217/782-2113

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT
NSPS SOURCE

PERMITTEE

Lincolnland Agri-Energy, LLC
Attn: Eric Mosbey
10406 North 1725th Street
Palestine, Illinois 62451

Application No.: 05070015 I.D. No.: 033899AAA
Applicant's Designation: ETHANOLPLT Date Received: July 6, 2005
Subject: Ethanol Production
Date Issued: DRAFT Expiration Date:
Location: West of the Town of Palestine at Southwest Corner of State Highway 33 and Township Road TR286A

This Permit is hereby granted to the above-designated Permittee to OPERATE emission source(s) and/or air pollution control equipment consisting of a fuel ethanol plant with a nominal design capacity of 52 million gallons per year, as described in Attachment A and other ancillary operations as described in the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):

Findings

1. This federally enforceable state operating permit is issued to limit the emissions of air pollutants from the source to less than major source thresholds (i.e., 100 tons/yr each for volatile organic material (VOM), nitrogen oxides (NO_x), carbon monoxide (CO), particulate matter (PM), and other regulated New Source Review pollutants, and 10 tons/yr for a single hazardous air pollutant (HAP) and 25 tons/yr for combined HAP's). As a result the source is excluded from the requirement to obtain a Clean Air Act Permit Program (CAAPP) permit. The maximum emissions of this source, as limited by the conditions of this permit, are provided in Attachment B.

2. Prior to issuance, a draft of this permit underwent a public notice and comment period.

1.0 Plant-Wide Conditions

1.1 Plant-Wide Operating Limitations

a. i. The ethanol production of the plant, as shipped including denaturant, shall not exceed 5.2 million gallons per month and 52 million gallons per year.

ii. The amount of grain processed by the plant shall not exceed 1,900,000 bushels per month and 19,000,000 bushels per year.

iii. The total feed production of the plant, expressed in terms of dry feed or dry feed equivalent, shall not exceed 17,200 tons per month and 172,000 tons per year.

iv. The natural gas usage by the plant shall not exceed 170 million cubic feet per month and 1,700 million cubic feet per year.

b. Compliance with annual limits established by this permit shall be determined from a running total of 12 months of data, unless another approach is specified in the applicable limitation or associated recordkeeping provisions. For this purpose, for emission units for which emissions are determined by engineering calculations, such as storage tanks, leaking components and fugitive dust, the Permittee shall perform calculations of emissions on at least an annual basis.

1.2 Plant-wide Emission Limitations

a. The emissions of the plant shall not exceed the limitations in Attachment B. As a consequence of this condition and other conditions of this permit, this permit is issued based on the plant not being a new major source subject to the federal rules for Prevention of Significant Deterioration (PSD), 40 CFR 52.21.

b. i. The emissions of HAP as listed in Section 112(b) of the Clean Air Act from the plant shall be less than 10 tons/year of any single HAP and 25 tons/year of any combination of such HAPs. As a result of this condition and other conditions of this permit, this permit is issued based on the emissions of all HAPs from this source not triggering the requirements of Section 112(g) of the Clean Air Act.

ii. If not otherwise specified for a particular emission unit, 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: 15.0 percent of VOM limit.

iii. The limitations for HAP emissions may be revised by the Illinois EPA based on the results of emission testing, if requested by the Permittee, provided that such

revised limitations would continue to assure compliance with applicable rules.

c. The emissions of VOM from miscellaneous emission units, e.g., wet cake storage pile, mash screen vent, boiler feed water tank, syrup tank, and thin stillage tank shall not exceed 1.0 ton/year, total. This limit is based on estimates of maximum VOM emissions made in the application. Compliance with this limit shall be determined on an annual basis.

1.3 Regulations of General Applicability

a. Emission units at the plant are subject to the following regulations of general applicability:

i. The emission of smoke or other particulate matter from each emission unit shall not exceed opacity of greater than 30 percent. [35 IAC 212.123(a)]

ii. Notwithstanding the above, opacity greater than 30 percent but less than 60 percent shall be allowed for a period or periods aggregating 8 minutes in any 60 minute period provided that such opaque emissions allowed during any 60 minute period shall occur from only one such emission unit at the plant, and provided further that such opaque emissions allowed from each such emission unit shall be limited to 3 times in any 24 hour period, pursuant to 35 IAC 212.123(b). If the Permittee elects to rely on this provision, appropriate determinations of opacity shall be made on a minute-by-minute basis and records maintained to show that all elements of this provision have been met.

1.4 Good Air Pollution Control Practice

The Permittee shall operate and maintain the emission units at this plant, 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, calibrating and maintaining required instrumentation according to the supplier’s specifications or as otherwise necessary to assure reliable operation of such devices.

d. Install stacks for the principal emission units designed with height and exhaust velocity that satisfy good engineering practice.

1.5 General Requirements for Emission Units Subject to NSPS

a. At all times, the Permittee shall maintain and operate emission units that are subject to the federal New Source Performance Standards (NSPS), including associated air pollution control equipment, in a manner consistent with good air pollution control practice for minimizing emissions, pursuant to 40 CFR 60.11(d).

b. i. For emission units subject to NSPS, the Permittee shall fulfill applicable notification requirements of the NSPS, 40 CFR 60.7(a), which requires the following notifications, which shall be made to the Illinois EPA:

A. Written notification of commencement of construction, no later than 30 days after such date. [40 CFR 60.7(a)(1)]

B. Written notification of the actual date of initial startup, within 15 days after such date. [40 CFR 60.7(a)(3)]

ii. For emission units subject to NSPS, the Permittee shall also fulfill other applicable requirements in 40 CFR 60, Subpart A, General Provisions.

c. For emission units subject to NSPS, the Permittee shall fulfill applicable recordkeeping and reporting requirements of the NSPS.

1.6 General Recordkeeping Requirements

a. The Permittee shall keep the following records for material usage and production:

i. Grain receipts (tons/month and tons/year).

ii. Ethanol production, as measured at the loading racks (gallons/month and gallons/year).

iii. Feed production as shipped, (dry feed: tons/month and tons/year, and wet feed: tons/month and tons/year).

iv. Natural gas usage for each category of equipment (feed dryers and boiler) (scf/month and scf/year).

b. The Permittee shall keep records of the data measured by required monitoring systems and instrumentation. Unless otherwise provided in a particular condition of this permit, the following requirements shall apply to such recordkeeping:

i. For required monitoring systems, data shall be automatically recorded by a central data system, dedicated data logging system, chart recorder or other data recording device. If an electronic data logging system is used, the recorded data shall be the hourly average value of the particular parameter for each hour. During periods when the automatic recording device is out of service, data shall be recorded at least once per shift for periods when the associated emission unit(s) is in service.

ii. For required instrumentation, the measured data shall be recorded manually at least once per shift, with data and time both recorded, for periods when the associated emission unit(s) are in service, provided however that if data from an instrument is recorded automatically, the above provisions for recording of data from monitoring systems shall apply.

1.7 Retention and Availability of Records

All records, logs, or written procedures required by this permit shall be retained at 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.

1.8 Plant-Wide Reporting Requirements Related to Deviations

a. If there is any deviation from the requirements of this permit that is not addressed by the unit-specific requirements of this permit, the Permittee shall submit a report within 30 days after the deviation. The report shall include the information specified in Condition 3.4.

b. Notwithstanding the above, if a 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 that 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.

c. Provisions of this permit that specify the timing for notifications of deviations may be revised in the operating permit for this plant.

1.9 Other Plant-Wide Notification and Reporting Requirements

a. The Permittee shall submit Quarterly Compliance Reports to the Illinois EPA as specified in various conditions of this permit.

i. 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.

ii. 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.

b. i. The Permittee shall submit an Annual Emission Report in accordance with 35 IAC Part 254.

ii. With its Annual Emission Report, the Permittee shall report:

A. The annual operating hours of the fermentation and distillation processes and the feed dryer and the percentage of these operating hours, if any, that these units operated out of compliance.

B. Significant deficiencies in the condition of emission units and control systems as related to emissions identified during the detailed annual inspection of equipment.

1.10 Submission of Reports

Unless otherwise instructed by the Illinois EPA, two copies of notifications and reports required by this permit shall be sent to:

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

and one copy shall be sent to the Illinois EPA's regional office at the following address:

Illinois Environmental Protection Agency
Division of Air Pollution Control
2009 Mall Street
Collinsville, Illinois 62234

1.11 Other Requirements

a. This approval to operate 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 other applicable federal, state, and local requirements.

b. In the event that the operation of this plant results in an odor nuisance, the Permittee shall take appropriate and necessary actions to minimize odors, including but not limited to increases in stack heights, changes in process equipment or installed control devices (such as increasing water flow rate in scrubbers or improving the quality of the water), or installation of additional controls, in order to eliminate the odor nuisance.

2.0 Unit-Specific Conditions

2.1 Fire Pump Backup Diesel Engine

2.1.1 Applicable Regulations

The emission of smoke or other particulate matter from the fire pump backup diesel engine (engine) shall not have an opacity greater than 30 percent, except as allowed by 35 IAC 212.123(b) and 212.124. Compliance with this limit shall be determined by 6-minute averages of opacity readings in accordance with USEPA Reference Method 9. [35 IAC 212.109 and 212.123(a)]

2.1.3 Non-Applicability of Regulations of Concern

This permit is issued based on the engine not being subject to the New Source Performance Standards (NSPS)for Stationary Compression Ignition Internal Combustion Engines, 40 CFR 60 Subpart IIII, because the engine was manufactured on October 7, 2003, which is prior to the July 12, 2005 applicability date for this NSPS in 40 CFR 60.4200(a)(2).

2.1.3 Operating Requirements

a. Distillate fuel oil shall be the only fuel fired in the engine.

b. The annual fuel usage of the engine shall not exceed 1,400 gallons per year.

c. The sulfur content of the fuel fired in an engine shall not exceed 0.05% weight.

2.1.4 Emission Limitations

Emissions from the engine shall not exceed the following limits. These limits are based on the information provided in the permit application including the maximum capacity of engine (300 hp), emission factors and maximum operation (200 hours per year).

Pollutant	Limits	
	Lbs/Hour	Tons/Year
NO_x	8.6	0.86
CO	0.5	0.05
VOM	0.3	0.03
PM	0.2	0.02
SO_2	1.0	0.10

2.1.5 Emissions Testing

Upon written request by the Illinois EPA, the Permittee shall promptly perform emission tests for an engine in accordance with the methods and procedures specified in Condition 3.1 for the pollutants specified in the request.

2.1.6 Monitoring Requirements

None

2.1.7 Recordkeeping Requirements

The Permittee shall maintain records of the following items for an engine:

a. A file containing:

   i. Applicable emission factors for engine, with supporting documentation, including a copy of the manufacturer's specifications or guarantee for emissions from the engine.

   ii. The maximum hourly emission rates from an engine, with supporting calculations.

b. Records for the sulfur content of the fuel used in an engine (percent by weight), which shall be recorded for each shipment of fuel delivered to the plant.

c. Records of fuel usage for an engine, gallons/month and gallons/year;

d. Records of operating hours for an engine (hours/month and hours/year).

e. The following log(s) or other records for an engine:

   i. An operating log, in accordance with Condition 3.3(c).

   ii. An inspection, maintenance and repair log, in accordance with Condition 3.3(d).

f. Records for monthly and annual NO_x, CO, PM, SO_2, and VOM emissions from an engine based on fuel consumption and other operating data, and appropriate emission factors, with supporting calculations.

2.1.8 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA of any deviations from the requirements of this permit for an engine as follows. These reports shall include the information specified in Condition 3.4.

a. The use of fuel with a sulfur content in excess of the limit specified in this permit with the length of time this fuel was used and the effect on the emission of SO_2.

b. The use of fuel in excess of the limit specified in Condition 2.1.3.

c. The deviations addressed above and all other deviations shall be reported in the quarterly compliance report.

2.2 Grain Handling, Grain Processing and Feed Handling Operations

2.2.1 Applicability Provisions and Applicable Regulations

a. i. The “affected grain handling operations” for the purpose of these unit-specific conditions are the grain handling receiving, transfer and storage operations at the plant, in which involve handling of whole grain.

ii. The “affected process operations” for the purpose of these unit-specific conditions are the grain milling operations and the feed cooling and handling operations, which involve materials other than whole grain.

b. Except for the grain handling operations, which are subject to 35 IAC Part 212, Subpart S, the emission of particulate matter (PM) into the atmosphere in any one hour period from each affected process operation at the plant, either alone or in combination with the emission of particulate matter from all other similar process operations shall not exceeds the allowable emission rates specified in 35 IAC 212.321(c).

c. The affected grain handling operation shall be operated in compliance with all applicable operating requirements of 35 IAC 212, Subpart S. (See also Condition 2.2.3)

2.2.2 Non-Applicability of Regulations of Concern

a. This permit is issued based on the affected grain handling operations at the plant not being subject to New Source Performance Standard for Grain Elevators, 40 CFR 60, Subpart DD, because the permanent storage capacity of the initial plant did not meet the threshold for applicability of these standards.

Note: The total permanent grain storage capacity of the plant is now approximately 3.3 million bushels with construction of the two additional grain storage bins pursuant to Construction Permit 07040073, issued on June 8, 2007. As this storage capacity exceeds the applicability threshold of the NSPS (permanent storage capacity of 2,500,000 bushels), an affected facility under the NSPS, 40 CFR 60 Subpart DD, that would be constructed, modified or reconstructed at the plant in the future would be subject to the control requirements of the NSPS, unless it qualifies for an exemption from the NSPS.

In this regard the construction of these two bins did not result in applicability of the control requirements of the

NSPS, 40 CFR Part 60 Subpart DD, to the grain handling operations at the plant because it qualified for an exemption. In particular that project entailed "…the installation of permanent storage capacity with no increase in hourly grain handling capacity," so that the project was not considered to be a modification of the existing grain handling operations pursuant to 40 CFR 60.304(b)(4).

b. The affected grain handling operations are not subject to 35 IAC 212.321 pursuant to 35 IAC 212.461(a).

c. This permit is issued based on the affected grain handling operations being exempt from the requirements of 35 IAC 212.462, as provided by Section 9 of the Environmental Protection Act. In particular, the proposed operations, when constructed, would meet the criteria for such exemption that are set forth in Section 9 of the Act.

2.2.3-1 Operational and Control Requirements Pursuant to Regulation

a. Housekeeping Practices. The Permittee shall implement and use the following housekeeping practices for affected grain handling operations, pursuant to 35 IAC 212.461(b):

i. Air pollution control devices shall be checked daily and cleaned as necessary to insure proper operation.

ii. Cleaning and Maintenance.

A. Floors shall be kept swept and cleaned from boot pit to cupola floor. Roof or bin decks and other exposed flat surfaces shall be kept clean of grain and dust that would tend to rot or become airborne.

B. Cleaning shall be handled in such a manner as not to permit dust to escape to the atmosphere.

C. The yard and surrounding open area, including but not limited to ditches and curbs, shall be cleaned to prevent the accumulation of rotting grain.

iii. Dump Pit.

A. Aspiration equipment shall be maintained and operated.

B. Dust control devices shall be maintained and operated.

iv. Head House. The head house shall be maintained in such a fashion that visible quantities of dust or dirt are not allowed to escape to the atmosphere.

v. Housekeeping Check List. A written Housekeeping Check List for the grain handling operation, developed and maintained by the Permittee, shall be completed by the manager of the operation on at least a monthly basis and copies maintained on the premises for inspection by the Illinois EPA.

Note: The yard and driveway of any source shall be asphalted, oiled or equivalently treated to control dust. [See Condition 2.13.3(c)]

b. If the plant or an individual affected grain handling operation ceases to meet the criteria for exemption from the requirements of 35 IAC 212.462, either all affected operations or the particular affected operation, as appropriate, shall comply with applicable requirements of 35 IAC 212.246, as set forth below. For example, the grain receiving operation shall comply with applicable requirements of 35 IAC 212.462(b) (Condition 2.3.5-1((b)(ii)), if a certified investigation performed by the Illinois EPA determines that such operation is causing or tending to cause air pollution. [Section 9 of the Environmental Protection Act and 35 IAC 212.462]

i. Cleaning and Separating Operations. [35 IAC 212.462(a)]

A. Particulate matter generated during cleaning and separating operations shall be captured to the extent necessary to prevent visible particulate matter emissions directly into the atmosphere.

B. Air contaminants collected from cleaning and separating operations shall be conveyed through air pollution control equipment, which has a rated, and actual particulate removal efficiency of not less than 90 percent by weight prior to release into the atmosphere.

ii. Dump-Pit Areas. [35 IAC 212.462(b)]

A. Induced draft shall be applied to major dump pits and their associated equipment

(including, but not limited to, boots, hoppers and legs) to such an extent that a minimum face velocity is maintained, at the effective grate surface, sufficient to contain particulate emissions generated in unloading operations. The minimum face velocity at the effective grate surface shall be at least 200 feet per minute.

B. The induced draft air stream shall be confined and conveyed through air pollution control equipment which has an overall rated and actual particulate collection efficiency of not less than 90 percent by weight.

C. Means or devices (including, but not limited to, wind deflectors) shall be employed to prevent a wind velocity in excess of 50 percent of the induced draft face velocity at the pit; provided, however, that such means or devices do not have to achieve the same degree of prevention when the ambient air wind exceeds 25 mph.

iii. Internal Transferring Area. [35 IAC 212.462(c)]

A. Internal transferring area shall be enclosed to the extent necessary to prohibit visible particulate matter emissions directly into the atmosphere.

B. Air contaminants collected from internal transfer operations shall be conveyed through air pollution control equipment which has a rated and actual particulate removal efficiency of not less than 90 percent by weight prior to release into the atmosphere.

2.2.3-2 Operational and Control Requirements to Address Potential Emissions

a. Grain from “straight trucks” (as distinguished from hopper bottom trucks) shall only be received if the grain receiving operation for such trucks is equipped with quick closing doors and an aspirated dump pit.

b. The Permittee shall operate the baghouses for the affected operations 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.

c. The Permittee shall operate and maintain 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 manufacturer's 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.

2.2.4 Emission Limitations

a. i. Fabric filters (baghouses) on affected operations shall comply with PM emission limit of 0.01 grain per standard cubic foot and be operated and maintained in accordance with good air pollution practice to minimize emissions.

ii. There shall be no visible emissions of fugitive emission, as defined by 40 CFR 60.301, from the affected grain handling operations, other than the affected grain receiving operation, which shall not exhibit opacity greater than 5.0 percent, 6-minute average.

b. i. PM emissions of the affected operations shall not exceed the following limits. These limits are based on information in the application, including the manufacturer's guarantees for the baghouses for these operations (0.01 gr/scf, filterable particulate), consideration of condensable particulate for the hammermilling operation and feed cooler (0.01 gr/scf) and continuous operation.

Operation	Air Flow	PM Emissions

	acfm	Pounds/Hr	Tons/Yr
Grain Receiving and Handling	39,000	3.34	14.64
Hammermilling Operation	9,800	1.68	7.36
Dry Feed Loadout	5,500	0.47	2.06
Feed Cooler	22,000	3.78	16.52
		Total	40.58

ii. The above limits do not account for uncaptured emissions from the grain receiving operation and loadout of feed, which shall not exceed 2.36 and 0.33 tons per year, respectively.

2.2.5 Testing Requirements

a. Upon written request by the Illinois EPA, the Permittee shall perform emission tests for affected units in accordance with the methods and procedures specified in Condition 3.1 for the pollutants specified in the request.

b. Upon written request by the Illinois EPA, the Permittee shall perform opacity observation in accordance with the methods and procedures specified by Condition 3.1-2 for affected grain handling operations as specified in such request.

2.2.6 Instrumentation Requirements

The Permittee shall install, operate, and maintain instrumentation on the baghouses for the affected operations to measure pressure drop across the baghouse.

2.2.7 Recordkeeping Requirements

The Permittee shall maintain records of the following items:

a. A file containing the permanent grain storage capacity of the plant, with supporting documentation, which record shall be updated if the permanent grain storage capacity of the plant changes.

b. A file containing:

i. A copy of the manufacturer’s specifications and recommended operating and maintenance procedures for each baghouse.

ii. The range of pressure drop within which each baghouse will be operated, as required by Condition 2.3.4(b), if not the range recommended

by the manufacturer, with explanation and supporting documentation.

iii. The maximum PM emission rate of each process emission unit with supporting assumptions and documentation.

c. Records related to grain, on a monthly basis:

i. Grain received (tons/month).

ii. Grain in storage (tons).

iii. Grain processed, based on amount received adjusted for change in amount stored (tons/month).

iv. Grain processed (tons/year).

d. Records of the differential pressure of each baghouse recorded at least once per operating day.

e. The following logs for the affected operations and associated air pollution control equipment:

i. Operating log(s) in accordance with Condition 3.3(c).

ii. Inspection, maintenance and repair log(s) in accordance with Condition 3.3(d), which also specifically identify performance of the inspections required by Condition 2.2.4(c).

f. The following records related to emissions:

i. Documentation for the PM emission factor(s) and maximum hourly emission rates used by the Permittee to determine emissions of the affected grain handling and process operations.

ii. Records of all other data used or relied upon by the Permittee to determine the PM emissions of affected operations.

iii. Records of PM emissions from affected operations (tons/month and tons/year) based on appropriate emission factors and operating data, with supporting calculations. These records shall be compiled on at least a quarterly basis.

2.2.8 Reporting Requirements

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

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

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

2.3 Mash Preparation, Fermentation and Distillation Process

2.3.1 Applicability Provisions and Applicable Regulations

a. The "affected units" for the purpose of these unit specific conditions are the emission units in mash preparation area, fermentation area, distillation area, and solid separation and evaporation area.

b. The affected units are subject to 35 IAC 212.321. [Refer to Condition 2.2.1(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/hour of organic material from an emission source, unless either emissions are controlled by at least 85 percent, as provided in 35 IAC 215.302, 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.

2.3.2 Non-Applicability of Regulations of Concern

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

b. This permit is issued based on the distillation operations not being subject to the NSPS for VOC emissions from SOCMI Distillation Operations, 40 CFR 60 Subpart NNN, based upon guidance from USEPA that this regulation does not apply to processing of material produced by biological reaction. (If this NSPS were applicable, it would require achievement of 98 percent control for VOM emissions.)

2.3.3 Operating Requirements

a. The key operating parameter of the fermentation scrubber (CO_2 scrubber) for the affected units, as specified below, shall be maintained at levels that are consistent with levels at which emission testing demonstrated compliance with applicable requirements, including the following:

   i. Minimum scrubber water flow rate: gallons/minute, hourly average

   ii. Maximum scrubber water outlet temperature: °F, hourly average

iii. Maximum scrubber exhaust gas outlet temperature: °F, hourly average

iv. Type and minimum usage rate of scrubbant additive for enhancing control of acetaldehyde, e.g., sodium bisulfite additive: gallons/day.

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

c. If the water supply to the scrubber is treated to remove solids (e.g., with a reverse osmosis unit) and the quality of the actual water supply to the scrubber, expressed as the solids content, is above the normal range for a day (24 hours), the Permittee shall inspect the system(s) supplying water for the scrubber within three days (72 hours) and initiate action to restore the quality of the water to the normal range.

d. i. The Permittee shall operate and maintain the scrubber in accordance with written procedures developed and maintained by the Permittee.

ii. The plant shall be designed to allow the routine inspection and maintenance of the scrubber to be performed without discharging uncontrolled fermentation emissions to the atmosphere.

2.3.4 Emission Limitations

a. VOM emissions from the principal fermentation units, i.e., the fermentation tanks and beer well, shall be controlled by devices that achieve at least 98 percent efficiency, by weight or to a concentration of no more than 20 ppmv, whichever is less stringent.

b. VOM emissions of the principle fermentation units shall not exceed the following limits:

Units	VOM Emissions	
	Lbs/Hour	Tons/Year
Fermentation Tanks and Beer Well (CO_2 Scrubber)	8.0	35.0

These limits are based on information in the application for maximum emissions including a representative VOM

factor for fermentation (0.1 lbs VOM/gallon), nominal scrubber efficiency (98.95%), and continuous operation.

Note: VOM emissions from other emission units that are controlled by oxidizer/boiler systems are addressed in Condition 2.4 and emission units that are uncontrolled are addressed in Condition 1.2(c).

2.3.5 Testing Requirements

a. Upon written request by the Illinois EPA, the Permittee shall promptly perform emission tests for miscellaneous affected units in accordance with the methods and procedures specified in Condition 3.1 for the units and pollutants specified in the request.

b. The detailed description of test conditions in the Final Report for this emission testing shall include information on the nature of the water supply to the scrubber and results of sampling and analysis of the water for solid content.

2.3.6 Monitoring Requirements

a. The Permittee shall equip the fermentation scrubber with instrumentation or other devices to measure other key operating parameters of the scrubber, such as, temperature of scrubbant, scrubbant flow rate, scrubbant recirculation rate, additive usage for the scrubbant, and pressure drop. If measurements are not recorded by the computerized data logging system for the fermentation department, measurements shall be manually recorded at least once per shift.

b. The Permittee shall equip the fermentation scrubber with features that enable it to readily identify an increase in the gas flow rate to the scrubber, such as a device to measure gas flow rate, or otherwise conduct periodic measurements to identify an increase in the gas flow rate to the scrubber. For this purpose, measurements, such measurements may be direct measurements of gas flow or indirect measurements of parameters, such as oxygen content, that would indicate an increase in the gas flow rate of the scrubber. Measurements shall be made on at least a quarterly basis and after any significant maintenance or repair or other activity that could increase the gas flow rate to the scrubber.

2.3.7 Recordkeeping Requirements

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

a. A file containing:

i. The values of the following operating parameters of the affected operation, when operating normally, with supporting calculations and documentation:

A. Mash feed rate to the fermentation tanks (gallons/hour);

B. Total quantity of mash fed into a fermentation tank during each cycle;

C. Fermentation tank cycle time (hours/cycle); and

D. Beer feed rate to the beer still (gallons/hour).

ii. The values of the key operating parameters, the range of pressure drop and the range of solids content for the water supply for the fermentation scrubber within which the scrubber will be operated, as required by Condition 2.3.3, with explanation and supporting documentation.

b. The following logs for affected units and the fermentation scrubber:

i. Operating log(s), in accordance with Condition 3.3(c), which shall also include information on operation of units, including information on operating settings for units, changes in source(s) of water for scrubbers, and change in water supply and blowdown rates, if not automatically recorded, and identify any periods when a scrubber is not in operation.

ii. The inspection, maintenance and repair logs in accordance with Condition 3.3(d).

c. Records for upsets in affected fermentation and distillation operations or other operations that could generate additional VOM emissions, with a description of the incident, an estimate of the additional VOM and HAP emissions that occurred with supporting calculations, and background information.

d. The following records related to emissions:

i. Documentation for the emission rates or factors and maximum hourly emission rates for emissions of VOM, HAP and PM used by the Permittee to determine emissions of the various affected units.

ii. Records for the usage of sulfuric acid or other sulfur-containing reagent in the fermentation process that contributes to SO_2 emissions when stillage is subsequently processed into feed.

iii. Records of all other data used or relied upon by the Permittee to determine the emissions of the affected units.

iv. Records of the VOM, HAP and PM emissions from the affected units that are to be controlled by the fermentation scrubber (tons/month and tons/year), based on appropriate emission rates or factors and operating data, with supporting calculations.

v. Records of the VOM and HAP emissions from the affected units that are not controlled (tons/year), based on appropriate emission rates or factors and operating data, 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.

e. Records for the operation of any system that treats the water supply for the fermentation scrubber to remove solids, including:

i. Operating log(s) and inspection maintenance and repair log(s) in accordance with Condition 3.3(c) and (d).

ii. The solids content of the treated water, determined at least twice per day, based either on direct sampling and analysis or by indirect measurements, e.g., measurements of conductivity.

2.3.8 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 an applicable requirement for the fermentation scrubber by more than 2.0 percent, as determined by the monitoring required by Condition 2.3.6, that lasts longer than three hours, 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. 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 and Cooling Operations

2.4.1 Applicability Provisions and Applicable Regulations

a. i. The “affected units” for the purpose of this unit specific conditions are the feed dryers and process emission units (flash tank, yeast tank, 190 proof condenser, 200 proof condenser, and centrate tank) (which are controlled by a thermal oxidizer); a feed cooler (which is controlled by a baghouse); and feed storage/loadout units (dry feed loadout is controlled by a baghouse).

ii. The thermal oxidizer/boiler is the combination of the thermal oxidizer and associated heat recovery steam generator, which serves as the main boiler to supply steam to the plant.

b. The affected units are subject to 35 IAC 212.321. [Refer to Condition 2.2.1(c).]

c. The affected units are subject to 35 IAC 215.301. [Refer to Condition 2.3.1(c).]

d. The oxidizer/boiler system is subject to the federal New Source Performance Standards (NSPS) for Industrial-Commercial-Institutional Steam Generating Units, 40 CFR 60, Subpart Db and related provisions in Subpart A. The Illinois EPA is administering NSPS in Illinois on behalf of the United States EPA under a delegation agreement.

i. The emission of nitrogen oxides (NO_x) from the oxidizer/boiler system, including periods of startup, malfunction, and breakdown, shall not exceed 0.1 lb/mmBtu, on a 30-day average, in accordance with the provisions of the NSPS, 40 CFR 60.44b(a)(1)(i), for low heat release steam generating units.

ii. There are no applicable NSPS requirements for particulate matter and sulfur dioxide pursuant to 40 CFR 60.43b and 60.42b, respectively for the oxidizer/boiler system, as this system is only fired on natural gas.

e. The emission of carbon monoxide (CO) from the oxidizer/boiler system shall not exceed 200 ppm, corrected to 50 percent excess air. [35 IAC 216.121]

2.4.2-1 Operating Requirements for the Feed Dryer and Thermal Oxidizer/Boiler

a. i. Only gaseous fuel shall be fired in the affected feed dryers and oxidizer/boiler system.

ii. The maximum fuel firing rate of the affected feed dryers and oxidizer/boiler system shall not exceed 85 and 135 mmBtu/hour, respectively.

b. i. The cyclones for the feed dryers 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 the 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 plant as related to the firing rate of the oxidizer/boiler systems and the control provided for VOM and CO.

ii. During operation of the feed dryers, the key operating parameters of the feed dryers, including the maximum temperature at the inlet of each feed dryer, shall be maintained at levels that are consistent with levels at which emission testing demonstrated compliance with applicable requirements for PM emissions.

c. i. There shall be no bypasses in the duct work connecting the process emission units or the feed dryers to the oxidizer/boiler system.

ii. Process vent streams shall be used as primary combustion air or introduced into the flame zone of the oxidizer/boiler system, as defined by 40 CFR 60.661.

d. The oxidizer/boiler system shall be operated whenever the feed dryers and other emission units that are controlled by the oxidizer/boiler system are in operation, as the oxidizer/boiler system serves as the control device for CO and/or VOM emissions from these units.

i. The combustion chamber of the oxidizer/boiler system shall be heated and maintained at the manufacturer’s recommended temperature prior to beginning operation of the process emission units and feed dryers that it controls.

ii. During periods when feed is present in dryers or emissions from other units are vented to the oxidizer/boiler systems, other than periods of shutdown, the minimum combustion chamber temperature of each oxidizer/boiler system shall be maintained at a temperature that is consistent with the manufacturer's recommended temperature or at which emission testing demonstrated compliance with applicable requirements.

iii. During shutdown of dryers and other units served by the oxidizer/boiler systems, the combustion chamber temperature of the oxidizer/boiler system need not comply with the above requirements and may instead be operated in accordance with good air pollution control practice as addressed by the Permittee in its written procedures for shutdown of the oxidizer/boiler systems and associated units.

e. Written procedures for the operation, maintenance, and monitoring of the oxidizer/boiler system shall be kept in the boiler control room. 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.

f. Notwithstanding Conditions 2.4-1(b)(ii) and (d)(ii), for the purpose of evaluation of the feed dryers and oxidizer/boiler system and further emission testing, the Permittee may operate the feed dryers and the oxidizer/boiler system at different levels of operating parameters and a lower combustion chamber temperature, respectively, in accordance with a detailed plan describing the evaluation and testing program submitted to and approved by the Illinois EPA.

2.4.2-2 Operating Requirements for the Feed Coolers and Baghouses

a. i. The feed cooler shall be operated in a manner such that flow of exhaust between the cooler and feed dryers is into the dryers, e.g., the feed cooler operates at higher pressure than the feed dryers or a seal system normally prevents exhaust flow with the hot feed into the cooler.

ii. The feed cooler discharge shall be routed through a baghouse prior to discharge to the atmosphere.

b. The Permittee shall operate the baghouses for the affected operations 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.

c. The Permittee shall operate and maintain 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 manufacturer's 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.

2.4.3 Emission Limitations

a. i. The VOM emissions from feed dryer and other emission units that are controlled by the oxidizer/boiler system shall be controlled by at least 98 weight percent (comparing the VOM entering and exiting the oxidizer/boiler system) or to a concentration of no more than 20 ppmv as measured at the exit of the oxidizer/boiler system, whichever is less stringent.

ii. The CO emissions from the feed dryer shall be controlled by at least 90 weight percent or to a concentration of no more than 100 ppmv, whichever is less stringent, determined in the same manner as above.

b. i. VOM and CO emissions of distillation process, feed dryers, certain other process units (mixer, slurry tank, flash tank, yeast tank, and centrate tank) that are controlled by the oxidizer/boiler system

and combustion emissions from the oxidizer/boiler system, combined shall not exceed the following limits. Compliance with these limits shall be determined at the exhaust of the oxidizer/boiler system, as it is used as the control device for these units, based on emission testing and monitoring as required elsewhere by this permit, and from operation of the oxidizer/boiler system and the units which it controls.

Pollutant	Pounds/Hour	Tons/Year
VOM	5.88	25.76
CO	21.30	93.44

These limits are based on information in the application for maximum VOM emissions from the emission units controlled by the oxidizer/boiler system and fuel combustion, and oxidizer/boiler system VOM and CO destruction efficiency of 98% and 90%, respectively for process emissions.

ii. Emissions of the oxidizer/boiler system (including both process and fuel combustion emissions) shall not exceed the following limits:

Pollutant	Emissions	
	Pounds/Hour	Tons/Year
NO_x	21.50	94.17
CO	See Condition 2.4.3(b)(i)	
SO_2	0.14	0.58
PM	4.58	20.03
VOM	See Condition 2.4.3(b)(i)	

These limits are based on information in the application including maximum firing rates (135 mmBtu/hour for the oxidizer/boiler system and 42.5 mmBtu/hour for each of the dryer exhausted to the oxidizer/boiler system), emission factors, nominal 90% control efficiency for process PM emissions, and continuous operation.

c. VOM emissions for feed cooling shall not exceed 3.32 lb/hour and 14.54 tons/year. These limits are based on information in the application for maximum emissions including VOM factor for feed cooling (0.2 lbs/ton) and continuous operation.

d. i. A. Emissions of VOM from the wet cake transfer and loadout operation shall not exceed 0.0018 tons/month, 0.02 tons/year and 0.03 tons per 10,000 tons of wet feed shipped.

B. For each 10,000 tons of wet cake shipped from the plant during a 12-month period, the annual VOM emissions from the dryers and feed cooler, as allowed by this permit, shall be reduced by 0.03 tons.

ii. This permit is issued based on negligible PM emissions from the wet cake transfer and loadout operation. For this purpose, PM emissions shall not exceed 0.1 lbs/hour and 0.44 tons/year.

2.4.4 Testing Requirements

a. Upon written request by the Illinois EPA, the Permittee shall perform opacity observation in accordance with the methods and procedures specified by Condition 3.1 for affected units as specified in such request.

b. Upon request by the Illinois EPA, the Permittee shall conduct measurements of the air pressures in the feed dryers and feed cooler during representative operation of these units.

2.4.5-1 Monitoring Requirements

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

B. The Permittee shall install, calibrate, maintain and operate a CO continuous emission monitoring system on the exhaust from the oxidizer/boiler system within one year after the initial emission testing required by Condition 3.1 unless this testing or further testing conducted by the Permittee demonstrates that the unit normally complies with CO limits in Condition 2.4.3 by a margin of at least 25 percent or the Illinois EPA approves further time for the Permittee to achieve this performance.

Note: Because the CO continuous emission monitoring system was installed, the hourly limits on CO emissions in Condition 2.4.3(b) shall apply on a 6-hour average.

ii. A. This monitoring system shall be operated during all periods of operation of the combustion unit except for continuous emission monitoring system breakdowns and repairs. The Permittee shall comply with applicable requirements of 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 NO_x monitoring systems to address the NO_x contained in the exhaust stream from the feed dryers.

B. The Permittee shall maintain records for the continuous monitoring systems, 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 requirements for CO monitoring systems 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. i. The Permittee shall equip the oxidizer/boiler system with a continuous monitoring device for combustion chamber temperature.

ii. The Permittee shall either equip the oxidizer/boiler system with device(s) to indicate flow of principle process vent stream(s) to the unit or equip the emergency releases for such streams, if any, with device(s) to indicate flow through the emergency release, which device(s) shall record such information at least once every hour.

iii. These devices shall be installed, calibrated, and maintained according to the supplier’s

specifications and shall be operated at all times that the system is in use.

2.4.5-2 Instrumentation Requirements

a. The Permittee shall install, operate, and maintain instrumentation to measure the operating temperature of the feed dryer.

b. The Permittee shall install, operate, and maintain instrumentation to record natural gas usage by the feed dyer and oxidizer/boiler system, which data shall be recorded on at least monthly basis.

2.4.6 Recordkeeping Requirements

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

a. A file containing:

i. Design information for the feed dryer and oxidizer/boiler system, with supporting documentation:

A. The design heat input of the dryer (million Btu/hour).

B. Moisture removal capacity of the feed dryer, lbs water/hour.

C. Continuous monitoring devices.

ii. The values of the operating parameters for the feed dryer and oxidizer/boiler system within which equipment will be operated, as required by Condition 2.4.5-1(a), with explanation and supporting documentation.

b. Records to be kept for each operating day, pursuant to the NSPS, 40 CFR 60, Subpart Db:

i. Calendar date. [40 CFR 60.49b(g)(1)]

ii. Total natural gas usage for boiler (ft^3/day). [40 CFR 60.49b(d)]

iii. The average hourly NO_x emission rates (expressed in lbs/million Btu heat input) measured. [40 CFR 60.49b(g)(2)]

iv. The 30-day average NO_x emission rates (lbs/million Btu heat input) calculated at the end of each operating date from the measured hourly NO_x emission rates for the preceding 30 operating days. [40 CFR 60.49b(g)(3)]

v. Identification of the operating date when the calculated 30-day average NO_x emission rates are in excess of the NO_x emissions standards under 40 CFR 60.44b, with the reasons for such excess emissions as well as a description of corrective actions taken. [40 CFR 60.49b(g)(4)]

vi. Identification of the operating days for which pollutant data have not been obtained, including reasons for not obtaining sufficient and a description of corrective actions taken. [40 CFR 60.49b(g)(5)]

vii. Identification of the times when emission data have been excluded from the calculation of average emission rates and the reasons for excluding data. [40 CFR 60.49b(g)(7)]

viii. Identification of the times when the pollutant concentration exceeds full span of the continuous monitoring system. [40 CFR 60.49b(g)(8)]

ix. Description of any modifications to the continuous monitoring system that could affect the ability of the continuous monitoring system to comply with Performance Specification 2 or 3. [40 CFR 60.49b(g)(9)]

x. Results of daily CEMS drift tests and quarterly accuracy assessments as required under Appendix F, Procedure 1 of 40 CFR 60. [40 CFR 60.49b(g)(10)]

c. Calculations of the annual capacity factor, determined on a 12-month rolling average basis with a new annual capacity factor calculated at the end of each calendar quarter, per quarter. [40 CFR 60.49b(d)]

d. Records for feed production from the plant (tons/month and tons/year, as shipped, by type of feed, e.g., dry or wet).

e. The following logs for affected units:

i. Operating log(s), in accordance with Condition 3.3(c), which for the feed dryer shall also include periods when feed is present in a dryer

while the associated oxidizer/boiler system not in operation.

ii. Inspection, maintenance, and repair log(s) in accordance with Condition 3.3(d).

f. The following records related to emissions:

i. Documentation for the emission rates or factors and maximum hourly emission rates used by the Permittee to determine PM, SO_2, VOM, CO* and HAP** emissions of the affected oxidizer/boiler system and the various affected units.

ii. Records of all other data, not addressed above, used or relied upon by the Permittee to determine emissions of the affected units.

iii. Records for upsets in the operation of the feed dryer, other affected units or the oxidizer/boiler systems 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 emissions that occurred, with supporting calculations and background information.

iv. Records of the PM, SO_2, VOM, CO* and HAP** emissions from the feed dryer and other units controlled by the oxidizer/boiler system (tons/month and tons/year), based on appropriate operating data for the oxidizer/boiler system and appropriate emission factors based on testing of the system and other published emission factors, with supporting calculations. These records shall be compiled on at least a quarterly basis.

* If continuous emissions monitoring is conducted for CO, the Permittee shall conduct recordkeeping for CO emissions in accordance with Condition 2.4.5.

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

v. The Permittee shall keep records of the PM, VOM, and HAP emissions from the feed cooler (tons/month and tons/year) based on operating records and appropriate emission factors, with supporting calculations.

g. The Permittee shall maintain records for the repaired or replaced Dryer B to demonstrate that the repairs to or replacement of this dryer did not result in an increase in the design feed drying capacity of the plant above that originally permitted in Construction Permit 02080027.

2.4.7 Reporting Requirements

a. The Permittee shall submit excess emission reports to the Illinois EPA for the thermal oxidizer/boiler system for any calendar quarter during which there are excess emissions from the unit. If there are no excess emissions during the calendar quarter, the Permittee shall submit a report semiannually stating that no excess emissions occurred during the semiannual reporting period.

b. For NO_x emissions from the oxidizer/boiler system, excess emissions are defined as any calculated 30-day rolling average NO_x emission rate, as (1) determined under 40 CFR 60.46b(e), that exceeds the applicable NSPS standard, and (2) any 3-hour block average NO_x emission rate that exceeds the hourly NO_x limitation in Condition 2.4.3(b)(ii).

c. i. For VOM and CO emissions from the oxidizer/boiler system, excess emissions are defined as any 3-hour block average in which the average combustion chamber temperature, when process units controlled by the system are operating, was more than 50°F below the temperature during testing than demonstrated compliance with applicable requirements.

ii. Not withstanding the above, when continuous emission monitoring is conducted for CO emissions from the oxidizer/boiler system, excess emissions are defined as any 6-hour block average in which the average emissions from CO continuous monitoring system exceeds the hourly limits in Condition 2.4.3(b).

d. i. 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. The feed dryer operates for more than one hour (60 minutes) when the combustion

chamber of the oxidizer/boiler is more than 50°F below the temperature during testing that demonstrated compliance with applicable requirements. (See Condition 2.4.2-1(c).)

B. If there is an exceedance of applicable CO emission limit for the oxidizer/boiler system, as determined by the monitoring required by Condition 2.4.5-1 that lasts longer than six hours (360 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.

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

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

ii. 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).

e. In addition to the reporting required above, the Permittee shall immediately notify the Illinois EPA if the feed dryer is normally being operated by the plant to produce dry feed and is out of service for a period of 24 hours or more, so as to result in above normal levels of wet feed production. This notification shall explain how wet feed is being managed during the outage of the feed dryer.

2.5 Storage Tanks

2.5.1 Applicable Regulations

a. The "affected tanks," for the purposes of these unit specific conditions are the storage tanks for undenatured ethanol, denaturant, and denatured ethanol at the plant.

b. Ethanol and denaturant tanks (T61 through T65) are subject to the NSPS for Volatile Organic Liquid Storage Vessels, 40 CFR, Subpart Kb. Pursuant to the NSPS, these tanks shall be equipped with an internal floating roof with one of the following closure devices pursuant to the NSPS, 40 CFR 60.112b(a)(1)(ii):

   i. A foam-filled or liquid-filled liquid mounted seal;

   ii. Two continuous seals; or

   iii. A mechanical shoe.

c. The affected tanks are subject to the control requirements of 35 IAC 215.122(b), 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)]

d. For the affected tanks, this permit does not address the control requirements of 35 IAC 215.120, 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 215.120, 215.127, and 215.128, following the review of the requirements of 40 CFR 60 Subpart Kb and 35 IAC 215.120, 215.127, and 215.128.

2.5.3 Operating Requirements

a. Each affected tank is limited to the storage of ethanol or denaturant.

b. Each 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 gaskets no longer close off. [40 CFR 60.113b(a)(3)(ii) and (a)(4)]

2.5.3 Emission Limitations

VOM emissions from the affected storage tanks, combined shall not exceed 3.16 tons/year. Emissions from the affected tanks shall be determined based on operating information for the tanks and the USEPA's TANKS program.

2.5.4 Inspection Requirements

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

a. For affected tanks 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 2.5.10 (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 each tank equipped with double-seal system: [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. 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)]

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 2.5.10(b))

2.5.5 Recordkeeping Requirements

a. The Permittee shall fulfill the applicable recordkeeping requirements of 40 CFR 60.115b for storage tanks that are subject to the NSPS, pursuant to 40 CFR 60.115b(a), as follows:

i. Keep a record of each Annual and Out-of-Service Inspection performed.

A. The date the inspection was performed;

B. Who performed the inspection;

C. The method of inspection;

D. The observed conditions of each feature of the internal floating roof (seals, roof

decks, and fittings), with the raw data recorded during the inspection; and

E. Summary of compliance.

ii. The Permittee shall maintain record of the following for each tanks to demonstrate compliance with the Out-of-Service Inspection requirements:

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.

iii. The Permittee shall keep the operating records required by 40 CFR 60.116b for each tank, as follows:

Records of the liquid stored, the period of storage, and the maximum true vapor pressure of that liquid during the respective storage period.

b. The Permittee shall keep records of the material throughput for each storage tank (gallons/month and gallons/year, by type of material).

c. The Permittee shall keep records of VOM and HAP emissions from storage tanks (tons/year), as determined using published USEPA emission estimation methodology, such as the TANKS Program, with supporting calculation.

2.5.6 Reporting Requirements

a. For each storage tank subject to the NSPS, the Permittee shall submit written notifications and reports to the Illinois EPA as required by the NSPS, as follows:

i. A report identifying any deficiencies or shortcomings identified in the Annual Inspection within 30 days of inspection. This report shall include the information specified in 40 CFR 60.115b(a)(3).

ii. Notification at least 30 days prior to refilling an affected tank for which an Out-of-Service inspection is to afford the Illinois EPA with the opportunity to have an observer present.

iii. If the inspection is not planned and the Permittee could not have known about refilling the tank 30 days in advance, a shorter notification may be accepted as provided for in 40 CFR 60.113b(a)(5).

iv. A report identifying any deficiencies or shortcomings identified in the Out-of-Service Inspection within 30 days of the inspection. This report shall include the information specified in 40 CFR 60.115b(a)(4).

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 requirements which is not repaired or otherwise corrected within 24 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 Loading Racks

2.6.1 Applicability Provisions and Applicable Regulations

a. The “affected loading racks,” for the purpose of these unit-specific conditions are the racks for loading out ethanol product from the plant.

b. This permit is issued based on the loadout of ethanol not being subject to applicable requirements for handling of gasoline because the vapor pressure of the product ethanol is less than 4.0 psi.

c. The affected loading racks are not required to use submerged loading pipes or submerged fill pursuant to 35 IAC 215.122(a). This is because the Illinois EPA has determined that equivalent or greater control of emissions will be provide because each affected loading rack must be equipped and operated with vapor collection and control equipment.

2.6.2 Operating Requirements

a. i. The loading of all transport tanks (tank truck, tank trailers, and rail cars) shall be conducted using bottom filling or submerged loading.

ii. The vapor displaced from the transport tanks by ethanol loadout shall be vented to the flare system.

b. The flare system shall be designed and be operated to comply with applicable requirements of 40 CFR 60.18, including:

i. The flare shall be operated with no visible emissions as determined by the methods specified in 40 CFR 60.18(f)(1), except for periods not to exceed a total of 5 minutes during any 2 consecutive hours.

ii. The flare shall be operated with a flame present when vapors displaced by ethanol loadout are being vented to it, as determined by the methods specified in 40 CFR 60.18(f)(2).

iii. The flare shall be used only with the net heating value of the gas being combusted being 300 Btu/scf or greater. The net heating value of the gas being combusted shall be determined by the methods specified in 40 CFR 60.18(f)(3). Note: Natural

gas or other gaseous fuel may be added to the displaced vapors to comply with this requirement.

iv. The flare shall be operated with an exit velocity less than the maximum allowable velocity, V_{max}, as determined by the method specified in 40 CFR 60.18(f)(6).

v. The flare shall be monitor to ensure that it is operated and maintained in conformance with the manufacture's design, as required by 40 CFR 60.18(d).

c. The affected loading racks and associated vapor collection and flare system shall be operated in accordance with good air pollution control practice to minimize emissions, including the following practices:

i. All loading and vapor return lines shall be equipped with fittings that are designed to be liquid and vapor tight.

ii. The loading racks shall be operated in a manner that prevents avoidable leaks of liquid during loading and any liquid drainage from the loading devices when a rack is not in use.

iii. The vapor collection systems shall be operated in a manner that prevents the gauge pressure from exceeding 18 inches of water and the vacuum from exceeding 6 inches of water during loading operations, as measured at a pressure tap or equivalent installed on each vapor collection system that is located as close as practicable to the vapor hose connection.

d. For each railcar, within 5 minutes after starting loading, the Permittee shall inspect the connection between the vapor collection system at the plant and the railcar for the presence of leaking vapor as determined by sound, sight, smell or a portable organic vapor analyzer. If a leak is identified, the Permittee shall:

i. Record the presence of a leak, including date, description of the leak, cause or likely causes, and identity of the rail car, if the leak is due to components on the railcar.

ii. Take action to repair the condition causing the leak, either promptly repairing or replacing the fitting or gasket of the vapor collection system or initiating action to have the fitting or gasket

of the rail car repaired or replaced, as appropriate.

iii. Record the completion of the repair, including the nature of the repair(s) and when it was completed.

e. i. The Permittee shall operate and maintain the affected loading racks and associated control systems in accordance with written procedures developed and maintained by the Permittee. These procedures may incorporate or reference other printed procedures, e.g., the provided by the equipment supplier or the company operating the transport vehicles.

ii. The Permittee shall keep a copy of the operating and maintenance procedures for the control systems provided by the supplier at a location at the plant where they are readily accessible to the individuals who are responsible for operation and maintenance of these systems.

f. The amount of ethanol loaded out by truck shall not exceed 52.0 million gallons per year.

2.6.4 Emission Limitations

a. This permit is issued based on the control systems for the affected loading racks achieving at least the following nominal efficiencies:

i. Vapor collection system for trucks: 98.7 percent capture efficiency, assuming that the prior cargo handled by a truck was gasoline, or otherwise 95 percent capture efficiency if the prior cargo was ethanol.

ii. Vapor collection system for rail cars: 95 percent capture efficiency.

iii. Flare: 98 percent destruction efficiency.

b. i. The total organic compound emissions from the affected loading racks shall not exceed 0.34 and 0.18 pounds per 1000 gallons of material loaded to truck and railcars, respectively. These rates shall also include those emissions not captured or controlled.

ii. Emissions of VOM and HAP from the affected loading racks shall not exceed the following limits. These limits are based on the information provided

in the permit application including emissions from combustions of fuel in the flare, maximum ethanol loadout to the truck of 52 million gallons per year, and nominal captured and control efficiencies as listed in Condition 2.6.4(a).

Pollutant	Emission Limits	
	Tons/Month	Tons/Year
VOM	0.88	8.86
Acetaldehyde	0.002	0.02
Individual HAP, Other Than Acetaldehyde	0.001	0.01
Total HAPs, Other Than Acetaldehyde	0.002	0.02

iii. Compliance with these limits shall be determined using published USEPA Methodology for calculating VOM emissions from loadout of volatile organic liquids. For this purpose, as related to VOM from loadout to transport vehicles other than railcars, unless the Permittee maintains a record of the previous cargo of a transport vehicle and how this cargo was unloaded, i.e., with or without a vapor balance system, the VOM emissions from loadout into such vehicle shall be calculated as if the previous cargo was gasoline, which was unloaded with a vapor balance system.

Note: A similar provision for loadout to railcars is not established because standard practice for handling of ethanol by rail currently involves use of railcars that are dedicated to transport of ethanol and unloading facilities at receiving sources that are not equipped with vapor balance systems.

c. Emissions of NO_x and CO from the flare associated with the affected loading racks shall not exceed the following limits:

Pollutant	Emission Limits	
	(Tons/Month)	(Tons/Year)
NO_x	0.22	2.20
CO	0.37	3.69

d. This permit is issued based on minimal emissions of PM and SO_2 from the flare. For this purpose, emissions of each pollutant shall not exceed a nominal emission rate of 0.44 tons/year.

2.6.5 Inspection Requirements

On at least a semi-annual basis, while ethanol is being loaded out from the plant, the Permittee shall conduct inspections of the vapor collection system at the plant and the transport vehicles that are being loaded (including the connection between the plant and the transport vehicle) for the presence of leaking organic vapors. These inspections shall be conducted using USEPA Method 21 and relevant procedures of 40 CFR Part 60, Subpart VV for connectors and closed vent systems. The Permittee shall keep records for these inspections in accordance with relevant recordkeeping provisions of 40 CFR 60, Subpart VV.

2.6.6 Recordkeeping Requirements

a. The Permittee shall maintain records of the following for loading racks:

   i. The identification and properties of each product distributed through the loading rack, as related to emissions, i.e., storage temperature, vapor pressure and molecular weight;

   ii. The amount of each product distributed through the loading rack, gallons/month and gallons/year, with annual records updated each month by totaling the throughput for that month plus preceding 11 months; and

   iii. Confirmation that the flare functioned properly, i.e., a flame was present and no visible emissions were observed except as allowed by 40 CFR 60.18(f)(1).

b. The Permittee shall maintain records of the following for the loading racks and associated flare:

   i. The presence of a pilot flame.

   ii. The use of an affected loading rack for loading when there was no pilot flame present in the associated flare, including:

      A. The date and time of the loading;

      B. The specific problem with the flare, or flame monitor;

      C. Amount of material loaded;

      D. The reason that loading occurred even though the flare did not have a pilot flame;

E. Corrective action taken; and

F. Action taken to prevent or reduce the likelihood of future occurrences.

iii. Implementation of the alternative flare scenarios:

A. Identification of the scenario implemented;

B. The reason why the main flare was shutdown; and

C. The date and time that the alternative operating scenario was implemented.

c. The Permittee shall keep records for each leak inspection for the loadout system that shall include, as a minimum, the following information:

i. Date of inspection;

ii. Findings (may indicate no leaks discovered; or location, nature, and severity of each leak);

iii. Leak determination method;

iv. Corrective action, including the date each leak was repaired and the reasons for any repair interval in excess of 5 days; and

v. Name and signature of the person that performed the inspection.

d. The Permittee shall maintain records of the total annual emissions of PM, NO_x, CO, VOM and HAP from each loading rack (tons/month and tons/year), with supporting calculations. Emissions data shall be compiled on at least a quarterly basis utilizing a published USEPA methodology, assuming 98 percent destruction if the flare is operated in accordance with Condition 2.6.4(a).

2.6.7 Reporting Requirements

a. The Permittee shall promptly notify the Illinois EPA of any deviations from the requirements of this permit for the affected loading rack 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 one hour, the Permittee shall

immediately notify the Illinois EPA. For this purpose, an exceedance shall be considered to continue even if operation of the loading rack is interrupted if the exceedance condition is still present when operation is resumed.

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

2.7 Bio-methanator

2.7.1 Applicability Provisions and Applicable Regulations

The bio-methanator is subject to 35 IAC 212.321. [Refer to Condition 2.2.1(c)]

2.7.2 Non-Applicability of Regulations of Concern

None

2.7.3 Operating Requirements

The exhaust from the bio-methanator shall be vented to the flare if bio-gas generated is not used as fuel at the plant.

2.7.4 Emissions Limitations

a. Emissions from the bio-methanator, excluding emissions associated with use of bio-gas in the dryer, shall each not exceed the following limits:

Pollutant	Emission Factor Lbs/million Btu	Emission Rate	
		Lbs/Hour	Tons/Year
NO_x	0.068	0.04	0.19
CO	0.370	0.24	1.04
VOM		0.11	0.50

These limits are based on the information provided in the permit application including standard emission factors and annual operation of the flare for disposal of bio-gas with 10 percent capacity factor.

b. This permit is issued based on minimal emissions of PM and SO_2 from the flare. For this purpose, emissions shall not exceed a nominal emission rate of 0.1 pound/hour and 0.44 tons/year.

2.7.5 Testing Requirements

None

2.7.6 Monitoring Requirements

The flare shall be equipped with a monitor or other device to confirm presence of a flame if bio-gas is being sent to the flare.

2.7.7 Recordkeeping Requirements

a. A file containing estimates of the maximum and typical rates of bio-gas generation, (cubic feet and million

Btu/hr) and the typical heat content of the bio-gas (BTU/scf) with supporting data and calculations.

b. A file containing estimates of the typical rate of gas consumed by the pilot flame for the flare, if any.

c. Records for the actual amount of bio-gas generated by the bio-methanator (scf/month and scf/year), with supporting calculations.

d. The following records related to flaring of bio-gas:

i. Each period when bio-gas is flared, with date, duration and explanation.

ii. The actual amount of bio-gas directed to the flare during these periods, if the Permittee estimates emissions from the bio-methanator for only bio-gas actually directed to the flare (rather than assuming that all bio-gas that is generated is flared), with supporting calculations.

iii. Each period when the flare operated without a flame present in the flare, including explanation and the amount of biogas exhausted through the flare during such period, with supporting calculations.

e. Records on at least an annual basis of the NO_x, VOM, CO, PM and SO_2 emissions from the bio-methanator, with supporting documentation and calculations.

2.7.8 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 the bio-methanotor is damaged so there is a deviation from an applicable requirement that is not repaired or otherwise corrected within 12 hours, the Permittee shall then notify the Illinois EPA within 5 days after the deviation.

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

2.8 Leaking Components

2.8.1 Applicable Regulations

a. The “affected components” for purpose of these unit-specific conditions are equipment, such as valves, flanges, pressure relief devices, sampling connections, open ended lines, etc., involved with the fermentation, distillation and subsequent handling of ethanol and denaturant, which generate VOM emissions when they leak.

b. i. Components in volatile organic compound service in the Fermentation and Distillation process units are subject to the NSPS for Equipment Leaks of VOC in the Synthetic Organic Chemical Manufacturing Industry (SOCMI), 40 CFR 60, Subparts VV.

ii. The Permittee shall implement a leak detection and repair program, including associated recordkeeping and reporting in accordance with applicable provisions of 40 CFR 60.480 through 60.488. Note: If the plant has more than 1500 components in gas or light liquid service, the leak detection and repair program must also satisfy applicable requirements of 35 IAC Part 215, Subpart Q, Leaks.

2.8.2 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 plant 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.

2.8.3 Control Requirements

a. For affected components, that are subject to 40 CFR 60, Subpart VV, the Permittee shall follow the work practice and operating 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.

b. 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.

2.8.4 Applicable Emission Limitations

VOM emission from equipment leaks shall not exceed 4.10 tons/year. This limit is based on emission estimates of all the affected components at the plant. Compliance with this limit shall be determined on an annual basis.

2.8.5 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.

2.8.6 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, relief device, etc.);

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. Records on at least an annual basis for the VOM and HAP emissions attributable to leaking components, with supporting documentation and calculations. These records shall be compiled on at least a quarterly basis.

2.8.7 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.

2.9 Cooling Tower

2.9.1 Applicable Regulations

The cooling tower is subject to 35 IAC 212.321. [Refer to Condition 2.2.1(c)]

2.9.2 Operational and Production Limits and Work Practices

a. The cooling tower shall be equipped with drift eliminators with a design drift loss of no more than least 0.005 percent.

b. The total dissolved solids (TDS) content of the water circulated in the cooling tower shall not exceed 2500 ppm, annual average.

c. i. Only non-VOC additives shall be used in the cooling tower.

ii. Process water or wastewater shall not be introduced into the cooling water, other than through unintentional leaks, which shall promptly be repaired.

2.9.3 Emission Limitations

PM emissions from the cooling tower shall not exceed 4.60 tons/year. Compliance with this limit shall be based on emissions determination published by USEPA.

2.9.4 Sampling and Analysis Requirement

a. The Permittee shall sample and analyze the water circulated in the cooling tower on at least a semi-annual basis for the TDS concentration, taking either grab samples or a daily composite sample of the water.

b. The Permittee shall keep records for this sampling and analysis activity, including documentation for sampling and analysis as well the resulting data that is collected.

2.9.5 Recordkeeping Requirements

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

a. A file containing:

i. The manufacturer’s specifications or design data for the affected unit, including water circulation

rate (gallons/hour) and design loss rate of the drift eliminators (percent), with supporting documentation.

ii. The maximum PM emissions from the cooling tower (tons/year), based on maximum operating rate of the cooling tower and factors that with greatest loss of PM as emissions, with supporting calculations.

b. Records for the actions used to routinely verify the solids contents of the water circulating in the cooling tower, such as sampling and analysis in accordance with the NPDES permit, periodic grab sampling and analysis, conductivity measurements, etc., including:

i. If routine verification will not be conducted pursuant to the NPDES permit, a written description of the procedures, with explanation of how they act to address compliance.

ii. Records for implementation of the procedure, including measured value(s) of relevant parameter(s).

c. Records for the amount of water circulated in the cooling tower, gallons/month, with supporting calculations.

d. The following logs for the affected units:

i. Operating log(s), in accordance with Condition 3.3(c).

ii. Inspection, maintenance and repair log(s) in accordance with Condition 3.3(d).

e. Records for the PM emissions from the cooling tower (tons/month and tons/year), with supporting documentation and calculations.

2.9.6 Reporting Requirements

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

i. If the affected unit is damaged so there is a deviation from an applicable requirements that is not repaired or otherwise corrected within 24

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.

2.10 Roadways and Other Sources of Fugitive Dust

2.10.1 Applicability Provisions and Applicable Regulations

a. The "affected operations" for the purpose of these unit-specific conditions are roadways, parking lots and other open areas at the plant as they may emit fugitive dust (PM) due to vehicle traffic and wind erosion.

b. Visible emissions of fugitive particulate matter from any process, including material handling or storage activity, shall not be present beyond the property line of the source, pursuant to 35 IAC 212.301. [See also Condition 1.3(a)]

c. The yard and driveway of the elevator shall be asphalted, oiled or equivalently treated to control dust pursuant to 35 IAC 212.461(b)(iv).

2.10.2 Non-Applicability of Regulations of Concern

The affected operations are not subject to the requirements of 35 IAC 212.321 because of the disperse nature of these emissions units. [35 IAC 212.323]

2.10.3 Operational and Production Limits and Work Practices

a. The Permittee shall follow good air pollution control practices to minimize fugitive dust from plant roads, parking areas, and other open areas of the plant. These practices shall provide for pavement on all regularly traveled entrances and exits to the plant and treatment (sweeping, application of water, use of dust suppressant, vacuuming, etc., when necessary) of paved and unpaved roads and areas that are routinely subject to vehicle traffic as necessary to prevent nuisance emissions of dust.

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 2.10.3(a) and 2.10.4, to control fugitive dust at each area of the plant with the potential to generate significant quantities of fugitive dust. This program shall include: (1) 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; (2)a description of the emissions

control technique (e.g., water spray surfactant spray, water flushing, or sweeping), that will routinely be implemented; (3) triggers for implementation of additional control, e.g., observation of extended dust plumes following passage of vehicles; and (4) the estimated effectiveness of the various control techniques in reducing PM emissions, with supporting documentation.

ii. The Permittee shall submit a copy of a revised fugitive dust control program to the Illinois EPA for review within 90 days as follows:

A. A revised program that includes such control measures for fugitive dust as may be needed to assure compliance with Condition 2.10.6 shall be submitted if:

I. The projected maximum total PM emissions, based on the records required by Condition 2.10.6(a)(ii) are more than 90 percent of a limit in Condition 2.10.4; or

II. Total PM emissions from the affected operations exceed the limit in Condition 2.10.5.

B. A revised program that corrects observed deficiencies in the control program shall be submitted if the Illinois EPA makes a written request for a revised program, citing deficiencies in the current program.

2.10.4 Emission Limitations

Fugitive dust (PM emissions) from the affected operations shall not exceed 7.33 tons/year. Compliance with this limit shall be based on standard emission factors published by USEPA.

2.10.5 Operational Measurements

a. Upon written request by the Illinois EPA, the Permittee shall conduct measurements of the silt loading on various affected roadway segments and parking areas, as specified in the request, as follows, which measurements shall be completed within 75 days of the Illinois EPA's request:

i. Sampling and analysis of the silt loading shall be conducted using the “Procedures for Sampling Surface/Bulk Dust Loading,” Appendix C.1 in *Compilation of Air Pollutant Emission Factors*, USEPA, AP-42. A series of samples shall be taken to determine the average silt loading and address the change in silt loadings as related to the amount and nature of vehicle traffic and implementation of the operating program.

ii. The Permittee shall submit test plans, test notifications and test reports for these measurements as specified by Condition 3.1.

2.10.6 Recordkeeping Requirements

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

a. A file containing:

i. The Permittee’s assumptions, with supporting explanation, for quantity and nature of vehicle traffic at the plant, including truck traffic related to the receipt of raw materials and loadout of products and employee and other vehicle traffic involved in the routine operation of the plant.

ii. The maximum PM emissions from the affected operations (tons/year, as PM and as PM_{10}), with supporting calculations, based on the maximum vehicle traffic at the plant (as recorded above), the silt loading on the different classes of roadways at the plant, and the effectiveness of the current fugitive dust control program (as addressed in Condition 2.10.3(b).

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

i. For each dust control treatment of roadway(s): the date and time; the reason for treatment, if not routine; the identity of the roadway(s)treated; the type of treatment; the identity of the treatment vehicle or equipment; and a description of any unusual observations or events related to control of dust that occurring during treatment; and

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 of the amount of different material received or shipped from the plant by rail (gallons or tons, by type of material).

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

2.11 Corn Oil Separation System

2.11.1 Applicability Provisions and Applicable Regulations

a. i. The “affected system” for the purpose of these unit specific conditions consists of the tricanter, thick syrup storage tank, oil storage tanks, and oil loadout operation.

ii. The “affected tanks” for the purpose of these unit specific conditions are the thick syrup storage tank and the oil storage tanks.

b. The tricanter is subject to 35 IAC 215.301. (Refer to Condition 2.3.1(c))

2.11.2 Non-Applicability of Regulations of Concern

a. The affected tanks are not subject to NSPS 40 CFR 60 Subpart Kb: Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984. This is because Subpart Kb does not apply to storage vessels storing a liquid with a maximum true vapor pressure less than 3.5 kilopascals (approximately 0.5 psia). [40 CFR 60.110b(b)]

b. The affected tanks are not subject to 35 IAC 215.121: Storage Containers. This is because these tanks store material with a vapor pressure less than 17.24 kPa (2.5 psia) or have a capacity less than 40,000 gallons.

c. This permit is issued based on the affected tanks not being subject to 35 IAC 215.122(b): Loading Operations. This is because they will not contribute to an odor nuisance and store only materials with a vapor pressure less than 2.5 psia at 70°F.

d. This permit is issued based on the oil loadout operation not being subject to 35 IAC 215.122(a): Loading Operations. This is because the loading operation will not contribute to an odor nuisance and will load only materials with a vapor pressure less than 2.5 psia at 70°F.

2.11.3 Operational and Emission Limitations

a. The maximum vapor pressure of the material stored in the affected tanks shall not exceed 0.1 psia at 70°F.

b. This permit is issued based on minimal emissions of VOM and HAPs from the affected system. For this purpose, emissions of VOM shall not exceed 0.1 pounds/hour and 0.44 tons/year. Emissions of HAPs shall not exceed 0.01 pounds/hour and 0.044 tons/year.

2.11.4 Recordkeeping Requirements

a. The Permittee shall maintain records of the amount of corn oil recovered by the affected system, determined as the amount of oil shipped from the plant.

b. The Permittee shall maintain an operating log or other operating records for the affected system that, at a minimum, include the following information:

i. Information identifying periods when the system is in service.

ii. For periods when the system is in service and operating normally, relevant process information to generally confirm normal operation.

iii. For periods when the system is in service and not operating normally, identification of each such period, with detailed information describing the operation and the potential consequences for additional emissions, with explanation.

c. The Permittee shall maintain an inspection, maintenance and repair log or other similar records for the affected system that, at minimum include the following information:

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

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

iii. For maintenance and repair activity, a description actions taken, reason for action, e.g., preventative measure or corrective action as a result of inspection, and the condition of equipment following completion of the activity.

d. The Permittee shall maintain records of the following items for the affected tanks.

i. Identification of each material stored in each tank.

ii. Vapor pressure of each material stored (psia at 70°F).

iii. Capacity of each affected tank (gallons).

2.11.5 Reporting Requirements

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

a. Storage of a material with vapor pressure in excess of the limit specified in this permit with the length of time this material was stored and the effect on the emission of VOM.

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

3.0. General Conditions

3.1 Emissions Testing

a. Within 45 days of a written request by the Illinois EPA or such later date agreed to by the Illinois EPA, emissions of selected units as specified in the table below, shall be measured during conditions which are representative of maximum emissions:

	Emissions					Efficiency	
Emission Unit/Process	PM	VOM	NO_x	CO	HAP	VOM	CO
Boiler	X	X	X	X	X	X*	X*
Grain Receiving	X						
Fermentation		X			X	X*	
Feed Cooler	X**	X			X		
Dry Feed Loadout	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).

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 Method 5
Volatile Organic Material	USEPA Method 18 and 25A*
Carbon Monoxide	USEPA Method 10
Nitrogen Oxides	USEPA Method 19**
Hazardous Air Pollutants	USEPA Method 18***

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

** Emission testing shall be conducted in conjunction with certification of the emission monitors required by Condition 18(a).

*** USEPA Method 320 may also be used.

c. For purposes of determining compliance with the NSPS standard (Condition 2.4.1(d)):

   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 60.46(e) or the test methods and procedures approved by USEPA on a 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 the 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 based on representative sampling and analysis:

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

e. At least 30 days prior to the actual date of testing, a written test plan shall be submitted to the Compliance Section of the Division of Air Pollution Control for review. This plan shall describe the specific procedures for testing, including as a minimum:

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

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

   iii. The specific determinations of emissions and operation which are intended to be made, including sampling and monitoring locations.

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

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

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

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 thirty (30) days prior to the expected date. Notification of the actual date and expected time of testing shall be submitted a minimum of five (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 Report(s) 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 thirty (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 consumption or throughput, and

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

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.

Note: The provisions related to the initial testing and associated notification and reporting required by above Condition 3.1 have occurred in 2004 and 2005.

3.2 Operation and Maintenance Procedures

a. 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 manufacturer or supplier if a copy of these procedures is attached to the Permittee's procedures.

b. For continuous monitoring devices and operational instrumentation required by this Permit, the Permittee shall keep a copy of manufacturer's or supplier's recommended operating and maintenance procedures and its specifications for the performance of the devices.

3.3 General Requirements for Logs

a. 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.

b. The Permittee shall maintain logs for the operation and maintenance and repair of monitoring devices and other instrumentation required by this permit.

c. Operating logs required by this permit shall, at a minimum, include the following information:

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

ii. For periods when a unit or group of related units is in service and operating normally, relevant process 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) and the potential consequences for additional emissions from unit(s), with explanation.

d. Inspection, maintenance and repair logs required by this permit shall, at minimum, include the following information:

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, and the condition of equipment following completion of the activity.

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 prompt 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.

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

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

ECB:JMS

cc: Region 3

ATTACHMENT A

Listing of Identified Emission Units and Process Equipment

Operation	Emission Unit/ Process Equipment	Emission Control Equipment
Boiler	Gas Boiler (C10)	----
	Boiler Feedwater Tank	----
Corn Receiving/Storage System	Truck and Rail Dump Station	Baghouse (C20)
	Conveyors	Baghouse (C20)
	Elevators	Baghouse (C20)
	Storage Bins	Baghouse (C20)
	Day Bin	Baghouse (C20)
	Hammermill Feed	Baghouse (C20)
Hammermilling Operation	Hammermills	Baghouse (C30,C35)
	Conveyors	Baghouse (C30)
Cooking, Liquification, Fermentation	Mixer	Boiler (C10)
	Slurry Tank	Boiler (C10)
	Cook Water Tank	----
	Recovery Tank	----
	Flash Tank	Boiler (C10)
	Liquification Tanks	----
	Yeast Tank	Boiler (C10)
	Fermenters	CO_2 Scrubber (C40)
	Beer Well	CO_2 Scrubber (C40)
Distillation	Beer Column	----
	Side Stripper	----
	Rectifier Column	----
	190 Proof Condenser	Boiler (C10)
	Molecular Sieve*	----
	200 Proof Condenser	Boiler (C10)
	Mash Screen	----
Solid Separation and Evaporation	Centrifuges*	----
	Centrate Tank	Boiler (C10)
	Evaporators*	----
	Syrup Tank	----
	Thin Stillage Tank	----
	Wastewater Methanators	Dryers or Flare
Feed** Drying and Cooling	Dryers (A and B)	Cyclone/Boiler (C10)
	Cooler	Baghouse
Feed Storage/Loadout	Dry Feed Storage	----
	Truck/Rail Car Loadout	Baghouse (C90)
	Wet Feed Storage & Loadout	----

* Enclosed

** Dry feed may also be referred to as Dried Distillers Grain with Solubles (DDGS).

ATTACHMENT A
(Continued)

Operation	Emission Unit/Process Equipment	Emission Control Equipment
Liquid Storage	190 Proof Storage Tank (T65)	Floating Roof
	200 Proof Storage (T63)	Floating Roof
	Gasoline Denaturant (T64)	Floating Roof
	Denatured Alcohol Storage (T61, T62)	Floating Roof
Ethanol Loadout	Truck Loadout	Flare (F50)
	Railcar Loadout	Dedicated Tankers
Equipment Components (Valves, Flanges, Pumps, Seals, etc.)	Processing of Material Throughout the Source's Piping System	Work Practices and Equipment Replacement
Fugitive/Uncaptured Emissions	Grain Receiving, Handling, Storage Piles, Etc.	----
	Process Building Ventilation	----
	Truck/Railcar Losses	----
	Cooling Tower	----
	Plant Roads and Parking Areas	----
Fire Pump Backup	Diesel Engine	----
Corn Oil System	Tricanter*	----
	Thick Syrup Tank	----
	Oil Storage Tanks	----
	Truck Loadout	----

* Enclosed

ATTACHMENT B

Plant-Wide Emission Limitations (Tons/Year)

Emission Unit(s)	PM/PM_{10}	NO_x	SO_2	CO	VOM
Boiler (Distillation and Feed Drying)	20.03	94.17	0.58	93.44	25.76
Corn Unloading & Grain Handling	17.04				
Hammermill	7.36				
Fermentation-CO_2 Scrubber					35.90
Feed Cooler	16.52				14.54
Feed Loading	2.39				
Storage Tanks					3.16
Ethanol Loading		2.20		3.69	8.45
Biomethanator	0.05	0.19	0.02	1.04	0.50
Cooling Tower	4.60				
Component Leaks					4.10
Plant Roads/Parking Areas	7.33				
Miscellaneous Units*	1.00				1.00
Engine	0.02	0.86	0.10	0.05	0.03
Totals:	76.34	97.42	0.70	98.22	93.44

* Example: Corn Oil Separation System