



## AIR QUALITY CONSTRUCTION PERMIT NEW SOURCE REVIEW (NSR) CLASSIFICATION: MINOR

**PERMIT NUMBER:** CP25-034

**DWEE ID:** 075073

**Program ID:** AIR 099 00023

**Permit Issued To:** KAPPA Ethanol, LLC

**Name of Source in Application:** KAPPA Ethanol, LLC

**Mailing Address:** 8450 KAPPA Lane, Minden, Nebraska 68959

**Source Location:** 8450 KAPPA Lane, Minden, Kearney County, Nebraska

**Permit Description:** SIGNIFICANT PERMIT REVISION for an ethanol production facility to construct and operate an additional 165 million gallon per year anhydrous ethanol production plant as a capacity expansion project.

**Standard Industrial Classification (SIC) Code:** 2869, Industrial Organic Chemicals, Not Elsewhere Classified

**North American Industry Classification System (NAICS) Code:** 325193, Ethyl Alcohol Manufacturing

**Revised or Superseded Construction Permits:** This construction permit supersedes Conditions III. (A), (B), (E), (G), and (H) of construction permit CP20-009 (issued September 2020) and no other terms or conditions of the original construction permit are being revised or otherwise modified by this document. All other provisions of the original permit are still in effect, and in concert with this permit, constitute the effective construction permit.

Pursuant to Chapter 10 of the Nebraska Air Quality Regulations, the public has been notified by prominent advertisement of this proposed construction of an air contaminant source and the thirty (30) day period allowed for comments has elapsed. This construction permit approves the proposed project as identified in air quality construction permit application #25-034 received November 17, 2025, and any subsequent supplementary facts or corrected information, which the DWEE considered applicable and incorporated into the permitting documents. Additional details of the proposed revisions, including estimated pollutant emission changes, can be found in the accompanying Fact Sheet.

Compliance with this permit shall not be a defense to any enforcement action for violation of an ambient air quality standard. The permit holder, owner, and operator of the facility shall assure that the installation, operation, and maintenance of all equipment is in compliance with all of the conditions of this permit.

The undersigned issues this permit on behalf of the Director under the authority of Title 129 – Nebraska Air Quality Regulations as amended September 28, 2022.

**DRAFT**

\_\_\_\_\_  
Date

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Reuel S. Anderson, Administrator  
Permitting and Engineering Division

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**TABLE OF CONTENTS**

|                                                                                                                                                                                                                             |      |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| Permit Signature Page .....                                                                                                                                                                                                 | i    |
| Table of Contents .....                                                                                                                                                                                                     | ii   |
| Abbreviations.....                                                                                                                                                                                                          | iii  |
| Summary of Revisions .....                                                                                                                                                                                                  | iv   |
| <u>Permit Conditions:</u>                                                                                                                                                                                                   |      |
| I. Standard Conditions .....                                                                                                                                                                                                | I-1  |
| II. General Construction Permit Conditions .....                                                                                                                                                                            | II-1 |
| III. Specific Conditions for Selected Emission Points:                                                                                                                                                                      |      |
| (A) Specific Conditions for Grain Receiving, Grain Shipping, Handling, Storage, and<br>Hammermilling                                                                                                                        |      |
| EP-1002, EP-1003, EP-1004, EP-2005, EP-2001, EP-2002, EP-2003, EP-2004, EP-2006,<br>EP-2007, EP-2008, EP-2009, EP-2010, EP-2011, EP-2012, EP-2013, EP-1005a, EP-1005b,<br>EP-1006, EP-1008, EP-TSHIP, EP-1009, EP1010 ..... | A-1  |
| (B) Specific Conditions for Fermentation and Distillation Operations                                                                                                                                                        |      |
| EP-3001, EP-3002, EP-8001, EP-9107.....                                                                                                                                                                                     | B-1  |
| (C) Specific Conditions for Boilers                                                                                                                                                                                         |      |
| EP-5001, EP-5002, EP-5003, EP-9109, EP-9110.....                                                                                                                                                                            | C-1  |
| (G) Specific Conditions for Cooling Towers                                                                                                                                                                                  |      |
| EP-6000, EP-6001, EP-6003 .....                                                                                                                                                                                             | G-1  |
| (H) Specific Conditions for Equipment Leaks .....                                                                                                                                                                           | H-1  |
| (J) Specific Conditions for RTO                                                                                                                                                                                             |      |
| EP-8001 .....                                                                                                                                                                                                               | J-1  |
| (K) Specific Conditions for DDGS Process                                                                                                                                                                                    |      |
| EP-8001, EP-8002, EP-8003 .....                                                                                                                                                                                             | K-1  |

## **ABBREVIATIONS, SYMBOLS, and UNITS OF MEASURE**

|                   |                                                                                            |                   |                                                                                   |
|-------------------|--------------------------------------------------------------------------------------------|-------------------|-----------------------------------------------------------------------------------|
| AP-42             | Compilation of Air Pollutant Emission Factors, Volume I, Stationary Point and Area Sources | MSDS              | Material Safety Data Sheet                                                        |
| BACT              | Best Available Control Technology                                                          | MW                | Megawatt                                                                          |
| bhp               | Brake Horsepower                                                                           | NAAQS             | National Ambient Air Quality Standards                                            |
| BMP               | Best Management Practice                                                                   | DWEE              | Nebraska Department of Water, Energy, and Environment                             |
| Btu               | British Thermal Unit                                                                       | NESHAP            | National Emission Standards for Hazardous Air Pollutants                          |
| bu                | Bushel                                                                                     | NO <sub>2</sub>   | Nitrogen Dioxide                                                                  |
| CAA               | Clean Air Act                                                                              | NO <sub>x</sub>   | Nitrogen Oxides                                                                   |
| CE                | Control Equipment                                                                          | NSPS              | New Source Performance Standard                                                   |
| CEM               | Continuous Emissions Monitor                                                               | NSR               | New Source Review                                                                 |
| CEMS              | Continuous Emissions Monitoring System                                                     | PAL               | Plant-wide Applicability Limit                                                    |
| cf                | Cubic feet                                                                                 | Pb                | Lead (chemical abbreviation)                                                      |
| CFR               | Code of Federal Regulations                                                                | PbR               | Permit-by-Rule                                                                    |
| CI                | Compression Ignition                                                                       | PEMS              | Predictive Emissions Monitoring System                                            |
| CO                | Carbon Monoxide                                                                            | PM                | Particulate Matter                                                                |
| CO <sub>2</sub>   | Carbon Dioxide                                                                             | PM <sub>10</sub>  | Particulate Matter with an aerodynamic diameter equal to or less than 10 microns  |
| CO <sub>2</sub> e | CO <sub>2</sub> equivalent                                                                 | PM <sub>2.5</sub> | Particulate Matter with an aerodynamic diameter equal to or less than 2.5 microns |
| COMS              | Continuous Opacity Monitoring System                                                       | ppb               | Parts per Billion                                                                 |
| CP                | Construction Permit                                                                        | ppm               | Parts per Million                                                                 |
| DDGS              | Dry Distillers Grains with Solubles                                                        | ppmv              | Parts per Million by volume                                                       |
| DGS               | Distiller's Grains with Solubles                                                           | ppmvd             | Parts per Million by volume, dry basis                                            |
| dscf              | Dry Standard Cubic Feet                                                                    | PSD               | Prevention of Significant Deterioration                                           |
| dscfm             | Dry Standard Cubic Feet per Minute                                                         | PTE               | Potential to Emit                                                                 |
| EMIS              | Emergency Management Information System                                                    | RATA              | Relative Accuracy Test Audit                                                      |
| EP                | Emission Point                                                                             | RICE              | Reciprocating Internal Combustion Engine                                          |
| EPA               | Environmental Protection Agency                                                            | RMP               | Risk Management Plan                                                              |
| EQC               | Environmental Quality Council                                                              | RTO               | Regenerative Thermal Oxidizer                                                     |
| ESP               | Electrostatic Precipitator                                                                 | RVP               | Reid Vapor Pressure                                                               |
| EU                | Emission Unit                                                                              | scf               | Standard Cubic Feet                                                               |
| FDCP              | Fugitive Dust Control Plan                                                                 | SI                | Spark Ignition                                                                    |
| FGR               | Flue Gas Recirculation                                                                     | SIC               | Standard Industrial Classification                                                |
| FID               | Facility Identification Number                                                             | SIP               | State Implementation Plan                                                         |
| FIP               | Federal Implementation Plan                                                                | SO <sub>2</sub>   | Sulfur Dioxide                                                                    |
| FR                | Federal Register                                                                           | SO <sub>x</sub>   | Sulfur Oxides                                                                     |
| ft                | Feet                                                                                       | TDS               | Total Dissolved Solids                                                            |
| FTIR              | Fourier Transform Infrared                                                                 | TO                | Thermal Oxidizer                                                                  |
| GHGs              | Greenhouse Gases                                                                           | TO/HRSG           | Thermal Oxidizer with Heat Recovery Steam Generator                               |
| H <sub>2</sub> S  | Hydrogen Sulfide                                                                           | tpy               | Tons per year                                                                     |
| HAP               | Hazardous Air Pollutant                                                                    | TRS               | Total Reduced Sulfur                                                              |
| hp                | Horsepower                                                                                 | TSP               | Total Suspended Particulate Matter                                                |
| hr                | Hour                                                                                       | ULNB              | Ultra Low-NO <sub>x</sub> Burner                                                  |
| kWh               | Kilowatt hours                                                                             | UST               | Underground Storage Tank                                                          |
| lb                | Pound                                                                                      | UTM               | Universal Transverse Mercator                                                     |
| LDAR              | Leak Detection and Repair                                                                  | VHAP              | Volatile Hazardous Air Pollutant                                                  |
| LNB               | Low-NO <sub>x</sub> Burner                                                                 | VMT               | Vehicle Miles Traveled                                                            |
| MACT              | Maximum Achievable Control Technology                                                      | VOC               | Volatile Organic Compound                                                         |
| Mgal              | One Thousand gallons                                                                       | WDGS              | Wet Distiller's Grains with Soluble                                               |
| MMBtu             | One Million British Thermal Units                                                          |                   |                                                                                   |
| MMscf             | One Million Standard Cubic Feet                                                            |                   |                                                                                   |

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## **SUMMARY OF REVISIONS**

The following permit conditions have been significantly revised or updated. The table below provides a summary of the new and revised conditions:

| Permit Condition / Summary of Revision                                                                                                                                                                              | Page      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| I. Standard Conditions and II. General Construction Permit Conditions<br>Updated to reflect the most recent version of Title 129 amended September 28, 2022.                                                        | I-1, II-1 |
| Condition III.(A)-Specific Conditions for Grain Receiving, Grain Shipping, Handling, Storage, and Hammermilling<br>Install two (2) truck dump pits, a grind conveyor, eight hammermills, and associated baghouses.  | A-1       |
| Condition III.(B) - Specific Conditions for Fermentation and Distillation Operations<br>Install additional fermentation, distillation, and dehydration equipment and replace the existing CO <sub>2</sub> scrubber. | B-1       |
| Condition III.(E) - Specific Conditions for Boilers<br>Install two (2) new natural gas-fired boilers.                                                                                                               | E-1       |
| Condition III.(G) - Specific Conditions for Cooling Towers<br>Install one (1) new cooling tower.                                                                                                                    | G-1       |
| Condition III.(H) - Specific Conditions for Equipment Leaks<br>Update equipment leak component counts and associated requirements for the expanded process.                                                         | H-1       |
| Condition III.(J) - Specific Conditions for RTO<br>Install a regenerative thermal oxidizer to control emissions from the new distillation and DDGS process equipment.                                               | J-1       |
| Condition III.(K) - Specific Conditions for DDGS Process<br>Install two (2) DDGS dryers, a DDGS cooler, and a DDGS loadout system                                                                                   | K-1       |

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## I. STANDARD CONDITIONS

The following Standard Conditions apply to this permit unless otherwise provided for in the Specific Conditions of this permit.

- (A) Regulatory authority:
- (1) Title 40 Protection of Environment, Code of Federal Regulations that apply to the source including those not currently delegated to Nebraska or not yet included in Title 129; and
  - (2) Title 129 as approved by EPA under 40 CFR Part 52, Subpart CC or 40 CFR Part 70, Appendix A as of the date of issuance of this permit (federally enforceable requirements); and Title 129 as amended September 28, 2022 (state only enforceable requirements).
- (B) The source shall allow the DWEE, USEPA or an authorized representative, upon presentation of credentials (Neb. Rev. Statute §81-1504; Title 129, Chapter 6, Section 003.11) to:
- (1) Enter upon the source's premises during reasonable hours where a source subject to this permit is located, emissions-related activity is conducted, or where records must be kept under the conditions of this permit, for the purpose of ensuring compliance with this permit or applicable requirements;
  - (2) Have access to and copy, during reasonable hours, any records that must be kept under the conditions of this permit, for the purpose of ensuring compliance with this permit or applicable requirements;
  - (3) Inspect during reasonable hours any facilities, pollution control equipment, including monitoring and air pollution control equipment, practices, or operations regulated or required under this permit, for the purpose of ensuring compliance with this permit or applicable requirements;
  - (4) Sample or monitor, during reasonable hours, substances, or parameters for the purpose of ensuring compliance with the permit or applicable requirements.
- (C) All requested permit amendments and revisions must adhere to the requirements of Title 129, Chapter 9.
- (D) The following methods may be used to determine compliance with the terms and conditions in this permit (Title 129, Chapter 15, Section 005.08):
- (1) Any compliance test method specified in the State Implementation Plan;
  - (2) Any test or monitoring method approved for the source in a permit issued pursuant to Title 129, Chapters 3, 4, or Chapter 13, Section 004;
  - (3) Any test or monitoring method provided for in Title 129; or
  - (4) Any other test, monitoring, or information-gathering method that produces information comparable to that produced by any method described in Condition I.(D)(1) through (3).
- (E) Application for review of plans or advice furnished by the Director will not relieve the source of legal compliance with any provision of these regulations or prevent the Director from enforcing or implementing any provision of these regulations (Title 129, Chapter 1, Section 001.06).
- (F) If and when the Director declares an air pollution episode as defined in Title 129, Chapter 2, Section 006.01, the source shall immediately take all required actions listed in Title 129, Appendix II, Paragraph 1.1, 1.2, and 1.3, respectively, until the Director declares the air pollution episode terminated (Title 129, Chapter 2, Section 006.03).

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- (G) Recordkeeping: To ensure compliance with this permit, records shall be maintained as outlined below. Records include electronic and/or paper copies of all application materials, notifications, reports, test protocols, test results, and plans; and, electronic and/or original paper copies of all required monitoring results, measurements, inspections, and observations (Title 129, Chapter 15, Section 005.06; Neb. Rev. Stat. §81-1504):
- (1) All records required by this permit shall be kept for a minimum of five (5) years and shall be clear and readily accessible to DWEE representatives during an inspection, unless otherwise specified in this permit.
  - (2) Monthly calculations and records required throughout this permit shall be compiled no later than the fifteenth (15th) day of each calendar month and shall include all records and calculations generated through the previous calendar month, unless otherwise specified in this permit (Title 129, Chapter 6, Section 003.03).
  - (3) The source shall keep the following records for each malfunction, start-up and shutdown where emissions were, or may have been, in excess of an emission limitation or standard (Title 129, Chapter 11, Sections 002 and 005; Chapter 15, Sections 006.02, 006.04, and 006.05):
    - (a) The identity of the equipment.
    - (b) Reason for, or cause of, the malfunction, shutdown, or start-up.
    - (c) Duration of period of excess emissions.
    - (d) Date and time of the malfunction, shutdown, or start-up.
    - (e) Physical and chemical composition of pollutants whose emissions are affected by the action.
    - (f) Methods, operating data, and/or calculations used to determine these emissions.
    - (g) Quantification of emissions in the units of the applicable emission control regulation.
    - (h) All measures utilized to minimize the extent and duration of excess emissions during the malfunction, shutdown, and start-up.
  - (4) The source shall keep records of maintenance performed on components of permitted emission units that would affect or potentially affect the emission rate of that unit and on control and monitoring equipment associated with the permitted emission unit (Title 129, Chapter 15, Sections 005.06, 006.06B, and 006.06E).
  - (5) All records of opacity readings, instrument readings, visual equipment inspections, logbook/sheet entries, and any other record of equipment performance shall identify the individual who entered the record, except for continuously generated electronic records.
  - (6) Operation and maintenance manuals, or equivalent documentation, detailing proper operation and maintenance of all permitted emission units, required control equipment, and required monitoring equipment shall be kept for the life of the equipment.
- (H) All permitted emission units, associated emissions conveyances, required control equipment, and required monitoring equipment shall be properly installed, operated, and maintained (Title 129, Chapter 6, Sections 003.01 and 003.13; Chapter 15, Section 005.06; Neb. Rev. Stat. §81-1504 and §81-1506).
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- (1) All emissions from emission units using required controls shall be captured and routed through associated emission conveyances to the required control equipment, except for uncaptured emissions described in the permit application and any additional information submitted prior to permit issuance.
  - (2) All equipment must be maintained to minimize the amount of uncontrolled pollutants that are released to the atmosphere. Proper equipment maintenance activities may include repair or replacement, and include, but are not limited to activities in response to the following:
    - (a) cracks, holes or gaps,
    - (b) broken, cracked, or otherwise damaged seals or gaskets, and
    - (c) broken, missing or open hatches, access covers, caps, or other closure devices.
- (I) When the source makes physical or operational changes to an emissions unit or associated control equipment that may cause an increase in emissions that makes the original testing not representative of current operating conditions or emissions, the source shall submit a notification of the change. Such notification shall be received by DWEE within fifteen (15) days after such change. The DWEE may require performance testing based on review of the specific changes identified in the notification and the resulting potential impact on emissions from the unit(s) and/or performance of the control equipment (Title 129, Chapter 15, Section 005.01).
- (1) This notification requirement applies to emissions units and/or control equipment that meet the following requirements, except as provided in Condition I.(I)(5):
    - (a) Emissions from the emissions unit and/or control equipment is subject to an emissions limit;
    - (b) A valid performance test has been conducted for the pollutant to which the emissions limit applies;
    - (c) Changes that may cause emissions to increase or invalidate prior testing include, but are not limited to, increasing the capacity of an emissions unit, changing the operational parameters of any control equipment outside of the range allowed for under this permit that makes the control equipment less efficient, changing the type of scrubber packing, or increasing the inlet pollutant loading of any control equipment.
  - (2) For emission units that have had a performance test conducted after January 1, 2012, the source shall make a one-time notification to the DWEE within fifteen (15) days of when there is a 10% increase in daily production/throughput rate, over the tested rate recorded during the most recent valid performance test unless otherwise specified in this permit. If there are subsequent 10% increases over the rate most recently notified to the DWEE, the source shall make a one-time notification to the DWEE of each such subsequent increase. This will not apply to emissions that already have emission rates that are normalized to production and/or throughput rates.
  - (3) The notification shall include the date of the changes, a description of the changes made, and an evaluation of the expected impact on emissions from the emissions units and/or control equipment.
  - (4) The following definitions apply for purposes of Condition I.(I)(2) above:
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- (a) “rate” shall mean the production or throughput of an emissions unit in the same units of production or throughput as the “tested rate” as defined below; and,
    - (b) “tested rate” shall mean the production or throughput rate of an emissions unit as recorded in the most recent valid performance test and reported to the DWEE in the source’s written copy of the test results, or test report, documenting the maximum capacity of the unit(s). The tested rate shall be extrapolated to daily. Examples include, but are not limited to, tons per hour to tons per day or gallons per hour to gallons per day.
  - (5) The above notification requirements do not apply when compliance with the emission limitation is demonstrated through the use of a CEMS, PEMS or COMS.
  - (J) No person shall cause or allow emissions, from any source, which are of an opacity equal to or greater than twenty percent (20%), as evaluated by an EPA approved method, or recorded by a continuous opacity monitoring system operated and maintained pursuant to 40 CFR Part 60 Appendix B except as provided for in Chapter 15, Sections 001.05 or 001.06 (Title 129, Chapter 15, Section 001.04).
  - (K) Open fires are prohibited except as allowed by Title 129, Chapter 15, Section 002.
  - (L) Particulate Matter – General Requirements (Title 129, Chapter 15, Section 003):
    - (1) The source shall not cause or permit the handling, transporting or storage of any material in a manner which allows particulate matter to become airborne in such quantities and concentrations that it remains visible in the ambient air beyond the property line.
    - (2) The source shall not cause or permit the construction, use, repair or demolition of a building, its appurtenances, a road, a driveway, or an open area without applying all reasonable measures to prevent particulate matter from becoming airborne and remaining visible beyond the property line. Such measures include, but are not limited to, paving or frequent cleaning of roads, driveways, and parking lots; application of dust-free surfaces; application of water; and planting and maintenance of vegetative ground cover.
  - (M) Testing:
    - (1) Performance testing if required by this permit or required by the DWEE shall be completed as follows:
      - (a) The source shall provide the DWEE a written notice at least thirty (30) days prior to testing to afford the DWEE an opportunity to have an observer present. The DWEE may, in writing, approve a notice of less than 30 days. If the testing is pursuant to an underlying requirement contained in a federal rule, the notice provisions of the underlying requirement apply (Title 129, Chapter 15, Section 005.03).
      - (b) The notification required by Condition I.(M)(1)(a) shall include the following (Title 129, Chapter 15, Section 005.03):
        - (i) Facility Name, Address and FID number.
        - (ii) Company Name, Address and Contact Person’s name.
        - (iii) Test schedule including date and estimated start time of testing.
        - (iv) List all applicable regulatory requirements that testing is being conducted for (permit condition, MACT, NSPS, etc.).
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- (v) Types of pollutants to be sampled including applicable emission limits and demonstration requirements.
  - (vi) Test methods and documentation of any proposed variations from the specified procedures and reason for variance.
  - (c) Testing shall be conducted according to the methodologies found in Title 129, Chapter 15, Section 005.02, or other DWEE approved methodologies (Title 129, Chapter 15, Section 005.02).
  - (d) Performance tests shall be performed under those representative (normal) conditions that: represent the range of combined process and control measure conditions under which the facility expects to operate (regardless of the frequency of the conditions); and are likely to most challenge the emissions control measures of the facility with regard to meeting the applicable emission standards, but without creating an unsafe condition. (Title 129, Chapter 15, Section 005).
  - (e) Performance tests shall be conducted for a minimum of three (3) one-hour runs unless another run-time is specified by the applicable Subpart or as deemed appropriate by the DWEE.
  - (f) The source shall monitor and record the operating parameters for process and control equipment during the performance testing required in the permit.
  - (g) A certified written copy of the test results, signed by the person conducting the test, shall be provided to the DWEE within sixty (60) days of completion of the test, unless a different time period is specified in the underlying requirements of an applicable federal rule, and will, at a minimum, contain the following items (Title 129, Chapter 15, Section 005.02G):
    - (i) A description of:
      - 1. The operating parameters for the emissions unit during testing. Examples include, but are not limited to, production rates, process throughputs, firing rates of combustion equipment, or fuel usage; and,
      - 2. The operating parameters for the control equipment during testing. Examples include, but are not limited to, baghouse fan speeds, scrubber liquid flow rates, or pressure drop across the control device.
    - (ii) Copies of all data sheets from the test run(s).
    - (iii) A description and explanation of any erroneous data or unusual circumstance(s) and the cause for such situation.
    - (iv) A final conclusion section describing the outcome of the testing.

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## II. GENERAL CONSTRUCTION PERMIT CONDITIONS

The following General Conditions apply to this permit unless otherwise provided for in the Specific Conditions of this permit.

- (A) The source shall provide the following notifications to the DWEE:
- (1) The date construction, reconstruction, or modification commenced as defined in Chapter 1. Notification shall be received by DWEE no later than thirty (30) days after such date and include a summary description of the event associated with the commencement of construction. The source may use either of the following to determine that construction commenced (Title 129, Chapter 3, Section 003.02):
    - (a) Initiating physical on-site construction activities of a permanent nature that meet the definition of “begin actual construction” or
    - (b) Entering into binding agreements or contractual obligations. If this option is used, the notice shall also include a brief summary of each binding agreement or contractual obligation entered into, the date of the agreement or contract, and why the agreement or contract cannot be cancelled or modified without substantial loss to the source.
  - (2) Notification of the date on which the source or modification first becomes operational, shall be received by the DWEE within fifteen (15) days after such date (Title 129, Chapter 6, Section 002.01A).
  - (3) Any emissions due to malfunctions, unplanned shutdowns, and ensuing start-ups that are, or may be, in excess of applicable emission limits shall be reported to the DWEE in accordance with Title 129, Chapter 15, Section 006.05.
- (B) Approval to construct, reconstruct, and/or modify the source will become invalid if a continuous program of construction is not commenced within 18 months after the date of issuance of the construction permit except upon a showing by the source that the complexity of the construction, reconstruction and/or modification requires additional time, or if construction, reconstruction or modification is discontinued for a period of 18 months or more, or if construction, reconstruction and/or modification is not completed within a reasonable period of time (Title 129, Chapter 3, Section 003.02).
- (C) This permit is not transferable to another location, unless otherwise specified in this permit (Title 129, Chapter 3).
- (D) Holding of this permit does not relieve the source from the responsibility to comply with all applicable portions of the Nebraska Air Quality Regulations and any other requirements under local, State, or Federal law. Any permit noncompliance shall constitute a violation of the Nebraska Environmental Protection Act and the Federal Clean Air Act and is grounds for enforcement action or permit revocation (Title 129, Chapter 3, Section 001).
- (E) Any source who failed to submit any relevant facts or who submitted incorrect information in a permit application shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrected information. If the permittee wishes to make changes at the source that will result in change(s) to values, specifications, and/or locations of emission points that were indicated in the permit application (or other supplemental information provided by the permittee and reviewed by the DWEE in issuance of this permit), the source must notify the DWEE before the change(s) can be made. In addition, the source must notify the DWEE if any modification which may result in an adverse change to the air quality impacts predicted by atmospheric dispersion modeling (such as changes in stack parameters or increases

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- in emission rates, potential emissions, or actual emissions). The permittee shall provide all necessary information to verify that there are no substantive changes affecting the basis upon which this permit was issued. Information may include, but not be limited to, additional engineering, modeling, and ambient air quality studies (Title 129, Chapter 3, Sections 002.02B, 002.03B, and 002.03C).
- (F) When requested by the DWEE, the permittee shall submit completed emission inventory forms for the preceding year to the DWEE by March 31 of each year (Title 129, Chapter 11).
- (G) If required, performance tests shall be conducted in accordance with Standard Condition I.(M) within sixty (60) days after first reaching the maximum capacity, but not more than 180 days after the start-up of operations of each unit, unless otherwise specified by the DWEE (Title 129, Chapter 15, Section 005.07).
- (H) If applicable, the following conditions apply to the verification of NAAQS modeling analysis (Title 129, Chapter 2):
- (1) The stack dimensions of the emission points identified in the air dispersion modeling analysis shall be constructed such that the reliability of the air dispersion modeling analysis associated with the permit application is maintained. A site survey or similar documentation containing the as-built stack dimensions, shall be maintained on-site and kept for the life of the source. If the as-built stack dimensions do not meet the criteria used in air dispersion modeling analysis, the permittee shall notify the DWEE prior to start-up of any emission unit associated with a stack not meeting the above criteria and, if requested by DWEE, submit a revised air dispersion modeling analysis to DWEE to ensure that the source will not interfere with the attainment or maintenance of the ambient air quality standards in Title 129 Chapter 2.
  - (2) The source shall sufficiently restrict public access to the source at the ambient air boundary relied upon in the air dispersion modeling analysis for the NAAQS compliance demonstration. A site survey, or similar documentation containing the locations of the boundary vertices, shall be maintained on-site and kept for the life of the source. If the boundary dimensions do not comply with the boundary information in the air dispersion model (plus or minus 25 meters), the permittee shall notify the DWEE prior to start-up of any emission unit and, if requested, submit a revised air dispersion modeling analysis to the DWEE to ensure that the source will not interfere with the attainment or maintenance of the ambient air quality standards in Title 129 Chapter 2.
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### III.(A) Specific Conditions for Grain Receiving, Grain Shipping, Handling, Storage, and Hammermilling

(1) Permitted Emission Points:

- (a) The source is permitted to construct the emission points and associated emission units identified in the following table, and shall be controlled by the required control equipment as indicated:

| Emission Point ID# | Required Control Equipment ID# and Description | Emission Unit ID# and Description                                            |
|--------------------|------------------------------------------------|------------------------------------------------------------------------------|
| EP-1002            | CE1002: Grain Receiving Baghouse #1            | EU1 and EU3: Truck Dump Pits #1 and #2                                       |
|                    |                                                | EU2 and EU4: Receiving Legs #1 and #2                                        |
|                    |                                                | EU5 and EU6: Grain Storage Silos #1 and #2                                   |
|                    |                                                | EU99: Scalping Bin                                                           |
|                    |                                                | EU900, EU901, EU929, EU 930, EU931, EU932 and EU933: Conveyors #1 through #7 |
| EP-1003            | CE1003a: Grain Receiving Baghouse #2           | EU1003: Truck Dump Pit #3                                                    |
| EP-1004            | CE1004: Grain Receiving Baghouse #3            | EU1004: Truck Dump Pit #4                                                    |
| EP-2005            | CE2005: Grind Conveyor Baghouse                | EU2005: Grind Conveyor                                                       |
| EP-2000            | CE2000: Grind Elevator Baghouse                | EU922: Grind Bin                                                             |
|                    |                                                | EU97: Scalper #1                                                             |
|                    |                                                | EU98: Scalper #2                                                             |
|                    |                                                | EU923: Grind Conveyors                                                       |
|                    |                                                | EU924: Grind Elevator                                                        |
| EP-2001            | CE2001: Hammermill Baghouse #1                 | EU973: Grind Elevator                                                        |
|                    |                                                | EU15: Hammermill #1                                                          |
| EP-2002            | CE2002: Hammermill Baghouse #2                 | EU977: Rotary Feeder #1                                                      |
|                    |                                                | EU16: Hammermill #2                                                          |
| EP-2003            | CE2003: Hammermill Baghouse #3                 | EU978: Rotary Feeder #2                                                      |
|                    |                                                | EU17: Hammermill #3                                                          |
| EP-2004            | CE2004: Hammermill Baghouse #4                 | EU979: Rotary Feeder #3                                                      |
|                    |                                                | EU971: Hammermill #4                                                         |
| EP-2006            | CE2006: Hammermill Baghouse #5                 | EU980: Rotary Feeder #4                                                      |
|                    |                                                | EU2006: Hammermill #5                                                        |
| EP-2007            | CE2007: Hammermill Baghouse #6                 | EU2006a: Rotary Feeder #5                                                    |
|                    |                                                | EU2007: Hammermill #6                                                        |
| EP-2008            | CE2008: Hammermill Baghouse #7                 | EU2007a: Rotary Feeder #6                                                    |
|                    |                                                | EU2008: Hammermill #7                                                        |
| EP-2009            | CE2009: Hammermill Baghouse #8                 | EU2008a: Rotary Feeder #7                                                    |
|                    |                                                | EU2009: Hammermill #8                                                        |
| EP-2010            | CE2010: Hammermill Baghouse #9                 | EU2009a: Rotary Feeder #8                                                    |
|                    |                                                | EU2010: Hammermill #9                                                        |
| EP-2011            | CE2011: Hammermill Baghouse #10                | EU2010a: Rotary Feeder #9                                                    |
|                    |                                                | EU2011: Hammermill #10                                                       |
| EP-2012            | CE2012: Hammermill Baghouse #11                | EU2011a: Rotary Feeder #10                                                   |
|                    |                                                | EU2012: Hammermill #11                                                       |
| EP-2013            | CE2013: Hammermill Baghouse #12                | EU2012a: Rotary Feeder #11                                                   |
|                    |                                                | EU2013: Hammermill #12                                                       |
|                    |                                                | EU2013a: Rotary Feeder #12                                                   |

|          |   |                                                                                                                                                          |
|----------|---|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| EP-1005a | - | EU12: Grain Storage Silo #3                                                                                                                              |
| EP-1005b | - | EU13: Grain Storage Silo #4                                                                                                                              |
| EP-1006  | - | EU14: Grain Storage Piles                                                                                                                                |
| EP-1008  | - | EU984: Grain Shipping Spout on Grain Silo #3 (EU12)                                                                                                      |
| EP-TSHIP | - | EUTSHIP: Grain Truck Shipping; maximum capacity: the grain shipping spout fills one 900-bushel grain truck in 6 minutes (56 lb/bu is assumed for grain). |
| EP-1009  | - | EU988: Tipi-Style Grain Storage Structure #1                                                                                                             |
| EP-1010  | - | EU989: Tipi-Style Grain Storage Structure #2                                                                                                             |

(2) Emission Limitations and Testing Requirements:

- (a) Pollutant emission rates from each emission point identified in the table below shall not exceed the permitted limits. Performance testing, if required, shall be conducted in accordance with Standard Condition I.(M) and General Condition II.(G).

| Emission Point ID# | Pollutant           | Permitted Limit            | Permitted Limit Averaging Period | Basis for Permit Limit | Performance Testing Required (Yes/No) |
|--------------------|---------------------|----------------------------|----------------------------------|------------------------|---------------------------------------|
| EP-1002            | PM/PM <sub>10</sub> | 1.80 lb/hr <sup>[2]</sup>  | 1-hour                           | Chapter 3              | No                                    |
| EP-1003            | PM/PM <sub>10</sub> | 0.27 lb/hr <sup>[2]</sup>  | 1-hour                           | Chapter 3              | Yes                                   |
| EP-1004            | PM/PM <sub>10</sub> | 0.27 lb/hr <sup>[2]</sup>  | 1-hour                           | Chapter 3              | Yes                                   |
| EP-2005            | PM/PM <sub>10</sub> | 0.13 lb/hr <sup>[2]</sup>  | 1-hour                           | Chapter 3              | Yes                                   |
| EP-2000            | PM/PM <sub>10</sub> | 0.84 lb/hr <sup>[2]</sup>  | 1-hour                           | Chapter 3              | No <sup>[1]</sup>                     |
| EP-2001            | PM/PM <sub>10</sub> | 0.42 lb/hr <sup>[2]</sup>  | 1-hour                           | Chapter 3              | No <sup>[1]</sup>                     |
| EP-2002            | PM/PM <sub>10</sub> | 0.42 lb/hr <sup>[2]</sup>  | 1-hour                           | Chapter 3              |                                       |
| EP-2003            | PM/PM <sub>10</sub> | 0.42 lb/hr <sup>[2]</sup>  | 1-hour                           | Chapter 3              |                                       |
| EP-2004            | PM/PM <sub>10</sub> | 0.42 lb/hr <sup>[2]</sup>  | 1-hour                           | Chapter 3              |                                       |
| EP-2006            | PM/PM <sub>10</sub> | 0.103 lb/hr <sup>[2]</sup> | 1-hour                           | Chapter 3              | Yes                                   |
| EP-2007            | PM/PM <sub>10</sub> | 0.103 lb/hr <sup>[2]</sup> | 1-hour                           | Chapter 3              | Yes                                   |
| EP-2008            | PM/PM <sub>10</sub> | 0.103 lb/hr <sup>[2]</sup> | 1-hour                           | Chapter 3              | Yes                                   |

| Emission Point ID# | Pollutant           | Permitted Limit            | Permitted Limit Averaging Period | Basis for Permit Limit | Performance Testing Required (Yes/No) |
|--------------------|---------------------|----------------------------|----------------------------------|------------------------|---------------------------------------|
| EP-2009            | PM/PM <sub>10</sub> | 0.103 lb/hr <sup>[2]</sup> | 1-hour                           | Chapter 3              | Yes                                   |
| EP-2010            | PM/PM <sub>10</sub> | 0.103 lb/hr <sup>[2]</sup> | 1-hour                           | Chapter 3              | Yes                                   |
| EP-2011            | PM/PM <sub>10</sub> | 0.103 lb/hr <sup>[2]</sup> | 1-hour                           | Chapter 3              | Yes                                   |
| EP-2012            | PM/PM <sub>10</sub> | 0.103 lb/hr <sup>[2]</sup> | 1-hour                           | Chapter 3              | Yes                                   |
| EP-2013            | PM/PM <sub>10</sub> | 0.103 lb/hr <sup>[2]</sup> | 1-hour                           | Chapter 3              | Yes                                   |

<sup>[1]</sup> Initial testing requirements were successfully completed March 25, 2016

<sup>[2]</sup> Permitted limit is demonstrated with a minimum of three 1-hour test runs, time specified by federal rule, time in approved EPA Test Method, or an alternative time approved by DWEE and averaging the test runs results.

- (b) Required performance testing on EP-2001 through EP-2004 shall be satisfied by testing only two (2) emissions points out of EP-2001 through EP-2004.
- (3) Operational and Monitoring Requirements and Limitations:
  - (a) Operation and maintenance of each baghouse shall be in accordance with the following requirements: (Chapters 3 and 15)
    - (i) Each Baghouse shall be operated and be controlling emissions at all times when the associated emission units are in operation.
    - (ii) Each Baghouse shall be equipped with an operational pressure differential indicator. Pressure differential indicator readings shall be recorded at least once each day that the associated baghouse is operating.
    - (iii) Baghouse filter bags are to be inspected and/or replaced as often as necessary to ensure proper operation or more frequently as indicated by pressure differential indicator readings or other indication of baghouse failure.
    - (iv) Observations at least once each day during daylight hours of each Baghouse operation shall be conducted to determine whether there are visible emissions from the stack, leaks, noise, or other indications that corrective action is needed. If corrective action is required, it shall occur immediately.
  - (b) Grain receiving operations shall be located inside a building and all dump pits shall utilize choke-flow systems. (Chapters 3 and 15)
  - (c) The facility shall not receive through EU-1, EU-3, EU1003, and EU1004 combined more than 9,442 tons of grain per day and 1,641,379 tons of grain per any period of twelve (12) consecutive calendar months. Compliance shall be demonstrated by recording the total amount of grain received at the facility as specified in Condition III(A)(5)(e). (Chapter 3)
  - (d) The facility shall not exceed 140,000 tons of grain shipped per any period of twelve (12) consecutive calendar months through EU984, the grain shipping spout. (Chapters 3 and 15)

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- (i) The facility shall weigh each truck and record the weight, in tons, of each truck loaded with grain from the grain shipping spout EU984. (Chapters 3)
- (4) Applicable NSPS, NESHAP, and MACT Requirements:  
The department has not identified any NSPS, NESHAP, or MACT requirements that apply to the emission points or emission units listed in Condition III.(A)(1).
- (5) Reporting and Recordkeeping Requirements:  
The owner of operator shall maintain the following records:
- (a) Records documenting the date, time, observations, and corrective actions taken for each day the associated baghouse is in operation.
  - (b) Filter replacement records including filter position, type, and date of filter installation.
  - (c) Records documenting the date, time, and pressure differential reading for each day the associated baghouse is in operation.
  - (d) Filter replacement records including the date the filter replacement occurred and the type of filter installed for each baghouse or particulate filter.
  - (e) Records documenting the total amount of grain received at Truck Dump Pit #1 (EU1),<sub>2</sub> Truck Dump Pit #2 (EU3), Truck Dump Pit #3 (EU1003), and Truck Dump Pit #4 (EU1004), combined, per day, each calendar month, and any twelve (12) consecutive calendar months.
  - (f) The source shall keep and maintain records documenting the weight, in tons, of each truck filled with grain through the Grain Shipping Spout (EU984).
  - (g) The source shall keep records of the total amount of grain shipped, in tons, at the Grain Shipping Spout (EU984) for each day, calendar month, and any twelve (12) consecutive calendar months.

**(III).(B) Specific Conditions for Fermentation and Distillation Operations**

(1) Permitted Emission Points:

- (a) The source is permitted to construct the emission points and associated emission units identified in the following table:

| <b>Emission Point ID#</b> | <b>Required Control Equipment ID# and Description</b>                                                                                                               | <b>Emission Unit ID# and Description</b>                                                                        | <b>Maximum Capacity</b> | <b>Permitted Fuel Type</b> |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-------------------------|----------------------------|
| EP-3001                   | CE3001: Pre-condenser <sup>[1]</sup><br>CE3000: CO <sub>2</sub> Scrubber with chemical addition<br>OR<br>CE3000: CO <sub>2</sub> Scrubber without chemical addition | EU31, EU32, EU33, EU34, EU35, EU36, EU37, EU38, EU39: Fermentation Tanks #1, #2, #3, #4, #5, #6, #7, #8, and #9 | -                       | -                          |
|                           |                                                                                                                                                                     | EU976: Degasser                                                                                                 | -                       | -                          |
|                           |                                                                                                                                                                     | EU301: Beer Well                                                                                                | -                       | -                          |
| EP-3002                   | CE3002: Distillation Scrubber with chemical addition                                                                                                                | EU21:Mixer                                                                                                      | -                       | -                          |
|                           |                                                                                                                                                                     | EU23 and EU24: Slurry tanks #1 and #2                                                                           | -                       | -                          |
|                           |                                                                                                                                                                     | EU25: Flash Process Tank                                                                                        | -                       | -                          |
|                           |                                                                                                                                                                     | EU26: Cook Tube                                                                                                 | -                       | -                          |
|                           |                                                                                                                                                                     | EU30: Yeast Tank                                                                                                | -                       | -                          |
|                           |                                                                                                                                                                     | EU50: Beer Column                                                                                               | -                       | -                          |
|                           |                                                                                                                                                                     | EU51: Side Stripper                                                                                             | -                       | -                          |
|                           |                                                                                                                                                                     | EU52: Rectifier Column                                                                                          | -                       | -                          |
|                           |                                                                                                                                                                     | EU53a and EU53b: Molecular Sieves #1 and #2                                                                     | -                       | -                          |
|                           |                                                                                                                                                                     | EU55: 190 Proof Condenser                                                                                       | -                       | -                          |
|                           |                                                                                                                                                                     | EU916: 200 Proof Condenser (Evaporator #4)                                                                      | -                       | -                          |
|                           |                                                                                                                                                                     | EU909, EU910, EU911, EU912, EU974: Centrifuges #1 through #5                                                    | -                       | -                          |
|                           |                                                                                                                                                                     | EU983: Centrifuge #6                                                                                            | -                       | -                          |
|                           |                                                                                                                                                                     | EU913, EU914, EU915: Evaporators #1 through #3                                                                  | -                       | -                          |
|                           |                                                                                                                                                                     | EU917, EU918, EU919, EU920: Evaporators #5 through #8                                                           | -                       | -                          |
|                           |                                                                                                                                                                     | EU981, EU982: Evaporators #9 and #10                                                                            | -                       | -                          |



| Emission Point ID# | Required Control Equipment ID# and Description | Emission Unit ID# and Description                  | Maximum Capacity | Permitted Fuel Type |
|--------------------|------------------------------------------------|----------------------------------------------------|------------------|---------------------|
|                    |                                                | EU936: Acid Wash Tank (sulfuric acid)              | -                | -                   |
| EP-8001            | CE8001: RTO                                    | EU302: Yeast Tank                                  | -                | -                   |
|                    |                                                | EU8005: 200P Condenser                             | -                | -                   |
|                    |                                                | EU8009: Sieve Feed Superheater                     | -                | -                   |
|                    |                                                | EU8010, EU8011, EU8012: Sieve #7, #8, #9           | -                | -                   |
|                    |                                                | EU8013: Regen Condenser #3                         | -                | -                   |
|                    |                                                | EU8014: Eductor Tank                               | -                | -                   |
|                    |                                                | EU8015: 200P Flash Tank                            | -                | -                   |
|                    |                                                | EU8016: 200P Cooler                                | -                | -                   |
| EP-9107            | -                                              | EU27, EU28, EU29: Liquefaction Tanks #1 through #3 | -                | -                   |

<sup>[1]</sup> CE3000 is permitted to operate with the Pre-condenser (CE3001) in series before CE3000 or without. Refer to Specific Condition III.(B)(3)(c) for CE3001 requirements.

(2) Emission Limitations and Testing Requirements:

- (a) Pollutant emission rates from each emission point identified in the table below shall not exceed the permitted limits. Performance testing, if required, shall be conducted in accordance with Standard Condition I.(M) and General Condition II.(G):

| Emission Point ID#  | Pollutant    | Permitted Limit                       | Permitted Limit Averaging Period | Basis for Permit Limit | Performance Testing Required (Yes/No) |
|---------------------|--------------|---------------------------------------|----------------------------------|------------------------|---------------------------------------|
| EP-3001 and EP-3002 | Acetaldehyde | 1.82 lb/hr (combined)                 | 1-hour                           | Chapter 3              | Yes <sup>[2]</sup>                    |
| EP 3001 and EP-3002 | Acrolein     | 0.13 lb/hr (combined)                 | 1-hour                           | Chapter 3              | Yes <sup>[2]</sup>                    |
| EP 3001 and EP-3002 | Formaldehyde | 0.0037 lb/hr (combined)               | 1-hour                           | Chapter 3              | Yes <sup>[2]</sup>                    |
| EP 3001 and EP-3002 | Methanol     | 0.20 lb/hr (combined)                 | 1-hour                           | Chapter 3              | Yes <sup>[2]</sup>                    |
| EP-3001 and EP-3002 | VOC          | 22.95 lb/hr <sup>[1]</sup> (combined) | 1-hour                           | Chapter 3              | Yes <sup>[2]</sup>                    |

<sup>[1]</sup> Expressed as weight of VOC

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<sup>[2]</sup> Annual performance testing shall be conducted in accordance with Conditions I.(M) and III.(B)(2)(b).

- (b) Performance testing is required on each emission point once per year during the third quarter (July through September). Testing must occur on every emission point associated in a group limit for every testing period. (Chapter 15)
  - (i) Performance testing on EP-3001 (and pre-condenser CE-3001) for Acetaldehyde, Acrolein, Formaldehyde, Methanol and VOC required by this condition shall be conducted concurrently with Acetaldehyde and VOC testing required for emission point, EP-3002. (Chapter 15)
  - (ii) Two (2) performance testing scenarios shall be conducted in accordance with III.(B)(2)(b) for EP-3001 (and pre-condenser CE-3001) and EP-3002.
    - 1. A performance test shall be conducted when EP-3001 (and pre-condenser CE-3001) and EP-3002 are operating concurrently.
    - 2. A performance test shall be conducted when EP-3001 (without pre-condenser CE-3001) and EP-3002 are operating concurrently.
  - (iii) During performance testing, all emissions generated in EU31 through EU39, EU301, EU976, EU21, EU23 through EU26, EU30, EU50 through EU52, EU53a, EU53b, EU55, EU909 through EU920, EU936, EU974, EU981, EU982, and EU983 shall be controlled by CE3001 and CE3002 and routed to atmosphere.
- (3) Operational and Monitoring Requirements and Limitations:
  - (a) VOC and HAP emissions from the fermentation and distillation process emission units and emission points identified in Condition III.(B)(1) shall be controlled as follows: EU31 through EU39, EU301 and EU976 shall be controlled by CE3000 (and pre-condenser CE3001), with at least 90 percent of the fermentation vent stream routed to the carbon sequestration pipeline ; EU21, EU23 through EU26, EU30, EU50 through EU52, EU53a, EU53b, EU55, EU909 through EU920, EU936, EU974, EU981, EU982, and EU983 shall be controlled by CE3002. (Chapter 3)
    - (i) The source may demonstrate through testing performed in accordance with Condition I.(M), or the use of a CEMS, that chemical addition is not necessary. Testing completed after May 5, 2007, and approved by the DWEE, may be used to demonstrate chemical addition is not necessary. (Chapter 3, Chapter 13, and Chapter 15)
  - (b) Operation and maintenance of each scrubber (CE3000 and CE3002) shall be in accordance with the following requirements: (Chapters 3 and 13)
    - (i) The scrubber shall be operated and be controlling emissions at all times when the associated emission units are in operation.
    - (ii) The scrubber shall be properly designed, installed, operated and maintained. The manufacturer's operation and maintenance manual, or its equivalent, detailing proper operation, inspection and maintenance of the scrubber shall be kept on site and readily available to DWEE representatives.
    - (iii) The scrubber shall be equipped with devices capable of monitoring the following operating parameters in the manner described below:
      - 1. Scrubbing liquid flow rate shall be monitored, recorded continuously and averaged hourly;

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2. Chemical addition flow rate shall be monitored, recorded continuously and averaged hourly if chemical addition is utilized;
  3. Scrubber pressure differential shall be monitored, recorded continuously and averaged hourly; and,
  4. Scrubber liquid temperature shall be monitored and recorded by direct measurement at least once each day.
- (iv) If chemical addition is utilized the total monthly amount of chemical, in gallons, added to the scrubber shall be monitored and recorded by the source.
- (v) Chemical draw down checks shall be performed upon request by DWEE personnel to verify that the flow meter is working correctly.
- (vi) The scrubber operating parameters shall be maintained at the levels recorded during the most recent valid performance test conducted at the facility.
1. The scrubber water temperature, “shall be maintained at the levels recorded during the most recent valid performance test” shall mean at or below the tested level(s) under normal operating conditions.
  2. The scrubbing liquid flow rate, flow rate of chemical additions, and concentration of the chemical injected into the scrubber shall be maintained at or above the levels recorded during testing. Chemical concentration, as documented by the supplier, shall be recorded upon use of the chemical.
- (vii) Observations at least once each day during daylight hours of scrubber operation shall be conducted to determine whether there are leaks, noise, or other indications that corrective action is necessary. If corrective action is required, it shall occur immediately.
- (viii) Flow meters for recording scrubbing liquid and chemical addition flow rates shall be maintained and calibrated according to manufacturer’s instructions.
- (ix) The permittee shall monitor and record the operating status of the carbon sequestration pipeline whenever the associated fermentation process is operating.
- (x) At least 90 percent of the fermentation vent stream generated by EU31 through EU39, EU301, and EU976 shall be routed to the carbon sequestration pipeline whenever the associated fermentation process is operating.
- (c) Operation and maintenance of the pre-condenser (CE3001) shall be in accordance with the following requirements until the issuance of an operation permit (Chapter 3):
- (i) The operation of pre-condenser (CE3001) is optional. CE3001 shall be properly designed, installed, operated, and maintained. The manufacturer’s operation and maintenance manual, or its equivalent, detailing proper operation, inspection, and maintenance for the pre-condenser shall be kept on site and readily available to DWEE representatives.
  - (ii) The pre-condenser (CE3001) shall be equipped with devices capable of monitoring the following operation parameters in the manner described below.
    1. Liquid temperature shall be monitored, recorded continuously, and averaged hourly;
    2. Overflow basin water level shall be monitored, recorded continuously, and averaged hourly;

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3. Pressure differential shall be monitored, recorded continuously, and averaged hourly, and
  4. Recirculated water ethanol concentration shall be measured and recorded once per calendar day sampling.
- (iii) The pre-condenser (CE3001) operating parameters shall be maintained at the levels recorded during the most recent valid performance test conducted at the facility as described below.
1. The temperature of the pre-condenser fluid shall not exceed the tested average temperature by more than five (5) degrees Fahrenheit.
  2. The overflow basin water level shall be maintained at or above levels recorded during testing.
- (4) Applicable NSPS, NESHAP, and MACT Requirements:
- The Department has not identified any NSPS, NESHAP, or MACT requirements that apply to the emission points or emission units listed in III.(B)(1).
- (5) Reporting and Recordkeeping Requirements:
- The owner of operator shall maintain the following records:
- (a) Records documenting the date, time, temperature and flow rate of scrubbing liquid, and the pressure differential reading for each day the associated scrubber is in operation.
  - (b) Records documenting the date, time, observations, and corrective actions taken for each day the associated scrubber is in operation.
  - (c) Records documenting the operating parameter data, listed under Condition III.(B)(3)(c)(ii), for the pre-condenser, including the date and time of the reading.
  - (d) The permittee shall provide written notice to the DWEE within 15 days that CE3001 begins operation.
  - (e) The permittee shall keep records of any yeast strains and/or enzyme changes, including the name or identifier of the strain/enzyme and date the change occurred.
  - (f) The permittee shall maintain records demonstrating operation of the carbon sequestration pipeline in accordance with Condition III.(B)(3)(a)(i).
  - (g) The permittee shall maintain records documenting the date, chemical name or identifier, amount of chemical used, chemical concentration, and chemical addition flow rate for the associated scrubber when chemical addition is used.

**(III).(E) Specific Conditions for Boilers**

(1) Permitted Emission Points:

- (a) The source is permitted to construct the emission points and associated emission units identified in the following table at the capacities and using the fuel types listed:

| <b>Emission Point ID#</b> | <b>Control Equipment ID# and Description</b> | <b>Emission Unit ID# and Description</b> | <b>Maximum Capacity</b> | <b>Permitted Fuel Type</b> |
|---------------------------|----------------------------------------------|------------------------------------------|-------------------------|----------------------------|
| EP-5001                   | -                                            | EU74: Boiler #1                          | 73.5 MMBtu/hr           | Natural Gas or Biogas      |
| EP-5002                   | -                                            | EU75: Boiler #2                          | 73.5 MMBtu/hr           | Natural Gas or Biogas      |
| EP-5003                   | -                                            | EU76: Boiler #3                          | 73.5 MMBtu/hr           | Natural Gas or Biogas      |
| EP-9109                   | -                                            | EU9109: Boiler #4                        | 92 MMBtu/hr             | Natural Gas                |
| EP-9110                   | -                                            | EU9110: Boiler #5                        | 92 MMBtu/hr             | Natural Gas                |

(2) Emission Limitations and Testing Requirements:

- (a) Boilers #1 (EU74) through #3 (EU76) and Boiler #4 (EU9109) and Boiler #5 (EU9110) are subject to the applicable emission limitations and opacity standards contained in NSPS, Subpart Dc.

(3) Operational and Monitoring Requirements and Limitations:

- (a) Boilers #1 (EU74) through #3 (EU76) and Boiler #4 (EU9109) and Boiler #5 (EU9110) are subject to operational and monitoring requirements contained in NSPS, Subpart Dc.

(4) Applicable NSPS, NESHAP, and MACT Requirements:

The following standards apply to EU74, EU75, EU76, EU9109, and EU9110:

| <b>Applicable Standard</b> | <b>Title</b>                                                       | <b>Rule Citation</b>                            |
|----------------------------|--------------------------------------------------------------------|-------------------------------------------------|
| NSPS, Subpart A            | General Provisions                                                 | Chapter 12, Sec. <u>001.01</u><br>40 CFR 60.1   |
| NSPS, Subpart Dc           | Small Industrial, Commercial, Institutional Steam Generation Units | Chapter 12, Sec. <u>001.05</u><br>40 CFR 60.40c |

(6) Reporting and Recordkeeping Requirements:

The owner of operator shall maintain the following records:

- (a) Notifications and record keeping as required by 40 CFR 60.7  
(b) Reporting and recordkeeping as required by 40 CFR 60.48c

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**(III).(G) Specific Conditions for Cooling Tower**

(1) Permitted Emission Point:

- (a) The source is permitted to construct the emission point and associated emission units identified in the following table with the number of cooling tower cells and at the circulation rate listed:

| <b>Emission Point ID#</b> | <b>Control Equipment ID# and Description</b> | <b>EU ID# and Description</b> | <b>Number of Cooling Tower Cells</b> | <b>Maximum Circulation Rate (gal/hr)</b> |
|---------------------------|----------------------------------------------|-------------------------------|--------------------------------------|------------------------------------------|
| EP-6000                   | -                                            | EU81: Cooling Tower #1        | 4                                    | 1,200,000 (total)                        |
| EP-6001                   | -                                            | EU82: Cooling Tower #2        | 5                                    | 1,680,000 (total)                        |
| EP-6003                   | -                                            | EU83: Cooling Tower #3        | 4                                    | 1,680,000 (total)                        |

(2) Emission Limitations and Testing Requirements:

- (a) The cooling towers identified in Condition III.(G)(1) are subject to the emissions limitations of Title 129, Chapter 15, Sections 001 and 004. Testing shall be conducted to ensure compliance with the TDS limitation established in Condition III.(G)(3)(b) below.

(3) Operational and Monitoring Requirements and Limitations:

- (a) Drift loss from Cooling Tower #1 (EU81) shall be limited to 0.005 percent. Drift loss from Cooling Tower #2 (EU82) shall be limited to 0.001 percent. Drift loss from Cooling Tower #3 (EU83) shall be limited to 0.0005 percent. Verification of drift loss shall be by manufacturer's specification. Manufacturer's drift loss specification shall be kept on site and readily available to Department representatives, upon request, for the life of the unit. (Chapter 3)
- (b) Total Dissolved Solids (TDS) concentration of the cooling water in each of the cooling towers shall not exceed 2,000 ppm. A representative TDS sample shall be collected and tested from each cooling tower a minimum of once per calendar month. The test method used to determine TDS concentration shall be in accordance with an EPA approved method and be documented. (Chapter 3)

(4) Applicable NSPS, NESHAP, and MACT Requirements:

The Department has not identified any NSPS, NESHAP, or MACT requirements that apply to the emission points or emission units listed in III.(G)(1).

(5) Reporting and Recordkeeping Requirements:

The owner of operator shall maintain the following records:

- (a) Records documenting the drift loss specification of EU81, EU82, and EU83.
- (b) Records documenting the TDS sample readings and calculations demonstrating compliance with Condition III.(G)(3)(b).

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**(III).(H) Specific Conditions for the Equipment Leaks (F9000)**

(1) Permitted Emission Points:

- (a) Each valve, pump, compressor, pressure relief device, sampling connection system, open-ended valve or line, flange, or other connector in VOC service and any device or system required by NSPS, Subpart VV, VVa or VVb (for emission units constructed after November 7, 2006) located throughout the ethanol plant.

(2) Emission Limitations and Testing Requirements:

- (a) Emission limitations and testing requirements as established by 40 CFR 60 Subpart VV, 40 CFR 60 Subpart VVa and 40 CFR 60 subpart VVb.

(3) Operational and Monitoring Requirements and Limitations:

- (a) Operational and Monitoring Requirements and Limitations as established by 40 CFR 60 Subpart VV, 40 CFR 60 subpart VVa and 40 CFR 60 subpart VVb.

(4) Applicable NSPS, NESHAP, and MACT Standards:

| Applicable Standard | Title                                                                      | Rule Citation                                    |
|---------------------|----------------------------------------------------------------------------|--------------------------------------------------|
| NSPS, Subpart A     | General Provisions                                                         | Chapter 12, Sec. <u>001.01</u><br>40 CFR 60.1    |
| NSPS, Subpart VV    | Equipment Leaks in the Synthetic Organic Chemicals Manufacturing Industry  | Chapter 12, Sec. <u>001.14</u><br>40 CFR 60.480  |
| NSPS, Subpart VVa   | Equipment Leaks in the Synthetic Organic Chemicals Manufacturing Industry. | Chapter 12, Sec. <u>001.51</u><br>40 CFR 60.480a |
| NSPS, Subpart VVb   | Equipment Leaks in the Synthetic Organic Chemicals Manufacturing Industry. | 40 CFR 60.480b                                   |

(5) Reporting and Recordkeeping Requirements:

The permittee shall maintain the following records:

- (a) Records identifying which emissions units are subject the requirements of NSPS subpart VV, VVa and VVb.

For emission units subject to NSPS subpart VV, the permittee shall maintain the following records:

- (b) Notifications and record keeping as required by 40 CFR 60.7.
- (c) Record keeping and reporting as required by 40 CFR 60.486 and 40 CFR 60.487.
- (d) Records including the date in which leak detection testing occurred, which valves, pumps, seals, open-ended lines, flanges, connectors, etc. were tested, and name of the individual who conducted the testing.
- (e) The owner or operator shall submit a semi-annual leak detection and repair report every six (6) calendar months to the Department. The initial semi-annual report shall be submitted beginning six (6) months after the initial startup date [60.487 (a)]. Subsequent reports for each six (6) calendar month reporting period shall be submitted within 45 days

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following June 30 and December 31 of each year. Each report must be certified by a responsible official and include the following items:

- (i) Date and time testing occurred
- (ii) Name of individual who conducted the testing; and
- (iii) Additional information required to be reported to the Department in accordance with 40 CFR 60.480

For emission units subject to NSPS subpart VVa, the permittee shall maintain the following records:

- (f) Notifications and recordkeeping as required by 40 CFR 60.7.
- (g) Recordkeeping and reporting as required by 40 CFR 60.486a and 40 CFR 60.487a.
- (h) Records indicating the date in which leak detection occurred, which valves, pumps, seals, open ended lines, flanges connectors, etc. were tested, and name of the individual who conducted the testing.
- (i) The owner or operator shall submit a semi-annual leak detection and repair report every six (6) calendar months to the Department. The initial semi-annual report shall be submitted beginning six(6) months after the initial startup date [60.487a(a)]. Subsequent reports for each six (6) month reporting period shall be submitted within 45 days following June 30 and December 31 of each year. Each report must be certified by a responsible official and include the following items:
  - (i) Date and time testing occurred
  - (ii) Name of the individual who conducted the testing ; and
  - (iii) Additional information required to be reported to the department in accordance with 40CFR 60.480a.

For emission units subject to NSPS subpart VVb, the permittee shall maintain the following records:

- (j) Notifications and recordkeeping as required by 40 CFR 60.7.
- (k) Recordkeeping and reporting as required by 40 CFR 60.486b and 40 CFR 60.487b.
- (l) Records indicating the date in which leak detection occurred, which valves, pumps, seals, open-ended lines, flanges, connectors, etc. were tested, and name of the individual who conducted the testing.
- (m) The owner or operator shall submit a semi-annual leak detection and repair report every six (6) calendar months to the Department. The initial semi-annual report shall be submitted beginning six (6) months after the initial startup date [60.487b(a)]. Subsequent reports for each six (6) month reporting period shall be submitted within 45 days following June 30 and December 31 of each year. Each report must be certified by a responsible official and include the following items:
  - (i) Date and time testing occurred
  - (ii) Name of the individual who conducted the testing ; and
  - (iii) Additional information required to be reported to the department in accordance with 40 CFR 60.480b.



**(III).(J) Specific Conditions for RTO**

(1) Permitted Emission Points:

- (a) The source is permitted to construct the emission points and associated emission units identified in the following table:

| <b>Emission Point ID#</b> | <b>Required Control Equipment ID# and Description</b> | <b>Emission Unit ID# and Description</b>                    | <b>Maximum Capacity (MMBtu/hr)</b> | <b>Permitted Fuel Type</b> |
|---------------------------|-------------------------------------------------------|-------------------------------------------------------------|------------------------------------|----------------------------|
| EP-8001                   | CE8001: Regenerative Thermal Oxidizer 1 (RTO1)        | EU302: Yeast Tank                                           | -                                  | -                          |
|                           |                                                       | EU8001a: Dryer #1                                           | 50.0                               | Natural Gas                |
|                           |                                                       | EU8001b: Dryer #2                                           | 50.0                               | Natural Gas                |
|                           |                                                       | EU8001c: RTO1                                               | 18.0                               | Natural Gas                |
|                           |                                                       | EU8003: Syrup Tank                                          | -                                  | -                          |
|                           |                                                       | EU8004: Whole Stillage Tank                                 | -                                  | -                          |
|                           |                                                       | EU8005: 200P Condenser #2                                   | -                                  | -                          |
|                           |                                                       | EU8006, EU8007: 2 <sup>nd</sup> Effect Evaporator #1 and #2 | -                                  | -                          |
|                           |                                                       | EU8008: 2 <sup>nd</sup> Effect Condensate Tank              | -                                  | -                          |
|                           |                                                       | EU8009 Sieve Feed Superheater                               | -                                  | -                          |
|                           |                                                       | EU8010, EU8011, EU8012: Molecular Sieve #7, #8, and #9      | -                                  | -                          |
|                           |                                                       | EU8013: Regen Condenser #3                                  | -                                  | -                          |
|                           |                                                       | EU8014: Eductor Tank                                        | -                                  | -                          |
|                           |                                                       | EU8015: 200P Flash Tank                                     | -                                  | -                          |
|                           |                                                       | EU8016: 200P Cooler                                         | -                                  | -                          |

(2) Emission Limitations and Testing:

- (a) Pollutant emission rates from the emission point identified in Condition III.(J)(1) shall not exceed the permitted limits identified in the table below. Initial performance testing, if required, shall be conducted in accordance with Conditions I.(M) and II.(G).

| Emission Point ID# | Pollutant         | Permitted Limit | Averaging Period              | Basis for Permit Limit               | Performance Testing Required |
|--------------------|-------------------|-----------------|-------------------------------|--------------------------------------|------------------------------|
| EP-8001            | PM                | 2.15 lb/hr      | 3-hour or test method average | Chapter 3 and Chapter 15 Section 001 | Yes <sup>[1]</sup>           |
|                    | PM <sub>10</sub>  | 2.15 lb/hr      | 3-hour or test method average | Chapter 3 and Chapter 15 Section 001 | Yes <sup>[1]</sup>           |
|                    | PM <sub>2.5</sub> | 2.15 lb/hr      | 3-hour or test method average | Chapter 3 and Chapter 15 Section 001 | Yes <sup>[1]</sup>           |
|                    | SO <sub>2</sub>   | 1.40 lb/hr      | 3-hour or test method average | Chapter 3                            | Yes                          |
|                    | NO <sub>x</sub>   | 11.80 lb/hr     | 3-hour or test method average | Chapter 3                            | Yes                          |
|                    | CO                | 4.45 lb/hr      | 3-hour or test method average | Chapter 3                            | Yes                          |
|                    | VOC               | 10.04 lb/hr     | 3-hour or test method average | Chapter 3                            | Yes                          |
|                    | Acetaldehyde      | 0.20 lb/hr      | 3-hour or test method average | Chapter 3                            | Yes                          |
|                    | Total HAPs        | 1.09 lb/hr      | 3-hour or test method average | Chapter 3                            | Yes                          |
|                    | Opacity           | < 20%           | 6-Minute                      | Chapter 15 Section 001               | Yes                          |

<sup>[1]</sup> Compliance with the PM limitation demonstrates compliance with the Title 129, Chapter 15, Sections 001.01 and 001.02 PM limitations.

(3) Operational and Monitoring Requirements and Limitations:

- (a) Emissions from the emission units and emission point identified in Condition III.(J)(1) shall be controlled by the pollution control equipment identified in Condition III.(J)(1). (Chapter 3)
- (b) Operation and maintenance of RTO1 (CE8001) shall be in accordance with the following requirements: (Chapter 3)
- (i) The RTO shall be operated and be controlling emissions at all times when the associated emission units are in operation.

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- (ii) The RTO shall be equipped with a thermocouple or equivalent device capable of continuously monitoring the combustion chamber temperature and shall be operated as follows:
      - 1. The thermocouple or equivalent device shall be operated at all times the RTO is in operation.
      - 2. The thermocouple or equivalent device shall continuously record the one-hour average combustion chamber temperature.
    - (iii) The one-hour average combustion chamber temperature shall be maintained at or above the temperature established during the most recent valid performance test demonstrating compliance with the permitted emission limits whenever the RTO is controlling emissions.
    - (iv) RTO shall be properly installed, operated, and maintained. The manufacturer's operation and maintenance manual, or its equivalent, detailing proper operation, inspection, and maintenance of the RTO shall be maintained on-site and made available to Department representatives upon request.
    - (v) Observations, at least once each operating day during daylight hours of the RTO and associated emission units, shall be conducted to determine whether there are visible emissions from the stack, leaks, noise, or other indications that corrective action is necessary. If corrective action is required, it shall occur immediately
  - (c) Operation of Dryer #1 (EU8001a) and Dryer #2 (EU8001b) shall comply with the following requirements:
    - (i) When producing DDGS, EU8001a and EU8001b shall be operated simultaneously and in series.
    - (ii) Dryer #1 (EU8001a) and Dryer #2 (EU8001b) shall each be equipped with a hour meter or equivalent device capable of continuously monitoring the hours of operation of the units.
    - (iii) Dryer #1 (EU8001a) shall not operate for more than 4,380 hours during any 12 consecutive months.
    - (iv) Dryer #2 (EU8001b) shall not operate for more than 4,380 hours during any 12 consecutive months.
  - (4) Applicable NSPS, NESHAP, and MACT Requirements:

At this time, the Department has not identified any NSPS, NESHAP, or MACT requirements that apply to the emission point or emission units listed in Condition III.(J)(1).
  - (5) Reporting and Recordkeeping Requirements:

The owner or operator shall maintain the following records:

    - (a) Records documenting the continuous monitoring of the combustion chamber temperature for the RTO for all times the associated emission units are in operation.
    - (b) Records documenting the one-hour average combustion chamber temperature operating parameter established during the most recent valid performance test demonstrating compliance with the permitted emission limits.
    - (c) Records documenting the date and time that routine observations were performed for each operating day the RTO is in operation, including a description of any atypical observations and corrective actions taken, if necessary.
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- (d) Records documenting when routine maintenance and preventive actions were performed on the RTO, including a description of the maintenance and/or preventive action performed.
  - (e) The owner or operator shall maintain records of the date and hours of operation for Dryer #1 (EU8001a) and Dryer #2 (EU8001b), including the total hours of operation for each emission unit during any 12 consecutive months.
  - (f) Records documenting any deviations from the operating requirements of this condition and the corrective actions taken.

**(III).(K) Specific Conditions for DDGS Process**

(1) Permitted Emission Points:

- (a) The source is permitted to construct the emission points and associated emission units identified in the following table:

| Emission Point ID# | Required Control Equipment ID# and Description | Emission Unit ID# and Description                           | Maximum Capacity (MMBtu/hr) | Permitted Fuel Type |
|--------------------|------------------------------------------------|-------------------------------------------------------------|-----------------------------|---------------------|
| EP-8001            | CE8001: Regenerative Thermal Oxidizer 1 (RTO1) | EU8001a: Dryer #1                                           | 50.0                        | Natural Gas         |
|                    |                                                | EU8001b: Dryer #2                                           | 50.0                        | Natural Gas         |
|                    |                                                | EU8001c: RTO1                                               | 18.0                        | Natural Gas         |
|                    |                                                | EU8003: Syrup Tank                                          | -                           | -                   |
|                    |                                                | EU8004: Whole Stillage Tank                                 | -                           | -                   |
|                    |                                                | EU8006, EU8007: 2 <sup>nd</sup> Effect Evaporator #1 and #2 | -                           | -                   |
|                    |                                                | EU8008: 2 <sup>nd</sup> Effect Condensate Tank              | -                           | -                   |
| EP-8002            | CE8002: DDGS Cooler Baghouse                   | EU8017: DDGS Cooler                                         | -                           | -                   |
| EP-8003            | CE8003: DDGS Loadout Baghouse                  | EU8018: DDGS Loadout                                        | -                           | -                   |

(2) Emission Limitations and Testing:

- (a) Pollutant emission rates from the emission point identified in Condition III.(K)(1) shall not exceed the permitted limits identified in the table below. Initial performance testing, if required, shall be conducted in accordance with Conditions I.(M) and II.(G).

| Emission Point ID# | Pollutant           | Permitted Limit | Averaging Period | Basis for Permit Limit | Performance Testing Required |
|--------------------|---------------------|-----------------|------------------|------------------------|------------------------------|
| EP-8002            | PM/PM <sub>10</sub> | 0.24 lb/hr      | 1 hour           | Chapter 3              | Yes                          |
| EP-8003            | PM/PM <sub>10</sub> | 0.24 lb/hr      | 1 hour           | Chapter 3              | Yes                          |

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- (b) Emissions from emission units identified in Condition III.(K)(1) that are routed to the RTO, Control Equipment CE8001, shall comply with the applicable requirements of Section III.(J), Specific Conditions for RTO (EP-8001).
- (3) Operational and Monitoring Requirements and Limitations:
- (a) The DDGS Cooler Baghouse (CE8002) and DDGS Loadout Baghouse (CE8003) shall be operated and controlling emissions at all times when the associated emission unit is in operation. (Chapter 3 and Chapter 15, Section 001)
- (b) Each baghouse shall be properly installed, operated, and maintained. The manufacturer's operation and maintenance manual, or its equivalent, detailing proper operation, inspection, and maintenance of each baghouse shall be maintained on-site and made available to Department representatives upon request. (Chapter 3)
- (c) Each baghouse shall be equipped with a device capable of continuously monitoring the pressure differential across the baghouse. Pressure differential readings shall be recorded at least once each operating day that the associated baghouse is in operation. (Chapter 3)
- (d) Filter bags shall be inspected and/or replaced in accordance with the manufacturer's operation and maintenance manual or equivalent, or more frequently as indicated by pressure differential readings or other indications of bag failure. (Chapter 3)
- (e) Observations shall be conducted at least once each operating day during daylight hours to determine whether there are visible emissions, leaks, or other indications that corrective action is necessary. If corrective action is required, it shall occur immediately. (Chapter 3)
- (4) Applicable NSPS, NESHAP, and MACT Requirements:
- At this time, the Department has not identified any NSPS, NESHAP, or MACT requirements that apply to the emission points or emission units listed in Condition III.(K)(1).
- (5) Reporting and Recordkeeping Requirements:
- The permittee shall maintain the following records:
- (a) Records documenting pressure differential readings for each baghouse in accordance with Condition III.(K)(3)(c).
- (b) Records documenting the date and time that routine observations were performed for each operating day the associated baghouse is in operation.
- (c) Filter replacement records including the date the filter replacement occurred and the type of filter installed.
- (d) Records documenting when routine maintenance and preventive actions were performed on each baghouse with a description of the maintenance and/or preventive action performed.
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