

217/782-2113

"RENEWAL"  
CLEAN AIR ACT PERMIT PROGRAM (CAAPP) PERMIT

PERMITTEE:

Sterigenics U.S., LLC  
Attn: Stephen Morris  
2015 Spring Road, Suite 650  
Oak Brook, Illinois 60523

I.D. No.: 043110AAC  
Application No.: 95120085

Date Received: January 10, 2005  
Date Issued: December 26, 2006  
Expiration Date<sup>1</sup>: December 26, 2011

Operation of: Sterilization of Medical Supplies and Treatment of Spices  
Source Location: 7775 Quincy Street, Willowbrook, DuPage County  
Responsible Official: Stephen Morris, Director of Environmental Health and Safety

This permit is hereby granted to the above-designated Permittee to OPERATE a Sterilization of Medical Supplies, pursuant to the above referenced permit application. This permit is subject to the conditions contained herein.

If you have any questions concerning this permit, please contact Kaushal Desai at 217/782-2113.

Edwin C. Bakowski, P.E.  
Acting Manager, Permit Section  
Division of Air Pollution Control

ECB:KKD:psj

cc: Illinois EPA, FOS, Region 1  
CES  
Lotus Notes

<sup>1</sup> Except as provided in Conditions 1.5 and 8.7 of this permit.

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**1.0 INTRODUCTION**

1.1 Source Identification

Sterigenics U.S., LLC  
7775 Quincy Street and 830 Midway Drive  
Willowbrook, Illinois 60521 Willowbrook, Illinois 60521  
630/472-4514

I.D. No.: 043110AAC  
Standard Industrial Classification: 7389, Business Services, Nec.

1.2 Owner/Parent Company

Sterigenics International, LLC  
2015 Spring Road, Suite 650  
Oak Brook, Illinois 60523

1.3 Operator

Sterigenics U.S., LLC  
2015 Spring Road, Suite 650  
Willowbrook, Illinois 60521

Stephen Morris  
630/928-1724

1.4 Source Description

The source is a medical sterilization facility. This sterilization only facility receives and processes primarily medical supplies and pharmaceuticals in addition to treating spices. The sterilization facility utilizes ethylene oxide as the principle sterilant gas, although propylene oxide is sometimes used. All sterilizer vacuum pumps exhaust to a wet (acid) scrubber. After leaving the sterilizing chambers, the product aerates or degasses without any vacuum in one of the aeration rooms. The product remains in aeration for approximately 18 hours then is moved to a segregated post-processing area. Aeration is not initiated for those products that are sterilized using the CyclEOne Cycle.

For purposes of the CAAPP, the Sterigenics Willowbrook I facility located at 7775 Quincy Street is considered a single source with the Sterigenics Willowbrook II facility, located at 830 Midway Drive. The Permittees have elected to obtain a combined CAAPP permit for their operations.

Note: This narrative description is for informational purposes only and is not enforceable.

1.5 Title I Conditions

As generally identified below, this CAAPP permit contains certain conditions for emission units at this source that address the

applicability of permitting programs for the construction and modification of sources, which programs were established pursuant to Title I of the Clean Air Act (CAA) and regulations thereunder. These programs include PSD and MSSCAM, and are implemented by the Illinois EPA pursuant to Sections 9, 9.1, 39(a) and 39.5(7)(a) of the Illinois Environmental Protection Act (Act). These conditions continue in effect, notwithstanding the expiration date specified on the first page of this permit, as their authority derives from Titles I and V of the CAA, as well as Titles II and X of the Act. (See also Condition 8.7.)

- a. This permit contains Title I conditions that reflect Title I requirements established in permits previously issued for this source, which conditions are specifically designated as "T1."

2.0 LIST OF ABBREVIATIONS AND ACRONYMS COMMONLY USED

ACMA	Alternative Compliance Market Account
Act	Illinois Environmental Protection Act [415 ILCS 5/1 et seq.]
AP-42	Compilation of Air Pollutant Emission Factors, Volume 1, Stationary Point and Other Sources (and Supplements A through F), USEPA, Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711
ATU	Allotment Trading Unit
BACT	Best Available Control Technology
BAT	Best Available Technology
CAA	Clean Air Act [42 U.S.C. Section 7401 et seq.]
CAAPP	Clean Air Act Permit Program
CAM	Compliance Assurance Monitoring
CEMS	Continuous Emission Monitoring System
CFR	Code of Federal Regulations
CO	Carbon Monoxide
ERMS	Emissions Reduction Market System
HAP	Hazardous Air Pollutant
IAC	Illinois Administrative Code
I.D. No.	Identification Number of Source, assigned by Illinois EPA
ILCS	Illinois Compiled Statutes
Illinois EPA	Illinois Environmental Protection Agency
LAER	Lowest Achievable Emission Rate
MACT	Maximum Achievable Control Technology
MSSCAM	Major Stationary Sources Construction and Modification (35 IAC 203, New Source Review for non-attainment areas)
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO <sub>x</sub>	Nitrogen Oxides
NSPS	New Source Performance Standards
PM	Particulate Matter
PM <sub>10</sub>	Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 microns as measured by applicable test or monitoring methods
PM <sub>2.5</sub>	Particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 microns as measured by applicable test or monitoring methods
PSD	Prevention of Significant Deterioration (40 CFR 52.21, New Source Review for attainment areas)
RMP	Risk Management Plan
SO <sub>2</sub>	Sulfur Dioxide
T1	Title I - identifies Title I conditions that have been carried over from an existing permit
T1N	Title I New - identifies Title I conditions that are being established in this permit
T1R	Title I Revised - identifies Title I conditions that have been carried over from an existing permit and subsequently revised in this permit
USEPA	United States Environmental Protection Agency
VOM	Volatile Organic Material

### 3.0 CONDITIONS FOR INSIGNIFICANT ACTIVITIES

#### 3.1 Identification of Insignificant Activities

The following activities at the source constitute insignificant activities as specified in 35 IAC 201.210:

- 3.1.1 Activities determined by the Illinois EPA to be insignificant activities, pursuant to 35 IAC 201.210(a)(1) and 201.211, as follows:

Ethylene Glycol Reactor Tanks  
Ethylene Glycol Storage Tank  
Pallet R & D Sterilizers

- 3.1.2 Activities that are insignificant activities based upon maximum emissions, pursuant to 35 IAC 201.210(a)(2) or (a)(3), as follows:

None

- 3.1.3 Activities that are insignificant activities based upon their type or character, pursuant to 35 IAC 201.210(a)(4) through (18), as follows:

Direct combustion units designed and used for comfort heating purposes and fuel combustion emission units as follows: (A) Units with a rated heat input capacity of less than 2.5 mmBtu/hr that fire only natural gas, propane, or liquefied petroleum gas; (B) Units with a rated heat input capacity of less than 1.0 mmBtu/hr that fire only oil or oil in combination with only natural gas, propane, or liquefied petroleum gas; and (C) Units with a rated heat input capacity of less than 200,000 Btu/hr which never burn refuse, or treated or chemically contaminated wood [35 IAC 201.210(a)(4)].

Storage tanks of organic liquids with a capacity of less than 10,000 gallons and an annual throughput of less than 100,000 gallons per year, provided the storage tank is not used for the storage of gasoline or any material listed as a HAP pursuant to Section 112(b) of the CAA [35 IAC 201.210(a)(10)].

Storage tanks of any size containing exclusively soaps, detergents, surfactants, glycerin, waxes, vegetable oils, greases, animal fats, sweeteners, corn syrup, aqueous salt solutions, or aqueous caustic solutions, provided an organic solvent has not been mixed with such materials [35 IAC 201.210(a)(17)].

- 3.1.4 Activities that are considered insignificant activities pursuant to 35 IAC 201.210(b). Note: These activities are not required to be individually listed.

### 3.2 Compliance with Applicable Requirements

Insignificant activities are subject to applicable requirements notwithstanding status as insignificant activities. In particular, in addition to regulations of general applicability, such as 35 IAC 212.301 and 212.123 (Condition 5.3.2), the Permittee shall comply with the following requirements, as applicable:

- 3.2.1 For each particulate matter process emission unit, the Permittee shall comply with the applicable particulate matter emission limit of 35 IAC 212.321 or 212.322 (see Attachment 2) and 35 IAC Part 266. For example, the particulate matter emissions from a process emission unit shall not exceed 0.55 pounds per hour if the emission unit's process weight rate is 100 pounds per hour or less, pursuant to 35 IAC 266.110.
- 3.2.2 For each organic material emission unit that uses organic material, e.g., a mixer or printing line, the Permittee shall comply with the applicable VOM emission limit of 35 IAC 218.301, which requires that organic material emissions not exceed 8.0 pounds per hour or, if no odor nuisance exists, do not qualify as photochemically reactive material as defined in 35 IAC 211.4690.
- 3.2.3 For each open burning activity, the Permittee shall comply with 35 IAC Part 237, including the requirement to obtain a permit for open burning in accordance with 35 IAC 237.201, if necessary.
- 3.2.4 For each cold cleaning degreaser, the Permittee shall comply with the applicable equipment and operating requirements of 35 IAC 218.182.
- 3.2.5 For each storage tank that has a storage capacity greater than 946 liters (250 gallons) and, if no odor nuisance exists, that stores an organic material with a vapor pressure exceeding 2.5 psia at 70 °F, the Permittee shall comply with the applicable requirements of 35 IAC 218.122, which requires use of a permanent submerged loading pipe, submerged fill, or a vapor recovery system.
- 3.2.6 For each emission unit required to be included in determining applicability of 35 IAC 218 Subpart TT, total VOM emissions from insignificant activities (including storage and handling of formulations) in conjunction with the applicable emission units in Section 7 of this permit shall not equal or exceed 25 ton/yr.
- 3.2.7 For each organic material emission unit that is exempt from 35 IAC 218 Subpart TT, the Permittee shall maintain emissions of VOM to the atmosphere less than or equal to 2.3 Mg (2.5 tons) per calendar year. The total emissions from emission units (including insignificant and significant activities) not complying with 35 IAC 218.986 shall not exceed 4.5 Mg (5.0 tons) per calendar year.

### 3.3 Addition of Insignificant Activities

- 3.3.1 The Permittee is not required to notify the Illinois EPA of additional insignificant activities present at the source of a type that is identified in Condition 3.1, until the renewal application for this permit is submitted, pursuant to 35 IAC 201.212(a).
- 3.3.2 The Permittee must notify the Illinois EPA of any proposed addition of a new insignificant activity of a type addressed by 35 IAC 201.210(a) and 201.211 other than those identified in Condition 3.1, pursuant to Section 39.5(12)(b) of the Act.
- 3.3.3 The Permittee is not required to notify the Illinois EPA of additional insignificant activities present at the source of a type identified in 35 IAC 201.210(b).

#### 4.0 SIGNIFICANT EMISSION UNITS AT THIS SOURCE

Emission Unit	Description	Date Constructed	Emission Control Equipment
AR	Three (3) Aeration Rooms (Willowbrook I)	June, 1984 (Modified March, 1998)	Acid Water Scrubber (Scrubber #2) with Dry Bed Reactor
Boiler-1	Lattner Model HRT-60 Natural Gas-Fired Boiler (Boiler-1, 2.5 mmBtu/hr, Willowbrook I)	Unknown	None
SC-1	Six (6) Ethylene Oxide/Propylene Oxide Sterilization Chambers (Six (6) Pallet Capacity, Willowbrook I)	June, 1984 (Modified November, 1990)	Acid Water Scrubber (Scrubber #1) or Acid Water Scrubber (Scrubber #2) with Dry Bed Reactor
SC-2	Six (6) Ethylene Oxide/Propylene Oxide Sterilization Chambers (Thirteen (13) Pallet Capacity, Willowbrook I)	June, 1984 (Modified 1998)	Acid Water Scrubber (Scrubber #1) or Acid Water Scrubber (Scrubber #2) with Dry Bed Reactor
SC-3	One (1) Ethylene Oxide/Propylene Oxide Sterilization Chamber (Three (3) Pallet Capacity, Willowbrook I)	June, 1984 (Modified November, 1990)	Acid Water Scrubber (Scrubber #1) or Acid Water Scrubber (Scrubber #2) with Dry Bed Reactor
SC-5	One (1) Ethylene Oxide/Propylene Oxide Sterilization Chamber (One (1) Pallet Capacity, Willowbrook I)	June 1984 (Modified November, 1990)	Acid Water Scrubber (Scrubber #1) or Acid Water Scrubber (Scrubber #2) with Dry Bed Reactor
SC-4	Five (5) Ethylene Oxide/Propylene Oxide Sterilization Chambers (Thirteen (13) Pallet Capacity, Willowbrook II)	July, 1999	Willowbrook II Scrubber (WBII-Scrubber) and Dry Bed Reactor
SV-1	Six (6) Ethylene Oxide/Propylene Oxide Sterilization Chamber Back Vents (Six (6) Pallet Capacity Sterilization Chambers, Willowbrook I)	June, 1984 (Modified November, 1990)	None
SV-2	Five (5) Ethylene Oxide/Propylene Oxide Sterilization Chamber Back Vents (Thirteen (13) Pallet Capacity Sterilization Chambers, Willowbrook I)	June, 1984 (Modified 1998)	None

Emission Unit	Description	Date Constructed	Emission Control Equipment
SV-3	One (1) Ethylene Oxide/Propylene Oxide Sterilization Chamber Back Vent (Three (3) Pallet Capacity Sterilization Chamber, Willowbrook I)	June, 1984	None
SV-4	Five (5) Ethylene Oxide/Propylene Oxide Sterilization Chamber Back Vents (Thirteen (13) Pallet Capacity Sterilization Chambers, Willowbrook II)	July, 1999	None
SV-5	One (1) Ethylene Oxide/Propylene Oxide Sterilization Chamber Back Vent (One (1) Pallet Capacity Sterilization Chamber, Willowbrook I)	June, 1984	None
WBII-AR	Two (2) Aeration Rooms (Willowbrook II)	July, 1999	Willowbrook II Scrubber (WBII-Scrubber) and Dry Bed Reactor
WBII-Boiler-1	Kewanee Model L35-80-G Natural Gas-Fired Boiler (WBII - Boiler-1, 3.3 mmBtu/hr, Willowbrook II)	July, 1999	None
WBII-Boiler-2	Kewanee Model L35-80-G Natural Gas-Fired Boiler (WBII - Boiler-2, 3.3 mmBtu/hr, Willowbrook II)	July, 1999	None
Fugitive VOM/HAP Emissions	Pumps, Seals, Flanges, etc.	-	None

## 5.0 OVERALL SOURCE CONDITIONS

### 5.1 Applicability of Clean Air Act Permit Program (CAAPP)

5.1.1 This permit is issued based on the source requiring a CAAPP permit as a major source of VOM emissions.

### 5.2 Area Designation

This permit is issued based on the source being located in an area that, as of the date of permit issuance, is designated nonattainment for the National Ambient Air Quality Standards for ozone (moderate nonattainment) and/or PM<sub>2.5</sub> and attainment or unclassifiable for all other criteria pollutants.

### 5.3 Source-Wide Applicable Provisions and Regulations

5.3.1 Specific emission units at this source are subject to particular regulations as set forth in Section 7 (Unit-Specific Conditions for Specific Emission Units) of this permit.

5.3.2 In addition, emission units at this source are subject to the following regulations of general applicability:

- a. No person shall cause or allow the emission of fugitive particulate matter from any process, including any material handling or storage activity, that is visible by an observer looking generally overhead at a point beyond the property line of the source unless the wind speed is greater than 40.2 kilometers per hour (25 miles per hour), pursuant to 35 IAC 212.301 and 212.314.
- b. Pursuant to 35 IAC 212.123(a), no person shall cause or allow the emission of smoke or other particulate matter, with an opacity greater than 30 percent, into the atmosphere from any emission unit other than those emission units subject to the requirements of 35 IAC 212.122, except as allowed by 35 IAC 212.123(b) and 212.124.

#### 5.3.3 Ozone Depleting Substances

The Permittee shall comply with the standards for recycling and emissions reduction of ozone depleting substances pursuant to 40 CFR Part 82, Subpart F, except as provided for motor vehicle air conditioners in Subpart B of 40 CFR Part 82:

- a. Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to 40 CFR 82.156.
- b. Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to 40 CFR 82.158.

- c. Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to 40 CFR 82.161.

#### 5.3.4 Risk Management Plan (RMP)

Should this stationary source, as defined in 40 CFR 68.3, become subject to the federal regulations for Chemical Accident Prevention in 40 CFR Part 68, then the owner or operator shall submit the items below. This condition is imposed in this permit pursuant to 40 CFR 68.215(a)(2)(i) and (ii).

- a. A compliance schedule for meeting the requirements of 40 CFR Part 68 by the date provided in 40 CFR 68.10(a); or
- b. A certification statement that the source is in compliance with all requirements of 40 CFR Part 68, including the registration and submission of the RMP, as part of the annual compliance certification required by Condition 9.8.

#### 5.3.5 Future Emission Standards

- a. Should this stationary source become subject to a new or revised regulation under 40 CFR Parts 60, 61, 62, or 63, or 35 IAC Subtitle B after the date issued of this permit, then the owner or operator shall, in accordance with the applicable regulation(s), comply with the applicable requirements by the date(s) specified and shall certify compliance with the applicable requirements of such regulation(s) as part of the annual compliance certification, as required by Condition 9.8. This permit may also have to be revised or reopened to address such new or revised regulations (see Condition 9.12.2).
- b. This permit and the terms and conditions herein do not affect the Permittee's past and/or continuing obligation with respect to statutory or regulatory requirements governing major source construction or modification under Title I of the CAA. Further, neither the issuance of this permit nor any of the terms or conditions of the permit shall alter or affect the liability of the Permittee for any violation of applicable requirements prior to or at the time of permit issuance.

#### 5.3.6 Episode Action Plan

- a. Pursuant to 35 IAC 244.141, 244.142, and 244.143, the Permittee shall maintain at the source and have on file with the Illinois EPA a written episode action plan (plan) for reducing the levels of emissions during yellow alerts, red alerts, and emergencies, consistent with safe operating procedures. The plan shall contain the information specified in 35 IAC 244.144 and is incorporated by reference into this permit.

- b. The Permittee shall immediately implement the appropriate steps described in this plan should an air pollution alert or emergency be declared by the Director of the Illinois EPA or his or her designated representative.
- c. If an operational change occurs at the source which invalidates the plan, a revised plan shall be submitted to the Illinois EPA for review within 30 days of the change, pursuant to 35 IAC 244.143(d). Such plans shall be further revised if disapproved by the Illinois EPA.

5.4 Source-Wide Non-Applicability of Regulations of Concern

Source-wide non-applicability of regulations of concern are not set for this source. However, there are unit specific non-applicability of regulations of concern set forth in Section 7 of this permit.

5.5 Source-Wide Control Requirements and Work Practices

Source-wide control requirements and work practices are not set for this source. However, there are requirements for unit specific control requirements and work practices set forth in Section 7 of this permit.

5.6 Source-Wide Production and Emission Limitations

5.6.1 Permitted Emissions for Fees

The annual emissions from the source, not considering insignificant activities as addressed by Section 3.0 of this permit, shall not exceed the following limitations. The overall source emissions shall be determined by adding emissions from all emission units. Compliance with these limits shall be determined on a calendar year basis. These limitations (Condition 5.6.1) are set for the purpose of establishing fees and are not federally enforceable (see Section 39.5(18) of the Act).

Permitted Emissions of Regulated Pollutants

Pollutant	Tons/Year
Volatile Organic Material (VOM)	10.73
Sulfur Dioxide (SO <sub>2</sub> )	0.05
Particulate Matter (PM)	0.26
Nitrogen Oxides (NO <sub>x</sub> )	3.45
HAP, not included in VOM or PM	---
Total	14.44

5.6.2 Emissions of Hazardous Air Pollutants

Pursuant to Section 39.5(7) (a) of the Act, the emissions of HAPs from the source shall be less than 10 tons/year for each individual HAP and 25 tons/year for all HAPs combined. Compliance with annual limits shall be determined on a monthly

basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total). This condition is being imposed so that the source is not a major source of HAP emissions. The Permittee shall fulfill the applicable testing, recordkeeping, and reporting requirements of Conditions 5.7.2, 5.9.2, and 5.10.2.

#### 5.6.3 Other Source-Wide Production and Emission Limitations

Other source-wide emission limitations are not set for this source pursuant to the federal rules for PSD, state rules for MSSCAM, or Section 502(b)(10) of the CAA. However, there are unit specific emission limitations set forth in Section 7 of this permit pursuant to these rules.

Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total).

### 5.7 Source-Wide Testing Requirements

5.7.1 Pursuant to 35 IAC 201.282 and Section 4(b) of the Act, every emission source or air pollution control equipment shall be subject to the following testing requirements for the purpose of determining the nature and quantities of specified air contaminant emissions and for the purpose of determining ground level and ambient air concentrations of such air contaminants:

- a. Testing by Owner or Operator: The Illinois EPA may require the owner or operator of the emission source or air pollution control equipment to conduct such tests in accordance with procedures adopted by the Illinois EPA, at such reasonable times as may be specified by the Illinois EPA and at the expense of the owner or operator of the emission source or air pollution control equipment. All such tests shall be made by or under the direction of a person qualified by training and/or experience in the field of air pollution testing. The Illinois EPA shall have the right to observe all aspects of such tests [35 IAC 201.282(a)].
- b. Testing by the Illinois EPA: The Illinois EPA shall have the right to conduct such tests at any time at its own expense. Upon request of the Illinois EPA, the owner or operator of the emission source or air pollution control equipment shall provide, without charge to the Illinois EPA, necessary holes in stacks or ducts and other safe and proper testing facilities, including scaffolding, but excluding instruments and sensing devices, as may be necessary [35 IAC 201.282(b)].
- c. Any such tests are also subject to the Testing Procedures of Condition 8.5 set forth in the General Permit Conditions of Section 8.

#### 5.7.2 HAP Testing to Verify Minor Source Status

Pursuant to Condition 5.7.1 and to verify compliance with the requirements of Condition 5.6.2, that is that this source is not a major source of HAPs, the following testing requirements are established:

- a. If in the previous calendar year, emissions of HAPs exceeded 80% of major source threshold for individual or total HAPs (greater than 8 tons of a single HAP or greater than 20 tons of total HAPs), then testing for HAPs using USEPA Method 18 or 25A shall be conducted as follows:

Test the emission units that contribute to individual and total HAP emissions.

- b. The calculation as to whether the 80% of major source threshold was exceeded shall be based on records and procedures in Condition 5.9.2 and shall be completed by January 31 for the previous calendar year. If testing is required it shall be completed by March 15.
- c. Any such tests are also subject to the Testing Procedures of Condition 8.5 set forth in the General Permit Conditions of Section 8.

#### 5.8 Source-Wide Monitoring Requirements

Source-wide monitoring requirements are not set for this source. However, there are provisions for unit specific monitoring set forth in Section 7 of this permit.

#### 5.9 Source-Wide Recordkeeping Requirements

##### 5.9.1 Annual Emission Records

The Permittee shall maintain records of total annual emissions on a calendar year basis for the emission units covered by Section 7 (Unit Specific Conditions for Specific Emission Units) of this permit to demonstrate compliance with Condition 5.6.1, pursuant to Section 39.5(7) (b) of the Act.

##### 5.9.2 Records for HAP Emissions

- a. The Permittee shall maintain records of individual and combined HAP emissions on a monthly and annual basis for the emission units covered by Section 7 (Unit Specific Conditions for Specific Emission Units) of this permit to demonstrate compliance with Condition 5.6.2, pursuant to Section 39.5(7) (b) of the Act.
- b. If testing is required by Condition 5.7.2, the Permittee shall keep records of the testing, including the test date,

conditions, methodologies, calculations, test results, and any discrepancies between the test results and formulation specifications of Condition 5.9.2(c) below.

5.9.3 Retention and Availability of Records

- a. All records and logs required by this permit shall be retained for at least five years from the date of entry (unless a longer retention period is specified by the particular recordkeeping provision herein), shall be kept at a location at the source that is readily accessible to the Illinois EPA or USEPA, and shall be made available for inspection and copying by the Illinois EPA or USEPA upon request.
- b. The Permittee shall retrieve and print, on paper during normal source office hours, any records retained in an electronic format (e.g., computer) in response to an Illinois EPA or USEPA request for records during the course of a source inspection.

5.10 Source-Wide Reporting Requirements

5.10.1 General Source-Wide Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Air Compliance Unit, of deviations of the source with the permit requirements within 30 days, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken. There are also reporting requirements for unit specific emission units set forth in Section 7 of this permit.

5.10.2 Annual Emissions Report

The annual emissions report required pursuant to Condition 9.7 shall contain emissions information, including HAP emissions, for the previous calendar year.

5.11 Source-Wide Operational Flexibility/Anticipated Operating Scenarios

Source-wide operational flexibility is not set for this source. However, there are provisions for unit specific operational flexibility set forth in Section 7 of this permit.

5.12 Source-Wide Compliance Procedures

5.12.1 Procedures for Calculating Emissions

Except as provided in Condition 9.1.3, compliance with the source-wide emission limits specified in Condition 5.6 shall be addressed by the recordkeeping and reporting requirements of Conditions 5.9 and 5.10, and compliance procedures in Section 7

(Unit Specific Conditions for Specific Emission Units) of this permit.

## 6.0 CONDITIONS FOR EMISSIONS CONTROL PROGRAMS

### 6.1 Emissions Reduction Market System (ERMS)

#### 6.1.1 Description of ERMS

The ERMS is a "cap and trade" market system for major stationary sources located in the Chicago ozone nonattainment area. It is designed to reduce VOM emissions from stationary sources to contribute to reasonable further progress toward attainment, as required by Section 182(c) of the CAA.

The ERMS addresses VOM emissions during a seasonal allotment period from May 1 through September 30. Participating sources must hold "allotment trading units" (ATUs) for their actual seasonal VOM emissions. Each year participating sources are issued ATUs based on allotments set in the sources' CAAPP permits. These allotments are established from historical VOM emissions or "baseline emissions" lowered to provide the emissions reductions from stationary sources required for reasonable further progress.

By December 31 of each year, the end of the reconciliation period following the seasonal allotment period, each source should have sufficient ATUs in its transaction account to cover its actual VOM emissions during the preceding season. A transaction account's balance as of December 31 will include any valid ATU transfer agreements entered into as of December 31 of the given year, provided such agreements are promptly submitted to the Illinois EPA for entry into the transaction account database. The Illinois EPA will then retire ATUs in sources' transaction accounts in amounts equivalent to their seasonal emissions. When a source does not appear to have sufficient ATUs in its transaction account, the Illinois EPA will issue a notice to the source to begin the process for Emissions Excursion Compensation.

In addition to receiving ATUs pursuant to their allotments, participating sources may also obtain ATUs from the market, including ATUs bought from other participating sources and general participants in the ERMS that hold ATUs (35 IAC 205.630) and ATUs issued by the Illinois EPA as a consequence of VOM emissions reductions from an Emissions Reduction Generator or an Intersector Transaction (35 IAC 205.500 and 35 IAC 205.510). During the reconciliation period, sources may also buy ATUs from a secondary reserve of ATUs managed by the Illinois EPA, the "Alternative Compliance Market Account" (ACMA) (35 IAC 205.710). Sources may also transfer or sell the ATUs that they hold to other sources or participants (35 IAC 205.630).

#### 6.1.2 Applicability

This permit is issued based on this source not being a participating source in the Emissions Reduction Market System

(ERMS), 35 IAC Part 205, pursuant to 35 IAC 205.200. This is based on the source's actual VOM emissions during the seasonal allotment period from May 1 through September 30 of each year being less than 10 tons and the source's baseline emissions also being less than 10 tons.

#### 6.1.3 Recordkeeping and Reporting

- a. The Permittee shall maintain the following records to allow the confirmation of actual VOM emissions during the seasonal allotment period:
  - i. Records of operating data and other information for each individual emission unit or group of related emission units at the source, as specified in Sections 5 and 7 of this permit, as appropriate, to determine actual VOM emissions during the seasonal allotment period;
  - ii. Records of the VOM emissions, in tons, during the seasonal allotment period, with supporting calculations, for each individual emission unit or group of related emission units at the source, determined in accordance with the procedures specified in Sections 5 and 7 of this permit; and
  - iii. Total VOM emissions from the source, in tons, during each seasonal allotment period, which shall be compiled by November 30 of each year.
- b. In the event that the source's VOM emissions during the seasonal allotment period equal or exceed 10 tons, the source shall become a participating source in the ERMS and beginning with the following seasonal allotment period, shall comply with 35 IAC Part 205, by holding allotment trading units (ATUs) for its VOM emissions during each seasonal allotment period, unless the source obtains exemption from the ERMS by operating with seasonal VOM emissions of no more than 15 tons pursuant to a limitation applied for and established in its CAAPP permit.

## 7.0 UNIT SPECIFIC CONDITIONS FOR SPECIFIC EMISSION UNITS

- 7.1 Units SC-1, SC-2, SC-3, SC-5 Willowbrook I Sterilization Chambers  
Controls AWS#1 or AWS#2/DBR Acid Water Scrubber (Scrubber #1) or Acid  
Water Scrubber (Scrubber #2) with Dry Bed  
Reactor

### 7.1.1 Description

Materials to be sterilized arrive at the source on pallets. If materials are not on pallets, they are placed on pallets for transportation through various parts of the source. Sterilization is performed on products that are packaged on pallets. Each pallet is approximately 40" x 48" x 60" in volume. When products are received from a manufacturer, they are placed in an unprocessed holding area. Sterilizer lots are configured to meet the FDA validated sterilization cycle for a certain sterilizer, such as 3, 5, 6, or 13 pallets. Lot sizes can be no larger than the sterilizer.

At a scheduled time, a sterilizer "load" or "lot" of pallets are transferred to the Preconditioning Room. This room is operated at temperatures ranging from 90°F to 120°F and 40% to 75% relative humidity. Typical lots remain in the Preconditioning Room for 12 to 96 hours, but most cycles have a narrow window of preconditioning. This room is designed to make microbiological spores more receptive to sterilant gas. Due to the nature of some materials, they may bypass this step and are placed directly in the sterilizer. This "preconditioning" process is not the same as the "presterilization conditioning" process.

At a scheduled time, the "lot" is placed into the sterilizer. Here the products are sterilized using the chamber vacuum process. All vacuum pump exhausts from the sterilizers flow to the acid/wet scrubber. The typical in-chamber sterilization cycle consists of four phases: (1) presterilization conditioning, (2) sterilization, (3) evacuation, and (4) air wash.

At a scheduled time, products are loaded into the sterilizing chamber. The sterilizer is hand-closed using a stainless steel door with an airtight seal, then a partial vacuum is drawn inside the chamber. This initial vacuum, or drawdown, prevents dilution of the sterilant gas. Chamber pressure is reduced to a vacuum pressure of half an atmosphere or less. The initial drawdown takes from 10 to 45 minutes, depending on the product being sterilized. Chamber temperature is then adjusted to between 90 to 130°F, in conjunction with humidification. Proper humidification is important to the process because the susceptibility of microorganisms to the sterilant gas is increased under moist conditions. Usually, the relative humidity is above 40% via adding steam, expressed more often as inches of steam added. The sterilant gas, which is supplied as a liquid, is vaporized and introduced into the chamber. The

pressure is held usually for four to six hours depending on the temperature, pressure, humidity level, type of sterilant gas, and products being sterilized. This is the only time ethylene oxide is injected into the chamber. Following sufficient exposure time, with the FDA-validated cycle parameters, the sterilant gas is evacuated from the chamber using a vacuum pump. The pressure of the chamber is raised to atmospheric pressure by introducing air or nitrogen. The combination of evacuation and air wash phases can be repeated to remove as much of the ethylene oxide from the product as possible.

There are six chambers with a capacity of six pallets, six with a capacity of thirteen pallets and one chamber with a capacity of three pallets at Willowbrook I. The source operates two air pollution control systems. Acid Water Scrubber System #1 or the Deox system is typically used to control emissions from the sterilization chamber vacuum pumps. This system consists of a wet scrubber used to control high concentrations of ethylene oxide in the exhaust stream. The second system, which is used as an alternate operating scenario for the sterilizer vacuum pumps, consists of a wet acid scrubber followed by a dry bed reactant system. This system is typically used to control emissions from the aeration rooms/chambers and was installed to meet the ethylene oxide MACT requirements.

7.1.2 List of Emission Units and Pollution Control Equipment

Emission Unit	Description	Emission Control Equipment
SC-1	Six (6) Ethylene Oxide/Propylene Oxide Sterilization Chambers (Six (6) Pallet Capacity, Willowbrook I)	Acid Water Scrubber (Scrubber #1) or Acid Water Scrubber (Scrubber #2) with Dry Bed Reactor
SC-2	Six (6) Ethylene Oxide/Propylene Oxide Sterilization Chambers (Thirteen (13) Pallet Capacity, Willowbrook I)	Acid Water Scrubber (Scrubber #1) or Acid Water Scrubber (Scrubber #2) with Dry Bed Reactor
SC-3	One (1) Ethylene Oxide/Propylene Oxide Sterilization Chamber (Three (3) Pallet Capacity, Willowbrook I)	Acid Water Scrubber (Scrubber #1) or Acid Water Scrubber (Scrubber #2) with Dry Bed Reactor
SC-5	One (1) Ethylene Oxide/Propylene Oxide Sterilization Chamber (One (1) Pallet Capacity, Willowbrook I)	Acid Water Scrubber (Scrubber #1) or Acid Water Scrubber (Scrubber #2) with Dry Bed Reactor

### 7.1.3 Applicability Provisions and Applicable Regulations

- a. The Ethylene Oxide/Propylene Oxide Sterilization Chambers listed in Condition 7.1.2 are "affected chambers" for the purpose of these unit-specific conditions.
- b. The affected chambers are subject to the NESHAP for Ethylene Oxide Emissions Standards for Sterilization Facilities, 40 CFR 63 Subparts A and O because the source uses 907 kg (1 ton) or more of ethylene oxide within any consecutive 12-month period after December 6, 1996. Pursuant to 40 CFR 63.362, the owner or operator of the affected chambers shall comply with the following:
  - i. The emission limitations of Condition 7.1.3 (b) (ii) (see also 40 CFR 63.362(c)) apply during sterilization operation. The emissions limitations of Condition 7.1.3 do not apply during periods of malfunction [40 CFR 63.362(b)].
  - ii. Each owner or operator of a sterilization source using 1 ton shall reduce ethylene oxide emissions to the atmosphere by at least 99 percent from each sterilization chamber vent [40 CFR 63.362(c)].
- c. The affected chambers are subject to 35 IAC 218 Subpart G, Use of Organic Material, which provides that:
  - i. No person shall cause or allow the discharge of more than 3.6 kg/hr (8 lb/hr) of organic material into the atmosphere from any emission unit, except as provided in Condition 7.1.3 (c) (ii) (see also 35 IAC 218.302) and the following exception: If no odor nuisance exists the limitation of 35 IAC 218 Subpart G shall apply only to photochemically reactive material [35 IAC 218.301].
  - ii. Emissions of organic material in excess of those permitted by Condition 7.1.3(c) (i) (see also 35 IAC 218.301) are allowable if such emissions are controlled by any other air pollution control equipment approved by the Illinois EPA and approved by the USEPA as a SIP revision capable of reducing by 85 percent or more the uncontrolled organic material that would be otherwise emitted to the atmosphere [35 IAC 218.302(c)].

Note: Source does not have approved air pollution control equipment that meets this requirement.
- d. The affected chambers are subject to 35 IAC 218 Subpart TT, Other Emission Units, which provides that, pursuant to 35 IAC 218.986, every owner or operator of an emission unit subject to 35 IAC 218 Subpart TT shall comply with the

requirements of Conditions 7.1.3 (d) (i), (ii), or (iii) (see also 35 IAC 218.986 (a), (b), (c), (d) or (e)):

- i. Emission capture and control equipment which achieves an overall reduction in uncontrolled VOM emissions of at least 81 percent from each emission unit [35 IAC 218.986(a)]; or
- ii. An equivalent alternative control plan which has been approved by the Illinois EPA and USEPA in a federally enforceable permit or as a SIP revision [35 IAC 218.986(c)]; or
- iii. Pursuant to 35 IAC 218.986(e), any leaks from components subject to the control requirements of 35 IAC 218 Subpart TT shall be subject to the following control measures by March 15, 1995:

Repair any component from which a leak of VOL can be observed. The repair shall be completed as soon as practicable but no later than 15 days after the leak is found, unless the leaking component cannot be repaired until the process unit is shut down, in which case the leaking component must be repaired before the unit is restarted [35 IAC 218.986(e) (1)].

Note: For purposes of 35 IAC Part 218 Subpart TT, the sterilization chamber, which includes the sterilization chamber vent and the chamber exhaust vent, is considered a single emission unit. [05120010]

e. Malfunction and Breakdown Provisions

Subject to the following terms and conditions, the Permittee is authorized to continue operation of affected chambers in violation of the applicable standards in Condition 7.1.3(c) and (d) in the event of a malfunction or breakdown of the Willowbrook I Acid-Water Scrubber #1 or #2. This authorization is provided pursuant to 35 IAC 201.149, 201.161 and 201.262, as the Permittee has applied for such authorization in its application, generally explaining why such continued operation would be required to provide essential service or to prevent risk of injury to personnel or severe damage to equipment, and describing the measures that will be taken to minimize emissions from any malfunctions and breakdowns. This authorization supersedes the general prohibition in Condition 9.2.3 against continued operation in such circumstances.

- i. This authorization only allows such continued operation as necessary to provide essential service or prevent risk of injury to personnel or severe damage to equipment and does not extend to continued

operation solely for the economic benefit of the Permittee.

- ii. Upon occurrence of excess emissions due to malfunction or breakdown, the Permittee shall immediately repair the damaged feature(s) of Willowbrook I Acid-Water Scrubber #1 or #2, reroute emissions from the affected chambers to the remaining Willowbrook I Acid-Water Scrubber that is still in proper working order, remove the affected chambers from sterilization service, or undertake other action so that excess emissions cease.
- iii. The Permittee shall fulfill the applicable recordkeeping and reporting requirements of Conditions 7.1.9(e) and 7.1.10(c). For these purposes, time shall be measured from the start of a particular incident. The absence of excess emissions for a short period shall not be considered to end the incident if excess emissions resume. In such circumstances, the incident shall be considered to continue until corrective actions are taken so that excess emissions cease or the Permittee takes the affected chambers out of service.
- iv. Following notification to the Illinois EPA of a malfunction or breakdown with excess emissions, the Permittee shall comply with all reasonable directives of the Illinois EPA with respect to such incident, pursuant to 35 IAC 201.263.
- v. This authorization does not relieve the Permittee from the continuing obligation to minimize excess emissions during malfunction or breakdown. As provided by 35 IAC 201.265, an authorization in a permit for continued operation with excess emissions during malfunction and breakdown does not shield the Permittee from enforcement for any such violation and only constitutes a prima facie defense to such an enforcement action provided that the Permittee has fully complied with all terms and conditions connected with such authorization.

7.1.4 Non-Applicability of Regulations of Concern

None

7.1.5 Operational and Production Limits and Work Practices

- a. The Permittee shall follow good operating practices for the acid water scrubbers and dry bed reactor, including periodic inspections every month, routine maintenance and prompt repair of defects.

- b. Pursuant to Section 39.5(7)(a) of the Act, the Permittee shall exhaust no more than five (5) of the affected chambers to the acid water scrubbers and dry bed reactor during the first evacuation. This is the maximum number of chambers evacuated at which compliance with Condition 7.1.3(b)(ii) (see also 40 CFR 63.362(c)) was demonstrated during the most recent compliance test.

#### 7.1.6 Emission Limitations

In addition to Condition 5.3.2 and the source wide emission limitations in Condition 5.5, the affected chambers are subject to the following:

- a.
  - i. Emissions of organic material from Sterilization Retorts 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, and 12 shall not exceed 99 tons/year. This condition is based on representations of maximum actual emission rates in order to limit emissions to levels at which the Illinois EPA believes 35 IAC Part 203 would apply [T1]
  - ii. The above limitations were established in Permit 84060002, pursuant to 35 IAC Part 203. These limits ensure that the construction and/or modification addressed in the aforementioned permit does not constitute a new major source pursuant to Title I of the CAA, specifically 35 IAC Part 203 [T1].
- b.
  - i. Emissions of organic material excluding Freon 12 from Sterilization Retort #8 shall not exceed 25 tons/year. This condition is based on representations of maximum actual emission rate.
  - ii. The above limitations were established in Permit 85110056, pursuant to 35 IAC Part 203. These limits ensure that the construction and/or modification addressed in the aforementioned permit does not constitute a major modification pursuant to Title I of the CAA, specifically 35 IAC Part 203 [T1].
- c. Emissions and Operation of Sterilization Retorts 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, and 12 shall not exceed the following limits:
  - i. The Deoxx System (acid water scrubber) shall be operated to reduce the ethylene oxide emissions from Sterilization Retorts 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, and 12 by at least 99%.
  - ii. Monthly usage of propylene oxide and ethylene oxide shall not exceed 2,800 and 70,000 pounds, respectively.

- iii. This permit is issued based on negligible emissions of volatile organic material other than propylene oxide and ethylene oxide from Sterilization Retorts 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, and 12. For this purpose, emissions from all such emission units shall not exceed nominal emission rates of 0.1 lb/hour and 0.44 ton/year.
  - iv. The above limitations were established in Permit 90080038, pursuant to 35 IAC Part 203. These limits ensure that the construction and/or modification addressed in the aforementioned permit does not constitute a new major source or major modification pursuant to Title I of the CAA, specifically 35 IAC Part 203 [T1].
- d. Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total).

#### 7.1.7 Testing Requirements

- a. Pursuant to 40 CFR 63.363(b), the following procedures shall be used to determine compliance with the emission limits under Condition 7.1.3(b)(ii) (see also 40 CFR 63.362(c)), the sterilization chamber vent standard:
  - i. Pursuant to 40 CFR 63.363(b)(1)(i), during the performance test required in Condition 7.1.7(a) (see also 40 CFR 63.363(a)), the owner or operator shall determine the efficiency of control devices used to comply with Condition 7.1.3(b)(ii) (see also 40 CFR 63.362(c)) using the test methods and procedures in 40 CFR 63.365(b)(1). The owner or operator shall also, for facilities with acid-water scrubbers, establish as a site-specific operating parameter [established once every permit term] during the test methods and procedures in 40 CFR 63.365(b)(1) either:
    - A. The maximum ethylene glycol concentration using the procedures described 40 CFR 63.365(e)(1) [40 CFR 63.363(b)(1)(i)(A)]; or
    - B. The maximum liquor tank level using the procedures described in 40 CFR 63.365(e)(2) [40 CFR 63.363(b)(1)(i)(B)].
  - ii. Following the date on which the initial performance test is completed, operation of the facility (with acid-water scrubbers) with an ethylene glycol concentration in the scrubber liquor in excess of the maximum ethylene glycol concentration or the liquor tank level in excess of the maximum liquor tank level

shall constitute a violation of the sterilization chamber vent standard [40 CFR 63.363(b)(2)(i)].

- c. When in the opinion of the Illinois EPA it is necessary to conduct testing to demonstrate compliance with Condition 7.1.3(d) (see also 35 IAC 218.986), the owner or operator of a VOM emission unit subject to the requirements of 35 IAC 218 Subpart TT shall, at his own expense, conduct such tests in accordance with the applicable test methods and procedures specified in 35 IAC 218.105 [35 IAC 218.968(a)].
- d. Pursuant to 35 IAC 218.105(d)(1) and Section 39.5(7)(b) of the Act, the control device efficiency shall be determined by simultaneously measuring the inlet and outlet gas phase VOM concentrations and gas volumetric flow rates in accordance with the gas phase test methods specified below (see also 35 IAC 218.105(f)):
  - i. Volatile Organic Material Gas Phase Source Test Methods: The methods in 40 CFR Part 60, Appendix A, delineated below shall be used to determine control device efficiencies [35 IAC 218.105(f)].
    - A. CFR Part 60, Appendix A, Method 18, 25 or 25A, as appropriate to the conditions at the site, shall be used to determine VOM concentration. Method selection shall be based on consideration of the diversity of organic species present and their total concentration and on consideration of the potential presence of interfering gases. The test shall consist of three separate runs, each lasting a minimum of 60 min, unless the Illinois EPA and the USEPA determine that process variables dictate shorter sampling times [35 IAC 218.105(f)(1)].
    - B. 40 CFR Part 60, Appendix A, Method 1 or 1A shall be used for sample and velocity traverses [35 IAC 218.105(f)(2)].
    - C. 40 CFR Part 60, Appendix A, Method 2, 2A, 2C or 2D shall be used for velocity and volumetric flow rates [35 IAC 218.105(f)(3)].
    - D. 40 CFR Part 60, Appendix A, Method 3 shall be used for gas analysis [35 IAC 218.105(f)(4)].
    - E. 40 CFR Part 60, Appendix A, Method 4 shall be used for stack gas moisture [35 IAC 218.105(f)(5)].
    - F. 40 CFR Part 60, Appendix A, Methods 2, 2A, 2C, 2D, 3 and 4 shall be performed, as applicable,

at least twice during each test run [35 IAC 218.105(f)(6)].

G. Use of an adaptation to any of the test methods specified in Conditions 7.1.7 (d)(i)(A), (B), (C), (D), (E) and (F) (see also 35 IAC 218.105(f)(1), (2), (3), (4), (5) and (6)) may not be used unless approved by the Illinois EPA and the USEPA on a case by case basis. An owner or operator must submit sufficient documentation for the Illinois EPA and the USEPA to find that the test methods specified in Conditions 7.1.7(d)(i)(A), (B), (C), (D), (E) and (F) (see also 35 IAC 218.105(f)(1), (2), (3), (4), (5) and (6)) will yield inaccurate results and that the proposed adaptation is appropriate [35 IAC 218.105(f)(7)].

ii. Notwithstanding other requirements of 35 IAC Part 218, upon request of the Illinois EPA where it is necessary to demonstrate compliance, an owner or operator of an emission unit which is subject to 35 IAC Part 218 shall, at his own expense, conduct tests in accordance with the applicable test methods and procedures specific in 35 IAC Part 218. Nothing in this Condition (see also 35 IAC 218.105) shall limit the authority of the USEPA pursuant to the CAA, as amended, to require testing [35 IAC 218.105(i)].

#### 7.1.8 Monitoring Requirements

a. i. The owner or operator of a source subject to emissions standards in Condition 7.1.3(b) (see also 40 CFR 63.362) shall comply with the monitoring requirements in 40 CFR 63.8, according to the applicability in Table 1 of 40 CFR 63.360, and in this Condition (see also 40 CFR 63.364) [40 CFR 63.364(a)(1)].

ii. Each owner or operator of an ethylene oxide sterilization facility subject to these emissions standards shall monitor the parameters specified in this Condition (see also 40 CFR 63.364). All monitoring equipment shall be installed such that representative measurements of emissions or process parameters from the source are obtained. For monitoring equipment purchased from a vendor, verification of the operational status of the monitoring equipment shall include completion of the manufacturer's written specifications or recommendations for installation, operation, and calibration of the system [40 CFR 63.364(a)(2)].

- b. Pursuant to 40 CFR 63.364(b), for sterilization facilities complying with Condition 7.1.7(b) (see also 40 CFR 63.363(b)) through the use of an acid-water scrubber, the owner or operator shall either:
  - i. Sample the scrubber liquor and analyze and record once per week the ethylene glycol concentration of the scrubber liquor using the test methods and procedures in 40 CFR 63.365(e) (1). Monitoring is required during a week only if the scrubber unit has been operated [40 CFR 63.364 (b) (1)]; or
  - ii. Measure and record once per week the level of the scrubber liquor in the recirculation tank. The owner or operator shall install, maintain, and use a liquid level indicator to measure the scrubber liquor tank level (i.e., a marker on the tank wall, a dipstick, a magnetic indicator, etc.) [40 CFR 63.364(b) (2)].
- c. Pursuant to 35 IAC 218.105(g), leak detection methods for volatile organic material owners or operators required by 35 IAC Part 218 to carry out a leak detection monitoring program shall comply with the following requirements:
  - i. Leak Detection Monitoring:
    - A. Monitoring shall comply with 40 CFR 60, Appendix A, Method 21 [35 IAC 218.105 (g) (1) (A)];
    - B. The detection instrument shall meet the performance criteria of Method 21 [35 IAC 218.105(g) (1) (B)];
    - C. The instrument shall be calibrated before use on each day of its use by the methods specified in Method 21 [35 IAC 218.105 (g) (1) (C)];
    - D. Calibration gases shall be:
      - 1. Zero air (less than 10 ppm of hydrocarbon in air) [35 IAC 218.105 (g) (1) (D) (i)]; and
      - 2. A mixture of methane or n-hexane and air at a concentration of approximately, but no less than, 10,000 ppm methane or n-hexane [35 IAC 218.105(g) (1) (D) (ii)].
    - E. The instrument probe shall be traversed around all potential leak interfaces as close to the interface as possible as described in Method 21 [35 IAC 218.105 (g) (1) (E)].

- ii. Pursuant to 35 IAC 218.105(g) (2), when equipment is tested for compliance with no detectable emissions as required, the test shall comply with the following requirements:
  - A. The requirements of Conditions 7.1.8 (c) (i) (A) through (e) (i) (E) (see also 35 IAC 218.105(g) (1) (A) through (g) (1) (E)) above shall apply [35 IAC 218.105 (g) (2) (A)]; and
  - B. The background level shall be determined as set forth in Method 21 [35 IAC 218.105 (g) (2) (B)].
- iii. Pursuant to 35 IAC 218.105(g) (3), leak detection tests shall be performed consistent with:
  - A. "APTI Course SI 417 controlling Volatile Organic Compound Emissions from Leaking Process Equipment", EPA-450/2-82-015 [35 IAC 218.105(g) (3) (A)];
  - B. "Portable Instrument User's Manual for Monitoring VOC Sources", EPA-340/1-86-015 [35 IAC 218.105(g) (3) (B)];
  - C. "Protocols for Generating Unit-Specific Emission Estimates for Equipment Leaks of VOC and VHAP", EPA-450/3-88-010 [35 IAC 218.105(g) (3) (C)]; and/or
  - D. "Petroleum Refinery Enforcement Manual", EPA-340/1-80-008 [35 IAC 218.105 (g) (3) (D)].

#### 7.1.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for each affected chamber to demonstrate compliance with Conditions 5.5.1, 7.1.3, and 7.1.6, pursuant to Section 39.5(7) (b) of the Act:

- a. The owner or operator of a source subject to the emissions standards in Condition 7.1.3(b) (see also 40 CFR 63.362) shall comply with the recordkeeping requirements in 40 CFR 63.10(b) and (c), according to the applicability in Table 1 of 40 CFR 63.360, and in this Condition (see also 40 CFR 63.367) [40 CFR 63.367(a)].
- b. Records of the testing of the efficiency of each capture system and control device pursuant to Condition 7.1.7, which include the following [Section 39.5(7) (e) of the Act]:
  - i. The date, place and time of sampling or measurements;

- ii. The date(s) analyses were performed;
  - iii. The company or entity that performed the analyses;
  - iv. The analytical techniques or methods used;
  - v. The results of such analyses; and
  - vi. The operating conditions as existing at the time of sampling or measurement.
- c. Pursuant to 35 IAC 218.986(e) (2), any leaks from components subject to the control requirements of 35 IAC 218 Subpart TT shall be subject to the following control measures by March 15, 1995:

For any leak which cannot be readily repaired within one hour after detection, the following records, as set forth in this subsection, shall be kept. These records shall be maintained by the owner or operator for a minimum of two years after the date on which they are made. Copies of the records shall be made available to the Illinois EPA or the USEPA upon verbal or written request.

- i. The name and identification of the leaking component [35 IAC 218.986(e) (2) (A)];
  - ii. The date and time the leak is detected [35 IAC 218.986(e) (2) (B)];
  - iii. The action taken to repair the leak [35 IAC 218.986(e) (2) (C)]; and
  - iv. The date and time the leak is repaired [35 IAC 218.986(e) (2) (D)].
- d. Pursuant to 35 IAC 218.991(a) (2), any owner or operator of a VOM emission unit which is subject to the requirements of 35 IAC 218 Subpart, TT and complying by the use of emission capture and control equipment shall collect and record all of the following information each day and maintain the information at the source for a period of three years:
- i. Control device monitoring data [35 IAC 218.991 (a) (2) (A)];
  - ii. A log of operating time for the capture system, control device, monitoring equipment and the associated emission source [35 IAC 218.991 (a) (2) (B)]; and
  - iii. A maintenance log for the capture system, control device and monitoring equipment detailing all routine

and non-routine maintenance performed including dates and duration of any outages [35 IAC 218.991 (a) (2) (C)].

- e. Records for Malfunctions and Breakdowns of Willowbrook I Acid-Water Scrubber #1 or #2.

The Permittee shall maintain records, pursuant to 35 IAC 201.263, of continued operation of an affected chamber subject to 35 IAC Part 218, Subparts G and TT during malfunctions and breakdown of the control features of the Willowbrook I Acid-Water Scrubber #1 or #2, which as a minimum, shall include:

- i. Date and duration of malfunction or breakdown;
  - ii. A detailed explanation of the malfunction or breakdown;
  - iii. An explanation why the damaged feature(s) could not be immediately repaired or the affected chambers could not be removed from service without risk of injury to personnel or severe damage to equipment;
  - iv. The measures used to reduce the quantity of emissions and the duration of the event;
  - v. The steps taken to prevent similar malfunctions or breakdowns or reduce their frequency and severity; and
  - vi. The amount of release above typical emissions during malfunction/breakdown.
- f. Records addressing use of good operating practices for the acid water scrubbers and dry bed reactor:
    - i. Records for periodic inspection of the acid water scrubbers and dry bed reactor with date, individual performing the inspection, and nature of inspection; and
    - ii. Records for prompt repair of defects, with identification and description of defect, effect on emissions, date identified, date repaired, and nature of repair.
    - iii. Records listing the good operating practices and inspection procedures that the Permittee follows
  - g. The type and amount of sterilant gas used for each affected chamber, lb/mo and ton/yr; and

- h. The monthly and aggregate annual VOM and HAP emissions from the affected chambers based on the sterilant gas usage and air pollution control equipment efficiencies, with supporting calculations.

#### 7.1.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section of deviations of an affected chamber with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

- a. *Content and submittal dates for excess emissions and monitoring system performance reports.* All excess emissions and monitoring system performance reports and all summary reports, if required per 40 CFR 63.10 (e) (3) (vii) and (viii), shall be delivered or postmarked within 30 days following the end of each calendar half or quarter as appropriate (see 40 CFR 63.10(e) (3) (i) through (iv) for applicability). Written reports of excess emissions or exceedances of process or control system parameters shall include all information required in 40 CFR 63.10(c) (5) through (13) as applicable in Table 1 of 40 CFR 63.360 and information from any calibration tests in which the monitoring equipment is not in compliance with PS-9 or the method used for temperature calibration. The written report shall also include the name, title, and signature of the responsible official who is certifying the accuracy of the report. When no excess emissions or exceedances have occurred or monitoring equipment has not been inoperative, repaired, or adjusted, such information shall be stated in the report [40 CFR 63.366(a) (3)].
- b. Any owner or operator of a VOM emission unit which is subject to the requirements of 35 IAC 218 Subpart TT and complying by the use of emission capture and control equipment shall notify the Illinois EPA of any violation of the requirements of 35 IAC 218 Subpart TT by sending a copy of any record showing a violation to the Illinois EPA within 30 days following the occurrence of the violation [35 IAC 218.991(a) (3) (A)];
- c. Reporting of Malfunctions and Breakdowns for Willowbrook I Acid-Water Scrubber #1 or #2

The Permittee shall provide the following notification and reports to the Illinois EPA, Compliance Section and Regional Field Office, pursuant to 35 IAC 201.263, concerning continued operation of an affected chamber subject to Conditions 7.1.3(c) and (d) during malfunction or breakdown of the control features of the Willowbrook I Acid-Water Scrubber #1 or #2.

- i. The Permittee shall notify the Illinois EPA's regional office by telephone immediately, but no later than three (3) days, upon the occurrence of noncompliance due to malfunction, or breakdown.
  - ii. Upon achievement of compliance, the Permittee shall give a written follow-up notice to the Illinois EPA, Compliance Section and Regional Field Office, within 15 days providing a detailed explanation of the event, an explanation why continued operation of the affected chambers was necessary, the length of time during which operation continued under such conditions, the measures taken by the Permittee to minimize and correct deficiencies with chronology, and when the repairs were completed or when the affected chambers were taken out of service.
  - iii. If compliance is not achieved within 5 working days of the occurrence, the Permittee shall submit interim status reports to the Illinois EPA, Compliance Section and Regional Field Office, within 5 days of the occurrence and every 14 days thereafter, until compliance is achieved. These interim reports shall provide a brief explanation of the nature of the malfunction or breakdown, corrective actions accomplished to date, actions anticipated to occur with schedule, and the expected date on which repairs will be complete or the affected chambers will be taken out of service.
- d. Emissions of VOM in excess of limits in Condition 7.1.6 based on the current month's records plus the preceding 11 months within 30 days of such an occurrence.

#### 7.1.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

#### 7.1.12 Compliance Procedures

- a. Compliance with Condition 7.1.3(b) is addressed by the requirements of Condition 7.1.5, the testing requirements in Conditions 7.1.7 and 40 CFR 63.365, the monitoring requirements in Condition 7.1.8, the records required in Condition 7.1.9, and the reporting requirements of Condition 7.1.10.
- b. Compliance with Condition 7.1.3(c) is addressed by the requirements of Condition 7.1.5, the testing requirements in Conditions 7.1.7 and 40 CFR 63.365, the monitoring requirements in Condition 7.1.8, the records required in Condition 7.1.9, and the reporting requirements of Condition 7.1.10.

- c. Compliance with Condition 7.1.3(d) is addressed by the requirements of Condition 7.1.5, the testing requirements in Conditions 7.1.7 and 40 CFR 63.365, the monitoring requirements in Condition 7.1.8, the records required in Condition 7.1.9, and the reporting requirements of Condition 7.1.10.
- d. Compliance with Condition 7.1.3(e) is addressed by the requirements of Condition 7.1.5, the testing requirements in Conditions 7.1.7 and 40 CFR 63.365, the monitoring requirements in Condition 7.1.8, the records required in Condition 7.1.9, and the reporting requirements of Condition 7.1.10.
- e. Compliance with Condition 7.1.6 is addressed by records required in Condition 7.1.9, the reporting requirements of Condition 7.1.10, and calculating VOM emissions from the affected chambers based on the following:

$$\text{VOM Emissions (lb)} = (\text{Sterilant Gas Usage, lb}) \times [1 - (\text{0.05 lb Loss to Aeration Chamber/lb Sterilant Gas Usage})] \times [1 - (\text{Overall Acid Water Scrubber or Acid Water Scrubber/Dry Bed Reactor Efficiency* (\%)/100})]$$

- \* As specified by manufacturer or vendor of the acid water scrubbers and dry bed reactor or testing pursuant to Condition 7.1.7.

- 7.2 Units SC-4 Willowbrook II Sterilization Chambers  
 Controls WBII-S/DBR Willowbrook II Scrubber (WBII-Scrubber) and Dry  
 Bed Reactor

7.2.1 Description

There are five chambers with a capacity of thirteen pallets at Willowbrook II. The emissions from the Willowbrook II sterilization chambers will be routed to the combined acid-water scrubber and dry bed system. The emissions streams are first routed to the acid scrubber and then to the dry bed reactant system. The acid scrubber system, consisting of a packed scrubber, converts the ethylene oxide to ethylene glycol by reacting ethylene oxide with sulfuric acid. The dry cell system contains a patented dry reactant that will absorb the remaining ethylene oxide in the scrubber exhaust.

7.2.2 List of Emission Units and Pollution Control Equipment

Emission Unit	Description	Emission Control Equipment
SC-4	Five (5) Ethylene Oxide/Propylene Oxide Sterilization Chambers (Thirteen (13) Pallet Capacity, Willowbrook II)	Willowbrook II Scrubber (WBII-Scrubber) and Dry Bed Reactor

7.2.3 Applicability Provisions and Applicable Regulations

- a. The Ethylene Oxide/Propylene Oxide Sterilization Chambers listed in Condition 7.2.2 are "affected chambers" for the purpose of these unit-specific conditions.
- b. The affected chambers are subject to the NESHAP for Ethylene Oxide Emissions Standards for Sterilization Facilities, 40 CFR 63 Subparts A and O because the source uses 907 kg (1 ton) or more of ethylene oxide within any consecutive 12-month period after December 6, 1996. Pursuant to 40 CFR 63.362, the owner or operator of the affected chambers shall comply with the following:
  - i. The emission limitations of Condition 7.2.3 (b) (ii) (see also 40 CFR 63.362(c)) apply during sterilization operation. The emissions limitations of Condition 7.1.3 do not apply during periods of malfunction [40 CFR 63.362(b)].
  - ii. Each owner or operator of a sterilization source using 1 ton shall reduce ethylene oxide emissions to the atmosphere by at least 99 percent from each sterilization chamber vent [40 CFR 63.362(c)].
- c. The affected chambers are subject to 35 IAC 218 Subpart G, Use of Organic Material, which provides that:

- i. No person shall cause or allow the discharge of more than 3.6 kg/hr (8 lb/hr) of organic material into the atmosphere from any emission unit, except as provided in Condition 7.2.3 (c) (ii) (see also 35 IAC 218.302) and the following exception: If no odor nuisance exists the limitation of 35 IAC 218 Subpart G shall apply only to photochemically reactive material [35 IAC 218.301].
- ii. Emissions of organic material in excess of those permitted by Condition 7.2.3(c) (i) (see also 35 IAC 218.301) are allowable if such emissions are controlled by any other air pollution control equipment approved by the Illinois EPA and approved by the USEPA as a SIP revision capable of reducing by 85 percent or more the uncontrolled organic material that would be otherwise emitted to the atmosphere [35 IAC 218.302(c)].

Note: Source does not have approved air pollution control equipment that meets this requirement.

- d. The affected chambers are subject to 35 IAC 218 Subpart TT, Other Emission Units, which provides that, pursuant to 35 IAC 218.986, every owner or operator of an emission unit subject to 35 IAC 218 Subpart TT shall comply with the requirements of Conditions 7.2.3 (d) (i), (ii), or (iii) (see also 35 IAC 218.986 (a), (b), (c), (d) or (e)):
  - i. Emission capture and control equipment which achieves an overall reduction in uncontrolled VOM emissions of at least 81 percent from each emission unit [35 IAC 218.986(a)]; or
  - ii. An equivalent alternative control plan which has been approved by the Illinois EPA and USEPA in a federally enforceable permit or as a SIP revision [35 IAC 218.986(c)]; or
  - iii. Pursuant to 35 IAC 218.986(e), any leaks from components subject to the control requirements of 35 IAC 218 Subpart TT shall be subject to the following control measures by March 15, 1995:

Repair any component from which a leak of VOL can be observed. The repair shall be completed as soon as practicable but no later than 15 days after the leak is found, unless the leaking component cannot be repaired until the process unit is shut down, in which case the leaking component must be repaired before the unit is restarted [35 IAC 218.986(e)(1)].

Note: For purposes of 35 IAC Part 218 Subpart TT, the sterilization chamber, which includes the

sterilization chamber vent and the chamber exhaust vent, is considered a single emission unit.

e. Malfunction and Breakdown Provisions

Subject to the following terms and conditions, the Permittee is authorized to continue operation of affected chambers in violation of the applicable standards in Condition 7.1.3(c) and (d) in the event of a malfunction or breakdown of the Willowbrook II Acid-Water Scrubber. This authorization is provided pursuant to 35 IAC 201.149, 201.161 and 201.262, as the Permittee has applied for such authorization in its application, generally explaining why such continued operation would be required to provide essential service or to prevent risk of injury to personnel or severe damage to equipment, and describing the measures that will be taken to minimize emissions from any malfunctions and breakdowns. This authorization supersedes the general prohibition in Condition 9.2.3 against continued operation in such circumstances.

- i. This authorization only allows such continued operation as necessary to provide essential service or prevent risk of injury to personnel or severe damage to equipment and does not extend to continued operation solely for the economic benefit of the Permittee.
- ii. Upon occurrence of excess emissions due to malfunction or breakdown, the Permittee shall immediately repair the damaged feature(s) of Willowbrook II Acid-Water Scrubber, remove the affected chambers from sterilization service, or undertake other action so that excess emissions cease.
- iii. The Permittee shall fulfill the applicable recordkeeping and reporting requirements of Conditions 7.2.9(e) and 7.2.10(c). For these purposes, time shall be measured from the start of a particular incident. The absence of excess emissions for a short period shall not be considered to end the incident if excess emissions resume. In such circumstances, the incident shall be considered to continue until corrective actions are taken so that excess emissions cease or the Permittee takes the affected chambers out of service.
- iv. Following notification to the Illinois EPA of a malfunction or breakdown with excess emissions, the Permittee shall comply with all reasonable directives of the Illinois EPA with respect to such incident, pursuant to 35 IAC 201.263.

- v. This authorization does not relieve the Permittee from the continuing obligation to minimize excess emissions during malfunction or breakdown. As provided by 35 IAC 201.265, an authorization in a permit for continued operation with excess emissions during malfunction and breakdown does not shield the Permittee from enforcement for any such violation and only constitutes a prima facie defense to such an enforcement action provided that the Permittee has fully complied with all terms and conditions connected with such authorization.

7.2.4 Non-Applicability of Regulations of Concern

None

7.2.5 Operational and Production Limits and Work Practices

- a. The Permittee shall follow good operating practices for the scrubber and dry bed reactor, including periodic inspections every month, routine maintenance and prompt repair of defects.
- b. Pursuant to Section 39.5(7)(a) of the Act, the Permittee shall exhaust no more than three (3) of the affected chambers to the acid water scrubbers and dry bed reactor during the first evacuation. This is the maximum number of chambers evacuated at which compliance with Condition 7.2.3(b)(ii) (see also 40 CFR 63.362(c)) was demonstrated during the most recent compliance test.

7.2.6 Emission Limitations

In addition to Condition 5.3.2 and the source wide emission limitations in Condition 5.5, the affected chambers are subject to the following:

- a. Emissions and operation of the five (5) sterilization chambers shall not exceed the following limits:

<u>Material</u>	Material Usage		VOM Emissions	
	<u>(Ton/mo)</u>	<u>(Ton/yr)</u>	<u>(Ton/mo)</u>	<u>(Ton/yr)</u>
Ethylene Oxide	25.00	150.00	0.25	2.50
Propylene Oxide	0.17	1.00	0.01	<u>0.01</u>
Totals				2.51

<u>Material</u>	HAP Emissions (e.g., ethylene oxide, propylene oxide)	
	<u>(Ton/mo)</u>	<u>(Ton/yr)</u>
Ethylene Oxide	0.25	2.50
Propylene Oxide	0.01	<u>0.01</u>
Totals		2.51

These limits are based on representations of the maximum actual emissions based on the maximum sterilant gas usage and a minimum overall control efficiency of 99% for the acid scrubber and dry bed system.

- b. The above limitations were established in Permit 99040046, pursuant to 35 IAC Part 203. These limits ensure that the construction and/or modification addressed in the aforementioned permit does not constitute a major modification pursuant to Title I of the CAA, specifically 35 IAC Part 203 [T1].
- c. The emissions of Hazardous Air Pollutants (HAP) as listed in Section 112(b) of the CAA from the five (5) sterilization chambers and the two (2) aeration rooms shall be less than 10 tons/year of any single HAP and 25 tons/year of any combination of such HAPs. As a result of this condition, this permit is issued based on the emissions from the five (5) sterilization chambers and the two (2) aeration rooms not triggering the requirements of Section 112(g) of the CAA.
- d. Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total).

#### 7.2.7 Testing Requirements

- a. Pursuant to 40 CFR 63.363(b), the following procedures shall be used to determine compliance with the emission limits under Condition 7.2.3(b)(ii) (see also 40 CFR 63.362(c)), the sterilization chamber vent standard:
  - i. Pursuant to 40 CFR 63.363(b)(1)(i), during the performance test required in Condition 7.2.7(a) (see also 40 CFR 63.363(a)), the owner or operator shall determine the efficiency of control devices used to comply with Condition 7.2.3(b)(ii) (see also 40 CFR 63.362(c)) using the test methods and procedures in 40 CFR 63.365(b)(1). The owner or operator shall also, for facilities with acid-water scrubbers, establish as a site-specific operating parameter [established once every permit term] during the test methods and procedures in 40 CFR 63.365(b)(1) either:
    - A. The maximum ethylene glycol concentration using the procedures described 40 CFR 63.365(e)(1) [40 CFR 63.363(b)(1)(i)(A)]; or
    - B. The maximum liquor tank level using the procedures described in 40 CFR 63.365(e)(2) [40 CFR 63.363(b)(1)(i)(B)].

- ii. Following the date on which the initial performance test is completed, operation of the facility (with acid-water scrubbers) with an ethylene glycol concentration in the scrubber liquor in excess of the maximum ethylene glycol concentration or the liquor tank level in excess of the maximum liquor tank level shall constitute a violation of the sterilization chamber vent standard [40 CFR 63.363(b)(2)(i)].
- c. When in the opinion of the Illinois EPA it is necessary to conduct testing to demonstrate compliance with Condition 7.2.3(d) (see also 35 IAC 218.986), the owner or operator of a VOM emission unit subject to the requirements of 35 IAC 218 Subpart TT shall, at his own expense, conduct such tests in accordance with the applicable test methods and procedures specified in 35 IAC 218.105 [35 IAC 218.968(a)].
- d. Pursuant to 35 IAC 218.105(d)(1) and Section 39.5(7)(b) of the Act, the control device efficiency shall be determined by simultaneously measuring the inlet and outlet gas phase VOM concentrations and gas volumetric flow rates in accordance with the gas phase test methods specified below (see also 35 IAC 218.105(f)):
  - i. Volatile Organic Material Gas Phase Source Test Methods: The methods in 40 CFR Part 60, Appendix A, delineated below shall be used to determine control device efficiencies [35 IAC 218.105(f)].
    - A. CFR Part 60, Appendix A, Method 18, 25 or 25A, as appropriate to the conditions at the site, shall be used to determine VOM concentration. Method selection shall be based on consideration of the diversity of organic species present and their total concentration and on consideration of the potential presence of interfering gases. The test shall consist of three separate runs, each lasting a minimum of 60 min, unless the Illinois EPA and the USEPA determine that process variables dictate shorter sampling times [35 IAC 218.105(f)(1)].
    - B. 40 CFR Part 60, Appendix A, Method 1 or 1A shall be used for sample and velocity traverses [35 IAC 218.105(f)(2)].
    - C. 40 CFR Part 60, Appendix A, Method 2, 2A, 2C or 2D shall be used for velocity and volumetric flow rates [35 IAC 218.105(f)(3)].
    - D. 40 CFR Part 60, Appendix A, Method 3 shall be used for gas analysis [35 IAC 218.105(f)(4)].

- E. 40 CFR Part 60, Appendix A, Method 4 shall be used for stack gas moisture [35 IAC 218.105(f) (5)].
  - F. 40 CFR Part 60, Appendix A, Methods 2, 2A, 2C, 2D, 3 and 4 shall be performed, as applicable, at least twice during each test run [35 IAC 218.105(f) (6)].
  - G. Use of an adaptation to any of the test methods specified in Conditions 7.2.7 (c) (i) (A), (B), (C), (D), (E) and (F) (see also 35 IAC 218.105(f) (1), (2), (3), (4), (5) and (6)) may not be used unless approved by the Illinois EPA and the USEPA on a case by case basis. An owner or operator must submit sufficient documentation for the Illinois EPA and the USEPA to find that the test methods specified in Conditions 7.2.7(c) (i) (A), (B), (C), (D), (E) and (F) (see also 35 IAC 218.105(f) (1), (2), (3), (4), (5) and (6)) will yield inaccurate results and that the proposed adaptation is appropriate [35 IAC 218.105(f) (7)].
- ii. Notwithstanding other requirements of 35 IAC Part 218, upon request of the Illinois EPA where it is necessary to demonstrate compliance, an owner or operator of an emission unit which is subject to 35 IAC Part 218 shall, at his own expense, conduct tests in accordance with the applicable test methods and procedures specific in 35 IAC Part 218. Nothing in this Condition (see also 35 IAC 218.105) shall limit the authority of the USEPA pursuant to the CAA, as amended, to require testing [35 IAC 218.105(i)].

#### 7.2.8 Monitoring Requirements

- a.
  - i. The owner or operator of a source subject to emissions standards in Condition 7.2.3(b) (see also 40 CFR 63.362) shall comply with the monitoring requirements in 40 CFR 63.8, according to the applicability in Table 1 of 40 CFR 63.360, and in this Condition (see also 40 CFR 63.364) [40 CFR 63.364(a) (1)].
  - ii. Each owner or operator of an ethylene oxide sterilization facility subject to these emissions standards shall monitor the parameters specified in this Condition (see also 40 CFR 63.364). All monitoring equipment shall be installed such that representative measurements of emissions or process parameters from the source are obtained. For

monitoring equipment purchased from a vendor, verification of the operational status of the monitoring equipment shall include completion of the manufacturer's written specifications or recommendations for installation, operation, and calibration of the system [40 CFR 63.364(a)(2)].

- b. Pursuant to 40 CFR 63.364(b), for sterilization facilities complying with Condition 7.2.7(b) (see also 40 CFR 63.363(b)) through the use of an acid-water scrubber, the owner or operator shall either:
  - i. Sample the scrubber liquor and analyze and record once per week the ethylene glycol concentration of the scrubber liquor using the test methods and procedures in 40 CFR 63.365(e)(1). Monitoring is required during a week only if the scrubber unit has been operated [40 CFR 63.364 (b)(1)]; or
  - ii. Measure and record once per week the level of the scrubber liquor in the recirculation tank. The owner or operator shall install, maintain, and use a liquid level indicator to measure the scrubber liquor tank level (i.e., a marker on the tank wall, a dipstick, a magnetic indicator, etc.) [40 CFR 63.364(b)(2)].
- c. Pursuant to 35 IAC 218.105(g), leak detection methods for volatile organic material owners or operators required by 35 IAC Part 218 to carry out a leak detection monitoring program shall comply with the following requirements:
  - i. Leak Detection Monitoring:
    - A. Monitoring shall comply with 40 CFR 60, Appendix A, Method 21 [35 IAC 218.105 (g)(1)(A)];
    - B. The detection instrument shall meet the performance criteria of Method 21 [35 IAC 218.105(g)(1)(B)];
    - C. The instrument shall be calibrated before use on each day of its use by the methods specified in Method 21 [35 IAC 218.105 (g)(1)(C)];
    - D. Calibration gases shall be:
      - 1. Zero air (less than 10 ppm of hydrocarbon in air) [35 IAC 218.105 (g)(1)(D)(i)]; and
      - 2. A mixture of methane or n-hexane and air at a concentration of approximately, but

no less than, 10,000 ppm methane or n-hexane [35 IAC 218.105(g) (1) (D) (ii)].

- E. The instrument probe shall be traversed around all potential leak interfaces as close to the interface as possible as described in Method 21 [35 IAC 218.105 (g) (1) (E)].
- ii. Pursuant to 35 IAC 218.105(g) (2), when equipment is tested for compliance with no detectable emissions as required, the test shall comply with the following requirements:
  - A. The requirements of Conditions 7.2.8 (c) (i) (A) through (e) (i) (E) (see also 35 IAC 218.105(g) (1) (A) through (g) (1) (E)) above shall apply [35 IAC 218.105 (g) (2) (A)]; and
  - B. The background level shall be determined as set forth in Method 21 [35 IAC 218.105 (g) (2) (B)].
- iii. Pursuant to 35 IAC 218.105(g) (3), leak detection tests shall be performed consistent with:
  - A. "APTI Course SI 417 controlling Volatile Organic Compound Emissions from Leaking Process Equipment", EPA-450/2-82-015 [35 IAC 218.105(g) (3) (A)];
  - B. "Portable Instrument User's Manual for Monitoring VOC Sources", EPA-340/1-86-015 [35 IAC 218.105(g) (3) (B)];
  - C. "Protocols for Generating Unit-Specific Emission Estimates for Equipment Leaks of VOC and VHAP", EPA-450/3-88-010 [35 IAC 218.105(g) (3) (C)]; and/or
  - D. "Petroleum Refinery Enforcement Manual", EPA-340/1-80-008 [35 IAC 218.105 (g) (3) (D)].

#### 7.2.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for each affected chamber to demonstrate compliance with Conditions 5.5.1, 7.2.3, and 7.2.6, pursuant to Section 39.5(7) (b) of the Act:

- a. The owner or operator of a source subject to the emissions standards in Condition 7.2.3(b) (see also 40 CFR 63.362) shall comply with the recordkeeping requirements in 40 CFR 63.10(b) and (c), according to the applicability in Table 1

of 40 CFR 63.360, and in this Condition (see also 40 CFR 63.367) [40 CFR 63.367(a)].

- b. Records of the testing of the efficiency of each capture system and control device pursuant to Condition 7.2.7, which include the following [Section 39.5(7)(e) of the Act]:
  - i. The date, place and time of sampling or measurements;
  - ii. The date(s) analyses were performed;
  - iii. The company or entity that performed the analyses;
  - iv. The analytical techniques or methods used;
  - v. The results of such analyses; and
  - vi. The operating conditions as existing at the time of sampling or measurement.
- c. Pursuant to 35 IAC 218.986(e)(2), any leaks from components subject to the control requirements of 35 IAC 218 Subpart TT shall be subject to the following control measures by March 15, 1995:

For any leak which cannot be readily repaired within one hour after detection, the following records, as set forth in this subsection, shall be kept. These records shall be maintained by the owner or operator for a minimum of two years after the date on which they are made. Copies of the records shall be made available to the Illinois EPA or the USEPA upon verbal or written request.

- i. The name and identification of the leaking component [35 IAC 218.986(e)(2)(A)];
  - ii. The date and time the leak is detected [35 IAC 218.986(e)(2)(B)];
  - iii. The action taken to repair the leak [35 IAC 218.986(e)(2)(C)]; and
  - iv. The date and time the leak is repaired [35 IAC 218.986(e)(2)(D)].
- d. Pursuant to 35 IAC 218.991(a)(2), any owner or operator of a VOM emission unit which is subject to the requirements of 35 IAC 218 Subpart, TT and complying by the use of emission capture and control equipment shall collect and record all of the following information each day and maintain the information at the source for a period of three years:

- i. Control device monitoring data [35 IAC 218.991 (a) (2) (A)];
  - ii. A log of operating time for the capture system, control device, monitoring equipment and the associated emission source [35 IAC 218.991 (a) (2) (B)]; and
  - iii. A maintenance log for the capture system, control device and monitoring equipment detailing all routine and non-routine maintenance performed including dates and duration of any outages [35 IAC 218.991 (a) (2) (C)].
- e. Records for Malfunctions and Breakdowns of Willowbrook II Acid-Water Scrubber
- The Permittee shall maintain records, pursuant to 35 IAC 201.263, of continued operation of an affected chamber subject to 35 IAC Part 218, Subparts G and TT during malfunctions and breakdown of the control features of the Willowbrook II Acid-Water Scrubber, which as a minimum, shall include:
- i. Date and duration of malfunction or breakdown;
  - ii. A detailed explanation of the malfunction or breakdown;
  - iii. An explanation why the damaged feature(s) could not be immediately repaired or the affected chambers could not be removed from service without risk of injury to personnel or severe damage to equipment;
- f. Records addressing use of good operating practices for the acid water scrubber and dry bed reactor:
- i. Records for periodic inspection of the acid water scrubber and dry bed reactor with date, individual performing the inspection, and nature of inspection; and
  - ii. Records for prompt repair of defects, with identification and description of defect, effect on emissions, date identified, date repaired, and nature of repair.
  - iii. Records listing the good operating practices and inspection procedures that the Permittee follows
- g. The type and amount of sterilant gas used for each affected chamber, ton/mo and ton/yr; and

- h. The monthly and aggregate annual VOM and HAP emissions from the affected chambers based on the sterilant gas usage and air pollution control equipment efficiencies, with supporting calculations.

#### 7.2.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section of deviations of an affected chamber with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

- a. *Content and submittal dates for excess emissions and monitoring system performance reports.* All excess emissions and monitoring system performance reports and all summary reports, if required per 40 CFR 63.10 (e) (3) (vii) and (viii), shall be delivered or postmarked within 30 days following the end of each calendar half or quarter as appropriate (see 40 CFR 63.10(e) (3) (i) through (iv) for applicability). Written reports of excess emissions or exceedances of process or control system parameters shall include all information required in 40 CFR 63.10(c) (5) through (13) as applicable in Table 1 of 40 CFR 63.360 and information from any calibration tests in which the monitoring equipment is not in compliance with PS-9 or the method used for temperature calibration. The written report shall also include the name, title, and signature of the responsible official who is certifying the accuracy of the report. When no excess emissions or exceedances have occurred or monitoring equipment has not been inoperative, repaired, or adjusted, such information shall be stated in the report [40 CFR 63.366(a) (3)].
- b. Any owner or operator of a VOM emission unit which is subject to the requirements of 35 IAC 218 Subpart TT and complying by the use of emission capture and control equipment shall notify the Illinois EPA of any violation of the requirements of 35 IAC 218 Subpart TT by sending a copy of any record showing a violation to the Illinois EPA within 30 days following the occurrence of the violation [35 IAC 218.991(a) (3) (A)];
- c. Reporting of Malfunctions and Breakdowns for Willowbrook II Acid-Water Scrubber

The Permittee shall provide the following notification and reports to the Illinois EPA, Compliance Section and Regional Field Office, pursuant to 35 IAC 201.263, concerning continued operation of an affected chamber subject to Conditions 7.2.3(c) and (d) during malfunction or breakdown of the control features of the Willowbrook II Acid-Water Scrubber.

- i. The Permittee shall notify the Illinois EPA's regional office by telephone immediately, but no later than three (3) days, upon the occurrence of noncompliance due to malfunction, or breakdown.
  - ii. Upon achievement of compliance, the Permittee shall give a written follow-up notice to the Illinois EPA, Compliance Section and Regional Field Office, within 15 days providing a detailed explanation of the event, an explanation why continued operation of the affected chambers was necessary, the length of time during which operation continued under such conditions, the measures taken by the Permittee to minimize and correct deficiencies with chronology, and when the repairs were completed or when the affected chambers were taken out of service.
  - iii. If compliance is not achieved within 5 working days of the occurrence, the Permittee shall submit interim status reports to the Illinois EPA, Compliance Section and Regional Field Office, within 5 days of the occurrence and every 14 days thereafter, until compliance is achieved. These interim reports shall provide a brief explanation of the nature of the malfunction or breakdown, corrective actions accomplished to date, actions anticipated to occur with schedule, and the expected date on which repairs will be complete or the affected chambers will be taken out of service.
- d. Emissions of VOM in excess of limits in Condition 7.2.6 based on the current month's records plus the preceding 11 months within 30 days of such an occurrence.

#### 7.2.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

#### 7.2.12 Compliance Procedures

- a. Compliance with Condition 7.2.3(b) is addressed by the requirements of Condition 7.2.5, the testing requirements in Conditions 7.2.7 and 40 CFR 63.365, the monitoring requirements in Condition 7.2.8, the records required in Condition 7.2.9, and the reporting requirements of Condition 7.2.10.
- b. Compliance with Condition 7.2.3(c) is addressed by the requirements of Condition 7.2.5, the testing requirements in Conditions 7.2.7 and 40 CFR 63.365, the monitoring requirements in Condition 7.2.8, the records required in Condition 7.2.9, and the reporting requirements of Condition 7.2.10.

- c. Compliance with Condition 7.2.3(d) is addressed by the requirements of Condition 7.2.5, the testing requirements in Conditions 7.2.7 and 40 CFR 63.365, the monitoring requirements in Condition 7.2.8, the records required in Condition 7.2.9, and the reporting requirements of Condition 7.2.10.
- d. Compliance with Condition 7.2.3(e) is addressed by the requirements of Condition 7.2.5, the testing requirements in Conditions 7.2.7 and 40 CFR 63.365, the monitoring requirements in Condition 7.2.8, the records required in Condition 7.2.9, and the reporting requirements of Condition 7.2.10.
- e. Compliance with Condition 7.2.6 is addressed by records required in Condition 7.2.9, the reporting requirements of Condition 7.2.10, and calculating VOM emissions from the affected chambers based on the following:

$$\text{VOM Emissions (lb)} = (\text{Sterilant Gas Usage, lb}) \times [1 - (\text{0.05 lb Loss to Aeration Chamber/lb Sterilant Gas Usage})] \times [1 - (\text{Overall Acid Water Scrubber or Acid Water Scrubber/Dry Bed Reactor Efficiency* (\%)/100})]$$

- \* As specified by manufacturer or vendor of the acid water scrubbers and dry bed reactor or testing pursuant to Condition 7.2.7.

- 7.3 Units SV-1, SV-2, SV-3, SV-5 Willowbrook I Sterilization Chamber Back Vents  
 Controls AWS#2/DBR Acid Water Scrubber (Scrubber #2) with Dry Bed Reactor

7.3.1 Description

At the conclusion of the sterilizing cycle, the sterilizing chamber is returned to ambient temperature and back up to atmospheric pressure. The chamber door is then opened, enabling the chamber exhausts to automatically activate. This chamber air exhaust or "back vent" is an exhaust system that forcefully ventilates the chamber with fresh air. Indoor air is ventilated into the front open door through the chamber and to the back exhaust, and some chambers may have a smaller front "hood" vent as well. This chamber exhaust is responsible for removing sterilant gas from the void space in the sterilizer chamber. This chamber exhaust assists in providing fresh indoor air through the front door into the chamber. This chamber air exhaust system operates not only during unloading sterilized product, but also during re-loading with new, nonsterile product without any sterilant gas. The chamber exhaust consists of a butterfly valve in the ductwork that opens and a blower that automatically switches on and pulls fresh air through the chamber. This can be triggered only by opening the chamber door (front). A chamber face velocity on the order of 100 feet per minute air flow rate can be maintained, producing chamber exhaust flow rates of 2,000 to 3,500 cubic feet per minute.

7.3.2 List of Emission Units and Pollution Control Equipment

Emission Unit	Description	Emission Control Equipment
SV-1	Six (6) Ethylene Oxide/Propylene Oxide Sterilization Chamber Back Vents (Six (6) Pallet Capacity Sterilization Chambers, Willowbrook I)	None
SV-2	Six (6) Ethylene Oxide/Propylene Oxide Sterilization Chamber Back Vents (Thirteen (13) Pallet Capacity Sterilization Chambers, Willowbrook I)	None
SV-3	One (1) Ethylene Oxide/Propylene Oxide Sterilization Chamber Back Vent (Three (3) Pallet Capacity Sterilization Chamber, Willowbrook I)	None
SV-5	One (1) Ethylene Oxide/Propylene Oxide Sterilization Chamber Back Vent (One (1) Pallet Capacity Sterilization Chamber, Willowbrook I)	None

7.3.3 Applicability Provisions and Applicable Regulations

- a. The Ethylene Oxide/Propylene Oxide Sterilization Chamber Back Vents listed in Condition 7.3.2 are "affected chamber

exhaust vents" for the purpose of these unit-specific conditions.

- b. The affected chamber exhaust vents are subject to 35 IAC 218 Subpart G, Use of Organic Material, which provides that:
  - i. No person shall cause or allow the discharge of more than 3.6 kg/hr (8 lb/hr) of organic material into the atmosphere from any emission unit, except as provided in Condition 7.3.3 (c) (ii) (see also 35 IAC 218.302) and the following exception: If no odor nuisance exists the limitation of 35 IAC 218 Subpart G shall apply only to photochemically reactive material [35 IAC 218.301].
  - ii. Emissions of organic material in excess of those permitted by Condition 7.3.3(c) (i) (see also 35 IAC 218.301) are allowable if such emissions are controlled by any other air pollution control equipment approved by the Illinois EPA and approved by the USEPA as a SIP revision capable of reducing by 85 percent or more the uncontrolled organic material that would be otherwise emitted to the atmosphere [35 IAC 218.302(c)].
- c. The affected chamber exhaust vents are subject to 35 IAC 218 Subpart TT, Other Emission Units, which provides that, pursuant to 35 IAC 218.986, every owner or operator of an emission unit subject to 35 IAC 218 Subpart TT shall comply with the requirements of Conditions 7.3.3(d) (i) or (ii) (see also 35 IAC 218.986(a), (b), (c), (d) or (e)):
  - i. Emission capture and control equipment which achieves an overall reduction in uncontrolled VOM emissions of at least 81 percent from each emission unit [35 IAC 218.986(a)]; or
  - ii. An equivalent alternative control plan which has been approved by the Illinois EPA and USEPA in a federally enforceable permit or as a SIP revision [35 IAC 218.986(c)].

Note: For purposes of 35 IAC Part 218 Subpart TT, the sterilization chamber, which includes the sterilization chamber vent and the chamber exhaust vent, is considered a single emission unit.

#### 7.3.4 Non-Applicability of Regulations of Concern

The affected chamber exhaust vents are not subject to the NESHAP for Ethylene Oxide Emissions Standards for Sterilization Facilities, 40 CFR 63 Subparts A and O because the rule was revised in 2002 and control is no longer required on back vent

emissions. This is in order to prevent explosions at affected facilities.

7.3.5 Operational and Production Limits and Work Practices

The Permittee shall follow good operating practices for the affected chamber exhaust vents, including monthly inspections, routine maintenance and prompt repair of defects.

7.3.6 Emission Limitations

There are no specific emission limitations for these units, however, there are source wide emission limitations in Condition 5.5 that include these units.

7.3.7 Testing Requirements

- a. When in the opinion of the Illinois EPA it is necessary to conduct testing to demonstrate compliance with Condition 7.3.3(b) (see also 35 IAC 218.986), the owner or operator of a VOM emission unit subject to the requirements of 35 IAC 218 Subpart TT shall, at his own expense, conduct such tests in accordance with the applicable test methods and procedures specified in 35 IAC 218.105 [35 IAC 218.968(a)].
- b. Notwithstanding other requirements of 35 IAC Part 218, upon request of the Illinois EPA where it is necessary to demonstrate compliance, an owner or operator of an emission unit which is subject to 35 IAC Part 218 shall, at his own expense, conduct tests in accordance with the applicable test methods and procedures specific in 35 IAC Part 218. Nothing in this Condition (see also 35 IAC 218.105) shall limit the authority of the USEPA pursuant to the CAA, as amended, to require testing [35 IAC 218.105(i)].

7.3.8 Monitoring Requirements

Monitoring requirements are not set for the affected chamber back vents.

7.3.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for each affected chamber exhaust vent to demonstrate compliance with Conditions 5.5.1 and 7.3.3, pursuant to Section 39.5(7)(b) of the Act:

- a. The owner or operator of a source subject to the emissions standards in Condition 7.3.3(b)(ii) (see also 40 CFR 63.362) shall comply with the recordkeeping requirements in 40 CFR 63.10(b) and (c), according to the applicability in

Table 1 of 40 CFR 63.360, and in this Condition (see also 40 CFR 63.367) [40 CFR 63.367(a)].

#### 7.3.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section of deviations of an affected chamber exhaust vent with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

- a. *Content and submittal dates for excess emissions and monitoring system performance reports.* All excess emissions and monitoring system performance reports and all summary reports, if required per 40 CFR 63.10 (e) (3) (vii) and (viii), shall be delivered or postmarked within 30 days following the end of each calendar half or quarter as appropriate (see 40 CFR 63.10(e) (3) (i) through (iv) for applicability). Written reports of excess emissions or exceedances of process or control system parameters shall include all information required in 40 CFR 63.10(c) (5) through (13) as applicable in Table 1 of 40 CFR 63.360 and information from any calibration tests in which the monitoring equipment is not in compliance with PS-9 or the method used for temperature calibration. The written report shall also include the name, title, and signature of the responsible official who is certifying the accuracy of the report. When no excess emissions or exceedances have occurred or monitoring equipment has not been inoperative, repaired, or adjusted, such information shall be stated in the report [40 CFR 63.366(a) (3)].
- b. Any owner or operator of a VOM emission unit which is subject to the requirements of 35 IAC 218 Subpart TT and complying by the use of emission capture and control equipment shall notify the Illinois EPA of any violation of the requirements of 35 IAC 218 Subpart TT by sending a copy of any record showing a violation to the Illinois EPA within 30 days following the occurrence of the violation [35 IAC 218.991(a) (3) (A)];

#### 7.3.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

#### 7.3.12 Compliance Procedures

- a. Compliance with Condition 7.3.3(b) is addressed by the requirements of Condition 7.3.5, the testing requirements in Conditions 7.3.7, the records required in Condition 7.3.9, and the reporting requirements of Condition 7.3.10.

- b. Compliance with Condition 7.3.3(c) is addressed by the requirements of Condition 7.3.5, the testing requirements in Conditions 7.3.7, the records required in Condition 7.3.9, and the reporting requirements of Condition 7.3.10.
- c. Compliance with Condition 7.3.6 is addressed by the records required in Condition 7.3.9, and the reporting requirements of Condition 7.3.10.

- 7.4 Units SV-4 Willowbrook II Sterilization Chamber Back Vents  
 Controls WBII-S/DBR Willowbrook II Scrubber (WBII-Scrubber) and Dry  
 Bed Reactor

7.4.1 Description

At the conclusion of the sterilizing cycle, the sterilizing chamber is returned to ambient temperature and back up to atmospheric pressure. The chamber door is then opened, enabling the chamber exhausts to automatically activate. This chamber air exhaust or "back vent" is an exhaust system that forcefully ventilates the chamber with fresh air. Indoor air is ventilated into the front open door through the chamber and to the back exhaust, and some chambers may have a smaller front "hood" vent as well. This chamber exhaust is responsible for removing sterilant gas from the void space in the sterilizer chamber. This chamber exhaust assists in providing fresh indoor air through the front door into the chamber. This chamber air exhaust system operates not only during unloading sterilized product, but also during re-loading with new, nonsterile product without any sterilant gas. The chamber exhaust consists of a butterfly valve in the ductwork that opens and a blower that automatically switches on and pulls fresh air through the chamber. This can be triggered only by opening the chamber door (front). A chamber face velocity on the order of 100 feet per minute air flow rate can be maintained, producing chamber exhaust flow rates of 2,000 to 3,500 cubic feet per minute.

7.4.2 List of Emission Units and Pollution Control Equipment

Emission Unit	Description	Emission Control Equipment
SV-4	Five (5) Ethylene Oxide/Propylene Oxide Sterilization Chamber Back Vents (Thirteen (13) Pallet Capacity Sterilization Chambers, Willowbrook II)	None

7.4.3 Applicability Provisions and Applicable Regulations

- a. The Ethylene Oxide/Propylene Oxide Sterilization Chamber Back Vents listed in Condition 7.4.2 are "affected chamber exhaust vents" for the purpose of these unit-specific conditions.
- b. No person shall cause or allow the discharge of more than 3.6 kg/hr (8 lb/hr) of organic material into the atmosphere from any emission unit, except as provided in 35 IAC 218.302, 218.303, 218.304 and the following exception: If no odor nuisance exists the limitation of 35 IAC 218 Subpart G shall apply only to photochemically reactive material [35 IAC 218.301].
- c. The affected chamber exhaust vents are subject to 35 IAC 218 Subpart TT, Other Emission Units, which provides that,

pursuant to 35 IAC 218.986, every owner or operator of an emission unit subject to 35 IAC 218 Subpart TT shall comply with the requirements of Conditions 7.4.3(d)(i) or (ii) (see also 35 IAC 218.986(a), (b), (c), (d) or (e)):

- i. Emission capture and control equipment which achieves an overall reduction in uncontrolled VOM emissions of at least 81 percent from each emission unit [35 IAC 218.986(a)]; or
- ii. An equivalent alternative control plan which has been approved by the Illinois EPA and USEPA in a federally enforceable permit or as a SIP revision [35 IAC 218.986(c)].

Note: For purposes of 35 IAC Part 218 Subpart TT, the sterilization chamber, which includes the sterilization chamber vent and the chamber exhaust vent, is considered a single emission unit.

#### 7.4.4 Non-Applicability of Regulations of Concern

The affected chamber exhaust vents are not subject to the NESHAP for Ethylene Oxide Emissions Standards for Sterilization Facilities, 40 CFR 63 Subparts A and O because the rule was revised in 2002 and control is no longer required on back vent emissions. This is in order to prevent explosions at affected facilities.

#### 7.4.5 Operational and Production Limits and Work Practices

The Permittee shall follow good operating practices for the affected chamber exhaust vents, including monthly inspections, routine maintenance and prompt repair of defects.

#### 7.4.6 Emission Limitations

There are no specific emission limitations for these units, however, there are source wide emission limitations in Condition 5.5 that include these units.

#### 7.4.7 Testing Requirements

- a. When in the opinion of the Illinois EPA it is necessary to conduct testing to demonstrate compliance with Condition 7.4.3(b) (see also 35 IAC 218.986), the owner or operator of a VOM emission unit subject to the requirements of 35 IAC 218 Subpart TT shall, at his own expense, conduct such tests in accordance with the applicable test methods and procedures specified in 35 IAC 218.105 [35 IAC 218.968(a)].
- b. Notwithstanding other requirements of 35 IAC Part 218, upon request of the Illinois EPA where it is necessary to

demonstrate compliance, an owner or operator of an emission unit which is subject to 35 IAC Part 218 shall, at his own expense, conduct tests in accordance with the applicable test methods and procedures specific in 35 IAC Part 218. Nothing in this Condition (see also 35 IAC 218.105) shall limit the authority of the USEPA pursuant to the CAA, as amended, to require testing [35 IAC 218.105(i)].

#### 7.4.8 Monitoring Requirements

Monitoring requirements are not set for the affected chamber back vents.

#### 7.4.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for each affected chamber exhaust vent to demonstrate compliance with Conditions 5.5.1 and 7.4.3, pursuant to Section 39.5(7)(b) of the Act:

- a. The owner or operator of a source subject to the emissions standards in Condition 7.4.3(b)(ii) (see also 40 CFR 63.362) shall comply with the recordkeeping requirements in 40 CFR 63.10(b) and (c), according to the applicability in Table 1 of 40 CFR 63.360, and in this Condition (see also 40 CFR 63.367) [40 CFR 63.367(a)].

#### 7.4.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section of deviations of an affected chamber exhaust vent with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

- a. *Content and submittal dates for excess emissions and monitoring system performance reports.* All excess emissions and monitoring system performance reports and all summary reports, if required per 40 CFR 63.10(e)(3)(vii) and (viii), shall be delivered or postmarked within 30 days following the end of each calendar half or quarter as appropriate (see 40 CFR 63.10(e)(3)(i) through (iv) for applicability). Written reports of excess emissions or exceedances of process or control system parameters shall include all information required in 40 CFR 63.10(c)(5) through (13) as applicable in Table 1 of 40 CFR 63.360 and information from any calibration tests in which the monitoring equipment is not in compliance with PS-9 or the method used for temperature calibration. The written report shall also include the name, title, and signature of the responsible official who is certifying the accuracy of the report. When no excess emissions or exceedances have

occurred or monitoring equipment has not been inoperative, repaired, or adjusted, such information shall be stated in the report [40 CFR 63.366(a)(3)].

- b. Any owner or operator of a VOM emission unit which is subject to the requirements of 35 IAC 218 Subpart TT and complying by the use of emission capture and control equipment shall notify the Illinois EPA of any violation of the requirements of 35 IAC 218 Subpart TT by sending a copy of any record showing a violation to the Illinois EPA within 30 days following the occurrence of the violation [35 IAC 218.991(a)(3)(A)];

#### 7.4.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

#### 7.4.12 Compliance Procedures

- a. Compliance with Condition 7.3.3(b) is addressed by the requirements of Condition 7.3.5, the testing requirements in Conditions 7.3.7, the records required in Condition 7.3.9, and the reporting requirements of Condition 7.3.10.
- b. Compliance with Condition 7.3.3(c) is addressed by the requirements of Condition 7.3.5, the testing requirements in Conditions 7.3.7, the records required in Condition 7.3.9, and the reporting requirements of Condition 7.3.10.
- c. Compliance with Condition 7.3.6 is addressed by the records required in Condition 7.3.9, and the reporting requirements of Condition 7.3.10.

7.5 Units AR Willowbrook I Aeration Rooms  
 Controls AWS#2/DBR Acid Water Scrubber (Scrubber #2) with Dry Bed Reactor

7.5.1 Description

After the medical products are loaded onto forklifts, they are transferred to aeration rooms for all cycles other than CycleOne cycles. The sterile products are placed in these heated rooms to allow diffusion of any residual sterilant gas from the products prior to quarantine or shipping. This source's aeration rooms are designed to exhaust 10% of the air volume that is recirculated within the room. The sterile products are maintained in the aeration rooms for at least 18 to 24 hours. Following aeration, the product is moved to a post-production or post-aeration storage area awaiting shipment out by the customer.

7.5.2 List of Emission Units and Pollution Control Equipment

Emission Unit	Description	Emission Control Equipment
AR	Three (3) Aeration Rooms (Willowbrook I)	Acid Water Scrubber (Scrubber #2) with Dry Bed Reactor

7.5.3 Applicability Provisions and Applicable Regulations

- a. The Aeration Rooms listed in Condition 7.5.2 are "affected aeration rooms" for the purpose of these unit-specific conditions.
- b. The affected aeration rooms are subject to the NESHAP for Ethylene Oxide Emissions Standards for Sterilization Facilities, 40 CFR 63 Subparts A and O because the source uses 907 kg (1 ton) or more of ethylene oxide within any consecutive 12-month period after December 6, 1996.
  - i. Pursuant to 40 CFR 63.360(g), the owner or operator shall comply with the provisions of 40 CFR 63 Subpart O as follows:
 

All aeration room vents subject to the emissions standards in Condition 7.5.3(b)(ii) (see also 40 CFR 63.362) with an initial startup date before December 6, 2000, no later than December 6, 2000 [40 CFR 63.360(g)(4)].
  - ii. Pursuant to 40 CFR 63.362, the owner or operator of the affected aeration rooms shall comply with the following:
    - A. The emission limitations of Condition 7.5.3(b)(ii) (see also 40 CFR 63.362(e)) apply

during sterilization operation. The emissions limitations do not apply during periods of malfunction [40 CFR 63.362(b)].

- B. Each owner or operator of a sterilization source using 10 tons shall reduce ethylene oxide emissions to the atmosphere from each aeration room vent to a maximum concentration of 1 ppmv or by at least 99 percent, whichever is less stringent, from each aeration room vent [40 CFR 63.362(d)].
- c. The affected aeration rooms are subject to 35 IAC 218 Subpart G, Use of Organic Material, which provides that:
  - i. No person shall cause or allow the discharge of more than 3.6 kg/hr (8 lb/hr) of organic material into the atmosphere from any emission unit, except as provided in Condition 7.5.3 (c) (ii) (see also 35 IAC 218.302) and the following exception: If no odor nuisance exists the limitation of 35 IAC 218 Subpart G shall apply only to photochemically reactive material [35 IAC 218.301].
  - ii. Emissions of organic material in excess of those permitted by Condition 7.5.3(c) (i) (see also 35 IAC 218.301) are allowable if such emissions are controlled by any other air pollution control equipment approved by the Illinois EPA and approved by the USEPA as a SIP revision capable of reducing by 85 percent or more the uncontrolled organic material that would be otherwise emitted to the atmosphere [35 IAC 218.302(c)].
- d. The affected aeration rooms are subject to 35 IAC 218 Subpart TT, Other Emission Units, which provides that, pursuant to 35 IAC 218.986, every owner or operator of an emission unit subject to 35 IAC 218 Subpart TT shall comply with the requirements of Conditions 7.5.3 (d) (i) or (ii) (see also 35 IAC 218.986(a), (b), (c), (d) or (e)):
  - i. Emission capture and control equipment which achieves an overall reduction in uncontrolled VOM emissions of at least 81 percent from each emission unit [35 IAC 218.986(a)]; or
  - ii. An equivalent alternative control plan which has been approved by the Illinois EPA and USEPA in a federally enforceable permit or as a SIP revision [35 IAC 218.986(c)].

#### 7.5.4 Non-Applicability of Regulations of Concern

None

7.5.5 Operational and Production Limits and Work Practices

- a. The Permittee shall follow good operating practices for the acid water scrubber and dry bed reactor, including monthly inspections, routine maintenance and prompt repair of defects.
- b. Pursuant to Section 39.5(7)(a) of the Act, the Permittee shall not operate the affected aeration rooms with a level of scrubber liquor in the recirculation tank which exceeds 159 inches or the liquor level from the most recent performance test. This is the liquor tank level at which compliance with Condition 7.5.3(b)(ii)(B) (see also 40 CFR 63.362(d)) was demonstrated during the most recent compliance test.

7.5.6 Emission Limitations

In addition to Condition 5.3.2 and the source wide emission limitations in Condition 5.5, the affected aeration rooms are subject to the following:

- a. Emissions and operation of equipment shall not exceed the following limits:

<u>Item of Equipment</u>	<u>Operating Hours (Hours/year)</u>	<u>Volatile Organic Material Emissions</u>	
		<u>(lb/hr)</u>	<u>(Tons/year)</u>
West Aeration Cell	8,760	3.6	15.77

These limits are based on the maximum operating hours and maximum emissions.

- b. The above limitations were established in Permit 96120054, pursuant to 40 CFR 52.21, Prevention of Significant Deterioration (PSD). These limits ensure that the construction and/or modification addressed in the aforementioned permit does not constitute a major modification pursuant to Title I of the CAA, specifically the federal rules for Prevention of Significant Deterioration (PSD), 40 CFR 52.21 [T1].
- c. Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total).

7.5.7 Testing Requirements

- a. i. The owner or operator of a source subject to emissions standards in Condition 7.5.3(b)(ii) (see also 40 CFR 63.362) shall conduct an initial

performance test using the procedures listed in 40 CFR 63.7 according to the applicability in Table 1 of 40 CFR 63.360, the procedures listed in this Condition (see also 40 CFR 63.363), and the test methods listed in Condition 7.5.12(a) through (f) (see also 40 CFR 63.365) [40 CFR 63.363(a)(1)].

- ii. The owner or operator of all sources subject to these emissions standards shall complete the performance test within 180 days after initial startup of the source (the compliance date for the specific source as determined in 40 CFR 63.360(g)) [40 CFR 63.363(a)(2)].
- b. Pursuant to 40 CFR 63.363(c), the following procedures shall be used to determine compliance with the emission limits under Condition 7.5.3(b)(ii)(B) (see also 40 CFR 63.362(d)), the aeration room vent standard:
- i. Pursuant to 40 CFR 63.363(c)(1), during the performance test required in Condition 7.5.7(a) (see also 40 CFR 63.363(a)), the owner or operator shall determine either:
    - A. The concentration of ethylene oxide emitted from the aeration room into the atmosphere (after any control device used to comply with Condition 7.5.3(b)(ii)(B) (see also 40 CFR 63.362(d))) using the methods in Condition 7.5.12(b)(i) (see also 40 CFR 63.365(c)(1)) [40 CFR 63.363(c)(1)(i)]; or
    - B. The efficiency of the control device used to comply with Condition 7.5.3(b)(ii)(B) (see also 40 CFR 63.362(d)) using the test methods and procedures in Condition 7.5.12(c) (see also 40 CFR 63.365(d)(1)) [40 CFR 63.363(c)(1)(ii)].
  - ii. For facilities seeking to comply with Condition 7.5.7(b)(i)(B) (see also 40 CFR 63.363(c)(1)(ii)) with catalytic oxidizers or thermal oxidizers, the owner or operator must also establish as a site-specific operating parameter the baseline temperature using the procedures described in Condition 7.5.12(d) (see also 40 CFR 63.365(f)(2)) [40 CFR 63.363(c)(2)].
  - iii. Pursuant to 40 CFR 63.363(c)(3), following the date on which the initial performance test is completed, the owner or operator of a facility shall comply with the following provision:

For facilities continuously measuring the ethylene oxide concentration emitted from the aeration room

(after any control device), operation of the facility with a 3-hour average ethylene oxide concentration in excess of the 1 ppmv ethylene oxide concentration limit shall constitute a violation of the aeration room vent standard [40 CFR 63.363 (c) (3) (i)].

- c. Pursuant to 40 CFR 63.363(f), for facilities complying with the emissions limits under Condition 7.5.3(b) (ii) (see also 40 CFR 63.362) with a control technology other than acid-water scrubbers or catalytic or thermal oxidizers:
  - i. The owner or operator of the facility shall provide to the Illinois EPA or the USEPA information describing the design and operation of the air pollution control system including recommendations for the operating parameters to be monitored to indicated proper operation and maintenance of the air pollution control system. Based on this information, the Illinois EPA or the USEPA will determine the site-specific operating parameter(s) to be established during the performance test. During the performance test required in Condition 7.5.7(a) (see also 40 CFR 63.363(a)) using the methods approved in Condition 7.5.12(d) (see also 40 CFR 63.365(g)), the owner or operator shall determine the site-specific operating parameter(s) approved by the Illinois EPA or the USEPA [40 CFR 63.363(f) (1)].
  - ii. Operation of the facility in a manner that exceeds a site-specific parameter established as a maximum requirement or falls below a site-specific parameter established as a minimum requirement (depending on the parameters monitored) shall constitute a violation of the applicable emissions standard under Condition 7.5.3(b) (ii) (see also 40 CFR 63.362) [40 CFR 63.363(f) (2)].
- d. When in the opinion of the Illinois EPA it is necessary to conduct testing to demonstrate compliance with Condition 7.5.3(d) (see also 35 IAC 218.986), the owner or operator of a VOM emission unit subject to the requirements of 35 IAC 218 Subpart TT shall, at his own expense, conduct such tests in accordance with the applicable test methods and procedures specified in 35 IAC 218.105 [35 IAC 218.968(a)].
- e. Pursuant to 35 IAC 218.105(d) (1) and Section 39.5(7) (b) of the Act, the control device efficiency shall be determined by simultaneously measuring the inlet and outlet gas phase VOM concentrations and gas volumetric flow rates in accordance with the gas phase test methods specified below (see also 35 IAC 218.105(f)):

- i. Volatile Organic Material Gas Phase Source Test Methods: The methods in 40 CFR Part 60, Appendix A, delineated below shall be used to determine control device efficiencies [35 IAC 218.105(f)].
  - A. CFR Part 60, Appendix A, Method 18, 25 or 25A, as appropriate to the conditions at the site, shall be used to determine VOM concentration. Method selection shall be based on consideration of the diversity of organic species present and their total concentration and on consideration of the potential presence of interfering gases. The test shall consist of three separate runs, each lasting a minimum of 60 min, unless the Illinois EPA and the USEPA determine that process variables dictate shorter sampling times [35 IAC 218.105 (f) (1)].
  - B. 40 CFR Part 60, Appendix A, Method 1 or 1A shall be used for sample and velocity traverses [35 IAC 218.105(f) (2)].
  - C. 40 CFR Part 60, Appendix A, Method 2, 2A, 2C or 2D shall be used for velocity and volumetric flow rates [35 IAC 218.105 (f) (3)].
  - D. 40 CFR Part 60, Appendix A, Method 3 shall be used for gas analysis [35 IAC 218.105 (f) (4)].
  - E. 40 CFR Part 60, Appendix A, Method 4 shall be used for stack gas moisture [35 IAC 218.105(f) (5)].
  - F. 40 CFR Part 60, Appendix A, Methods 2, 2A, 2C, 2D, 3 and 4 shall be performed, as applicable, at least twice during each test run [35 IAC 218.105(f) (6)].
  - G. Use of an adaptation to any of the test methods specified in Conditions 7.5.7 (e) (i) (A), (B), (C), (D), (E) and (F) (see also 35 IAC 218.105(f) (1), (2), (3), (4), (5) and (6)) may not be used unless approved by the Illinois EPA and the USEPA on a case by case basis. An owner or operator must submit sufficient documentation for the Illinois EPA and the USEPA to find that the test methods specified in Conditions 7.5.7(e) (i) (A), (B), (C), (D), (E) and (F) (see also 35 IAC 218.105(f) (1), (2), (3), (4), (5) and (6)) will yield inaccurate results and that the proposed adaptation is appropriate [35 IAC 218.105(f) (7)].

- ii. Notwithstanding other requirements of 35 IAC Part 218, upon request of the Illinois EPA where it is necessary to demonstrate compliance and once per permit term, an owner or operator of an emission unit which is subject to 35 IAC Part 218 shall, at his own expense, conduct tests in accordance with the applicable test methods and procedures specific in 35 IAC Part 218. Nothing in this Condition (see also 35 IAC 218.105) shall limit the authority of the USEPA pursuant to the CAA, as amended, to require testing [35 IAC 218.105(i)].

#### 7.5.8 Monitoring Requirements

- a.
  - i. The owner or operator of a source subject to emissions standards in Condition 7.5.3(b)(ii) (see also 40 CFR 63.362) shall comply with the monitoring requirements in 40 CFR 63.8, according to the applicability in Table 1 of 40 CFR 63.360, and in this Condition (see also 40 CFR 63.364) [40 CFR 63.364(a)(1)].
  - ii. Each owner or operator of an ethylene oxide sterilization facility subject to these emissions standards shall monitor the parameters specified in this Condition (see also 40 CFR 63.364). All monitoring equipment shall be installed such that representative measurements of emissions or process parameters from the source are obtained. For monitoring equipment purchased from a vendor, verification of the operational status of the monitoring equipment shall include completion of the manufacturer's written specifications or recommendations for installation, operation, and calibration of the system [40 CFR 63.364(a)(2)].
- b. For sterilization facilities complying with Condition 7.5.7(b) (see also 40 CFR 63.363(c)) through the use of a control device other than acid-water scrubbers or catalytic or thermal oxidizers, the owner or operator shall monitor the parameters as approved by the Illinois EPA or the USEPA using the methods and procedures in Condition 7.5.12(e) (see also 40 CFR 63.365(g)) [40 CFR 63.364(d)].
- c. Pursuant to 40 CFR 63.364(e), for sterilization facilities complying with Condition 7.5.7(c)(iii)(A) (see also 40 CFR 63.363(c)(3)(i)) through the use of direct measurement of ethylene oxide concentration, the owner or operator shall follow either Condition 7.5.8(c)(i) or (ii) (see also 40 CFR 63.364(e)(1) or (2)):
  - i. Measure and record once per hour the ethylene oxide concentration at the outlet to the atmosphere from

the aeration room vent after any control device according to the procedures specified in Condition 7.5.12(b) (i) (see also 40 CFR 63.365(c)(1)). The owner or operator shall compute and record a 3-hour average every third hour. The owner or operator will install, calibrate, operate, and maintain a gas chromatograph consistent with the requirements of performance specification (PS) 9 in 40 CFR Part 60, Appendix B, to measure ethylene oxide. The daily calibration requirements of section 7.2 of PS 9 are required only on days when ethylene oxide emissions are vented to the control device from the aeration room vent [40 CFR 63.364(e)(1)].

- ii. Measure and record the ethylene oxide concentration in the sterilization chamber immediately before the chamber exhaust is activated according to the procedures specified in Condition 7.5.12(b) (ii) (see also 40 CFR 63.365(c)(2)). The owner or operator shall install, calibrate, operate, and maintain a gas chromatograph consistent with the requirements of PS 9 to measure ethylene oxide concentration. The daily calibration requirements of section 7.2 of PS 9 are required only on days when the chamber exhaust is activated [40 CFR 63.364 (e)(2)].
- d. Pursuant to Sections 39.5(7) (b) and (d) of the Act and 40 CFR 63.363(f)(1) and 63.364(d), the Permittee shall measure and record once per week the level of the scrubber liquor in the recirculation tank. The Permittee shall install, maintain, and use a liquid level indicator to measure the scrubber liquor tank level (i.e., a marker on the tank wall, a dipstick, a magnetic indicator, etc.).

#### 7.5.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for each affected aeration room to demonstrate compliance with Conditions 5.5.1 and 7.5.3, pursuant to Section 39.5(7) (b) of the Act:

- a. The owner or operator of a source subject to the emissions standards in Condition 7.5.3(b) (ii) (see also 40 CFR 63.362) shall comply with the recordkeeping requirements in 40 CFR 63.10(b) and (c), according to the applicability in Table 1 of 40 CFR 63.360, and in this Condition (see also 40 CFR 63.367) [40 CFR 63.367(a)].
- b. Records of the testing of the efficiency of each capture system and control device pursuant to Condition 7.5.7, which include the following [Section 39.5(7) (e) of the Act]:
  - i. The date, place and time of sampling or measurements;

- ii. The date(s) analyses were performed;
  - iii. The company or entity that performed the analyses;
  - iv. The analytical techniques or methods used;
  - v. The results of such analyses; and
  - vi. The operating conditions as existing at the time of sampling or measurement.
- c. Pursuant to 35 IAC 218.991(a)(2), any owner or operator of a VOM emission unit which is subject to the requirements of 35 IAC 218 Subpart, TT and complying by the use of emission capture and control equipment shall collect and record all of the following information each day and maintain the information at the source for a period of three years:
- i. Control device monitoring data [35 IAC 218.991 (a)(2)(A)];
  - ii. A log of operating time for the capture system, control device, monitoring equipment and the associated emission source [35 IAC 218.991 (a)(2)(B)]; and
  - iii. A maintenance log for the capture system, control device and monitoring equipment detailing all routine and non-routine maintenance performed including dates and duration of any outages [35 IAC 218.991 (a)(2)(C)].
- d. Records addressing use of good operating practices for the acid water scrubber and dry bed reactor:
- i. Records for periodic inspection of the acid water scrubber and dry bed reactor with date, individual performing the inspection, and nature of inspection;
  - ii. Records for prompt repair of defects, with identification and description of defect, effect on emissions, date identified, date repaired, and nature of repair; and
  - iii. The level of the scrubber liquor in the recirculation tank shall be recorded once per week.
- e. The type and amount of sterilant gas used for each sterilization chamber associated with the affected aeration rooms, lb/mo and ton/yr; and
- f. The monthly and aggregate annual VOM and HAP emissions from the affected aeration rooms based on the sterilant gas

usage and air pollution control equipment efficiencies, with supporting calculations.

- g. Records listing the good operating practices and inspection procedures that the Permittee follows

#### 7.5.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section of deviations of an affected aeration room with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

- a. *Content and submittal dates for excess emissions and monitoring system performance reports.* All excess emissions and monitoring system performance reports and all summary reports, if required per 40 CFR 63.10 (e) (3) (vii) and (viii), shall be delivered or postmarked within 30 days following the end of each calendar half or quarter as appropriate (see 40 CFR 63.10(e)(3)(i) through (iv) for applicability). Written reports of excess emissions or exceedances of process or control system parameters shall include all information required in 40 CFR 63.10(c)(5) through (13) as applicable in Table 1 of 40 CFR 63.360 and information from any calibration tests in which the monitoring equipment is not in compliance with PS-9 or the method used for temperature calibration. The written report shall also include the name, title, and signature of the responsible official who is certifying the accuracy of the report. When no excess emissions or exceedances have occurred or monitoring equipment has not been inoperative, repaired, or adjusted, such information shall be stated in the report [40 CFR 63.366(a)(3)].
- b. Any owner or operator of a VOM emission unit which is subject to the requirements of 35 IAC 218 Subpart TT and complying by the use of emission capture and control equipment shall notify the Illinois EPA of any violation of the requirements of 35 IAC 218 Subpart TT by sending a copy of any record showing a violation to the Illinois EPA within 30 days following the occurrence of the violation [35 IAC 218.991(a)(3)(A)];
- c. Continued operation of an affected chamber with a defect in the acid water scrubber that may result in emissions in excess of limits in Conditions 7.5.3 (c) (i) and/or 7.5.6 within 30 days of such an occurrence.
- d. Emissions of VOM in excess of limits in Condition 7.5.6 based on the current month's records plus the preceding 11 months within 30 days of such an occurrence.

7.5.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

7.5.12 Compliance Procedures

- a. Compliance with Condition 7.5.3(b) is addressed by the requirements of Condition 7.5.5, the testing requirements in Conditions 7.5.7, the monitoring requirements of 7.5.8, the records required in Condition 7.5.9, and the reporting requirements of Condition 7.5.10.
- b. Compliance with Condition 7.5.3(c) is addressed by the requirements of Condition 7.5.5, the testing requirements in Conditions 7.5.7, the records required in Condition 7.5.9, and the reporting requirements of Condition 7.5.10.
- c. Compliance with Condition 7.5.3(d) is addressed by the requirements of Condition 7.5.5, the testing requirements in Conditions 7.5.7, the records required in Condition 7.5.9, and the reporting requirements of Condition 7.5.10.
- d. Compliance with Condition 7.5.6 is addressed by the records required in Condition 7.5.9, the reporting requirements of Condition 7.5.10, and calculations from the affected aeration based on the following:

$$\text{VOM Emissions (lb)} = (\text{Sterilant Gas Usage, lb}) \times (0.05 \text{ lb Loss to Aeration Rooms/lb Sterilant Gas Usage}) \times [1 - (\text{Overall Acid Water Scrubber/Dry Bed Reactor Efficiency}^* (\%)/100)]$$

- \* As specified by manufacturer or vendor of the acid water scrubber and dry bed reactor or testing pursuant to Condition 7.5.7.

7.6 Units WBII-AC & WBII-AR Willowbrook II Aeration Rooms  
 Controls WBII-S/DBR Willowbrook II Scrubber (WBII-Scrubber) and Dry  
 Bed Reactor

7.6.1 Description

After the medical products are loaded onto forklifts, they are transferred to one of two aeration rooms for all product cycles other than CycleOne. The sterile products are placed in these heated rooms to allow diffusion of any residual sterilant gas from the products prior to quarantine or shipping. This source's aeration rooms are designed to exhaust 10% of the air volume that is recirculated within the room. The sterile products are maintained in the aeration rooms for at least 18 to 24 hours. Following aeration, the product is moved to a post-production or post-aeration storage area awaiting shipment out by the customer.

7.6.2 List of Emission Units and Pollution Control Equipment

Emission Unit	Description	Emission Control Equipment
WBII-AR	Two (2) Aeration Rooms (Willowbrook II)	Willowbrook II Scrubber (WBII-Scrubber) and Dry Bed Reactor

7.6.3 Applicability Provisions and Applicable Regulations

- a. The Aeration Room listed in Condition 7.6.2 are "affected aeration rooms" for the purpose of these unit-specific conditions.
- b. The affected aeration rooms are subject to the NESHAP for Ethylene Oxide Emissions Standards for Sterilization Facilities, 40 CFR 63 Subparts A and O because the source uses 907 kg (1 ton) or more of ethylene oxide within any consecutive 12-month period after December 6, 1996.
  - i. Pursuant to 40 CFR 63.360(g), the owner or operator shall comply with the provisions of 40 CFR 63 Subpart O as follows:
 

All aeration room vents subject to the emissions standards in Condition 7.6.3(b)(ii) (see also 40 CFR 63.362) with an initial startup date before December 6, 2000, no later than December 6, 2000 [40 CFR 63.360(g)(4)].
  - ii. Pursuant to 40 CFR 63.362, the owner or operator of the affected aeration rooms shall comply with the following:
    - A. The emission limitations of Condition 7.6.3(b)(ii) (see also 40 CFR 63.362(e)) apply during sterilization operation. The emissions

limitations do not apply during periods of malfunction [40 CFR 63.362(b)].

- B. Each owner or operator of a sterilization source using 10 tons shall reduce ethylene oxide emissions to the atmosphere from each aeration room vent to a maximum concentration of 1 ppmv or by at least 99 percent, whichever is less stringent, from each aeration room vent [40 CFR 63.362(d)].
- c. The affected aeration rooms are subject to 35 IAC 218 Subpart G, Use of Organic Material, which provides that:
  - i. No person shall cause or allow the discharge of more than 3.6 kg/hr (8 lb/hr) of organic material into the atmosphere from any emission unit, except as provided in Condition 7.6.3 (c) (ii) (see also 35 IAC 218.302) and the following exception: If no odor nuisance exists the limitation of 35 IAC 218 Subpart G shall apply only to photochemically reactive material [35 IAC 218.301].
  - ii. Emissions of organic material in excess of those permitted by Condition 7.6.3(c) (i) (see also 35 IAC 218.301) are allowable if such emissions are controlled by any other air pollution control equipment approved by the Illinois EPA and approved by the USEPA as a SIP revision capable of reducing by 85 percent or more the uncontrolled organic material that would be otherwise emitted to the atmosphere [35 IAC 218.302(c)].
- d. The affected aeration rooms are subject to 35 IAC 218 Subpart TT, Other Emission Units, which provides that, pursuant to 35 IAC 218.986, every owner or operator of an emission unit subject to 35 IAC 218 Subpart TT shall comply with the requirements of Conditions 7.6.3 (d) (i) or (ii) (see also 35 IAC 218.986(a), (b), (c), (d) or (e)):
  - i. Emission capture and control equipment which achieves an overall reduction in uncontrolled VOM emissions of at least 81 percent from each emission unit [35 IAC 218.986(a)]; or
  - ii. An equivalent alternative control plan which has been approved by the Illinois EPA and USEPA in a federally enforceable permit or as a SIP revision [35 IAC 218.986(c)].

#### 7.6.4 Non-Applicability of Regulations of Concern

None

7.6.5 Operational and Production Limits and Work Practices

- a. The Permittee shall follow good operating practices for the acid water scrubber and dry bed reactor, including monthly inspections, routine maintenance and prompt repair of defects.
- b. Pursuant to Section 39.5(7) (a) of the Act, the Permittee shall not:
  - i. Operate the affected aeration rooms with a level of scrubber liquor in the recirculation tank which exceeds 202 inches or the liquor level from the most recent performance test. This is the liquor tank level at which compliance with Condition 7.6.3(b) (ii) (B) (see also 40 CFR 63.362(d)) was demonstrated during the most recent compliance test.
  - ii. Exhaust more than one (1) of the affected aeration rooms to the acid water scrubber and dry bed reactor at a time. This is the maximum number of aeration rooms exhausted into the acid water scrubber and dry bed reactor at which compliance with Condition 7.6.3(b) (ii) (B) (see also 40 CFR 63.362(d)) was demonstrated during the most recent compliance test.

7.6.6 Emission Limitations

In addition to Condition 5.3.2 and the source wide emission limitations in Condition 5.5, the affected aeration rooms are subject to the following:

- a. Emissions and operation of the two (2) aeration rooms shall not exceed the following limits:

<u>Material</u>	<u>Material Usage</u> (lb/mo)	<u>(Ton/yr)</u>	<u>VOM Emissions</u> (lb/mo)	<u>(Ton/yr)</u>
Ethylene Oxide	2,000	6.00	20.00	0.06
Propylene Oxide	13.33	0.04	0.13	<u>0.01</u>
Totals				<u>0.07</u>

<u>Material</u>	<u>HAP Emissions (e.g., ethylene oxide, propylene oxide)</u> (lb/mo)	<u>(Ton/yr)</u>
Ethylene Oxide	20.00	0.06
Propylene Oxide	0.13	<u>0.01</u>
Totals		<u>0.07</u>

These limits are based on representations of the maximum actual emissions based on the maximum sterilant gas usage

and a minimum overall control efficiency of 99% for the acid scrubber and dry bed system.

- b. The above limitations were established in Permit 99040046, pursuant to 35 IAC Part 203. These limits ensure that the construction and/or modification addressed in the aforementioned permit does not constitute a major modification pursuant to Title I of the CAA, specifically 35 IAC Part 203 [T1].
- c. The emissions of Hazardous Air Pollutants (HAP) as listed in Section 112(b) of the CAA from the five (5) sterilization chambers and the two (2) aeration rooms shall be less than 10 tons/year of any single HAP and 25 tons/year of any combination of such HAPs. As a result of this condition, this permit is issued based on the emissions from the five (5) sterilization chambers and the two (2) aeration rooms not triggering the requirements of Section 112(g) of the CAA.
- d. Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total).

#### 7.6.7 Testing Requirements

- a.
  - i. The owner or operator of a source subject to emissions standards in Condition 7.6.3(b)(ii) (see also 40 CFR 63.362) shall conduct an initial performance test using the procedures listed in 40 CFR 63.7 according to the applicability in Table 1 of 40 CFR 63.360, the procedures listed in this Condition (see also 40 CFR 63.363), and the test methods listed in Condition 7.6.12(a) through (f) (see also 40 CFR 63.365) [40 CFR 63.363(a)(1)].
  - ii. The owner or operator of all sources subject to these emissions standards shall complete the performance test within 180 days after initial startup of the source (the compliance date for the specific source as determined in 40 CFR 63.360(g)) [40 CFR 63.363(a)(2)].
- b. Pursuant to 40 CFR 63.363(c), the following procedures shall be used to determine compliance with the emission limits under Condition 7.6.3(b)(ii)(B) (see also 40 CFR 63.362(d)), the aeration room vent standard:
  - i. Pursuant to 40 CFR 63.363(c)(1), during the performance test required in Condition 7.6.7(a) (see also 40 CFR 63.363(a)), the owner or operator shall determine either:

- A. The concentration of ethylene oxide emitted from the aeration room into the atmosphere (after any control device used to comply with Condition 7.6.3(b)(ii)(B) (see also 40 CFR 63.362(d))) using the methods in Condition 7.6.12(b)(i) (see also 40 CFR 63.365(c)(1)) [40 CFR 63.363 (c)(1)(i)]; or
  - B. The efficiency of the control device used to comply with Condition 7.6.3(b)(ii)(B) (see also 40 CFR 63.362(d)) using the test methods and procedures in Condition 7.6.12(c) (see also 40 CFR 63.365(d)(1)) [40 CFR 63.363(c)(1)(ii)].
- ii. For facilities seeking to comply with Condition 7.6.7(b)(i)(B) (see also 40 CFR 63.363 (c)(1)(ii)) with catalytic oxidizers or thermal oxidizers, the owner or operator must also establish as a site-specific operating parameter the baseline temperature using the procedures described in Condition 7.6.12(d) (see also 40 CFR 63.365(f)(2)) [40 CFR 63.363(c)(2)].
  - iii. Pursuant to 40 CFR 63.363(c)(3), following the date on which the initial performance test is completed, the owner or operator of a facility shall comply with the following provision:

For facilities continuously measuring the ethylene oxide concentration emitted from the aeration room (after any control device), operation of the facility with a 3-hour average ethylene oxide concentration in excess of the 1 ppmv ethylene oxide concentration limit shall constitute a violation of the aeration room vent standard [40 CFR 63.363 (c)(3)(i)].
- c. Pursuant to 40 CFR 63.363(f), for facilities complying with the emissions limits under Condition 7.6.3(b)(ii) (see also 40 CFR 63.362) with a control technology other than acid-water scrubbers or catalytic or thermal oxidizers:
    - i. The owner or operator of the facility shall provide to the Illinois EPA or the USEPA information describing the design and operation of the air pollution control system including recommendations for the operating parameters to be monitored to indicate proper operation and maintenance of the air pollution control system. Based on this information, the Illinois EPA or the USEPA will determine the site-specific operating parameter(s) to be established during the performance test. During the performance test required in Condition 7.6.7(a) (see also 40 CFR 63.363(a)) using the methods approved in Condition 7.6.12(d) (see also 40 CFR 63.365(g)), the

owner or operator shall determine the site-specific operating parameter(s) approved by the Illinois EPA or the USEPA [40 CFR 63.363(f)(1)].

- ii. Operation of the facility in a manner that exceeds a site-specific parameter established as a maximum requirement or falls below a site-specific parameter established as a minimum requirement (depending on the parameters monitored) shall constitute a violation of the applicable emissions standard under Condition 7.6.3(b)(ii) (see also 40 CFR 63.362) [40 CFR 63.363(f)(2)].
  
- d. When in the opinion of the Illinois EPA it is necessary to conduct testing to demonstrate compliance with Condition 7.6.3(d) (see also 35 IAC 218.986), the owner or operator of a VOM emission unit subject to the requirements of 35 IAC 218 Subpart TT shall, at his own expense, conduct such tests in accordance with the applicable test methods and procedures specified in 35 IAC 218.105 [35 IAC 218.968(a)].
  
- e. Pursuant to 35 IAC 218.105(d)(1) and Section 39.5(7)(b) of the Act, the control device efficiency shall be determined by simultaneously measuring the inlet and outlet gas phase VOM concentrations and gas volumetric flow rates in accordance with the gas phase test methods specified below (see also 35 IAC 218.105(f)):
  - i. Volatile Organic Material Gas Phase Source Test Methods: The methods in 40 CFR Part 60, Appendix A, delineated below shall be used to determine control device efficiencies [35 IAC 218.105(f)].
    - A. CFR Part 60, Appendix A, Method 18, 25 or 25A, as appropriate to the conditions at the site, shall be used to determine VOM concentration. Method selection shall be based on consideration of the diversity of organic species present and their total concentration and on consideration of the potential presence of interfering gases. The test shall consist of three separate runs, each lasting a minimum of 60 min, unless the Illinois EPA and the USEPA determine that process variables dictate shorter sampling times [35 IAC 218.105(f)(1)].
  
    - B. 40 CFR Part 60, Appendix A, Method 1 or 1A shall be used for sample and velocity traverses [35 IAC 218.105(f)(2)].

- C. 40 CFR Part 60, Appendix A, Method 2, 2A, 2C or 2D shall be used for velocity and volumetric flow rates [35 IAC 218.105 (f) (3)].
  - D. 40 CFR Part 60, Appendix A, Method 3 shall be used for gas analysis [35 IAC 218.105 (f) (4)].
  - E. 40 CFR Part 60, Appendix A, Method 4 shall be used for stack gas moisture [35 IAC 218.105(f) (5)].
  - F. 40 CFR Part 60, Appendix A, Methods 2, 2A, 2C, 2D, 3 and 4 shall be performed, as applicable, at least twice during each test run [35 IAC 218.105(f) (6)].
  - G. Use of an adaptation to any of the test methods specified in Conditions 7.6.7 (e) (i) (A), (B), (C), (D), (E) and (F) (see also 35 IAC 218.105(f) (1), (2), (3), (4), (5) and (6)) may not be used unless approved by the Illinois EPA and the USEPA on a case by case basis. An owner or operator must submit sufficient documentation for the Illinois EPA and the USEPA to find that the test methods specified in Conditions 7.6.7(e) (i) (A), (B), (C), (D), (E) and (F) (see also 35 IAC 218.105(f) (1), (2), (3), (4), (5) and (6)) will yield inaccurate results and that the proposed adaptation is appropriate [35 IAC 218.105(f) (7)].
- ii. Notwithstanding other requirements of 35 IAC Part 218, upon request of the Illinois EPA where it is necessary to demonstrate compliance and once per permit term, an owner or operator of an emission unit which is subject to 35 IAC Part 218 shall, at his own expense, conduct tests in accordance with the applicable test methods and procedures specific in 35 IAC Part 218. Nothing in this Condition (see also 35 IAC 218.105) shall limit the authority of the USEPA pursuant to the CAA, as amended, to require testing [35 IAC 218.105(i)].

#### 7.6.8 Monitoring Requirements

- a. i. The owner or operator of a source subject to emissions standards in Condition 7.6.3(b) (ii) (see also 40 CFR 63.362) shall comply with the monitoring requirements in 40 CFR 63.8, according to the applicability in Table 1 of 40 CFR 63.360, and in this Condition (see also 40 CFR 63.364) [40 CFR 63.364(a) (1)].

- ii. Each owner or operator of an ethylene oxide sterilization facility subject to these emissions standards shall monitor the parameters specified in this Condition (see also 40 CFR 63.364). All monitoring equipment shall be installed such that representative measurements of emissions or process parameters from the source are obtained. For monitoring equipment purchased from a vendor, verification of the operational status of the monitoring equipment shall include completion of the manufacturer's written specifications or recommendations for installation, operation, and calibration of the system [40 CFR 63.364(a)(2)].
- b. For sterilization facilities complying with Condition 7.6.7(b) (see also 40 CFR 63.363(c)) through the use of a control device other than acid-water scrubbers or catalytic or thermal oxidizers, the owner or operator shall monitor the parameters as approved by the Illinois EPA or the USEPA using the methods and procedures in Condition 7.6.12(e) (see also 40 CFR 63.365(g)) [40 CFR 63.364(d)].
- c. Pursuant to 40 CFR 63.364(e), for sterilization facilities complying with Condition 7.6.7(c)(iii)(A) (see also 40 CFR 63.363(c)(3)(i)) through the use of direct measurement of ethylene oxide concentration, the owner or operator shall follow either Condition 7.6.8(c)(i) or (ii) (see also 40 CFR 63.364(e)(1) or (2)):
  - i. Measure and record once per hour the ethylene oxide concentration at the outlet to the atmosphere from the aeration room vent after any control device according to the procedures specified in Condition 7.6.12(b)(i) (see also 40 CFR 63.365(c)(1)). The owner or operator shall compute and record a 3-hour average every third hour. The owner or operator will install, calibrate, operate, and maintain a gas chromatograph consistent with the requirements of performance specification (PS) 9 in 40 CFR part 60, Appendix B, to measure ethylene oxide. The daily calibration requirements of section 7.2 of PS 9 are required only on days when ethylene oxide emissions are vented to the control device from the aeration room vent [40 CFR 63.364(e)(1)].
  - ii. Measure and record the ethylene oxide concentration in the sterilization chamber immediately before the chamber exhaust is activated according to the procedures specified in Condition 7.6.12(b)(ii) (see also 40 CFR 63.365(c)(2)). The owner or operator shall install, calibrate, operate, and maintain a gas chromatograph consistent with the requirements of PS 9 to measure ethylene oxide concentration. The daily calibration requirements of section 7.2 of PS 9 are

required only on days when the chamber exhaust is activated [40 CFR 63.364(e)(2)].

- d. Pursuant to Section 39.5(7)(d) of the Act and 40 CFR 63.363(f)(1) and 63.364(d), the Permittee shall measure and record once per week the level of the scrubber liquor in the recirculation tank. The Permittee shall install, maintain, and use a liquid level indicator to measure the scrubber liquor tank level (i.e., a marker on the tank wall, a dipstick, a magnetic indicator, etc.).

#### 7.6.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for each affected aeration room to demonstrate compliance with Conditions 5.5.1 and 7.6.3, pursuant to Section 39.5(7)(b) of the Act:

- a. The owner or operator of a source subject to the emissions standards in Condition 7.6.3(b)(ii) (see also 40 CFR 63.362) shall comply with the recordkeeping requirements in 40 CFR 63.10(b) and (c), according to the applicability in Table 1 of 40 CFR 63.360, and in this Condition (see also 40 CFR 63.367) [40 CFR 63.367(a)].
- b. Records of the testing of the efficiency of each capture system and control device pursuant to Condition 7.6.7, which include the following [Section 39.5(7)(e) of the Act]:
  - i. The date, place and time of sampling or measurements;
  - ii. The date(s) analyses were performed;
  - iii. The company or entity that performed the analyses;
  - iv. The analytical techniques or methods used;
  - v. The results of such analyses; and
  - vi. The operating conditions as existing at the time of sampling or measurement.
- c. Pursuant to 35 IAC 218.991(a)(2), any owner or operator of a VOM emission unit which is subject to the requirements of 35 IAC 218 Subpart, TT and complying by the use of emission capture and control equipment shall collect and record all of the following information each day and maintain the information at the source for a period of three years:
  - i. Control device monitoring data [35 IAC 218.991(a)(2)(A)];

- ii. A log of operating time for the capture system, control device, monitoring equipment and the associated emission source [35 IAC 218.991(a)(2)(B)]; and
  - iii. A maintenance log for the capture system, control device and monitoring equipment detailing all routine and non-routine maintenance performed including dates and duration of any outages [35 IAC 218.991(a)(2)(C)].
- d. Records addressing use of good operating practices for the acid water scrubber and dry bed reactor:
  - i. Records for periodic inspection of the acid water scrubber and dry bed reactor with date, individual performing the inspection, and nature of inspection; and
  - ii. Records for prompt repair of defects, with identification and description of defect, effect on emissions, date identified, date repaired, and nature of repair.
  - iii. The level of the scrubber liquor in the recirculation tank shall be recorded once per week.
- e. The type and amount of sterilant gas used for each sterilization chamber associated with the affected aeration rooms, lb/mo and ton/yr;
- f. The monthly and aggregate annual VOM and HAP emissions from the affected aeration rooms based on the sterilant gas usage and air pollution control equipment efficiencies, with supporting calculations; and
- g. Records listing the good operating practices and inspection procedures that the Permittee follows

#### 7.6.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section of deviations of an affected aeration room with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

- a. *Content and submittal dates for excess emissions and monitoring system performance reports.* All excess emissions and monitoring system performance reports and all summary reports, if required per 40 CFR 63.10 (e)(3)(vii) and (viii), shall be delivered or postmarked within 30 days following the end of each calendar half or quarter as

appropriate (see 40 CFR 63.10(e)(3)(i) through (iv) for applicability). Written reports of excess emissions or exceedances of process or control system parameters shall include all information required in 40 CFR 63.10(c)(5) through (13) as applicable in Table 1 of 40 CFR 63.360 and information from any calibration tests in which the monitoring equipment is not in compliance with PS-9 or the method used for temperature calibration. The written report shall also include the name, title, and signature of the responsible official who is certifying the accuracy of the report. When no excess emissions or exceedances have occurred or monitoring equipment has not been inoperative, repaired, or adjusted, such information shall be stated in the report [40 CFR 63.366(a)(3)].

- b. Any owner or operator of a VOM emission unit which is subject to the requirements of 35 IAC 218 Subpart TT and complying by the use of emission capture and control equipment shall notify the Illinois EPA of any violation of the requirements of 35 IAC 218 Subpart TT by sending a copy of any record showing a violation to the Illinois EPA within 30 days following the occurrence of the violation [35 IAC 218.991(a)(3)(A)];
- c. Continued operation of an affected chamber with a defect in the acid water scrubber that may result in emissions in excess of limits in Conditions 7.6.3 (c)(i) and/or 7.6.6 within 30 days of such an occurrence.
- d. Emissions of VOM in excess of limits in Condition 7.6.6 based on the current month's records plus the preceding 11 months within 30 days of such an occurrence.

#### 7.6.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

#### 7.6.12 Compliance Procedures

- a. Compliance with Condition 7.6.3(b) is addressed by the requirements of Condition 7.6.5, the testing requirements in Conditions 7.6.7, the monitoring requirements of 7.6.8, the records required in Condition 7.6.9, and the reporting requirements of Condition 7.6.10.
- b. Compliance with Condition 7.6.3(c) is addressed by the requirements of Condition 7.6.5, the testing requirements in Conditions 7.6.7, the records required in Condition 7.6.9, and the reporting requirements of Condition 7.6.10.
- c. Compliance with Condition 7.6.3(d) is addressed by the requirements of Condition 7.6.5, the testing requirements in Conditions 7.6.7, the records required in Condition 7.6.9, and the reporting requirements of Condition 7.6.10.

- d. Compliance with Condition 7.6.6 is addressed by the records required in Condition 7.6.9, the reporting requirements of Condition 7.6.10, and calculations from the affected aeration based on the following:

$$\text{VOM Emissions (lb)} = (\text{Sterilant Gas Usage, lb}) \times (\text{0.05 lb Loss to Aeration Rooms/lb Sterilant Gas Usage}) \times [1 - (\text{Overall Acid Water Scrubber/Dry Bed Reactor Efficiency* (\%)/100})]$$

- \* As specified by manufacturer or vendor of the acid water scrubber and dry bed reactor or testing pursuant to Condition 7.6.7.

7.7 Unit WBI-BOILER-1 Willowbrook I Boiler #1

7.7.1 Description

A natural gas-fired boiler is used at the source to generate steam for use in sterilization of medical supplies and spices.

7.7.2 List of Emission Units and Pollution Control Equipment

Emission Unit	Description	Emission Control Equipment
Boiler-1	Lattner Model HRT-60 Natural Gas-Fired Boiler (Boiler-1, 2.5 mmBtu/hr, Willowbrook I)	None

7.7.3 Applicability Provisions and Applicable Regulations

- a. Boiler-1 is an "affected boilers" for the purpose of these unit-specific conditions.
- b. The affected boiler is subject to the limits identified in Condition 5.3.2.
  - i. No person shall cause or allow the emission of fugitive particulate matter from any process, including any material handling or storage activity, that is visible by an observer looking generally overhead at a point beyond the property line of the source unless the wind speed is greater than 40.2 kilometers per hour (25 miles per hour), pursuant to 35 IAC 212.301 and 212.314.
  - ii. Pursuant to 35 IAC 212.123(a), no person shall cause or allow the emission of smoke or other particulate matter, with an opacity greater than 30 percent, into the atmosphere from any emission unit other than those emission units subject to the requirements of 35 IAC 212.122, except as allowed by 35 IAC 212.123(b) and 212.124.

7.7.4 Non-Applicability of Regulations of Concern

- a. The New Source Performance Standard for Small-Industrial-Commercial-Institutional Steam Generating Units, 40 CFR 60, Subpart Dc, applies to units that have a maximum design heat input capacity of 29 MW (100 mmBtu/hr) or less, but greater than or equal to 2.9 MW (10 mmBtu/hr). The affected boiler has a maximum design heat input capacity of less than 2.9 MW (10 mmBtu/hr), therefore, this regulation does not apply.
- b. The affected boiler is not subject to 35 IAC 216.121, emissions of carbon monoxide from fuel combustion emission

units, because the actual heat input of the affected boiler is less than 2.9 MW (10 mmBtu/hr).

- c. The affected boiler is not subject to 35 IAC 217.121, emissions of nitrogen oxides from new fuel combustion emission sources, because the actual heat input of the affected boiler is less than 73.2 MW (250 mmBtu/hr).
- d. Pursuant to 35 IAC 218.303, fuel combustion emission units are not subject to 35 IAC 218.301, use of organic material.

#### 7.7.5 Operational and Production Limits and Work Practices

The affected boiler shall only be operated with natural gas as the fuel.

#### 7.7.6 Emission Limitations

There are no specific emission limitations for these units, however, there are source wide emission limitations in Condition 5.5 that include these units.

#### 7.7.7 Testing Requirements

Upon reasonable request by the Illinois EPA, pursuant to Section 39.5(7)(d) of the Act, the Permittee shall have measurements of opacity from the affected boiler conducted in accordance with Method 9, 40 CFR Part 60, Appendix A, and 35 IAC 212.109, to demonstrate compliance.

#### 7.7.8 Monitoring Requirements

None

#### 7.7.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for the affected boiler to demonstrate compliance with Conditions 5.5.1 and 7.7.3, pursuant to Section 39.5(7)(b) of the Act:

- a. Records of the fuel usage for the affected boiler, Mft<sup>3</sup>/mo and Mft<sup>3</sup>/yr; and
- b. Records of the monthly and annual aggregate NO<sub>x</sub>, PM, SO<sub>2</sub>, and VOM emissions from the affected boiler shall be maintained, based on fuel consumption and the applicable emission factors, with supporting calculations.

#### 7.7.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section of deviations of an affected boiler with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of

the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

Notification within 30 days for deviations of 35 IAC 212.123(a).

7.7.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

7.7.12 Compliance Procedures

Compliance with the emission limits shall be based on the testing, recordkeeping, and reporting requirements in Condition 7.7.7, 7.7.9, and 7.7.10 and the emission factors and formulas listed below:

To determine compliance with Condition 5.5.1, emissions from the affected boiler shall be calculated based on the following emission factors:

<u>Pollutant</u>	<u>Emission Factor (lb/Mft<sup>3</sup>)</u>
NO <sub>x</sub>	100
PM	7.6
SO <sub>2</sub>	0.6
VOM	5.5

These are the emission factors for uncontrolled natural gas combustion in small boilers (< 100 mmBtu/hr), Tables 1.4-1 and 1.4-2, AP-42, Volume I, Fifth Edition, Supplement D, March, 1998.

$$\text{Boiler Emissions (lb)} = (\text{Natural Gas Consumed, Mft}^3) \times (\text{The Appropriate Emission Factor, lb/Mft}^3)$$

7.8 Units WBII-BOILERS Willowbrook II Boiler #1 and #2

7.8.1 Description

Natural gas-fired boilers are used at the source to generate steam for use in sterilization of medical supplies and spices.

7.8.2 List of Emission Units and Pollution Control Equipment

Emission Unit	Description	Emission Control Equipment
WBII-Boiler-1	Kewanee Model L35-80-G Natural Gas-Fired Boiler (WBII - Boiler-1, 3.3 mmBtu/hr, Willowbrook II)	None
WBII-Boiler-2	Kewanee Model L35-80-G Natural Gas-Fired Boiler (WBII - Boiler-2, 3.3 mmBtu/hr, Willowbrook II)	None

7.8.3 Applicability Provisions and Applicable Regulations

- a. Willowbrook II Boiler-1 and Willowbrook II Boiler-2, are "affected boilers" for the purpose of these unit-specific conditions.
- b. Each affected boiler is subject to the emission limits identified in Condition 5.3.2.
  - i. No person shall cause or allow the emission of fugitive particulate matter from any process, including any material handling or storage activity, that is visible by an observer looking generally overhead at a point beyond the property line of the source unless the wind speed is greater than 40.2 kilometers per hour (25 miles per hour), pursuant to 35 IAC 212.301 and 212.314.
  - ii. Pursuant to 35 IAC 212.123(a), no person shall cause or allow the emission of smoke or other particulate matter, with an opacity greater than 30 percent, into the atmosphere from any emission unit other than those emission units subject to the requirements of 35 IAC 212.122, except as allowed by 35 IAC 212.123(b) and 212.124.

7.8.4 Non-Applicability of Regulations of Concern

- a. The New Source Performance Standard for Small-Industrial-Commercial-Institutional Steam Generating Units, 40 CFR 60, Subpart Dc, applies to units that have a maximum design heat input capacity of 29 MW (100 mmBtu/hr) or less, but greater than or equal to 2.9 MW (10 mmBtu/hr). Each affected boiler has a maximum design heat input capacity of

less than 2.9 MW (10 mmBtu/hr), therefore, this regulation does not apply.

- b. The affected boilers are not subject to 35 IAC 216.121, emissions of carbon monoxide from fuel combustion emission units, because the actual heat input of each affected boiler is less than 2.9 MW (10 mmBtu/hr).
- c. The affected boilers are not subject to 35 IAC 217.121, emissions of nitrogen oxides from new fuel combustion emission sources, because the actual heat input of each affected boiler is less than 73.2 MW (250 mmBtu/hr).
- d. Pursuant to 35 IAC 218.303, fuel combustion emission units are not subject to 35 IAC 218.301, use of organic material.

#### 7.8.5 Operational and Production Limits and Work Practices

The affected boilers shall only be operated with natural gas as the fuel.

#### 7.8.6 Emission Limitations

There are no specific emission limitations for these units, however, there are source wide emission limitations in Condition 5.5 that include these units.

#### 7.8.7 Testing Requirements

Upon reasonable request by the Illinois EPA, pursuant to Section 39.5(7)(d) of the Act, the Permittee shall have measurements of opacity from the affected boilers conducted in accordance with Method 9, 40 CFR Part 60, Appendix A, and 35 IAC 212.109, to demonstrate compliance.

#### 7.8.8 Monitoring Requirements

None

#### 7.8.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for each affected boiler to demonstrate compliance with Conditions 5.5.1 and 7.8.3, pursuant to Section 39.5(7)(b) of the Act:

- a. Records of the fuel usage for the affected boilers, Mft<sup>3</sup>/mo and Mft<sup>3</sup>/yr; and
- b. Records of the monthly and annual aggregate NO<sub>x</sub>, PM, SO<sub>2</sub>, and VOM emissions from the affected boilers shall be maintained, based on fuel consumption and the applicable emission factors, with supporting calculations.

7.8.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section of deviations of an affected boiler with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

Notification within 30 days for deviations of 35 IAC 212.123(a).

7.8.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

7.8.12 Compliance Procedures

Compliance with the emission limits shall be based on the testing, recordkeeping, and reporting requirements in Condition 7.7.7, 7.7.9, and 7.7.10 and the emission factors and formulas listed below:

To determine compliance with Condition 5.5.1, emissions from the affected boilers shall be calculated based on the following emission factors:

<u>Pollutant</u>	<u>Emission Factor (lb/Mft<sup>3</sup>)</u>
NO <sub>x</sub>	100
PM	7.6
SO <sub>2</sub>	0.6
VOM	5.5

These are the emission factors for uncontrolled natural gas combustion in small boilers (< 100 mmBtu/hr), Tables 1.4-1 and 1.4-2, AP-42, Volume I, Fifth Edition, Supplement D, March, 1998.

Boiler Emissions (lb) = (Natural Gas Consumed, Mft<sup>3</sup>) x (The Appropriate Emission Factor, lb/Mft<sup>3</sup>)

## 8.0 GENERAL PERMIT CONDITIONS

### 8.1 Permit Shield

Pursuant to Section 39.5(7)(j) of the Act, the Permittee has requested and has been granted a permit shield. This permit shield provides that compliance with the conditions of this permit shall be deemed compliance with applicable requirements which were applicable as of the date the proposed permit for this source was issued, provided that either the applicable requirements are specifically identified within this permit, or the Illinois EPA, in acting on this permit application, has determined that other requirements specifically identified are not applicable to this source and this determination (or a concise summary thereof) is included in this permit.

This permit shield does not extend to applicable requirements which are promulgated after \_\_\_\_\_ (the date of issuance of the proposed permit) unless this permit has been modified to reflect such new requirements.

### 8.2 Applicability of Title IV Requirements (Acid Deposition Control)

This source is not an affected source under Title IV of the CAA and is not subject to requirements pursuant to Title IV of the CAA.

### 8.3 Emissions Trading Programs

No permit revision shall be required for increases in emissions allowed under any USEPA approved economic incentives, marketable permits, emissions trading, and other similar programs or processes for changes that are provided for elsewhere in this permit and that are authorized by the applicable requirement [Section 39.5(7)(o)(vii) of the Act].

### 8.4 Operational Flexibility/Anticipated Operating Scenarios

#### 8.4.1 Changes Specifically Addressed by Permit

Physical or operational changes specifically addressed by the Conditions of this permit that have been identified as not requiring Illinois EPA notification may be implemented without prior notice to the Illinois EPA.

#### 8.4.2 Changes Requiring Prior Notification

The Permittee is authorized to make physical or operational changes that contravene express permit terms without applying for or obtaining an amendment to this permit, provided that [Section 39.5(12)(a)(i) of the Act]:

- a. The changes do not violate applicable requirements;
- b. The changes do not contravene federally enforceable permit terms or conditions that are monitoring (including test

methods), recordkeeping, reporting, or compliance certification requirements;

- c. The changes do not constitute a modification under Title I of the CAA;
- d. Emissions will not exceed the emissions allowed under this permit following implementation of the physical or operational change; and
- e. The Permittee provides written notice to the Illinois EPA, Division of Air Pollution Control, Permit Section, at least 7 days before commencement of the change. This notice shall:
  - i. Describe the physical or operational change;
  - ii. Identify the schedule for implementing the physical or operational change;
  - iii. Provide a statement of whether or not any New Source Performance Standard (NSPS) is applicable to the physical or operational change and the reason why the NSPS does or does not apply;
  - iv. Provide emission calculations which demonstrate that the physical or operational change will not result in a modification; and
  - v. Provide a certification that the physical or operational change will not result in emissions greater than authorized under the Conditions of this permit.

## 8.5 Testing Procedures

Tests conducted to measure composition of materials, efficiency of pollution control devices, emissions from process or control equipment, or other parameters shall be conducted using standard test methods if applicable test methods are not specified by the applicable regulations or otherwise identified in the conditions of this permit.

Documentation of the test date, conditions, methodologies, calculations, and test results shall be retained pursuant to the recordkeeping procedures of this permit. Reports of any tests conducted as required by this permit or as the result of a request by the Illinois EPA shall be submitted as specified in Conditions 8.6.3 and 8.6.4.

## 8.6 Reporting Requirements

### 8.6.1 Monitoring Reports

Reports summarizing required monitoring as specified in the conditions of this permit shall be submitted to the Illinois EPA

every six months as follows, unless more frequent submittal of such reports is required in Sections 5 or 7 of this permit [Section 39.5(7) (f) of the Act]:

<u>Monitoring Period</u>	<u>Report Due Date</u>
January - June	September 1
July - December	March 1

All instances of deviations from permit requirements must be clearly identified in such reports. All such reports shall be certified in accordance with Condition 9.9.

#### 8.6.2 Test Notifications

Unless otherwise specified elsewhere in this permit, a written test plan for any test required by this permit shall be submitted to the Illinois EPA for review at least 60 days prior to the testing pursuant to Section 39.5(7) (a) of the Act. The notification shall include at a minimum:

- a. The name and identification of the affected unit(s);
- b. The person(s) who will be performing sampling and analysis and their experience with similar tests;
- c. The specific conditions under which testing will be performed, including a discussion of why these conditions will be representative of maximum emissions and the means by which the operating parameters for the source and any control equipment will be determined;
- d. The specific determinations of emissions and operation that are intended to be made, including sampling and monitoring locations;
- e. The test method(s) that will be used, with the specific analysis method, if the method can be used with different analysis methods;
- f. Any minor changes in standard methodology proposed to accommodate the specific circumstances of testing, with justification; and
- g. Any proposed use of an alternative test method, with detailed justification.

#### 8.6.3 Test Reports

Unless otherwise specified elsewhere in this permit, the results of any test required by this permit shall be submitted to the Illinois EPA within 60 days of completion of the testing. The

test report shall include at a minimum [Section 39.5(7)(e)(i) of the Act]:

- a. The name and identification of the affected unit(s);
- b. The date and time of the sampling or measurements;
- c. The date any analyses were performed;
- d. The name of the company that performed the tests and/or analyses;
- e. The test and analytical methodologies used;
- f. The results of the tests including raw data, and/or analyses including sample calculations;
- g. The operating conditions at the time of the sampling or measurements; and
- h. The name of any relevant observers present including the testing company's representatives, any Illinois EPA or USEPA representatives, and the representatives of the source.

#### 8.6.4 Reporting Addresses

- a. Unless otherwise specified in the particular provision of this permit or in the written instructions distributed by the Illinois EPA for particular reports, reports and notifications shall be sent to the Illinois EPA - Air Compliance Unit with a copy sent to the Illinois EPA - Air Regional Field Office.
- b. As of the date of issuance of this permit, the addresses of the offices that should generally be utilized for the submittal of reports and notifications are as follows:
  - i. Illinois EPA - Air Compliance Unit  
  
Illinois Environmental Protection Agency  
Bureau of Air  
Compliance & Enforcement Section (MC 40)  
P.O. Box 19276  
Springfield, Illinois 62794-9276
  - ii. Illinois EPA - Air Quality Planning Section  
  
Illinois Environmental Protection Agency  
Bureau of Air  
Air Quality Planning Section (MC 39)  
P.O. Box 19276  
Springfield, Illinois 62794-9276

iii. Illinois EPA - Air Regional Field Office

Illinois Environmental Protection Agency  
Division of Air Pollution Control  
9511 West Harrison  
Des Plaines, Illinois 60016

iv. USEPA Region 5 - Air Branch

USEPA (AR - 17J)  
Air & Radiation Division  
77 West Jackson Boulevard  
Chicago, Illinois 60604

- c. Permit applications should be addressed to the Air Permit Section. As of the date of issuance of this permit, the address of the Air Permit Section is as follows:

Illinois Environmental Protection Agency  
Division of Air Pollution Control  
Permit Section (MC 11)  
P.O. Box 19506  
Springfield, Illinois 62794-9506

8.7 Title I Conditions

Notwithstanding the expiration date on the first page of this CAAPP permit, Title I conditions in this permit, which are identified by a T1, T1N, or T1R designation, remain in effect until such time as the Illinois EPA takes action to revise or terminate them in accordance with applicable procedures for action on Title I conditions. This is because these conditions either: (a) incorporate conditions of earlier permits that were issued by the Illinois EPA pursuant to authority that includes authority found in Title I of the CAA (T1 conditions), (b) were newly established in this CAAPP permit pursuant to authority that includes such Title I authority (T1N conditions), or (c) reflect a revision or combination of conditions established in this CAAPP permit (T1R conditions). (See also Condition 1.5.)

## 9.0 STANDARD PERMIT CONDITIONS

### 9.1 Effect of Permit

9.1.1 The issuance of this permit does not release the Permittee from compliance with State and Federal regulations which are part of the Illinois State Implementation Plan, as well as with other applicable statutes and regulations of the United States or the State of Illinois or applicable ordinances, except as specifically stated in this permit and as allowed by law and rule.

9.1.2 In particular, this permit does not alter or affect the following [Section 39.5(7)(j)(iv) of the Act]:

- a. The provisions of Section 303 (emergency powers) of the CAA, including USEPA's authority under that Section;
- b. The liability of an owner or operator of a source for any violation of applicable requirements prior to or at the time of permit issuance;
- c. The applicable requirements of the acid rain program consistent with Section 408(a) of the CAA; and
- d. The ability of USEPA to obtain information from a source pursuant to Section 114 (inspections, monitoring, and entry) of the CAA.

9.1.3 Notwithstanding the conditions of this permit specifying compliance practices for applicable requirements, pursuant to Section 39.5(7)(j) and (p) of the Act, any person (including the Permittee) may also use other credible evidence to establish compliance or noncompliance with applicable requirements.

### 9.2 General Obligations of Permittee

#### 9.2.1 Duty to Comply

The Permittee must comply with all terms and conditions of this permit. Any permit noncompliance constitutes a violation of the CAA and the Act, and is grounds for any or all of the following: enforcement action; permit termination, revocation and reissuance, or modification; or denial of a permit renewal application [Section 39.5(7)(o)(i) of the Act].

The Permittee shall meet applicable requirements that become effective during the permit term in a timely manner unless an alternate schedule for compliance with the applicable requirement is established.

#### 9.2.2 Duty to Maintain Equipment

The Permittee shall maintain all equipment covered under this permit in such a manner that the performance or operation of such equipment shall not cause a violation of applicable requirements.

#### 9.2.3 Duty to Cease Operation

No person shall cause, threaten or allow the continued operation of any emission unit during malfunction or breakdown of the emission unit or related air pollution control equipment if such operation would cause a violation of an applicable emission standard, regulatory requirement, ambient air quality standard or permit limitation unless this permit provides for such continued operation consistent with the Act and applicable Illinois Pollution Control Board regulations [Section 39.5(6)(c) of the Act].

#### 9.2.4 Disposal Operations

The source shall be operated in such a manner that the disposal of air contaminants collected by the equipment operations, or activities shall not cause a violation of the Act or regulations promulgated there under.

#### 9.2.5 Duty to Pay Fees

The Permittee must pay fees to the Illinois EPA consistent with the fee schedule approved pursuant to Section 39.5(18) of the Act, and submit any information relevant thereto [Section 39.5(7)(o)(vi) of the Act]. The check should be payable to "Treasurer, State of Illinois" and sent to: Fiscal Services Section, Illinois Environmental Protection Agency, P.O. Box 19276, Springfield, Illinois 62794-9276.

### 9.3 Obligation to Allow Illinois EPA Surveillance

Upon presentation of proper credentials and other documents as may be required by law and in accordance with constitutional limitations, the Permittee shall allow the Illinois EPA, or an authorized representative to perform the following [Sections 4 and 39.5(7)(a) and (p)(ii) of the Act]:

- a. Enter upon the Permittee's premises where an actual or potential emission unit is located; where any regulated equipment, operation, or activity is located or where records must be kept under the conditions of this permit;
- b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- c. Inspect during hours of operation any sources, equipment (including monitoring and air pollution control equipment),

practices, or operations regulated or required under this permit;

- d. Sample or monitor any substances or parameters at any location:
  - i. At reasonable times, for the purposes of assuring permit compliance or applicable requirements; or
  - ii. As otherwise authorized by the CAA, or the Act.
- e. Obtain and remove samples of any discharge or emission of pollutants authorized by this permit; and
- f. Enter and utilize any photographic, recording, testing, monitoring, or other equipment for the purposes of preserving, testing, monitoring, or recording any regulated activity, discharge or emission at the source authorized by this permit.

#### 9.4 Obligation to Comply with Other Requirements

The issuance of this permit does not release the Permittee from applicable State and Federal laws and regulations, and applicable local ordinances addressing subjects other than air pollution control.

#### 9.5 Liability

##### 9.5.1 Title

This permit shall not be considered as in any manner affecting the title of the premises upon which the permitted source is located.

##### 9.5.2 Liability of Permittee

This permit does not release the Permittee from any liability for damage to person or property caused by or resulting from the construction, maintenance, or operation of the sources.

##### 9.5.3 Structural Stability

This permit does not take into consideration or attest to the structural stability of any unit or part of the source.

##### 9.5.4 Illinois EPA Liability

This permit in no manner implies or suggests that the Illinois EPA (or its officers, agents or employees) assumes any liability, directly or indirectly, for any loss due to damage, installation, maintenance, or operation of the source.

##### 9.5.5 Property Rights

This permit does not convey any property rights of any sort, or any exclusive privilege [Section 39.5(7)(o)(iv) of the Act].

## 9.6 Recordkeeping

### 9.6.1 Control Equipment Maintenance Records

A maintenance record shall be kept on the premises for each item of air pollution control equipment. At a minimum, this record shall show the dates of performance and nature of preventative maintenance activities.

### 9.6.2 Records of Changes in Operation

A record shall be kept describing changes made at the source that result in emissions of a regulated air pollutant subject to an applicable requirement, but not otherwise regulated under this permit, and the emissions resulting from those changes [Section 39.5(12) (b) (iv) of the Act].

### 9.6.3 Retention of Records

- a. Records of all monitoring data and support information shall be retained for a period of at least 5 years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records, original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit [Section 39.5(7) (e) (ii) of the Act].
- b. Other records required by this permit including any logs, plans, procedures, or instructions required to be kept by this permit shall be retained for a period of at least 5 years from the date of entry unless a longer period is specified by a particular permit provision.

## 9.7 Annual Emissions Report

The Permittee shall submit an annual emissions report to the Illinois EPA, Air Quality Planning Section no later than May 1 of the following year, as required by 35 IAC Part 254.

## 9.8 Requirements for Compliance Certification

Pursuant to Section 39.5(7) (p) (v) of the Act, the Permittee shall submit annual compliance certifications. The compliance certifications shall be submitted no later than May 1 or more frequently as specified in the applicable requirements or by permit condition. The compliance certifications shall be submitted to the Air Compliance Unit, Air Regional Field Office, and USEPA Region 5 - Air Branch. The addresses for the submittal of the compliance certifications are provided in Condition 8.6.4 of this permit.

- a. The certification shall include the identification of each term or condition of this permit that is the basis of the

certification; the compliance status; whether compliance was continuous or intermittent; the method(s) used for determining the compliance status of the source, both currently and over the reporting period consistent with the conditions of this permit.

- b. All compliance certifications shall be submitted to USEPA Region 5 in Chicago as well as to the Illinois EPA.
- c. All compliance reports required to be submitted shall include a certification in accordance with Condition 9.9.

#### 9.9 Certification

Any document (including reports) required to be submitted by this permit shall contain a certification by a responsible official of the Permittee that meets the requirements of Section 39.5(5) of the Act and applicable regulations [Section 39.5(7)(p)(i) of the Act]. An example Certification by a Responsible Official is included as Attachment 1 to this permit.

#### 9.10 Defense to Enforcement Actions

##### 9.10.1 Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit [Section 39.5(7)(o)(ii) of the Act].

##### 9.10.2 Emergency Provision

- a. An emergency shall be an affirmative defense to an action brought for noncompliance with the technology-based emission limitations under this permit if the following conditions are met through properly signed, contemporaneous operating logs, or other relevant evidence [Section 39.5(7)(k) of the Act]:

- i. An emergency occurred as provided in Section 39.5(7)(k) of the Act and the Permittee can identify the cause(s) of the emergency.

Note: For this purpose, emergency means a situation arising from sudden and reasonably unforeseeable events beyond the control of the source, as further defined by Section 39.5(7)(k)(iv) of the Act.

- ii. The permitted source was at the time being properly operated;
- iii. The Permittee submitted notice of the emergency to the Illinois EPA within two working days of the time when emission limitations were exceeded due to the emergency. This notice must contain a detailed

description of the emergency, any steps taken to mitigate emissions, and corrective actions taken; and

iv. During the period of the emergency the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission limitations, standards, or regulations in this permit.

b. This provision is in addition to any emergency or upset provision contained in any applicable requirement. This provision does not relieve a Permittee of any reporting obligations under existing federal or state laws or regulations [Section 39.5(7)(k)(iv) of the Act].

#### 9.11 Permanent Shutdown

This permit only covers emission units and control equipment while physically present at the indicated source location(s). Unless this permit specifically provides for equipment relocation, this permit is void for the operation or activity of any item of equipment on the date it is removed from the permitted location(s) or permanently shut down. This permit expires if all equipment is removed from the permitted location(s), notwithstanding the expiration date specified on this permit.

#### 9.12 Reopening and Reissuing Permit for Cause

##### 9.12.1 Permit Actions

This permit may be modified, revoked, reopened and reissued, or terminated for cause in accordance with applicable provisions of Section 39.5 of the Act. The filing of a request by the Permittee for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition [Section 39.5(7)(o)(iii) of the Act].

##### 9.12.2 Reopening and Revision

This permit must be reopened and revised if any of the following occur [Section 39.5(15)(a) of the Act]:

- a. Additional requirements become applicable to the equipment covered by this permit and three or more years remain before expiration of this permit.
- b. Additional requirements become applicable to an affected source for acid deposition under the acid rain program.
- c. The Illinois EPA or USEPA determines that this permit contains a material mistake or that inaccurate statements were made in establishing the emission standards or limitations, or other terms or conditions of this permit.

- d. The Illinois EPA or USEPA determines that this permit must be revised or revoked to ensure compliance with the applicable requirements.

#### 9.12.3 Inaccurate Application

The Illinois EPA has issued this permit based upon the information submitted by the Permittee in the permit application. Any misinformation, false statement or misrepresentation in the application shall be grounds for revocation and reissuance under Section 39.5(15) of the Act, pursuant to Sections 39.5(5)(e) and (i) of the Act.

#### 9.12.4 Duty to Provide Information

The Permittee shall furnish to the Illinois EPA, within a reasonable time specified by the Illinois EPA any information that the Illinois EPA may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. Upon request, the Permittee shall also furnish to the Illinois EPA copies of records required to be kept by this permit, or for information claimed to be confidential, the Permittee may furnish such records directly to USEPA along with a claim of confidentiality [Section 39.5(7)(o)(v) of the Act].

#### 9.13 Severability Clause

The provisions of this permit are severable. In the event of a challenge to any portion of the permit, other portions of the permit may continue to be in effect. Should any portion of this permit be determined to be illegal or unenforceable, the validity of the other provisions shall not be affected and the rights and obligations of the Permittee shall be construed and enforced as if this permit did not contain the particular provisions held to be invalid and the applicable requirements underlying these provisions shall remain in force [Section 39.5(7)(i) of the Act].

#### 9.14 Permit Expiration and Renewal

Upon the expiration of this permit, if the source is operated, it shall be deemed to be operating without a permit unless a timely and complete CAAPP application has been submitted for renewal of this permit. However, if a timely and complete application to renew this CAAPP permit has been submitted, the terms and all conditions of this CAAPP permit will remain in effect until the issuance of a renewal permit [Section 39.5(5)(1) and (o) of the Act].

Note: Pursuant to Sections 39.5(5)(h) and (n) of the Act, upon submittal of a timely and complete renewal application, the permitted source may continue to operate until final action is taken by the Illinois EPA on the renewal application, provided, however, that this protection shall cease if the applicant fails to submit any additional information necessary to evaluate or take final action on the renewal

application as requested by the Illinois EPA in writing. For a renewal application to be timely, it must be submitted no later than 9 months prior to the date of permit expiration.

9.15 General Authority for the Terms and Conditions of this Permit

The authority for terms and conditions of this permit that do not include a citation for their authority is Section 39.5(7)(a) of the Act, which provides that the Illinois EPA shall include such provisions in a CAAPP permit as are necessary to accomplish the purposes of the Act and to assure compliance with all applicable requirements. Section 39.5(7)(a) of the Act is also another basis of authority for terms and conditions of this permit that do include a specific citation for their authority.

Note: This condition is included in this permit pursuant to Section 39.5(7)(n) of the Act.

**10.0 ATTACHMENTS**

Attachment 1 Example Certification by a Responsible Official

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: \_\_\_\_\_

Name: \_\_\_\_\_

Official Title: \_\_\_\_\_

Telephone No.: \_\_\_\_\_

Date Signed: \_\_\_\_\_

Attachment 2 Emissions of Particulate Matter from Process Emission Units

- a. New Process Emission Units for Which Construction or Modification Commenced On or After April 14, 1972 [35 IAC 212.321].
- i. No person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any new process emission unit which, either alone or in combination with the emission of particulate matter from all other similar process emission units for which construction or modification commenced on or after April 14, 1972, at a source or premises, exceeds the allowable emission rates specified in subsection (c) of 35 IAC 212.321 [35 IAC 212.321(a)].

- ii. Interpolated and extrapolated values of the data in subsection (c) of 35 IAC 212.321 shall be determined by using the equation [35 IAC 212.321(b)]:

$$E = A(P)^B$$

where:

P = Process weight rate; and  
 E = Allowable emission rate; and,

- A. Up to process weight rates of 408 Mg/hr (450 T/hr):

	<u>Metric</u>	<u>English</u>
P	Mg/hr	T/hr
E	kg/hr	lb/hr
A	1.214	2.54
B	0.534	0.534

- B. For process weight rate greater than or equal to 408 Mg/hr (450 T/hr):

	<u>Metric</u>	<u>English</u>
P	Mg/hr	T/hr
E	kg/hr	lb/hr
A	11.42	24.8
B	0.16	0.16

iii. Limits for Process Emission Units For Which Construction or Modification Commenced On or After April 19, 1972 [35 IAC 212.321(c)]:

Metric P <u>Mg/hr</u>	E <u>kg/hr</u>	English P <u>T/hr</u>	E <u>lb/hr</u>
0.05	0.25	0.05	0.55
0.1	0.29	0.10	0.77
0.2	0.42	0.2	1.10
0.3	0.64	0.30	1.35
0.4	0.74	0.40	1.58
0.5	0.84	0.50	1.75
0.7	1.00	0.75	2.40
0.9	1.15	1.00	2.60
1.8	1.66	2.00	3.70
2.7	2.1	3.00	4.60
3.6	2.4	4.00	5.35
4.5	2.7	5.00	6.00
9.0	3.9	10.00	8.70
13.0	4.8	15.00	10.80
18.0	5.7	20.00	12.50
23.0	6.5	25.00	14.00
27.0	7.1	30.00	15.60
32.0	7.7	35.00	17.00
36.0	8.2	40.00	18.20
41.0	8.8	45.00	19.20
45.0	9.3	50.00	20.50
90.0	13.4	100.00	29.50
140.0	17.0	150.00	37.00
180.0	19.4	200.00	43.00
230.0	22.0	250.00	48.50
270.0	24.0	300.00	53.00
320.0	26.0	350.00	58.00
360.0	28.0	400.00	62.00
408.0	30.1	450.00	66.00
454.0	30.4	500.00	67.00

b. Existing Process Emission Units for Which Construction or Modification Prior to April 14, 1972 [35 IAC 212.322].

- i. No person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any process emission unit for which construction or modification commenced prior to April 14, 1972, which, either alone or in combination with the emission of particulate matter from all other similar process emission units at a source or premises, exceeds the allowable emission rates specified in subsection (c) of 35 IAC 212.322 [35 IAC 212.322(a)].
- ii. Interpolated and extrapolated values of the data in subsection (c) of 35 IAC 212.321 shall be determined by using the equation [35 IAC 212.322(b)]:

$$E = C + A(P)^B$$

where:

P = Process weight rate; and  
 E = Allowable emission rate; and,

A. Up to process weight rates up to 27.2 Mg/hr (30 T/hr):

	<u>Metric</u>	<u>English</u>
P	Mg/hr	T/hr
E	kg/hr	lb/hr
A	1.985	4.10
B	0.67	0.67
C	0	0

B. For process weight rate in excess of 27.2 Mg/hr (30 T/hr):

	<u>Metric</u>	<u>English</u>
P	Mg/hr	T/hr
E	kg/hr	lb/hr
A	25.21	55.0
B	0.11	0.11
C	- 18.4	- 40.0

iii. Limits for Process Emission Units For Which Construction or Modification Commenced Prior to April 14, 1972 [35 IAC 212.322(c)]:

Metric P <u>Mg/hr</u>	E <u>kg/hr</u>	English P <u>T/hr</u>	E <u>lb/hr</u>
0.05	0.27	0.05	0.55
0.1	0.42	0.10	0.87
0.2	0.68	0.2	1.40
0.3	0.89	0.30	1.83
0.4	1.07	0.40	2.22
0.5	1.25	0.50	2.58
0.7	1.56	0.75	3.38
0.9	1.85	1.00	4.10
1.8	2.9	2.00	6.52
2.7	3.9	3.00	8.56
3.6	4.7	4.00	10.40
4.5	5.4	5.00	12.00
9.0	8.7	10.00	19.20
13.0	11.1	15.00	25.20
18.0	13.8	20.00	30.50
23.0	16.2	25.00	35.40
27.2	18.15	30.00	40.00
32.0	18.8	35.00	41.30
36.0	19.3	40.00	42.50
41.0	19.8	45.00	43.60
45.0	20.2	50.00	44.60
90.0	23.2	100.00	51.20
140.0	25.3	150.00	55.40
180.0	26.5	200.00	58.60
230.0	27.7	250.00	61.00
270.0	28.5	300.00	63.10
320.0	29.4	350.00	64.90
360.0	30.0	400.00	66.20
400.0	30.6	450.00	67.70
454.0	31.3	500.00	69.00

Attachment 3 Compliance Assurance Monitoring (CAM) Plan

There are no specific emission units that require a CAM plan as identified in the Monitoring Requirements of Subsection 8 for each Section 7, Unit Specific Conditions for Specific Emission Units.

Attachment 4 Guidance

The Illinois has prepared guidance for sources on the Clean Air Act Permit Program (CAAPP) that is available on the Internet site maintained by the Illinois EPA, [www.epa.state.il.us](http://www.epa.state.il.us). This guidance includes instructions on applying for a revision or renewal of the CAAPP permit.

Guidance On Revising A CAAPP Permit:

[www.epa.state.il.us/air/caapp/caapp-revising.pdf](http://www.epa.state.il.us/air/caapp/caapp-revising.pdf)

Guidance On Renewing A CAAPP Permit:

[www.epa.state.il.us/air/caapp/caapp-renewing.pdf](http://www.epa.state.il.us/air/caapp/caapp-renewing.pdf)

The application forms prepared by the Illinois EPA for the CAAPP are also available from the Illinois EPA's Internet site:

[www.epa.state.il.us/air/caapp/index.html](http://www.epa.state.il.us/air/caapp/index.html)

These CAAPP application forms should also be used by a CAAPP source when it applies for a construction permit. For this purpose, the appropriate CAAPP application forms and other supporting information, should be accompanied by a completed Application For A Construction Permit form (199-CAAPP) and Fee Determination for Construction Permit Application form (197-FEE):

[www.epa.state.il.us/air/caapp/199-caapp.pdf](http://www.epa.state.il.us/air/caapp/199-caapp.pdf)

[www.epa.state.il.us/air/permits/197-fee.pdf](http://www.epa.state.il.us/air/permits/197-fee.pdf)

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