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STATE OF NEBRASKA

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AIR QUALITY CONSTRUCTION PERMIT

PERMIT NUMBER: CP10-045

Facility Name: Trenton Agri Products, LLC

NDEQ Facility ID#: 78323

Mailing Address:
36638 US Highway 34
Trenton, Nebraska 69044

Facility Location:
36638 US Highway 34
Sections 30 and 31, Township 3N, Range 32W
Trenton, Hitchcock County, Nebraska

Project Description: Modification of an existing ethanol manufacturing plant producing approximately 50 million gallons of denatured ethanol annually

Standard Industrial Classification (SIC) Code: 2869, Industrial Organic Chemicals

Revised or Superseded Construction Permits: This construction permit supersedes Conditions III.(A), (B), (C), and (D) and removes Condition III.(J) of permit CP06-0039 (issued February 26, 2009). No other terms or conditions of the original construction permit are being revised or otherwise modified by this document. All other provisions of the original permit are still in effect, and in concert with this permit, constitute the effective construction permit.

Pursuant to Chapter 14 of the Nebraska Air Quality Regulations, the public has been notified by prominent advertisement of this proposed construction of an air contaminant source and the thirty (30) day period allowed for comments has elapsed. This construction permit approves the proposed project as identified in the air quality construction permit application #10-045 received September 2, 2010 and amended April 25, 2011, including any supporting information received prior to issuance of this permit. Additional details of the proposed project, including estimated pollutant emissions caused by the project, can be found in the accompanying Fact Sheet.

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

The undersigned issues this permit on behalf of the Director under the authority of Title 129 – Nebraska Air Quality Regulations as amended June 15, 2011.

2/24/2012
Date

Shelley Schneider
Shelley Schneider, Air Administrator
Air Quality Division

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III.(B): Incorporates operational, monitoring, recordkeeping, and reporting requirements for a prescrubber, an additional component of the control system for fermentation emissions. Increases the VOC emission limitation and requires performance testing to demonstrate compliance with the new limitation.	B-1
III.(C): Updates the list of emission units controlled by the Thermal Oxidizer and revises the CO and VOC emission limitations from the Thermal Oxidizer stack.	C-1
III.(D): Updates PM/PM_{10} emission limitations from the DDGS Cooling Cyclones.	D-1
III.(J): This condition has been removed from the construction permit.	N/A

III.(A) Specific Conditions for Grain Receiving, Handling, Storage, and Hammermilling

(1) Permitted Emission Points: The source is permitted to construct the emission points and associated emission units identified in the following table:

Emission Point ID#	Required Control Equipment ID# and Description	Emission Unit Description
C20	C20: Grain Handling Baghouse	Grain Receiving Station (Truck) – 15,000 bushels/hr
		One 119,000-bushel capacity Storage Bin (Bin #1)
		One 119,000-bushel capacity Storage Bin (Bin #2)
		Grain Elevators #1 & #2
		Associated conveyors and transfer points
C30	C30: Hammermill Baghouse	One 5,000-bushel capacity Grain Day Bin
		Hammermill #1
		Hammermill #2
		Associated conveyors and transfer points

(2) Emission Limitations and Testing Requirements:

Pollutant emission rates from each emission point identified in the table below shall not exceed the permitted limits. Performance testing, if required, shall be conducted in accordance with Specific Condition II.(D).

Emission Point ID#	Pollutant	Permitted Limit	Averaging Period	Basis for Permit Limit	Performance Testing Required (Yes/No)
C20	PM/PM_{10}	0.87 lb/hr	3-hr or test method average	Chapter 17	No
C30	PM/PM_{10}	0.51 lb/hr	3-hr or test method average	Chapter 17	No

(3) Operational and Monitoring Requirements and Limitations

(a) The C20 baghouse dust collector shall be operated whenever the grain is received, elevated, conveyed into and out of the grain storage bins and the grain day bin, moved by associated conveyors and transfer points including the hammermill feed. The grain unloading areas shall have a canopy or other collection device to capture particulate matter emissions. The C30 baghouse dust collector shall be operated whenever the grain is processed through the hammermills, and transported by associated conveyors and transfer points to the mixer (P50).

(b) Operation and maintenance of each baghouse shall be in accordance with the following requirements: {Chapters 19 and 20}

(i) The baghouse shall be operated and be controlling emissions at all times when the associated emission units are in operation.

(ii) The baghouse shall be equipped with an operational pressure differential indicator. Pressure differential indicator readings shall be recorded at least once each day that the associated baghouse is operating.

(iii) Baghouse filter bags are to be inspected and/or replaced as often as necessary to ensure proper operation or more frequently as indicated by pressure differential indicator readings or other indication of bag failure.

(iv) Observations at least once each day during daylight hours of baghouse operation shall be conducted to determine whether there are visible emissions from the stack, leaks, noise, or other indications that corrective action is needed. If corrective action is required, it shall occur immediately.

(v) The owner or operator shall maintain an on-site inventory of spare bags of each type used to ensure rapid replacement in the event of bag failure.

(c) Grain receiving shall not exceed 90,720 tons per calendar month and 510,000 tons in any period of twelve (12) consecutive calendar months.

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

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

(5) Reporting and Recordkeeping Requirements:

(a) Records documenting the date, time, and pressure differential reading for each day the associated baghouse is in operation.

(b) Filter replacement records including the date the filter replacement occurred and the type of filter installed.

(c) Records documenting the date, time, observations, and corrective actions taken for each day the associated baghouse is in operation.

(d) The tons of grain received for each calendar month and for each period of twelve (12) consecutive calendar months to demonstrate compliance with Condition III.(A)(3)(c).

III.(B) Specific Conditions for Fermentation Operations

(1) Permitted Emission Points: The source is permitted to construct the emission points and associated emission units identified in the following table:

Emission Point ID#	Required Control Equipment ID# and Description	Emission Unit Description
C40	C40: Scrubber Control System (CO_2 Scrubber with chemical addition (S40a)[1] and Prescrubber (S40b)[2])	Fermentation Tank #1
		Fermentation Tank #2
		Fermentation Tank #3
		Fermentation Tank #4
		Beer Well

[1] Chemical addition is not required provided the requirements of Condition III.(B)(3)(e) are met.
[2] Emissions from the Prescrubber (S40b) are routed to the CO_2 Scrubber (S40a).

(2) Emission Limitations and Testing Requirements:

(a) Pollutant emission rates from each emission point identified in the table below shall not exceed the permitted limits. Performance testing, if required, shall be conducted in accordance with Specific Condition II.(D).

Emission Point ID#	Pollutant	Permitted Limit	Averaging Period	Basis for Permit Limit	Performance Testing Required (Yes/No)
C40	VOC	7.00 lb/hr[1]	3-hour or test method average	Chapter 17	Yes
	HAP		Speciation and Quantification of HAP composition at outlet	Chapter 27	Yes

[1] Expressed as weight of VOC

(b) Performance testing shall occur during the 3rd quarter (between July 1 and September 30) of 2012 (Title 129, Chapter 34).

(3) Operational and Monitoring Requirements and Limitations

(a) Emissions from the emission units identified in Condition III.(B)(1) shall be controlled by pollution control equipment as follows: Fermenters #1 through #4 and the beer well shall be controlled by the Scrubber Control System (C40). {Chapters 19 and 27}

(b) Total scrubber downtime shall be defined as the time when either unit comprising the Scrubber Control System are down for routine maintenance and shall be limited to 50 hours per calendar year. When both units comprising the Scrubber Control System are down simultaneously the downtime from only one unit shall count towards the 50 hour total scrubber down time limit. {Chapters 17 and 27}

(i) The CO_2 Scrubber (S40a) shall be considered down when the associated emission units are in operation (Prescrubber inlet pressure greater than zero) and the CO_2

Scrubber operating parameters are not maintained in accordance with Condition III.(B)(3)(c)(vi).

(ii) The prescrubber (S40a) shall be considered down when the associated emission units are in operation (Prescrubber inlet pressure greater than zero) and the prescrubber operating parameters are not maintained in accordance with Condition III.(B)(3)(d)(iv).

(c) Operation and maintenance of the CO_2 Scrubber (S40a) shall be in accordance with the following requirements: {Chapters 19 and 27}

(i) The CO_2 Scrubber (S40a) shall be operated and be controlling emissions at all times when the associated emission units are in operation (Prescrubber inlet pressure greater than zero), except for down time as described in Condition III.(B)(3)(b).

(ii) The CO_2 Scrubber (S40a) shall be properly designed, installed, operated and maintained. The manufacturer's operation and maintenance manual, or its equivalent, detailing proper operation, inspection and maintenance of the scrubber shall be kept on site and readily available to NDEQ representatives.

(iii) The CO_2 Scrubber (S40a) shall be equipped with devices capable of monitoring the following operating parameters in the manner described below.

1. Scrubbing liquid flow rate shall be monitored and recorded continuously by Digital Control System (DCS);

2. Chemical addition flow rate shall be monitored and recorded continuously by DCS;

3. Scrubber pressure differential (CO_2 Scrubber inlet pressure minus atmospheric pressure) shall be monitored and recorded continuously by DCS; and,

4. Scrubber liquid temperature shall be monitored by direct measurement and recorded at least once each day.

(iv) The total monthly amount and type of chemical, in gallons, added to the scrubber shall be monitored and recorded by the permittee.

(v) Chemical draw down checks shall be performed upon request by NDEQ personnel to verify that the flow meter is working correctly.

(vi) The scrubber operating parameters shall be maintained at the levels recorded during the most recent valid performance test conducted at the facility as described below:

1. Scrubber liquid shall be comprised of only well water to ensure consistent liquid temperature.

2. The scrubbing liquid flow rate, flow rate of chemical additions, and concentration of the chemical injected into the scrubber shall be maintained at or above the levels recorded during testing. Chemical

concentration, as documented by the supplier, shall be recorded upon use of the chemical.

(vii) Observations at least once each day during daylight hours of scrubber operation shall be conducted to determine whether there are leaks, noise, or other indications that corrective action is necessary. If corrective action is required, it shall occur immediately.

(viii) Flow meters for recording scrubbing liquid and chemical addition flow rates shall be maintained and calibrated according to manufacturer's instructions.

(d) Operation and maintenance of the Prescrubber (S40b) shall be in accordance with the following requirements: {Chapters 19 and 27}

(i) The Prescrubber (S40b) shall be operated and be collecting emissions at all times when the associated emission units are in operation (Prescrubber inlet pressure greater than zero), except for down time as described in Condition III.(B)(3)(b).

(ii) The Prescrubber (S40b) shall be properly designed, installed, operated and maintained. The manufacturer's operation and maintenance manual, or its equivalent, detailing proper operation, inspection and maintenance of the scrubber shall be kept on site and readily available to NDEQ representatives.

(iii) The Prescrubber (S40b) shall be equipped with devices capable of monitoring the following operating parameters in the manner described below:

1. The liquid level and outlet water flow of the prescrubber shall be monitored and recorded continuously by DCS, and

2. The prescrubber inlet pressure and fan inlet pressure shall be monitored and recorded continuously by DCS and used to monitor and record the prescrubber pressure differential.

(iv) The Prescrubber (S40b) operating parameters shall be maintained at the levels recorded during the most recent valid performance test conducted at the facility as described below:

1. Prescrubber liquid shall be comprised of only water from S40a and water recirculated through the Prescrubber.

2. For the liquid level and outlet water flow, "maintained at the levels recorded during the most recent valid performance test" shall mean within a range that is representative of the tested level(s) under normal operating conditions, as determined by NDEQ.

(e) The source may demonstrate through testing performed in accordance with Condition II.(D), that chemical addition is not necessary. Testing completed after January 1, 2007, and approved by the NDEQ, may be used to demonstrate chemical addition is not necessary. {Chapters 17, 27, and 34}

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

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

(5) Reporting and Recordkeeping Requirements:

(a) Records that document the operating parameter data for CO_2 Scrubber (S40a), including the date and time of the readings. The records shall include:

(i) Scrubbing liquid flow rate;

(ii) Chemical addition flow rate;

(iii) Scrubber pressure differential (CO_2 Scrubber inlet pressure minus atmospheric pressure) readings; and

(iv) Scrubber liquid temperature readings

(b) Records that document the operating parameter data for the Prescrubber (S40b), including the date and time of the readings. The records shall include:

(i) Liquid level and outlet water flow, and

(ii) Prescrubber pressure differential, prescrubber inlet pressure, and Fan inlet pressure.

(c) Monthly records that document the amount and type of chemical injected into the water supplied to the scrubber.

(d) Monthly records that document the purchase date, concentration, amount, and type of chemical purchased for chemical injection associated with the scrubber.

(e) Records that document the operating parameters developed during the most recent valid performance test conducted at the facility.

(f) All corrective actions shall be documented a minimum of once each day, including the date, time, observations, and corrective actions that have been conducted.

(g) Records documenting when routine maintenance and preventive actions were performed with a description of the maintenance and/or preventive action performed.

(h) Records documenting the number of hours of downtime for the CO_2 Scrubber (S40a) and Prescrubber (S40b), reason why the CO_2 Scrubber or Prescrubber was not operating, and the number of hours of Total scrubber downtime.

III.(C) Specific Conditions for Thermal Oxidizer Stack

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

Emission Point ID#	Control Equipment ID# and Description	Emission Unit (EU) / EP ID# and Description	Maximum Capacity	Permitted Fuel Type
S10	C10: Thermal Oxidizer	Pre-Fermentation Equipment: (Mixer, Cookwater Tank, Slurry Tank, Flash Tank, Receiver Tank, 2 Liquid Tanks, and 1 Yeast Tank)	-	-
		Distillation Equipment: (Beer Column, Side Stripper, Rectifier Column, Molecular Sieve, and 3 Condensers)	-	-
		P10: One DDGS Dryer	30.0 MMBtu/hr	Natural Gas
		All Centrifuges & Evaporators	-	-
		C10: Thermal oxidizer with a waste heat recovery boiler	99.0 MMBtu/hr	Natural Gas

(2) Emission Limitations and Testing Requirements:

Pollutant emission rates from each emission point identified in the table below shall not exceed the permitted limits. Performance testing, if required, shall be conducted in accordance with Specific Condition II.(D).

Emission Point ID#	Pollutant	Permitted Limits	Averaging Period	Basis for Permit Limit	Performance Testing Required (Yes/No)
S10	PM/PM_{10}	5.0 lb/hr	3-hour or test method average	Chapter 17	No
	CO	9.10 lb/hr	3-hour or test method average	Chapter 17	No
	VOC	1.82 lb/hr[1]	3-hour or test method average	Chapter 17	No
	HAP	-	Speciation and Quantification of HAP composition at outlet	Chapter 27	No

[1] Expressed as weight of VOC

(3) Operational and Monitoring Requirements and Limitations:

(a) Emission from the pre-fermentation equipment, distillation equipment, DDGS dryer, centrifuges, and evaporators are controlled by the thermal oxidizer (identified as C10). {Chapters 19 and 27}

(b) Operation of the thermal oxidizer with a waste heat recovery boiler shall be in accordance with the following requirements {Chapters 19 and 27}:

(i) The thermal oxidation system shall control emissions at all times when the associated emission units are in operation.

(ii) The thermal oxidizer shall be equipped with a thermocouple or equivalent device capable of continuously monitoring the temperature inside the thermal oxidizer. The thermocouple shall be calibrated in accordance with manufacturer's instructions.

(iii) Routine observations (at least once each day when the thermal oxidizer is in operation) shall be conducted to determine whether there are visible emissions from the stack, atypical operating parameters, leaks or noise, or other indications, which may necessitate corrective action. Corrective action shall be taken immediately if necessary.

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

The following standards apply to Thermal Oxidizer with Waste Heat Recovery Boiler (C10):

Applicable Standard	Title	Rule Citation
NSPS, Subpart A	General Provisions	Chapter 18, Sec. 001.01 40 CFR 60.1
NSPS, Subpart Dc	Small Industrial, Commercial, Institutional Steam Generation Units	Chapter 18, Sec. 001.52 40 CFR 60.40c

(5) Reporting and Recordkeeping Requirements:

(a) Records documenting when routine observations were performed with a description including thermocouple readings and any atypical observations.

(b) Records documenting when routine maintenance and preventive actions were performed with a description of the maintenance and/or preventive action performed.

(c) Records documenting equipment failures, malfunctions, or other variations, including time of occurrence, remedial action taken, and when corrections were made.

(d) Notifications and recordkeeping as required by 40 CFR 60.7.

(e) Reporting and recordkeeping as required by 40 CFR 60.48c.

III.(D) Specific Conditions for DDGS Cooling Cyclone

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

Emission Point ID#	Control Equipment ID# and Description	Emission Unit (EU) / EP ID# and Description
P70	P70: Cooling Cyclone	DDGS Cooler
		DDGS Storage
		DDGS Loadout

(2) Emission Limitations and Testing Requirements:

Pollutant emission rates from each emission point identified in the table below shall not exceed the permitted limits. Performance testing, if required, shall be conducted in accordance with Specific Condition II.(D).

Emission Point ID#	Pollutant	Permitted Limits	Averaging Period	Basis for Permit Limit	Performance Testing Required (Yes/No)
P70	PM/PM_{10}	1.03 lb/hr	3-hour or test method average	Chapter 17	No
	VOC	2.78 lb/hr [1]	3-hour or test method average	Chapter 17	No
	HAP	-	Speciation and Quantification of HAP composition at outlet	Chapter 27	No

[1] Expressed as weight of VOC

(3) Operational and Monitoring Requirements and Limitations:

(a) Emissions from the DDGS loadout are controlled by the DDGS Cooling Cyclone (P70). {Chapters 19 and 27}

(b) Operation of the cyclone shall be in accordance with the following requirements {Chapter 19}

(i) The cyclone shall be operated and be controlling emissions at all times when DDGS is being produced or loaded out .

(ii) Routine observations (at least once each day when any of the cyclone dust collectors are in operation) shall be conducted to determine whether there are visible emissions from the stack, leaks or noise, atypical operating parameter, or other indications, which may necessitate corrective action. Corrective action shall be taken immediately if necessary.

(iii) Collected waste material from the cyclone shall be handled, transported, and stored in a manner that ensures compliance with General Condition I.(J).

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

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

(5) Reporting and Recordkeeping Requirements:

(a) Records documenting when routine observations were performed with a description including readings of operating parameters and any atypical observations.

(b) Records documenting when routine maintenance and preventive actions were performed with a description of the maintenance and/or preventive action performed.

(c) Records documenting equipment failures, malfunctions, or other variations, including time of occurrence, remedial action taken, and when corrections were made.