217/782-2113

CONSTRUCTION PERMIT
PREVENTION OF SIGNIFICANT DETERIORATION APPROVAL -- REVISED

PERMITTEE

Aventine Renewable Energy, Inc.
Attn: Steve Antonacci
1300 South Second Street
Pekin, Illinois 61554

Application No.: 05010062 I.D. No.: 179060ACR
Applicant's Designation:
Subject: Ethanol Expansion Project
Date Permit Initially Issued: November 1, 2005
Date Revision Request Received: March 13, 2008
Date Revision Issued: November 5, 2008
Location: 1300 South Second Street, Pekin

Permit is hereby granted to the above-designated Permittee to CONSTRUCT emission source(s) and/or air pollution control equipment consisting of a fuel ethanol expansion project, including the units listed in Attachment A and other ancillary operations, as described in the above-referenced application. This Permit is subject to the following special conditions and the standard conditions attached hereto.

In conjunction with this permit, approval is given with respect to the Prevention of Significant Deterioration of Air Quality Regulations (PSD) to construct the above referenced project, in that the Illinois Environmental Protection Agency (Illinois EPA) finds that the application fulfills all applicable requirements of 40 CFR 52.21. This approval is issued pursuant to the Clean Air Act, as amended, 42 U.S.C. 7401 et. seq., the Federal regulations promulgated there under at 40 CFR 52.21 for Prevention of Significant Deterioration of Air Quality (PSD), and a Delegation of Authority agreement between the United States Environmental Protection Agency and the Illinois EPA for the administration of the PSD Program. This approval becomes effective in accordance with the provisions of 40 CFR 124.15 and may be appealed in accordance with the provisions of 40 CFR 124.19. This approval is also based upon and subject to the following findings and the conditions, which follow:

Findings for Revised Permit

1a. Aventine Renewable Energy, Inc. ("Aventine") performs corn wet milling and ethanol production at its existing complex in Pekin. Aventine added a dry mill ethanol facility ("Pekin II"), to the complex, which began operation in 2007. Pekin II is served by the existing grain elevator, existing ethanol storage and loadout facilities, and wastewater treatment plant at the complex. Pekin II includes its own supply of steam, which is produced by a waste heat boiler on the discharge of the natural gas fired oxidizer, serving the facility.

b. i. Aventine has applied for a revised permit that increases the permitted ethanol production of the new ethanol facility, expressed in terms of ethanol production prior to blending in denaturant, to 63.3 million gallons ethanol per year, from 56.5 million gallons per year authorized by the original permit.

ii. This revised permit is issued based on the increase in the permitted production of the facility not being a separate project from the original facility. This is because this increase will not entail construction of new equipment but rather be achieved through improved operating procedures for the facility as achieved at other similar ethanol plants and reflected in a higher guarantee for plant capacity from the firm that designed this facility.

iii. This revised permit is issued based on no increase in the total permitted emissions of the new facility, as the higher permitted emissions for certain units such as feed cooling, process ethanol tank and ethanol loadout would be accompanied by lower permitted emissions for emission units such as milling and oxidizer/boiler, which had higher compliance margins and performed better than originally permitted.

2. Aventine is located in Tazewell County. The area is designated attainment for all criteria pollutants.

3. The potential annual emissions from the new facility and related increases in throughput of existing facilities are more than 15 tons of particulate matter (PM) and more than 40 tons of both nitrogen oxides (NO_x) and volatile organic material (VOM). The potential annual emissions of sulfur dioxide (SO_2) and carbon monoxide (CO) are less than 40 tons and 100 tons, respectively. (See Table I).

4. This new facility was subject to PSD review as a major modification because it was significant for emission of PM, VOM, and NO_x and represented a modification to the operation of an existing major source. As project is subject to PSD, Best Available Control Technology (BACT) was required for the new facility. BACT is not applicable to operations at the existing facilities, which would experience an increase in throughput as a result of this new facility but would not be modified.

5. After reviewing Aventine’s application for a revised permit, the Illinois EPA has determined that the application shows that the facility would continue to: (i) comply with applicable emission standards, and (ii) apply BACT for emissions of PM, NO_x and VOM from the various units in the new facility.

6. The air quality analyses submitted as part of the original application demonstrated that the project would not cause violations of the National Ambient Air Quality Standards for PM, NO_x and ozone or the associated PSD increments.

7. The Illinois EPA has determined that the revised permit would comply with all applicable Illinois Air Pollution Board Regulations and the federal Prevention of Significant Deterioration of Air Quality Regulations (PSD), 40 CFR 52.21.

8. A copy of the application and a summary of the Illinois EPA's review of the application for revised permit and a draft of this revised permit were placed in a location in the vicinity of the project, and the public was given notice and an opportunity to examine this material and to submit comments and to request a public hearing on this matter.

The Illinois EPA is issuing this revised approval subject to the following conditions and consistent with the specifications and data in the application material submitted by the Permittee. Any significant departure from the terms expressed in the application would need to receive prior written authorization by Illinois EPA.

Section 1: Facility-Wide Conditions for the New Dry Mill Facility

1.1 Operating Limitations

a. The amount of grain processed by the dry mill facility, on a dry basis, shall not exceed 56,500 tons/month and 565,000 tons/year.

b. Ethanol production of the dry mill facility determined as ethanol produced by the facility prior to addition of denaturant shall not exceed 6.3 million gallons/month and 63.3 million gallons/year.

c. Total annual natural gas usage by the dry mill facility (feed dryers and thermal oxidizer) combined shall not exceed 2190 million cubic feet.

d. Compliance with these annual limitations and other annual limitations of this permit shall be determined from a running total of 12 months of data, unless otherwise specified in the particular condition.

1.2 Emission Limitations

a. Emissions from the dry mill facility shall not exceed the limitations in Table I. For purposes of determining compliance with these limitations, the procedures in the unit-specific conditions of this permit shall be followed unless other credible evidence provides a more accurate estimate of emissions.

b. i. This permit is issued based on the project not being a major source for Hazardous Air Pollutants (HAP), so that this source is not subject to the requirements of Section 112(g) of the Clean Air Act.

ii. If not otherwise specified for a particular emission unit that is part of the dry mill facility, the emissions of HAPs, other than acetaldehyde, shall not exceed the following limits, which are expressed as a percentage of the VOM limitations:

Individual HAP: 10.0 percent of VOM limit
Aggregate HAPs: 14.0 percent of VOM limit

Note: Refer to Table I for limitations for emissions of acetaldehyde.

c. This permit is issued based upon at most negligible increases in emissions at the existing wastewater treatment facility attributable to the operations of the dry mill facility. For this purposes, the emissions of VOM and any other pollutants from the wastewater treatment facility attributable to the dry mill facility shall not exceed 0.44 tons/year.

1.3 Regulations of General Applicability

Emission units at this source are subject to the following regulations of general applicability:

a. No person shall cause or allow the emission of fugitive particulate matter from any process, including any material handling or storage activity, that is visible by an observer looking generally overhead at a point beyond the property line of the source unless the wind speed is greater than 25 miles per hour, pursuant to 35 IAC 212.301 and 212.314.

b. No person shall cause or allow the emission of smoke or other particulate matter with an opacity greater than 30 percent into the atmosphere from any emission unit, pursuant to 35 IAC 212.123(a), except as allowed by 35 IAC 212.123(b) or 212.124.

1.4 Good Air Pollution Control Practice

The Permittee shall operate and maintain the emission units at the dry mill facility, including associated air pollution control equipment, in a manner consistent with good air pollution control practice, as follows:

a. At all times, including periods of startup, shutdown, malfunction or breakdown, operate as practicable to minimize emissions.

b. Conduct routine inspection and perform appropriate maintenance and repairs to facilitate proper functioning of equipment and minimize or prevent malfunctions and breakdowns.

c. Install, calibrate and maintain required instrumentation according to the supplier’s specifications or as otherwise necessary to assure reliable operation of such devices.

1.5 Retention and Availability of Records

a. All records, including logs and procedures, required by this permit shall be retained by the Permittee at a readily accessible location at the source for at least three years from the date of entry and shall be available for inspection by the Illinois EPA upon request. Any records retained in electronic format (e.g., computer) shall be capable of being retrieved and printed on paper during normal source office hours so as to be able to respond to an Illinois EPA request for records during the course of a source inspection. The Permittee shall provide copies of any required records requested by the Illinois EPA as soon as is practicable, considering the nature and extent of the requested records.

1.6 Facility Wide Reporting

a. The Permittee shall submit Quarterly Compliance Reports as specified in the unit specific conditions of this permit and Condition 3.4(b).

b. Accompanying its annual emission report required by 35 IAC Part 254, the Permittee shall report the following information for the dry mill facility for the preceding calendar year: (1) Amount of grain processed; (2) Amount of ethanol produced by the dry mill facility; (3) Amount of ethanol shipped, including denaturant; and (4) Usage of natural gas.

c. i. The Permittee shall notify the Illinois EPA within 30 days of any deviation from the operating limitations in Condition 1.1 or the annual emission limitations set for various emissions units at the dry mill facility and existing complex. Any such notification shall include the information specified in Condition 3.4.

ii. Not withstanding the above or provisions in the Unit Specific Conditions of this permit for reporting deviations, if deviation will occur from required maintenance, repair or other activity that can be scheduled in advance, the Permittee shall also notify the Illinois EPA prior to undertaking such activity, if it is feasible to do so. Such notification shall be submitted at least 5 days in advance unless the activity is scheduled less than 5 days in advance. Such notification shall be followed by such other notification or reporting as required for the deviations.

1.7 Submission of Reports

a. i. All notifications and reports required by this permit shall be sent to the Illinois EPA at the following address unless otherwise indicated by the Illinois EPA:

Illinois Environmental Protection Agency
Division of Air Pollution Control
Compliance Enforcement Section (#40)
P.O. Box 19276
Springfield, Illinois 62794-9276

ii. A copy of each report or notification shall also be sent directly to the Illinois EPA's regional office at the following address:

Illinois Environmental Protection Agency
Division of Air Pollution Control
5415 North University
Peoria, Illinois 61614

b. When this permit requires immediate notification, such notification shall be provided by telephone and followed by facsimile or e-mail transmittal of a narrative report.

1.8 Authorization to Operate

a. The Permittee may operate the new facility under this construction permit until the CAAPP permit for the source is revised to address this facility, as the Permittee has submitted an application to renew the current CAAPP permit on timely basis as required by the Environmental Protection Act.

1.9 Other Requirements

a. This permit does not relieve the Permittee of the responsibility to comply with all Local, State and Federal Regulations which are part of the applicable Illinois State Implementation Plan, as well as all other applicable Federal, State and Local requirements.

b. In particular, requirements of the source's current Clean Air Act Permit Program (CAAPP) permit that address existing emission units at the source are not affected by this permit.

Section 2: Unit Specific Conditions

2.1 Grain Receiving, Handling and Milling

2.1.1 Description

The new facility will be served by the existing grain elevator at the complex, at which corn is received and stored in bins and silos prior to being sent for milling. The grain receiving and storage operations are existing operations and will not be physically modified as part of this project. The new facility will be connected to the existing elevator with a new enclosed transfer system (leg), which will be vented into the existing dust control system at the elevator.

At the new facility, the grain will be held in a “day bin”, cleaned or scalped to remove any foreign material, milled or ground in hammermills, and conveyed to the slurry tank for enzymatic processing.

These operations at the proposed new facility will be controlled by a baghouse.

2.1.2 List of Emission Units and Pollution Control Equipment

Operations	Emission Unit	Emission Control Equipment
Elevator	Existing Elevator Operations Leg (New)	Various
Milling	Scalper	Milling Baghouse (C-30)
	Grain Day Bin (P20)	
	Hammermill Feed	
	Three Hammermills (P30)	

2.1.3 Applicability Provisions and Applicable Regulations

a. i. The “affected milling units” for the purpose of these unit-specific conditions, are the operations at the new facility described in Conditions 2.1.1 and 2.1.2.

ii. The “affected elevator units” for the purpose of these unit-specific conditions are the operations at the elevator described in Conditions 2.1.1 and 2.1.2.

b. The affected milling units are subject to 35 IAC 212.321, which provide that, no person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any new process emission unit, either alone or in combination with the emission of particulate matter from all other similar process emission units … at a source or premises, exceeds the allowable emission rates specified in 35 IAC 212.321(c).

c. The affected elevator units are subject to various state emission standards, as identified in the source's Clean Air Act Program (CAAPP) permit.

2.1.4 Non-Applicability of Regulations of Concern

a. This permit is issued based on existing operations at the elevator not being subject to Best Available Control Technology (BACT) because they are not undergoing physical changes as part of this project.

b. i. This permit is issued based on the additional grain throughput of the existing elevator to serve the new facility not being a modification of the elevator for purposes of the NSPS, 40 CFR 60, Subpart DD, because it can be accommodated by the elevator and is not accompanied by physical change to the grain receiving or grain handling operations.

ii. This permit is issued based on the new leg at the elevator not being subject to the NSPS, 40 CFR 60, Subpart DD, because it does not increase the hourly grain handling capacity of the elevator, determined as the hourly rate at which grain may be received or unloaded.

2.1.5-1 Determination of Best Available Control Technology (BACT)

a. i. PM emissions from the affected milling units shall be controlled by a baghouse or other filter-type control device that emits no more than 0.005 grains of PM* per standard cubic foot (gr/scf).

* PM as would be measured by USEPA Method 5.

ii. There shall be no visible emissions of fugitive emissions, as defined by 40 CFR 60.301, from the affected milling units.

b. PM emissions from the new leg at the elevator shall comply with the applicable state emission standards for internal transfer operations at a grain elevator, as applicable to existing internal transfer operations at the elevator.

2.1.5-2 Emission Limitations

a. PM emissions from affected milling units (the milling baghouse) shall not exceed 0.5 lb/hour and 2.19 tons/year. These limits are based on information provided in the application.

b. Emissions of the existing elevator, including the new leg, attributable to receiving and handling of grain for the new facility shall not exceed 0.014 lb/ton, 0.39 ton/month and 3.94 tons/year.

2.1.6 Operational Requirements

a. The Permittee shall operate the baghouse for the affected milling units with a pressure drop that is within a range that is consistent with manufacturer's recommended levels or that during emission testing that demonstrated compliance with applicable requirements.

b. The Permittee shall operate and maintain the air pollution control equipment for the affected milling units in a manner that assures that applicable requirements are met. The actions taken by the Permittee to meet this requirement shall include at least the following:

i. Written operating procedures shall be maintained and updated describing normal process and equipment operating parameters; monitoring or instrumentation for measuring control equipment operating parameters, if any; and control equipment inspection and maintenance practices. With respect to control equipment maintenance practices, the operating procedures may incorporate the manufactures recommended operating instructions, if a copy of these instructions is attached to the procedures.

ii. Visual inspections of air pollution control equipment shall be conducted on a regular schedule. These inspections shall include a detailed inspection of the performance and condition of control equipment at least once per year.

2.1.7 Testing Requirements

The Permittee shall perform emission tests for affected milling units as required in Condition 3.1.

2.1.8 Operational Monitoring Requirements

a. The Permittee shall install, operate instrumentation on the baghouse for the affected milling units to measure pressure drop across the baghouse.

2.1.9-1 Recordkeeping Requirements for Affected Milling Units

The Permittee shall maintain the following records for the affected milling units:

a. A copy of the manufacturer's specifications and recommended operating and maintenance procedures for the baghouse for the affected units.

b. Amount of grain delivered to the hammermills (tons/month and tons/year, on a dry basis).

c. Differential pressure across the milling baghouse, as recorded at least once per operating day.

d. Logs for inspections, other equipment observations, preventative maintenance, maintenance activities other than preventative maintenance, and repair of air pollution control equipment which include: date, duration, nature, and description of observation or action.

e. The following records related to PM emissions:

i. Documentation for the PM emission rates or factors used by the Permittee to determine emissions of the affected milling units.

ii. All other data used or relied upon to determine the PM emissions of affected units.

iii. PM emissions (tons/month and tons/year) based on appropriate emission factors and operating data, with supporting calculations.

2.1.9-2 Recordkeeping Requirements for Affected Elevator Units.

a. The Permittee shall maintain the following records related to PM emissions of the affected elevator units attributable to the new dry mill facility.

2.1.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA of any deviations from the requirements of this permit for the affected units as follows. These notifications shall include the information specified by Condition 3.4.

a. Excess opacity from the affected milling units that lasts more than 30 minutes (five 6-minute averaging periods) shall be immediately reported to the Illinois EPA.

b. The deviations addressed above and all other deviations shall be reported with the quarterly compliance report.

2.1.11 Compliance Procedures

Compliance with the emission limits of Condition 2.1.5-2(b) shall be based on the records required by Condition 2.1.9 and

appropriate emission factors, including emission factors developed from emission testing conducted in accordance with Condition 2.1.7 or otherwise emission factors published by USEPA for uncontrolled or uncaptured operations, and the manufacturer guaranteed emissions rates for air pollution control equipment.

2.2 Fermentation

2.2.1 Description

Ethanol is produced by fermentation of the starch in corn. Ground corn is prepared for fermentation by converting it to "mash" by the addition of water and enzymes. In the fermentation tanks, yeast is added to the mash to begin the batch fermentation process, which converts sugar to ethanol.

Two scrubbers (the CO_2 scrubber and purge scrubber) are used to control emissions of ethanol and other organic compounds from the fermentation tanks and the "beer well", a process tank that receives the content of each fermentation tank in turn and holds it pending further processing. The facility is designed so that the wastewater generated from the scrubbers is routed back to the fermentation process for reuse.

The fermentation scrubber is also referred to as the "CO_2 scrubber", as it scrubs the CO_2 stream from the fermentation process. This stream is routed through a CO_2 scrubber to recover ethanol and other organic compounds in the exhaust. The Permittee expects that the scrubbed CO_2 stream will then be sold to the CO_2 processing plants adjacent to the complex, which operate under long-term contract with the Permittee, to purchase and then process the CO_2 for sale. However, this permit does not rely on further control of these emissions that may occur at these CO_2 plants and allows the exhaust of the CO_2 scrubber to be vented directly to the atmosphere.

The purge scrubber is used between batches when a fermentation tank is undergoing cleaning/purging, when air is also present in the exhaust stream in more than trace levels.

The exhausts from other significant units used to prepare the mash, i.e., mixer, slurry tank, and yeast tank are vented to the oxidizer. These units are addressed in Condition 2.4 of this permit.

2.2.2 List of Emission Units and Pollution Control Equipment

Operation	Emission Unit	Emission Control Equipment
In-Line Mash Cooking System	Cook Water Tank	----
	Cooking System	
Fermentation Preparation	Flash Tank	----
	Receiver Tank	----
	Liquefaction Tanks	----
Fermentation	Fermentation Tanks	CO_2 Scrubber (C-40) and Purge Scrubber (C-41)
	Beer Well	

2.2.3 Applicability Provisions and Applicable Regulations

a. An “affected unit” for the purpose of these unit specific conditions is an emission unit described in Conditions 2.2.1 and 2.2.2.

b. The affected units are subject to 35 IAC 212.321, which provides that no person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any new process emission unit, either alone or in combination with the emission of particulate matter from all other similar process emission units, at a source or premises, exceeds the allowable emission rates specified in 35 IAC 212.321(c).

c. The affected units are subject to 35 IAC 215.301, which provides that no person shall cause or allow the discharge of more than 8 lbs/hr of organic material from an emission source, unless either emissions are controlled by at least 85 percent, as provided by 35 IA 218.302, or the emissions do not qualify as photochemically reactive material, as defined by 35 IAC 211.4690 and do not contribute to an odor nuisance.

2.2.4 Non-Applicability of Regulations of Concern

a. This permit is issued based on the affected units not being subject to the NSPS for VOC Emissions from SOCMI Reactor Process, 40 CFR 60 Subpart RRR, because the fermentation tanks involve biological reaction and operate as batch processes.

2.2.5-1 Determination of Best Available Control Technology (BACT)

a. i. Fermentation Tanks and Beer Well

A. Except as provided below, the VOM emissions from the fermentation tanks and beer well shall be controlled with a control system (CO_2 scrubber) that either: (1) Reduces overall VOM emissions from these sources to no more than 1.20 lb/thousand gallons of ethanol produced, with VOM measured by appropriate methods for determination of the mass of VOM; or (2) Reduces overall VOM emissions from the fermentation tanks and beer well to no more than 10 ppm, average, as would be measured by USEPA Reference Method 25A. For this purpose, compliance shall be determined as the average over the control system operating cycle (nominally 14 hours in duration) and ethanol production shall be determined in terms of ethanol production, prior to addition of denaturant. As related to testing of VOM

emissions, each test shall consist of at least three separate test runs with a total duration of at least 10 hours for each point from the control system and compliance shall be determined by comparing the arithmetic average of valid tests results for the system to the applicable limits referenced above.

Note: The BACT control requirement of 1.20 lb VOM/1,000 gallons of ethanol is equivalent to a nominal VOM control efficiency of at least 98.5 percent over the scrubber cycle.

B. If the exhaust from the fermentation tanks and beer well is normally sent to a CO_2 plant, during cleaning of tanks or other periods when the exhaust stream from a fermentation tank or the beer well would upset the operation of the CO_2 plant, the unit may be controlled by a separate scrubber (Purge Scrubber) or other control device that either: 1) Is a single-pass fresh water scrubber operated with a minimum water flow rate of at least 0.03 gallons/scfm and a maximum exhaust gas temperature from the scrubber of 85 °F; 2) Achieves at least 98 percent control of VOM emissions, with VOM measured by appropriate methods for determination of the mass of VOM; or 3) Reduces VOM emissions to no more than 25 ppm, as would be measured by USEPA Reference Method 25A. For this purpose, scrubber operation or emissions shall be determined as the average across a single cycle of the purge scrubber. In addition, as related to testing of VOM emissions, VOM emissions may be determined as the average of two test runs if the duration of the typical purge cycle is less than 2.75 hours.

ii. Other Affected Units:

The VOM emissions from each affected unit other than the fermentation tanks and beer well shall either: 1) In the absence of add-on control equipment, not exceed 100 ppm or 0.1 lb/hour, as would be measured by USEPA Reference Method 25A; or 2) Be exhausted through add-on control equipment that is operated to comply with Condition 2.2.5-1(a)(ii), above. For this purpose, emissions or operation shall be measured as the average across a single operating cycle, with at least a run in the beginning, middle and end of the cycle.

b. The PM emissions from affected units shall be controlled by good operating practices.

2.2.5-2 Emission Limitations

a. i. The emissions from the fermentation tanks and beer well shall not exceed the following limits:

Exhaust Stream	VOM (Lbs/Hr)	VOM (T/Yr)	Acetaldehyde (Lb/Hr)	Acetaldehyde (T/Yr)
CO_2 Scrubber	7.74	33.90	1.30	5.71
Purge Scrubber	4.61	10.1	0.52	1.13

ii. This permit is issued based on negligible emissions of VOM and acetaldehyde from affected units other than the fermentation tanks and beer well, which are not controlled by scrubbers. For this purpose VOM emissions shall not exceed 0.1 lb/hour and 0.44 tons/year and 0.01 lb/hour and 0.044 tons/year, respectively.

b. This permit is issued based on negligible PM emissions from the affected units. For this purpose, PM emissions from these units, in total, shall not exceed 0.1 lb/hr and 0.44 tons/year.

c. The above limitations are applicable at the point where emissions leave the dry mill facility. In particular, if the exhaust from the fermentation tanks and beer well is ducted to CO_2 plant(s), these limitations apply at the point where emissions are discharged to the atmosphere or ducted to CO_2 plant(s).

2.2.6 Operational Requirements

a. i. The key operating parameters of the scrubbers (CO_2 scrubber and purge scrubber) for the affected units shall be maintained at levels that are consistent with levels at which emission testing demonstrated compliance with applicable requirements:

A. Maximum outlet gas temperature (°F, hourly average).

B. Minimum scrubbant flow rate (gallons/minute, hourly average).

C. Maximum scrubbant temperature (°F, hourly average).

D. Minimum use of sodium bisulfite and/or any other additives, in the scrubbant (pounds/hour

or ppm by weight in scrubbant, by material, hourly average).

ii. If the differential pressure across the scrubber is outside of the normal operating range as defined by the Permittee for a period of 4 hours, the Permittee shall inspect the scrubber with 24 hours and initiate appropriate corrective action to restore the pressure drop of the scrubber to the normal range.

iii. The Permittee shall operate and maintain the scrubbers in accordance with written procedures developed and maintained by the Permittee.

b. Emissions from affected fermentation tanks and the beer well shall not be exhausted through the purge scrubber for more than 4,380 hours per year.

2.2.7 Testing Requirements

The Permittee shall perform emission tests for affected units as required in Condition 3.1.

2.2.8 Monitoring Requirements

a. The Permittee shall equip the scrubbers with continuous monitoring devices for the following operating parameters and differential pressure across the packed bed and demister section of the scrubber. These monitoring devices shall be installed, operated, maintained and calibrated according to the supplier’s specifications and record data on no greater than 15-minute intervals and average hourly data. The Permittee shall maintain logs for the maintenance and repair of these devices.

i. Scrubber exhaust gas discharge temperature.

ii. Scrubbant flow rate.

iii. Scrubbant temperature at the inlet of the scrubber.

iv. Usage of each additive.

b. During any period when measurements are not recorded by the computerized data logging system, measurements shall be manually recorded at least twice per shift.

2.2.9 Recordkeeping Requirements

The Permittee shall maintain records of the following items for the affected units:

a. Records of normal process parameters, with supporting calculations and documentation, including feed rate to the fermentation tanks.

b. Records for operation of the affected units and scrubbers, which includes the information specified in Condition 3.3(a), including:

i. Identification of any period of scrubber deviation or upset and the operating levels of the affected units and scrubbers during such incident.

ii. Records for any period during which any affected units was in operation when the scrubbers was not in operation or was malfunctioning so as to cause emissions in excess of an applicable emissions limitation.

c. The Permittee shall keep a log for inspection, maintenance, and repairs for the affected units and the associated scrubbers, which includes the information specified in Condition 3.3(b).

d. Records for any upsets or deviations from normal operation in fermentation operations that could generate additional VOM and HAP emissions, with a description of the incident, an estimate of the additional VOM and HAP emissions that occurred with supporting calculations, and background information.

e. Records of the VOM and HAP emissions from the affected units (tons/month and tons/year), as determined at the scrubbers and any other vents, based on appropriate emission factors, with supporting calculations.

Note: For the purpose of these records, HAPS shall include acetaldehyde and other organic HAPs emitted from the affected units, as addressed during emissions testing.

2.2.10 Reporting Requirements

a. The Permittee shall promptly notify the Illinois EPA of any deviations from the requirements of this permit for the affected units as follows. These notifications shall include the information specified by Condition 3.4.

i. If there is an exceedance of applicable requirements for a scrubber by more than 5.0 percent, as determined by the monitoring required by Condition 2.2.8 that lasts longer than three hours, the Permittee shall immediately notify the Illinois EPA within 72 hours.

ii. The deviations addressed above and all other deviations shall be reported with the quarterly compliance report.

b. If there is any deviation of the requirements of this permit, not addressed by the above reporting requirements, as determined by the records required by this permit or by other means, the Permittee shall submit a report with the quarterly compliance report.

c. Notwithstanding the above, if a deviation from the requirements of this permit will occur from required maintenance, repair or other activity that can be scheduled in advance, the Permittee shall also notify the Illinois EPA prior to undertaking such activity if it is feasible to do so. Such notification shall be submitted at least 5 days in advance unless the activity is scheduled less than 5 days in advance. This notification may be supplemented with additional information submitted within 7 days of the deviation, as needed to provide all information required by Condition 3.4(a).

2.2.11 Compliance Procedures

Compliance with the emission limitations of Condition 2.2.5-2 shall be based on the records required by Conditions 2.2.8, 2.2.9, and appropriate emissions factors developed from testing of the affected units.

2.3 Distillation

2.3.1 Description

In the distillation area, the solids and water are separated from the ethanol-rich “beer” produced in the fermentation tanks. The beer is initially processed using a vacuum distillation system, to produce approximately 190 proof ethanol (95% ethanol, 5% water). The remaining water in the ethanol is removed in a molecular sieve to produce approximately 200 proof (100%) ethanol.

The exhaust points from the distillation system, i.e., the 190 proof condenser and 200 proof condenser are vented to the oxidizer/boiler control serving the feed dryers. The associated emissions are further addressed in Condition 2.4 of this permit.

2.3.2 List of Emission Units and Pollution Control Equipment

Emission Unit	Emission Control Equipment
Beer Column	Closed Column
Side Stripper	
Rectifier Column/190 Proof Condenser	Oxidizer/Boiler (See Section 2.4)
Molecular Sieve/200 Proof Condenser	

2.3.3 Applicability Provisions and Applicable Regulations

a. An “affected unit” for the purpose of these unit specific conditions is an emission unit described in Conditions 2.3.1 and 2.3.2.

b. The affected units are subject to 35 IAC 212.321. (Refer to Condition 2.2.3(b).)

c. The affected units are subject to 35 IAC 215.301. (Refer to Condition 2.2.3(c).)

2.3.4 Non-Applicability of Regulations of Concern

a. This permit is issued based on the affected process not being subject to either 40 CFR 60, Subpart NNN or RRR, Standards of Performance for Volatile Organic Compound Emissions from Synthetic Organic Chemical Manufacturing Industry Distillation Operations, or Reactor Processes, respectively, based upon guidance from USEPA that this regulation is not applicable to processing of material produced by biological reaction.

b. This permit does not address the applicability of 35 IAC 215.301 for the affected units that are controlled by the oxidizer/boiler because the organic material emissions of the units are required to be controlled by at least 85%,

such that organic material emissions are less than 8.0 lbs/hour.

2.3.5-1 Determination of Best Available Control Technology (BACT)

a. The exhausts from the distillation units, i.e., the 190 proof condenser and the 200 proof condenser, shall be vented to the oxidizer/boiler for control of emissions.

2.3.5-2 Emission Limitations

a. This permit is issued based on no emissions from the operation of the affected units other than emissions that occur through the oxidizer/boiler, as addressed in Condition 2.4, or emissions attributable to leaking components, as addressed in Condition 2.7.

2.3.6 Operational Requirements

The affected units shall not operate when the oxidizer/boiler (C-10) is not in service.

2.3.7 Testing Requirements

None

2.3.8 Monitoring Requirements

None

2.3.9 Recordkeeping Requirements

The Permittee shall maintain records of the following items for the affected units:

a. Records of normal process operating parameters, hourly average, with supporting calculations and documentation:

b. A log or other records for operation of the affected units, including:

i. Identification of any period of oxidizer deviation or upsets and the operating levels of the units during such incident.

ii. Records for any period during which any affected unit was in operation when the oxidizer/boiler was not in operation or was malfunctioning so as to cause an emissions level in excess of the emissions limitation.

c. A log for inspection, maintenance, and repairs for the affected units.

d. Records for any upsets in the affected units that could generate additional VOM or HAP emissions, with a description of the incident, an estimate of the additional VOM and HAP emissions that occurred with supporting calculations, and background information.

2.3.10 Reporting Requirements

a. The Permittee shall promptly notify the Illinois EPA of any deviations from the requirements of this permit for the affected units as follows. These notifications shall include the information specified by Condition 3.4.

i. If there are direct emissions from an affected unit, contrary to Condition 2.3.5-2, the Permittee shall notify the Illinois EPA within 72 hours.

ii. The deviations addressed above and all other deviations shall be reported with the quarterly compliance report.

b. If there is any deviation of the requirements of this permit, not addressed by the above reporting requirements, as determined by the records required by this permit or by other means, the Permittee shall submit a report with the quarterly compliance report.

c. Notwithstanding the above, if a deviation from the requirements of this permit will occur from required maintenance, repair or other activity that can be scheduled in advance, the Permittee shall also notify the Illinois EPA prior to undertaking such activity if it is feasible to do so. Such notification shall be submitted at least 5 days in advance unless the activity is scheduled less than 5 days in advance. This notification may be supplemented with additional information submitted within 7 days of the deviation, as needed to provide all information required by Condition 3.4(a).

2.4 Feed Drying Operations

2.4.1 Description

Stillage, the solids-laden material recovered from the bottom of the distillation system, is processed in mechanical centrifuges for de-watering. The recovered water from the centrifuges is processed in a steam driven evaporator to produce thick syrup. The wet cake from the centrifuges and the syrup solubles from the evaporator are mixed and further processed by drying.

Two natural gas fired dryers will be used to produce dry feed from wet cake. These dryers will have the capacity to convert all wet cake produced at the facility into dry feed. The dryers will be equipped with cyclones to minimize carry of PM with the exhaust. The natural gas-fired oxidizer system will control emissions of CO, VOM, HAP and PM from the dryers. The oxidizer will also function as the furnace for the boiler to supply steam to the dry mill facility, with a nominal heat input capacity of 150 million Btu/hour.

The oxidizer also controls the emissions from certain units in the fermentation area (mixer, slurry tanks and yeast tank) and the distillation area (190 proof condenser and 200 proof condenser).

2.4.2 List of Emission Units and Pollution Control Equipment

Emission Unit	Description	Emission Control Equipment
Fermentation Preparation	Mixer	Cyclone (Dryers Only) and Oxidizer/Boiler (C-10)
	Slurry Tanks	
	Yeast Tank	
Distillation	Rectifier Column/190 Proof Condenser	
	Molecular Sieve/200 Proof Condenser	
Feed Dewatering and Drying	Evaporators/Centrifuges/Centrate Tank	
	Two Dryers in Series, Natural Gas Fired, Nominal 50 mmBtu/Hour Each	
	Thin Stillage Tank, Syrup Tank, Whole Stillage Tank	---
Feed Cooling	Cooling Cyclone and Transport	Baghouse (C-70)

2.4.3 Applicability Provisions and Applicable Regulations

a. An “affected unit” for the purpose of these unit specific conditions is an emission unit described in Conditions 2.4.1 and 2.4.2.

b. The oxidizer/boiler is subject to the New Source Performance Standard (NSPS) for Industrial-Commercial-Institutional Steam Generating units, 40 CFR 60, Subpart Db and related provisions in 40 CFR 60, Subpart A General Provisions. For this purpose, the oxidizer/boiler is regulated as a duct burner, as defined by 40 CFR 60.41b, because it is located in the exhaust duct from the feed dryer and has the ability to fire additional fuel to heat this exhaust before it enters the heat recovery portion or boiler portion of the oxidizer/boiler.

i. The emission of nitrogen oxides (NO_x) from the oxidizer/boiler, including period of startup, malfunction, and breakdown shall not exceed 0.2 lb/mmBtu in accordance with the provisions of the NSPS 40 CFR 60.44b(a)(4)(i) for natural gas fired duct burners.

ii. At all times, the Permittee shall maintain and operate the oxidizer/boiler, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions, pursuant to 40 CFR 60.11(d).

c. The affected units are subject to 35 IAC 212.321. (Refer to Condition 2.2.3(b).)

d. The affected units are subject to 35 IAC 215.301. (Refer to Condition 2.2.3(c).)

2.4.4 Non-Applicability of Regulations of Concern

a. For the oxidizer/boiler, here are no applicable NSPS control requirements for emissions of PM or SO_2, pursuant to 40 CFR 60.43b or 60.42b, respectively, as the boiler fires natural gas.

b. For the affected units that are controlled by the oxidizer/boiler, this permit does not address the applicability of 35 IAC 215.301 because the organic material emissions of the units are required to be controlled by greater than 85 percent, such that organic material emissions are less than 8.0 lb/hour.

c. This permit is issued based on the oxidizer/boiler not being subject to NSPS or state emission standards for steam generating units with a heat input capacity of 250 million Btu/hour or more because the capacity of the oxidizer/boiler, by itself, excluding the dryers, is less than this level.

2.4.5-1 Determination of Best Available Control Technology (BACT)

a. i. A. During periods when feed dryers are operating, emissions from the oxidizer/boiler shall not exceed the following limits:

VOM: 0.30 lb per ton of dried feed produced.

PM: 0.20 lb per ton of dried feed produced, with PM determined as would be measured by USEPA Method 5.

B. During period when the feed dryers are not operating but other process units are vented to the oxidizer/boiler, process emissions shall be used as combustion air for the oxidizer burners or introduced into the combustion zone of the oxidizer.

C. During periods when the feed dryers are not operating and other process units are not vented to the oxidizer/boiler, emissions of VOM and PM shall be controlled by use of good combustion practices.

ii. Emissions of NO_x from the oxidizer/boiler shall not exceed 0.05 lb/million Btu heat input, considering total heat input of natural gas fuel to both the feed dryer and oxidizer/boiler, with compliance determined as the average of 30 boiler operating days, using the compliance methodology of the NSPS.

b. Emissions from the feed cooling and transport system shall not exceed the following limits:

VOM - 0.1 lb per ton of dried feed produced.

PM* - 0.005 gr/scf, as achieved with a baghouse or other filter-type control system.

* PM as would be measured by USEPA Method 5.

c. The VOM emissions from affected units other than the oxidizer/boiler and feed cooling and transport system shall either: 1) In the absence of add-on control equipment, not exceed 100 ppm or 0.1 lb/hour, as would be measured by USEPA Reference Method 25A; or 2) Be exhausted through add-on control equipment that is operated to comply with Condition 2.2.5-1(a)(ii), above. For this purpose, emissions or operation shall be measured as the average across a single operating cycle, with at least a run in the beginning, middle and end of the cycle.

2.4.5-2 Emission Limitations

a. Emissions of the oxidizer/boiler shall not exceed the following limitations.

Pollutant	Lbs/Hr	Tons/Yr
NO_x	12.5	54.80
CO	22.0	96.20
VOM	7.17	31.38
PM	4.18	18.30
SO_2	8.52	37.30
Acetaldehyde	0.22	0.94

b. Emissions of the feed cooling and transport system shall not exceed the following limits:

Pollutant	Lbs/Hr	Tons/Yr
VOM	2.09	9.17
PM	0.88	3.84
Acetaldehyde	0.20	0.88

2.4.6 Operational and Production Limits and Work Practices

a. i. Natural gas shall be the only fuel fired in the feed dryers and the oxidizer/boiler.

ii. A. The rated firing rate of the feed dryers shall not exceed 100 million Btu/hour, total.

B. The rated firing rate of the burners in oxidizer/boiler shall not exceed 150 million Btu/hour.

iii. The feed dryers and oxidizer/boiler shall be equipped, operated, and maintained with low NO_x burner technology.

b. The cyclone control devices for the feed dryers and the oxidizer/boiler shall be designed so as to be able to be operated to maintain effective control of emissions across the full range of operation of the dryers, such that control of emissions is not significantly degraded by the operating rate of the dryers, as related to the control of PM provided by the cyclones, or the steam demands of the facility as related to the firing rate of the oxidizer and the control provided for VOM and CO.

c. i. The loading of wet feed to the feed dryers shall not exceed the level at which the uncontrolled emissions that are generated would exceed the demonstrated capability of emissions control equipment to comply with applicable emission limits.

ii. During periods when feed is present in the dryers or emissions from other units are vented to the oxidizer, the minimum oxidizer combustion chamber

temperature shall be maintained at a temperature that is consistent with the temperature at which emission testing demonstrated compliance with applicable requirements.

iii. The combustion chamber of the oxidizer shall be preheated to the manufacturer's recommended temperature or a temperature that is consistent with the most recent emission test in which compliance was demonstrated, prior to sending the wet cake to the feed dryers or venting other units to the oxidizer.

iv. Notwithstanding the above, for the purpose of evaluation of the oxidizer and further emission testing, the Permittee may operate the oxidizer at different operating parameters in accordance with a detailed plan describing the evaluation and testing program submitted to and approved by the Illinois EPA.

d. The Permittee shall operate and maintain the feed dryers and associated control system in accordance with written procedures developed and maintained by the Permittee. These procedures shall provide for good air pollution control practices to minimize emissions and shall include the Permittee's standard operating procedures for startup, normal operation, and shutdown of the dryer system and address likely malfunction and upsets events for the dryer system.

2.4.7 Testing Requirements

The Permittee shall perform emission tests as requested for an affected units as required in Condition 3.1.

2.4.8 Monitoring Requirements

a. i. A. The Permittee shall install, calibrate, operate, and maintain a continuous monitoring system on the oxidizer/boiler for NO_x emissions. This system shall be operated during all periods of operation of the boiler except for continuous monitoring system breakdowns and repairs. Data is to be recorded during calibration checks, and zero and span adjustments. [40 CFR 60.48b]

B. The Permittee shall install, calibrate, operate, and maintain a CO continuous monitoring system on the exhaust from oxidizer/boiler within one year after the initial emission testing required by this permit unless this testing or further testing

conducted by the Permittee demonstrates that the unit normally complies by a margin of at least 25 percent with the emission limits in this permit or the Illinois EPA approves further time for the Permittee to achieve this performance.

ii. A. These monitoring systems shall be operated during all periods of operation of the oxidizer/boiler except for continuous emission monitoring system breakdowns and repairs. The Permittee shall comply with applicable requirements of the NSPS for continuous emission monitoring, including any requirements that USEPA may establish on a case-by-case basis pursuant to 40 CFR 60.13(i) to supplement generally applicable requirements for NOx monitoring system to address the NOx contained in the exhaust stream from the feed dryers.

B. The Permittee shall maintain records for the continuous monitoring system, including recorded emission concentrations and records of maintenance, calibration, and operational activity associated with the system.

C. The Permittee shall submit quarterly monitoring reports to the Illinois EPA for these systems.

iii. The requirement for a CO monitoring system may be revised or waived in the operating permit for the source if the Illinois EPA determines that compliance with requirements for CO emissions is not facilitated to a significant degree by such monitoring.

b. The Permittee shall equip the oxidizer/boiler with a continuous monitoring device for combustion chamber temperature, which device shall be installed, calibrated, operated, and maintained according to the supplier’s specifications and shall be operated at all times that the oxidizer is in use.

2.4.9 Recordkeeping Requirements

a. The Permittee shall maintain records of the following items:

i. The following design information for the feed dryers and oxidizer/boiler, accompanied by supporting documentation:

A. The design heat input of each feed dryer.

B. The design capacity of each feed dryer, in terms of wet feed input, lbs/hour, and moisture removal capacity, lbs water/hour.

C. The design heat input capacity of the oxidizer/boiler, Btu/hr.

ii. Feed production as shipped (dry feed, tons/month).

iii. Natural gas usage (scf/month and scf/year) for both the feed dryers and the oxidizer.

iv. Records for upsets in feed dryer operations or other operations that could generate additional emissions, with a description of the incident, explanation, and corrective actions and any preventative measures taken, and an estimate of the additional CO, VOM, PM, and HAP emissions that occurred, with supporting calculations and background information.

v. A. Records of the monthly and annual NO_x, CO, PM, SO_2, VOM, and HAP emissions from the oxidizer/boiler, with supporting calculations.

B. Records of the monthly and annual PM, VOM, and HAP emissions from the feed cooling and transport system, with supporting calculations.

Note: For the purpose of these records, HAPS shall include acetaldehyde and other organic HAPs emitted from the affected units addressed during emissions testing.

b. The Permittee shall maintain an operation log(s) and log(s) for inspection, maintenance, and repairs for feed dryers and feed cooling and transport system, and associated control system. For the feed dryers, this log shall identify periods of the time when feed is present in the dryers, the oxidizer not in operation.

2.4.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA of any deviations from the requirements of this permit for the affected units as follows. These notifications shall include the information specified by Condition 3.4.

a. i. If there is an exceedance of applicable requirements for the oxidizer/boiler, as determined by the monitoring required by Condition 2.4.8 that lasts longer than three hours (180 minutes), the Permittee shall immediately notify the Illinois EPA. The

initial notification for such a deviation may be supplemented with additional information submitted within seven days of the deviation, as needed to provide all information required by Condition 3.4.

ii. The deviations addressed above and all other deviations from applicable requirements shall be reported with the quarterly compliance report.

b. Notwithstanding the above, if a deviation from the requirements of this permit will occur from required maintenance, repair or other activity that can be scheduled in advance, the Permittee shall also notify the Illinois EPA prior to undertaking such activity if it is feasible to do so. Such notification shall be submitted at least five days in advance unless the activity is scheduled less than five days in advance. This notification may be supplemented with additional information submitted within seven days of the deviation, as needed to provide all information required by Condition 3.4(a).

2.4.11 Compliance Procedures

a. For VOM and CO emissions from the oxidizer/boiler, periods of excess emissions shall include any 1-hour period when the feed dryers are operating in which the average combustion temperature is more than 50°F below the temperature during testing that demonstrated compliance with applicable requirements. Additional provisions or revised provisions defining excess emissions may be included in subsequent permits based on actual operating data and experience.

b. Compliance with the emission limits of Condition 2.4.5-2 for other pollutants from the oxidizer/boiler and the feed cooling and transport system shall be based on the equipment operation, as addressed by the records required by Condition 2.4.9, and appropriate emissions factors based on emission testing of the affected units.

2.5 Feed Handling and Loadout Operations

2.5.1 Description

Dried feed is stored pending bulk loadout. PM emissions are controlled by a baghouse.

2.5.2 List of Emission Units and Pollution Control Equipment

Operation	Description	Emission Control Equipment
Feed Storage and Loading	Feed Storage and Loadout	Baghouse (C-90)

2.5.3 Applicability Provisions and Applicable Regulations

a. An “affected unit” for the purpose of these unit specific conditions is an emission unit described in Conditions 2.3.1 and 2.3.2.

b. The affected units are subject to 35 IAC 212.321. (Refer to Condition 2.2.3(b).)

c. The affected units are subject to 35 IAC 215.301. (Refer to Condition 2.2.3(c).)

2.5.4 Nonapplicability

None

2.5.5-1 Determination of Best Available Control Technology (BACT)

a. PM emissions from the affected units shall be controlled by a baghouse or other filter-type control device that emits no more than 0.005 grains of PM* per scf.

* PM as would be measured by USEPA Method 5.

b. Emissions of PM from feed loadout shall be controlled by wind screens and loadout practices to minimize loss of dust to the atmosphere.

2.5.5-2 Emission Limitations

a. Emissions of PM from feed storage and loadout systems (Baghouse C–90) shall not exceed 0.5 lb/hour and 2.21 tons/year.

b. This permit is issued based on negligible emissions of VOM from the affected units. For this purpose, VOM emissions shall not exceed 0.1 lb/hour and 0.44 ton/year.

2.5.6 Operational Requirements

a. The Permittee shall operate the baghouse for the affected units with a pressure drop that is within a range that is consistent with manufacturer's recommended levels or that during emission testing that demonstrated compliance with applicable requirements.

b. The Permittee shall operate and maintain the air pollution control equipment for the affected units in a manner that assures that applicable requirements are met. The actions taken by the Permittee to meet this requirement shall include at least the following:

i. Written operating procedures shall be maintained and updated describing normal process and equipment operating parameters; monitoring or instrumentation for measuring control equipment operating parameters, if any; and control equipment inspection and maintenance practices. With respect to control equipment maintenance practices, the operating procedures may incorporate the manufactures recommended operating instructions, if a copy of these instructions is attached to the procedures.

ii. Visual inspections of air pollution control equipment shall be conducted on a regular schedule. These inspections shall include a detailed inspection of the performance and condition of control equipment at least once per year.

2.5.7 Testing Requirements

The Permittee shall perform emission tests for affected units as required in Condition 3.1.

2.5.8 Operational Monitoring Requirements

a. The Permittee shall install, operate instrumentation on the baghouse for the affected units to measure pressure drop across the baghouse.

2.5.9 Recordkeeping Requirements for Affected Units

The Permittee shall maintain the following records for the affected units:

a. A copy of the manufacturer's specifications and recommended operating and maintenance procedures for the baghouse for the affected units.

b. Differential pressure across the baghouse for the affected units, as recorded at least once per operating day.

c. Logs for inspections, other equipment observations, preventative maintenance, maintenance activities other than preventative maintenance, and repair of air pollution control equipment which include: date, duration, nature, and description of observation or action.

d. The following records related to PM emissions:

i. Documentation for the PM emission factor(s) used by the Permittee to determine emissions of the affected units.

ii. All other data used or relied upon to determine the PM emissions of affected units.

iii. PM emissions (tons/month and tons/year) based on appropriate emission factors and operating data, with supporting calculations.

2.5.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA of any deviations from the requirements of this permit for the affected units as follows. These notifications shall include the information specified by Condition 3.4.

a. Excess opacity from the affected units that lasts more than 24 minutes (four 6-minute averaging periods) shall be immediately reported to the Illinois EPA.

b. The deviations addressed above and all other deviations shall be reported with the quarterly compliance report.

2.5.11 Compliance Procedures

Compliance with the emission limits of Condition 2.5.5-2(a) shall be based on the records required by Condition 2.5.9 and appropriate emission factors, including emission factors developed from emission testing conducted in accordance with Condition 2.5.7 or otherwise emission factors published by USEPA for uncontrolled or uncaptured operations, and the manufacturer guaranteed emissions rates for air pollution control equipment.

2.6 Storage Tanks

2.6.1 Description

The new dry mill facility will include a “day tank” for temporary storage of 190 proof ethanol prior to processing in the molecular sieve day tank. The tank will be equipped with an internal floating roof for control of organic emissions.

All final product will be stored in the existing tanks with either existing vapor combustion unit will serve as control for the truck loadout or loadout to rail or barges will be a dedicated to ethanol service. No physical changes will occur to these existing operations as a result of this project.

2.6.2 List of Emission Equipment and Pollution Control Equipment

Operation	Emission	Emission Control
New Tank (T65)	190 Proof Day Tank Nom. Capacity 165,000 Gal.	Internal Floating Roof with Double Seals
Existing Storage Tanks	Various	Various

2.6.3 Applicability Provisions

a. i. The “new affected tank,” for the purposes of these unit specific conditions is the new process tank described in Conditions 2.5.1 and 2.5.2.

ii. The “existing affected tanks” are the existing storage tanks described in Conditions 2.6.1 and 2.6.2, which will be used to store final product from and denaturant for the dry mill facility.

b. The new affected tank is subject to the NSPS for Volatile Organic Liquid Storage Vessels, 40 CFR 60, Subpart Kb, and related provisions in Subpart A.

c. The new affected tank is subject to the control requirements of 35 IAC 215.122, which requires a permanent submerged loading pipe or an equivalent device approved by the Illinois EPA. The Illinois EPA has not approved any alternative control. [Submerged Loading Pipe - 35 IAC 215.122(b)]

2.6.4 Non-Applicable Regulations

a. For the new affected tank, this permit does not address the applicability of 35 IAC 215.121, 215.127, and 215.128. This is based on the Illinois EPA’s finding that compliance with 40 CFR 60, Subpart Kb assures compliance with 35 IAC 215.121, 215.127, and 215.128, following the review of the requirements of 40 CFR 60 Subpart Kb and 35 IAC 215.121, 215.127, and 215.128.

2.6.5-1 Determination of Best Available Control Technology (BACT)

The control requirements of 40 CFR 60 Subpart Kb also serve as the determination of BACT for the affected tank as required by PSD.

2.6.5-2 Emission Limitations

a. Emissions of VOM from the new affected tank shall not exceed 0.32 tons/year.

b. VOM emissions of the existing storage tanks attributable to the handling of material associated with the new dry mill facility shall not exceed 1.0 ton/year. For this purpose, emissions shall be determined as the difference between VOM emissions associated with material from the existing complex and the total VOM emissions from the existing storage tanks.

2.6.6 Control Requirements

The new affected tank shall be equipped with one of the following closure devices between the wall of the tank and the edge of the internal floating roof or other device complying with the NSPS [40 CFR 60.112b(a)(1)(ii)]:

a. Two seals mounted one above the other so that each forms a continuous closure that completely covers the space between the wall of the storage vessel and the edge of the internal floating roof. The lower seal may be vapor-mounted, but both must be continuous.

b. A foam or liquid-filled seal mounted in contact with the liquid (liquid mounted seal). A liquid mounted seal means a foam or liquid-filled seal mounted in contact with the liquid between the wall of the storage vessel and the floating roof continuously around the circumference of the tank.

c. A mechanical shoe seal. A mechanical shoe seal is a metal sheet held vertically against the wall of the storage vessel by springs or weighted levers and is connected by braces to the floating roof. A flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof.

2.6.7 Operating Requirements

a. The new affected tank shall be operated in compliance with the operating requirements of 40 CFR 60.112b(a)(1) and 60.113b(a), as follows:

i. The internal floating roof shall float on the liquid surface at all times, except during those intervals when the storage tank is being completely emptied and subsequently refilled and the roof rests on its leg supports. When the roof is resting on its leg supports, the process of emptying or refilling shall be continuous and shall be accomplished as rapidly as possible. [40 CFR 60.112b(a)(1)(i)]

ii. Each opening in a non-contact internal floating roof except for automatic bleeder vents (vacuum breaker vents) and the rim space vents shall provide a projection below the liquid surface. [40 CFR 60.112b(a)(1)(iii)]

iii. Each opening in the internal floating roof except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains shall be equipped with a cover or lid which is maintained in a closed position at all times (i.e., no visible gaps) except when the device is in actual use. The cover or lid shall be equipped with a gasket. Covers on each access hatch and automatic gauge float well shall be bolted except when they are in use. [40 CFR 60.112b(a)(1)(iv)]

iv. Automatic bleeder vents shall be equipped with a gasket and be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports. [40 CFR 60.112b(a)(1)(v)]

v. Rim space vents shall be equipped with a gasket and be set to open only when the internal floating roof is not floating or at the manufacturer’s recommended setting. [40 CFR 60.112b(a)(1)(vi)]

vi. Each penetration of the internal floating roof for the purpose of sampling shall be a sample well. The sample well shall have a slit fabric cover that covers at least 90 percent of the opening. [40 CFR 60.112b(a)(1)(vii)]

vii. Each penetration of the internal floating roof that allows for the passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed sliding cover. [40 CFR 60.112b(a)(1)(viii)]

viii. Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover. [40 CFR 60.112b(a)(1)(ix)]

ix. A tank that is in-service shall be repaired or emptied upon identification in an inspection that the floating roof is not resting on the surface of the VOL, there is liquid accumulated on the roof, the seal is detached, or there are holes or tears in the seal fabric. These actions shall be completed within 45 days of the inspection unless an extension is granted. [40 CFR 60.113b(a)(2) and (a)(3)(ii)]

x. A tank that is empty shall be repaired prior to refilling the tank upon identification in an inspection that the floating roof has defects, the primary seal has holes, tears or other openings in the seal or seal fabric, or the secondary seal has holes, tears or other openings in the seal or seal fabric, or the gaskets no longer close off. [40 CFR 60.113b(a)(3)(ii) and (a)(4)]

2.6.8 Inspection Requirements

The Permittee shall fulfill the applicable testing and procedures requirements of 40 CFR 60.113b(a) for the new affected tank, including the following:

a. For affected tank equipped with a liquid-mounted, on an annual basis, visually inspect the internal floating roof and the primary seal through manholes and roof hatches on the fixed roof at least once every 12 months after initial fill. If the internal floating roof is not resting on the surface of the VOL inside the storage tank, or there is liquid accumulated on the roof, or the seal is detached, or there are holes or tears in the seal fabric, the Permittee shall repair the items or empty and remove the storage tank from service within 45 days. If a failure that is detected during this inspection cannot be repaired within 45 days and if the vessel cannot be emptied within 45 days, a 30-day extension may be requested from the Illinois EPA in the inspection report required in Condition 1.5.10(a)(i) (40 CFR 60.115b(a)(3)). Such a request for an extension must document that alternate storage capacity is unavailable and specify a schedule of actions the company will take that will assure that the control equipment will be repaired or the storage tank will be emptied as soon as possible. [40 CFR 60.113b(a)(2)]

b. As applicable for tanks equipped with both primary and secondary seals, visually inspect the affected tank as follows: [40 CFR 60.113b(a)(3)]

i. Visually inspect the tank as specified by 40 CFR 60.113(a)(4) at least every 5 years; or

ii. Visually inspect the tank as specified by 40 CFR 60.113(a)(2) at least once every 12 months.

c. i. Visually inspect the internal floating roof, the primary seal, the secondary seal (if one is in service), gaskets, slotted membranes and sleeve seals (if any) each time the tank is emptied and degassed. If the internal floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric, or the secondary seal has holes, tears, or other openings in the seal or the seal fabric, or the gaskets no longer close off the liquid surfaces from the atmosphere, or the slotted membrane has more than 10 percent open area, the Permittee shall repair the items as necessary so that none of the conditions specified in this paragraph exist before refilling the storage tank with VOL. In no event shall inspections conducted in accordance with this provision occur at intervals greater than 10 years in the case of tanks for which annual visual inspection are performed and at intervals greater than 5 years in the case of tanks equipped with double-seal systems complying by means of 40 CFR 60.112b(a)(1)(ii)(B). [40 CFR 60.113b(a)(4)]

ii. The Permittee shall give prior notification to the Illinois EPA for the above inspections as required by 40 CFR 60.113b(a)(5). (See also Condition 2.7.10(b).)

2.6.9-1 Recordkeeping Requirements – New Affected Tank

a. The Permittee shall fulfill the applicable recordkeeping requirements of 40 CFR 60.115b for the new affected tank pursuant to 40 CFR 60.115b(a), including keep a record of each inspection performed as required by Condition 2.5.8. [40 CFR 60.115b(a)(2)]

i. The date the inspection was performed;

ii. Who performed the inspection;

iii. The method of inspection;

iv. The observed condition of each feature of the internal floating roof (seals, roof decks and fittings), with the raw data recorded during the inspection; and

v. Summary of compliance.

b. The Permittee shall maintain records of the following for the new affected tank to demonstrate compliance with the

Out-of-Service Inspection requirements of Condition 2.5.8(c):

Sufficient records to identify whenever the tank is empty for any reason or whenever repairs are made as a result of regular inspection or incident of roof damage or defect.

c. i. The Permittee shall keep the operating records required by 40 CFR 60.116b for the new affected tank, as follows:

Records of the VOL stored, the period of storage, and the maximum true vapor pressure of that VOL during the respective storage period. [40 CFR 60.116b(c)]

ii. The Permittee shall keep the Material Safety Data Sheet (MSDS) or other comparable data for the VOL stored in each affected tank, which records shall be used to identify HAPs that may be emitted from the storage and loadout of material.

2.6.9-2 Recordkeeping Requirements – New and Existing Affected Tanks

a. The Permittee shall keep records of monthly and annual VOM and HAP emissions in tons/month and ton/year in accordance with the compliance procedures in Condition 2.6.11, for: (1) The new affected tank, and (2) Existing affected tanks, as attributable to the additional throughput from the dry mill facility. These records shall be prepared at least annually, unless a more frequent determination is necessary to determine whether annual emissions of VOM or HAP have exceeded applicable limitations.

2.6.10 Reporting Requirements

a. The Permittee shall fulfill all applicable reporting and notification requirements of the NSPS, 40 CFR 60.7, for the new affected tank.

b. The Permittee shall submit written notifications and reports to the Illinois EPA as required by the NSPS, for the new affected tank, as follows:

i. If any of the conditions described in Condition 2.6.8(c) are detected during the annual visual inspection required in Condition 2.6.8, a report shall be furnished to the Illinois EPA within 30 days of the inspection. Each report shall identify the tank, the nature of the defects, and the date the tank was emptied or the nature of and date the repair was made. [40 CFR 60.115b(a)(3)]

ii. Notify the Illinois EPA in writing at least 30 days prior to the filling or refilling of a tank for which an inspection is required by Conditions 2.5.8 to afford the Illinois EPA the opportunity to have an observer present. If such inspection is not planned and the Permittee could not have known about the inspection 30 days in advance of refilling the tank, the Illinois EPA at least 7 days prior to the refilling of the tank. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent by express mail so that it is received by the Illinois EPA at least 7 days prior to the refilling. [40 CFR 60.113b(a)(5)]

c. The Permittee shall promptly notify the Illinois EPA of any deviations from the requirements of this permit for the affected tanks as follows. These notifications shall include the information specified by Condition 3.4.

i. If a tank is damaged so there is a deviation from an applicable requirement that is not repaired or otherwise corrected within 48 hours, the Permittee shall then immediately notify the Illinois EPA.

ii. The deviations addressed above and all other deviations shall be reported with the quarterly compliance report.

2.6.11 Compliance Procedures

Emissions from the affected storage tanks shall be determined based on operating information for the tanks and USEPA methodology for determining emissions from storage tanks, e.g., the TANKS program.

2.7 Fuel Ethanol Loadout

2.7.1 Description

Fuel ethanol from the new dry mill facility will be shipped with the existing loadout facilities at the Permittee's complex for loading tank trucks and rail cars and with the existing barge lading facility at the adjacent Midwest Grain complex.

Organic emissions occur from the vapor laden air displaced from the tank of the transport vehicle when the ethanol is loaded. For loading of rail cars and barges, loadout emissions are minimized by submerged loading and use of dedicated rail cars and barges, which previously handled ethanol. For loading of tanks trucks, which are not in dedicated service and may have previously held gasoline, emission are controlled with an existing vapor combustion unit.

2.7.2 List of Emission Units and Pollution Control Equipment

Operation	Emission Unit Description	Emission Control
Fuel Ethanol Load Out	Truck Loading	Combustion Unit
	Railcar Loading	Dedicated Transport Vehicles
	Barge Loading	

2.7.3 Applicability Provisions and Applicable Regulations

a. An "affected unit" for the purpose of these unit-specific conditions is a loading operation described in Conditions 2.7.1 and 2.7.2.

2.7.4 Non-Applicability of Regulations of Concern

a. This permit is issued based on the affected truck loading unit not being subject to applicable requirements for handling of gasoline because the vapor pressure of the ethanol product is less than 4.0 psi and hence will not be subject to the requirements applicable to handling of gasoline, including 40 CFR 60 Subpart XX, the NSPS for Bulk Gasoline Terminals.

b. The affected truck loading unit is excused from the requirement to use submerged loading pipes pursuant to 35 IAC 215.122(a) because the unit is equipped and operated with vapor collection and control equipment.

2.7.5 Control Requirements and Operational Limitations

a. The Permittee shall route vapor displaced by ethanol loadout in the affected truck loading unit into a combustion control system or other permitted control system for VOM emissions.

b. The Permittee shall operate the affected units in accordance with good air pollution control practice to minimize organic emissions.

2.7.6 Emission Limitations

a. The VOM emissions from the affected units, in total, shall not exceed 24.0 tons/year.

2.7.7 Testing Requirements

Upon written request by the Illinois EPA, The Permittee shall perform emission tests for the control system for the affected truck loading unit in accordance with the methods and procedures specified by Condition 3.1.

2.7.8 Monitoring Requirements

None

2.7.9 Recordkeeping Requirements

The Permittee shall maintain records of the following items for the affected units:

a. Operating records for each day on which fuel ethanol loadout is conducted, as follow:

i. Date, type(s) of loadout (truck, rail or barge), and amount of ethanol loaded by type.

ii. Confirmation that established operating procedures were followed.

iii. Confirmation that loadout into railcars or barges, if any, was only into “dedicated” transport vehicle, i.e., tanks that were previously used to handle fuel ethanol or that were cleaned prior to arrival at the source.

b. Records for each event when loadout of ethanol by an affected truck loadout unit continues when the control system is not operating properly to control organic emissions:

i. Date, time, and duration of event.

ii. Description of event.

iii. Estimated amount of ethanol loaded until the situation was corrected or loadout ceased.

iv. Reason why loadout could not be immediately ceased.

v. Corrective actions taken.

vi. Actions taken to prevent or reduce the likelihood of future occurrences.

c. An inspection, maintenance and repair log for the control system for the affected truck loadout unit, which lists activities that are performed, with date and responsible individual(s).

d. Monthly and annual records of the emissions of VOM and HAP from the affected units, with supporting calculations.

2.7.10 Reporting Requirements

a. The Permittee shall promptly notify the Illinois EPA of any deviations from the requirements of this permit for the affected units as follows. These notifications shall include the information specified by Condition 3.4.

i. If there is an exceedance of applicable requirements during loadout of ethanol that lasts longer than eight hour, the Permittee shall immediately notify the Illinois EPA. For this purpose, an exceedance shall be considered to continue even if operation of the affected unit is interrupted if the exceedance condition is still present when operation of the unit is resumed.

ii. The deviations addressed above and all other deviations shall be reported with the quarterly compliance report.

2.7.11 Compliance Procedures

Compliance with the emission limits of Condition 2.7.6 shall be based on the records required by Condition 2.7.9, the use of appropriate emission factors, developed using published USEPA emissions estimation methodology, and standard USEPA emission factors, as control systems are properly operated.

2.7.12 Operational Flexibility/Anticipated Operating Scenarios

a. The Permittee is authorized to make the following physical changes with respect to these units without prior notification to the Illinois EPA or revision of this permit. This condition does not affect the Permittee’s obligation to properly obtain a construction permit in a timely manner if these changes would accompany an activity that would constitute construction or modification of an emission unit, as defined in 35 IAC 201.102.

Changes in fittings made during the course of repair and maintenance of the affected units.

2.8 Leaking Components

2.8.1 Description

Equipment components, such as valves, flanges, etc., in the piping for the fermentation tanks, distillation equipment, and the subsequent handling of ethanol and denaturant generate organic emissions when they leak.

2.8.2 List of Emission Equipment and Pollution Control Equipment

Emission Unit	Description	Emission Control Measures
Equipment Components (Valves, Flanges, Pump Seals, Etc.)	Leaks That Occur in the Piping System	Leak Detection and Repair (LDAR) Program

2.8.3 Applicability Provisions

a. The “affected components” are equipment components in Conditions 2.6.1 and 2.6.2 that are in VOM service.

b. The affected components associated with the fermentation and distillation operations are subject to the NSPS for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry, 40 CFR 60, Subpart VV, and related provisions in 40 CFR 60 Subpart A, General Provision.

2.8.4 Non-Applicable Regulations

a. This permit is issued based on affected components not being subject to the requirements of 35 IAC Part 215, Subpart Q, Leaks from Synthetic Organic Chemical and Polymer Manufacturing Equipment, pursuant to the applicability provisions at 35 IAC 215.420, because the overall complex (i.e., existing operations and operations associated with the new dry mill facility) will have less than 1,500 components in gas or light liquid service (which components are used to manufacture the chemicals or polymers listed in 35 IAC Part 215, Appendix D).

b. For the affected components, this permit does not address the applicability of 35 IAC 215.142 to certain components because the leaks of organic material are being addressed by the requirements of the NSPS, 40 CFR 60 Subpart VV or comparable requirements, which require timely repairs of any leaking component.

2.8.5-1 Determination of Best Available Technology (BACT)

The control requirements of the above regulations and the requirements in Conditions 2.8.6 and 2.8.8, also serve as the

determination of BACT for affected components, as required by PSD.

2.8.5-2 Emission Limitations

Total annual emissions from the affected components shall not exceed 5.03 tons of VOM and 0.78 tons of acetaldehyde, as determined by use of appropriate USEPA methodology for estimating emissions from leaking components.

2.8.6 Control Requirements

a. For affected components, that are subject to 40 CFR 60, Subpart VV the Permittee shall follow the work practice requirements set forth in 40 CFR 60.482-1 (Standards: General), 60.482-2 (Standards: Pumps in light liquid service), 60.482-4 (Standards: Pressure relief devices in gas/vapor service), 60.482-5 (Standards: Sampling connection systems), 60.482-6 (Standards: Open-ended valves or lines), 60.482-7 (Standards: Valves in gas/vapor service and light liquid service)*, 60.482-8 (Standards: Pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and flanges and other connectors), 60.482-9 (Standards: Delay of repair), and 60.482-10 (Standards: Closed vent systems and control devices).

* The Permittee may elect to utilize the alternative standards of 40 CFR 60.483-1 or 60.483-2, where applicable.

2.8.7 Operating Requirements

a. For affected components that are not subject to 40 CFR Part 60, Subpart VV, the Permittee shall repair any affected component from which a leak of volatile organic liquid (VOL) is detected or observed. The repair shall be completed as soon as practicable but no later than 21 days after the leak is found. If the leaking component cannot be repaired until the process unit is shut down, the leaking component must then be repaired before the unit is restarted.

b. For affected components that are subject to 40 CFR 60, Part 60, Subpart VV the Permittee shall follow the operating requirements set in 40 CFR 60.482-1 (Standards: general), 60.482-2 (Standards: Pumps in light liquid service), 60.482-4 (Standards: Pressure relief devices in gas/vapor service), 60.482-5 (Standards: Sampling connection systems), 60.482-6 (Standards: Open-ended valves or lines), 60.482-7 (Standards: Valves in gas/vapor service and light liquid service), 60.482-8 (Standards: Pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid

service, and flanges and other connectors), 60.482-9 (Standards: Delay of repair), and 60.482-10 (Standards: Closed vent systems and control devices).

2.8.8 Inspection Requirements

For all affected components that are in VOC service, as defined by 40 CFR 60.481, other than components in vacuum service, the Permittee shall follow the inspection requirements set forth in 40 CFR 60.482-1 (Standards: General), 60.482-2 (Standards: Pumps in light liquid service), 60.482-4 (Standards: Pressure relief devices in gas/vapor service), 60.482-5 (Standards: Sampling connection systems), 60.482-6 (Standards: Open-ended valves or lines), 60.482-7 (Standards: Valves in gas/vapor service and light liquid service)*, 60.482-8 (Standards: Pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and flanges and other connectors), 60.482-9 (Standards: Delay of repair), and 60.482-10 (Standards: Closed vent systems and control devices).

* The Permittee may elect to utilize the alternative standards of 40 CFR 60.483-1 through 60.483-2, where applicable.

2.8.9 Recordkeeping Requirements

The Permittee shall maintain the following records related to affected components:

a. The applicable records as specified in 40 CFR 60.486.

b. A leaking components monitoring log, which shall contain the following information:

i. The name of the process unit where the component is located;

ii. The type of component (e.g., valve, pump seal);

iii. The identification number of the component;

iv. The date on which a leaking component is discovered;

v. The date on which a leaking component is repaired;

vi. The date and instrument reading of the recheck procedure after a leaking component is repaired;

vii. A record of the calibration of the monitoring instrument;

viii. The identification number of leaking components which cannot be repaired until process unit shutdown; and

ix. The total number of components inspected and the total number of components found leaking during that monitoring period.

c. All required reports as specified at 40 CFR 60.487.

d. Records on at least an annual basis of the VOM and HAP emissions attributable to affected components, with supporting documentation and calculations.

2.8.10 Reporting Requirements

a. The Permittee shall fulfill all applicable notification and reporting requirements of the NSPS for the affected components.

b. The Permittee shall report any deviations from the requirements of this permit for the affected components in the quarterly compliance report submitted to the Illinois EPA. These reports shall include the information specified by Condition 3.4.

2.8.11 Compliance Procedures

Compliance with emission limits of Condition 2.6.6 shall be based on the records required by Condition 2.6.9 and the use of appropriate USEPA emissions factors for VOM losses from leaking components.

2.8.12 Operational Flexibility/Anticipated Operating Scenarios

The Permittee is authorized to repair and replace affected components without prior notification to the Illinois EPA or revision of this permit. This condition does not affect the Permittee’s obligation to properly obtain a construction permit in a timely manner for any activity constituting construction or modification of the source, as defined in 35 IAC 201.102.

2.9 Cooling Tower

2.9.1 Description

A non-contact multi celled cooling tower is used to support the heat exchangers used to cool process streams and to condense surplus steam being returned to boilers.

2.9.2 List of Emission Units and Pollution Control Measures

Emission Unit Description	Control Measures
Cooling Tower	Drift Eliminator

2.9.3 Applicable Regulations

a. The cooling tower is subject to 35 IAC 212.321. (Refer to Condition 2.2.3(b).)

b. The cooling tower is subject to 35 IAC 215.301. (Refer to Condition 2.2.3(c).)

2.9.4 Non-Applicability of Regulations of Concern

None

2.9.5-1 Best Available Control Technology (BACT) Determination

a. The cooling tower shall be equipped with drift eliminators with a design draft loss efficiency of at least 0.005 percent.

b. The VOM content of additives used in the cooling tower shall be minimized, consistent with maintaining a common set of additives for the cooling towers at the complex.

2.9.5-2 Emission Limitations

a. Annual emissions of PM and VOM from the cooling tower shall not exceed 6.85 tons and 1.13 tons, respectively.

2.9.6 Operational Requirements

a. The Permittee shall follow good air pollution control practices to minimize emissions from the cooling tower.

2.9.7 Testing Requirements

None

2.9.8 Monitoring Requirement

None

2.9.9 Recordkeeping Requirements

The Permittee shall maintain the following records for the cooling tower:

a. Design data for the cooling tower, including water circulation rate (gallons/minute) and design loss rate of the drift eliminators (percent).

b. Operating records for the cooling tower, including total dissolved solids concentration of the water circulated in the cooling tower, recorded on at least a quarterly basis (ppm).

c. Records on at least an annual basis of the PM and VOM emissions from the cooling tower, with supporting documentation and calculations.

2.9.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA of any deviations from the requirements of this permit for the cooling tower as follows. These notifications shall include the information specified by Condition 3.4.

a. If the cooling tower is damaged so there is a deviation from an applicable requirements that is not repaired or otherwise corrected within 72 hours, the Permittee shall then immediately notify the Illinois EPA.

b. The deviations addressed above and all other deviations shall be reported with the quarterly compliance report.

2.9.11 Compliance Procedures

Compliance with Condition 2.9.6 shall be based on the records required by Condition 2.9.9 and the use of appropriate emission factors and USEPA emission determination methodology.

2.10 Roadways and Other Sources of Fugitive Dust

2.10.1 Description

Fugitive dust/particulate matter emissions are generated by vehicle traffic and wind blown dust on roadways, parking lots and other open areas at the plant.

2.10.2 List of Emission Units and Pollution Control Measures

Emission Unit Description	Emission Control Measures
Vehicle Traffic, Paved and Unpaved Plant Roads, Parking Lots and Open Areas	Fugitive Dust Control Program

2.10.3 Applicable Regulations

a. The “affected units” for the purpose of these unit-specific conditions are the operations described in Condition 2.8.2.

b. The affected units are subject to 35 IAC 212.301. (See also Condition 1.4(a).)

2.10.4 Non-Applicability of Regulations of Concern

The affected units are not subject to the requirements of 35 IAC 212.321 (“the process weight rate” rule) because of the disperse nature of these units. [35 IAC 212.323]

2.10.5-1 Determination of Best Available Control Technology (BACT)

a. New roadways and the parking lot for the control room for the dry mill facility shall be paved.

b. The emissions of fugitive dust from the above units shall be controlled in accordance with a fugitive dust control program.

2.10.5-2 Operational and Production Limits and Work Practices

a. The Permittee shall follow good air pollution control practices to minimize nuisance fugitive dust from affected units at the new dry mill facility.

b. i. The Permittee shall carry out control measures for fugitive dust in accordance with a written control program maintained by the Permittee. This program shall set forth the measures being implemented to demonstrate compliance with Conditions 2.8.3, 2.8.5(a) and 2.8.6, to control fugitive dust at each area of the plant with the potential to generate significant quantities of fugitive dust. This program shall include: (i) A map or diagram showing

the location of all fugitive emission units controlled, including the location, identification, length, and width of roadways, and volume and nature of expected traffic or other activity; (ii) estimated dust emissions control technique (e.g., water spray surfactant spray, water flushing, or sweeping); (iii) triggers for additional control, e.g., observation of extended dust plumes following passage of vehicles.

ii. The Permittee shall submit a copy of a revised fugitive dust control program to the Illinois EPA for review within 90 days of a request from the Illinois EPA for a revision to the program to address observed deficiencies in the control program.

2.10.6 Emission Limitations

Emissions of PM from affected units attributable to operation of the dry mill facility shall not exceed 7.47 tons per year, as determined by use of appropriate USEPA methodology for estimating emissions of fugitive dust.

2.10.7 Testing Requirements

None

2.10.8 Monitoring Requirement

None

2.10.9 Recordkeeping Requirements

The Permittee shall maintain the following records with respect to the affected units:

a. A file documenting assumptions about the quantity and nature of vehicle traffic for the dry mill facility as related to the grain receipts and loadout of ethanol and feed.

b. Records documenting implementation of the fugitive dust control program, including:

i. For each dust control treatment of a roadway: the name and location of the roadway controlled, the type of treatment, identification of each truck used, application rate of water or other dust suppressant material, and total quantity of material applied;

ii. A log recording incidents when control measures were not carried out as scheduled or were not fully

implemented and incidents when additional control measures were carried out, with description of each such incident and explanation. This log shall address any adjustments to the scheduling of control measures made by the Permittee due to weather conditions that either acted to reduce or increase the level of potential dust, such as precipitation or extended periods of dry weather.

c. Records on at least an annual basis of the PM emissions from the affected operations, with supporting documentation and calculations.

2.10.10 Reporting Requirements

a. The Permittee shall promptly notify the Illinois EPA of any deviations from the requirements of this permit for affected units as follows. These notifications shall include the information specified by Condition 3.4.

i. If there is an exceedance of Condition 2.10.3(b) that lasts longer than one hour, the Permittee shall immediately notify the Illinois EPA.

ii. The deviations addressed above and all other deviations shall be reported with the quarterly compliance report.

b. With the Quarterly Emission Report, the Permittee shall submit the following information to the Illinois EPA:

Dates when control measures otherwise required by the dust control program were not carried out with explanation.

2.10.11 Compliance Procedures

Compliance with Condition 2.10.6 shall be based on the records required by Condition 2.10.9 and the use of appropriate USEPA methodology for estimating emissions of fugitive dust.

Section 3: General Conditions

3.1 Emission Testing

a. i. Within 180 days of initial startup of feed dryers, emissions of selected units as specified in the following table, shall be measured during conditions which are representative of maximum emissions:

	Emissions					Efficiency	
Emission Unit	PM	VOM	NO_x	CO	HAP	VOM	CO
Milling (Baghouse C-30)	x						
Fermentation - CO_2 Scrubber		x			x		
Fermentation - Purge Scrubber		x			x		
Oxidizer/Boiler	x**	x	x	x	x		
Feed Cooling (Baghouse C-70)	x	x			X		
Feed Loading (Baghouse C-90)	x						

* Efficiency testing need not be performed if the Permittee is demonstrating compliance based on the concentration of VOM or CO in the exhaust.

** Particulate matter tests shall include measurements of condensable particulate matter, as collected in the back half of the Method 5 sampling train or by separate measurements using USEPA Method 202 (40 CFR Part 51, Appendix M).

ii. In addition to the emission testing required above, the Permittee shall perform emission tests as requested by the Illinois EPA for an emission unit within 45 days of a written request by the Illinois EPA or such later date agreed to by the Illinois EPA.

b. The following methods and procedures shall be used for testing of emissions, unless another method is approved by the USEPA or Illinois EPA. Refer to 40 CFR 60, Appendix A, for USEPA test methods.

Location of Sample Points	USEPA Method 1
Gas Flow and Velocity	USEPA Method 2
Flue Gas Weight	USEPA Method 3
Moisture	USEPA Method 4
Particulate Matter	USEPA Methods 5 and 202
Volatile Organic Material	USEPA Method 18 and 25/25A*
Carbon Monoxide	USEPA Method 10
Nitrogen Oxides	USEPA Method 7, 7E, or 19**
Opacity	USEPA Method 9
Hazardous Air Pollutants	USEPA Method 18*/***

* Testing shall also be conducted in accordance with industry-specific guidance from USEPA on testing VOM and HAP emissions at ethanol plants.

** Emission testing shall be conducted in conjunction with certification of the NOx emission monitor required by Condition 2.4.8(b)(i)(A)

*** USEPA Method 320 or other method approved by the Illinois EPA may also be used.

c. For purposes of determining compliance with the NSPS Standard for NO_x (Condition 2.4.3(b)).

i. The emission tests for the boiler shall be conducted and data collected in accordance with 40 CFR 60.8 and the test methods and procedures specified in 40 CFR 60.46b(e) or the test methods and procedures approved by USEPA on case-by-case basis pursuant to 40 CFR 60.8(a), to address the NO_x contained in the exhaust stream from the feed dryers that enters the boiler.

ii. NO_x emissions shall be monitored for 30 successive boiler operating days and the 30-day average emission rate is used to determine compliance with the NSPS standard. The 30-day average emission rate is calculated as the average of all hourly emissions data recorded by the monitoring system during 30-day test period, unless USEPA approves alternative procedures to demonstrate compliance with the NSPS pursuant to 40 CFR 60.13(i).

d. The following measurements shall also be made during emission testing of the oxidizer/boiler based on representative sampling and analysis:

i. VOM content in material, lb VOM/lb material, for material entering the distillation process, feed dryer, and feed cooler.

e. i. A written test plan shall be submitted to the Compliance Section of the Division of Air Pollution Control for review at least 60 days prior to the scheduled date of testing. This plan shall describe the specific procedures for testing, including as a minimum:

A. The person(s) who will be performing sampling and analysis and their experience with similar tests.

B. The specific conditions under which testing will be performed, including a discussion of why these conditions will be representative of maximum emissions and any changes in the means or manner by which the operating parameters for the emission unit and any control equipment will be determined.

C. The specific determinations of emissions and operation that is intended to be made, including sampling and monitoring locations.

D. The test method(s) that will be used, with the specific analysis method, if the method can be used with different analysis methods.

E. Any minor changes in standard methodology proposed to accommodate the specific circumstances of testing, with justification.

F. The format and content of the Source Test Report.

ii. As part of the approval of a test plan, the Permittee may request and the Illinois EPA may approve a program to evaluate alternative levels of operating parameters for a control device, leading to testing at new values for operating parameters. In such case, the provisions of the approved test plan shall supersede the particular provisions of this permit with respect to the required level of operating parameters for the affected unit(s).

f. The Illinois EPA shall be notified prior to these tests to enable the Illinois EPA to observe these tests. Notification of the expected date of testing shall be submitted a minimum of 30 days prior to the expected date. Notification of the actual date and expected time of testing shall be submitted a minimum of 5 working days prior to the actual date of the test. The Illinois EPA may at its discretion accept notifications with shorter advance notice provided that the Illinois EPA will not accept such notifications if it interferes with the Illinois EPA's ability to observe testing.

g. Copies of the Final Reports for these tests shall be submitted to the Illinois EPA within 14 days after the test results are compiled and finalized but no later than 30 days after completion of sampling. The Final Report shall include as a minimum:

i. A summary of results

ii. General information

iii. Description of test method(s), including description of sampling points, sampling train, analysis equipment, and test schedule.

iv. Detailed description of test conditions, including:

A. Plant operating rates, i.e., ethanol and feed production rate,

B. Unit operating information, i.e., mode(s) of operation, process rate, e.g. fuel or raw material combustion or throughput,

C. General, control equipment information, i.e., equipment condition and operating parameters during testing.

D. For scrubbers, usage of sodium bisulfite and/or other additives in the scrubbant.

v. Data and calculations, including copies of all raw data sheets and records of laboratory analyses, sample calculations, and data on equipment calibration.

h. Copies of emission test reports shall be retained for at least five years after the date that an emission test is superseded by a more recent test.

3.2 Operation or Maintenance Procedures

Where this permit requires the Permittee to operate or maintain emission units in accordance with written procedures, such procedures may incorporate procedures provided by the equipment supplier.

3.3 General Requirements for “Logs” Or Similar Records

a. Operating logs or other similar records required by this permit shall, at a minimum, include the following information related to the emission units and associated control system:

i. Information identifying periods when an emission unit or group of related emission units was not in service.

ii. For periods when a unit or group of related units is in service and operating normally, relevant process and control system information to generally confirm normal operation.

iii. For periods when a unit or group of related units is in service and is not operating normally, identification of each such period, with detailed information describing the operation of the unit(s), the potential consequences for additional emissions from the unit(s), the potential of any excess emissions from the affected unit(s), the actions taken to restore normal operation, and any actions taken to prevent similar events in the future.

iv. Other information as may be appropriate to show that the emission unit or group of related emission units is operated in accordance with good air pollution control practices.

b. Inspection, maintenance and repair logs or other similar information required by this permit shall, at a minimum, include the following information related to the emission units and associated control system:

i. Identification of equipment, with date, time, responsible employee and type of activity.

ii. For inspections, a description of the inspection, findings, and any recommended actions, with reason.

iii. For maintenance and repair activity, a description of actions taken, reason for action, e.g., preventative measure or corrective action as a result of inspection, probable cause for requiring maintenance or repair if not routine or preventative, and the condition of equipment following completion of the activity.

iv. Other information as may be appropriate to show that the emission unit or group of related emission units is maintained in accordance with good air pollution control practices, including prompt repair of defects that interfere with effective control of emissions.

c. The logs required by this permit may be kept in manual or electronic form, and may be part of a larger information database maintained by the Permittee provided that the information required to be kept in a log is readily accessible.

3.4 Reporting of Deviations

a. Reports of deviations shall include the following information:

i. Identify the deviation, with date, time, duration and description.

ii. Describe the effect of the deviation on compliance, with an estimate of the excess emissions that accompanied the deviation, if any.

iii. Describe the probable cause of the deviation and any corrective actions or preventive measures taken.

b. Quarterly compliance report shall be submitted no later than 45 days after the preceding calendar quarter. This report shall also provide a listing of all deviations for which immediate or 30-day reporting was required, but need not include copies of the previously submitted information.

c. If there are no deviations during the calendar quarter, the Permittee shall still submit a compliance report, which report shall state that no deviations occurred during the reporting period.

Please note that this permit has been revised to allow an increase in the production capacity of the Plant to 63.3 million gallons per year.

If you have any questions on this permit, please call Minesh Patel at 217/782-2113.

Edwin C. Bakowski, P.E. Date Signed: _____
Manager, Permit Section
Division of Air Pollution Control

ECB:MVP:jws

cc: Region 2

ATTACHMENT A

Operation	Emission Unit	Emission Control Equipment
Existing Elevator	Receiving, Handling and Storage	Enclosure, Dust Suppression Measures, and Filters
	Elevator Leg (New)	
Milling	Scalper	Baghouse (C-30)
	Grain Day Bin	
	Hammermill Feed	
	Three Hammermills	
Mash Preparation	Cook Water Tank	----
	Mixer	Oxidizer/Boiler (C-10)
	Slurry Tanks	
	Yeast Tank	
Fermentation	Flash Tank	----
	Receiver Tank	----
	Liquefaction Tanks (1-2)	----
	Fermentation Tanks (1-4)	CO_2 Scrubber (C-40)/Purge Scrubber (C-41)
	Beer Well	
Distillation	Beer Column	Closed Column
	Side Stripper	Closed Column
	Rectifier/190 Proof Condenser	Cyclone (Dryers only) and Oxidizer/Boiler (C-10)
	Molecular Sieve/200 Proof Condenser	
Feed Dewatering and Drying	Evaporators/Centrifuges/ Centrate Tank	
	Feed Dryers	
	Stillage and Syrup Tanks	---
Feed Cooling	Cooling Cyclone and Transport	Baghouse (C-70)
Feed Storage and Loadout	Feed Storage	Baghouse (C-90)
	Feed Loading	
Storage Tanks	190 Proof Day Tank (New)	Internal Floating Roof with Primary and Secondary Seals
	Existing Storage Tanks	Various
Fuel Ethanol Loadout (Existing)	Truck Loadout	Oxidizer Control
	Barge and Rail Loadout	Dedicated Transport Vessels
Cooling Tower	Non-Contact Cooling Tower	Drift Eliminator
Leaking Components	Equipment Components (Valves, Flanges, Pump Seals, Etc.)	Work Practices and Equipment Repair
Fugitive Dust	Plant Roads and Parking Lots and Vehicle Traffic,	Fugitive Dust Control Program

TABLE I

Annual Emission Limitations for the Dry Mill Project (Tons/Year)

Facility/Operation	Potential Emissions Associated with the Project					
	PM[a]	VOM	SO_2	NO_x	CO	Acetaldehyde
Dry Mill Facility						
Milling	2.19	---	---	---	---	---
Mash Preparation	0.044	0.44	---	---	---	0.044
Fermentation – CO_2 Scrubber	0.44	33.90	---	---	---	5.71
- Purge Scrubber	0.44	10.10	---	---	---	1.13
Process Ethanol Tank (T65)	---	0.32	---	---	---	---
Distillation/Drying (Oxidizer/Boiler)	18.30	31.38	37.3	54.8	96.2	0.94
Feed Cooling	3.84	9.17	---	---	---	0.88
Feed Storage and Loadout	2.21	0.44	---	---	---	---
Leaking Components	---	5.03	---	---	---	0.78
Cooling Tower	6.85	1.13	---	---	---	---
Subtotal:	34.31	91.91	37.3	54.8	96.2	9.48
Existing Facilities[b]						
Grain Elevator	3.94	---				
Ethanol Storage Tanks	---	1.00				
Ethanol Loadout	---	24.00				
Roadways	7.47	---				
Wastewater Treatment	---	0.44				
Subtotal:	11.41	25.44				
Total:	45.7	117.4	37.3	54.8	96.2	

Notes:

[a] PM including condensable particulate matter as measured by USEPA Method 202.

[b] Emissions associated with this project.

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