

Missouri Department of dnr.mo.gov

NATURAL RESOURCES

Michael L. Parson, Governor

Carol S. Comer, Director

JUN 05 2019

Ms. Katie Biri
Regulatory Affairs Manager
Midwest Sterilization Corporation
P.O. Box 411
Jackson, MO 63755

RE: New Source Review Permit - Project Number: 2019-04-015

Dear Ms. Biri:

Enclosed with this letter is your permit to construct. Please study it carefully and refer to Appendix A for a list of common abbreviations and acronyms used in the permit. Also, note the special conditions, if any, on the accompanying pages. The document entitled, "Review of Application for Authority to Construct," is part of the permit and should be kept with this permit in your files. Operation in accordance with these conditions and your new source review permit application is necessary for continued compliance. The reverse side of your permit certificate has important information concerning standard permit conditions and your rights and obligations under the laws and regulations of the State of Missouri.

This permit may include requirements with which you may not be familiar. If you would like the department to meet with you to discuss how to understand and satisfy the requirements contained in this permit, an appointment referred to as a Compliance Assistance Visit (CAV) can be set up with you. To request a CAV, please contact your local regional office or fill out an online request. The regional office contact information can be found at the following website: <http://dnr.mo.gov/regions/>. The online CAV request can be found at <http://dnr.mo.gov/cav/compliance.htm>.

If you were adversely affected by this permit decision, you may be entitled to pursue an appeal before the Administrative Hearing Commission pursuant to Sections 621.250 and 643.075.6 RSMo. To appeal, you must file a petition with the Administrative Hearing Commission within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the Administrative Hearing Commission, whose contact information is: Administrative Hearing Commission, United States Post Office Building, 131 West High Street, Third Floor, P.O. Box 1557, Jefferson City, Missouri 65102, phone: 573-751-2422, fax: 573-751-5018, website: www.ohc.mo.gov/ahc.



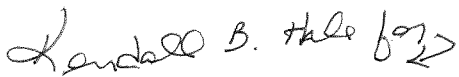
Recycled paper

Ms. Katie Biri
Page Two

If you have any questions regarding this permit, please do not hesitate to contact Nicole Weidenbenner, at the Department of Natural Resources' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or at (573) 751-4817. Thank you for your attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Handwritten signature of Susan Heckenkamp in cursive script.

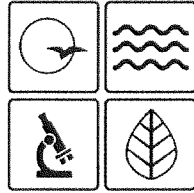
Susan Heckenkamp
New Source Review Unit Chief

SH:nwd

Enclosures

c: Southeast Regional Office
PAMS File: 2019-04-015

Permit Number: **062019-001**



**MISSOURI
DEPARTMENT OF
NATURAL RESOURCES**

MISSOURI AIR CONSERVATION COMMISSION

PERMIT TO CONSTRUCT

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the air contaminant source(s) described below, in accordance with the laws, rules and conditions as set forth herein.

Permit Number: **062019-001** Project Number: 2019-04-015
Installation Number: 031-0068

Parent Company: Midwest Sterilization Corporation

Parent Company Address: 1204 Lenco Ave., Jackson, MO 63755

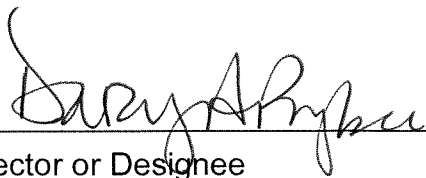
Installation Name: Midwest Sterilization Corporation

Installation Address: 1204 Lenco Ave., Jackson, MO 63755

Location Information: Cape Girardeau County, S14, T35, R7

Application for Authority to Construct was made for:
Installation of new scrubber system and three glycol storage tanks. This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

-
- Standard Conditions (on reverse) are applicable to this permit.
- Standard Conditions (on reverse) and Special Conditions are applicable to this permit.



Director or Designee
Department of Natural Resources

JUN 05 2019

Effective Date

STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Enforcement and Compliance Section of the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review. In the event that there is a discrepancy between the permit application and this permit, the conditions of this permit shall take precedence. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the Enforcement and Compliance Section of the Department's Air Pollution Control Program of the anticipated date of start up of this (these) air contaminant source(s). The information must be made available within 30 days of actual startup. Also, you must notify the Department's regional office responsible for the area within which you are located within 15 days after the actual start up of this (these) air contaminant source(s).

A copy of the permit application and this permit and permit review shall be kept at the installation address and shall be made available to Department's personnel upon request.

You may appeal this permit or any of the listed special conditions to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.075.6 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed. If it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC.

If you choose not to appeal, this certificate, the project review and your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant source(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit using the contact information below.

Contact Information:

Missouri Department of Natural Resources
Air Pollution Control Program
P.O. Box 176
Jefferson City, MO 65102-0176
(573) 751-4817

The regional office information can be found at the following website:

<http://dnr.mo.gov/regions/>

SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

The special conditions listed in this permit were included based on the authority granted to the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060 paragraph (3)(E). "Conditions required by permitting authority."

Midwest Sterilization Corporation
Cape Girardeau County, S14, T35, R7

1. Superseding Condition
 - A. The conditions of this permit supersede all special conditions found in the previously issued construction permit 022016-014B and 122018-008 issued by the Air Pollution Control Program.

2. Ethylene Oxide Usage Limitations
 - A. Midwest Sterilization Corporation shall not use more than 860,049 pounds of ethylene oxide combined in all 13 of its sterilization chambers in any consecutive 12-month period.

 - B. Attachment A or equivalent forms, such as electronic forms, shall be used to demonstrate compliance with Special Condition 2.A.

3. Control Device Requirement – Wet Scrubber (CD-01)
 - A. Midwest Sterilization Corporation shall control emissions from the vacuum pump vents of all sterilization chambers using a wet scrubber (CD-01).

 - B. The wet scrubber shall be operated and maintained in accordance with the manufacturer's specifications, a copy of which shall be kept on site.

 - C. The operating pressure drop and the liquid flow rate of the scrubber shall be maintained within the manufacturer's recommended operating conditions (40-120 gpm for liquid flow rate, 10-17 wg for pressure drop).

 - D. Midwest Sterilization Corporation shall install gauges to measure the scrubber pressure drop and the liquid flow rate. The operating pressure drop and the liquid flow rate shall be recorded once every day while the scrubber is in operation to show compliance with Special Condition 3.C.

 - E. The concentration of glycol in the wet scrubber liquor shall not exceed 49.8% by weight, which was established during the September 15, 2004, stack test. Midwest Sterilization Corporation shall sample the wet scrubber liquor once each week to verify that the concentration of glycol is no greater than 49.8% by weight. Sampling shall be performed using methods approved by the Missouri Air Pollution Control Program.

SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

- F. If the glycol concentration for any sample tested in compliance with Special Condition 3.E., is greater than 49.8% by weight, Midwest Sterilization shall implement corrective actions within eight hours to return the concentration to less than or equal to 49.8%. If corrective actions fail to return the concentration of less than or equal to 49.8%, Midwest Sterilization Corporation shall submit an application to the Air Pollution Control Program to take into account the new information.
 - G. Midwest Sterilization Corporation shall maintain an operating and maintenance log for the wet scrubber which shall include the following:
 - 1) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and
 - 2) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.
4. Control Device Requirement – Safe Cell II (CD-02)
- A. Midwest Sterilization Corporation shall control the ethylene oxide emissions from all of the aeration chambers using a Safe Cell II control device.
 - B. The medium (beads) for the Safe Cell II control device shall be made of appropriate materials for operating conditions expected to occur. Replacement beads shall be kept on site.
 - C. The Safe Cell II control device shall be operated and maintained in accordance with the manufacturer's specifications, a copy of which shall be kept on site.
 - D. Midwest Sterilization Corporation shall maintain an operating and maintenance log for the Safe Cell II control device which shall include the following:
 - 1) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and
 - 2) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.
5. Control Device Requirement – Wet Scrubber (CD-03)
- A. Midwest Sterilization Corporation shall control emissions from the back vents of all sterilization chambers using a wet scrubber (CD-03).
 - B. The wet scrubber shall be operated and maintained in accordance with the manufacturer's specifications, a copy of which shall be kept on site.

SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

- C. The operating pressure drop and the liquid flow rate of the scrubber shall be maintained within the manufacturer's recommended operating conditions.
 - D. Midwest Sterilization Corporation shall install gauges to measure the scrubber pressure drop and the liquid flow rate. The operating pressure drop and the liquid flow rate shall be recorded once every day while the scrubber is in operation to show compliance with Special Condition 5.C.
 - E. Midwest Sterilization Corporation shall maintain an operating and maintenance log for the wet scrubber which shall include the following:
 - 1) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and
 - 2) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.
6. Record Keeping and Reporting Requirements
- A. Midwest Sterilization Corporation shall maintain all records required by this permit for not less than five years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request. These records shall include SDS for all materials used.
 - B. Midwest Sterilization Corporation shall report to the Air Pollution Control Program's Compliance/Enforcement Section, by mail at P.O. Box 176, Jefferson City, MO 65102 or by email at AirComplianceReporting@dnr.mo.gov, no later than ten days after the end of the month during which any record required by this permit shows an exceedance of a limitation imposed by this permit.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE
SECTION (5) REVIEW

Project Number: 2019-04-015
Installation ID Number: 031-0068
Permit Number: 06 2019 - 001

Installation Address:
Midwest Sterilization Corporation
1204 Lenco Ave.
Jackson, MO 63755

Parent Company:
Midwest Sterilization Corporation
1204 Lenco Ave.
Jackson, MO 63755

Cape Girardeau County, S14, T35, R7

REVIEW SUMMARY

- Midwest Sterilization Corporation has applied for authority to install a new scrubber system and associated three glycol storage tanks.
- The application was deemed complete on May 13, 2019.
- HAP emissions are expected from the proposed equipment. The HAP of concern from this process is ethylene oxide.
- None of the New Source Performance Standards (NSPS) apply to the proposed equipment.
- None of the NESHAPs apply to this installation.
- The Maximum Achievable Control Technology (MACT) standard, 40 CFR Part 63, Subpart O, *Ethylene Oxide Emissions Standards for Sterilization Facilities* applies to the sterilization chamber vents and the aeration room vents. Subpart O does not have any requirements for the back vents.
- The ethylene oxide emissions from the aeration room are controlled by a Safe Cell II control system. The ethylene oxide emissions from the sterilization chamber vacuum pump vents are controlled by an existing wet scrubber. The ethylene oxide emissions from the sterilization chamber exhaust vent (back vent) is controlled by the wet scrubber authorized in this permit.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of all pollutants are below de minimis levels.
- This installation is located in Cape Girardeau County, an attainment/unclassifiable area for all criteria air pollutants.

- This installation is not on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2. The installation's major source level is 250 tons per year and fugitive emissions are not counted toward major source applicability.
- Ambient air quality modeling was not performed. The EPA has completed the Risk and Technology Review for 40 CFR Part 63, Subpart O, *Ethylene Oxide Emissions Standards for Sterilization Facilities*. Therefore ambient air quality monitoring is not required.
- Emissions testing is not required for the equipment as a part of this permit. Testing may be required by other applicable state or federal regulations.
- No Operating Permit is required for this installation.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

Midwest Sterilization Corporation is an existing installation in Jackson, Missouri that sterilizes disposable medical devices, dairy cartons, and spices. The largest portion of the business is sterilization of plastic medical supplies. The sterilization process uses ethylene oxide, which is converted to liquid ethylene glycol after wet scrubbing. The facility currently operates thirteen (13) sterilization chambers and 21 aeration rooms.

The sterilization process begins with the loading of palletized, non-sterile products into a designated preconditioning room where they are held under elevated temperature and humidity levels for a prescribed amount of time in preparation for sterilization. After the preconditioning step, the load is transferred using forklifts to a sterilization chamber. While in the chamber, vacuum pumps are used to execute a number of evacuations to reduce the concentration of oxygen inside. Nitrogen, steam, and subsequently, a known amount of ethylene oxide are then introduced into the chamber under a vacuum and circulated in and around the product for a specified period of time. The chamber temperature is maintained at about 125 °F by hot water jackets that wrap the chamber.

After sterilization, vacuum pumps are used to remove the ethylene oxide from the chamber and route it to the wet scrubber emission control system (CD-01, EP# E1). A number of flush cycles are required during the evacuation process to reduce the ethylene oxide to a level that allows for safe chamber unloading. This wet scrubber control system is subject to 40 CFR Part 63, Subpart O emission limitations.

When the sterilization chamber door is opened for unloading, a vent on the opposite end of the chamber (the back vent, EP# E8) automatically activates an exhaust fan that pulls fresh warehouse air through the chamber during the entire unloading process. Back vent emissions do not have any requirements under 40 CFR Part 63, Subpart O.

The sterilized product is moved from the chamber to a heated aeration room. During a typical 24-72 hour period of time, the aeration process removes residual ethylene oxide from the product. The aeration room emissions are directed through a Safe Cell II emission control system (CD-02, EP# E7) that consists of a series of DR 490 units filled with dry reactant. The Safe Cell II system is subject to 40 CFR Part 63, Subpart O emission limitations. When aeration is complete, the sterilized product is stored in the sterile area of the warehouse before shipping.

The following tables lists the equipment on site and the specifications for the sterilization chambers current at the installation.

Table 1: Installation equipment

EP #	Unit Description	Controls
E1	13 Sterilization Chambers, specifics presented in Table 2	Wet Scrubber (CD-01)
E4	3 Natural Gas Fired Boilers, MHDR= 2 units at 3.347 MMBtu/hr, and 1 unit at 8.369 MMBtu/hr. Total is 15.063 MMBtu/hr	None
E5	5 Ethylene Glycol Storage Tanks, 2 units at 12,000 gallon capacity, 2 units at 4,000 gallon capacity, 1 unit at 1,000 gallon capacity	None
E6	Chat Haul Road	None
E7	21 Aeration Rooms	Safe Cell II (CD-02)
E8	Sterilization Chamber Back Vents	New Wet Scrubber (CD-03) in this permit
E9	3 Ethylene Glycol Storage Tanks [2-20,303 gallons, 1-6,500 gallon capacity]	None

Table 2: Sterilization Chamber Specifications

Current Chamber Number ¹	Installation Date	Ethylene Oxide Usage (lb/cycle)	Average Cycle Duration (hr)	Chamber Capacity (ft ³)
1	1990	70	12	1,000
2	1990	70	12	1,000
3	1990	70	12	1,000
4	1991	70	12	1,000
5	1991	70	12	1,000
6	1992	70	12	1,000
7	1995	142	20	2,000
8	1998	142	20	2,000
9	2000	199	16	4,423
10	2000	199	16	4,423
11	2014	199	16	4,423
12	2018	70	12	1,000
13	TBD	70	12	1,000

¹ The chambers listed in Table 2 are labeled differently than in previous permits. Permit 022016-014 authorized the construction of Chambers No. 12 and 13, which were never installed. Permit 022016-014 authorized the construction of Chamber 14, which was installed and is currently listed as Chamber 12. Permit 122018-008 authorized the construction of Chamber 13, which is not yet installed.

The installation is a minor source for construction permits. The following New Source Review permits have been issued to Midwest Sterilization Corporation from the Air Pollution Control Program.

Table 3: Permit History

Permit Number	Description
0780-006	Permitting sterilization chambers. Superseded by subsequent permits.
0187-003	Changing location. Superseded by subsequent permits.
0389-011	Installation of new sterilization chambers. Superseded by subsequent permits.
0490-002	Installation of new sterilization chambers. Superseded by subsequent permits.
1094-005	Addition of new sterilization chambers. Superseded by subsequent permits.
062000-011	Addition of new sterilization chambers, aeration rooms, and ethylene oxide abatement system. Superseded by subsequent permits.
062003-023	Installation of one sterilization chamber and three aeration rooms. Superseded by subsequent permits.
062003-023A	Removing language. Superseded by subsequent permits.
052004-009	New process configuration for MACT compliance. Superseded by subsequent permits.
052004-009A	Removing and replacing special conditions. Added emissions limit. Superseded by subsequent permits.
052004-009B	Limit ethylene oxide emissions and revise back vent emission limit. Superseded by subsequent permits.
122013-007	Addition of a sterilization chamber. Superseded by subsequent permits.
022016-014	Installation of new sterilization chambers. Superseded by subsequent permits.
022016-014A	Correct wet scrubber special condition wording. Superseded by subsequent permits.
022016-014B	Installation of new sterilization chamber. Considered part of the same project as Permit No. 022016-014 and 022016-014A. Superseded by this permitting action.
122018-008	Installation of new sterilization chamber. Superseded by this permitting action.

PROJECT DESCRIPTION

The installation proposes to install a new wet scrubber system (CD-03, EP# E8) and associated glycol storage tanks (EP# 9-1, 9-2, and 9-3) to control emissions from the sterilization room back vents. The emissions from the back vents are currently voluntarily routed through the Safe Cell II system to decrease emissions. In this project, the Safe Cell II controls will be removed from the back vents, causing an emissions increase. After issuance of this permit, the emissions will be routed through the new wet scrubber system. The Safe Cell II system will continue to control the emissions from the aeration room.

EMISSIONS/CONTROLS EVALUATION

The potential emissions of the Sterilization Chambers (EP# E1), Aeration Rooms (EP# E7), and Back Vents (EP# E8); the Boilers (EP# E4) and the Haul Road (EP# E6) were calculated. Storage tank emissions were not evaluated.

Emissions from Sterilization Chambers (EP# E1), Aeration Rooms (EP# E7), and Back Vents (EP# E8) are based on a mass balance approach. Based on the data presented above in Table 2, total potential ethylene oxide usage is calculated to be 860,049 lbs per year.

The potential emissions from the Back Vents (EP# E8) were tested on February 16, 2005, to demonstrate compliance the special conditions of Construction Permit 052004-009B, which established a limit of 0.008 lb Ethylene Oxide emitted per lb Ethylene Oxide charged of uncontrolled emissions. This limit was superceded in Construction Permit 122013-007, however, it was used in this permit because this value demonstrated compliance with the Risk Assessment Level (RAL) modeling performed in 2005. This project is to install a wet scrubber, which has been provided a 99% overall control efficiency.

The Aeration Rooms (EP# E7) are controlled by the Safe Cell II system (CD-02) and are subject to an emission limitation in Subpart O of 1 ppm. The flow rate of the system is 40,000 ft³/min; and ideal gas law conversions were used to calculate the potential emissions.

The Sterilization Chambers (EP# E1) are controlled by the existing wet scrubber (CD-01) and are subject to an emission limitation in Subpart O of 99% overall control of emissions. The potential uncontrolled emissions for the Sterilization Chambers (EP# E1) were estimating by subtracting the potential emissions of the Back Vents (EP# E9) and the Aeration Rooms (EP# E7) from the total ethylene oxide usage. Controlled potential emissions applied the 99% overall control requirement in Subpart O.

The existing wet scrubber (CD-01) underwent performance testing in 2004, and demonstrated a 99.73% efficiency. However, this value was not used because it was based on only one test and the actual efficiency may deviate somewhat from 99.73%. The wet scrubber was provided a 99% overall control efficiency for this permit. During the scrubbing process, the ethylene oxide is converted to ethylene glycol. The installation is required to monitor the ethylene glycol concentration to ensure that it is below the value obtained during the test (49.8 wt. %), so that the 99% control efficiency can be maintained.

Potential emissions from the Boilers (EP# E4) were calculated using webFIRE emission factors for SCC codes 10200603 and 10200602. Haul Road (EP# E6) potential emissions were calculated based on the methodology in AP-42, Section 13.2.2. "Unpaved Roads" (November 2006); using a length of 0.1 miles, unloaded truck weight of 14 tons, loaded truck weight of 24 tons, a silt content of 8.3% and 110 rain days.

Table 4: Emissions Summary (tpy)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Actual Emissions (2018 EIQ)	New Installation Conditioned Potential
PM	25.0	N/A	2.69
PM ₁₀	15.0	0.13	1.12
PM _{2.5}	10.0	0.13	0.55
SO _x	40.0	0.01	0.04

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Actual Emissions (2018 EIQ)	New Installation Conditioned Potential
NOx	40.0	1.77	6.47
VOC	40.0	3.45	5.86
CO	100.0	1.48	5.43
GHG (CO ₂ e)	N/A	N/A	7808
GHG (mass)	N/A	N/A	7762.17
Total HAPs	10.0/25.0	N/R	5.63
Ethylene Oxide	10.0	N/R	5.50

N/A = Not Applicable; N/D = Not Determined, N/R = Not Reported

PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of all pollutants are below de minimis levels.

APPLICABLE REQUIREMENTS

Midwest Sterilization Corporation shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved.

GENERAL REQUIREMENTS

- *Start-Up, Shutdown, and Malfunction Conditions*, 10 CSR 10-6.050
- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110
 - Per 10 CSR 10-6.110(4)(B)2.B(II) and (4)(B)2.C(II) a full EIQ is required for the first full calendar year the equipment (or modifications) approved by this permit are in operation.
- *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*, 10 CSR 10-6.170
- *Restriction of Emission of Odors*, 10 CSR 10-6.165

SPECIFIC REQUIREMENTS

- *MACT Regulations*, 10 CSR 10-6.075
 - 40 CFR Part 63, Subpart O, *Ethylene Oxide Emissions Standards for Sterilization Facilities*

STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, it is recommended that this permit be granted with special conditions.

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated April 1, 2019, received April 8, 2019, designating Midwest Sterilization Corporation as the owner and operator of the installation.

APPENDIX A

Abbreviations and Acronyms

%percent	Mgal1,000 gallons
°Fdegrees Fahrenheit	MWmegawatt
acfmactual cubic feet per minute	MHDRmaximum hourly design rate
BACT Best Available Control Technology	MMBtuMillion British thermal units
BMPsBest Management Practices	MMCFmillion cubic feet
BtuBritish thermal unit	MSDSMaterial Safety Data Sheet
CAM Compliance Assurance Monitoring	NAAQSNational Ambient Air Quality Standards
CASChemical Abstracts Service	NESHAPs National Emissions Standards for Hazardous Air Pollutants
CEMS Continuous Emission Monitor System	NO_xnitrogen oxides
CFRCode of Federal Regulations	NSPSNew Source Performance Standards
COcarbon monoxide	NSRNew Source Review
CO₂carbon dioxide	PMparticulate matter
CO₂ecarbon dioxide equivalent	PM_{2.5}particulate matter less than 2.5 microns in aerodynamic diameter
COMS Continuous Opacity Monitoring System	PM₁₀particulate matter less than 10 microns in aerodynamic diameter
CSRCode of State Regulations	ppmparts per million
dscfdry standard cubic feet	PSDPrevention of Significant Deterioration
EIQEmission Inventory Questionnaire	PTEpotential to emit
EPEmission Point	RACTReasonable Available Control Technology
EPAEnvironmental Protection Agency	RALRisk Assessment Level
EUEmission Unit	SCCSource Classification Code
fpsfeet per second	scfmstandard cubic feet per minute
ftfeet	SDSSafety Data Sheet
GACT Generally Available Control Technology	SICStandard Industrial Classification
GHGGreenhouse Gas	SIPState Implementation Plan
gpmgallons per minute	SMALScreening Model Action Levels
grgrains	SO_xsulfur oxides
GWPGlobal Warming Potential	SO₂sulfur dioxide
HAPHazardous Air Pollutant	SSMStartup, Shutdown & Malfunction
hrhour	tphtons per hour
hphorsepower	tpytons per year
lbpound	VMTvehicle miles traveled
lbs/hrpounds per hour	VOCVolatile Organic Compound
MACTMaximum Achievable Control Technology	
µg/m³micrograms per cubic meter	
m/smeters per second	