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

October 21, 2024

PERMIT TO INSTALL
107-23A

ISSUED TO
Temperform, LLC

LOCATED AT
25425 Trans X Road
Novi, Michigan 48375

IN THE COUNTY OF
Oakland

STATE REGISTRATION NUMBER
B7357

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: **September 27, 2024**	
DATE PERMIT TO INSTALL APPROVED: **October 21, 2024**	SIGNATURE:
DATE PERMIT VOIDED:	SIGNATURE:
DATE PERMIT REVOKED:	SIGNATURE:

PERMIT TO INSTALL

Table of Contents

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_2e	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_2S	Hydrogen Sulfide
kW	Kilowatt
lb	Pound
m	Meter
mg	Milligram
mm	Millimeter
MM	Million
MW	Megawatts
NMOC	Non-Methane Organic Compounds
NO_x	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_2	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 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 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
EUSCRUBBER1	Melting, pouring and cooling operations equipped with 5 electric induction furnaces, pour station, ladle drying station, and heaters. This emission unit is controlled by a 40,000 CFM wet scrubber.	FGSCRUBBERS1/2
EUSCRUBBER2	Melting, pouring and cooling operations equipped with 4 core machines, a pour station, casting cooling tunnel, heaters, mold spray. This emission unit is controlled by a 40,000 CFM wet scrubber.	FGSCRUBBERS1/2
EUBAGHOUSE1	Sand silo, sand return hopper and handling system controlled by a 12,000 CFM baghouse.	NA
EUBAGHOUSE2	Cleaning and finishing system controlled by a cyclone and an 8,000 CFM baghouse.	NA
EUBAGHOUSE3	Sand reclamation system controlled by a thermal secondary combustion chamber and 14,000 CFM baghouse. The thermal secondary combustion chamber is used to destroy fumes from a burn-off oven that removes resins and binders from sand. The burn-off oven is a continuous process operated as needed with a maximum design capacity of 1.5 tons of sand processed per hour.	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.

EUBAGHOUSE1
EMISSION UNIT CONDITIONS

DESCRIPTION

Sand silo, sand return hopper and handling system.

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT

12,000 cfm baghouse

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. PM	0.0067 lb/1000 lb of exhaust gases on a dry basis	Hourly	EUBAGHOUSE1	SC V.1	R 336.1331
2. PM	0.36 pph	Hourly	EUBAGHOUSE1	SC V.1	R 336.1331

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate EUBAGHOUSE1 unless a malfunction abatement plan (MAP) as described in Rule 911(2) 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 336.1205, R 336.1225, R 336.1331, R 336.1910, R 336.1911)**

2. The permittee shall not operate EUBAGHOUSE1 if the associated baghouse is not operating in a satisfactory manner acceptable to the AQD District Supervisor. **(R 336.1205, R 336.1225, R 336.1331, R 336.1910)**

3. While EUBAGHOUSE1 is in operation, the permittee shall limit fugitive emissions by keeping outside leading doors and windows closed, unless the doors are actively in use. **(R 336.1205, R 336.1225, R 336.1331)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall not operate EUBAGHOUSE1 unless the associated baghouse is installed, maintained, and operated in a satisfactory manner acceptable to the AQD District Supervisor. **(R 336.1205, R 336.1225, R 336.1331, R 336.1910)**

2. The baghouse that serves EUBAGHOUSE1 shall be equipped with static pressure drop monitoring device and be operated to comply with permit allowable particulate emission. The magnitude of the static pressure drop across each of the baghouses shall be maintained according to its manufacturer's specifications. **(R 336.1224, R 336.1225, R 336.1331)**

3. The permittee shall not operate any portion of EUBAGHOUSE1 unless the building housing is operating at a pressure lower than the outside, so that air flows into the building through all natural draft openings (NDOs). NDO is defined as any opening that is not connected to a duct in which a fan or blower is installed. **(R 336.1225, R 336.1301, R 336.1303)**

V. TESTING/SAMPLING

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

1. Upon the request of the AQD District Supervisor, the permittee shall verify PM emission rates from EUBAGHOUSE1 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
PM	40 CFR Part 60, Appendix A; Part 10 of the Michigan Air Pollution Control Rules

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 336.1331, R 336.2001, R 336.2003, R 336.2004)**

VI. MONITORING/RECORDKEEPING

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

1. The permittee shall keep, in a satisfactory manner acceptable to the AQD District Supervisor, all monthly records related to, or as required by, the MAP. **(R 336.1205, R 336.1225, R 336.1331, R 336.1910, R 336.1911)**

2. Every six months and upon request of the AQD District Supervisor, the permittee shall verify that the direction of air flow at each natural draft opening (NDO) for the building housing of EUBAGHOUSE1 is flowing into the building using a non-toxic smoke test (i.e., smoke bomb, smoke tube) or an approved alternate method. The permittee shall notify the AQD District Supervisor in writing at least 15 days before the test is scheduled. No less than 60 days prior to testing, the permittee shall submit a complete test plan to the AQD. The AQD must approve the final plan prior to testing. Verification of air flow direction includes the submittal of a complete report of the test results to the AQD District Supervisor within 30 days following the date of the test. After two years of consistent tests that demonstrate the direction of air flow at each NDO is into the building, the permittee may submit a request for a change in the testing frequency to the AQD District Supervisor for review and approval. **(R 336.1225, R 336.1301, R 336.1303)**

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:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SV004	10	22	40 CFR 52.21(c) & (d)

IX. OTHER REQUIREMENT(S)

NA

EUBAGHOUSE2
EMISSION UNIT CONDITIONS

DESCRIPTION

Cleaning and finishing system.

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT

Cyclone and 8,000 CFM baghouse

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. PM	0.01 lb/1000 lb of exhaust gases on a dry basis	Hourly	EUBAGHOUSE2	SC V.1	R 336.1331
2. PM	0.36 pph	Hourly	EUBAGHOUSE2	SC V.1	R 336.1331

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate EUBAGHOUSE2 unless a malfunction abatement plan (MAP) as described in Rule 911(2) 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 336.1205, R 336.1225, R 336.1331, R 336.1910, R 336.1911)**

2. The permittee shall not operate EUBAGHOUSE2 if the associated baghouse is not operating in a satisfactory manner acceptable to the AQD District Supervisor. **(R 336.1205, R 336.1225, R 336.1331, R 336.1910)**

3. While EUBAGHOUSE2 is in operation, the permittee shall limit fugitive emissions by keeping exterior doors and windows closed, unless they are actively in use. **(R 336.1205, R 336.1225, R 336.1331)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall not operate EUBAGHOUSE2 unless the cyclones and associated baghouse are installed, maintained, and operated in a satisfactory manner acceptable to the AQD District Supervisor. **(R 336.1205, R 336.1225, R 336.1331, R 336.1910)**

2. The baghouse that serves EUBAGHOUSE2 shall be equipped with static pressure drop monitoring device and be operated to comply with permit allowable particulate emission. The magnitude of the static pressure drop across each of the baghouses shall be maintained according to its manufacturer's specifications. **(R 336.1224, R 336.1225 R 336.1331)**
3. The permittee shall not operate any portion of EUBAGHOUSE2 unless the building housing is operating at a pressure lower than the outside, so that air flows into the building through all natural draft openings (NDOs). NDO is defined as any opening that is not connected to a duct in which a fan or blower is installed. **(R 336.1225, R 336.1301, R 336.1303)**

V. TESTING/SAMPLING

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

1. Upon the request of the AQD District Supervisor, the permittee shall verify PM emission rates from EUBAGHOUSE2 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
PM	40 CFR Part 60, Appendix A; Part 10 of the Michigan Air Pollution Control Rules

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 336.1331, R 336.2001, R 336.2003, R 336.2004)**

VI. MONITORING/RECORDKEEPING

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

1. The permittee shall keep, in a satisfactory manner acceptable to the AQD District Supervisor, monthly all records related to, or as required by, the MAP. **(R 336.1205, R 336.1225, R 336.1331, R 336.1910, R 336.1911)**

2. Every six months and upon request of the AQD District Supervisor, the permittee shall verify that the direction of air flow at each natural draft opening (NDO) for the building housing of EUBAGHOUSE2 is flowing into the building using a non-toxic smoke test (i.e., smoke bomb, smoke tube) or an approved alternate method. The permittee shall notify the AQD District Supervisor in writing at least 15 days before the test is scheduled. No less than 60 days prior to testing, the permittee shall submit a complete test plan to the AQD. The AQD must approve the final plan prior to testing. Verification of air flow direction includes the submittal of a complete report of the test results to the AQD District Supervisor within 30 days following the date of the test. After two years of consistent tests that demonstrate the direction of air flow at each NDO is into the building, the permittee may submit a request for a change in the testing frequency to the AQD District Supervisor for review and approval. **(R 336.1225, R 336.1301, R 336.1303)**

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:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SV003	24	34	40 CFR 52.21(c) & (d)

IX. OTHER REQUIREMENT(S)

NA

EUBAGHOUSE3
EMISSION UNIT CONDITIONS

DESCRIPTION

Sand reclamation system with the thermal secondary combustion chamber used to destroy fumes from a burn-off oven that removes resins and binders from sand. The burn-off oven is a continuous process operated as needed with a maximum design capacity of 1.5 tons of sand processed per hour.

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT

Thermal secondary combustion chamber and 14,000 CFM baghouse arranged in series

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. PM	0.0093 lb/1000 lb of exhaust gases on a dry basis	Hourly	EUBAGHOUSE3	SC V.1	R 336.1331
2. PM	0.585 pph	Hourly	EUBAGHOUSE3	SC V.1	R 336.1331
3. VOC	0.3 pph	Hourly	EUBAGHOUSE3	SC V.2	R 336.1702

II. MATERIAL LIMIT(S)

1. The permittee shall only use natural gas in the thermal combustion chamber for EUBAGHOUSE3 as fuel. **(R 336.1224, R 336.1225, R 336.1702)**

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate EUBAGHOUSE3 unless a malfunction abatement plan (MAP) as described in Rule 911(2) 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 336.1205, R 336.1225, R 336.1331, R 336.1702, R 336.1910, R 336.1911)**

2. The permittee shall not operate EUBAGHOUSE3 if the associated baghouse is not operating in a satisfactory manner acceptable to the AQD District Supervisor. **(R 336.1205, R 336.1225, R 336.1331, R 336.1702, R 336.1910)**

3. While EUBAGHOUSE3 is in operation, the permittee shall limit fugitive emissions by keeping exterior doors and windows closed, unless they are actively in use. **(R 336.1205, R 336.1225, R 336.1331)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall not operate EUBAGHOUSE3 unless the associated baghouse is installed, maintained, and operated in a satisfactory manner acceptable to the AQD District Supervisor. **(R 336.1205, R 336.1225, R 336.1331, R 336.1910)**

2. The baghouse that serves EUBAGHOUSE3 shall be equipped with static pressure drop monitoring device and be operated to comply with permit allowable particulate emission. The magnitude of the static pressure drop across each of the baghouses shall be maintained according to its manufacturer's specifications. **(R 336.1224, R 336.1225, R 336.1331)**

3. The permittee shall not operate EUBAGHOUSE3 unless the afterburner (secondary combustion chamber) is installed, maintained, and operated in a satisfactory manner. **(R 336.1225, R 336.1702, R 336.1910)**

4. The permittee shall not process sand in EUBAGHOUSE3 unless a minimum temperature of 1350°F is maintained for the afterburner as per the manufacturer. **(R 336.1225, R 336.1702, R 336.1910)**

5. The permittee shall install, calibrate, maintain and operate in a satisfactory manner, a device to monitor and record, using a data logger, the temperature in the afterburner on a continuous basis. **(R 336.1225, R 336.1702)**

6. The permittee shall not operate any portion of EUBAGHOUSE3 unless the building housing is operating at a pressure lower than the outside, so that air flows into the building through all natural draft openings (NDOs). NDO is defined as any opening that is not connected to a duct in which a fan or blower is installed. **(R 336.1225, R 336.1301, R 336.1303)**

V. TESTING/SAMPLING

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

1. Upon the request of the AQD District Supervisor, the permittee shall verify PM emission rates from EUBAGHOUSE3 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
PM	40 CFR Part 60, Appendix A; Part 10 of the Michigan Air Pollution Control Rules

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 336.1331, R 336.2001, R 336.2003, R 336.2004)**

2. Upon the request of the AQD District Supervisor, the permittee shall verify VOC emission rates from EUBAGHOUSE3 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
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 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 336.1702, R 336.2001, R 336.2003, R 336.2004)**

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 temperature in the secondary combustion chamber of EUBAGHOUSE3 on a continuous basis. **(R 336.1225, R 336.1702)**

2. The permittee shall keep, in a manner satisfactory to the AQD District Supervisor, secondary combustion chamber temperature records for EUBAGHOUSE3, as required by SC VI.1. The temperature records shall include process operating periods (date, beginning and ending times) and temperature summaries with average, minimum and maximum temperatures during each burn-off oven operating period. The permittee shall keep complete all required calculations in a format acceptable to the AQD District Supervisor by the last day of the calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. **(R 336.1225, R 336.1702)**

3. The permittee shall keep, in a satisfactory manner, acceptable to the AQD District Supervisor, monthly all records related to, or as required by, the MAP. **(R 336.1205, R 336.1225, R 336.1331, R 336.1702, R 336.1910, R 336.1911)**

4. Every six months and upon request of the AQD District Supervisor, the permittee shall verify that the direction of air flow at each natural draft opening (NDO) for the building housing of EUBAGHOUSE3 is flowing into the building using a non-toxic smoke test (i.e., smoke bomb, smoke tube) or an approved alternate method. The permittee shall notify the AQD District Supervisor in writing at least 15 days before the test is scheduled. No less than 60 days prior to testing, the permittee shall submit a complete test plan to the AQD. The AQD must approve the final plan prior to testing. Verification of air flow direction includes the submittal of a complete report of the test results to the AQD District Supervisor within 30 days following the date of the test. After two years of consistent tests that demonstrate the direction of air flow at each NDO is into the building, the permittee may submit a request for a change in the testing frequency to the AQD District Supervisor for review and approval. **(R 336.1225, R 336.1301, R 336.1303)**

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:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SV005	13	46.5	40 CFR 52.21(c) and (d)

IX. OTHER REQUIREMENT(S)

1.

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
FGSCRUBBERS1/2	Melting, pouring, cooling of metal and mold/core preparation operations controlled by two 40,000 CFM wet scrubbers that are arranged in parallel. There is a liquid phase carbon adsorption system, with random packing to increase mass transfer surface area and is present to reduce organics in the scrubber liquor.	EUSCRUBBER1 EUSCRUBBER2
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

FGSCRUBBERS1/2
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

Melting, pouring, cooling of metal and mold/core preparation operations. There is a liquid phase carbon adsorption system, with random packing to increase mass transfer surface area and is present to reduce organics in the scrubber liquor.

Emission Unit: EUSCRUBBER1 and EUSCRUBBER2

POLLUTION CONTROL EQUIPMENT

Two 40,000 CFM wet scrubbers arranged in parallel

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. VOC	25.0 pph	Hourly	FGSCRUBBERS1/2	SC V.1	R 336.1205(3), R 336.1702
2. VOC	0.28 lb/ton of metal melted	Hourly	FGSCRUBBERS1/2	SC V.1	R 336.1205(3), R 336.1702
3. VOC	36.14 tpy	12-month rolling time period	FGSCRUBBERS1/2	SC VI.6	R 336.1205(3), R 336.1702

II. MATERIAL LIMIT(S)

1. The permittee shall not process through FGSCRUBBERS1/2 more than 18,913 tons of mold and core sand per year, based on a 12-month rolling time period, as determined that the end of each calendar month. **(R 336.1205(3), R 336.1224, R 336.1225, R 336.1702)**

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate FGSCRUBBERS1/2 unless a malfunction abatement plan (MAP) as described in Rule 911(2) 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 336.1205, R 336.1225, R 336.1331, R 336.1702, R 336.1910, R 336.1911)**

2. The permittee shall not operate any unit in FGSCRUBBERS1/2 unless both scrubbers are installed and operating properly, including the liquid phase carbon adsorption system or equivalent system as approved by the AQD District Supervisor. This includes:

   a) Testing for organics in scrubber liquor to ensure adsorption, or equivalent parameter(s) as approved by the AQD District Supervisor, at a frequency stated in an approved MAP.
   b) Testing the carbon used for saturation or break-through, or equivalent parameter(s) as approved by the AQD District Supervisor, at a frequency stated in an approved MAP. **(R 336.1205, R 336.1225, R 336.1331, R 336.1702)**

3. The permittee shall not operate FGSCRUBBERS1/2 if the associated scrubbers are not operating in a satisfactory manner complete all required calculations in a format acceptable to the AQD District Supervisor by the last day of the calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. **(R 336.1205, R 336.1224, R 336.1225, R 336.1331, R 336.1702, R 336.1910)**

4. While any unit in FGSCRUBBERS1/2 is in operation, the permittee shall limit fugitive emissions by keeping exterior doors and windows closed, unless they are actively in use. **(R 336.1205, R 336.1225, R 336.1331)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The scrubbers that serve FGSCRUBBERS1/2 shall be equipped with liquid flow monitoring devices to maintain and record the flow rates of effluent, make-up, and recirculation according to its manufacturer's specifications, on an hourly basis. **(R 336.1205, R 336.1224, R 336.1225 R 336.1331, R 336.1702)**

2. The permittee shall install, calibrate, maintain and operate in a satisfactory manner, one or more devices to monitor and record the pressure drop across the scrubbers on a continuous basis. **(R 336.1205, R 336.1224, R 336.1225, R 336.1331, R 336.1702, R 336.1910)**

3. The permittee shall not operate any portion of FGSCRUBBERS1/2 unless the building housing is operating at a pressure lower than the outside, so that air flows into the building through all natural draft openings (NDOs). NDO is defined as any opening that is not connected to a duct in which a fan or blower is installed. **(R 336.1225, R 336.1301, R 336.1303)**

V. TESTING/SAMPLING

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

1. Upon the request of the AQD District Supervisor, the permittee shall verify VOC emission rates from any unit in FGSCRUBBERS1/2 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
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 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 336.1702, R 336.2001, R 336.2003, R 336.2004)**

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 and the facility 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 336.1224, R 336.1225, R 336.1331, R 336.1702, R 336.1910, R 336.1911)**

2. The permittee shall keep, in a satisfactory manner, acceptable to the AQD District Supervisor, monthly all records related to, or as required by, the MAP. **(R 336.1205, R 336.1224, R 336.1225, R 336.1331, R 336.1702, R 336.1910, R 336.1911)**

3. The permittee shall keep, in a satisfactory manner, acceptable to the AQD District Supervisor, daily records of the pressure drop across the scrubber. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205, R 336.1225, R 336.1331, R 336.1702, R 336.1910, R 336.1911)**

4. The permittee shall keep, in a satisfactory manner acceptable to the AQD District Supervisor, daily records of the daily average (averaged over operating periods for each scrubber) liquid flow rate through the scrubber. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1331, R 336.1702, R 336.1910, R 336.1911)**

5. The permittee shall record the amount of mold and core sand processed per month. Such records shall be kept on file for a period of at least five years and made available to the Air Quality Division upon request. **(R 336.1205, R 336.1224, R 336.1225, R 336.1702)**

6. The permittee shall record the amount of metal poured per month. The permittee shall calculate the monthly VOC emission rate from FGSCRUBBERS1/2 and the preceding 11-month total VOC rate, using an emission factor of 0.28 lb of VOC per ton of metal poured (or an emission factor established during the most recent approved compliance test) and the monthly tonnage of poured iron. From this data, the permittee shall determine the 12-month rolling average emission rates of VOC in tons per year. All records shall be kept on file for a period of at least five years and made available to the Department upon request. **(R 336.1205(3), R 336.1224, R 336.1225, R 336.1702)**

7. Every six months and upon request of the AQD District Supervisor, the permittee shall verify that the direction of air flow at each natural draft opening (NDO) for the building housing of FGSCRUBBERS1/2 is flowing into the building using a non-toxic smoke test (i.e., smoke bomb, smoke tube) or an approved alternate method. The permittee shall notify the AQD District Supervisor in writing at least 15 days before the test is scheduled. No less than 60 days prior to testing, the permittee shall submit a complete test plan to the AQD. The AQD must approve the final plan prior to testing. Verification of air flow direction includes the submittal of a complete report of the test results to the AQD District Supervisor within 30 days following the date of the test. After two years of consistent tests that demonstrate the direction of air flow at each NDO is into the building, the permittee may submit a request for a change in the testing frequency to the AQD District Supervisor for review and approval. **(R 336.1225, R 336.1301, R 336.1303)**

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:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SV001	48 by 48	45	40 CFR 52.21(c) and (d)
2. SV002	48 by 48	45	40 CFR 52.21(c) and (d)

IX. OTHER REQUIREMENT(S)

NA

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)**

2. The permittee shall not melt more than 20,000 tons per year of metal, based on a 12-month rolling time period, as determined that the end of each calendar month. This condition is to classify the facility as an existing small foundry and will be met by complying with SC VI.6 in FGSCRUBBERS1/2. **(40 CFR 63.10880(f))**

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

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: **(40 CFR 10899(c))**

    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.

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. **(40 CFR 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)**