

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

March 4, 2014

**PERMIT TO INSTALL
5-14**

**ISSUED TO
Ferris State University**

**LOCATED AT
625 South Warren Avenue
Big Rapids, Michigan**

**IN THE COUNTY OF
Mecosta**

**STATE REGISTRATION NUMBER
K2155**

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:

January 30, 2014

DATE PERMIT TO INSTALL APPROVED:

March 4, 2014

SIGNATURE:

DATE PERMIT VOIDED:

SIGNATURE:

DATE PERMIT REVOKED:

SIGNATURE:

PERMIT TO INSTALL

Table of Contents

| Section | Page |
|--|-------------|
| Alphabetical Listing of Common Abbreviations / Acronyms | 2 |
| General Conditions | 3 |
| Special Conditions | 5 |
| Emission Unit Summary Table..... | 5 |
| Special Conditions for EU-INCINERATOR..... | 6 |
| <u>Special Conditions for EU-COGEN</u> | 8 |
| Special Conditions for EU-BOILER..... | 11 |
| Flexible Group Summary Table | 13 |
| Special Conditions for FGFACILITY | 13 |
| Appendix A: Incinerator Operation and Maintenance Guidelines | 16 |
| Appendix B: Example Calculations for GHGs..... | 16 |

Common Abbreviations / Acronyms

| Common Acronyms | | Pollutant / Measurement Abbreviations | |
|------------------------|---|--|--|
| AQD | Air Quality Division | BTU | British Thermal Unit |
| BACT | Best Available Control Technology | °C | Degrees Celsius |
| CAA | Clean Air Act | CO | Carbon Monoxide |
| CEM | Continuous Emission Monitoring | dscf | Dry standard cubic foot |
| CFR | Code of Federal Regulations | dscm | Dry standard cubic meter |
| CO ₂ e | Carbon Dioxide Equivalent | °F | Degrees Fahrenheit |
| COM | Continuous Opacity Monitoring | gr | Grains |
| EPA | Environmental Protection Agency | Hg | Mercury |
| EU | Emission Unit | hr | Hour |
| FG | Flexible Group | H ₂ S | Hydrogen Sulfide |
| GACS | Gallon of Applied Coating Solids | hp | Horsepower |
| GC | General Condition | lb | Pound |
| GHGs | Greenhouse Gases | kW | Kilowatt |
| HAP | Hazardous Air Pollutant | m | Meter |
| HVLP | High Volume Low Pressure * | mg | Milligram |
| ID | Identification | mm | Millimeter |
| LAER | Lowest Achievable Emission Rate | MM | Million |
| MACT | Maximum Achievable Control Technology | MW | Megawatts |
| MAERS | Michigan Air Emissions Reporting System | ng | Nanogram |
| MAP | Malfuction Abatement Plan | NO _x | Oxides of Nitrogen |
| MDEQ | Michigan Department of Environmental Quality (Department) | PM | Particulate Matter |
| MSDS | Material Safety Data Sheet | PM10 | PM with aerodynamic diameter ≤10 microns |
| NESHAP | National Emission Standard for Hazardous Air Pollutants | PM2.5 | PM with aerodynamic diameter ≤ 2.5 microns |
| NSPS | New Source Performance Standards | pph | Pounds per hour |
| NSR | New Source Review | ppm | Parts per million |
| PS | Performance Specification | ppmv | Parts per million by volume |
| PSD | Prevention of Significant Deterioration | ppmw | Parts per million by weight |
| PTE | Permanent Total Enclosure | psia | Pounds per square inch absolute |
| PTI | Permit to Install | psig | Pounds per square inch gauge |
| RACT | Reasonably Available Control Technology | scf | Standard cubic feet |
| ROP | Renewable Operating Permit | sec | Seconds |
| SC | Special Condition | SO ₂ | Sulfur Dioxide |
| SCR | Selective Catalytic Reduction | THC | Total Hydrocarbons |
| SRN | State Registration Number | tpy | Tons per year |
| TAC | Toxic Air Contaminant | µg | Microgram |
| TEQ | Toxicity Equivalence Quotient | VOC | Volatile Organic Compound |
| VE | Visible Emissions | yr | Year |

* For High Volume Low Pressure (HVLP) applicators, the pressure measured at the HVLP gun air cap shall not exceed ten (10) pounds per square inch gauge (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-INCINERATOR | J.A.R. Model MCP60 incinerator to burn pathological waste. Stack ID: SV-INCINERATOR | 1985 | FGFACILITY |
| EU-COGEN | A co-generation system consisting of a 1130 KW gas turbine, and a boiler (duct burner) rated at 50,000 pound of steam per hour and a heat input of 45 million Btus per hour. Stack ID: SV-COGEN | 1988 | FGFACILITY |
| EU-BOILER | 75,000 pound per hour gas/oil-fired boiler. Stack ID: SV-BOILER | 1996 | FGFACILITY |

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-INCINERATOR

DESCRIPTION: J.A.R. Model MCP60 incinerator to burn pathological waste.

Flexible Group ID: FGFACILITY

POLLUTION CONTROL EQUIPMENT: NA

I. EMISSION LIMITS

| Pollutant | Limit | Time Period / Operating Scenario | Equipment | Testing / Monitoring Method | Underlying Applicable Requirements |
|------------------|---|---|------------------|------------------------------------|---|
| 1. PM | 0.20 pounds per 1,000 pounds of exhaust gases, corrected to 50% excess air. | Test Protocol | EU-INCINERATOR | GC 13 | R 336.1331 |

II. MATERIAL LIMITS

1. The permittee shall not burn any waste in EU-INCINERATOR other than the following wastes: **(40 CFR 60.51c, R 336.1205)**

Pathological wastes - As defined in the federal Standards of Performance for New Stationary Sources, 40 CFR 60.51c, pathological waste means waste materials 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.

III. PROCESS/OPERATIONAL RESTRICTIONS

1. The incinerator shall be installed, maintained, and operated in a satisfactory manner to control emissions from EU-INCINERATOR. A list of recommended operating and maintenance procedures is specified in Appendix A. **(R 336.1301, R 336.1331, R 336.1910)**

IV. DESIGN/EQUIPMENT PARAMETERS

1. The permittee shall not operate EU-INCINERATOR unless the incinerator is equipped with a manual timer switch, with operating instructions, to insure use of the afterburner whenever the incinerator is operated. If it is determined, by the AQD District Supervisor, that such manual timer switch is not being utilized correctly, an automatic afterburner switch shall be required to be installed. **(R 336.1301, R 336.1331)**

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. 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 month, unless otherwise specified in any recordkeeping, reporting or notification special condition. **(R 336.1205)**
2. The permittee shall keep, in a satisfactory manner, daily records of the time, description and weight of waste combusted in EU-INCINERATOR, as required by SC II.1. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205)**

VII. REPORTING

NA

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. SV-INCINERATOR | 18 | 58 | R 336.1225, 40 CFR 52.21(c) & (d) |

IX. OTHER REQUIREMENTS

NA

The following conditions apply to: EU-COGEN

DESCRIPTION: A co-generation system consisting of a 1130 KW gas turbine, and a boiler (duct burner) rated at 50,000 pound of steam per hour and a heat input of 45 million BTUs per hour.

Flexible Group ID: FGFACILITY

POLLUTION CONTROL EQUIPMENT: NA

I. EMISSION LIMITS

| Pollutant | Limit | Time Period / Operating Scenario | Equipment | Testing / Monitoring Method | Underlying Applicable Requirements |
|---|----------------------|----------------------------------|---|--|---|
| 1. NO _x when firing natural gas | 85 ppmv ¹ | Test Protocol | Turbine portion of EU-COGEN | GC 13, SC V.1, 40 CFR Part 60 Subpart GG, 60.335 | R 336.1205(1)(a) & (3), 40 CFR Part 60 Subpart GG, 60.332 |
| 2. NO _x when firing natural gas | 8.04 pph | Test Protocol | Turbine portion of EU-COGEN | GC 13 | R 336.1205(1)(a) & (3), 40 CFR 52.21(c) & (d) |
| 3. NO _x when firing natural gas | 10.64 pph | Test Protocol | Combined turbine and duct burner portions of EU-COGEN | GC 13 | R 336.1205(1)(a) & (3), 40 CFR 52.21(c) & (d) |
| 4. NO _x when firing No. 2 fuel oil | 97 ppmv ¹ | Test Protocol | Turbine portion of EU-COGEN | GC 13, SC V.1, 40 CFR Part 60 Subpart GG, 60.335 | R 336.1205(1)(a) & (3), 40 CFR Part 60 Subpart GG, 60.332 |
| 5. NO _x when firing No. 2 fuel oil | 13.52 pph | Test Protocol | Combined turbine and duct burner portions of EU-COGEN | GC 13 | R 336.1205(1)(a) & (3), 40 CFR 52.21(c) & (d) |
| 6. SO ₂ when firing No. 2 fuel oil | 64 ppmv ¹ | Test Protocol | Turbine portion of EU-COGEN | GC 13, SC V.1, 40 CFR Part 60 Subpart GG, 60.335 | R 336.1205(1)(a) & (3), 40 CFR Part 60 Subpart GG, 60.332 |
| 7. SO ₂ when firing No. 2 fuel oil | 26.5 pph | Test Protocol | Combined turbine and duct burner portions of EU-COGEN | GC 13 | R 336.1205(1)(a) & (3), 40 CFR 52.21(c) & (d) |
| 8. SO ₂ when firing No. 2 fuel oil | 592 lb/day | Calendar day | Combined turbine and duct burner portions of EU-COGEN | SC 2.4, SC VI.4 | R 336.1205(1)(a) & (3), 40 CFR 52.21(c) & (d) |
| 9. CO when firing natural gas or No. 2 fuel oil | 3.74 pph | Test Protocol | Combined turbine and duct burner portions of EU-COGEN | GC 13 | R 336.1205(1)(a) & (3) |

¹ ppmv = parts per million by volume at 15 percent oxygen and on a dry gas basis.

² Based on an emission rate of 0.10 pounds per million Btus heat input.

³ Based on an emission rate of 0.42 pounds per million Btus heat input.

⁴ Based on an emission rate of 0.06 pounds per million Btus heat input.

II. MATERIAL LIMITS

1. The permittee shall only burn pipeline quality natural gas or No. 2 fuel oil in EU-COGEN. **(R 336.1205, R 336.1224, 40 CFR 52.21(c) & (d))**
2. The sulfur content of all No. 2 fuel oil fired in EU-COGEN shall not exceed 0.4 percent by weight. **(R 336.1224, 40 CFR 52.21(c) & (d), 40 CFR Part 60 Subparts GG, 60.333(b))**
3. The permittee shall not fire more than 74,000 pounds per calendar day of No. 2 fuel oil in EU-COGEN. **(R 336.1205, R 336.1224, 40 CFR 52.21(c) & (d))**

III. PROCESS/OPERATIONAL RESTRICTIONS

1. The permittee shall comply with all provisions of the federal Standards of Performance for New Stationary Sources as specified in 40 CFR Part 60 Subparts A and GG, as they apply to the turbine portion of EU-COGEN. **(40 CFR Part 60 Subparts A and GG)**

IV. DESIGN/EQUIPMENT PARAMETERS

1. The permittee shall not fire any fuel in the duct burner unless the turbine portion of EU-COGEN is operating. **(R 336.1205(a) and (3), R 336.2803, R 336.2804, 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 the sulfur content in the No. 2 fuel oil in accordance with 40 CFR 60.334(h). Sulfur content monitoring will be used to determine compliance with SC II.2. **(R 336.1224, 40 CFR 52.21(c) & (d), 40 CFR 60.334 and 60.335)**
2. The permittee shall monitor the nitrogen and sulfur content in the fuels in accordance with 40 CFR 60.335(d) and (e) or as described in an approved Custom Fuel Monitoring Plan (CFMP). If the permittee develops a CFMP, it shall be submitted within 90 days of permit issuance, and shall be implemented and maintained. The permittee shall submit the CFMP and any amendments to the CFMP to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 90 days of submittal, the CFMP or amended CFMP shall be considered approved. **(40 CFR 60.334 and 60.335)**
3. 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 recordkeeping, reporting or notification special condition. **(R 336.1205, 40 CFR 52.21(c) & (d), 40 CFR Part 60 Subpart GG)**
4. The permittee shall keep, in a satisfactory manner, monthly and 12-month rolling time period natural gas use and No. 2 fuel oil use records for EU-COGEN. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205, 40 CFR 52.21(c) & (d), 40 CFR Part 60 Subpart GG)**

5. The permittee shall keep, in a satisfactory manner, monthly and 12-month rolling time period NO_x emission calculation records for each fuel fired in the turbine and duct burner portions of EU-COGEN. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d), 40 CFR Part 60 Subpart GG, 60.332)**
6. The permittee shall keep, in a satisfactory manner, monthly and 12-month rolling time period SO₂ emission calculation records for No. 2 fuel oil fired in the turbine and duct burner portions of EU-COGEN. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205, 40 CFR 52.21(c) & (d), 40 CFR Part 60 Subpart GG, 60.332)**
7. The permittee shall keep, in a satisfactory manner, monthly and 12-month rolling time period CO emission calculation records for each fuel fired in the turbine and duct burner portions of EU-COGEN. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205)**
8. The permittee shall keep, in a satisfactory manner, a complete copy of each No. 2 fuel oil analysis, as supplied by the oil vendor. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205, 40 CFR 52.21(c) & (d))**

VII. REPORTING

NA

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. SV-COGEN | 36 | 53 | R 336.1225, 40 CFR 52.21(c) & (d) |

IX. OTHER REQUIREMENTS

NA

The following conditions apply to: EU-BOILER

DESCRIPTION: 75,000 pound per hour gas/oil-fired boiler.

Flexible Group ID: FGFACILITY

POLLUTION CONTROL EQUIPMENT: NA

I. EMISSION LIMITS

| Pollutant | Limit | Time Period / Operating Scenario | Equipment | Testing / Monitoring Method | Underlying Applicable Requirements |
|--------------------|-----------|--|-----------|-----------------------------|--|
| 1. NO _x | 8.96 pph | Test Protocol | EU-BOILER | GC 13 | R 336.1205(1)(a) & (3), 40 CFR 52.21(c) & (d) |
| 2. SO ₂ | 33.91 pph | Test Protocol | EU-BOILER | GC 13 | R 336.1205(1)(a) & (3), 40 CFR 52.21(c) & (d) |
| 3. SO ₂ | 34.3 tpy | 12-month rolling time period as determined at the end of each calendar month | EU-BOILER | SC II.3, SC VI.4 | R 336.1205(1)(a) & (3) |
| 4. CO | 13.44 pph | Test Protocol | EU-BOILER | GC 13 | R 336.1205(1)(a) & (3) |

5. Visible emissions from EU-BOILER shall not exceed 20 percent opacity except as specified in the federal Standards of Performance for New Stationary Sources, 40 CFR Part 60 Subparts A and Dc. **(40 CFR Part 60 Subparts A & Dc)**

II. MATERIAL LIMITS

1. The permittee shall only burn pipeline quality natural gas or No. 2 fuel oil in EU-BOILER. **(R 336.1205, R 336.1224, R 336.1225, 40 CFR 52.21(c) & (d))**
2. The sulfur content of all No. 2 fuel oil fired in EU-BOILER shall not exceed 0.4 percent by weight. **(R 336.1224, 40 CFR 52.21(c) & (d), 40 CFR Part 60 Subpart Dc, 60.42c(d))**
3. The permittee shall not fire more than 1,200,000 gallons per 12-month rolling time period as determined at the end of each calendar month of No. 2 fuel oil in EU-BOILER. **(R 336.1205, R 336.1224)**

III. PROCESS/OPERATIONAL RESTRICTIONS

1. The permittee shall comply with all provisions of the federal Standards of Performance for New Stationary Sources as specified in 40 CFR Part 60 Subparts A and Dc, as they apply to EU-BOILER. **(40 CFR Part 60 Subparts A and Dc)**

IV. DESIGN/EQUIPMENT PARAMETERS

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 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 recordkeeping, reporting or notification special condition. **(R 336.1205, 40 CFR 52.21(c) & (d), 40 CFR Part 60 Subpart Dc)**
2. The permittee shall keep, in a satisfactory manner, daily, monthly and 12-month rolling time period natural gas use and No. 2 fuel oil use records for EU-BOILER. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205, 40 CFR 52.21(c) & (d), 40 CFR Part 60 Subpart Dc)**
3. The permittee shall keep, in a satisfactory manner, daily, monthly and 12-month rolling time period NO_x emission calculation records for each fuel fired in EU-BOILER. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205, 40 CFR 52.21(c) & (d), 40 CFR Part 60 Subpart Dc)**
4. The permittee shall keep, in a satisfactory manner, daily, monthly and 12-month rolling time period SO₂ emission calculation records for each fuel fired in EU-BOILER. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205, 40 CFR 52.21(c) & (d))**
5. The permittee shall keep, in a satisfactory manner, monthly and 12-month rolling time period CO emission calculation records for each fuel fired in EU-BOILER. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205)**
6. The permittee shall verify the sulfur content of the No. 2 fuel oil for each new shipment of oil in accordance with 40 CFR Part 60 Subpart Dc, 60.42c(h). The verification shall be submitted to the AQD District Supervisor in an acceptable format within 30 days following the end of the quarter in which the data were collected. **(R 336.1205, 40 CFR 52.21(c) & (d), 40 CFR Part 60 Subpart Dc, 60.42c(h))**

VII. REPORTING

NA

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. SV-BOILER | 42 | 53 | R 336.1225, 40 CFR 52.21(c) & (d) |

IX. OTHER REQUIREMENTS

NA

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 |
|--------------------------|---|-------------------------------------|
| FGFACILITY | All process equipment source-wide including equipment covered by other permits, grandfathered equipment and exempt equipment. | NA |

The following conditions apply Source-Wide to: FGFACILITY

I. EMISSION LIMITS

| Pollutant | Limit | Time Period / Operating Scenario | Equipment | Testing / Monitoring Method | Underlying Applicable Requirements |
|------------------------|--------------------|---|------------------|---|---|
| 1. NO _x | Less than 90.0 tpy | 12-month rolling time period as determined at the end of each calendar month | FGFACILITY | SC II.1, SC VI.2, SC VI.3 | R 336.1205(3) |
| 2. SO ₂ | Less than 90.0 tpy | 12-month rolling time period as determined at the end of each calendar month | FGFACILITY | SC II.1, SC VI.2, SC VI.3 | R 336.1205(3) |
| 3. Each Individual HAP | Less than 9.0 tpy | 12-month rolling time period as determined at the end of each calendar month | FGFACILITY | SC VI.4 | R 336.1205(3) |
| 4. Aggregate HAPs | Less than 22.5 tpy | 12-month rolling time period as determined at the end of each calendar month | FGFACILITY | SC VI.4 | R 336.1205(3) |
| 5. CO ₂ e | 89,000 tpy | 12-month rolling time period as determined at the end of each calendar month. | FGFACILITY | SC II.1, SC VI.2 - SC VI.5 and Appendix A | R 336.1205(3) |

II. MATERIAL LIMITS

1. The permittee shall not use more than 3.165 million gallons of fuel oil per 12-month rolling time period in FGFACILITY, nor more than 1,479.6 million cubic feet of natural gas per 12-month rolling time period, or the amount as determined from the following equation:

$$\text{Foil} = 3.165 \times (1 - F_{\text{gas}}/1,479.6)$$

Where:

Foil = The amount of fuel oil used, in million gallons, based upon a 12-month rolling time period, as determined at the end of each calendar month.

Fgas = The amount of natural gas used, in million cubic feet, based upon a 12-month rolling time period, as determined at the end of each calendar month.

(R 336.1205(3))

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 complete all required calculations in a format acceptable to the AQD District Supervisor and make them available by the 30th day of the calendar month, for the previous calendar month, unless otherwise specified in any recordkeeping, reporting or notification special condition. **(R 336.1205(3))**
2. The permittee shall keep, in a satisfactory manner, monthly and 12-month rolling time period fuel use records for FGFACILITY. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1205(3))**
3. The permittee shall keep, in a satisfactory manner, monthly and 12-month rolling time period NO_x and SO₂ emission calculation records for FGFACILITY, as required by SC I.1 and I.2. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1205(3))**
4. The permittee shall keep, in a satisfactory manner, individual and aggregate HAP emission calculations determining the cumulative emission rate of each during the first 12 months and the annual emission rate of each thereafter, in tons per 12-month rolling time period as determined at the end of each calendar month, as required by SC I.3 and I.4. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1205(3))**

5. The permittee shall keep, in a satisfactory manner, monthly and 12-month rolling time period CO₂e emission calculation records for FGFACILITY, as required by SC I.5 and Appendix A. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1205(3))**

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTIONS

NA

IX. OTHER REQUIREMENTS

NA

APPENDIX A: Incinerator Operation and Maintenance Guidelines

1. Designate a trained operator for your unit and make that person responsible for compliance with the air pollution control requirements.
2. Grates should be cleaned before each day's operation (more often if necessary) and the ashes disposed of properly.
3. Preheat the unit with the burners (not with waste) for at least 15 minutes.
4. Do not overload. Stay within the given loading rates and follow manufacturer's instructions.
5. Schedule charges to minimize opening the charging door as infrequently as possible. Opening the charging door lets cold air in and quenches the fire causing smoke.
6. Burn only the type of wastes that your incinerator has been approved to burn. Follow the manufacturer's instructions to maximize the efficiency of the unit, and to properly burn the waste(s).
7. Keep the combustion air adjusted according to the manufacturer's instructions.
8. Observe the stack frequently and adjust your operation as necessary to eliminate smoke and fly ash.
9. A copy of the manufacturer's manual and this Guideline should be posted near your incinerator.
10. Make quarterly inspections to check and service all of the equipment. If you do not have a qualified person available for proper inspections, a service contract with a reputable manufacturer is advisable.

APPENDIX B: Example Calculations for GHGs

For limits on Fuel usage:

Total natural gas consumed for one year = assumed value of 596.4 MMcf

Emission factors from 40 CFR Part 98, Table C-1.

CO₂, CH₄, and N₂O (tons/yr) = fuel usage x heat value x emission factor x 1 ton/2000 lbs

CO₂ = (596.4 MMcf) x (1028 Btu/cf) x (116.89 lbs CO₂/MMbtu) x (1 ton/2000 lbs) = 35,832.58 tons/yr

CH₄ = (596.4 MMcf) x (1028 Btu/cf) x (0.0022 lbs CH₄/MMbtu) x (1 ton/2000 lbs) = 0.67 tons/yr

N₂O = (596.4 MMcf) x (1028 Btu/cf) x (0.00022 lbs N₂O/MMBtu) x (1/2000) = 0.07 tons/yr

Global Warming Potential from 40 CFR Part 98, Table A-1

Actual CO₂e = GHG emission rate x Global Warming Potential

PTE CO₂e = CO₂ (35,832.58 x 1) + CH₄ (0.67 x 21) + N₂O (0.07 x 310) = **35,868.35 tons/yr**