

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

October 14, 2021

**PERMIT TO INSTALL**  
129-19B

**ISSUED TO**  
Berne Foundry, LLC

**LOCATED AT**  
7190 Berne Road  
Pigeon, Michigan 48755

**IN THE COUNTY OF**  
Huron

**STATE REGISTRATION NUMBER**  
A1453

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: <b>August 18, 2021</b>	
DATE PERMIT TO INSTALL APPROVED: <b>October 14, 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	Malfuction 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>2e</sub>	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.

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Flexible Group ID
EUINDUCTIONA	Coreless induction tilt-furnace used for melting steel, iron, and aluminum alloys with a nominal holding capacity of 4,000 lb. Exhaust hood will direct emissions to a 40,000 scfm fabric filter baghouse (Baghouse #3).	FGFOUNDRY
EUINDUCTIONB	Coreless induction tilt-furnace used for melting steel, iron, and aluminum alloys with a nominal holding capacity of 4,000 lb. Exhaust hood will direct emissions to Baghouse #3.	FGFOUNDRY
EUINDUCTIONC	Coreless induction tilt-furnace used for melting steel, iron, and aluminum alloys with a nominal holding capacity of 2,000 lb. Exhaust hood will direct emissions to Baghouse #3.	FGFOUNDRY
EUINDUCTIOND	Coreless induction tilt-furnace used for melting steel, iron, and aluminum alloys with a nominal holding capacity of 1,000 lb. Exhaust hood will direct emissions to Baghouse #3.	FGFOUNDRY
EUPOURING	Pouring line with the ladle supported by an overhead trolley system. General plant ventilation in this area to Baghouse #3.	FGFOUNDRY
EUCOOLING	Cooling line. Parts are conveyed from pouring area as they cool. General plant ventilation in this area to Baghouse #3.	FGFOUNDRY
EUSHAKEOUT	Manual shakeout process to separate cast parts from sand molds. Exhaust hood directs emissions to Baghouse #3.	FGFOUNDRY
EUFINISHING	Various finishing and cleaning processes in the Main Building, including grinding and cutting. Emissions from grinding processes on the east side of the Main Building are controlled by Baghouse #1, which vents in-plant.	NA
EUSANDHANDLING	Sand that is shipped to the facility in trucks is placed into a holding tank outside using a conveyor and elevator. An enclosed screw auger transfers the sand from the holding tank into the Main Building. Sand is placed in a tank on top of the molding machines.	FGMOLDCORE
EUMOLD1	20 by 30-inch molding machine with overhead natural gas-fired oven rated at 750,000 BTU/hr. General plant ventilation in the molding area to Baghouse #3.	FGMOLDCORE
EUMOLD2	20 by 30-inch molding machine with overhead natural gas-fired oven rated at 750,000 BTU/hr. General plant ventilation in the molding area to Baghouse #3.	FGMOLDCORE
EUMOLD3	30 by 40-inch molding machine with overhead natural gas-fired oven rated at 1,250,000 BTU/hr. General plant ventilation in the molding area to Baghouse #3.	FGMOLDCORE
EUMOLD4	30 by 40-inch molding machine with overhead natural gas-fired oven rated at 2,000,000 BTU/hr. General plant ventilation in the molding area to Baghouse #3.	FGMOLDCORE
EUMOLD5	20 by 30-inch molding machine with overhead natural gas-fired oven rated at 750,000 BTU/hr. General plant ventilation in the molding area to Baghouse #3.	FGMOLDCORE
EUMOLD6	20 by 30-inch molding machine with overhead natural gas-fired oven rated at 750,000 BTU/hr. General plant ventilation in the molding area to Baghouse #3.	FGMOLDCORE

<b>Emission Unit ID</b>	<b>Emission Unit Description (Including Process Equipment &amp; Control Device(s))</b>	<b>Flexible Group ID</b>
EUMOLD7	20 by 30-inch molding machine with overhead natural gas-fired oven rated at 750,000 BTU/hr. General plant ventilation in the molding area to Baghouse #3.	FGMOLDCORE
EUHANDMOLD	Natural gas-fired brick oven rated at 250,000 BTU/hr, where small parts are molded. General plant ventilation in the molding area to Baghouse #3.	FGMOLDCORE
EUCORE1	Core machine fired by natural gas with a rating of 150,000 BTU/hr. Sand is blown into the core box, which is heated by two natural gas manifolds. The target temperature is 500°F. General plant ventilation in the molding area to Baghouse #3.	FGMOLDCORE
EUCORE2	Core machine fired by natural gas with a rating of 250,000 BTU/hr. Sand is blown into the core box, which is heated by two natural gas manifolds. The target temperature is 500°F. General plant ventilation in the molding area to Baghouse #3.	FGMOLDCORE
EUCORE3	Core machine fired by natural gas with a rating of 150,000 BTU/hr. Sand is blown into the core box, which is heated by two natural gas manifolds. The target temperature is 500°F. General plant ventilation in the molding area to Baghouse #3.	FGMOLDCORE
EUCORE4	Core machine fired by natural gas with a rating of 250,000 BTU/hr. Sand is blown into the core box, which is heated by two natural gas manifolds. The target temperature is 500°F. General plant ventilation in the molding area to Baghouse #3.	FGMOLDCORE
EUCORE5	Core machine fired by natural gas with a rating of 150,000 BTU/hr. Sand is blown into the core box, which is heated by two natural gas manifolds. The target temperature is 500°F. General plant ventilation in the molding area to Baghouse #3.	FGMOLDCORE
EUCORE6	Core machine fired by natural gas with a rating of 250,000 BTU/hr. Sand is blown into the core box, which is heated by two natural gas manifolds. The target temperature is 500°F. General plant ventilation in the molding area to Baghouse #3.	FGMOLDCORE
EUCORE7	Core machine fired by natural gas with a rating of 750,000 BTU/hr. Sand is blown into the core box, which is heated by two natural gas manifolds. The target temperature is 500°F. General plant ventilation in the molding area to Baghouse #3.	FGMOLDCORE
EUHEATTREAT1	Natural gas-fired heat-treating furnace with maximum heat input capacity of 1,000,000 BTU/hr and associated water-based and oil-based quenching located in the Main Building. General plant ventilation in the heat treat area to Baghouse #3.	FGHEATTREAT
EUHEATTREAT2	Natural gas-fired heat-treating furnace with maximum heat input capacity of 750,000 BTU/hr and associated water-based and oil-based quenching located in the Main Building. General plant ventilation in the heat treat area to Baghouse #3.	FGHEATTREAT
EUHEATTREAT3	Electric heat-treating furnace with maximum heat input capacity of 250,000 BTU/hr and associated water-based and oil-based quenching located in the Metal Building. Emissions are uncontrolled.	FGHEATTREAT
EUHEATTREAT4	Natural gas-fired heat-treating furnace with maximum heat input capacity of 1,000,000 BTU/hr and associated water-based and oil-based quenching located in the Metal Building. Emissions are uncontrolled.	FGHEATTREAT

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.

## **EUFINISHING EMISSION UNIT CONDITIONS**

### **DESCRIPTION**

Various finishing and cleaning processes in the Main Building, including grinding and cutting. Emissions from grinding processes on the east side of the Main Building are controlled by Baghouse #1, which vents in-plant.

**Flexible Group ID:** NA

### **POLLUTION CONTROL EQUIPMENT**

Baghouse #1 controls emissions on the east side of the Main Building from finishing and vents into the plant.

#### **I. EMISSION LIMIT(S)**

NA

#### **II. MATERIAL LIMIT(S)**

NA

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

1. The permittee shall not operate EUFINISHING unless an updated malfunction abatement plan (MAP) as described in Rule 911(2), for baghouse #1, has been submitted within 90 days of permit issuance, and is implemented and maintained. The MAP shall, at a minimum, specify the following:
  - a) A complete preventative maintenance program including identification of the supervisory personnel responsible for overseeing the inspection, maintenance, and repair of air-cleaning devices, a description of the items or conditions that shall be inspected, the frequency of the inspections or repairs, and an identification of the major replacement parts that shall be maintained in inventory for quick replacement.
  - b) An identification of the source and air-cleaning device operating variables that shall be monitored to detect a malfunction or failure, the normal operating range of these variables, and a description of the method of monitoring or surveillance procedures.
  - c) A description of the corrective procedures or operational changes that shall be taken in the event of a malfunction or failure to achieve compliance with the applicable emission limits.

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 336.1331, R 336.1910, R 336.1911, 40 CFR 52.21(c) and (d))**

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

1. The permittee shall not operate EUFINISHING unless baghouse #1 is installed, maintained, and operated in a satisfactory manner. **(R 336.1224, R 336.1225, R 336.1301, R 336.1331, R 336.1910, 40 CFR 52.21(c) and (d))**

#### **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 monitor and record, in a satisfactory manner, the pressure drop across the baghouse associated with EUFINISHING at least once per week. **(R 336.1224, R 336.1225, R 336.1301, R 336.1331, R 336.1910, 40 CFR 52.21(c) and (d))**
2. The permittee shall keep a record of all inspections and maintenance performed on baghouse #1, in accordance with the MAP. The permittee shall maintain this record on site and make it available to the Department upon request. **(R 336.1224, R 336.1225, R 336.1301, R 336.1331, 40 CFR 52.21)**

**VII. REPORTING**

NA

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

NA

**IX. OTHER REQUIREMENT(S)**

1. The special conditions in this permit for this flexible group do not go into effect until PTI 129-19A is voided. Once PTI 129-19A is voided, the special conditions of this flexible group go into effect immediately. **(R 336.1201(3))**

**FLEXIBLE GROUP SPECIAL CONDITIONS**

**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
FGFOUNDRY	Four (4) coreless induction tilt-furnaces used to produce various steel, stainless steel, and aluminum alloys, with a pouring line, cooling, and manual shakeout operations. Emissions from each furnace are collected by an exhaust hood and controlled by Baghouse #3. Pouring and cooling processes are to be enclosed in a new building with general ventilation to Baghouse #3. Shakeout will have an exhaust hood to direct emissions to Baghouse #3.	EUINDUCTIONA, EUINDUCTIONB, EUINDUCTIONC, EUINDUCTIOND, EUPOURING, EUCOOLING, EUSHAKEOUT
FGMOLDCORE	Sand premixed with chemical binder (resin coated sand, or RCS) is used to make molds. There are seven (7) molding machines, one hand-molding operation, and seven (7) core machines. General plant ventilation in the molding area to Baghouse #3.	EUMOLD1, EUMOLD2, EUMOLD3, EUMOLD4, EUMOLD5, EUMOLD6, EUMOLD7, EUHANDMOLD, EUCORE1, EUCORE2, EUCORE3, EUCORE4, EUCORE5, EUCORE6, EUCORE7
FGHEATTREAT	Four (4) heat treating furnaces and associated water-based and oil-based quenching operations. EUHEATTREAT1 and EUHEATTREAT2 are located in the Main Building and general exhaust in this area is exhausted to Baghouse #3. EUHEATTREAT3 and EUHEATTREAT4 are located in the Metal Building and are uncontrolled.	EUHEATTREAT1, EUHEATTREAT2, EUHEATTREAT3, EUHEATTREAT4
FGMACTZZZZZ	The affected source is an existing iron and steel foundry, that is (or is part of) an area source of hazardous air pollutant (HAP) emissions. The affected source is an existing small foundry as defined by 40 CFR Part 63 Subpart ZZZZZ.	NA

**FGFOUNDRY  
 FLEXIBLE GROUP CONDITIONS**

**DESCRIPTION**

Four (4) coreless induction tilt-furnaces used to produce various steel, stainless steel, and aluminum alloys, with a pouring line, cooling, and manual shakeout operations.

**Emission Unit:** EUINDUCTIONA, EUINDUCTIONB, EUINDUCTIONC, EUINDUCTIOND, EUPOURING, EUCOOLING, EUSHAKEOUT

**POLLUTION CONTROL EQUIPMENT**

Emissions from each furnace are collected by an exhaust hood and controlled by Baghouse #3. Pouring and cooling processes are to be enclosed in a new building with general ventilation to Baghouse #3. Shakeout will have an exhaust hood to direct emissions to Baghouse #3.

**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. PM	0.010 lb/1000 lb dry gas	Hourly	FGFOUNDRY (SVBAGHOUSE3)	SC V.1	R 336.1331(1)(a)
2. PM	1.84 lb/hr	Hourly	FGFOUNDRY (SVBAGHOUSE3)	SC V.1	R 336.1331(1)(a)
3. PM10	3.0 lb/hr	Hourly	FGFOUNDRY (SVBAGHOUSE3)	SC V.1	40 CFR 52.21(c) and (d)
4. PM2.5	2.2 lb/hr	Hourly	FGFOUNDRY (SVBAGHOUSE3)	SC V.1	40 CFR 52.21(c) and (d)

**II. MATERIAL LIMIT(S)**

<b>Material</b>	<b>Limit</b>	<b>Time Period / Operating Scenario</b>	<b>Equipment</b>	<b>Monitoring / Testing Method</b>	<b>Underlying Applicable Requirements</b>
1. Metal charged to furnaces	7,500 tons per year	12-month rolling time period as determined at the end of each calendar month	FGFOUNDRY	SC VI.2	R 336.1224, R 336.1225, 40 CFR 52.21(c) and (d)
2. Metal charged to furnace	4,500 lbs per heat	Each heat	EUINDUCTIONA	SC VI.1	R 336.1224, R 336.1225, 40 CFR 52.21(c) and (d)
3. Metal charged to furnace	4,500 lbs per heat	Each heat	EUINDUCTIONB	SC VI.1	R 336.1224, R 336.1225, 40 CFR 52.21(c) and (d)
4. Metal charged to furnace	2,200 lbs per heat	Each heat	EUINDUCTIONC	SC VI.1	R 336.1224, R 336.1225, 40 CFR 52.21(c) and (d)
5. Metal charged to furnace	1,100 lbs per heat	Each heat	EUINDUCTIOND	SC VI.1	R 336.1224, R 336.1225, 40 CFR 52.21(c) and (d)

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

1. The permittee shall not operate multiple furnaces in charge/melt mode simultaneously. **(R 336.1224, R 336.1225, 40 CFR 52.21(c) and (d))**
2. The permittee shall not pour from multiple furnaces simultaneously. **(R 336.1224, R 336.1225, 40 CFR 52.21(c) and (d))**
3. All operations of FGFOUNDRY shall take place inside an enclosed building. **(R 336.1225, 40 CFR 52.21(c) and (d))**
4. The permittee shall not operate FGFOUNDRY unless a malfunction abatement plan (MAP) as described in Rule 911(2), for Baghouse #3, has been submitted within 60 days of PTI 129-19A being voided, and is implemented and maintained. The MAP shall, at a minimum, specify the following:
  - a) A complete preventative maintenance program including identification of the supervisory personnel responsible for overseeing the inspection, maintenance, and repair of air-cleaning devices, a description of the items or conditions that shall be inspected, the frequency of the inspections or repairs, and an identification of the major replacement parts that shall be maintained in inventory for quick replacement.
  - b) An identification of the source and air-cleaning device operating variables that shall be monitored to detect a malfunction or failure, the normal operating range of these variables, and a description of the method of monitoring or surveillance procedures.
  - c) A description of the corrective procedures or operational changes that shall be taken in the event of a malfunction or failure to achieve compliance with the applicable emission limits.

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 336.1331, R 336.1702(a), R 336.1910, R 336.1911, 40 CFR 52.21(c) and (d))**

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

1. The permittee shall not operate FGFOUNDRY unless the baghouse fabric filter controlling emissions from the melting furnaces, pouring, and cooling and shakeout area (Baghouse #3) is installed, maintained, and operated in a satisfactory manner acceptable to the AQD District Supervisor. **(R 336.1224, R 336.1225, R 336.1301, R 336.1331, R 336.1910, 40 CFR 52.21(c) and (d))**
2. The permittee shall equip and maintain each furnace of FGFOUNDRY with a properly engineered exhaust hood located directly above the furnace and ducted to Baghouse #3. **(R 336.1224, R 336.1225, R 336.1910, 40 CFR 52.21(c) & (d))**
3. The permittee shall not operate FGFOUNDRY unless a bag leak detector on Baghouse #3 is installed, maintained and operated in a satisfactory manner acceptable to the AQD District Supervisor. **(R 336.1224, R 336.1225, R 336.1301, R 336.1331, R 336.1910, 40 CFR 52.21(c) and (d))**

4. The permittee shall not operate FGFOUNDRY unless a gauge, which measures the pressure drop across the fabric filter collector (Baghouse #3), is installed, maintained and operated in a satisfactory manner acceptable to the AQD District Supervisor. **(R 336.1224, R 336.1225, R 336.1301, R 336.1331, R 336.1910, 40 CFR 52.21(c) and (d))**

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

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

1. Upon request of the AQD District Supervisor, the permittee shall verify PM, PM10, and PM2.5 emission rates from the Baghouse #3 exhaust stack (SVBAGHOUSE3) by testing at owner's expense, in accordance with Department requirements. Testing shall be performed using an approved EPA Method listed in:

<b>Pollutant</b>	<b>Test Method Reference</b>
PM	40 CFR Part 60, Appendix A; Part 10 of the Michigan Air Pollution Control Rules
PM10 / PM2.5	40 CFR Part 51, Appendix M

An alternate method, or a modification to the approved EPA Method, may be specified in an AQD approved Test Protocol and must meet the requirements of the federal Clean Air Act, all applicable state and federal rules and regulations, and be within the authority of the AQD to make the change. No less than 30 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, 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 336.1224, R 336.1225, R 336.1331(1)(a), R 336.2001, R 336.2003, R 336.2004, 40 CFR 52.21(c) & (d))**

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

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

1. The permittee shall keep records, in a satisfactory manner, of each type of alloy that has been processed at the facility for each calendar year. **(R 336.1224, R 336.1225, 40 CFR 52.21(c) and (d))**
2. The permittee shall keep records for each furnace, in a satisfactory manner, of the total weight of metal added to the furnace, for each heat. **(R 336.1224, R 336.1225, 40 CFR 52.21(c) and (d))**
3. The permittee shall keep records, in a satisfactory manner, of the total amount of metal charged to the furnaces of FGFOUNDRY, on a monthly and 12-month rolling time period basis. The calculations shall be completed by the end of the month, for the previous month and 12-month rolling time period. The permittee shall keep the records on file at the facility, in a format acceptable to the AQD District Supervisor, and make them available to the Department upon request. **(R 336.1224, R 336.1225, 40 CFR 52.21(c) and (d))**
4. The permittee shall monitor and record, in a satisfactory manner, the pressure drop across the fabric filter baghouse (Baghouse #3) on a daily basis, for each operating day. **(R 336.1224, R 336.1225, R 336.1301, R 336.1331, R 336.1910, 40 CFR 52.21(c) and (d))**

#### **VII. REPORTING**

1. Within 10 days after initial operation of Baghouse #3, the permittee shall notify the AQD District Supervisor, in writing, of the completion of the activity. **(R 336.1225, 40 CFR 52.21(c) and (d))**

**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. SVBAGHOUSE3*	48	55	R 336.1225, 40 CFR 52.21(c) and (d)
* Baghouse #3 may vent to SVBAGHOUSE3 or back into the building.			

**IX. OTHER REQUIREMENT(S)**

1. The special conditions in this permit for this flexible group do not go into effect until PTI 129-19A is voided. Once PTI 129-19A is voided, the special conditions of this flexible group go into effect immediately. **(R 336.1201(3))**

**Footnotes:**

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

**FGMOLDCORE  
 FLEXIBLE GROUP CONDITIONS**

**DESCRIPTION**

Sand premixed with chemical binder (resin coated sand, or RCS) is used to make molds. There are seven (7) molding machines, one hand-molding operation, and seven (7) core machines.

**Emission Unit:** EUMOLD1, EUMOLD2, EUMOLD3, EUMOLD4, EUMOLD5, EUMOLD6, EUMOLD7, EUHANDMOLD, EUCORE1, EUCORE2, EUCORE3, EUCORE4, EUCORE5, EUCORE6, EUCORE7

**POLLUTION CONTROL EQUIPMENT**

General plant ventilation in the molding area to Baghouse #3.

**I. EMISSION LIMIT(S)**

NA

**II. MATERIAL LIMIT(S)**

Material	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. RCS used	6,750 tons per year	12-month rolling time period as determined at the end of each calendar month	FGMOLDCORE	SC VI.1	R 336.1224, R 336.1225, R 336.1702(a)

2. The permittee shall not use any fuel other than natural gas in FGMOLDCORE. (R 336.1224, R 336.1225, R 336.1702(a), 40 CFR 52.21(c) and (d))

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

NA

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

1. The maximum nameplate heat input of the emission units in FGMOLDCORE shall not exceed the following: (R 336.1224, R 336.1225, R 336.1702(a), 40 CFR 52.21(c) and (d))

- a) EUMOLD1 750,000 BTU/hr
- b) EUMOLD2 750,000 BTU/hr
- c) EUMOLD3 1,250,000 BTU/hr
- d) EUMOLD4 2,000,000 BTU/hr
- e) EUMOLD5 750,000 BTU/hr
- f) EUMOLD6 750,000 BTU/hr
- g) EUMOLD7 750,000 BTU/hr
- h) EUHANDMOLD 250,000 BTU/hr
- i) EUCORE1 150,000 BTU/hr
- j) EUCORE2 250,000 BTU/hr
- k) EUCORE3 150,000 BTU/hr
- l) EUCORE4 250,000 BTU/hr
- m) EUCORE5 150,000 BTU/hr
- n) EUCORE6 250,000 BTU/hr
- o) EUCORE7 750,000 BTU/hr

**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 monitor and record, in a satisfactory manner, the amount of RCS used in FGMOLDCORE, on a monthly and 12-month rolling time period basis. The calculations shall be completed by the end of the month, for the previous month and 12-month rolling time period. The permittee shall keep the records on file at the facility, in a format acceptable to the AQD District Supervisor, and make them available to the Department upon request. **(R 336.1225, R 336.1702(a))**

**VII. REPORTING**

NA

**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. SVBAGHOUSE3*	48	55	R 336.1225, 40 CFR 52.21(c) and (d)
* Baghouse #3 may vent to SVBAGHOUSE3 or back into the building.			

**IX. OTHER REQUIREMENT(S)**

1. The special conditions in this permit for this flexible group do not go into effect until PTI 129-19A is voided. Once PTI 129-19A is voided, the special conditions of this flexible group go into effect immediately. **(R 336.1201(3))**

**FGHEATTREAT  
FLEXIBLE GROUP CONDITIONS**

**DESCRIPTION**

Four (4) heat treating furnaces and associated water-based and oil-based quenching operations.

**Emission Unit:** EUHEATTREAT1, EUHEATTREAT2, EUHEATTREAT3, EUHEATTREAT4

**POLLUTION CONTROL EQUIPMENT**

EUHEATTREAT1 and EUHEATTREAT2 are located in the Main Building and general exhaust in this area is exhausted to Baghouse #3. EUHEATTREAT3 and EUHEATTREAT4 are located in the Metal Building and are uncontrolled.

**I. EMISSION LIMIT(S)**

NA

**II. MATERIAL LIMIT(S)**

<b>Material</b>	<b>Limit</b>	<b>Time Period / Operating Scenario</b>	<b>Equipment</b>	<b>Monitoring / Testing Method</b>	<b>Underlying Applicable Requirements</b>
1. Quench oil*	110 gal/year	12-month rolling time period as determined at the end of each calendar month	FGHEATTREAT	SC VI.2	R 336.1225, R 336.1702(a)

\*The quench oil usage is defined as the amount of quench oil added to bring the quench oil levels up to starting levels less any amount of quench oil reclaimed, disposed of, or spilled and cleaned up.

2. The permittee shall not combust any fuel other than natural gas in FGHEATTREAT. **(R 336.1225, R 336.1702(a), 40 CFR 52.21(c) and (d))**

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

NA

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

1. The maximum nameplate heat input of the emission units in FGHEATTREAT shall not exceed the following: **(R 336.1225, R 336.1702(a), 40 CFR 52.21(c) and (d))**

- a) EUHEATTREAT1      1,000,000 BTU/hr
- b) EUHEATTREAT2      750,000 BTU/hr
- c) EUHEATTREAT3      250,000 BTU/hr
- d) EUHEATTREAT4      1,000,000 BTU/hr

**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 maintain a current listing from the manufacturer of the chemical composition of each quench oil, including the weight percent of each component. The data may consist of Material Safety Data Sheets, manufacturer's formulation data, or both as deemed acceptable by 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))**
2. The permittee shall monitor and record, in a satisfactory manner, the amount of quench oil used in FGHEATTREAT, on a monthly and 12-month rolling time period basis. The records shall be completed by the end of the month, for the previous month and 12-month rolling time period. The permittee shall keep the records on file at the facility, in a format acceptable to the AQD District Supervisor, and make them available to the Department upon request. **(R 336.1225, R 336.1702(a))**

**VII. REPORTING**

NA

**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. SVBAGHOUSE3*	48	55	R 336.1225, 40 CFR 52.21(c) and (d)

\* Baghouse #3 may vent to SVBAGHOUSE3 or back into the building.

**IX. OTHER REQUIREMENT(S)**

1. The special conditions in this permit for this flexible group do not go into effect until PTI 129-19A is voided. Once PTI 129-19A is voided, the special conditions of this flexible group go into effect immediately. **(R 336.1201(3))**

**FGMACTZZZZZ**  
**FLEXIBLE GROUP CONDITIONS**

**DESCRIPTION**

The affected source is an existing iron and steel foundry, that is (or is part of) an area source of hazardous air pollutant (HAP) emissions. The affected source is an existing small foundry as defined by 40 CFR Part 63 Subpart ZZZZZ.

Emission Unit: NA

**POLLUTION CONTROL EQUIPMENT**

NA

**I. EMISSION LIMIT(S)**

NA

**II. MATERIAL LIMIT(S)**

1. If applicable, the permittee shall not utilize a binder chemical formulation that uses methanol as a specific ingredient of the catalyst formulation for a warm box mold or core making line. This requirement does not apply to the resin portion of the binder system. **(40 CFR 63.10886)**

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

1. The permittee shall implement and maintain an approved plan to address the pollution prevention management practices for metallic scrap and mercury switches by the applicable compliance date specified in 40 CFR 63.10881. The plan shall include the following:
  - a) Metallic scrap management program. **(40 CFR 63.10885(a))**
  - b) Mercury requirements. **(40 CFR 63.10885(b))**

The permittee shall revise the plan within 30 days after a change occurs. **(40 CFR 63.10885)**

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

NA

**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 keep records on a monthly basis as required by 40 CFR 63.10899(b)(1) through (13) as applicable. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(40 CFR 63.10899(b))**

## **VII. REPORTING**

1. The permittee shall submit semiannual compliance reports to the Administrator according to the requirements in §63.10(e). The reports must include, at a minimum, the following information as applicable:
  - a) Summary information on the number, duration, and cause (including unknown cause, if applicable) of excursions or exceedances, as applicable, and the corrective action taken.
  - b) Summary information on the number, duration, and cause (including unknown cause, if applicable) for monitor downtime incidents (other than downtime associated with zero and span or other calibration checks, if applicable).
  - c) Summary information on any deviation from the pollution prevention management practices in §63.10885 and 63.10886 and the operation and maintenance requirements §63.10896 and the corrective action taken. **(40 CFR 10899 (c))**
2. If applicable, the permittee shall submit semiannual reports of the number of mercury switches removed or the weight of mercury recovered from the switches and properly managed, the estimated number of vehicles processed, an estimate of the percent of mercury switches recovered, and a certification that the recovered mercury switches were recycled at RCRA-permitted facilities. The semiannual reports must include a certification that the facility has conducted periodic inspections or taken other means of corroboration as required under §63.10885(b)(1)(ii)(C). The permittee shall identify which option in §63.10885(b) applies to each scrap provider, contract, or shipment. **(63.10899(b)(2)(i))**

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

NA

## **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 ZZZZZ for Iron and Steel Foundries by the initial compliance date. **(40 CFR Part 63 Subparts A and ZZZZZ)**