

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

July 21, 2017

PERMIT TO INSTALL
68-17A

ISSUED TO
Michigan State University

LOCATED AT
Farm Lane Road
East Lansing, Michigan

IN THE COUNTY OF
Ingham

STATE REGISTRATION NUMBER
K3249

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:

June 15, 2017

DATE PERMIT TO INSTALL APPROVED:

July 21, 2017

SIGNATURE:

DATE PERMIT VOIDED:

SIGNATURE:

DATE PERMIT REVOKED:

SIGNATURE:

PERMIT TO INSTALL

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Common Abbreviations / Acronyms

Common Acronyms		Pollutant / Measurement Abbreviations	
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 _{2e}	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 ₂ 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	Malfuction Abatement Plan	MW	Megawatts
MDEQ	Michigan Department of Environmental Quality	NMOC	Non-methane Organic Compounds
MSDS	Material Safety Data Sheet	NO _x	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 ₂	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.

Emission Unit ID	Emission Unit Description (Process Equipment & Control Devices)	Installation Date / Modification Date	Flexible Group ID
EU-FLNRINC	Consumat pathological waste incinerator (Farm Lane/Incinerator Road) that burns institutional waste co-fired with 10% or less medical/infectious waste. Additionally, the incinerator burns pathological waste, some low-level nuclear waste, and low volumes of non-hazardous pharmaceutical waste. Fuel type: natural gas Burn rate: 825 lbs/hour	5/2/1975 6/13/1984	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 336.1290.			

The following conditions apply to:
EU-FLNRINC

DESCRIPTION: Consumat pathological waste incinerator (Farm Lane/Incinerator Road) that burns institutional waste co-fired with 10 percent or less medical/infectious waste. Additionally, the incinerator burns pathological waste, some low-level nuclear waste, and low volumes of non-hazardous pharmaceutical waste.

Fuel type: natural gas
 Burn rate: 825 lbs/hour

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT: Direct flame afterburner

I. EMISSION LIMITS

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. PM	0.20 Lbs/1000 lbs of exhaust gasses corrected to 50% excess air.	Test Protocol*	EU-FLNRINC	SC V.1, SC V.2, SC V.3	R 336.1331

*Test Protocol shall specify averaging time.

II. MATERIAL LIMITS

1. The permittee shall not burn polyvinyl chloride plastics in EU-FLNRINC.¹ **(R 336.1225, R 336.1901)**
2. The permittee shall not burn chemotherapeutic waste in EU-FLNRINC.¹ **(R 336.1225, R 336.1901)**
3. The permittee shall burn only pharmaceutical waste that is deemed non-hazardous in EU-FLNRINC.¹ **(R 336.1225, R 336.1901)**
4. In any combination of waste, the permittee shall not burn less than 90% Pathological waste by weight to maintain status as a pathological waste incinerator unit. Failure to do so will require compliance with 40 CFR Part 60, Subpart FFFF. **(40 CFR 60.2993(I))**
5. The permittee shall not burn any waste in EU-FLNRINC other than the following wastes.¹ **(R 336.1225, R 336.1901)**
 - a. **Institutional wastes** as defined in 40 CFR 60.3078. Institutional waste means solid waste that is combusted at any institutional facility that generated the waste.
 - b. **Non-hazardous Pharmaceutical wastes** as defined in the DEQ Office of Waste Management and Radiological Protection Hazardous Waste Management Rules, R 299.9228(2)(m), Non-hazardous Pharmaceutical Waste means solid waste pharmaceuticals that are not hazardous.
 - c. **Pathological Waste** as defined in 40 CFR 60.51c. Pathological waste is waste material consisting of only human or animal remains, anatomical parts and/or tissue, the bags/containers used to collect and transport the waste material and animal bedding.
 - d. **Medical/Infectious waste** - as defined in 40 CFR 60.51c, medical/infectious waste generated in the diagnosis, treatment, or immunization of human beings or animals, in research pertaining thereto, or in the production or testing of biologicals that is further listed in the above regulation. This waste shall not exceed 10 percent, by weight, in aggregate, of the total waste burned in EU-FLNRINC as measured on a calendar quarter basis. For purposes of this definition, pathological waste, chemotherapeutic waste, and low-level radioactive waste are considered "other" wastes when calculating the percentage of medical/infectious waste combusted.

6. The permittee shall not burn more than 10 percent, by weight, of medical/infectious waste as defined in SC II.4 of EU-FLNRINC. **(40 CFR 60.51c, 40 CFR 60.50c(c))**
7. The permittee may incinerate animal carcasses and paper wastes containing byproduct materials defined in license to the permittee by the U.S. Nuclear Regulatory Commission, in accordance with the conditions of said license and all applicable federal regulations including 10 CFR Part 20. **(10 CFR Part 20)**
8. The permittee shall use only natural gas as fuel in EU-FLNRINC.¹ **(R 336.1225, R 336.1901)**

III. PROCESS/OPERATIONAL RESTRICTIONS

1. The permittee shall not combust waste in EU-FLNRINC unless a minimum temperature of 1750 °F and a minimum retention time of 0.5 second in the afterburner are maintained. **(R 336.1301, R 336.1331, R 336.1910)**
2. The after burner shall be installed, maintained, and operated in a satisfactory manner to control emissions from EU-FLNRINC. A list of operating and maintenance procedures is specified in Appendix 9-1 of the current ROP. **(R 336.1301, R 336.1331, R 336.1910)**
3. The permittee shall not operate EU-FLNRINC unless the temperature setting and indicator light for the afterburner are calibrated in a satisfactory manner. The indicator light will turn on when the afterburner reaches the minimum temperature from SC III.1. **(R 336.1301, R 336.1331, R 336.1910)**
4. The permittee shall not operate EU-FLNRINC unless the Section 1 Incinerators Malfunction Abatement Plan, or an alternate plan approved by the AQD District Supervisor, is implemented and maintained. The plan shall include procedures for maintaining and operating in a satisfactory manner, EU-FLNRINC, add-on air pollution control device, and monitoring equipment during malfunction events, and a program for corrective action for such events. If the malfunction abatement plan fails to address or inadequately addresses an event that meets the characteristics of a malfunction at the time the plan is initially developed, the owner or operator shall revise the malfunction abatement plan within 45 days after such an event occurs and submit the revised plan to the AQD District Supervisor. **(R 336.1910, R 336.1911)**
5. The permittee shall operate EU-FLNRINC as per the Waste Management Plan in Appendix 10-1 of the current ROP or via an alternate plan approved by the AQD District Supervisor. **(40 CFR 60.50c(c))**

IV. DESIGN/EQUIPMENT PARAMETERS

1. The permittee shall not operate EU-FLNRINC unless the afterburner is installed, maintained, and operated in a satisfactory manner. **(R 336.1224, R 336.1225, R 336.1301, R 336.1331, R 336.1910)**
2. The permittee shall equip and maintain the afterburner of EU-FLNRINC with a thermocouple control system. **(R 336.1224, R 336.1225, R 336.1301, R 336.1331, R 336.1901, R 336.1910, R 336.1910)**
3. The permittee shall install, calibrate, maintain and operate in a satisfactory manner a device to monitor and record the temperature in the afterburner of EU-FLNRINC on a continuous basis. **(R 336.1301, R 336.1331, R 336.1901, R 336.1910)**
4. The EU-FLNRINC afterburner temperature shall be interconnected with the primary chamber start relay so that the primary chamber burner will start only after the afterburner minimum temperature (1750 °F) is reached. **(R 336.1301, R 336.1331, R 336.1901, R 336.1910)**

V. TESTING/SAMPLING

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

1. Visual inspection for abnormal/excessive smoke to be performed at least once a day, every day that the incinerator is operating. (R 336.1301, R 336.1331, R 336.1901, R 336.1910)
2. The permittee shall measure the opacity using Method 9 (Visual Determination of the Opacity of Emissions from Stationary Sources) upon request of the AQD. (R 336.1301, R 336.1331, R 336.1901, R 336.1910)
3. The permittee shall verify PM emission rates, by testing at owner's expense, in accordance with department requirements within 12 months of the ROP renewal issuance, and once every five years thereafter, unless the permittee has submitted to the AQD District Supervisor an acceptable demonstration that the most recent acceptable test remains valid and representative. During performance testing, the permittee shall also determine and record the average operating temperature of the afterburner to control the emissions from the EU-FLNRINC. (R 336.1301, R 336.1331, R 336.1901, R 336.1910)

VI. MONITORING/RECORDKEEPING

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

1. All required calculations shall be completed in a format acceptable to the AQD District Supervisor by the 30th day of the calendar month, for the previous calendar quarter, unless otherwise specified in any monitoring/recordkeeping special condition. (R 336.1224, R 336.1225, R 336.1901, 40 CFR 60.50c(c))
2. The permittee shall monitor and record the temperature in the afterburner of EU-FLNRINC on a continuous basis in a manner and with instrumentation acceptable to the District Supervisor, Air Quality Division. Records shall be kept on file and made available to the Department upon request. (R 336.1301, R 336.1331, R 336.1901, R 336.1910)
3. The permittee shall keep, in a satisfactory manner, records on a calendar quarter basis of the description and weight of waste burned in EU-FLNRINC, as required by SC II.4, II.5 and II.6 specifically differentiating between pathological and other wastes. All records shall be kept on file and made available to the Department upon request. (R 336.1225, R 336.1901, 40 CFR 60.51c)
4. The permittee shall calculate the weight percent of medical/infectious waste burned in EU-FLNRINC, as required by SC II.6. All records shall be kept on file and made available to the Department upon request. (R 336.1225, R 336.1901, 40 CFR 60.51c)

VII. REPORTING

1. A complete test plan shall be submitted to the AQD no less than 30 days prior to testing for review. The final plan must be approved by the AQD prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test. (R 336.2001)

VIII. STACK/VENT RESTRICTIONS

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. SVFLRINC01	46 ¹	29 ¹	R 336.1901

IX. OTHER REQUIREMENTS

NA

Footnotes:

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