With regard to the data deliverables, most of the requirements were met with the exception of the following deficiencies. These deficiencies have been corrected by the data reviewer and no additional action is required by the laboratory. Please note that these deficiencies do not impact data usability.

- The canister cleaning verification blank was not provided for Summa® Canister No. A-327 (Sample CIAR940522-1A/028-00X). Based upon the raw data provided, both canisters were cleaned on April 7, 1994 and qualifiers were applied based upon the April 7, 1994 QC batch results.

- The date of sample collection was reported by the laboratory as April 24, 1994 for all field samples on the "Sample Description Information" page (un-numbered). The correct date of sample collection for field samples CIAR940425-1A/CB5-00X and CIAR940425-1B/FB-00X is April 25, 1994 (as noted on chain-of-custody). The correction has been made by the data reviewer and no additional action is required by the laboratory.

- The retention time of the tentatively identified compounds is not reported on the CLP-Form Is.

- Target compounds whose concentrations are less than the laboratory reported method detection limit (MDL) have been reported as ND (not detected) by Enseco. Under the CLP format, these compounds would be reported by the laboratory as estimated values and flagged (J). Since a modified CLP format was requested, no additional action is required by the laboratory.

- Several tentatively identified compounds (TICs) were not reported by the laboratory since these TICs were identified as common laboratory contaminants. Following the CLP format, all TICs should be reported by the laboratory and flagged (B) to indicate possible laboratory or field contamination. Since these TICs would be negated during the data validation review, there is no impact on data usability and no additional action is required by the laboratory.

- Based upon the data received and reviewed, it appears that several field samples may have been mis-labeled. For example, two field-blank samples exhibited elevated concentrations of target compounds. Two field-duplicate samples, were reported as non-detected while their duplicates pair sample contained elevated concentrations of target compounds. This data reviewer has contacted both the sample collection team and the laboratory in an effort to confirm this apparent error; however, no definitive information suggesting

mislabeling of samples was obtained. Therefore, the results are reported as presented by the laboratory and qualification of the data is based upon the reported results.

4.0 DATA QUALIFIERS

The data validation review has identified aspects of the analytical data that require qualification. To confidently use any of the data within the data set, the data user should understand the limitations and qualifications presented. With regard to data usability, the following qualifiers are offered based upon the data provided.

Hold Times:

- All samples were analyzed within the 14 day hold time requirement.

Blank Contaminants:

- The volatile target compound, 1,2,4-trichlorobenzene, was detected in the laboratory (method) blank associated with field samples 105633-0008 through 105633-0018 at an estimated (J) concentration of 3.9 ppb (v/v). There is no impact on data usability since all field samples were reported as non-detected for 1,2,4-trichlorobenzene.

- The volatile target compound, acetone, was detected in all three field-blank samples associated with all field samples at estimated concentrations ranging from 4.2 ppb to 6.6 ppb. All positive acetone results less than 5 times the blank concentration are qualitatively questionable and have been flagged (B) on the laboratory summary pages and on the summary table. All reported results greater than 5 times the blank concentrations are regarded as "real" values and no data qualifiers are required. The following field samples have been qualified:

Analyte	Associated Sample
Acetone	CIAR940522-1B/151-00X and CIAR940522-1A/041-FD6

- Several volatile target compounds (Vinyl chloride at 5.0 ppb; 1,1-Dichloroethene at 6.2 ppb; Toluene at 7.0 ppb; Ethylbenzene at 3.6 ppb; p,m-Xylenes at 12 ppb; 1,2,4-Trimethylbenzene at 4.9 ppb; and 1,2-Dichlorobenzene at 9.2 ppb) were detected in field-blank sample CIAR940522-1A/FB-00X associated with samples 105633-0001 through 105633-0010. All positive results less than 5 times the blank concentration are qualitatively questionable and have been flagged (B) on the laboratory summary pages and on the

summary table. Results greater than 5 times the blank concentration are regarded as "real" values and no data qualifiers are required. The following samples have been qualified based upon the field blank results:

Analyte	Associated Samples
1,1-Dichloroethene	CIAR940522-1B/161-00X, CIAR940522-1B/167-00X, CIAR940522-1B/161-FD4, CIAR940522-1B/151-00X, CIAR940522-1A/005-00X, CIAR940522-1A/047-00X, CIAR940522-1A/074-00X, CIAR940522-1A/091-00X and CIAR940522-1A/091-FD5

- Several volatile target compounds (1,1-Dichloroethene at 1.4 J ppb; Toluene at 19 ppb; Ethylbenzene at 8.3 ppb; p,m-Xylenes at 35 ppb; o-Xylenes at 9.4 ppb; 1,3,5-Trimethylbenzene at 2.2 ppb; and 1,2,4-Trimethylbenzene at 10 ppb) were detected in field-blank sample CIAR940523-1A/FB-00X associated with samples 105633-0021 through 105633-0032. All positive results less than 5 times the blank concentration are qualitatively questionable and have been flagged (B) on the laboratory summary pages and on the summary table. Results greater than 5 times the blank concentration are regarded as "real" values and no data qualifiers are required. The following samples have been qualified based upon the field blank results:

Analyte	Associated Samples
1,1-Dichloroethene	CIAR940523-1A/167-00X
Toluene	CIAR940523-1A/163-FD7
Ethylbenzene	CIAR940523-1A/163-FD7
p,m-Xylenes	CIAR940523-1A/163-FD7 and CIAR940523-1A/167-00X
o-Xylenes	CIAR940523-1A/163-FD7 and CIAR940523-1A/167-00X
1,3,5-Trimethylbenzene	CIAR940523-1A/163-FD7 and CIAR9405231A/167-00X
1,2,4-Trimethylbenzene	CIAR940523-1A/163-FD7 and CIAR9405231A/167-00X

- No volatile target compounds were detected in the canister QC cleaning blanks.

- Tentatively identified compounds were found during the canister cleaning certification analyses as well as the laboratory (method) blank analyses at retention times 12.0, 17.2 and 20.3 minutes. All TICs identified were less than 10 percent of the peak area of the nearest internal standard and identification and quantitation was therefore, not required by the laboratory.

GC/MS Performance Check (Tuning) Summary:

- The bromofluorobenzene (BFB) tuning compound for the volatile organic compound analyses were reported within control limits.

Initial and Continuing Calibration Results:

- Due to the high difference (%D >40 but < 90) between the initial and continuing calibration response factors, all positive results for the following volatile compounds have been flagged (J) estimated. The actual detection limit may be higher than reported and have been flagged (UJ) estimated on the laboratory report summary pages and on the summary table.

Compound	Associated Sample
1,2,4-Trichlorobenzene	Samples 105633-0001 through 105633-0007

Internal Standards Area Performance:

- The volatile internal standard area counts and retention times fell within control limits for all project samples.

Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (LCSD) Summaries:

- The VOC spike (LCS/LCSD) recoveries and relative percent difference (RPD) between duplicate analyses fell within acceptable control limits providing a positive indication of the overall accuracy and precision associated with the analyses.

- Four sets of duplicate pairs were collected and submitted to the laboratory as blind field-duplicate samples. In duplicate pairs CIAR940522-1B/167-00X and CIAR940522-1B/167-FD4 and CIAR940522-1A/091-00X and CIAR-940522-1A/091-FD5, the positive VOC results replicated well providing a positive indication of both the laboratory and field precision. Duplicate pairs CIAR940522-1A/041-00X and CIAR940522-1A/041-FD6 as well as CIAR940523-1A/163-00X and CIAR940523-1A/163-FD7 exhibited poor reproducibility. As noted earlier in this report, it appears that several samples may have been mislabeled. Due to the extremely poor reproducubility associated with these duplicate pairs, the positive results are regarded as estimated values and have been flagged (J) while the non-detected results are unreliable (compound may or may not be present) and have been flagged (R) on the laboratory summary pages and on the summary table.

Target Compound Identification and Quantitation:

- No errors in target compound identification and/or quantitation were identified during the data validation review.

- The following ambient air samples contained target compounds whose concentrations are less than the MDL but greater than 1.0 ppb (v/v) which have been reported as ND by the laboratory. Following CLP convention, the laboratory would report these estimated concentrations with a (J) qualifier. However, the samples were analyzed by EPA Method TO-14 and a modified CLP deliverable was requested; therefore, no further action is required by the laboratory. This data is provided for informational purposes only. It should be noted that acetone and o-xylene were identified in the field-blank samples; therefore, all positive acetone and o-xylene results less than 5 times the blank concentration are regarded as qualitatively questionable and have been flagged (B).

Sample ID	Retention Time	VOCs	Estimated Conc. ppb (v/v)
CIAR940522-1B/161-00X	4.48 min.	Acetone	4.6 JB
CIAR940522-1B/167-00X	4.48 min.	Acetone	3.4 JB
	2.86 min.	Vinyl chloride	1.7 J
	7.64 min.	Benzene	1.7 J
CIAR940522-1B/167-FD4	4.48 min.	Acetone	3.6 JB
	4.93 min.	Methylene chloride	1.5 J
	7.63 min.	Benzene	1.5 J
	10.8 min.	Toluene	1.5 J
CIAR940522-1B/151-00X	4.48 min.	Acetone	10.9 JB
CIAR940522-1A/FB-00X	4.48 min.	Acetone	4.2 J
	15.2 min.	o-Xylene	2.7 J
CIAR940522-1A/005-00X	4.51 min.	Acetone	2.3 JB
	4.31 min.	1,1-Dichloroethene	1.1 JB
CIAR940522-1A/046-00X	4.47 min.	Acetone	3.6 JB
CIAR940522-1A/074-00X	4.47 min.	Acetone	5.5 JB
	17.2 min.	1,3,5-Trimethylbenzene	1.5 J
	18.2 min.	1,2,4-Trimethylbenzene	1.4 J
CIAR940522-1A/091-00X	4.47 min.	Acetone	1.5 JB
CIAR940522-1A/091-FD5	4.47 min.	Acetone	2.7 JB
CIAR940522-1A/049-00X	4.55 min.	Acetone	2.4 JB
CIAR940522-1A/034-00X	4.36 min.	1,1-Dichloroethene	1.3 JB
	4.56 min.	Acetone	2.9 JB
CIAR940522-1A/036-00X	4.55 min.	Acetone	3.7 JB
CIAR940522-1A/FB2-00X	4.56 min.	Acetone	4.2 J
CIAR940522-1A/028-00X	4.55 min.	Acetone	1.9 JB
	4.99 min.	Methylene chloride	1.3 J
CIAR940523-00/BG3-00X	4.48 min.	Acetone	3.3 JB
CIAR940523-00/BG1-00X	4.45 min.	Acetone	4.6 JB
CIAR940523-1A/145-00X	14.7 min.	m,p-Xylene	1.4 J
CIAR940523-1A/159-00X	7.07 min.	1,1,1-TCA	1.7 J
CIAR940523-1A/105-00X	4.46 min.	Acetone	4.1 JB
CIAR940523-1A/120-00X	4.43 min.	Acetone	2.0 JB
	18.2 min.	1,2-Dichlorobenzene	1.0 J
CIAR940523-1A/163-FD7	4.49 min.	Acetone	4.9 JB

Sample ID	Retention Time	VOCs	Estimated Conc. ppb (v/v)
CIAR940523-1A/FB-00X	4.31 min.	1,1-Dichloroethene	1.4 J
	4.49 min.	Acetone	6.6 J
CIAR940523-1A/167-00X	4.43 min.	Acetone	7.2 JB
	15.0 min.	o-Xylene	2.3 JB

Tentatively Identified Compounds:

- The validity of the Tentatively Identified Compounds (TICs) were evaluated based upon the mass-spectral data provided as well as the identifications made by the laboratory, and the following comments are offered:

  - No TICs were identified in the majority of samples. Unknown alkanes, branched alkanes and substituted benzenes were identified in field samples CIAR940522-1B/161-00X,CIAR940522-1A/041-FD6,CIAR940523-1A/163-FD7 and CIAR940523-1A/FB-00X. Dienes were identified in samples CIAR940523-00/BG3-00X and CIAR940523-00/BG2-00X and an unknown alkene was found in sample CIAR940523-1a/163-00x.

- The following ambient air samples contained TICs which have an area greater than 10 percent of the nearest internal standard and which were not reported by the laboratory since these TICs were identified as common laboratory contaminants:

Sample ID	Retention Time	TICs	Estimated Conc. ppb (v/v)
CIAR940522-1A/FB2-00X	9.6 min.	Unknown	11 J
CIAR940522-1A/109-00X	12.3 min.	Siloxane	4.0 J
	20.6 min.	Uknown	7.0 J
CIAR940522-1A/CB6-00X	20.6 min.	Uknown	7.0 J
CIAR940523-00/BG3-00X	12.3 min.	Siloxane	4.0 J
	20.6 min.	Uknown	5.0 J
CIAR940523-00/BG2-00X	12.3 min.	Siloxane	4.0 J
	20.6 min.	Uknown	4.0 J
CIAR940523-00/BG2-00X	20.6 min.	Uknown	4.0 J
CIAR940523-1A/145-00X	12.3 min.	Siloxane	4.0 J
CIAR940523-1A/120-00X	12.3 min.	Siloxane	12 J
CIAR940523-1A/163-00X	12.3 min.	Siloxane	12 J

Sample ID	Retention Time	TICs	Estimated Conc. ppb (v/v)
CIAR940523-1A/163-FD7	12.3 min.	Siloxane	4.0 J
CIAR940523-1A/FB-00X	12.3 min.	Siloxane	4.0 J
CIAR940523-1A/167-00X	12.3 min.	Siloxane	4.0 J

TABLE 1
SUMMARY OF AMBIENT AIR ANALYTICAL RESULTS
CWM CHEMICAL SERVICES, INC.
CHICAGO INCINERATOR FACILITY
ENSECO DATA SET No. 105633

Dames and Moore Sample ID	CIAR940522 1B/161-00X	CIAR940522 1B/167-00X	CIAR940522 1B/167-FD4	CIAR940522 1B/151-00X	CIAR940522 1A/FB-00X	CIAR940522 1A/005-00X	CIAR940522 1A/046-00X	CIAR940522 1A/074-00X	CIAR940522 1A/091-00X	CIAR940522 1A/091-FD5
Laboratory ID	105633-0001	105633-0002	105633-0003	105633-0004	105633-0005	105633-0006	105633-0007	105633-0008	105633-0009	105633-0010
Date Sample Collected	05-22-94	05-22-94	05-22-94	05-22-94	05-22-94	05-22-94	05-22-94	05-22-94	05-22-94	05-22-94
Dilution Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.05	1.45	1.0
Canister ID	9710B	9724B	9628B	9717B	A-165	A-136	A-131	A-173	A-293	A-270
Units	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)
VOLATILE COMPOUNDS										
Dichlorodifluoromethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.1 U	2.9 U	2.0 U
Chloromethane	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.2 U	5.8 U	4.0 U
1,2-Dichloro-1,1,2,2-tetrafluoroethene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.1 U	2.9 U	2.0 U
Vinyl Chloride	2.0 U	2.0 U	2.1	2.0 U	5.0	2.0 U	2.0 U	2.1 U	2.9 U	2.0 U
Bromomethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.1 U	2.9 U	2.0 U
Chloroethane	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.2 U	5.8 U	4.0 U
Trichlorofluoromethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.1 U	2.9 U	2.0 U
1,1-Dichloroethene	15 B	30 B	31 B	2.0 U	6.2	2.0 U	2.0 U	4.0	3.2 B	2.8 B
1,1,2-Trichloro-1,2,2-trifluoroethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.1 U	2.9 U	2.0 U
Acetone	10 U	10 U	10 U	10 B	10 U	10 U	10 U	10 U	15 U	10 U
Methylene Chloride	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.1 U	2.9 U	2.0 U
1,1-Dichloroethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.1 U	2.9 U	2.0 U
cis-1,2-Dichloroethene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.1 U	2.9 U	2.0 U
Chloroform	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.1 U	2.9 U	2.0 U
1,1,1-Trichloroethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.1 U	2.9 U	2.0 U
Carbon Tetrachloride	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.1 U	2.9 U	2.0 U
Benzene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.1 U	2.9 U	2.0 U
1,2-Dichloroethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.1 U	2.9 U	2.0 U
Trichloroethene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.1 U	2.9 U	2.0 U
1,2-Dichloropropane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.1 U	2.9 U	2.0 U
cis-1,3-Dichloropropene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.1 U	2.9 U	2.0 U
4-Methyl-2-Pentanone	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.2 U	5.8 U	4.0 U
Toluene	2.0 U	2.0 U	2.0 U	2.0 U	7.7	2.0 U	2.0 U	2.1 U	2.9 U	2.0 U
trans-1,3-Dichloropropene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.1 U	2.9 U	2.0 U
1,1,2-Trichloroethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.1 U	2.9 U	2.0 U
Tetrachloroethene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.1 U	2.9 U	2.0 U
1,2-Dibromomethane (EDB)	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.1 U	2.9 U	2.0 U
Chlorobenzene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.1 U	2.9 U	2.0 U
Ethylbenzene	2.0 U	2.0 U	2.0 U	2.0 U	3.6	2.0 U	2.0 U	2.1 U	2.9 U	2.0 U
p,m-Xylenes	5.0 U	5.0 U	5.0 U	5.0 U	12	5.0 U	5.0 U	5.2 U	5.8 U	5.0 U
o-Xylene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.2 U	5.8 U	5.0 U
Styrene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.1 U	2.9 U	2.0 U
1,1,2,2-Tetrachloroethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.1 U	2.9 U	2.0 U
Benzyl chloride	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.1 U	2.9 U	2.0 U
1,3,5-Trimethylbenzene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.1 U	2.9 U	2.0 U
1,2,4-Trimethylbenzene	2.0 U	2.0 U	2.0 U	2.0 U	4.9	2.0 U	2.0 U	2.1 U	2.9 U	2.0 U
1,3-Dichlorobenzene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.1 U	2.9 U	2.0 U
1,4-Dichlorobenzene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.1 U	2.9 U	2.0 U
1,2-Dichlorobenzene	2.0 U	2.0 U	2.0 U	2.0 U	9.2	2.0 U	2.0 U	2.1 U	2.9 U	2.0 U
1,2,4-Trichlorobenzene	4.0 UJ	4.0 UJ	4.0 UJ	4.0 UJ	4.0 UJ	4.0 UJ	4.0 UJ	4.2 U	5.8 U	4.0 U
Hexachlorobutadiene	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.2 U	5.8 U	4.0 U

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TABLE 1 (continued)
SUMMARY OF AMBIENT AIR ANALYTICAL RESULTS
CWM CHEMICAL SERVICES, INC.
CHICAGO INCINERATOR FACILITY
ENSECO DATA SET No. 105633

Dames and Moore Sample ID	CIAR940522 1A/049-00X	CIAR940522 1A/034-00X	CIAR940522 1A/036-00X	CIAR940522 1A/FB2-00X	CIAR940522 1A/041-00X	CIAR940522 1A/041-FD6	CIAR940522 1A/027-00X	CIAR940522 1A/028-00X	CIAR940522 1A/109-00X	CIAR940522 1A/CB6-00X
Laboratory ID	105633-0011	105633-0012	105633-0013	105633-0014	105633-0015	105633-0016	105633-0017	105633-0018	105633-0019	105633-0020
Date Sample Collected	05-22-94	05-22-94	05-22-94	05-22-94	05-22-94	05-22-94	05-22-94	05-22-94	05-22-94	05-22-94
Dilution Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Canister ID	A-282	A-299	A-218	A-219	A-263	A-221	A-332	A-327	A-322	A-321
Units	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)
VOLATILE COMPOUNDS										
Dichlorodifluoromethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloromethane	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
1,2-Dichloro-1,1,2,2-tetrafluoroethene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Vinyl Chloride	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bromomethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloroethane	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Trichlorofluoromethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1-Dichloroethene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	4.3	14	2.0 U
1,1,2-Trichloro-1,2,2-trifluoroethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Acetone	10 U	10 U	10 U	10 U	10 U	21 B	10 U	10 U	10 U	10 U
Methylene Chloride	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1-Dichloroethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
cis-1,2-Dichloroethene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloroform	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1,1-Trichloroethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Carbon Tetrachloride	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Benzene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dichloroethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Trichloroethene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dichloropropane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
cis-1,3-Dichloropropene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
4-Methyl-2-Pentanone	4.0 U	4.0 U	4.0 U	4.0 U	R	10 J	4.0 U	4.0 U	4.0 U	4.0 U
Toluene	2.0 U	2.0 U	2.3	2.0 U	R	3.1 J	2.0 U	2.0 U	2.0 U	2.0 U
trans-1,3-Dichloropropene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1,2-Trichloroethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Tetrachloroethene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dibromomethane (EDB)	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chlorobenzene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Ethylbenzene	2.0 U	2.0 U	2.0 U	2.0 U	R	6.2 J	2.0 U	2.0 U	2.0 U	2.0 U
p,m-Xylenes	5.0 U	5.0 U	5.0 U	5.0 U	R	45 J	5.0 U	5.0 U	5.0 U	5.0 U
o-Xylene	5.0 U	5.0 U	5.0 U	5.0 U	R	12 J	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1,2,2-Tetrachloroethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Benzyl chloride	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,3,5-Trimethylbenzene	2.0 U	2.0 U	2.0 U	2.0 U	R	3.2 J	2.0 U	2.0 U	2.0 U	2.0 U
1,2,4-Trimethylbenzene	2.0 U	2.0 U	2.0 U	2.0 U	R	14 J	2.0 U	2.0 U	2.0 U	2.0 U
1,3-Dichlorobenzene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,4-Dichlorobenzene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dichlorobenzene	2.0 U	2.0 U	2.0 U	2.0 U	R	3.5 J	2.0 U	2.0 U	2.0 U	2.0 U
1,2,4-Trichlorobenzene	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Hexachlorobutadiene	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U

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TABLE 1 (continued)
SUMMARY OF AMBIENT AIR ANALYTICAL RESULTS
CWM CHEMICAL SERVICES, INC.
CHICAGO INCINERATOR FACILITY
ENSECO DATA SET No. 105633

Dames and Moore Sample ID	CIAR940523 00/BG3-00X	CIAR940523 00/BG2-00X	CIAR940523 00/BG1-00X	CIAR940523 1A/143-00X	CIAR940523 1A/145-00X	CIAR940523 1A/159-00X	CIAR940523 1A/105-00X	CIAR940523 1A/120-00X	CIAR940523 1A/163-00X	CIAR940523 1A/163-FD7	CIAR940523 1A/FB-00X	CIAR940523 1A/167-00X
Laboratory ID	105633-0021	105633-0022	105633-0023	105633-0024	105633-0025	105633-0026	105633-0027	105633-0028	105633-0029	105633-0030	105633-0031	105633-0032
Date Sample Collected	05-23-94	05-23-94	05-23-94	05-23-94	05-23-94	05-23-94	05-23-94	05-23-94	05-23-94	05-23-94	05-23-94	05-23-94
Dilution Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Canister ID	9325B	9248B	9251B	9234B	9301B	9333B	9318B	9325B	9360B	9340B	9334B	9337B
Units	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)
VOLATILE COMPOUNDS												
Dichlorodifluoromethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloromethane	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
1,2-Dichloro-1,1,2,2-tetrafluoroethene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Vinyl Chloride	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bromomethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloroethane	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Trichlorofluoromethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1-Dichloroethene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	22	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.3 B
1,1,2-Trichloro-1,2,2-trifluoroethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Acetone	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylene Chloride	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1-Dichloroethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
cis-1,2-Dichloroethene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloroform	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1,1-Trichloroethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Carbon Tetrachloride	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Benzene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dichloroethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Trichloroethene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dichloropropane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
cis-1,3-Dichloropropene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
4-Methyl-2-Pentenone	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Toluene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	R	14 BJ	19	2.0 U
trans-1,3-Dichloropropene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	5.5
1,1,2-Trichloroethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Tetrachloroethene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dibromomethane (EDB)	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chlorobenzene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Ethylbenzene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	R	6.2 BJ	8.3	2.0 B
p,m-Xylenes	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	R	27 BJ	35	10 B
o-Xylene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	R	7.9 BJ	9.4	5.0 U
Styrene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1,2,2-Tetrachloroethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Benzyl chloride	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,3,5-Trimethylbenzene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	R	5.0 BJ	2.2	2.0 U
1,2,4-Trimethylbenzene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	R	22 BJ	10	3.2 B
1,3-Dichlorobenzene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,4-Dichlorobenzene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dichlorobenzene	2.0 U	2.0 U	2.0 U	2.0 U	3.5	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2,4-Trichlorobenzene	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Hexachlorobutadiene	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U

continued next page (see notes on last page of table)

TABLE 1 (continued)
SUMMARY OF AMBIENT AIR ANALYTICAL RESULTS
CWM CHEMICAL SERVICES, INC.
CHICAGO INCINERATOR FACILITY
ENSECO DATA SET No. 105633

NOTES:

U	: Compound was not detected at laboratory reported method detection limit.
J	: Quantitation is approximate due to limitations identified during the quality assurance review (data validation).
B	: This result is qualitatively suspect since this compound was detected in a field and/or laboratory blank at a similar concentration.
UJ	: This analyte was not detected, but the quantitation limit is estimated due to limitations identified during the QA review.
R	: Unreliable result. Compound may or may not be present.

DATA VALIDATION REVIEW
PROJECT: CWM CHEMICAL SERVICES, INC.
CHICAGO INCINERATOR FACILITY
CHICAGO, ILLINOIS
DATE SAMPLES COLLECTED: JUNE 2 AND 3, 1004
JOB NO.: 13963-055-192

LAB REPORT No.: 105791 and 105815

1.0 INTRODUCTION

Twelve (12) ambient air samples, two (2) field-duplicate samples and two (2) field-blank samples were collected and submitted to Enseco Air Toxics Laboratory (Enseco) of City of Industry, California. A list of all samples included in this review are provided in Section 2.0. All samples were analyzed for Volatile Organic Compounds (VOCs) plus mass-spectral library searches for extraneous chromatographic peaks following USEPA Method TO-14.

A data validation/quality assurance review was performed on all samples prepared under a modified Contract Laboratory Program (CLP) Data Deliverable Format. Data were examined to assess data usability and compliance relative to CLP-I data-package deliverable requirements. The organic data quality review is based upon the following parameters:

- * Hold Times
- * Blank Contaminants
- * GC/MS Performance Check (Tuning) Summary
- Initial and Continuing Calibration Results
- * Internal Standard Area Performance
- * Laboratory Control Sample and Laboratory Control Sample Duplicate Summaries:
- * Target Compound Identification and Quantitation
- Tentatively Identified Compounds Evaluation

* All criteria were met for this parameter

Overall, the data quality is good. Details of the data validation/quality assurance review are presented in the narrative section of the report. Summary tables have been provided. Data qualifiers have been placed next to the results so that the data user can quickly assess the qualitative and/or quantitative reliability of the reported result. This report was prepared to provide a critical review of the laboratory analysis and reported chemical results. Quality assurance reviews of laboratory-generated data routinely identify

problems associated with analytical measurements, even from the most experienced and capable laboratories.

This review has been performed in accordance with the requirements specified in the Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, dated September 1986 and revised June 1988 and with guidance from the USEPA CLP National Functional Guidelines for Organic Data Review dated December 1990 and revised June 1991.

2.0 SAMPLES INCLUDED IN REVIEW

Sample ID	Lab ID	Date Collected	Test Requested
	Enseco Data Set No. 105791		
CIAR940602-06/162-00X	105791-001	06/02/94	VOC+10
CIAR940602-06/161-00X	105791-002	06/02/94	VOC+10
CIAR940602-06/161-FD8	105791-003	06/02/94	VOC+10
CIAR940602-06/156-00X	105791-004	06/02/94	VOC+10
	Enseco Data Set No. 105815		
CIAR940602-06/162-00X	105815-001	06/02/94	VOC+10
CIAR940602-06/FB-00X	105815-002	06/02/94	VOC+10
CIAR940602-06/068-00X	105815-003	06/02/94	VOC+10
CIAR940602-06/068-FD9	105815-004	06/02/94	VOC+10
CIAR940602-06/083-00X	105815-005	06/02/94	VOC+10
CIAR940602-06/084-00X	105815-006	06/02/94	VOC+10
CIAR940602-06/113-00X	105815-007	06/02/94	VOC+10
CIAR940602-06/115-00X	105815-008	06/02/94	VOC+10
CIAR940602-06/002-00X	105815-009	06/02/94	VOC+10
CIAR940603-06/089-00X	105815-010	06/03/94	VOC+10
CIAR940603-06/087-00X	105815-011	06/03/94	VOC+10
CIAR940603-06/FB-00X	105815-012	06/03/94	VOC+10

Legend:

VOC+10 = Volatile Organic Compounds plus Forward Library Searches

3.0 GENERAL COMMENTS

With regard to the data deliverables, most of the requirements were met with the exception of the following deficiencies. These deficiencies have been corrected by the data reviewer and no additional action is required by the laboratory. Please note that these deficiencies do not impact data usability.

- The canister Summa® identifications were provided; however, the summary page which indicates which canister corresponds to each field sample was not provided in the data sets (105791 and 105815) received for review. There is no impact on data usability since no blank contaminants were identified during the canister cleaning QC certification.

- The retention time of the tentatively identified compounds is not reported on the CLP-Form Is.

- Target compounds whose concentrations are less than the laboratory reported method detection limit (MDL) have been reported as ND (not detected) by Enseco. Under the CLP format, these compounds would be reported by the laboratory as estimated values and flagged (J). Since a modified CLP format was requested, no additional action is required by the laboratory.

- Several tentatively identified compounds (TICs) were not reported by the laboratory since these TICs were identified as common laboratory contaminants. Following the CLP format, all TICs should be reported by the laboratory and flagged (B) to indicate possible laboratory or field contamination. Since these TICs would be negated during the data validation review, there is no impact on data usability and no additional action is required by the laboratory.

4.0 DATA QUALIFIERS

The data validation review has identified aspects of the analytical data that require qualification. To confidently use any of the data within the data set, the data user should understand the limitations and qualifications presented. With regard to data usability, the following qualifiers are offered based upon the data provided.

Hold Times:

- All samples were analyzed within the 14 day hold time requirement.

Blank Contaminants:

- No volatile target compounds above 0.2 ppb(v/v) were identified in the laboratory (method) blank and/or field blanks.

- Tentatively identified compounds were found during the canister cleaning certification analyses at retention times 13 minutes and 20.8 minutes. All TICs identified were less than 10 percent of the peak area of the nearest internal standard and identification and quantitation was therefore, not required by the laboratory.

GC/MS Performance Check (Tuning) Summary:

- The bromofluorobenzene (BFB) tuning compound for the volatile organic compound analyses were reported within control limits.

Initial and Continuing Calibration Results:

- Due to the high difference (%D >40 but < 90) between the initial and continuing calibration response factors, all positive results for the following volatile compounds have been flagged (J) estimated. The actual detection limit may be higher than reported and have been flagged (UJ) estimated on the laboratory report summary pages and on the summary table.

Compound	Data Set	Associated Sample
1,2-Dichloroethane	105815	All Ambient Air Samples

Internal Standards Area Performance:

- The volatile internal standard area counts and retention times fell within control limits for all project samples.

Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (LCSD) Summaries:

- The VOC spike (LCS/LCSD) recoveries and relative percent difference (RPD) between duplicate analyses fell within acceptable control limits providing a positive indication of the overall accuracy and precision associated with the laboratory analyses.

- Samples CIAR940602-06/161-00X and CIAR940602-06/161-FD8 were submitted to the laboratory as blind field-duplicate samples in data set 105791. Correlation between the duplicate field sample results is poor. The

target compound, toluene, was detected in sample -06/161-00X at 3.8 ppb (v/v) while five (5) target compounds (toluene, ethylbenzene, m,p-xylenes, 1,3,5-trimethylbenzene and 1,2,4-trimethylbenzene) were detected in the field duplicate sample at concentrations ranging from 2.8 ppb to 19 ppb (v/v). The positive and non-detected results in the duplicate pair are regarded as estimated values and have been flagged (J/UJ) on the laboratory summary pages and on the summary table.

- Samples CIAR940602-06/068-00X and CIAR940602-06/068-FD9 were submitted to the laboratory as blind field-duplicate samples in data set 105815. The results replicated well providing an overall positive indication of both the field and laboratory precision associated with this data set.

Target Compound Identification and Quantitation:

- No errors in target compound identification and/or quantitation were identified during the data validation review.

- The following ambient air samples contained target compounds whose concentrations are less than the MDL but greater than 1.0 ppb (v/v) which have been reported as ND by the laboratory. Following CLP convention, the laboratory would report these estimated concentrations with a (J) qualifier. However, the samples were analyzed by method TO-14 and a modified CLP deliverable was requested; therefore, no further action is required by the laboratory. This data is provided for informational purposes only.

Sample ID	Retention Time	VOCs	Estimated Conc.ppb (v/v)
CIAR940602-06/161-00X	4.45 min.	Acetone	4.4 J
	10.0 min.	4-Methyl-2-pentanone	1.8 J
	11.0 min.	Toluene	3.8 J
	14.4 min.	p,m-Xylene	2.1 J
	18.4 min.	1,2,4-Trimethylbenzene	1.1 J
CIAR940602-06/161-FD8	4.45 min.	Acetone	5.3 J
	15.3 min.	o-Xylene	3.7 J
	21.2 min.	1,2,4-Trichlorobenzene	2.2 J
CIAR940602-06/156-00X	4.59 min.	Acetone	2.1 J
	15.2 min.	o-Xylene	2.0 J
CIAR940602-06/079-00X	4.43 min.	Acetone	2.8 J
CIAR940602-06/068-00X	4.46 min.	Acetone	2.7 J
CIAR940602-06/068-FD9	4.47 min.	Acetone	2.3 J

Sample ID	Retention Time	VOCs	Estimated Conc.ppb (v/v)
CIAR940602-06/083-00X	4.50 min.	Acetone	5.7 J
CIAR940602-06/113-00X	4.48 min.	Acetone	4.9 J
CIAR940602-06/002-00X	4.43 min.	Acetone	8.5 J
CIAR940602-06/089-00X	4.48 min.	Acetone	3.2 J
CIAR940602-06/087-00X	4.49 min.	Acetone	1.8 J

Tentatively Identified Compounds:

- The validity of the Tentatively Identified Compounds (TICs) were evaluated based upon the mass-spectral data provided as well as the identifications made by the laboratory, and the following comments are offered:

  - No TICs were identified in the majority of samples. One TIC, identified as a cycloalkane at an estimated concentration of 7.9 ppb was detected in sample CIAR940424-1B/047-00X and an unknown alkene was tentatively identified at an estimated concentration of 7.9 ppb (v/v) in sample CIAR940424-1B/117-00X.

- The following ambient air samples contained TICs which have an area greater than 10 percent of the nearest internal standard and which were not reported by the laboratory since these TICs were identified as common laboratory contaminants:

Sample ID	Retention Time	TICs	Estimated Conc. ppb (v/v)
CIAR940602-06/079-00X	12.3 min.	Siloxane	6.0 J
	20.6 min.	Uknown	4.0 J

TABLE 1
SUMMARY OF AMBIENT AIR ANALYTICAL RESULTS
CWM CHEMICAL SERVICES, INC.
CHICAGO INCINERATOR FACILITY
ENSECO DATA SET No. 105791

Dames and Moore Sample ID	CIAR940602 06/162-00X		CIAR940602 06/161-00X		CIAR940602 06/161-FD8		CIAR940602 06/156-00X	
Laboratory ID	105791-0001		105791-0002		105791-0003		105791-0004	
Date Sample Collected	06-02-94		06-02-94		06-02-94		06-02-94	
Dilution Factor	1.0		1.0		1.0		1.0	
Canister ID	A-296		9412BB		NP		NP	
Units	ppb(v/v)		ppb(v/v)		ppb(v/v)		ppb(v/v)	
VOLATILE COMPOUNDS								
Dichlorodifluoromethane	2.0	U	2.0	UJ	2.0	UJ	2.0	U
Chloromethane	4.0	U	4.0	UJ	4.0	UJ	4.0	U
1,2-Dichloro-1,1,2,2-tetrafluoroethene	2.0	U	2.0	UJ	2.0	UJ	2.0	U
Vinyl Chloride	2.0	U	2.0	UJ	2.0	UJ	2.0	U
Bromomethane	2.0	U	2.0	UJ	2.0	UJ	2.0	U
Chloroethane	4.0	U	4.0	UJ	4.0	UJ	4.0	U
Trichlorofluoromethane	2.0	U	2.0	UJ	2.0	UJ	2.0	U
1,1-Dichloroethene	2.0	U	2.0	UJ	2.0	UJ	2.0	U
1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	U	2.0	UJ	2.0	UJ	2.0	U
Acetone	10	U	10	UJ	10	UJ	10	U
Methylene Chloride	2.0	U	2.0	UJ	2.0	UJ	2.0	U
1,1-Dichloroethane	2.0	U	2.0	UJ	2.0	UJ	2.0	U
cis-1,2-Dichloroethene	2.0	U	2.0	UJ	2.0	UJ	2.0	U
Chloroform	2.0	U	2.0	UJ	2.0	UJ	2.0	U
1,1,1-Trichloroethane	2.0	U	2.0	UJ	2.0	UJ	2.0	U
Carbon Tetrachloride	2.0	U	2.0	UJ	2.0	UJ	2.0	U
Benzene	2.0	U	2.0	UJ	2.0	UJ	2.0	U
1,2-Dichloroethane	2.0	U	2.0	UJ	2.0	UJ	2.0	U
Trichloroethene	2.0	U	2.0	UJ	2.0	UJ	2.0	U
1,2-Dichloropropane	2.0	U	2.0	UJ	2.0	UJ	2.0	U
cis-1,3-Dichloropropene	2.0	U	2.0	UJ	2.0	UJ	2.0	U
4-Methyl-2-Pentanone	4.0	U	4.0	UJ	4.0	UJ	4.0	U
Toluene	2.0	U	2.0	UJ	19	J	2.0	U
trans-1,3-Dichloropropene	2.0	U	2.0	UJ	2.0	UJ	2.0	U
1,1,2-Trichloroethane	2.0	U	2.0	UJ	2.0	UJ	2.0	U
Tetrachloroethene	2.0	U	2.0	UJ	2.0	UJ	2.0	U
1,2-Dibromomethane (EDB)	2.0	U	2.0	UJ	2.0	UJ	2.0	U
Chlorobenzene	2.0	U	2.0	UJ	2.0	UJ	2.0	U
Ethylbenzene	2.0	U	2.0	UJ	5.6	J	2.0	U
p,m-Xylenes	5.0	U	5.0	UJ	19	J	9.7	
o-Xylene	5.0	U	5.0	UJ	5.0	UJ	5.0	U
Styrene	2.0	U	2.0	UJ	2.0	UJ	2.0	U
1,1,2,2-Tetrachloroethane	2.0	U	2.0	UJ	2.0	UJ	2.0	U
Benzyl chloride	2.0	U	2.0	UJ	2.0	UJ	2.0	U
1,3,5-Trimethylbenzene	2.0	U	2.0	UJ	2.8	J	2.0	U
1,2,4-Trimethylbenzene	2.0	U	2.0	UJ	13	J	2.0	U
1,3-Dichlorobenzene	2.0	U	2.0	UJ	2.0	UJ	2.0	U
1,4-Dichlorobenzene	2.0	U	2.0	UJ	2.0	UJ	2.0	U
1,2-Dichlorobenzene	2.0	U	2.0	UJ	2.0	UJ	2.0	U
1,2,4-Trichlorobenzene	4.0	U	4.0	UJ	4.0	UJ	4.0	U
Hexachlorobutadiene	4.0	U	4.0	UJ	4.0	UJ	4.0	U

continued next page (see notes on last page of table)

TABLE 1 (continued)
SUMMARY OF AMBIENT AIR ANALYTICAL RESULTS
CWM CHEMICAL SERVICES, INC.
CHICAGO INCINERATOR FACILITY
ENSECO DATA SET No. 105815

Dames and Moore Sample ID	CIAR940602 06/079-00X		CIAR940602 06/FB-00X		CIAR940602 06/068-00X		CIAR940602 06/068-FD9		CIAR940602 06/083-00X		CIAR940602 06/084-00X	
Laboratory ID	105815-0001		105815-0002		105815-0003		105815-0004		105815-0005		105815-0006	
Date Sample Collected	06-02-94		06-02-94		06-02-94		06-02-94		06-02-94		06-02-94	
Dilution Factor	1.0		1.0		1.0		1.0		1.0		1.0	
Canister ID	NP		NP		NP		NP		NP		NP	
Units	ppb(v/v)		ppb(v/v)		ppb(v/v)		ppb(v/v)		ppb(v/v)		ppb(v/v)	
VOLATILE COMPOUNDS												
Dichlorodifluoromethane	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Chloromethane	4.0	U	4.0	U	4.0	U	4.0	U	4.0	U	4.0	U
1,2-Dichloro-1,1,2,2-tetrafluoroethene	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Vinyl Chloride	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Bromomethane	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Chloroethane	4.0	U	4.0	U	4.0	U	4.0	U	4.0	U	4.0	U
Trichlorofluoromethane	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
1,1-Dichloroethene	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Acetone	10	U	10	U	10	U	10	U	10	U	10	U
Methylene Chloride	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
1,1-Dichloroethane	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
cis-1,2-Dichloroethene	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Chloroform	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
1,1,1-Trichloroethane	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Carbon Tetrachloride	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Benzene	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
1,2-Dichloroethane	2.0	UJ	2.0	UJ	2.0	UJ	2.0	UJ	2.0	UJ	2.0	UJ
Trichloroethene	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
1,2-Dichloropropane	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
cis-1,3-Dichloropropene	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
4-Methyl-2-Pentanone	4.0	U	4.0	U	4.0	U	4.0	U	4.0	U	4.0	U
Toluene	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
trans-1,3-Dichloropropene	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
1,1,2-Trichloroethane	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Tetrachloroethene	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
1,2-Dibromomethane (EDB)	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Chlorobenzene	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Ethylbenzene	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
p,m-Xylenes	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
o-Xylene	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Styrene	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
1,1,2,2-Tetrachloroethane	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Benzyl chloride	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
1,3,5-Trimethylbenzene	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
1,2,4-Trimethylbenzene	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
1,3-Dichlorobenzene	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
1,4-Dichlorobenzene	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
1,2-Dichlorobenzene	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
1,2,4-Trichlorobenzene	4.0	U	4.0	U	4.0	U	4.0	U	4.0	U	4.0	U
Hexachlorobutadiene	4.0	U	4.0	U	4.0	U	4.0	U	4.0	U	4.0	U

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TABLE 1 (continued)
SUMMARY OF AMBIENT AIR ANALYTICAL RESULTS
CWM CHEMICAL SERVICES, INC.
CHICAGO INCINERATOR FACILITY
ENSECO DATA SET No. 105815

Dames and Moore Sample ID	CIAR940602 06/113-00X		CIAR940602 06/115-00X		CIAR940602 06/002-00X		CIAR940602 06/089-00X		CIAR940602 06/087-00X		CIAR940602 06/FB-00X	
Laboratory ID	105815-0007		105815-0008		105815-0009		105815-0010		105815-0011		105815-0012	
Date Sample Collected	06-02-94		06-02-94		06-02-94		06-03-94		06-03-94		06-03-94	
Dilution Factor	1.0		1.0		1.0		1.0		1.0		1.0	
Canister ID	NP		NP		NP		NP		NP		NP	
Units	ppb(v/v)		ppb(v/v)		ppb(v/v)		ppb(v/v)		ppb(v/v)		ppb(v/v)	
VOLATILE COMPOUNDS												
Dichlorodifluoromethane	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Chloromethane	4.0	U	4.0	U	4.0	U	4.0	U	4.0	U	4.0	U
1,2-Dichloro-1,1,2,2-tetrafluoroethene	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Vinyl Chloride	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Bromomethane	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Chloroethane	4.0	U	4.0	U	4.0	U	4.0	U	4.0	U	4.0	U
Trichlorofluoromethane	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
1,1-Dichloroethene	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Acetone	10	U	10	U	10	U	10	U	10	U	10	U
Methylene Chloride	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
1,1-Dichloroethane	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
cis-1,2-Dichloroethene	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Chloroform	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
1,1,1-Trichloroethane	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Carbon Tetrachloride	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Benzene	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
1,2-Dichloroethane	2.0	UJ	2.0	UJ	2.0	UJ	2.0	UJ	2.0	UJ	2.0	UJ
Trichloroethene	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
1,2-Dichloropropane	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
cis-1,3-Dichloropropene	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
4-Methyl-2-Pentanone	4.0	U	4.0	U	4.0	U	4.0	U	4.0	U	4.0	U
Toluene	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
trans-1,3-Dichloropropene	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
1,1,2-Trichloroethane	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Tetrachloroethene	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
1,2-Dibromomethane (EDB)	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Chlorobenzene	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Ethylbenzene	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
p,m-Xylenes	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
o-Xylene	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Styrene	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
1,1,2,2-Tetrachloroethane	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Benzyl chloride	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
1,3,5-Trimethylbenzene	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
1,2,4-Trimethylbenzene	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
1,3-Dichlorobenzene	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
1,4-Dichlorobenzene	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
1,2-Dichlorobenzene	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
1,2,4-Trichlorobenzene	4.0	U	4.0	U	4.0	U	4.0	U	4.0	U	4.0	U
Hexachlorobutadiene	4.0	U	4.0	U	4.0	U	4.0	U	4.0	U	4.0	U

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TABLE 1 (continued)
SUMMARY OF AMBIENT AIR ANALYTICAL RESULTS
CWM CHEMICAL SERVICES, INC.
CHICAGO INCINERATOR FACILITY
ENSECO DATA SET Nos. 105791 and 105815

NOTES

U	:	Compound was not detected at the laboratory reported method detection limit
J	:	Quantitation is approximate due to limitations identified during the quality assurance review (data validation).
B	:	This result is qualitatively suspect since this compound was detected in a field and/or laboratory blank at a similar concentration.
UJ	:	This analyte was not detected, but the quantitation limit is estimated due to limitations identified during the QA review.
R	:	Unreliable result. Compound may or may not be present.
NP	:	Not provided

DATA VALIDATION REVIEW
PROJECT: CWM CHEMICAL SERVICES, INC.
CHICAGO INCINERATOR FACILITY
CHICAGO, ILLINOIS
DATE SAMPLES COLLECTED: JUNE 2, 1004
JOB NO.: 13963-055-192

LAB REPORT No.: 105833

1.0 INTRODUCTION

Nine (9) ambient air samples, one (1) field-duplicate sample and one (1) field-blank sample were collected and submitted to Enseco Air Toxics Laboratory (Enseco) of City of Industry, California. A list of all samples included in this review are provided in Section 2.0. All samples were analyzed for Volatile Organic Compounds (VOCs) plus mass-spectral library searches for extraneous chromatographic peaks following USEPA Method TO-14.

A data validation/quality assurance review was performed on all samples prepared under a modified Contract Laboratory Program (CLP) Data Deliverable Format. Data were examined to assess data usability and compliance relative to CLP-I data-package deliverable requirements. The organic data quality review is based upon the following parameters:

*	●	Hold Times
*	●	Blank Contaminants
*	●	GC/MS Performance Check (Tuning) Summary
*	●	Initial and Continuing Calibration Results
*	●	Internal Standard Area Performance
*	●	Laboratory Control Sample and Laboratory Control Sample Duplicate Summaries:
*	●	Target Compound Identification and Quantitation
*	●	Tentatively Identified Compounds Evaluation

* All criteria were met for this parameter

Overall, the data quality is good. Details of the data validation/quality assurance review are presented in the narrative section of the report. Summary tables have been provided. Data qualifiers have been placed next to the results so that the data user can quickly assess the qualitative and/or quantitative reliability of the reported result. This report was prepared to provide a critical review of the laboratory analysis and reported chemical results. Quality assurance reviews of laboratory-generated data routinely identify problems associated with analytical measurements, even from the most experienced and capable laboratories.

This review has been performed in accordance with the requirements specified in the Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, dated September 1986 and revised June 1988 and with guidance from the USEPA CLP National Functional Guidelines for Organic Data Review dated December 1990 and revised June 1991.

2.0 SAMPLES INCLUDED IN REVIEW

Sample ID	Lab ID	Date Collected	Test Requested
	Enseco Data Set No. 105833		
CIAR940603-06/104-00X	105833-001	06/03/94	VOC+10
CIAR940603-06/133-00X	105833-002	06/03/94	VOC+10
CIAR940603-06/041-00X	105833-003	06/03/94	VOC+10
CIAR940603-06/055-00X	105833-004	06/03/94	VOC+10
CIAR940603-06/025-00X	105833-005	06/03/94	VOC+10
CIAR940603-06/FB2-00X	105833-006	06/03/94	VOC+10
CIAR940603-06/045-00X	105833-007	06/03/94	VOC+10
CIAR940603-06/045-FD0	105833-008	06/03/94	VOC+10
CIAR940603-06/044-00X	105833-009	06/03/94	VOC+10
CIAR940603-06/060-00X	105833-010	06/03/94	VOC+10
CIAR940603-06/075-00X	105833-011	06/03/94	VOC+10

Legend:

VOC+10 = Volatile Organic Compounds plus Forward Library Searches

3.0 GENERAL COMMENTS

With regard to the data deliverables, most of the requirements were met with the exception of the following deficiencies. These deficiencies have been corrected by the data reviewer and no additional action is required by the laboratory. Please note that these deficiencies do not impact data usability.

- The canister Summa® identifications were provided; however, the summary page which indicates which canister corresponds to each field sample was not provided. There is no impact on data usability since no blank contaminants were identified during the canister cleaning QC certification.

- Target compounds whose concentrations are less than the laboratory reported method detection limit (MDL) have been reported as ND (not detected) by Enseco. Under the CLP format, these compounds would be reported by the laboratory as estimated values and flagged (J). Since a modified CLP format was requested, no additional action is required by the laboratory.

- A tentatively identified compound (TIC) was not reported by the laboratory since this TIC was identified as common laboratory contaminant in other data sets. Following the CLP format, all TICs should be reported by the laboratory and flagged (B) to indicate possible laboratory or field contamination. Since these TICs would be negated during the data validation review, there is no impact on data usability and no additional action is required by the laboratory.

4.0 DATA QUALIFIERS

The data validation review has identified aspects of the analytical data that require qualification. To confidently use any of the data within the data set, the data user should understand the limitations and qualifications presented. With regard to data usability, the following qualifiers are offered based upon the data provided.

Hold Times:

- All samples were analyzed within the 14 day hold time requirement.

Blank Contaminants:

- No volatile target compounds above 0.2 ppb(v/v) were identified in the laboratory (method) blank and/or field blanks.

- Tentatively identified compounds were found during the canister cleaning certification analyses at retention times 12.5, 17.8 and 20.8 minutes. All TICs identified were less than 10 percent of the peak area of the nearest internal standard and identification and quantitation was therefore, not required by the laboratory.

GC/MS Performance Check (Tuning) Summary:

- The bromofluorobenzene (BFB) tuning compound for the volatile organic compound analyses were reported within control limits.

Initial and Continuing Calibration Results:

- All initial and continuing calibration response factors are greater than 0.05 and fall within control limits.

- All percent difference (%D) between the initial and continuing calibration response factors fell within acceptable control limits and no data qualifiers are required.

Internal Standards Area Performance:

- The volatile internal standard area counts and retention times fell within control limits for all project samples.

Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (LCSD) Summaries:

- The VOC spike (LCS/LCSD) recoveries and relative percent difference (RPD) between duplicate analyses fell within acceptable control limits providing a positive indication of the overall accuracy and precision associated with the laboratory analyses.

- Samples CIAR940603-06/045-00X and CIAR940603-06/045-FD0 were submitted to the laboratory as blind field-duplicate samples in data set 105833. The results replicated well (all non-detected) providing an overall positive indication of both the field and laboratory precision associated with this data set.

Target Compound Identification and Quantitation:

- No errors in target compound identification and/or quantitation were identified during the data validation review.

- The target compound, acetone, was detected in all field samples except CIAR940603-06/045-00X at concentrations less than the MDL but greater than 1.0 ppb (v/v). These target compounds were reported as ND by the laboratory. Following CLP convention, the laboratory would report these estimated concentrations with a (J) qualifier. However, the samples were analyzed by method TO-14 and a modified CLP deliverable was requested; therefore, no further action is required by the laboratory. This data is provided for informational purposes only. It should be noted that acetone was detected in the field blank sample; therefore, the positive results are qualitatively questionable and have been flagged (B).

Sample ID	Retention Time	VOCs	Estimated Conc. ppb (v/v)
CIAR940603-06/104-00X	4.58 min.	Acetone	2.2 JB
CIAR940603-06/133-00X	4.57 min.	Acetone	2.4 JB
CIAR940603-06/041-00X	4.59 min.	Acetone	5.3 JB
CIAR940603-06/055-00X	4.58 min.	Acetone	1.2 JB
CIAR940603-06/025-00X	4.58 min.	Acetone	1.2 JB
CIAR940603-06/FB2-00X	4.57 min.	Acetone	1.1 J
CIAR940603-06/045-FD0	4.56 min.	Acetone	3.9 JB
CIAR940603-06/044-00X	4.56 min.	Acetone	1.7 JB
CIAR940603-06/060-00X	4.56 min.	Acetone	6.5 JB
CIAR940603-06/075-00X	4.56 min.	Acetone	2.2 JB

Tentatively Identified Compounds:

- The validity of the Tentatively Identified Compounds (TICs) were evaluated based upon the mass-spectral data provided as well as the identifications made by the laboratory, and the following comments are offered:

  - No TICs were identified in the ambient air samples in this data set.

- The following ambient air samples contained TICs which have an area greater than 10 percent of the nearest internal standard and which were not reported by the laboratory since these TICs were identified as common laboratory contaminants:

Sample ID	Retention Time	TICs	Estimated Conc. ppb (v/v)
CIAR940603-06/060-00X	16.8 min.	Unknown	5.0 J

TABLE 1
SUMMARY OF AMBIENT AIR ANALYTICAL RESULTS
CWM CHEMICAL SERVICES, INC.
CHICAGO INCINERATOR FACILITY
ENSECO DATA SET No. 105833

Dames and Moore Sample ID	CIAR9406	CIAR940603	CIAR9406	CIAR940603	CIAR9406	CIAR940603	CIAR940603	CIAR940603	CIAR940603	CIAR940603	CIAR940603
	06/104-00X	06/133-00X	06/041-00	06/055-00X	06/026-00X	06/FB2-00X	06/045-00X	06/045-FDO	06/044-00X	06/060-00X	06/075-00X
Laboratory ID	105791-00	105791-0002	105791-0003	105791-0004	105833-00	105833-0006	105833-0007	105833-0008	105833-0009	105833-0010	105833-0011
Date Sample Collected	06-03-94	06-03-94	06-03-94	06-03-94	06-03-94	06-03-94	06-03-94	06-03-94	06-03-94	06-03-94	06-03-94
Dilution Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Canister ID	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
Units	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)	ppb(v/v)
VOLATILE COMPOUNDS											
Dichlorodifluoromethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloromethane	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
1,2-Dichloro-1,1,2,2-tetrafluoro	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Vinyl Chloride	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bromomethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloroethane	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Trichlorofluoromethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1-Dichloroethene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1,2-Trichloro-1,2,2-trifluoroet	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Acetone	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylene Chloride	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1-Dichloroethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
cis-1,2-Dichloroethene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloroform	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1,1-Trichloroethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Carbon Tetrachloride	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Benzene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dichloroethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Trichloroethene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dichloropropane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
cis-1,3-Dichloropropene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
4-Methyl-2-Pentanone	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Toluene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
trans-1,3-Dichloropropene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1,2-Trichloroethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Tetrachloroethene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dibromomethane (EDB)	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chlorobenzene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Ethylbenzene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
p,m-Xylenes	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
o-Xylene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1,2,2-Tetrachloroethane	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Benzyl chloride	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,3,5-Trimethylbenzene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2,4-Trimethylbenzene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,3-Dichlorobenzene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,4-Dichlorobenzene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	9.1
1,2-Dichlorobenzene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2,4-Trichlorobenzene	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Hexachlorobutadiene	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U

continued next page (see notes on last page of table)

TABLE 1 (continued)
SUMMARY OF AMBIENT AIR ANALYTICAL RESULTS
CWM CHEMICAL SERVICES, INC.
CHICAGO INCINERATOR FACILITY
ENSECO DATA SET No. 106833

NOTE

U : Compound was not detected at laboratory reported method detection limit
J : Quantitation is approximate due to limitations identified during the quality assurance review (data validation).
B : This result is qualitatively suspect since this compound was detected in a field and/or laboratory blank at a similar concentration.
UJ : This analyte was not detected, but the quantitation limit is estimated due to limitations identified during the QA review.
R : Unreliable result. Compound may or may not be present.
NP : Not Provided

APPENDIX C

APPENDIX C
AIR EMISSIONS CALCULATIONS

DISPERSION MODELING RESULTS
CHICAGO INCINERATOR PROJECT *

POLLUTANT	BASIN	BASIN AREA (M2)	BASIN TOTAL EMISSIONS (G/S)	MAXIMUM 1-HOUR CONCENTRATION (µG/M3) **	AVERAGE ANNUAL CONCENTRATION (µG/ME) ***	DISTANCE TO MAXIMUM 1-HOUR CONCENTRATION (M)	DISTANCE TO AVERAGE ANNUAL CONCENTRATION (M)
1,1 DICHLOROETHENE	A	7617.80	5.46E-05	0.1462	0.0039	100	100
TOLUENE	A	7617.80	1.56E-05	0.0418	0.0011	100	100
TRANS-1,3 DICHLOROPROPENE	A	7618.80	2.01E-05	0.0537	0.0014	100	100
1,2 DICHLOROBENZENE	A	7618.80	3.11E-05	0.8333	0.0022	100	100
VINYL CHLORIDE	B	7362.325	1.44E-05	0.0393	0.0010	100	100
1,1 DICHLOROETHENE	B	7362.325	3.06E-05	0.0836	0.0022	100	100
ACETONE	B	7362.325	5.18E-05	0.1416	0.0037	100	100
METHYLENE CHLORIDE	B	7362.325	2.55E-05	0.0698	0.0018	100	100
TRICHLOROETHENE	B	7362.325	4.02E-05	0.1101	0.0029	100	100
TOLUENE	B	7362.325	1.50E-05	0.0409	0.0011	100	100
1,2,4 TRIMETHYLBENZENE	B	7362.325	1.93E-05	0.0527	0.0014	100	100
1,2 DICHLOROBENZENE	6	10381.575	4.72E-05	0.1045	0.0027	100	100

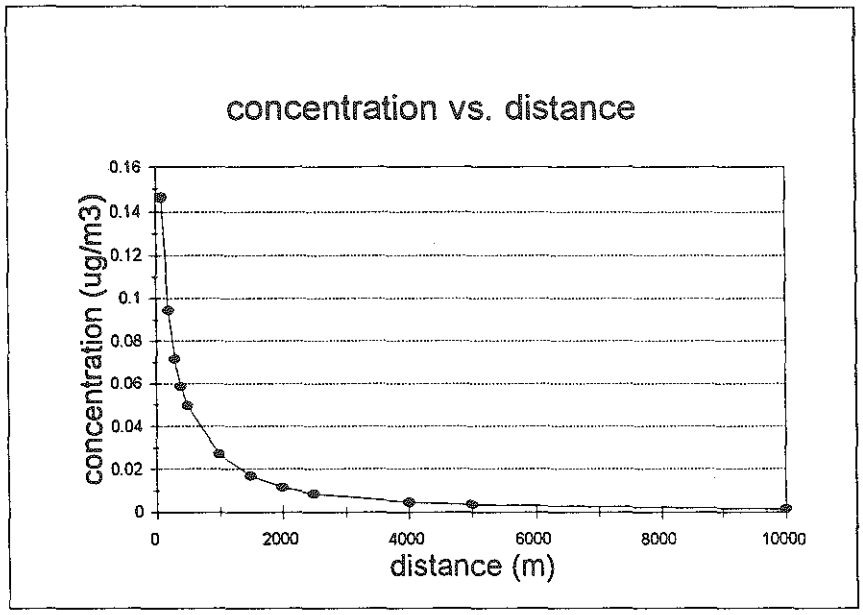
* PREDICTED WITH SCREEN2 MODEL WITH FOLLOWING ASSUMPTIONS:
MODEL - SCREEN2
WIND DIRECTION INDEPENDENT
RECEPTOR GRID - 44 POINTS, BEGINS AT 100 M, OUT TO 10 KM
EMISSION DATA - 12/8/94 FAX FROM DAVE TRAINOR
AREA SOURCE RELEASE HEIGHT - 0 M

** USING ALL COMBINATIONS OF ATMOSPHERIC STABILITY AND WIND SPEED
MAXIMUM CONCENTRATIONS ASSOCIATED WITH ATMOSPHERIC STABILITY = 6 AND WIND SPEED = 1 M/S

*** USING AVERAGE CONDITION (ATMOSPHERIC STABILITY = 4, WIND SPEED -= 4 M/S)
ANNUAL AVERAGE CONCENTRATION = MAXIMUM 1-HOUR CONCENTRATION * 0.214 (TURNER, 1970)

ANALYSIS OF 1,1 DICHLOROETHENE, BASIN A, MAXIMUM 1-HOUR CONCENTRATION

DISTANCE FROM SOURCE (M)	MAXIMUM 1-HOUR CONC. (UG/M3)
100	0.1462
200	0.0943
300	0.0716
400	0.0584
500	0.0496
1000	0.027
1500	0.0169
2000	0.0116
2500	0.0086
4000	0.0046
5000	0.0034
10000	0.0014



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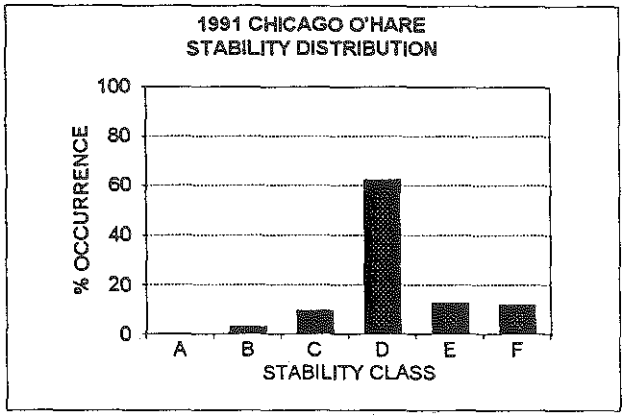
STABILITY CLASS	FREQ. OF OCCURRENCE	% OCCURRENCE
A	21	0.2
B	277	3.2
C	856	9.8
D	5445	62.2
E	1113	12.7
F	1048	12.0
TOTAL	8760	100



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APPENDIX D

APPENDIX D
SCREEN 2 MODEL RESULTS

Emission Estimates
SWMU-1A
Values<DL set to DL/2

	Area Square Meters	Average ug/m2/min	Total Emissions ug/min
Dichlorodifluoromethane	7617.8	0.148	1127.43
Chloromethane	7617.8	0.117	891.28
1,2-Dichloro-1,1,2,2-tetrafluoroethene	7617.8	0.210	1599.74
Vinyl Chloride	7617.8	0.079	601.81
Bromomethane	7617.8	0.125	952.23
Chloroethane	7617.8	0.164	1249.32
Trichlorofluoromethane	7617.8	0.156	1188.38
1,1-Dichloroethene	7617.8	0.430	3275.65
1,1,2-Trichloro-1,2,2-trifluoroethane	7617.8	0.230	1752.09
Acetone	7617.8	0.356	2711.94
Methylene Chloride	7617.8	0.119	906.52
1,1-Dichloroethane	7617.8	0.126	959.84
cis-1,2-Dichloroethene	7617.8	0.119	906.52
Chloroform	7617.8	0.146	1112.20
1,1,1-Trichloroethane	7617.8	0.164	1249.32
Carbon Tetrachloride	7617.8	0.189	1439.76
Benzene	7617.8	0.103	784.63
1,2-Dichloroethane	7617.8	0.121	921.75
Trichloroethene	7617.8	0.205	1561.65
1,2-Dichloropropane	7617.8	0.199	1515.94
cis-1,3-Dichloropropene	7617.8	0.143	1089.35
4-Methyl-2-Pentanone	7617.8	0.289	2201.54
Toluene	7617.8	0.123	936.99
trans-1,3-Dichlororopropene	7617.8	0.158	1203.61
1,1,2-Trichloroethane	7617.8	0.176	1340.73
Tetrachloroethene	7617.8	0.218	1660.68
1,2-Dibromomethane (EDB)	7617.8	0.213	1622.59
Chlorobenzene	7617.8	0.143	1089.35
Ethylbenzene	7617.8	0.132	1005.55
p,m-Xylenes	7617.8	0.325	2475.79
o-Xylene	7617.8	0.316	2407.22
Styrene	7617.8	0.174	1325.50
1,1,2,2-Tetrachloroethane	7617.8	0.236	1797.80
Benzyl chloride	7617.8	0.155	1180.76
1,3,5-Trimethylbenzene	7617.8	0.150	1142.67
1,2,4-Trimethylbenzene	7617.8	0.158	1203.61
1,3-Dichlorobenzene	7617.8	0.193	1470.24
1,4-Dichlorobenzene	7617.8	0.206	1569.27
1,2-Dichlorobenzene	7617.8	0.245	1866.36
1,2,4-Trichlorobenzene	7617.8	0.494	3763.19
Hexachlorobutadiene	7617.8	0.663	5050.60

Emission Estimates
SWMU-1B
Values<DL set to DL/2

	Area Square Meters	Average ug/m2/min	Total Emissions ug/min
Dichlorodifluoromethane	7362.325	0.150	1104.35
Chloromethane	7362.325	0.125	920.29
1,2-Dichloro-1,1,2,2-tetrafluoroethene	7362.325	0.212	1560.81
Vinyl Chloride	7362.325	0.117	861.39
Bromomethane	7362.325	0.118	868.75
Chloroethane	7362.325	0.160	1177.97
Trichlorofluoromethane	7362.325	0.170	1251.60
1,1-Dichloroethene	7362.325	0.249	1833.22
1,1,2-Trichloro-1,2,2-trifluoroethane	7362.325	0.232	1708.06
Acetone	7362.325	0.422	3106.90
Methylene Chloride	7362.325	0.208	1531.36
1,1-Dichloroethane	7362.325	0.123	905.57
cis-1,2-Dichloroethene	7362.325	0.120	883.48
Chloroform	7362.325	0.148	1089.62
1,1,1-Trichloroethane	7362.325	0.165	1214.78
Carbon Tetrachloride	7362.325	0.191	1406.20
Benzene	7362.325	0.097	714.15
1,2-Dichloroethane	7362.325	0.123	905.57
Trichloroethene	7362.325	0.328	2414.84
1,2-Dichloropropane	7362.325	0.140	1030.73
cis-1,3-Dichloropropene	7362.325	0.135	993.91
4-Methyl-2-Pentanone	7362.325	0.248	1825.86
Toluene	7362.325	0.122	898.20
trans-1,3-Dichlororopropene	7362.325	0.135	993.91
1,1,2-Trichloroethane	7362.325	0.165	1214.78
Tetrachloroethene	7362.325	0.205	1509.28
1,2-Dibromomethane (EDB)	7362.325	0.215	1582.90
Chlorobenzene	7362.325	0.139	1023.36
Ethylbenzene	7362.325	0.131	964.46
p,m-Xylenes	7362.325	0.329	2422.20
o-Xylene	7362.325	0.329	2422.20
Styrene	7362.325	0.129	949.74
1,1,2,2-Tetrachloroethane	7362.325	0.208	1531.36
Benzyl chloride	7362.325	0.157	1155.89
1,3,5-Trimethylbenzene	7362.325	0.149	1096.99
1,2,4-Trimethylbenzene	7362.325	0.157	1155.89
1,3-Dichlorobenzene	7362.325	0.182	1339.94
1,4-Dichlorobenzene	7362.325	0.182	1339.94
1,2-Dichlorobenzene	7362.325	0.182	1339.94
1,2,4-Trichlorobenzene	7362.325	0.450	3313.05
Hexachlorobutadiene	7362.325	0.646	4756.06

Emission Estimates
SWMU-04
Values<DL set to DL/2

	Area Square Meters	Average ug/m2/min	Total Emissions ug/min
Dichlorodifluoromethane	9522.25	0.142	1352.16
Chloromethane	9522.25	0.071	676.08
1,2-Dichloro-1,1,2,2-tetrafluoroethene	9522.25	0.194	1847.32
Vinyl Chloride	9522.25	0.087	828.44
Bromomethane	9522.25	0.162	1542.60
Chloroethane	9522.25	0.183	1742.57
Trichlorofluoromethane	9522.25	0.078	742.74
1,1-Dichloroethene	9522.25	0.110	1047.45
1,1,2-Trichloro-1,2,2-trifluoroethane	9522.25	0.213	2028.24
Acetone	9522.25	0.330	3142.34
Methylene Chloride	9522.25	0.193	1837.79
1,1-Dichloroethane	9522.25	0.141	1342.64
cis-1,2-Dichloroethene	9522.25	0.110	1047.45
Chloroform	9522.25	0.136	1295.03
1,1,1-Trichloroethane	9522.25	0.152	1447.38
Carbon Tetrachloride	9522.25	0.175	1666.39
Benzene	9522.25	0.133	1266.46
1,2-Dichloroethane	9522.25	0.113	1076.01
Trichloroethene	9522.25	0.184	1752.09
1,2-Dichloropropane	9522.25	0.514	4894.44
cis-1,3-Dichloropropene	9522.25	0.186	1771.14
4-Methyl-2-Pentanone	9522.25	0.569	5418.16
Toluene	9522.25	0.157	1494.99
trans-1,3-Dichlororopropene	9522.25	0.186	1771.14
1,1,2-Trichloroethane	9522.25	0.228	2171.07
Tetrachloroethene	9522.25	0.283	2694.80
1,2-Dibromomethane (EDB)	9522.25	0.198	1885.41
Chlorobenzene	9522.25	0.160	1523.56
Ethylbenzene	9522.25	0.151	1437.86
p,m-Xylenes	9522.25	0.302	2875.72
o-Xylene	9522.25	0.302	2875.72
Styrene	9522.25	0.413	3932.69
1,1,2,2-Tetrachloroethane	9522.25	0.382	3637.50
Benzyl chloride	9522.25	0.144	1371.20
1,3,5-Trimethylbenzene	9522.25	0.171	1628.30
1,2,4-Trimethylbenzene	9522.25	0.205	1952.06
1,3-Dichlorobenzene	9522.25	0.251	2390.08
1,4-Dichlorobenzene	9522.25	0.334	3180.43
1,2-Dichlorobenzene	9522.25	0.418	3980.30
1,2,4-Trichlorobenzene	9522.25	0.720	6856.02
Hexachlorobutadiene	9522.25	0.741	7055.99

Emission Estimates
SWMU-06
Values<DL set to DL/2

	Area Square Meters	Average ug/m2/min	Total Emissions ug/min
Dichlorodifluoromethane	10381.575	0.134	1391.13
Chloromethane	10381.575	0.112	1162.74
1,2-Dichloro-1,1,2,2-tetrafluoroethene	10381.575	0.190	1972.50
Vinyl Chloride	10381.575	0.069	716.33
Bromomethane	10381.575	0.105	1090.07
Chloroethane	10381.575	0.143	1484.57
Trichlorofluoromethane	10381.575	0.152	1578.00
1,1-Dichloroethene	10381.575	0.108	1121.21
1,1,2-Trichloro-1,2,2-trifluoroethane	10381.575	0.208	2159.37
Acetone	10381.575	0.322	3342.87
Methylene Chloride	10381.575	0.094	975.87
1,1-Dichloroethane	10381.575	0.110	1141.97
cis-1,2-Dichloroethene	10381.575	0.108	1121.21
Chloroform	10381.575	0.132	1370.37
1,1,1-Trichloroethane	10381.575	0.148	1536.47
Carbon Tetrachloride	10381.575	0.171	1775.25
Benzene	10381.575	0.087	903.20
1,2-Dichloroethane	10381.575	0.110	1141.97
Trichloroethene	10381.575	0.146	1515.71
1,2-Dichloropropane	10381.575	0.125	1297.70
cis-1,3-Dichloropropene	10381.575	0.121	1256.17
I-Methyl-2-Pentanone	10381.575	0.222	2304.71
Toluene	10381.575	0.102	1058.92
trans-1,3-Dichlororopropene	10381.575	0.121	1256.17
1,1,2-Trichloroethane	10381.575	0.148	1536.47
Tetrachloroethene	10381.575	0.184	1910.21
1,2-Dibromomethane (EDB)	10381.575	0.193	2003.64
Chlorobenzene	10381.575	0.125	1297.70
Ethylbenzene	10381.575	0.118	1225.03
p,m-Xylenes	10381.575	0.295	3062.56
o-Xylene	10381.575	0.295	3062.56
Styrene	10381.575	0.116	1204.26
1,1,2,2-Tetrachloroethane	10381.575	0.186	1930.97
Benzyl chloride	10381.575	0.140	1453.42
1,3,5-Trimethylbenzene	10381.575	0.133	1380.75
1,2,4-Trimethylbenzene	10381.575	0.133	1380.75
1,3-Dichlorobenzene	10381.575	0.163	1692.20
1,4-Dichlorobenzene	10381.575	0.163	1692.20
1,2-Dichlorobenzene	10381.575	0.273	2834.17
1,2,4-Trichlorobenzene	10381.575	0.403	4183.77
Hexachlorobutadiene	10381.575	0.579	6010.93