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

November 3, 2023

**PERMIT TO INSTALL**
144-15H

**ISSUED TO**
The Andersons Marathon Holdings, LLC

**LOCATED AT**
26250 B Drive North
Sheridan Township, Michigan 49224

**IN THE COUNTY OF**
Calhoun

**STATE REGISTRATION NUMBER**
B8570

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:<br>**August 17, 2023** | |
| DATE PERMIT TO INSTALL APPROVED:<br>**November 3, 2023** | SIGNATURE: |
| DATE PERMIT VOIDED: | SIGNATURE: |
| DATE PERMIT REVOKED: | SIGNATURE: |

# PERMIT TO INSTALL

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## COMMON ACRONYMS

| | |
|---|---|
| AQD | Air Quality Division |
| BACT | Best Available Control Technology |
| CAA | Clean Air Act |
| CAM | Compliance Assurance Monitoring |
| CEMS | Continuous Emission Monitoring System |
| CFR | Code of Federal Regulations |
| COMS | Continuous Opacity Monitoring System |
| Department/department/EGLE | Michigan Department of Environment, Great Lakes, and Energy |
| EU | Emission Unit |
| FG | Flexible Group |
| GACS | Gallons of Applied Coating Solids |
| GC | General Condition |
| GHGs | Greenhouse Gases |
| HVLP | High Volume Low Pressure* |
| ID | Identification |
| IRSL | Initial Risk Screening Level |
| ITSL | Initial Threshold Screening Level |
| LAER | Lowest Achievable Emission Rate |
| MACT | Maximum Achievable Control Technology |
| MAERS | Michigan Air Emissions Reporting System |
| MAP | 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. The permittee shall not operate this equipment in a manner that causes or permits the emission of an air contaminant or water vapor in quantities that cause, alone or in reaction with other air contaminants, 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)) | Installation Date / Modification Date | Flexible Group ID |
|---|---|---|---|
| EU-INTERNALOP | Internal operations - storage and internal handling of grain at grain elevator. | 10-01-81 / 02-16-11 / 02-22-21 | NA |
| EU-GRAINDRY | One 62.1 MMBtu/hr (average) natural gas fired grain dryer (10,000 bushels/hr throughput capacity at 5 points moisture removal), at the grain elevator. | 04-09-15 | NA |
| EU-COOLINGTWR2 | Five-cell cooling tower equipped with drift eliminators. | 12-16-15 / TBD | NA |
| EU-FERMENTER1 | Fermenter #1, controlled by fermentation scrubbers C-40 and C-40A and purge scrubber C-120. There is a pre-condenser before scrubbers C-40 and C-40A.(144-15G) | 08-01-06 | FGNSPSVV FGPURGE FGFERM FGCAMUNITS |
| EU-FERMENTER2 | Fermenter #2, controlled by fermentation scrubbers C-40 and C-40A and purge scrubber C-120. There is a pre-condenser before scrubbers C-40 and C-40A. (144-15G) | 08-01-06 | FGNSPSVV FGPURGE FGFERM FGCAMUNITS |
| EU-FERMENTER3 | Fermenter #3, controlled by fermentation scrubbers C-40 and C-40A and purge scrubber C-120. There is a pre-condenser before scrubbers C-40 and C-40A. (144-15G) | 02-16-2011 | FGNSPSVV FGPURGE FGFERM FGCAMUNITS |
| EU-FERMENTER4 | Fermenter #4, controlled by fermentation Scrubbers C-40 and C-40A and purge scrubber C-120. There is a pre-condenser before scrubbers C-40 and C-40A. (144-15G) | 12-16-2015 | FGFERM FGPURGE FGNSPSVVa FGCAMUNITS |
| EU-FERMENTER5 | Fermenter #5, controlled by fermentation Scrubbers C-40 and C-40A and purge scrubber C-120. There is a pre-condenser before scrubbers C-40 and C-40A. (144-15G) | 12-16-2015 | FGFERM FGPURGE FGNSPSVVa FGCAMUNITS |
| EU-FERMENTER6 | Fermenter #6, controlled by fermentation Scrubbers C-40 and C-40A and purge scrubber C-120. There is a pre-condenser before scrubbers C-40 and C-40A.(144-15H) | TBD | FGFERM FGPURGE FGNSPSVVa FGCAMUNITS |
| EU-FERMENTER7 | Fermenter #7, controlled by fermentation Scrubbers C-40 and C-40A and purge scrubber C-120. There is a pre-condenser before scrubbers C-40 and C-40A.(144-15H) | 8-01-06 | FGFERM FGPURGE FGNSPSVV FGCAMUNITS |
| EU-FERMENTER8 | Fermenter #8, controlled by fermentation scrubber C-40 and C-40A and purge scrubber C-120. There is a pre-condenser before scrubber C-40. (144-15G) | 8-01-06 | FGNSPSVV FGPURGE FGFERM FGCAMUNITS |

| Emission Unit ID | Emission Unit Description (Including Process Equipment & Control Device(s)) | Installation Date / Modification Date | Flexible Group ID |
|---|---|---|---|
| EU-FERMENTER9 | Fermenter #9, controlled by fermentation scrubbers C-40 and C-40A and purge scrubber C-120. There is a pre-condenser before scrubbers C-40 and C-40A. (144-15G) | 12-16-2015 | FGNSPSVVa<br>FGPURGE<br>FGFERM<br>FGCAMUNITS |
| EU-FERMENTER10 | Fermenter #10, controlled by fermentation Scrubbers C-40 and C-40A and purge scrubber C-120. There is a pre-condenser before scrubbers C-40 andC-40A. (144-15G) | 12-16-15 | FGFERM<br>FGPURGE<br>FGNSPSVVa<br>FGCAMUNITS |
| EU-FERMENTER11 | Fermenter #11, controlled by fermentation Scrubbers C-40 and C-40A and purge scrubber C-120. There is a pre-condenser before scrubbers C-40 and C-40A. (144-15G) | 12-16-15 | FGFERM<br>FGPURGE<br>FGNSPSVVa<br>FGCAMUNITS |
| EU-FERMENTER12 | Fermenter #12, controlled by fermentation Scrubbers C-40 and C-40A and purge scrubber C-120. There is a pre-condenser before scrubbers C-40 and C-40A. (144-15G) | TBD | FGFERM<br>FGPURGE<br>FGNSPSVVa<br>FGCAMUNITS |
| EU-BEERWELL | Beer well, controlled by fermentation scrubbers C-40 and C-40A. There is a pre-condenser before scrubbers C-40 and C-40A. | 08-01-06 | FGNSPSVV<br>FGFERM |
| EU-CT | Combustion turbine equipped with dry low NOx (SoLoNOx) burner technology to generate electrical power. | 12-16-15 | FG-CHP |
| EU-DB | Duct burner associated with the combustion turbine. | 12-16-15 | FG-CHP |

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.

# EU-INTERNALOP
# EMISSION UNIT CONDITIONS

## DESCRIPTION

Internal operations storage and internal handling of grain at grain elevator.

**Flexible Group ID:** NA

## POLLUTION CONTROL EQUIPMENT

NA

## I. EMISSION LIMIT(S)

NA

## II. MATERIAL LIMIT(S)

| Material | Limit | Time Period / Operating Scenario | Equipment | Monitoring / Testing Method | Underlying Applicable Requirements |
|---|---|---|---|---|---|
| 1. Grain handled internally | 55 million bushels | 12-month rolling time period as determined at the end of each calendar month | EU-INTERNALOP | SC VI.1 | R 336.1205(1), 40 CFR 52.21 (c) and (d) |

## III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The applicant shall not operate EU-INTERNALOP unless the program for continuous fugitive emissions control for all plant roadways, the plant yard, all material storage piles, and all material handling operations specified in Appendix 9 has been implemented and is maintained. **(R 336.1205(1), R 336.1901, R 336.1911)**

2. Particulate matter collected from the cleaning operation portion of EU-INTERNALOP shall be removed and disposed of in a manner which minimizes fugitive emissions. **(R 336.1205(1), R 336.1370, R 336.1901)**

## IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

## V. TESTING/SAMPLING

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

NA

## VI. MONITORING/RECORDKEEPING

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

1. The permittee shall keep, in a satisfactory manner, monthly and 12-month rolling time period records of the bushels of grain handled internally for EU-INTERNALOP. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205(1), 40 CFR 52.21(c) and (d))**

## 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:

NA

## IX. OTHER REQUIREMENT(S)

NA

**Footnotes:**
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

# EU-GRAINDRY
# EMISSION UNIT CONDITIONS

## DESCRIPTION

One 62.1 MMBtu/hr (average) natural gas fired grain dryer (10,000 bushels/hr throughput capacity at 5 points moisture removal), at the grain elevator.

**Flexible Group ID:** NA

## POLLUTION CONTROL EQUIPMENT

NA

## I. EMISSION LIMIT(S)

| Pollutant | Limit | Time Period / Operating Scenario | Equipment | Monitoring / Testing Method | Underlying Applicable Requirements |
|---|---|---|---|---|---|
| 1. Visible Emissions | 5 percent opacity | Six-minute average | EU-GRAINDRY | SC VI.1 | R 336.1205(1), R 336.1301, R 336.1901 |

## II. MATERIAL LIMIT(S)

| Material | Limit | Time Period / Operating Scenario | Equipment | Monitoring / Testing Method | Underlying Applicable Requirements |
|---|---|---|---|---|---|
| 1. Natural gas | 125 million cubic feet | 12-month rolling time period as determined at the end of each calendar month | EU-GRAINDRY | SC VI.3 | R 336.1205(1), 40 CFR 52.21(c) & (d) |
| 2. Grain dried | 10 million bushels | 12-month rolling time period as determined at the end of each calendar month | EU-GRAINDRY | SC VI.4 | R 336.1205(1), 40 CFR 52.21(c) & (d) |

## III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The applicant shall not operate any of the emission units in EU-GRAINDRY unless the program for continuous fugitive emissions control for all plant roadways, the plant yard, all material storage piles, and all material handling operations specified in Appendix 9 has been implemented and is maintained. **(R 336.1205(1), R 336.1901, R 336.1911)**

## IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The applicant shall not operate EU-GRAINDRY unless all the exhaust gases are passed through column plate perforations with diameters less than or equal to 0.094 inch. **(R 336.1205(1), R 336.1301, R336.1331, 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))**

NA

## VI. MONITORING/RECORDKEEPING

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

1. The permittee shall conduct a monthly one-minute visible emissions observation of the EU-GRAINDRY vents during routine operating conditions. For the purpose of this condition, such observations shall follow the procedures to record the reading, perform maintenance, and eliminate visible emissions outlined in Appendix 3. If an observation reveals any visible emissions from the vent (other than uncombined water vapor), the permittee shall inspect the particulate control system and perform any maintenance required to eliminate visible emissions. **(R 336.1205(1), R 336.1301)**

2. The permittee shall keep, in a satisfactory manner, records of all visible emission readings for EU-GRAINDRY. At a minimum, records shall include the date, time, name of observer/reader, whether the reader is certified, and status of visible emissions. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205(1), R 336.1301)**

3. The permittee shall keep, in a satisfactory manner, monthly and 12-month rolling time period records of cubic feet of natural gas burned in EU-GRAINDRY. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205(1), 40 CFR 52.21(c) and (d))**

4. The permittee shall keep, in a satisfactory manner, monthly and 12-month rolling time period records of the bushels of grain dried in EU-GRAINDRY. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205(1), 40 CFR 52.21(c) and (d))**

## VII. REPORTING

1. The applicant shall not operate EU-GRAINDRY unless all the exhaust gases are passed through column plate perforations with diameters less than or equal to 0.094 inch. **(R 336.1205(1), R 336.1301, R336.1331, R 336.1901, R 336.1910)**

## 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:

NA

## IX. OTHER REQUIREMENT(S)

NA

**Footnotes:**
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

# EU-COOLINGTWR2
# EMISSION UNIT CONDITIONS

## DESCRIPTION:

Five-cell cooling tower equipped with drift eliminators.

**Flexible Group ID:** NA

## POLLUTION CONTROL EQUIPMENT:

Drift Eliminators

## I. EMISSION LIMIT(S)

N/A

## II. MATERIAL LIMIT(S)

N/A

## III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate EU-COOLINGTWR2 unless it is installed, maintained, and operated in a satisfactory manner. Satisfactory operation of EU-COOLINGTWR2 includes maintaining it according to the MAP. **(R 336.1331, R 336.1910, 40 CFR 52.21(c) & (d))**

## IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall equip and maintain EU-COOLINGTOWER2 with drift eliminators. **(R 336.1331, R 336.1910, 40 CFR 52.21(c) & (d))**

2. The permittee shall not operate EU-COOLINGTWR2 unless a malfunction abatement plan (MAP) as described in Rule 911(2), for EU-COOLINGTWR2, has been submitted within 90 days of permit issuance, and is implemented and maintained. 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 336.1331, R 336.1910, 40 CFR 52.21(c) & (d))**

## V. TESTING/SAMPLING

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

N/A

## VI. MONITORING/RECORDKEEPING

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

N/A

## VII. REPORTING

N/A

## VIII. STACK/VENT RESTRICTION(S)

N/A

## IX. OTHER REQUIREMENT(S)

N/A

**Footnotes:**
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

# 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 |
|---|---|---|
| FGFERM | Exhaust from all fermenters and the beer well.<br><br>While the neighboring CO2 recovery facility is not operating, the emissions from FGFERM are vented to the atmosphere through fermentation CO2 scrubbers C-40 and C-40A. Emission may vent through the pre-condenser before venting through scrubbers C-40 and C-40A.<br><br>While the neighboring CO2 recovery facility is operating, most or all of the exhaust stream from fermentation CO2 scrubber C-40 is routed to the CO2 recovery facility and some of the exhaust stream from fermentation CO2 scrubber C-40A may be routed to the CO2 recovery facility.<br><br>During fermenter filling, the emissions are routed through purge scrubber C-120 as described in FGPURGE. | EU-BEERWELL<br>EU-FERMENTER1<br>EU-FERMENTER2<br>EU-FERMENTER3<br>EU-FERMENTER4<br>EU-FERMENTER5<br>EU-FERMENTER6<br>EU-FERMENTER7<br>EU-FERMENTER8<br>EU-FERMENTER9<br>EU-FERMENTER10<br>EU-FERMENTER11<br>EU-FERMENTER12 |
| FGPURGE | While the neighboring CO2 recovery facility is operating, the exhaust stream from fermentation CO2 scrubbers C-40 and/or C-40A may be routed to the CO2 recovery facility.<br><br>Exhaust from a fermenter during the clean in place and initial filling is not suitable for use at the CO2 recovery facility; therefore, the emissions from the fermenter cleaning and filling may be controlled by purge scrubber C-120, which vents to atmosphere. Interlocks ensure that only one fermenter vents to the purge scrubber at a time. | EU-FERMENTER1<br>EU-FERMENTER2<br>EU-FERMENTER3<br>EU-FERMENTER4<br>EU-FERMENTER5<br>EU-FERMENTER6<br>EU-FERMENTER7<br>EU-FERMENTER8<br>EU-FERMENTER9<br>EU-FERMENTER10<br>EU-FERMENTER11<br>EU-FERMENTER12 |
| FG-CHP | Combined heat and power (CHP) system to generate electricity and steam for the facility. The CHP system consist of a combustion turbine and a duct burner with a heat recovery steam generator (HRSG) to generate steam from the heat provided by the turbine exhaust and/or the heat provided by the duct burner. The CHP system can operate in three modes: turbine only, turbine and duct burner, and duct burner only. | EU-CT<br>EU-DB |

# FGFERM
# FLEXIBLE GROUP CONDITIONS

## DESCRIPTION

Exhaust from all fermenters and the beer well.

While the neighboring $CO_2$ recovery facility is not operating, the emissions from FGFERM are vented to the atmosphere through fermentation $CO_2$ scrubbers C-40 and C-40A. Emission may vent through the pre-condenser before venting through scrubbers C-40 and C-40A.

While the neighboring $CO_2$ recovery facility is operating, most or all of the exhaust stream from fermentation $CO_2$ scrubber C-40 is routed to the $CO_2$ recovery facility and some of the exhaust stream from fermentation $CO_2$ scrubber C-40A may be routed to the $CO_2$ recovery facility.

During fermenter filling, the emissions are routed through purge scrubber C-120 as described in FGPURGE.

**Emission Unit:** EU-BEERWELL, EU-FERMENTER1, EU-FERMENTER2, EU-FERMENTER3, EU-FERMENTER4, EU-FERMENTER5, EU-FERMENTER6, EU-FERMENTER7, EU-FERMENTER8, EU-FERMENTER9, EU-FERMENTER10, EU-FERMENTER11, EU-FERMENTER12

## POLLUTION CONTROL EQUIPMENT

Pre-condenser and Fermentation $CO_2$ Scrubbers C-40 and C-40A

## I. EMISSION LIMIT(S)

| Pollutant | Limit | Time Period / Operating Scenario | Equipment | Monitoring / Testing Method | Underlying Applicable Requirements |
|---|---|---|---|---|---|
| 1. VOC | 14.0 pph | Hourly | FGFERM through scrubber C-40 | SC V.1, SC VI.2 | R 336.1205(1), R 336.1702(a) |
| 2. Acetaldehyde | 1.3 pph | Hourly | FGFERM through scrubber C-40 | SC V.1, SC VI.2 | R 336.1205(1) R 336.1225 |
| 3. VOC | 13.0 pph | Hourly | FGFERM2 through scrubber C-40A | SC V.1, SC VI.2 | R 336.1205(1), R 336.1702(a) |
| 4. Acetaldehyde | 0.93 pph | Hourly | FGFERM2 through scrubber C-40A | SC V.1, SC VI.2 | R 336.1205(1), R 336.1225 |

## II. MATERIAL LIMIT(S)

NA

## III. PROCESS/OPERATIONAL RESTRICTION(S)

NA

## IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall not operate any equipment in FGFERM unless the fermentation $CO_2$ scrubbers C-40 and C-40A are installed, maintained, and operated in a satisfactory manner as described in the MAP, except as allowed by FGPURGE IV.1. Satisfactory operation includes:
   a) While the pre-condenser is operating:

i. Maintaining a minimum daily average scrubber water flow rate and chemical feed rate in scrubber C-40 at or above the scrubber water flow rate and chemical feed rate at which the VOC emission limit was met during the most recent compliance test conducted with the pre-condenser operating.
ii. Maintaining a minimum daily average scrubber water flow rate and chemical feed rate in scrubber C-40A at or above the scrubber water flow rate and chemical feed rate at which the VOC emission limit was met during the most recent compliance test conducted with the pre-condenser operating.
iii. Maintaining the minimum daily average pre-condenser water flow rate at one of the following:
A. 400 gallons per minute until an acceptable compliance test has been completed,
B. The water flow rate at which the VOC emission limits were met during the most recent compliance test conducted with the pre-condenser operating.

b) While the pre-condenser is not operating:
i. Maintaining a minimum daily average scrubber water flow rate and chemical feed rate in scrubber C-40 at or above the scrubber water flow rate and chemical feed rate at which the VOC emission limit was met during the most recent compliance test conducted with the pre-condenser not operating.
ii. Maintaining a minimum daily average scrubber water flow rate and chemical feed rate in scrubber C-40A at or above the scrubber water flow rate and chemical feed rate at which the VOC emission limit was met during the most recent compliance test conducted with the pre-condenser not operating.

Satisfactory operation also includes operating liquid flow rate indicators capable of accurately indicating the scrubber water flow rates, scrubber chemical feed rates, and pre-condenser coolant liquid flow rate over the entire range of flow rates that constitutes satisfactory operation. **(R 336.1205(1), R 336.1225, R 336.1702(a), 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. The permittee shall test for the VOC and Acetaldehyde emission rates from FGFERM scrubber C-40 and scrubber C-40A, at owner's expense, in accordance with Department requirements, following issuance of this PTI. Testing shall be conducted with and without the pre-condenser operating. Testing shall be performed using an approved EPA Method listed in:

| Pollutant | Test Method Reference |
|---|---|
| VOC | 40 CFR Part 60, Appendix A |
| HAPs | 40 CFR Part 63, Appendix A |

An alternate method, or a modification to the approved EPA Method, may be specified in an AQD-approved Test Protocol. 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 336.1205(1), R 336.1225, R 336.1702(a), R 336.2001, R 336.2003, R 336.2004)**

2. The permittee shall verify the VOC and Acetaldehyde emission rates from FGFERM, at a minimum, every five years from the date of the last test. **(R 336.1213(3), 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. All required calculations shall be completed in a format acceptable to the AQD District Supervisor and made available by the 15th day of the calendar month, for the previous calendar month, unless otherwise specified in any recordkeeping, reporting or notification special condition. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205(1), R 336.1225, R 336.1702(a))**

2. The permittee shall keep the following information on a monthly and 12-month rolling time period, as determined at the end of each calendar month, for FGFERM:
a) Results of the most recent VOC and acetaldehyde emission test.
b) VOC and acetaldehyde emission rates determined from the VOC and acetaldehyde emission test.

c) Hours of operation of FGFERM.
d) VOC and acetaldehyde mass emission calculations determining the monthly emission rates in tons per calendar month, based on the VOC and acetaldehyde emission factors and hours of operation.
e) VOC and acetaldehyde mass emission calculations determining the annual emission rates in tons per 12-month rolling time period as determined at the end of each calendar month. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205(1), R 336.1225, R 336.1702(a))**

3. The permittee shall continuously monitor and record the water flow rates and chemical feed rates of scrubber C-40, and scrubber C-40A; and the pre-condenser water flow rate as an indicator of proper operation of the scrubbers and pre-condenser using the facility's Distributed Control System (DCS) historian. The permittee shall record daily average scrubber water flow rates, chemical feed rates, and pre-condenser flow rates for showing compliance with SC IV.1. The record shall indicate whether or not the pre-condenser was operating by use of the pre-condenser water flow rate data point recorded. The permittee shall perform an annual zero-check on the monitor. **(R 336.1205(1), R 336.1225, R 336.1702(a), R 336.1910)**

## VII. REPORTING

1. Within 30 days after completion of the installation of EU-FERMENTER1 and EUFERMENTER12, the permittee or the authorized agent pursuant to Rule 204, shall notify the AQD District Supervisor, in writing, of the completion of the activity. **(R 336.1201(7)(a))**

## 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. S-40 | 24 | 100 | R 336.1225<br>40 CFR 52.21(c) & (d) |
| 2. S-40A | 24 | 75 | R 336.1225,<br>40 CFR 52.21(c) & (d) |

## IX. OTHER REQUIREMENT(S)

NA

**Footnotes:**
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

# FGPURGE
# FLEXIBLE GROUP CONDITIONS

## DESCRIPTION

While the neighboring $CO_2$ recovery facility is operating, the exhaust stream from fermentation $CO_2$ scrubbers C-40 and/or C-40A may be routed to the $CO_2$ recovery facility.

Exhaust from a fermenter during the clean in place and initial filling is not suitable for use at the $CO_2$ recovery facility; therefore, the emissions from fermenter cleaning and filling may be controlled by purge scrubber C-120, which vents to atmosphere. Interlocks ensure that only one fermenter vents to the purge scrubber at a time.

**Emission Unit:** EU-FERMENTER1, EU-FERMENTER2, EU-FERMENTER3, EU-FERMENTER4, EU-FERMENTER5, EU-FERMENTER6, EU-FERMENTER7, EU-FERMENTER8, EU-FERMENTER9, EU-FERMENTER10, EU-FERMENTER11, EU-FERMENTER12

## POLLUTION CONTROL EQUIPMENT

Purge Scrubber C-120

## I. EMISSION LIMIT(S)

NA

## II. MATERIAL LIMIT(S)

NA

## III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not vent emission through Purge Scrubber C-120 for more than 5,000 hours per 12-month rolling time period as determined at the end of each calendar month. **(R 336.1205(1), R 336.1225, R 336.1702(a))**

## IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall not fill any fermenter unless the purge scrubber C-120 is installed, maintained, and operated in a satisfactory manner as described in the MAP. Satisfactory operation includes maintaining the scrubber liquid flow rate and the reservoir liquid level in the range identified in the MAP as constituting satisfactory operation. **(R 336.1205(1), R 336.1225, R 336.1702(a), R 336.1910)**

2. The permittee shall equip and maintain the purge scrubber C-120 with a liquid flow rate indicator capable of accurately indicating the scrubber liquid flow rate over the entire range of flow rates that constitutes satisfactory operation, as described in the MAP. **(R 336.1205(1), R 336.1225, R 336.1702(a), R 336.1910)**

3. The permittee shall not operate FGPURGE unless a malfunction abatement plan (MAP) as described in Rule 911(2), for FGPURGE, has been submitted within 90 days of permit issuance, and is implemented and maintained. 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 336.1331, R 336.1910, 40 CFR 52.21(c) & (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. All required calculations shall be completed in a format acceptable to the AQD District Supervisor and made available by the 15th day of the calendar month, for the previous calendar month, unless otherwise specified in any recordkeeping, reporting or notification special condition. **(R 336.1225, R 336.1702(a))**

2. The permittee shall keep, in a satisfactory manner, a log of the 12-month rolling time period hours that emissions vent through purge scrubber C-120. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1205(3), R 336.1225, R 336.1702(a))**

3. The permittee shall continuously monitor the scrubber C-120 liquid flow rate as an indicator of proper operation of the scrubber. **(R 336.1205(1), R 336.1225, R 336.1702(a), R 336.1910)**

## 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. S-120 | 7.5 | 40 | R 336.1225, 40 CFR 52.21(c) & (d) |

## IX. OTHER REQUIREMENT(S)

NA

**Footnotes:**
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

# FGCHP
# FLEXIBLE GROUP CONDITIONS

## DESCRIPTION

Combined heat and power (CHP) system to generate electricity and steam for the facility. The CHP system consist of a combustion turbine and a duct burner with a heat recovery steam generator (HRSG) to generate steam from the heat provided by the turbine exhaust and/or the heat provided by the duct burner. The CHP system can operate in three modes: turbine only, turbine and duct burner, and duct burner only.

**Emission Unit:** EU-CT, EU-DB

## POLLUTION CONTROL EQUIPMENT

A dry low NOx burner for NOx control on the turbine.

## I. EMISSION LIMIT(S)

| Pollutant | Limit | Time Period / Operating Scenario | Equipment | Monitoring / Testing Method | Underlying Applicable Requirements |
|---|---|---|---|---|---|
| 1. NOx | 42 ppmvd at 15% O2 | Hourly / except when operating at temperatures less than 0°F | FGCHP | SC V.2<br>SC VI.3<br>SC VI.4<br>SC VI.7<br>SC VI.8 | R 336.1205(1)(a) and (b),<br>40 CFR 60.4320(a) |
| 2. NOx | 120 ppmvd at 15% O2 | Hourly / when operating at temperatures less than 0°F | FGCHP | SC V.2<br>SC VI.3<br>SC VI.4<br>SC VI.7<br>SC VI.8 | R 336.1205(1),<br>40 CFR 52.21(c) and (d),<br>40 CFR 60.4320(a) |
| 3. NOx | 54 ppmvd at 15% O2 | Hourly / when the combustion turbine is not operating | EU-DB | SC V.2<br>SC VI.3<br>SC VI.7<br>SC VI.8 | R 336.1205(1),<br>40 CFR 52.21(c) and (d),<br>40 CFR 60.4320(a) |
| 4. NOx | 35.0 pph | Hourly / when the combustion turbine is not operating | EU-DB | SC V.2<br>SC VI.3<br>SC VI.7<br>SC VI.8 | R 336.1205(1) |
| 5. NOx | 52.5 pph | Hourly / when operating at temperatures less than 0°F | FGCHP | SC V.2<br>SC VI.3<br>SC VI.4<br>SC VI.7<br>SC VI.8 | R 336.1205(1),<br>40 CFR 52.21(c) and (d) |
| 6. NOx | 14.0 pph | Hourly / when the combustion turbine is operating, except when operating at temperatures less than 0°F | FGCHP | SC V.2<br>SC VI.3<br>SC VI.4<br>SC VI.7<br>SC VI.8 | R 336.1205(1) |
| 7. CO | 42.8 pph | Hourly / except during startup and shutdown** | FGCHP | SC V.1<br>SC VI.7 | R 336.1205(1) |
| 8. CO | 410.3 pph | Operating hour during startup** | FGCHP | SC VI.7 | R 336.1205(1),<br>40 CFR 52.21(d) |
| 9. CO | 223 pph | Operating hour during shutdown** | FGCHP | SC VI.7 | R 336.1205(1),<br>40 CFR 52.21(d) |

| Pollutant | Limit | Time Period / Operating Scenario | Equipment | Monitoring / Testing Method | Underlying Applicable Requirements |
|---|---|---|---|---|---|
| 10. PM10 | 2.9 pph | Hourly | FGCHP | SC V.1<br>SC VI.7 | R 336.1205(1),<br>40 CFR 52.21(c) and (d) |
| 11. PM2.5 | 2.9 pph | Hourly | FGCHP | SC V.1<br>SC VI.7 | R 336.1205(1),<br>40 CFR 52.21(d) |
| 12. VOC | 3.2 pph | Hourly | FGCHP | SC V.1<br>SC VI.7 | R 336.1205(1),<br>R 336.1702(a) |

ppmvd = parts per million by volume at 15 percent oxygen and on a dry gas basis
** Startup is defined as the period of time from synchronization to the grid (generator breaker closed) until the unit reaches steady state operation (loads greater than 50 percent of design capacity). Shutdown is defined as that period of time from the initial lowering of the turbine output below 50 percent of full operating load, with the intent to shut down, until the point at which the generator breaker opens.

## II. MATERIAL LIMIT(S)

1. The permittee shall only burn natural gas in any unit in FGCHP. **(R 336.1205(1), R 336.1225, R 336.1401, R 336.1702(a), 40 CFR 60.4330)**

## III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate any unit in FGCHP unless a MAP as described in Rule 911(2), has been 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.
   d) Identification of the source, and operating variables and ranges for varying loads, shall be monitored and recorded. The normal operating range of these variables and a description of the method of monitoring shall be maintained.

   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 90 days after such an event occurs. The permittee shall also amend the MAP within 90 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 336.1331, R 336.1910, R 336.1911, 40 CFR 52.21(c) & (d))**

2. The permittee shall operate and maintain FGCHP, air pollution control equipment, and monitoring equipment in a manner consistent with good air pollution control practices for minimizing emissions at all times including during startup, shutdown, and malfunction. **(40 CFR 60.4333(a))**

3. The total hours for startup and shutdown for EU-CT shall not exceed 100 hours per 12-month rolling time period as determined at the end of each calendar month. **(R 336.1205(1))**

4. The total hours for operation at temperatures less than 0°F for EU-CT shall not exceed 200 hours per 12-month rolling time period as determined at the end of each calendar month. **(R 336.1205(1))**

5. The capacity factor for operating EU-DB in fresh air firing mode shall not exceed 10% on an annual basis. **(40 CFR 60 Subpart Db)**

6. The permittee shall not burn more than 71.7 million standard cubic feet of natural gas per 12-month rolling time period, as determined at the end of each calendar month, while operating EU-DB in fresh air firing mode. **(R 336.1205(1))**

7. The permittee shall not burn more than 842 million standard cubic feet of natural gas per 12-month rolling time period, as determined at the end of each calendar month, in EU-CT. **(R 336.1205(1))**

8. The permittee shall not burn more than 977 million standard cubic feet of natural gas per 12-month rolling time period, as determined at the end of each calendar month, in EU-DB. **(R 336.1205(1))**

## IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The maximum design heat input capacity for FGCHP shall not exceed, on a fuel heat input basis, 257.4 MMBtu per hour. **(R 336.1205(1), 40 CFR 52.21(c) & (d))**

2. The permittee shall not operate FGCHP unless the SoLoNOx dry low NOx burner is installed, maintained, and operated in a satisfactory manner. Satisfactory manner includes operating and maintaining the control device in accordance with an approved MAP for FGCHP as required in SC III.1. **(R 336.1205(1), R 336.1225, R 336.1910, 40 CFR 52.21(c) & (d))**

3. The permittee shall install, calibrate, maintain, and operate in a satisfactory manner a device to monitor and record the natural gas flow rate to FGCHP on a continuous basis. The device, shall be operated in accordance with 40 CFR 60.4345(c). **(R 336.1205(1), 40 CFR 52.21(c) & (d), 40 CFR 60.4345)**

4. As an alternative to conducting annual performance tests as required by 40 CFR 63.4340(a), the permittee may install, calibrate, maintain, and operate a continuous parameter monitoring system for NOx emissions that continuously monitors the appropriate parameters to determine whether the unit is operating in low-NOx mode. The permittee shall establish and document the continuous parameter monitoring system in accordance with 40 CFR 60.4355 and 40 CFR 60.4410. **(40 CFR 60.4340(b)(2)(ii), 40 CFR 60.4355, 40 CFR 60.4410)**

## V. TESTING/SAMPLING

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

1. By September 13, 2017, the permittee shall verify PM10, PM2.5, CO, and VOC emission rates from FGCHP by testing at owner's expense, in accordance with the Department requirements. Testing shall be performed using an approved EPA Method listed in:

| Pollutant | Test Method Reference |
|---|---|
| PM10/PM2.5 | 40 CFR Part 51, Appendix M |
| CO | 40 CFR Part 60, Appendix A |
| VOC | 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. 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 336.1702(a), R 336.2001, R 336.2003, R 336.2004, 40 CFR 52.21(c) and (d))**

2. If the permittee does not use the continuous emissions monitoring allowance as specified in SC VI.3 and VI.4, then within 60 days after achieving the maximum production rate, but not later than 180 days after initial startup, federal Standards of Performance for New Stationary Sources require verification of NOx emission rates from FGCHP, by testing at owner's expense, in accordance with 40 CFR Parts 60.8 and 60.4400.
   a) The permittee shall conduct three separate test runs, at least 20 minutes each, at ambient temperatures greater than 0 °F, and at any load condition within ±25 percent of 100 percent peak load.
   b) Testing must be conducted annually (at least every 14 calendar months).
   c) If the stack test result is less than or equal to 75 percent of the NOx limits in SC I.1, the test plan can be changed to once every two years (at least every 26 calendar months). If subsequent test results yield NOx emissions greater than 75 percent of the NOx limit in SC I.1, annual testing must be resumed.
   d) Subsequent stack testing is not required if the permittee shows continuous compliance with the NOx emission limits with a CEMS or equivalent PEMS pursuant to 40 CFR 60.4340(b)(ii), as specified in SC VI.1.
   e) Stack testing procedures and the location of stack testing ports shall be in accordance with the applicable Federal Reference Methods, 40 CFR Part 60 Appendix A.

   No less than 45 days prior to testing, a complete test plan shall be submitted to the AQD. 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. **(40 CFR 60.4400)**

## 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 15th day of the calendar month, for the previous calendar month, unless otherwise specified in any recordkeeping, reporting or notification special condition. **(R 336.1205(1), 40 CFR 52.21(c) and (d))**

2. The permittee shall monitor and record, in a satisfactory manner, the natural gas usage for EU-CT and for EU-DB for each calendar month and 12-month rolling time period as determined at the end of each calendar month. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205(1), 40 CFR 52.21(c) and (d))**

3. In lieu of the stack testing required in SC V.2, the permittee may instead install, calibrate, maintain, and operate one of the following continuous monitoring systems:
   a) Continuous emission monitoring as described in 40 60.4335(b) and 60.4345, or
   b) Continuous parameter monitoring as follows:
      i. For a diffusion flame turbine without add-on selective catalytic reduction (SCR) controls, the permittee shall define parameters indicative of the unit's $NO_X$ formation characteristics, and monitor these parameters continuously.
      ii. For any lean premix stationary combustion turbine, the permittee shall continuously monitor the appropriate parameters to determine whether the unit is operating in low-$NO_x$ mode.
      iii. For any turbine that uses SCR to reduce $NO_X$ emissions, the permittee shall continuously monitor appropriate parameters to verify the proper operation of the emission controls.
      iv. For affected units that are also regulated under 40 CFR Part 75, with state approval the permittee may monitor the $NO_x$ emission rate using the methodology in Appendix E to 40 CFR Part 75, or the low mass emissions methodology in 40 CFR 75.19, the requirements of this condition may be met by performing the parametric monitoring described in Section 2.3 of 40 CFR Part 75 Appendix E or in 40 CFR 75.19(c)(1)(iv)(H). **(40 CFR 60.4340(b))**

4. In lieu of the subsequent stack test requirements listed in SC V.2, the permittee may instead continuously monitor appropriate parameters to determine that the turbine is operating in low-NOx mode. The parameters must be continuously monitored and recorded during the initial performance test to establish acceptable values and ranges. The permittee must develop and keep on-site a parameter monitoring plan pursuant to 40 CFR 60.4355 (a)(1) through (6). **(40 CFR 60.4340(b)(ii), 40 CFR 60.4355, 40 CFR 60.4410)**

5. The permittee shall monitor the sulfur content in the fuel once per turbine operating day, using the methods described in 40 CFR 60.4415, or alternate methods as described in 40 CFR 60.4360. The permittee may use a custom monitoring schedule pursuant to 40 CFR 60.4370(c) if the schedule has been approved by the EPA Administrator. Sulfur in fuel monitoring is not required if it is demonstrated that the potential sulfur emissions do not exceed 26 ng $SO_2$/Joules (0.060 lb $SO_2$/MMBtu) heat input. The demonstration shall include one of the following: **(40 CFR 60.4360, 40 CFR 60.4370)**
   a) The fuel quality characteristics in a current, valid purchase contract, tariff sheet or transportation contract for the fuel, specifying that the maximum total sulfur content is 20 grains of sulfur per 100 standard cubic feet or less; or
   b) Representative fuel sampling data, as specified in 40 CFR Part 75, Appendix D, Section 2.3.1.4 or 2.3.2.4, shows that the sulfur content does not exceed 26 ng $SO_2$/Joules (0.060 lb $SO_2$/MMBtu) heat input.

6. The permittee shall keep, in a satisfactory manner, records of the sulfur content of the fuel once each operating day for FGCHP, as required by SC VI.5. This condition does not apply if it is demonstrated that the potential sulfur emissions do not exceed 26 ng $SO_2$ /Joules (0.060 lb $SO_2$/MMBtu) per MMBtu heat input pursuant to 40 CFR 60.4365. The permittee shall keep all records on file and make them available to the Department upon request. **(40 CFR 60.4370)**

7. The permittee shall maintain records of all information necessary for all notifications and reports as specified in these special conditions as well as that information necessary to demonstrate compliance with the emission limits of this permit for FGCHP. This information shall include, but shall not be limited to the following:
   a) Compliance tests and any testing required under the special conditions of this permit;
   b) Monitoring data including continuous parameter monitoring system data;
   c) Verification of heat input capacity;
   d) Identification, type, and amount of fuel combusted on a calendar month basis;
   e) Gross energy output on a calendar month basis;
   f) All records required by 40 CFR 60.7;
   g) Records of the duration of all dates and times of startup, shutdown, and malfunction events;
   h) Records of the hours of operation at temperatures less than 0°F;
   i) Records of the standard cubic feet of natural gas burned per month and 12-month rolling time period while operating EU-DB in fresh air firing mode;
   j) Records of total hours of operation of FGCHP;
   k) Records of the annual capacity factor of EU-DB in fresh air firing mode;
   l) All calculations necessary to show compliance with the limits contained in this permit.

   All of the above information shall be stored in a format acceptable to the AQD District Supervisor and shall be consistent with the requirements of 40 CFR 60.7(f). **(R 336.1205(1), R 336.1225, R 336.1331, R 336.1702(a), R 336.1912, 40 CFR 52.21(c) & (d), 40 CFR 60.7(f), 40 CFR 60.4345)**

8. If the permittee installs a device to monitor and record the NOx emissions for FGCHP on a continuous basis, the permittee shall install, calibrate, maintain, and operate in a satisfactory manner the monitoring device according to the procedures outlined in Appendix 3 (NOx and $CO_2$/$O_2$ Monitoring CEMS Requirements) and 40 CFR Part 60.48b(b)(1), (c), (d), (e), (f). **(R 336.1205(1), 40 CFR 60.4335(b), 40 CFR 60.4345)**

9. If the permittee installs a device to monitor and record the NOx emissions for FGCHP on a continuous basis, the permittee shall install, calibrate, maintain, and operate in a satisfactory manner a device to monitor and record the flue gas oxygen concentration for FGCHP on a continuous basis and according to the procedures outlined in Appendix 3 (NOx and $CO_2$/$O_2$ Monitoring CEMS Requirements) and 40 CFR Part 60.48. **(R 336.1205(1), 40 CFR 60.4335(b), 40 CFR 60.4345)**

## VII. REPORTING

1. If FGCHP contains a continuous parameter monitoring system to determine continuous compliance with the $NO_x$ emission limits pursuant to SC VI.4, the permittee shall submit excess emissions and monitor downtime in accordance with 40 CFR 60.7(c) and 40 CFR 60.4380(c). An excess emission is a 4-hour rolling operating hour average for the turbine in which any monitored parameter does not achieve the target value or is outside the acceptable range defined in the monitoring plan. Monitor downtime is any turbine operating hour in which any of the required parametric data are either not recorded or invalid. All reports must be postmarked by the 30th day following the end of each 6-month period. **(40 CFR 60.4375(a), 40 CFR 60.4380(c), 40 CFR 60.4395)**

2. If the permittee is required to monitor the sulfur content in the fuel pursuant to SC VI.5 and 40 CFR 60.4360, the permittee shall submit excess emissions and monitor downtime in accordance with 40 CFR 60.7(c) and 60.4385. An excess emission is each turbine operating hour beginning on the date and hour that any sample shows an exceedance in the applicable sulfur limit and ending on the date and hour that a subsequent sample is taken that demonstrates compliance with the sulfur limit. Monitor downtime begins when a required sample is not taken by its due date or the date and hour that invalid results are obtained. Monitor downtime ends on the date and hour of the next valid sample. All reports must be postmarked by the 30th day following the end of each 6-month period. **(40 CFR 60.4375(a), 40 CFR 60.4385, 40 CFR 60.4395)**

## 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. SVCHP | 54 | 100 | R 336.1225, 40 CFR 52.21(c) and (d) |

## IX. OTHER REQUIREMENT(S)

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 KKKK, as they apply to FGCHP. **(40 CFR Part 60 Subparts A and KKKK)**

**Footnotes:**
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

## APPENDIX 3: Monitoring Requirements

The following monitoring procedures, methods, or specifications are the details to the monitoring requirements identified and referenced in FGOXID, FGOXID2, EU-GRAINRECEIVE, EU-GRAINDRY, EU-LOADOUT, FGC-20, FGCORNBINS, FGC-30, and FGMILL2.

1. Visible emissions shall be recorded as "observed" or "not observed."
2. If visible emissions are observed, the maintenance supervisor shall be notified immediately and steps 2 through 6 must be followed.
3. A determination of needed repairs and/or maintenance, if applicable, shall be made within 24 hours and recorded.
4. If necessary, repair and/or maintenance operations shall be performed within 48 hours of discovery.
5. Routine maintenance shall be performed according to the manufacturer's recommendations.
6. A six-minute average, Method 9 reading shall be performed to confirm compliance with the visible emission limit.

The following monitoring procedures, methods, or specifications are the details to the monitoring requirements identified and referenced in FGOXID and FGCHP.

### $NO_x$ and $CO_2/O_2$ Monitoring
### Continuous Emission Monitoring System (CEMS) Requirements

1. The permittee shall maintain a copy of the Monitoring Plan. The Monitoring Plan shall include drawings or specifications showing proposed locations and descriptions of the required CEMS.

2. The permittee shall maintain a copy of the final report demonstrating the CEMS complies with the requirements of the corresponding Performance Specifications (PS) in the following table.

| Pollutant | Applicable PS |
|---|---|
| $NO_x$ | 2 |
| $CO_2/O_2$ | 3 |

3. The span value shall be 2.0 times the lowest emission standard or as specified in the federal regulations.

4. The CEMS shall be installed, calibrated, maintained, and operated in accordance with the procedures set forth in 40 CFR 60.13 and PS 2 and 3 of Appendix B, 40 CFR Part 60.

5. Each calendar quarter, the permittee shall perform the Quality Assurance Procedures of the CEMS set forth in Appendix F of 40 CFR Part 60. Within 30 days following the end of each calendar quarter, the permittee shall submit the results to the AQD in the format of the data assessment report (Figure 1, Appendix F)

6. In accordance with 40 CFR 60.7(c) and (d), the permittee shall submit two copies of an excess emission report (EER) and summary report in an acceptable format to the AQD, within 30 days following the end of each calendar quarter. The Summary Report shall follow the format of Figure 1 in 40 CFR 60.7(d). The EER shall include the following information:
   a. A report of each exceedance above the limits specified in the conditions of this permit. This includes the date, time, magnitude, cause, and corrective actions of all occurrences during the reporting period.
   b. A report of all periods of CEMS downtime and corrective action.
   c. A report of the total operating time of each boiler during the reporting period.
   d. A report of any periods that the CEMS exceeds the instrument range.
   e. If no exceedances or CEMS downtime occurred during the reporting period, the permittee shall report that fact.

All monitoring data shall be kept on file for a period of at least five years and made available to the AQD upon request.

## APPENDIX 9: Fugitive Dust Control Plan

The permittee shall use the following calculations in conjunction with monitoring, testing or recordkeeping data to determine compliance with the applicable requirements referenced in EU-GRAINRECEIVE, EU-GRAINSHIPPED, EU-INTERNALOP, EU-GRAINDRY, and FGC-20.

Grain Handling, Storage, and Drying - Plant and Roadways

**I. Site Roadways/Plant Yard**

A. The dust on the site roadways/plant yard shall be controlled by applications of water, calcium chloride or other acceptable and approved fugitive dust control compounds. Applications of dust suppressants shall be done as often as necessary to meet all applicable emission limits.
B. All paved roadways/plant yards shall be swept as needed between applications.
C. Any material spillage on roads shall be cleaned up immediately.

**II. Plant**

A. The drop distance at each transfer point shall be reduced to the minimum the equipment can achieve. All transfer points shall be enclosed.

**III. Grain Storage**

A. All outdoor storage of grain shall be covered.

**IV. Truck Traffic**

A. On-site: Vehicles shall be loaded to prevent their contents from dropping, leaking, blowing, or otherwise escaping. This shall be accomplished by loading so that no part of the load shall come in contact within six inches of the top of any sideboard, side panel or tail gate, otherwise, the truck shall be tarped.

**V. AQD/MDEQ Inspection**

A. The provisions and procedures of this plan are subject to adjustment if following an inspection and written notification the AQD finds the fugitive dust requirements and/or permitted emission limits are not being met.