

**MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY  
AIR QUALITY DIVISION**

JANUARY 7, 2021

**PERMIT TO INSTALL**  
173-08B

**ISSUED TO**  
A & L IRON & METAL, INC.

**LOCATED AT**  
2000 MILBOCKER ROAD  
GAYLORD, MICHIGAN 49734

**IN THE COUNTY OF**  
OTSEGO

**STATE REGISTRATION NUMBER**  
N7508

The Air Quality Division has approved this Permit to Install, pursuant to the delegation of authority from the Michigan Department of Environment, Great Lakes, and Energy. 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:<br><b>December 9, 2020</b> |            |
| DATE PERMIT TO INSTALL APPROVED:<br><b>January 7, 2021</b>                          | SIGNATURE: |
| DATE PERMIT VOIDED:   | SIGNATURE: |
| DATE PERMIT REVOKED:  | SIGNATURE: |

**PERMIT TO INSTALL**

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### COMMON ACRONYMS

|                            |   |
|----------------------------|---|
| AQD                        | Air Quality Division  |
| BACT                       | Best Available Control Technology                           |
| CAA                        | Clean Air Act   |
| CAM                        | Compliance Assurance Monitoring                             |
| CEMS                       | Continuous Emission Monitoring System                       |
| CFR                        | Code of Federal Regulations                                 |
| COMS                       | Continuous Opacity Monitoring System                        |
| Department/department/EGLE | Michigan Department of Environment, Great Lakes, and Energy |
| EU                         | Emission Unit   |
| FG                         | Flexible Group  |
| GACS                       | Gallons of Applied Coating Solids                           |
| GC                         | General Condition   |
| GHGs                       | Greenhouse Gases  |
| HVLP                       | High Volume Low Pressure*                                   |
| ID                         | Identification  |
| IRSL                       | Initial Risk Screening Level                                |
| ITSL                       | Initial Threshold Screening Level                           |
| LAER                       | Lowest Achievable Emission Rate                             |
| MACT                       | Maximum Achievable Control Technology                       |
| MAERS                      | Michigan Air Emissions Reporting System                     |
| MAP                        | Malfunction Abatement Plan                                  |
| MSDS                       | Material Safety Data Sheet                                  |
| NA                         | Not Applicable  |
| NAAQS                      | National Ambient Air Quality Standards                      |
| NESHAP                     | National Emission Standard for Hazardous Air Pollutants     |
| NSPS                       | New Source Performance Standards                            |
| NSR                        | New Source Review   |
| PS                         | Performance Specification                                   |
| PSD                        | Prevention of Significant Deterioration                     |
| PTE                        | Permanent Total Enclosure                                   |
| PTI                        | Permit to Install   |
| RACT                       | Reasonable Available Control Technology                     |
| ROP                        | Renewable Operating Permit                                  |
| SC                         | Special Condition   |
| SCR                        | Selective Catalytic Reduction                               |
| SNCR                       | Selective Non-Catalytic Reduction                           |
| SRN                        | State Registration Number                                   |
| TBD                        | To Be Determined  |
| TEQ                        | Toxicity Equivalence Quotient                               |
| USEPA/EPA                  | United States Environmental Protection Agency               |
| VE                         | Visible Emissions   |

\*For HVLP applicators, the pressure measured at the gun air cap shall not exceed 10 psig.

### POLLUTANT / MEASUREMENT ABBREVIATIONS

|                   |  |
|-------------------|--|
| acfm              | Actual cubic feet per minute                                     |
| BTU               | British Thermal Unit   |
| °C                | Degrees Celsius  |
| CO                | Carbon Monoxide  |
| CO <sub>2</sub> e | Carbon Dioxide Equivalent  |
| dscf              | Dry standard cubic foot  |
| dscm              | Dry standard cubic meter   |
| °F                | Degrees Fahrenheit   |
| gr                | Grains   |
| HAP               | Hazardous Air Pollutant  |
| Hg                | Mercury  |
| hr                | Hour   |
| HP                | Horsepower   |
| H <sub>2</sub> S  | Hydrogen Sulfide   |
| kW                | Kilowatt   |
| lb                | Pound  |
| m                 | Meter  |
| mg                | Milligram  |
| mm                | Millimeter   |
| MM                | Million  |
| MW                | Megawatts  |
| NMOC              | Non-Methane Organic Compounds                                    |
| NO <sub>x</sub>   | Oxides of Nitrogen   |
| ng                | Nanogram   |
| PM                | Particulate Matter   |
| PM10              | Particulate Matter equal to or less than 10 microns in diameter  |
| PM2.5             | Particulate Matter equal to or less than 2.5 microns in diameter |
| pph               | Pounds per hour  |
| ppm               | Parts per million  |
| ppmv              | Parts per million by volume                                      |
| ppmw              | Parts per million by weight                                      |
| psia              | Pounds per square inch absolute                                  |
| psig              | Pounds per square inch gauge                                     |
| scf               | Standard cubic feet  |
| sec               | Seconds  |
| SO <sub>2</sub>   | Sulfur Dioxide   |
| TAC               | Toxic Air Contaminant  |
| Temp              | Temperature  |
| THC               | Total Hydrocarbons   |
| tpy               | Tons per year  |
| µg                | Microgram  |
| µm                | Micrometer or Micron   |
| VOC               | Volatile Organic Compounds                                       |
| yr                | Year   |

## 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 Environment, Great Lakes, and Energy, 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 Rule 210 (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 Rule 219 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 Rule 219 and shall be sent to the District Supervisor, Air Quality Division, Michigan Department of Environment, Great Lakes, and Energy. **(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 condition 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 Rule 301, 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 Rule 303 (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 Rule 370(2). **(R 336.1370)**
13. The Department may require the permittee to conduct acceptable performance tests, at the permittee's expense, in accordance with Rule 1001 and Rule 1003, under any of the conditions listed in Rule 1001. **(R 336.2001)**

## EMISSION UNIT SPECIAL CONDITIONS

### EMISSION UNIT SUMMARY TABLE

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

| <b>Emission Unit ID</b> | <b>Emission Unit Description<br/>(Including Process Equipment &amp; Control Device(s))</b>   | <b>Flexible<br/>Group ID</b> |
|-------------------------|--|------------------------------|
| EUGENERATOR             | General Electric model no. FDL16 locomotive compression ignition reciprocating internal combustion engine which drives an electricity generator with an output rating of approximately 2.6 megawatts (MW). The engine has a manufacture date of 1978 and a horsepower rating of approximately 3,506 hp. The engine is equipped with an oxidation catalyst. | NA                           |

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 336.1291.

**EUGENERATOR  
 EMISSION UNIT CONDITIONS**

**DESCRIPTION**

General Electric model no. FDL16 locomotive compression ignition reciprocating internal combustion engine which drives an electricity generator with an output rating of approximately 2.6 megawatts (MW). The engine has a manufacture date of 1978 and a horsepower rating of approximately 3,506 hp. The engine is equipped with an oxidation catalyst.

**Flexible Group ID:** NA

**POLLUTION CONTROL EQUIPMENT**

Oxidation catalyst

**I. EMISSION LIMIT(S)**

| <b>Pollutant</b> | <b>Limit</b>   | <b>Time Period / Operating Scenario</b> | <b>Equipment</b> | <b>Monitoring / Testing Method</b> | <b>Underlying Applicable Requirements</b> |
|------------------|--|---|------------------|------------------------------------|---|
| 1. CO            | 70% or greater reduction in CO emissions as measured at the inlet of the oxidation catalyst and at the outlet of the oxidation catalyst.<br>OR<br>23 ppmvd @ 15% oxygen. | Hourly                                  | EUGENERATOR      | SC V.2,<br>SC VI.2                 | 40 CFR 63.6603,<br>R 336.1205(3)          |
| 2. NOx           | 69.4 pph   | Hourly                                  | EUGENERATOR      | SC V.1                             | R 336.1205(3)                             |
| 3. VOC           | 17.4 pph   | Hourly                                  | EUGENERATOR      | SC V.1                             | R 336.1205(3)                             |

**II. MATERIAL LIMIT(S)**

1. The total heat input of natural gas and diesel fuel used in EUGENERATOR shall not exceed 12,483 MMBtu per 12-month rolling time period. Compliance with this permit condition shall be demonstrated using the methodology in Appendix A. **(R 336.1205(3))**
2. The total heat input of natural gas and diesel fuel used in EUGENERATOR shall not exceed 21.7 MMBtu/hr. Compliance with this permit conditions shall be demonstrated using the methodology in Appendix A. **(R 336.1205(3))**
3. The diesel fuel used in EUGENERATOR shall have a sulfur content not to exceed 15 ppm and shall have a minimum cetane index of 40 or a maximum aromatic content of 35% by volume. **(40 CFR 63.6604, R 336.1402)**
4. The heat input of natural gas for EUGENERATOR shall not exceed 6.5 MMBTU/hr. Compliance with this permit conditions shall be demonstrated by SC IV.2. or a methodology approved in writing by the AQD District Supervisor. **(R 336.1205, R 336.1225, R 336.1901, 40 CFR 52.21)**

**III. PROCESS/OPERATIONAL RESTRICTION(S)**

NA

#### **IV. DESIGN/EQUIPMENT PARAMETER(S)**

1. The permittee shall not operate EUGENERATOR unless the oxidation catalyst is installed, maintained, and operated in a satisfactory manner. Satisfactory operation of the oxidation catalyst shall include the following limitations from 40 CFR Part 63, Subpart ZZZZ Appendix Table 2b: **(40 CFR 63.6603 Table 2b, R 336.1205(3))**
  - a) A minimum temperature of greater than or equal to 450 degrees Fahrenheit and less than 1,350 degrees Fahrenheit as measured at the inlet of the oxidation catalyst is maintained at all times.
  - b) The pressure drop across the oxidation catalyst shall not change by more than 2 inches water column from the pressure drop across the catalyst that was measured during performance testing.
2. The permittee shall install, calibrate, maintain and operate in a satisfactory manner, acceptable to the AQD District Supervisor, a device to monitor and record the hourly heat input for natural gas, on a continuous basis, in MMBtu per hour. **(R 336.1205, R 336.1225, 40 CFR 52.21)**

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

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

1. Within 12-months after permit issuance, the permittee shall verify NO<sub>x</sub> and VOC emission rates used to calculate emissions from EUGENERATOR by testing at owner's expense, in accordance with Department requirements. Testing shall be performed using an approved EPA Method listed in:

| Pollutant       | Test Method Reference      |
|-----------------|----------------------------|
| NO <sub>x</sub> | 40 CFR Part 60, Appendix A |
| VOCs            | 40 CFR Part 60, Appendix A |

An alternate method, or a modification to the approved EPA Method, may be specified in an AQD-approved Test Protocol. No less than 60 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.1205, R 336.1224, R 336.1225, R 336.1702, R 336.2001, R 336.2003, R 336.2004, 40 CFR 52.21(c) & (d))**

2. The permittee shall verify CO concentration or reduction efficiency for EUGENERATOR by testing at the owner's expense, in accordance with Department requirements. Testing shall be performed every 8,760 operating hours, or every three years, whichever occurs first. Testing shall be performed using EPA Methods 1, 2, 3A, 4 and 10. Alternate methods, or a modification to the approved EPA Methods, may be specified in an AQD approved Test Protocol. No less than 60 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office and a notification to the EPA administrator of stack testing. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(40 CFR 63.6620, R 336.1205(3))**

#### **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 last day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. **(R 336.1205, R 336.1331, 40 CFR 52.21(c)&(d))**
2. The permittee shall maintain the following records:
  - a) Diesel fuel usage (in gallons) and natural gas usage (in standard cubic feet), on a monthly and 12-month rolling time period basis. Records shall be completed by the end of each calendar month.
  - b) Fuel receipts or fuel supplier certification indicating the sulfur content of diesel fuel used.
  - c) Fuel receipts or fuel supplier certifications indicating the heat content of fuels.
  - d) Calculated total heat input of all fuels used in EUGENERATOR (see Appendix A) on a monthly basis.

- e) Hourly heat input in MMBtu/hr and annual heat input in MMBtu's per rolling 12-month time period of EUGENERATOR, using the methodology contained in Appendix A.
- f) Hourly heat input in MMBtu/hr for natural gas on an hourly basis.
- g) Monthly operating hours of EUGENERATOR.
- h) A copy of each notification and report that was submitted to comply with this subpart, including all documentation supporting any Initial Notification or Notification of Compliance Status that was submitted, according to the requirement in 40 CFR 63.10(b)(2)(xiv).
- i) Records of the occurrence and duration of each malfunction of operation (i.e., process equipment) or the air pollution control and monitoring equipment as required under 40 CFR 63.6655 (a)(2).
- j) Records of performance tests and performance evaluations as required in 40 CFR 63.10(b)(2)(viii).
- k) Records of all required maintenance performed on the air pollution control and monitoring equipment as required under 40 CFR 63.6655(a)(4).
- l) Records of actions taken during periods of malfunction to minimize emissions in accordance with 40 CFR 63.6605(b), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation as required under 40 CFR 63.6655(a)(5).

All of the above records shall be maintained in a format acceptable to the Air Quality Division and shall be maintained for a period of at least five years and made available to the Air Quality Division upon request. **(40 CFR Subpart ZZZZ, 40 CFR 63.10, R 336.1205(3), R 336.1225)**

- 3. The permittee shall install and maintain a continuous parameter monitoring system (CPMS). Following are the requirements of the CPMS: **(40 CFR Part 63, Subpart ZZZZ)**
  - a) The permittee shall prepare a site-specific monitoring plan that addresses the monitoring system design, data collection, and the quality assurance and quality control elements outlined in paragraphs (b)(1)(i) through (v) of 40 CFR 63.6625 and in 40 CFR 63.8(d). As specified in 40 CFR 63.8(f)(4), the permittee may request approval of monitoring system quality assurance and quality control procedures alternative to those specified in paragraphs (b)(1) through (5) of section 63.6625 in the site-specific monitoring plan.
  - b) The permittee shall install, operate, and maintain each CPMS in continuous operation according to the procedures in the site-specific monitoring plan.
  - c) The CPMS shall collect data at least once every 15 minutes (see also 40 CFR 63.6635).
  - d) For a CPMS for measuring temperature range, the temperature sensor shall have a minimum tolerance of 2.8 degrees Celsius (5 degrees Fahrenheit) or 1 percent of the measurement range, whichever is larger as required under 40 CFR 63.6625 (b)(4).
  - e) The permittee shall conduct the CPMS equipment performance evaluation, system accuracy audits, or other audit procedures specified in the site-specific monitoring plan at least annually.
  - f) The permittee shall conduct a performance evaluation of each CPMS in accordance with the site-specific monitoring plan.
- 4. The permittee shall monitor and record, in a satisfactory manner, in compliance with condition VI.2(c). The data sampling frequency of the CPMS shall be at least once every 15 minutes. **(40 CFR 63.6625, 40 CFR 63.6635)**

## **VII. REPORTING**

- 1. The permittee shall submit semi-annual compliance reports to the Administrator in accordance with 40 CFR 63.6650(b)(1) through 63.6650(b)(5). **(40 CFR Part 63 Subpart ZZZZ)**
- 2. The permittee shall submit notifications to the Administrator in accordance with the requirements of 40 CFR 63.7(b) and (c); 40 CFR 63.8(e), (f)(4); and 40 CFR 63.9(b) through (e), (g), and (h). **(40 CFR 63.6645)**
- 3. The permittee shall submit reports on control equipment malfunctions, excursions in catalyst temperature, and excursions in the pressure drop across the oxidation catalyst in accordance with the applicable requirements of 40 CFR 63.6650. **(40 CFR Part 63.6650)**

**VIII. STACK/VENT RESTRICTION(S)**

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards 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. SVGENERATOR1            | 16  | 48  | R 336.1225                                |
| 2. SVGENERATOR2            | 16  | 48  | R 336.1225                                |
| 3. SVGENERATOR3            | 16  | 48  | R 336.1225                                |

**IX. OTHER REQUIREMENT(S)**

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 ZZZZ, for Stationary Reciprocating Internal Combustion Engines. **(40 CFR 63.6595, 40 CFR Part 63, Subparts A and ZZZZ)**

**Footnotes:**

<sup>1</sup> This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

## **APPENDIX A**

### **Calculation of Total Heat Input to EUGENERATOR**

To show compliance with special condition II.1, it is necessary to calculate the total heat input for all fuels (natural gas and diesel fuel oil) used in EUGENERATOR. In order to perform this calculation, it is necessary to have the following information

1.  $HC_{do}$  = Heat content of diesel oil as provided by fuel supplier (Btu's per gallon).
2.  $HC_{ng}$  = Heat content of natural gas as provided by natural gas provider (Btu's per cubic foot).
3.  $Q_{do}$  = monthly diesel fuel usage, gallons
4.  $Q_{ng}$  = monthly natural gas usage, cubic feet.
5. Total monthly heat input =  $((HC_{do} * Q_{do}) + (HC_{ng} * Q_{ng}))/1,000,000$

To show compliance with special condition II.2, it is necessary to divide the total monthly heat input to EUGENERATOR, calculated in step 5 above, by the total hours that EUGENERATOR operated during each calendar month.

Both the total monthly heat input and the hourly heat input need to be calculated on a monthly basis and recorded on a monthly basis, as required by special condition II.2.