

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

October 15, 2015

**PERMIT TO INSTALL  
148-15**

**ISSUED TO**  
Michigan Department of Corrections – Ionia Facilities

**LOCATED AT**  
1342 West Main Street  
Ionia, Michigan

**IN THE COUNTY OF**  
Ionia

**STATE REGISTRATION NUMBER**  
K2120

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

DATE OF RECEIPT OF ALL INFORMATION REQUIRED BY RULE 203: <b>September 24, 2015</b>	
DATE PERMIT TO INSTALL APPROVED: <b>October 15, 2015</b>	SIGNATURE:
DATE PERMIT VOIDED:	SIGNATURE:
DATE PERMIT REVOKED:	SIGNATURE:

**PERMIT TO INSTALL**

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**Common Abbreviations / Acronyms**

<b>Common Acronyms</b>		<b>Pollutant / Measurement Abbreviations</b>	
AQD	Air Quality Division	acfm	Actual cubic feet per minute
BACT	Best Available Control Technology	BTU	British Thermal Unit
CAA	Clean Air Act	°C	Degrees Celsius
CAM	Compliance Assurance Monitoring	CO	Carbon Monoxide
CEM	Continuous Emission Monitoring	CO <sub>2</sub> e	Carbon Dioxide Equivalent
CFR	Code of Federal Regulations	dscf	Dry standard cubic foot
COM	Continuous Opacity Monitoring	dscm	Dry standard cubic meter
Department/ department	Michigan Department of Environmental Quality	°F	Degrees Fahrenheit
EU	Emission Unit	gr	Grains
FG	Flexible Group	HAP	Hazardous Air Pollutant
GACS	Gallons of Applied Coating Solids	Hg	Mercury
GC	General Condition	hr	Hour
GHGs	Greenhouse Gases	HP	Horsepower
HVLP	High Volume Low Pressure*	H <sub>2</sub> S	Hydrogen Sulfide
ID	Identification	kW	Kilowatt
IRSL	Initial Risk Screening Level	lb	Pound
ITSL	Initial Threshold Screening Level	m	Meter
LAER	Lowest Achievable Emission Rate	mg	Milligram
MACT	Maximum Achievable Control Technology	mm	Millimeter
MAERS	Michigan Air Emissions Reporting System	MM	Million
MAP	Malfunction Abatement Plan	MW	Megawatts
MDEQ	Michigan Department of Environmental Quality	NMOC	Non-methane Organic Compounds
MSDS	Material Safety Data Sheet	NO <sub>x</sub>	Oxides of Nitrogen
NA	Not Applicable	ng	Nanogram
NAAQS	National Ambient Air Quality Standards	PM	Particulate Matter
NESHAP	National Emission Standard for Hazardous Air Pollutants	PM10	Particulate Matter equal to or less than 10 microns in diameter
NSPS	New Source Performance Standards	PM2.5	Particulate Matter equal to or less than 2.5 microns in diameter
NSR	New Source Review	pph	Pounds per hour
PS	Performance Specification	ppm	Parts per million
PSD	Prevention of Significant Deterioration	ppmv	Parts per million by volume
PTE	Permanent Total Enclosure	ppmw	Parts per million by weight
PTI	Permit to Install	psia	Pounds per square inch absolute
RACT	Reasonable Available Control Technology	psig	Pounds per square inch gauge
ROP	Renewable Operating Permit	scf	Standard cubic feet
SC	Special Condition	sec	Seconds
SCR	Selective Catalytic Reduction	SO <sub>2</sub>	Sulfur Dioxide
SNCR	Selective Non-Catalytic Reduction	TAC	Toxic Air Contaminant
SRN	State Registration Number	Temp	Temperature
TEQ	Toxicity Equivalence Quotient	THC	Total Hydrocarbons
USEPA/EPA	United States Environmental Protection Agency	tpy	Tons per year
VE	Visible Emissions	µg	Microgram
		µm	Micrometer or Micron
		VOC	Volatile Organic Compounds
		yr	Year

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

### GENERAL CONDITIONS

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

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

**SPECIAL CONDITIONS**

**EMISSION UNIT SUMMARY TABLE**

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

<b>Emission Unit ID</b>	<b>Emission Unit Description (Process Equipment &amp; Control Devices)</b>	<b>Installation Date / Modification Date</b>	<b>Flexible Group ID</b>
EU-BOILER1	A 89.9 MMBtu/hr natural gas fired steam boiler. Located at the Michigan Reformatory.	Before 1970	FG-BOILERS
EU-BOILER2	A 89.9 MMBtu/hr natural gas fired steam boiler. Located at the Michigan Reformatory .	Before 1970	FG-BOILERS
EU-BOILER3	A 89.9 MMBtu/hr natural gas fired steam boiler. Located at the Michigan Reformatory .	Before 1970	FG-BOILERS
EU-BOILER4	A 40.8 MMBtu/hr natural gas fired steam boiler. This boiler will replace older 89.9 MMBtu/hr boiler.	TBD	FG-BOILERS FG-NSPSBOILERS
EU-BOILER5	A 40.8 MMBtu/hr natural gas fired steam boiler. This boiler will replace older 89.9 MMBtu/hr boiler.	TBD	FG-BOILERS FG-NSPSBOILERS
EU-EMGRICE1	This emission unit, and any replacement of this unit as applicable under R 336.1285(a)(vi), is for a 1200 kW diesel-fueled reciprocating internal combustion emergency engine located at the Bellamy Creek Correctional Facility.	Before 2002	FG-EMGGENS
EU-EMGRICE2	This emission unit, and any replacement of this unit as applicable under R 336.1285(a)(vi), is for a 150 kW diesel-fueled reciprocating internal combustion emergency engine located at the ITF Facility.	Before 2002	FG-EMGGENS
EU-EMGRICE3	This emission unit, and any replacement of this unit as applicable under R 336.1285(a)(vi), is for a 350 kW diesel-fueled reciprocating internal combustion emergency engine located at the RCF Facility.	Before 2002	FG-EMGGENS
EU-EMGRICE4	This emission unit, and any replacement of this unit as applicable under R 336.1285(a)(vi), is for a 600 kW diesel-fueled reciprocating internal combustion emergency engine located at the Richard A. Handlon Correctional Facility.	Before 2002	FG-EMGGENS
EU-EMGRICE5	This emission unit, and any replacement of this unit as applicable under R 336.1285(a)(vi), is for a 500 kW diesel-fueled reciprocating internal combustion emergency engine located at the Michigan Reformatory #1 Facility.	Before 2002	FG-EMGGENS
EU-EMGRICE6	This emission unit, and any replacement of this unit as applicable under R 336.1285(a)(vi), is for a 500 kW diesel-fueled reciprocating internal combustion emergency engine located at the Michigan Reformatory #2 Facility.	Before 2002	FG-EMGGENS

Changes to the equipment described in this table are subject to the requirements of R 336.1201, except as allowed by R 336.1278 to R 336.1290.

**FLEXIBLE GROUP SUMMARY TABLE**

<b>Flexible Group ID</b>	<b>Flexible Group Description</b>	<b>Associated Emission Unit IDs</b>
FG-BOILERS	Five (5) natural gas fired steam boilers.	EU-BOILER1, EU-BOILER2, EU-BOILER3, EU-BOILER4, EU-BOILER5
FG-NSPSBOILERS	Two (2) natural gas fired steam boilers subject to NSPS Dc.	EU-BOILER4, EU-BOILER5
FG-EMGGENS	Six (6) diesel-fueled reciprocating internal combustion emergency engine generators.	EU-EMGRICE1, EU-EMGRICE2, EU-EMGRICE3, EU-EMGRICE4, EU-EMGRICE5, EU-EMGRICE6
FG-FACILITY	All process equipment source-wide including equipment covered by other permits, grandfathered equipment and exempt equipment.	All emission units

**The following conditions apply to: FG-BOILERS**

**DESCRIPTION:** Three (3) natural gas-fired steam boilers.

**Emission Units:** EU-BOILER1, EU-BOILER2, EU-BOILER3, EU-BOILER4, EU-BOILER5

**POLLUTION CONTROL EQUIPMENT:** NA

**I. EMISSION LIMITS**

<b>Pollutant</b>	<b>Limit*</b>	<b>Time Period / Operating Scenario</b>	<b>Equipment</b>	<b>Testing / Monitoring Method</b>	<b>Underlying Applicable Requirements</b>
1. NOx	100 lb/MMscf (when burning natural gas)	daily	Each boiler in FG-BOILERS	SC VI.1	R 336.1205(1)(a) & (3)

\*Limits are based on a natural gas higher heating value of 1,050 Btu/scf.

**II. MATERIAL LIMITS**

1. The permittee shall burn only pipeline quality natural gas in FG-BOILERS. **(R 336.1205(1)(a) & (3))**

**III. PROCESS/OPERATIONAL RESTRICTIONS**

NA

**IV. DESIGN/EQUIPMENT PARAMETERS**

1. The permittee shall install, calibrate, maintain and operate in a satisfactory manner, a device to monitor and record the natural gas used in FG-BOILERS. **(R 336.1205(3))**

**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 monitor and record, in a satisfactory manner, the natural gas used in FG-BOILERS per month and per 12-month rolling time period, as determined at the end of each calendar month. **(R 336.1205(3))**

**VII. REPORTING**

NA

**VIII. STACK/VENT RESTRICTIONS**

NA

**IX. OTHER REQUIREMENTS**

NA

**The following conditions apply to: FG-NSPSBOILERS**

**DESCRIPTION:** Two (2) natural gas-fired steam boilers subject to NSPS Dc.

**Emission Units:** EU-BOILER4, EU-BOILER5

**POLLUTION CONTROL EQUIPMENT:** NA

**I. EMISSION LIMITS**

NA

**II. MATERIAL LIMITS**

NA

**III. PROCESS/OPERATIONAL RESTRICTIONS**

NA

**IV. DESIGN/EQUIPMENT PARAMETERS**

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 monitor and record, in a satisfactory manner, the natural gas used in FG-NSPSBOILERS per calendar month. **(40 CFR 60.48c(g)(2))**

**VII. REPORTING**

1. The permittee shall provide written notification of construction and operation to comply with the federal Standards of Performance for New Stationary Sources, 40 CFR 60.7. The permittee shall submit this notification to the AQD District Supervisor within the time frames specified in 40 CFR 60.7. **(40 CFR 60.7, 40 CFR 60.48c(a))**

**VIII. STACK/VENT RESTRICTIONS**

NA

**IX. OTHER REQUIREMENTS**

1. The permittee shall comply with all applicable provisions of the Standards of Performance for New Stationary Sources, as specified in 40 CFR Part 60, Subpart A and Subpart Dc for Small Industrial, Commercial, and Institutional Steam Generating Units. **(40 CFR Part 60 Subparts A and Dc)**

**The following conditions apply to: FG-EMGGENS**

**DESCRIPTION:** Six (6) diesel fuel fired emergency reciprocating internal combustion engine generators.

**Emission Units:** EU-EMGRICE1, EU-EMGRICE2, EU-EMGRICE3, EU-EMGRICE4, EU-EMGRICE5, EU-EMGRICE6

**POLLUTION CONTROL EQUIPMENT:** NA

**I. EMISSION LIMITS**

NA

**II. MATERIAL LIMITS**

1. The sulfur content of the fuel oil used in FG-EMGGENS shall not exceed 500 ppm (0.05 percent) by weight. **(R 336.1205(1)(a) & (3))**

**III. PROCESS/OPERATIONAL RESTRICTIONS**

1. The permittee shall not operate each engine of FG-EMGGENS for more than 500 hours per year on a 12-month rolling time period basis as determined at the end of each calendar month. **((R 336.1205(1)(a) & (3))**

**IV. DESIGN/EQUIPMENT PARAMETERS**

1. The permittee shall equip and maintain each engine of FG-EMGGENS with non-resettable hours meters to track the operating hours. **(R 336.1205(1)(a) & (3))**

**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 complete all required calculations in a format acceptable to the AQD District Supervisor by the 30th day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. **(R 336.1205(3))**
2. The permittee shall monitor and record the hours of operation of each engine of FG-EMGGENS, on a monthly and 12-month rolling time period basis, in a manner that is acceptable to the District Supervisor, Air Quality Division. **(R 336.1205(3))**
3. The permittee shall maintain a complete record of the fuel oil specifications and/or fuel analysis for each delivery, or storage tank of fuel oil used in FG-EMGGENS, demonstrating that the fuel sulfur content meets the requirement of SC II.1. These records may include purchase records for ASTM specification fuel oil, specifications or analyses provided by the vendor at the time of delivery, analytical results from laboratory testing, or any records adequate to demonstrate compliance with the percent sulfur limit in fuel oil. The certification or test data shall include the name of the oil supplier or laboratory, and the sulfur content of the fuel oil. **(R 336.1205(3))**

4. The permittee shall maintain the following record for each engine of FG-EMGGENS. The following information shall be recorded and kept on file at the facility:
  - a. Engine manufacturer;
  - b. Date engine was manufactured;
  - c. Engine model number;
  - d. Engine horsepower;
  - e. Engine serial number;
  - f. Engine specification sheet;
  - g. Date of initial startup of the engine; and
  - h. Date engine was removed from service at this stationary source.

All of the above information shall be stored in a format acceptable to the AQD District Supervisor. **(R 336.1205, R 336.1225, R 336.1301, R 336.1331, R 336.1702, R 336.1910, R 336.1911, R 336.1912, 40 CFR 52.21(c) & (d))**

## **VII. REPORTING**

NA

## **VIII. STACK/VENT RESTRICTIONS**

NA

## **IX. OTHER REQUIREMENTS**

1. The permittee shall comply with all applicable provisions of the National Emission Standards for Hazardous Air Pollutants, as specified in 40 CFR Part 63, Subpart A and Subpart ZZZZ for Stationary Reciprocating Internal Combustion Engines. **(40 CFR Part 63 Subparts A and ZZZZ, 40 CFR 63.6585)**

**The following conditions apply Source-Wide to: FG-FACILITY**

**POLLUTION CONTROL EQUIPMENT:** NA

**I. EMISSION LIMITS**

<b>Pollutant</b>	<b>Limit</b>	<b>Time Period / Operating Scenario</b>	<b>Equipment</b>	<b>Testing / Monitoring Method</b>	<b>Underlying Applicable Requirements</b>
1. NOx	89 tpy	12-month rolling time period as determined	FG-FACILITY	SC VI.1	R 336.1205(3)
2. CO	89 tpy	12-month rolling time period as determined	FG-FACILITY	SC VI.2	R 336.1205(3)

**II. MATERIAL LIMITS**

1. The natural gas fuel usage for FG-FACILITY shall not exceed 1,215 million cubic feet per year as based on a 12-month rolling time period. **(R 336.1205(1)(a) & (3))**

**III. PROCESS/OPERATIONAL RESTRICTIONS**

NA

**IV. DESIGN/EQUIPMENT PARAMETERS**

1. The permittee shall install, calibrate, maintain and operate in a satisfactory manner, a device to monitor and record the natural gas used from all fuel burning equipment at FG-FACILITY. **(R 336.1205(3))**

**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 monitor and record, in a satisfactory manner, each fuel used for FG-FACILITY on a monthly basis. The permittee shall calculate monthly and 12-month rolling time period NOx emissions from FG-FACILITY and make them available to the Department upon request. For the purpose of demonstrating compliance with the NOx emission limit in SC I.1, the permittee shall use appropriate NOx emission factors.**(R 336.1205(1)(a) and (3))**
2. The permittee shall monitor and record, in a satisfactory manner, each fuel used for FG-FACILITY on a monthly basis. The permittee shall calculate monthly and 12-month rolling time period CO emissions from FG-FACILITY and make them available to the Department upon request. For the purpose of demonstrating compliance with the CO emission limit in SC I.2, the permittee shall use appropriate CO emission factors. **(R 336.1205(1)(a) and (3))**

**VII. REPORTING**

NA

**VIII. STACK/VENT RESTRICTIONS**

NA

**IX. OTHER REQUIREMENTS**

NA