

**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY  
AIR QUALITY DIVISION**

August 28, 2012

**PERMIT TO INSTALL**  
556-97A

**ISSUED TO**  
Lakeland Community Hospital, Niles

**LOCATED AT**  
31 North St. Joseph Avenue  
Niles, Michigan

**IN THE COUNTY OF**  
Berrien

**STATE REGISTRATION NUMBER**  
C5705

The Air Quality Division has approved this Permit to Install, pursuant to the delegation of authority from the Michigan Department of Environmental Quality. This permit is hereby issued in accordance with and subject to Section 5505(1) of Article II, Chapter I, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Pursuant to Air Pollution Control Rule 336.1201(1), this permit constitutes the permittee's authority to install the identified emission unit(s) in accordance with all administrative rules of the Department and the attached conditions. Operation of the emission unit(s) identified in this Permit to Install is allowed pursuant to Rule 336.1201(6).

DATE OF RECEIPT OF ALL INFORMATION REQUIRED BY RULE 203:

**August 1, 2012**

DATE PERMIT TO INSTALL APPROVED:

**August 28, 2012**

SIGNATURE:

DATE PERMIT VOIDED:

SIGNATURE:

DATE PERMIT REVOKED:

SIGNATURE:

**PERMIT TO INSTALL**

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**Common Abbreviations / Acronyms**

| <b>Common Acronyms</b> |   | <b>Pollutant / Measurement Abbreviations</b> |                                   |
|------------------------|---|--|-----------------------------------|
| AQD                    | Air Quality Division                                      | BTU  | British Thermal Unit              |
| BACT                   | Best Available Control Technology                         | °C   | Degrees Celsius                   |
| CAA                    | Clean Air Act   | CO   | Carbon Monoxide                   |
| CEM                    | Continuous Emission Monitoring                            | dscf   | Dry standard cubic foot           |
| CFR                    | Code of Federal Regulations                               | dscm   | Dry standard cubic meter          |
| CO <sub>2</sub> e      | Carbon Dioxide Equivalent                                 | °F   | Degrees Fahrenheit                |
| COM                    | Continuous Opacity Monitoring                             | gr   | Grains                            |
| EPA                    | Environmental Protection Agency                           | Hg   | Mercury                           |
| EU                     | Emission Unit   | hr   | Hour                              |
| FG                     | Flexible Group  | H <sub>2</sub> S                             | Hydrogen Sulfide                  |
| GACS                   | Gallon of Applied Coating Solids                          | hp   | Horsepower                        |
| GC                     | General Condition   | lb   | Pound                             |
| GHGs                   | Greenhouse Gases  | kW   | Kilowatt                          |
| HAP                    | Hazardous Air Pollutant                                   | m  | Meter                             |
| HVLP                   | High Volume Low Pressure *                                | mg   | Milligram                         |
| ID                     | Identification  | mm   | Millimeter                        |
| LAER                   | Lowest Achievable Emission Rate                           | MM   | Million                           |
| MACT                   | Maximum Achievable Control Technology                     | MW   | Megawatts                         |
| MAERS                  | Michigan Air Emissions Reporting System                   | ng   | Nanogram                          |
| MAP                    | Malfuction Abatement Plan                                 | NO <sub>x</sub>                              | Oxides of Nitrogen                |
| MDEQ                   | Michigan Department of Environmental Quality (Department) | PM   | Particulate Matter                |
| MSDS                   | Material Safety Data Sheet                                | PM10   | PM less than 10 microns diameter  |
| NESHAP                 | National Emission Standard for Hazardous Air Pollutants   | PM2.5  | PM less than 2.5 microns diameter |
| NSPS                   | New Source Performance Standards                          | pph  | Pounds per hour                   |
| NSR                    | New Source Review   | ppm  | Parts per million                 |
| PS                     | Performance Specification                                 | ppmv   | Parts per million by volume       |
| PSD                    | Prevention of Significant Deterioration                   | ppmw   | Parts per million by weight       |
| PTE                    | Permanent Total Enclosure                                 | psia   | Pounds per square inch absolute   |
| PTI                    | Permit to Install   | psig   | Pounds per square inch gauge      |
| RACT                   | Reasonably Available Control Technology                   | scf  | Standard cubic feet               |
| ROP                    | Renewable Operating Permit                                | sec  | Seconds                           |
| SC                     | Special Condition   | SO <sub>2</sub>                              | Sulfur Dioxide                    |
| SCR                    | Selective Catalytic Reduction                             | THC  | Total Hydrocarbons                |
| SRN                    | State Registration Number                                 | tpy  | Tons per year                     |
| TAC                    | Toxic Air Contaminant                                     | µg   | Microgram                         |
| TEQ                    | Toxicity Equivalence Quotient                             | VOC  | Volatile Organic Compound         |
| VE                     | Visible Emissions   | yr   | Year                              |

\* For High Volume Low Pressure (HVLP) applicators, the pressure measured at the HVLP gun air cap shall not exceed ten (10) pounds per square inch gauge (psig).

### GENERAL CONDITIONS

1. The process or process equipment covered by this permit shall not be reconstructed, relocated, or modified, unless a Permit to Install authorizing such action is issued by the Department, except to the extent such action is exempt from the Permit to Install requirements by any applicable rule. **(R 336.1201(1))**
2. If the installation, construction, reconstruction, relocation, or modification of the equipment for which this permit has been approved has not commenced within 18 months, or has been interrupted for 18 months, this permit shall become void unless otherwise authorized by the Department. Furthermore, the permittee or the designated authorized agent shall notify the Department via the Supervisor, Permit Section, Air Quality Division, Michigan Department of Environmental Quality, P.O. Box 30260, Lansing, Michigan 48909-7760, if it is decided not to pursue the installation, construction, reconstruction, relocation, or modification of the equipment allowed by this Permit to Install. **(R 336.1201(4))**
3. If this Permit to Install is issued for a process or process equipment located at a stationary source that is not subject to the Renewable Operating Permit program requirements pursuant to R 336.1210, operation of the process or process equipment is allowed by this permit if the equipment performs in accordance with the terms and conditions of this Permit to Install. **(R 336.1201(6)(b))**
4. The Department may, after notice and opportunity for a hearing, revoke this Permit to Install if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of this permit or is violating the Department's rules or the Clean Air Act. **(R 336.1201(8), Section 5510 of Act 451, PA 1994)**
5. The terms and conditions of this Permit to Install shall apply to any person or legal entity that now or hereafter owns or operates the process or process equipment at the location authorized by this Permit to Install. If the new owner or operator submits a written request to the Department pursuant to R 336.1219 and the Department approves the request, this permit will be amended to reflect the change of ownership or operational control. The request must include all of the information required by subrules (1)(a), (b), and (c) of R 336.1219 and shall be sent to the District Supervisor, Air Quality Division, Michigan Department of Environmental Quality. **(R 336.1219)**
6. Operation of this equipment shall not result in the emission of an air contaminant which causes injurious effects to human health or safety, animal life, plant life of significant economic value, or property, or which causes unreasonable interference with the comfortable enjoyment of life and property. **(R 336.1901)**
7. The permittee shall provide notice of an abnormal condition, start-up, shutdown, or malfunction that results in emissions of a hazardous or toxic air pollutant which continue for more than one hour in excess of any applicable standard or limitation, or emissions of any air contaminant continuing for more than two hours in excess of an applicable standard or limitation, as required in Rule 912, to the Department. The notice shall be provided not later than two business days after start-up, shutdown, or discovery of the abnormal condition or malfunction. Written reports, if required, must be filed with the Department within 10 days after the start-up or shutdown occurred, within 10 days after the abnormal conditions or malfunction has been corrected, or within 30 days of discovery of the abnormal condition or malfunction, whichever is first. The written reports shall include all of the information required in Rule 912(5). **(R 336.1912)**
8. Approval of this permit does not exempt the permittee from complying with any future applicable requirements which may be promulgated under Part 55 of 1994 PA 451, as amended or the Federal Clean Air Act.
9. Approval of this permit does not obviate the necessity of obtaining such permits or approvals from other units of government as required by law.
10. Operation of this equipment may be subject to other requirements of Part 55 of 1994 PA 451, as amended and the rules promulgated thereunder.

11. Except as provided in subrules (2) and (3) or unless the special conditions of the Permit to Install include an alternate opacity limit established pursuant to subrule (4) of R 336.1301, the permittee shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of density greater than the most stringent of the following. The grading of visible emissions shall be determined in accordance with R 336.1303. **(R 336.1301)**
  - a. A six-minute average of 20 percent opacity, except for one six-minute average per hour of not more than 27 percent opacity.
  - b. A visible emission limit specified by an applicable federal new source performance standard.
  - c. A visible emission limit specified as a condition of this Permit to Install.
  
12. Collected air contaminants shall be removed as necessary to maintain the equipment at the required operating efficiency. The collection and disposal of air contaminants shall be performed in a manner so as to minimize the introduction of contaminants to the outer air. Transport of collected air contaminants in Priority I and II areas requires the use of material handling methods specified in R 336.1370(2). **(R 336.1370)**
  
13. The Department may require the permittee to conduct acceptable performance tests, at the permittee's expense, in accordance with R 336.2001 and R 336.2003, under any of the conditions listed in R 336.2001. **(R 336.2001)**

**SPECIAL CONDITIONS**

**EMISSION UNIT SUMMARY TABLE**

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

| Emission Unit ID   | Emission Unit Description<br>(Process Equipment & Control Devices)   | Flexible Group ID |
|--|--|-------------------|
| EUETO1   | One Steris Amsco® Eagle®, Model 3017, 100% ethylene oxide (EtO) sterilizer/aerator. The sterilizer is controlled by a common AAT Safe-Cell II™ DR50 Air Scrubber.* | FGSTERILIZERS     |
| EUETO2   | One Steris Amsco® Eagle®, Model 3017, 100% ethylene oxide (EtO) sterilizer/aerator. The sterilizer is controlled by a common AAT Safe-Cell II™ DR50 Air Scrubber.* | FGSTERILIZERS     |
| <p>*This is a high-volume dry resin bed filter with a chemical reactant which controls both EtO sterilizers.</p> <p>Changes to the equipment described in this table are subject to the requirements of R 336.1201, except as allowed by R 336.1278 to R 336.1290.</p> |  |                   |

**FLEXIBLE GROUP SUMMARY TABLE**

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

| Flexible Group ID | Flexible Group Description  | Associated Emission Unit IDs |
|-------------------|---|------------------------------|
| FGSTERILIZERS     | Two EtO sterilizers, each with an air ejector system to prevent the discharge of any EtO to a wastewater stream and which are both controlled by one AAT Safe-Cell II™ DR50 Air Scrubber. | EUETO1<br>EUETO2             |

**The following conditions apply to: FGSTERILIZERS**

**DESCRIPTION:** Two EtO sterilizer/aerators which use 100 percent EtO as a sterilant. Both are controlled by a dry resin bed scrubber.

**Emission Units:** EUETO1, EUETO2

**POLLUTION CONTROL EQUIPMENT:** One AAT Safe-Cell II™ DR50 Air Scrubber which controls both sterilizers.

**I. EMISSION LIMITS**

| Pollutant | Limit       | Time Period/<br>Operating<br>Scenario  | Equipment   | Testing /<br>Monitoring<br>Method | Underlying<br>Applicable<br>Requirements |
|-----------|-------------|--|---|-----------------------------------|--|
| 1. EtO    | 0.0022 pph  | Test Protocol  | Both sterilizers<br>exhausting at one<br>time             | GC 13                             | R 336.1225                               |
| 2. EtO    | 0.0011 pph  | Test Protocol  | One individual<br>sterilizer<br>exhausting at one<br>time | GC 13                             | R 336.1225                               |
| 3. EtO    | 0.8 lb/year | 12-month rolling<br>time period as<br>determined at the<br>end of each<br>calendar month | FGSTERILIZERS<br>(both sterilizers<br>combined)           | SC VI.2                           | R 336.1225,<br>R 336.1702(a)             |

**II. MATERIAL LIMITS**

1. The permittee shall not use more than 100 grams of EtO per cycle/load in each EtO sterilizer within FGSTERILIZERS. **(R 336.1225, R 336.1702(a))**

**III. PROCESS/OPERATIONAL RESTRICTIONS**

1. The permittee shall not operate either sterilizer associated with FGSTERILIZERS unless the dry resin bed scrubber is installed, maintained, and operated in a satisfactory manner. Satisfactory operation of the dry bed scrubber includes a minimum EtO destruction efficiency of 99.5 percent by weight. **(R 336.1225, R 336.1702(a), R 336.1901, R 336.1910)**
2. The permittee shall not operate any sterilizer associated with FGSTERILIZERS unless a malfunction abatement plan (MAP) as described in Rule 911(2), has been submitted within 60 days of permit issuance, and is implemented and maintained. If at any time the MAP fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall amend the MAP within 45 days after such an event occurs. The permittee shall also amend the MAP within 45 days, if new equipment is installed or upon request from the District Supervisor. The permittee shall submit the MAP and any amendments to the MAP to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 90 days of submittal, the MAP or amended MAP shall be considered approved. Until an amended plan is approved, the permittee shall implement corrective procedures or operational changes to achieve compliance with all applicable emission limits. **(R 336.1225, R 336.1702(a), R 336.1910, R 336.1911)**

#### **IV. DESIGN/EQUIPMENT PARAMETERS**

1. The permittee shall not operate any sterilizer associated with FGSTERILIZERS unless each respective closed loop recirculating-fluid vacuum pump, air ejector system, or other method of drawing a vacuum and evacuating each sterilizer chamber and which prevents the discharge of any EtO to a wastewater stream is installed, maintained, and operated in a satisfactory manner on each sterilizer associated with FG-STERILIZERS. **(R 336.1225, R 336.1702(a))**

#### **V. TESTING/SAMPLING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

NA

#### **VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor by the 15th day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. **(R 336.1225, R 336.1702(a))**
2. The permittee shall keep a separate monthly record of the following information:
  - a. The amount of EtO used in each sterilizer per cycle/load.
  - b. The number of cycles/loads processed in each sterilizer per calendar day and per calendar month.
  - c. EtO mass emission calculations determining the monthly emission rate, in pounds per calendar month, from each sterilizer, and for both sterilizers combined.
  - d. EtO mass emission calculations determining the annual emission rate in pounds per 12-month rolling time period as determined at the end of each calendar month, for each sterilizer and for both sterilizers combined.

The permittee shall keep the records in a format acceptable to the AQD District Supervisor. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1225, R 336.1702(a))**

3. The permittee shall monitor a parameter of the dry resin bed scrubber, based on either the manufacturer's specifications or a performance test, which assures at least 99.5 percent reduction of EtO emissions. A copy of the manufacturer's specifications for the control device shall be maintained on file. **(R 336.1225, R 336.1910)**
4. The permittee shall keep the following in a satisfactory manner: records of the date, duration, and description of any malfunction of the control equipment; any maintenance performed; replacement of the dry resin bed; and any testing results for FGSTERILIZERS. All records shall be kept on file and made available to the Department upon request. **(R 336.1225, R 336.1910)**

#### **VII. REPORTING**

NA

**VIII. STACK/VENT RESTRICTIONS**

The exhaust gases from the stacks listed in the table below shall be discharged to the ambient air unless otherwise noted:

| <b>Stack &amp; Vent ID</b> | <b>Maximum Exhaust Diameter/Dimensions (inches)</b> | <b>Minimum Height Above Ground (feet)</b> | <b>Underlying Applicable Requirements</b>                              |
|----------------------------|---|---|--|
| 1. SV-ETO1&2               | 6   | 26  | R 336.1225, R 336.1901, R 336.2803, R 336.2804, 40 CFR 52.21 (c) & (d) |

**IX. OTHER REQUIREMENTS**

1. The permittee shall comply with all applicable provisions of the National Emission Standards for Hazardous Air Pollutants, as specified in 40 CFR Part 63, Subpart A and Subpart WWWW for Hospital Ethylene Oxide Sterilizers by the initial compliance date. **(40 CFR Part 63, Subpart A and Subpart WWWW)**