TECHNICAL SUPPORT DOCUMENT
For
DRAFT AIR EMISSION PERMIT NO. 14900013-005
Major Amendment

This technical support document (TSD) is intended for all parties interested in the draft/proposed permit and to meet the requirements that have been set forth by the federal and state regulations (40 CFR § 70.7(a)(5) and Minn. R. 7007.0850, subp. 1). The purpose of this document is to provide the legal and factual justification for each applicable requirement or policy decision considered in the preliminary determination to issue the draft/proposed permit.

1. General Information

1.1 Applicant and Stationary Source Location:

Table 1. Applicant and Source Address

Applicant/Address	Stationary Source/Address (SIC Code: 2869)
Denco II, LLC 227 County Road 22 Morris, MN 56267	DENCO II, LLC 227 County Road 22 Morris Stevens County
Contact: Brandon Soine Phone: 320-589-2931	

1.2 Facility Description

The facility is a fuel-ethanol production plant located near Morris, Minnesota in Stevens County. The primary emissions are VOCs, PM/PM_{10}/$PM_{2.5}$, NO_x, and CO. Volatile organic compounds (VOCs) are emitted by fermentation, distillation, DDGS drying, ethanol loading, and VOC liquid storage and piping. Particulate matter (PM/PM_{10}/$PM_{2.5}$) is emitted by corn receiving and handling, DDGS handling and drying, and vehicle traffic. Nitrogen oxides (NO_x) and carbon monoxide (CO) are emitted by combustion sources. The plant is currently permitted to produce 30 million gallons of 200 proof ethanol annually.

The primary air pollution controls onsite are the Process Scrubber and the Regenerative Thermal Oxidizer (RTO). The scrubber controls emissions from the Fermenters and the Distillation operation; the RTO controls emissions from the Dryer. Baghouses control PM/PM_{10} from the corn and DDGS handling and storage systems and the Truck/Rail Loadout area. There are internal floating roof tanks for ethanol. Emissions from process valves and piping are controlled through an inspection and maintenance program.

A by-product of the process is distillers' dried grain with solubles (DDGS), which is dried and sold primarily as livestock feed. The permit also authorizes additional dry product storage bins to store nutrients to be mixed with DDGS to produce a higher value animal feed supplement.

1.3 Description of the Activities Allowed by this Permit Action

Changes requested in the application:

- Add two grain storage bins, 414,000 bushels each (EU086, EU087)
- Increase RTO PM emission limits from 4.11 to 7.11 lb/hr to account for condensable PM
- Insignificant modification – flat storage
- Insignificant modification – change TK005 from storage of denaturant to E-85
- Remove Golden Lyk units from permit (GP012)
- Add 500,000 gallon tank to store denatured ethanol (TK014)
- Add hours-of-operation limit for grain receiving (7 am to 5 pm)

Other changes

- Updated Total Facility Requirements (FC)
- Removed references to Consent Decree which has been terminated
- GP001 liquid storage tanks – a tank of less than 20,000 gallon capacity is not subject to Subpart Kb; tanks smaller than 20,000 gallons have been moved to GP002; Subpart Kb floating roof requirements added for larger tanks in GP001
- GP002 added to permit for liquid storage tanks smaller than 20,000 gallons
- SV005, SV016, EU060, EU071, EU084 – deleted limit based on Minn. R. 7011.0735 which does not apply
- Updated performance test frequency for SV018, EU071,
- EU071, deleted test frequency plan which has been submitted
- EU072, existing fermenter added to SV018
- Updated requirements for fabric filters
- Tanks 008, 009, and 010 removed as reported to Emission Inventory System
- FS001, previously Unpaved Roads, now includes paved roads requirements
- One-time notifications which have been submitted have been removed (TK012, TK013)

This major amendment has tracking number 3783.

Other applications and permit actions reviewed and included where necessary are administrative amendments 1250, 2729, 2730, 3251, 3318, and reopenings 106, 874, and 2446.

1.4. Facility Emissions:

Table 2. Title I Emissions Increase Summary

Pollutant	**Unlimited Potential Emissions from the Modification** (tpy)*	**Limited Potential Emissions from the Modification**** (tpy)	**NSR/112(g) Threshold for New Major Source** (tpy)	**NSR/ 112(g) Review Required?** (Yes/No)
PM	1554	78.1	250	No
PM_{10}	649	49.0	250	No
$PM_{2.5}$	564	43.4	250	No
NO_x	134	29.7	250	No
SO_2	0.7	0.45	250	No
CO	258	87.9	250	No
Ozone (VOC)	812	54.5	250	No
CO_2e****	83958	83958	100,000	No
Individual and total HAPs		4.24/6.18	10/25	No

*source-wide PTE, based on no control, operating 8760 hours/year
**source-wide PTE based on permit limits
***10 tpy for a single HAP; 25 tpy for combined HAP
****Carbon dioxide equivalents as defined in Minn. R. 7007.0100.

Table 3. Total Facility Potential to Emit Summary

	PM tpy	**PM_{10}** tpy	**$PM_{2.5}$** tpy	**SO_2** Tpy	**NO_x** tpy	**CO** tpy	**CO_2e** Tpy	**VOC** tpy	**Single HAP** tpy	**All HAPs** tpy
Total Facility Limited Potential Emissions	78.1	49.0	43.4	0.45	29.7	87.9	83,958	54.5	4.24	6.18
Total Facility Actual Emissions (2010)	22.1	18.7	*	0.1	19.4	22.1	*	19.7	*	

* Not reported in MN emission inventory.

Table 4. Facility Classification

Classification	Major/Affected Source	Synthetic Minor/Area	Minor/Area
PSD		PM, $PM_{10,}$ $PM_{2.5,}$ CO, VOC	NOx, SO_2
Part 70 Permit Program		$PM_{10,}$ $PM_{2.5,}$ NOx, CO, VOC	SO_2
Part 63 NESHAP		X	

2. Regulatory and/or Statutory Basis

2.1 Units Affected by the Modification/Permit Amendment

Greenhouse Gases

DENCO II has an unrestricted PTE for CO2e of 83,958 tons per year; the federal subject-to-regulation threshold is 100,000 tons per year; therefore GHG are not subject to regulation for this permit action for either New Source review or Part 70. DENCO II remains a minor source for New Source Review and Part 70.

New Source Review

DENCO II currently operates under a permit which limits all NSR pollutants (other than GHG) to less than 100 tons per year, and the PTE remains less than 100 tons per year under the draft/proposed permit. Minnesota is attainment for all criteria pollutants, so the NSR major source threshold is 250 tons per year. Since the source is minor (PTE below 250 tons per year), NSR does not apply.

Part 70 Permit Program

DENCO II is and remains a nonmajor source for Part 70.

New Source Performance Standards (NSPS)

Subpart Kb applies to Tank TK014 authorized to be installed under this permit action.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

The Facility has accepted limits on VOC which effectively limit hazardous air pollutants (HAP) emissions such that it is a non-major source under 40 CFR pt. 63. The VOC limits are found at SV018, SV019, EU066, EU071, CE020, CE021, CE025, CE027, FS004, and FS005; the limits are expressed as limits in pounds per hour, limits on operational parameters of air pollution control equipment, and work practices. Most HAPs emitted from ethanol production are VOC, so VOC limits can effectively limit HAPs in this case. Test data from ethanol plants has confirmed that if there is at least 95 % VOC control on the

fermentation and DDGS drying processes, and the plant demonstrates compliance with VOC limits, then HAP emissions will be below major source thresholds. Other controls taken into account include the liquid storage tanks (floating roofs) and the Leak Detection and Repair program for piping leaks.

Thus, no major source NESHAPs apply. Cooling towers are subject to the cooling tower NESHAP which prohibits use of chromium-containing chemicals to treat the cooling water.

US EPA has promulgated Subpart JJJJJJ to Part 63 to regulate emissions from boilers at area (minor) sources of HAP. A boiler is an existing affected source if construction commenced on or before June 4, 2010. Construction commenced on the boilers at DENCO II prior to 2010, so this is an existing source. Because DENCO II only uses natural gas and propane, there are no applicable requirements in Subpart JJJJJJ.

Compliance Assurance Monitoring (CAM)

DENCO II is not a major source under the federal Part 70 operating permit regulation; therefore, CAM does not apply.

Environmental Review & AERA

DENCO II's potential-to-emit remains below 100 tons per year, so any increase in emissions is below 100 tons per year. Since preparation of an Environmental Assessment Worksheet (EAW) is not required for emissions increase less than 250 tons per year, an EAW is not required.

Minnesota State Rules

The new corn bins are subject to the following Minnesota Standards of Performance:

- Minn. R. 7011.1000 Standards of Performance for Bulk Agricultural Commodity Facilities

Table 5. Regulatory Overview of Units Affected by the Modification/Permit Amendment

Level*	Applicable Regulations	Comments:
FC		Updated
GP001	40 CFR 60, subp. Kb	Tanks less than 20,000 gallons are not subject to Kb and have been moved to GP002
GP002	Minn. R. 7011.1505	State Performance Standard for volatile organic liquid tanks
GP012	NA	Removed Golden Lyk units and related controls and stacks
SV005	Title I Conditions	Two additional grain bins added; added grain receiving hours-of-operation limit (FS002) of 7 am to 5 pm Monday through Friday year round plus 7 am to 5 pm Saturdays during October added

Level*	Applicable Regulations	Comments:
SV019	Title I Conditions	RTO stack; PM, PM_{10} limits changed from 4.11 lb/hr to 7.11 lb/hr
TK005	Minn. R. 7011.1505, subp. 3	Change liquid stored from denaturant to E-85
TK014	40 CFR 60, Subpart Kb Minn. R. 7011.1520(C)	New denatured ethanol storage; 500,000 gallon tank is greater than 150 cubic meters and vapor pressure is greater than 3.5 kilopascals (0.5 psi)
FS002	Minn. R. ch. 7009	Added grain receiving hours-of-operation limit of 7 am to 5 pm Monday through Friday year round plus 7 am to 5 pm Saturdays during October
FS007	Minn. R. 7011.0150	Flat storage added

*Where the requirement appears in the permit (e.g., EU, SV, GP, etc.).

The language 'This is a state-only requirement and is not enforceable by the U.S. Environmental Protection Agency (EPA) Administrator and citizens under the Clean Air Act' refers to permit requirements that are established under state law rather than by the federal Clean Air Act. The language is to clarify the distinction between permit conditions that are required by federal law and those that are established under state law. State law requirements are not enforceable by the EPA or by citizens under the federal Clean Air Act, but are fully enforceable by the MPCA and citizens under provisions of state law.

2.2 Comments on Units Not Affected by the Modification/Permit Amendment

Opacity monitoring for units burning natural gas, propane, or biogas

Several units burn natural gas, propane, or biogas (essentially the same as natural gas) and are subject to an opacity limit. These units include EU001 Boiler 1 (SV001), EU002 Boiler 2 (SV002), EU059 Boiler 3 (SV017) , and EU067 Biodigester Flare (SV020). Because fuel is limited to natural gas, propane, and biogas, visible emissions are unlikely and periodic monitoring for opacity is not necessary.

Emission limits for units subject to the Bulk Agricultural Commodity Rule

Several units in the previous permit (SV005, SV016, EU060, EU071, EU084) included a particulate matter limit based on Minn. R. 7011.0735. These units are subject to Minnesota's Dry Bulk Agricultural Commodity Rule. Minn. R. 7011.0735 does not apply to equipment subject to the Dry Bulk Agricultural Commodity Rule, Minn. R. 7011.1005. The previous permit already contained particulate matter limits more stringent than 7011.0735, as well as the opacity limits imposed by Minn. R. 7011.1005; those limits have been carried over into this permit action.

3. Technical Information

3.1 Calculations of Potential to Emit

Attachment 1 to this TSD contains detailed spreadsheets and supporting information prepared by the MPCA and the Permittee.

3.2 Dispersion Modeling

MPCA policy required DENCO II to complete air dispersion modeling to show modeled compliance with the PM10 and PM2.5 national ambient air quality standards (NAAQS). Several operating restrictions were assumed when the modeling was conducted. These have been incorporated as permit limits (e.g., hours of operation) in the draft/proposed permit. In addition, per MPCA practice, a table of the modeled parameters has been added to the permit as an appendix. Other than the specific operating restrictions mentioned above, the parameters listed in Appendix II of the permit describe the operation of the facility at maximum allowed emissions. The MPCA does not require any specific compliance demonstration with these parameters because they are worse-case conditions. The purpose of listing the parameters in the permit appendix is to provide a benchmark for determining if additional modeling is required at some future time.

The total ambient air impact of Denco II plus other sources and background (24-hour average) is predicted to be 105.81 micrograms per cubic meter for PM10 and 31.95 micrograms per cubic meter for PM2.5. These are respectively 71 % and 91 % of the NAAQS. Based on MPCA practice for requiring remodeling for future changes (see below), remodeling for PM2.5 will follow Tier 3 requirements. PM10 is subject to Tier 1 requirements (generally no automatic remodeling).

Table 6.

% of NAAQS/MAAQS:	**> 90%**	**90% - 75%**	**< 75%**
Allowable Growth Level:	**Low**	**Medium**	**High**
PSD - Limits	Tier 4	Tier 2**	Tier 1
PSD – No Limits	Tier 3	Tier 2**	Tier 1
Not PSD - Limits	Tier 3**	Tier 2**	Tier 1
Not PSD – No Limits	Tier 1	Tier 1	Tier 1

*Refer to Requirement Guidance in Delta for permit language for each tier.

- Tier 1. Parameter documentation only (no re-modeling);
- Tier 2. Parameter documentation and submittal/approval for major/moderate amendment levels;
- Tier 3. Parameter documentation and submittal/approval major/moderate/minor amendment levels w/an evaluation at reissuance that addresses changes that didn't need an amendment; and
- Tier 4. Parameter documentation and submittal/approval for all changes (pretty much our current template).

**The default tier is listed in the table and footnotes; however, individual permit teams may decide on a case-by-case basis to require a different level of modeling than stated in the table for these noted scenarios. Some things to consider in deciding on when to re-evaluate and/or when to submit and/or require MPCA approval for changes:

- How likely the facility is to make modifications that would increase the PTE of the pollutant(s) that was/were modeled;
- Does the facility make routine changes to units/sources that have low emissions but poor dispersion (e.g., heat recovery, fugitives);
- Does the permit already prohibit the facility from increasing emissions of the modeled pollutant(s) without first going through a permit amendment? For example, if they have a state synthetic minor permit, they cannot make any change that makes them cross the Part 70 threshold without getting the permit amendment first;
- Was the modeled required by a rule or was the decision to complete it based on policy or some case-by-case decision;
- How well do the operating assumptions used in the modeling resembling how the facility actually operates; and
- Does the facility have a wide range of growth levels for one pollutant.

3.3 Periodic Monitoring

In accordance with the Clean Air Act, it is the responsibility of the owner or operator of a facility to have sufficient knowledge of the facility to certify that the facility is in compliance with all applicable requirements.

In evaluating the monitoring included in the permit, the MPCA considered the following:

- The likelihood of the facility violating the applicable requirements;
- Whether add-on controls are necessary to meet the emission limits;
- The variability of emissions over time;
- The type of monitoring, process, maintenance, or control equipment data already available for the emission unit;
- The technical and economic feasibility of possible periodic monitoring methods; and
- The kind of monitoring found on similar units elsewhere.

The table below summarizes the periodic monitoring requirements for those emission units for which the monitoring required by the applicable requirement is nonexistent or inadequate.

Table 7. Periodic Monitoring

Level*	Requirement (rule basis)	Additional Monitoring	Discussion
GP001	40 CFR 60 subp. Kb	Same as current permit; subpart Kb requirements	Added tank TK014; removed tanks smaller than 20,000 gallons; Kb contains adequate inspection, monitoring and recordkeeping

Level*	Requirement (rule basis)	Additional Monitoring	Discussion
			requirements
GP002	Minn. R. 7011.1505, subp. 3	None required	Liquid tanks smaller than 20,000 gallons; Rule requirement is a submerged fill pipe, verifiable by inspection; tank TK005 is changed from storing denaturant to E-85
SV005	Title I Condition	Monitoring remains the same as the current permit	Fabric filter monitoring requirements at CE019
SV019	Title I Condition PM $\leq$ 7.11 lb/hr $PM_{10} \leq$ 7.11 lb/hr	Monitoring remains the same as the current permit	Thermal oxidizer monitoring requirements at CE027

*Where the requirement appears in the permit (e.g., EU, SV, GP, etc.).

3.4 Insignificant Activities

Stationary sources may have emission units which are classified as insignificant activities under the MPCA's permitting rules.

The permit is required to include periodic monitoring for all emissions units, including insignificant activities, per EPA guidance. The insignificant allowed by Minnesota Rules are only subject to general applicable requirements. Using the criteria outlined earlier in this TSD, the following table documents the justification why no additional periodic monitoring is necessary for the current insignificant activities.

Table 8. Insignificant Activities

Insignificant Activity	General Applicable Emission limit	Discussion
Fuel use: space heaters fueled by, kerosene, natural gas, or propane, less than 420,000 Btu/hr	PM $\leq$ 0.6 or 0.4 lb/MMBtu, depending on year constructed Opacity $\leq$ 20% with exceptions (Minn. R. 7011.0510/0515)	For this unit, based on the fuels used and EPA published emissions factors, it is highly unlikely that it could violate the applicable requirement. In addition, these types of units are typically operated and vented inside a building, so testing for PM or opacity is not feasible.

Insignificant Activity	General Applicable Emission limit	Discussion
Infrared electric ovens	Opacity ≤ 20% (Minn. R. 7011.0105 or 7011.0110)	These units are not likely to have any emissions of particulate matter at this site (used to dry off VOCs). It is highly unlikely that they could violate the applicable requirement.
Indirect heating equipment with a capacity less than 420,000 Btu/hour, etc.	PM ≤ 0.6 or 0.4, depending on year constructed Opacity ≤ 20% with exceptions (Minn. R. 7011.0510/0515)	For these units, based on the fuels used and EPA published emissions factors, it is highly unlikely that they could violate the applicable requirements.
Fabrication operations: equipment used exclusively for forging, pressing, drawing, spinning, or extruding hot metals	PM, variable depending on airflow Opacity ≤ 20% (Minn. R. 7011.0710/715)	While no known emissions estimation method exists for these units, based on general knowledge of how they operate, it is highly unlikely that they could generate significant particulate matter. In addition, these units would be operated and vented directly into a building, so testing is not feasible.
Cleaning operations: commercial laundries, not including dry cleaners and industrial launderers	Opacity ≤ 20% (Minn. R. 7011.0105 or 7011.0110))	While no known emissions estimation method exists for these units, based on general knowledge of how they operate, it is highly unlikely that they could generate visible emissions.
Emissions from a laboratory, as defined in Minn. R. 7007.1300, subp. 3(G)	PM, variable depending on airflow Opacity ≤ 20% (Minn. R. 7011.0710/0715)	These are very small, intermittent, bench-top operations that typically do not even have any emissions. It is highly unlikely that they could violate the applicable requirement.
Equipment used exclusively for packaging lubricants or greases;	PM, variable depending on airflow Opacity ≤ 20% (Minn. R. 7011.0710/0715)	While no known emissions estimation method exists for these units, based on general knowledge of how they operate, it is highly unlikely that they could generate particulate matter. In addition, these units would be operated and vented directly into a building,

Insignificant Activity	General Applicable Emission limit	Discussion
		so testing is not feasible.
Open tumblers with a batch capacity of 1,000 pounds or less	PM, variable depending on airflow Opacity ≤ 20% (Minn. R. 7011.0710/0715)	For these units, it is highly unlikely that they could violate the applicable requirement. In addition, these units are vented inside a building, so testing for PM or opacity is not feasible.
tanks…		
Equipment used for hydraulic or hydrostatic testing	PM, variable depending on airflow Opacity ≤ 20% (Minn. R. 7011.0710/715)	While no known emissions estimation method exists for these units, based on general knowledge of how they operate, it is highly unlikely that they could generate particulate matter. In addition, these units would be operated and vented directly into a building, so testing is not feasible.
Brazing, soldering or welding equipment	PM, variable depending on airflow Opacity ≤ 20% (Minn. R. 7011.0710/715)	For these units, based on EPA published emissions factors, it is highly unlikely that they could violate the applicable requirement. In addition, these units are typically operated and vented inside a building, so testing for PM or opacity is not feasible.
Blueprint copiers and photographic processes	Opacity ≤ 20% (Minn. R. 7011.0105 or 7011.0110))	While no known emissions estimation method exists for these units, based on general knowledge of how they operate, it is highly unlikely that they could generate visible emissions. In addition, these units would be operated and vented directly into an office area, so monitoring or testing is not feasible.
Cleaning operations: alkaline/phosphate cleaners and associated cleaners and associated burners	PM, variable depending on airflow Opacity ≤ 20% (Minn. R. 7011.0610+ Minn. R. 7011.0710/715)	For these units, there are some factors available for the burners, but very little information regarding the cleaning operation itself. However, based on general knowledge of how they operate, it is highly unlikely that they could violate the applicable requirement or that testing would be feasible.
Individual units with potential emissions less than	PM, variable depending on airflow	These are 4 natural gas combustion units, an emergency generator, and a specialty mixing area.

Insignificant Activity	General Applicable Emission limit	Discussion
2000 lb/year of certain pollutants	Opacity $\leq$ 20% (with exceptions) (Minn. R. 7011.0715 and Minn. R. 7011.610) or $SO_2 \leq$ 0.5 lb/MMBtu Opacity $\leq$ 20% (Minn. R. 7011.2300)	For the natural gas units and generator, based on the fuels used and EPA published emissions factors, it is highly unlikely that they could violate the applicable requirement. In addition, all of these units are operated and vented inside a building, so testing for PM or opacity is not feasible. The mixing area is not expected to generate particulate matter.
Infrequent use of spray paint equipment for routine housekeeping or plant upkeep activities not associated with primary production processes at the stationary source	PM, variable depending on airflow or process weight rate Opacity $\leq$ 20% (Minn. R. 7011.0715)	While spray equipment will have the potential to emit particulate matter, these particular activities are those not associated with production, so they would be infrequent and usually occur outdoors. Testing or monitoring is not feasible.
Equipment venting PM/PM_{10} inside a building, provided that emissions from the equipment are: a). filtered through an air cleaning system; and b). vented inside of the building 100% of the time	PM, variable depending on airflow Opacity $\leq$ 20% (Minn. R. 7011.0715)	For these units, it is highly unlikely that they could violate the applicable requirement. In addition, these units are vented inside a building, so testing for PM or opacity is not feasible.

3.6 Comments Received

Public Notice Period: <start date>, 2012 - <end date>, 2012

4. Permit Fee Assessment

This major amendment has tracking number 3783.

Other applications and permit actions included are administrative amendments 1250, 2729, 2730, 3251, 3318; and reopenings 106, 874, and 2446.

Reopening permit actions (usually to incorporate operating conditions from performance tests) are not subject to fees. Administrative applications 1250, 2729, and 2730 were received before July 1, 2009 and are not subject to fees.

5. Conclusion

Based on the information provided by DENCO II, LLC, the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission Permit No. 14900013-005 and this TSD, will not cause or contribute to a violation of applicable federal regulations and Minnesota Rules.

Staff Members on Permit Team: David Beil (permit writer/engineer)
Rachel Studanski, Dave Crowell (enforcement)
Curt Stock (stack testing)
Jessica Forsberg (peer reviewer)

AQ File No. 2322; DQ 3783, 106, 874, 1250, 2446, 2729, 2730, 3135, 3251, 3318

Attachments:
1. PTE Summary and Calculation Spreadsheets
2. Facility Description
3. CD-01 Forms
4. Points Calculator

ATTACHMENT 1 PTE Summary and Calculation Spreadsheets

DENCO II, LLC
Limited Potential Emissions @30 million gallons ethanol production

Stack/ Vent ID	Control Equipment ID	Emission Unit ID		Criteria Pollutants (Limited Emissions)							
			Emission Sources Associated with Ethanol Operations	PM (tpy)	PM10 (tpy)	PM2.5 (tpy)	SO2 (tpy)	NOx (tpy)	VOC (tpy)	CO (tpy)	CO2e (tpy)
SV001	---	EU001	Boiler	0.78	0.78	0.78	0.07	GP001	0.57	8.58	12,556
SV002	---	EU002	Boiler	0.78	0.78	0.78	0.07	GP001	0.57	8.58	12,556
SV005	CE019	EU005	Corn Dump Pit/Auger	SV005	SV005	SV005	---	---	---	---	---
SV005	CE019	EU006	Corn Elevator	SV005	SV005	SV005	---	---	---	---	---
SV005	CE019	EU010	Scalper	SV005	SV005	SV005	---	---	---	---	---
SV005	---	SV005	Limited Emissions from Grain/DDGS Handling	2.01	2.01	2.01	---	---	---	---	---
SV026	---	EU007	Corn Bin 1	2.46	0.25	0.18	---	---	---	---	---
SV005	---	EU008	Corn Bin 2 (Surge Bin)	SV005	SV005	SV005	---	---	---	---	---
SV005	---	EU009	Corn Bin 3	2.46	0.25	0.18	---	---	---	---	---
SV027	---	EU086	Corn Bin 4	2.46	0.25	0.18	---	---	---	---	---
SV028	---	EU087	Corn Bin 5	2.46	0.25	0.18	---	---	---	---	---
SV016	CE018	EU055	DDGS Storage Pile	SV016	SV016	SV016	---	---	---	---	---
SV016	CE018	EU056	DDGS Dump Pit/Auger	SV016	SV016	SV016	---	---	---	---	---
SV016	CE018	EU057	DDGS Elevator	SV016	SV016	SV016	---	---	---	---	---
SV016	CE018	EU058	Truck Load Spout 2	SV016	SV016	SV016	---	---	---	---	---
SV016	---	SV016	Limited Emissions from DDGS Handling	0.48	0.48	0.48	---	---	---	---	---
SV017	---	EU059	Boiler #3	1.90	1.90	1.90	0.17	GP001	1.38	21.02	30,750
SV018	CE020	EU016	Fermenter #1	---	---	---	---	---	SV018	---	---
SV018	CE020	EU017	Fermenter #2	---	---	---	---	---	SV018	---	---
SV018	CE020	EU061	Fermenter #3	---	---	---	---	---	SV018	---	---
SV018	CE020	EU062	Fermenter #4	---	---	---	---	---	SV018	---	---
SV018	CE020	EU063	Fermenter #5	---	---	---	---	---	SV018	---	---
SV018	CE020	EU064	Beer Well #1	---	---	---	---	---	SV018	---	---
SV018	CE020	EU065	Beer Well #2	---	---	---	---	---	SV018	---	---
SV018	CE020	EU051	Stripper	---	---	---	---	---	SV018	---	---
SV018	CE020	EU068	Rectifyer	---	---	---	---	---	SV018	---	---
SV018	CE020	EU069	Side Stripper	---	---	---	---	---	SV018	---	---
SV018	CE020	EU070	Molecular Sieve	---	---	---	---	---	SV018	---	---
SV018	---	SV018	Limited Emissions from Process Scrubber	---	---	---	---	---	21.90	---	---
SV019	CE021	EU066	DDGS Dryer	31.14	31.14	31.14	0.11	GP001	10.95	48.18	19,475
SV019	CE027	EU083	RTO	SV019	SV019	SV019	0.02	GP001	SV019	SV019	4,100
SV020	CE023	EU067	Bio-digester	0.00	0.00	0.00	0.01	0.09	0.01	0.49	4,510
SV021	CE024	EU060	Hammermill	2.19	2.19	2.19	---	---	---	---	---
SV022	CE025	EU071	Cyclone Cooler	1.31	1.31	1.31	---	---	5.26	---	---
SV023	CE025	EU076	Loadout Flare	0.07	0.07	0.07	0.01	0.92	6.58	1.00	10
SV025	CE029	EU084	Hammermill #2	EU060	EU060	EU060	---	---	---	---	---
---	---	GP001	NOx Group Emissions	---	---	---	---	28.70	---	---	---
---	---	TK001	Ethanol Tank	---	---	---	---	---	0.03	---	---
---	---	TK002	Ethanol Tank	---	---	---	---	---	0.03	---	---
---	---	TK003	Ethanol Tank	---	---	---	---	---	0.03	---	---
---	---	TK004	Ethanol Tank	---	---	---	---	---	0.03	---	---
---	---	TK005	Gasoline	---	---	---	---	---	0.03	---	---
---	---	TK006	Ethanol Tank	---	---	---	---	---	0.00	---	---
---	---	TK007	Ethanol Tank	---	---	---	---	---	0.00	---	---
---	---	TK011	Denatured Ethanol Storage Tank #1	---	---	---	---	---	0.06	---	---
---	---	TK014	Denatured Ethanol Storage Tank #2	---	---	---	---	---	0.08	---	---
---	---	FS001	Truck Traffic	2.39	0.48	0.12	---	---	---	---	---
---	---	FS002	Uncaptured Grain handling emissions	7.21	2.02	0.32	---	---	---	---	---
---	---	FS003	DDGS handling emissions	13.39	2.71	0.46	---	---	---	---	---
---	---	FS004	Ethanol Loading Rack	---	---	---	---	---	EU072	---	---
---	---	FS005	Equipment Leaks	---	---	---	---	---	6.99	---	---
---	---	FS006	Cooling Towers	1.42	0.99	0.99	---	---	---	---	---
---	---	FS007	Flat Storage	3.23	1.13	0.17	---	---	---	---	---
			TOTAL	**78.12**	**49.00**	**43.43**	**0.45**	**29.71**	**54.50**	**87.87**	**83,958**
			SOURCE-WIDE EMISSION CAP	**95.00**	**95.00**	**95.00**	**95.00**	**95.00**	**95.00**	**95.00**	**100,000**

2009 Air Emission Inventory Report
DENCO, LLC

DENCO II, LLC
Storage Tank Emissions

Tanks 4.08 Emissions	Description	Capacity	Tank Throughput (1000 gallons)	VOC Emissions (lbs)
TK001	200 Proof		7,500.0	56.84
TK002	200 Proof		7,500.0	56.84
TK003	200 Proof		7,500.0	56.84
TK004	200 Proof		7,500.0	56.84
TK005	Gasoline Tank		1,500.0	61.53
TK006	190 Proof		150.0	3.47
TK007	190 Proof		150.0	3.47
TK011	Denatured Ethanol	250,000	15,750.0	129.76
TK014	Denatured Ethanol	500,000	15,750.0	157.78

DENCO II, LLC
Combustion GHG Emissions

Emission Calculation Method

Fuel Usage based on maximum burner capacity/brake specific fuel consumption and annual operating hours (8,760 hrs/yr).
Emission factors are derived from 40 CFR 98 Subpart C, Tables C-1 and C-2 (EF kg/MMBtu * 2.2046 lb/kg = EF lb/MMBtu)
GHG Emissions (lbs) = Fuel Usage (MMBtu) x Emission Factor (lb/MMBtu)
GWP's are 40 CFR 98 Subpart A, Table A-1 and are as follows:

CO2	1
CH4	21
N2O	310

Emission Unit ID	Description	Burner Capacity MMBtu/hr	Fuel Usage		Emission Factors			GHG emissions			CO2e GHG emissions		
			Fuel Type	Annual Use (MMBtu)	CO2	CH4	N2O	CO2	CH4	N2O	CO2	CH4	N2O
EU001	Boiler #1	24.5	natural gas	214,620	116.8879	0.002205	0.00024046	25,086,479	473.15	51.61	25,086,479	9,936	15,998
EU002	Boiler #2	24.5	natural gas	214,620	116.8879	0.002205	0.00024046	25,086,479	473.15	51.61	25,086,479	9,936	15,998
EU059	Boiler #3	60	natural gas	525,600	116.8879	0.002205	0.00024046	61,436,276	1,158.74	126.39	61,436,276	24,333	39,180
EU066	Dryer	38	natural gas	332,880	116.8879	0.002205	0.00024046	38,909,641	733.87	80.04	38,909,641	15,411	24,814
EU079	RTO	8	natural gas	70,080	116.8879	0.002205	0.00024046	8,191,503	154.50	16.85	8,191,503	3,244	5,224
EU067	Bio-Digester Flare	8.80	natural gas	77,088	116.8879	0.002205	0.00024046	9,010,654	169.95	18.54	9,010,654	3,569	5,746
EU072	Loadout Flare	0.0204	natural gas	179	116.8879	0.002205	0.00024046	20,888	0.39	0.04	20,888	8	13
								Combustion Emission (lbs/yr CO_2e)			167,741,922	66,439	106,974
								Combustion Emission (tons/yr CO_2e)			83,871	33	53
								Total Combustion CO_2e (tons/yr)			83,958		

DENCO II, LLC
RTO Combustion Calculations (Postmodification)

RTO (EU080)
Firing Capacity: 8,000,000 BTU/hr 5.16%

Primary Fuel Type: Natural Gas
Heat Value: 1,050 BTU/cf
Fuel Burning Capacity: 7,619 cf/hr

Pollutant	Emission Factor (lb/cf)	Emission Rate (lb/hr)	Max. Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Max. Controlled Emissions (tons/yr)
PM	0.0000076	0.06	0.25	0.00	0.25
PM10	0.0000076	0.06	0.25	0.00	0.25
SOx	0.0000006	0.00	0.02	0.00	0.02
NOx	0.0000381	0.29	1.27	0.00	1.27
VOC	0.0000055	0.04	0.18	0.00	0.18
CO	0.0000840	0.64	2.80	0.00	2.80

All emission factors, except Nox, from Fifth Edition AP-42, Section 1.4, "Natural Gas

Example Calculations:
0.0000076 lb PM/cf · 7,619 cf/hr = 0.06 lb/hr
0.06 lb/hr · 8760 hr/yr ·ton/2000 lb = 0.25 tpy

Back-up Fuel Type: Propane
Heat Value: 91,500 BTU/gal
Fuel Burning Capacity: 87 gal/hr

Pollutant	Emission Factor (lb/gal)	Emission Rate (lb/hr)	Max. Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Max. Controlled Emissions (tons/yr)
PM	0.0006	0.05	0.23	0.00	0.23
PM10	0.0006	0.05	0.23	0.00	0.23
SOx	0.0001	0.01	0.04	0.00	0.04
NOx	0.0073	0.64	2.80	0.00	2.80
VOC	0.0005	0.04	0.19	0.00	0.19
CO	0.0032	0.28	1.23	0.00	1.23

All emission factors, except for NOx, from Fifth Edition AP-42, Section 1.5, "Liquefied

Example Calculations:
0.0006000 lb PM/gal · 87 gal/hr = 0.05 lb/hr
0.05 lb/hr · 8760 hr/yr ·ton/2000 lb = 0.23 tpy

Maximum Controlled Emission Summary

Pollutant	Max. Controlled Emissions (tons/yr)
PM	0.25
PM10	0.25
SOx	0.02
NOx	1.48
VOC	0.18
CO	2.80

DENCO II, LLC
DDGS Dryer

Particulate Emissions

Assumptions
·Since no particulate size distribution data is available for the dryer exhaust, assume PM10/PM2.5 emissions equal PM emissions.
·Particulate emissions from both process and combustion are included in the permit limit.
·Regenerative Thermal Oxidizer particulate control efficiency: **60%**

Process Data

Total DDGS feed to dryer (solids only):	17,500	lb/hr
Solids Concentration:	35%	by weight
Water Concentration:	65%	by weight

E =3.59 * (P ÷ 2,000)^0.62 (Equation from MN Rules 7011.0730, Table 1)

where
P = dry process weight rate in lb/hr (subtract any water or moisture content)
E = particulate emission rate in lb/hr

E, particulate emission rate = 3.59 * (17,500 lb/hr ÷ 2,000)^0.62 =	13.78	lb/hr
Potential PM emissions = 13.78 lb/hr * 1 ton/2,000 lb * 8,760 hr/yr =	60.34	ton/yr
Controlled $PM/PM_{10}/PM_{2.5}$ emission rate = 13.78 lb/hr · (1 - 0.60) =	5.51	lb/hr
=	24.14	ton/yr

Original Proposed PM/PM10 Limit: 5.00 lb/hr 21.90 tons/year

January 2004 Stack test re	2.80 lb/hr =	12.25	tpy
Revised* proposed PM/PM10/PM2.5 Limit=	**7.11 lb/hr =**	**31.14**	**tpy**

* Emission Limit has been revised on August 10, 2004 to demonstrate that the change in emissions less than 15tpy with the October 2003 Major Modification Application.

VOC Emissions

Assumptions
· Regenerative Thermal Oxidizer VOC control efficiency: **95%**

RTO inlet loading based on stack testing: 50.00 lb/hr

Potential VOC emissions = 50.00 lb/hr ethanol (VOC) · 8,760 hr/yr · 1 ton/2000 lb =	219.00	ton/yr
Controlled VOC emission rate = 50.00 lb/hr · (1 - 0.95) =	2.50	lb/hr
=	10.95	ton/yr

CO Emissions

Assumptions
· Regenerative Thermal Oxidizer CO control efficiency: **90%**

RTO inlet loading based on stack testing: 50.00 lb/hr

Potential CO emissions = 50.00 lb/hr CO · 8,760 hr/yr · 1 ton/2000 lb =	219.00	ton/yr
Controlled CO emission rate = 50.00 lb/hr · (1 - 0.90) =	5.00	lb/hr
=	21.90	ton/yr

Proposed Permitted CO Limit: 11.00 lb/hr 48.18 tons/year

DENCO II, LLC
Grain Receiving, Cleaning, and Hammermilling Emission Calculations (Postmodification)

Assumptions

· *Only grain for ethanol operations is processed through cleaning and hammermilling equipment.*
· *All grain is corn which has the highest Dustiness Ratio for the AP-42 emission factors.*

Additional Information

The Corn Bins (EU007-009) had previously been permitted as being controlled by the Grain Receiving Baghouse (SV005, CE019). This is not the case for the existing or proposed grain bins. The calculations below reflect the change in control efficiency for these sources.

Process Data

Grain Required for 30.00 MMgal EtOH:	11.5	MM bushels/yr =	11,500,000	bu/yr
Ethanol Grain Density:	56	lb/bushel		
Total Grain Receiving Throughput:	322,000	ton/yr =	36.8	ton/hr
Short Term Grain Receiving Throughput (facility maximum based on MPCA records for unloading conveyer)	130.0	ton/hr		
Dryer Solids rate (solids only - no moisture included):			17,500	lb/hr
DDGS Handling (solids only):	17,500 lb/hr ÷ 2000 lb/ton =		8.75	ton/hr
DDGS Handling (facility maximum):			84	ton/hr

Emission Calculation Method

Uncontrolled Potential Emissions = Throughput (ton/hr) · Emission Factor (lb/ton) · 8,760 hr/yr · 1 ton/2000 lb

PM Emissions from Grain Receiving, Cleaning, and Hammermilling

Emission Unit ID	Emission Source	Throughput (ton/hr)	AP-42[1] Emission Factor (lb/ton)	Uncontrolled PM Emissions (lb/hr)	Uncontrolled PM Emissions (tpy)	Capture Efficiency	Control Equipment Efficiency	Controlled PM Emissions (tpy)	Controlled PM Emissions (lb/hr)
EU005	Corn Dump Pit/Auger (Grain Receiving by Hopper Truck)	36.8	0.035	1.29	5.64	80%	99%	0.05	0.01
EU006	Grain Elevator (Headhouse and Internal Handling)	36.8	0.061	2.24	9.82	100%	99%	0.10	0.02
EU010	Scalper(Flaker)	36.8	0.770	28.30	123.97	100%	99%	1.24	0.28
EU087	Grain Leg(Headhouse and Internal Handling)	36.8	0.061	2.24	9.82	100%	99%	0.10	0.02
EU088	Grain Leg (Headhouse and Internal Handling)	36.8	0.061	2.24	9.82	100%	99%	0.10	0.02
EU089	Reclaim Leg (Headhouse and Internal Handling)	36.8	0.061	2.24	9.82	100%	99%	0.10	0.02
EU090	Reclaim Leg (Headhouse and Internal Handling)	36.8	0.061	2.24	9.82	100%	99%	0.10	0.02
SV005	**Grain Handling Totals**			**31.83**	**139.43**			**1.58**	**0.36**
EU056	DDGS Dump Pit/Auger	84.00	0.035	2.94	12.88	80%	99%	0.10	0.02
EU057	DDGS Elevator	84.00	0.061	5.12	22.44	100%	99%	0.22	0.05
EU058	Truck Load Spout	84.00	0.086	7.22	31.64	80%	99%	0.25	0.06
SV016	**DDGS Handling Totals**		**0.182**	**15.29**	**66.96**			**0.58**	**0.13**
EU060, 080	Hammermilling[2]	36.8	1.2	44.11	193.20	100%	99%	1.93	0.44
EU007, 9 & EU085-86	Corn Bins (Worst Case for modeling)	130.0	0.061	7.93	34.73	100%	0%	34.73	7.93
EU007, 9 & EU085-86	Corn Bins (Average) [3]	36.8	0.061	2.24	9.82	100%	0%	9.82	2.24
FS002	Uncaptured Emissions From Grain Handling	130.0	0.035	4.55	19.93	20%	uncaptured	3.99	0.91
FS003	Uncaptured Emissions From DDGS Handling	84.00	0.182	15.29	66.96	20%	uncaptured	13.39	3.06

1. Emission factors taken from AP-42 Section 9.9.1, 6/98.
2. The hammermilling emission factor is for controlled systems. The uncontrolled factor is back-calculated based on the baghouse control efficiency.
3. For individual permitting the grain bin (total) emissions will be divided equally between the 2 existing and 2 proposed grain bins.

DENCO II, LLC
Grain Receiving, Cleaning, and Hammermilling Emission Calculations (continued)

PM_{10} Emissions from Grain Receiving, Cleaning, and Hammermilling

Emission Unit ID	Emission Source	Throughput (ton/hr)	AP-42[1] Emission Factor (lb/ton)	Uncontrolled PM10 Emissions		Capture Efficiency	Control Equipment Efficiency	Controlled PM10 Emissions	
				(lb/hr)	(tpy)			(tpy)	(lb/hr)
EU005	Corn Dump Pit/Auger (Grain Receiving by Hopper Truck)	36.8	0.0078	0.29	1.26	80%	99%	0.01	0.00
EU006	Grain Elevator (Headhouse and Internal Handling)	36.8	0.034	1.25	5.47	100%	99%	0.05	0.01
EU010	Scalper(Flaker)	36.8	0.075	2.76	12.08	100%	99%	0.12	0.03
EU087	Grain Elevator (Headhouse and Internal Handling)	36.8	0.034	1.25	5.47	100%	99%	0.05	0.01
EU088	Grain Elevator (Headhouse and Internal Handling)	36.8	0.034	1.25	5.47	100%	99%	0.05	0.01
EU089	Reclaim Leg (Headhouse and Internal Handling)	36.8	0.034	1.25	5.47	100%	99%	0.05	0.01
EU090	Reclaim Leg (Headhouse and Internal Handling)	36.8	0.034	1.25	5.47	100%	99%	0.05	0.01
SV005	**Grain Handling Totals**			**4.29**	**18.80**			**0.35**	**0.08**
EU056	DDGS Dump Pit/Auger	84.00	0.0078	0.66	2.87	80%	99%	0.02	0.01
EU057	DDGS Elevator	84.00	0.034	2.86	12.51	100%	99%	0.13	0.03
EU058	Truck Load Spout	84.00	0.029	2.44	10.67	80%	99%	0.09	0.02
SV016	**DDGS Handling Totals**		**0.071**	**5.95**	**26.05**			**0.23**	**0.05**
EU060, 080	Hammermilling[2]	36.8	1.2	44.11	193.20	100%	99%	1.93	0.44
EU007, 9 & EU086-87	Corn Bins (Worst Case for modeling)	130.0	0.0063	0.82	3.59	100%	0%	3.59	0.82
EU007, 9 & EU086-87	Corn Bins (Average) [3]	36.8	0.0063	0.23	1.01	100%	0%	1.01	0.23
FS002	Uncaptured Emissions From Grain Handling	130.0	0.0078	1.01	4.44	20%	uncaptured	0.89	0.20
FS003	Uncaptured Emissions From DDGS Handling	84.0	0.037	3.09	13.54	20%	uncaptured	2.71	0.62

1. Emission factors taken from AP-42 Section 9.9.1, 6/98.
2. The hammermilling emission factor is for controlled systems. The uncontrolled factor is back-calculated based on the baghouse control efficiency.
3. For individual permitting the grain bin (total) emissions will be divided equally between the 2 existing and 2 proposed grain bins.

DENCO II, LLC
Grain Receiving, Cleaning, and Hammermilling Emission Calculations (continued)

$PM_{2.5}$ Emissions from Grain Receiving, Cleaning, and Hammermilling

Emission Unit ID	Emission Source	Throughput (ton/hr)	AP-42[1] Emission Factor (lb/ton)	Uncontrolled PM2.5 Emissions		Capture Efficiency	Control Equipment Efficiency	Controlled PM2.5 Emissions	
				(lb/hr)	(tpy)			(tpy)	(lb/hr)
EU005	Corn Dump Pit/Auger (Grain Receiving by Hopper Truck)	36.8	0.0013	0.05	0.21	80%	99%	0.00	0.00
EU006	Grain Elevator (Headhouse and Internal Handling)	36.8	0.0058	0.21	0.93	100%	99%	0.01	0.00
EU010	Scalper(Flaker)	36.8	0.075	2.76	12.08	100%	99%	0.12	0.03
EU087	Grain Leg (Headhouse and Internal Handling)	36.8	0.0059	0.22	0.95	100%	99%	0.01	0.00
EU088	Grain Leg (Headhouse and Internal Handling)	36.8	0.0059	0.22	0.95	100%	99%	0.01	0.00
EU089	Reclaim Leg (Headhouse and Internal Handling)	36.8	0.0059	0.22	0.95	100%	99%	0.01	0.00
EU090	Reclaim Leg (Headhouse and Internal Handling)	36.8	0.0059	0.22	0.95	100%	99%	0.01	0.00
SV005	**Grain Handling Totals**			**3.02**	**13.22**			**0.15**	**0.03**
EU056	DDGS Dump Pit/Auger	84.00	0.0013	0.11	0.48	80%	99%	0.00	0.00
EU057	DDGS Elevator	84.00	0.0058	0.49	2.13	100%	99%	0.02	0.00
EU058	Truck Load Spout	84.00	0.0049	0.41	1.80	80%	99%	0.01	0.00
SV016	**DDGS Handling Totals**			**1.01**	**4.42**			**0.04**	**0.01**
EU060, 080	Hammermilling[2]	36.8	1.2	44.11	193.20	100%	99%	1.93	0.44
EU007, 9 & EU086-87	Corn Bins (Worst Case for modeling)	130.0	0.0011	0.14	0.63	100%	0%	0.63	0.14
EU007, 9 & EU086-87	Corn Bins (Average) [3]	36.8	0.0011	0.04	0.18	100%	0%	0.18	0.04
FS002	Uncaptured Emissions From Grain Handling	130.0	0.0013	0.17	0.74	20%	uncaptured	0.15	0.03
FS003	Uncaptured Emissions From DDGS Handling	84.0	0.006	0.52	2.28	20%	uncaptured	0.46	0.10

1. Emission factors taken from AP-42 Section 9.9.1, 6/98.
2. The hammermilling emission factor is for controlled systems. The uncontrolled factor is back-calculated based on the baghouse control efficiency.
3. For individual permitting the grain bin (total) emissions will be divided equally between the 2 existing and 2 proposed grain bins.

SV005 PM/PM10 Emission Limit:	0.46 lb PM/hr =	2.01 ton PM/yr
SV016 PM/PM10 Emission Limit:	0.11 lb PM/hr =	0.48 ton PM/yr

DENCO II, LLC

Temporary Flat Storage

Assumptions:

- All emissions are fugitive.

- Material moisture content will be closer to 15.5%, however, we have conservatively assumed 4.8%.

- Thoughput will be 188 ton/hr for grain dropping.

- Only one operation will take place at a time (loading or reclaim).

$$E = k(0.0032)\frac{\left(\frac{U}{5}\right)^{1.3}}{\left(\frac{M}{2}\right)^{1.4}} \qquad Equation\ 1$$

E = emission factor (lb/ton)

k = particle size multiplier

U = mean wind speed (mph)

M = material moisture content (%)

k =	1	for TSP
	0.35	for PM10
	0.053	for PM2.5
U =	15.0	mph (max wind speed for equation)
M =	4.8	% (AP-42 Table 13.2.4-1)
Throughput	188	ton/hr

Emissions Activity	Throughput (tons)	Emission Factor (lb/ton)			Average Uncontrolled Emissions (lb/hr)		
		PM	PM10	PM2.5	PM	PM10	PM2.5
Loading	188	0.00392	0.00137	0.00021	0.737	0.258	0.039
Reclaim	188	0.00392	0.00137	0.00021	0.737	0.258	0.039

APPENDIX C

TANK EMISSIONS CALCULATIONS

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	DENCO TK-005 E85
City:	Morris
State:	Minnesota
Company:	DENCO
Type of Tank:	Internal Floating Roof Tank
Description:	Denaturant Storage Tank

Tank Dimensions

Diameter (ft):	11.00
Volume (gallons):	9,500.00
Turnovers:	126.00
Self Supp. Roof? (y/n):	N
No. of Columns:	1.00
Eff. Col. Diam. (ft):	1.00

Paint Characteristics

Internal Shell Condition:	Light Rust
Shell Color/Shade:	White/White
Shell Condition	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Rim-Seal System

Primary Seal:	Liquid-mounted
Secondary Seal	None

Deck Characteristics

Deck Fitting Category:	Detail
Deck Type:	Welded

Deck Fitting/Status	Quantity
Access Hatch (24-in. Diam.)/Unbolted Cover, Gasketed	1
Automatic Gauge Float Well/Unbolted Cover, Gasketed	1
Column Well (24-in. Diam.)/Built-Up Col.-Sliding Cover, Gask.	1
Ladder Well (36-in. Diam.)/Sliding Cover, Gasketed	1
Roof Leg or Hanger Well/Adjustable	7
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1

Meterological Data used in Emissions Calculations: St. Cloud, Minnesota (Avg Atmospheric Pressure = 14.18 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

DENCO TK-005 E85 - Internal Floating Roof Tank
Morris, Minnesota

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
E 85	All	43.16	37.69	48.64	41.54	0.6322	N/A	N/A	55.5426			49.80	
Ethyl alcohol						0.3610	N/A	N/A	46.0700	0.8500	0.4352	46.07	Option 2: A=8.321, B=1718.21, C=237.52
Gasoline (RVP 10)						3.7006	N/A	N/A	66.0000	0.1500	0.5648	92.00	Option 4: RVP=10, ASTM Slope=3

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

DENCO TK-005 E85 - Internal Floating Roof Tank
Morris, Minnesota

Annual Emission Calcaulations	
Rim Seal Losses (lb):	11.1442
Seal Factor A (lb-mole/ft-yr):	1.6000
Seal Factor B (lb-mole/ft-yr (mph)^n):	0.3000
Value of Vapor Pressure Function:	0.0114
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.6322
Tank Diameter (ft):	11.0000
Vapor Molecular Weight (lb/lb-mole):	55.5426
Product Factor:	1.0000
Withdrawal Losses (lb):	25.7307
Number of Columns:	1.0000
Effective Column Diameter (ft):	1.0000
Annual Net Throughput (gal/yr.):	1,197,000.0000
Shell Clingage Factor (bbl/1000 sqft):	0.0015
Average Organic Liquid Density (lb/gal):	6.4359
Tank Diameter (ft):	11.0000
Deck Fitting Losses (lb):	125.2461
Value of Vapor Pressure Function:	0.0114
Vapor Molecular Weight (lb/lb-mole):	55.5426
Product Factor:	1.0000
Tot. Roof Fitting Loss Fact.(lb-mole/yr):	197.8000
Deck Seam Losses (lb):	0.0000
Deck Seam Length (ft):	0.0000
Deck Seam Loss per Unit Length Factor (lb-mole/ft-yr):	0.0000
Deck Seam Length Factor(ft/sqft):	0.0000
Tank Diameter (ft):	11.0000
Vapor Molecular Weight (lb/lb-mole):	55.5426
Product Factor:	1.0000
Total Losses (lb):	162.1211

Roof Fitting/Status	Quantity	Roof Fitting Loss Factors KFa(lb-mole/yr)	KFb(lb-mole/(yr mph^n))	m	Losses(lb)
Access Hatch (24-in. Diam.)/Unbolted Cover, Gasketed	1	31.00	5.20	1.30	19.6291
Automatic Gauge Float Well/Unbolted Cover, Gasketed	1	4.30	17.00	0.38	2.7227
Column Well (24-in. Diam.)/Built-Up Col.-Sliding Cover, Gask.	1	33.00	0.00	0.00	20.8955
Ladder Well (36-in. Diam.)/Sliding Cover, Gasketed	1	56.00	0.00	0.00	35.4590
Roof Leg or Hanger Well/Adjustable	7	7.90	0.00	0.00	35.0157
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1	12.00	0.00	0.00	7.5983
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1	6.20	1.20	0.94	3.9258

TANKS 4.0.9d
Emissions Report - Detail Format

Individual Tank Emission Totals

Emissions Report for: Annual

DENCO TK-005 E85 - Internal Floating Roof Tank
Morris, Minnesota

	Losses(lbs)				
Components	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
E 85	11.14	25.73	125.25	0.00	162.12
Ethyl alcohol	4.85	21.87	54.51	0.00	81.23
Gasoline (RVP 10)	6.29	3.86	70.74	0.00	80.89

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	DEN-2012-MOD-TK011
City:	Morris
State:	Minnesota
Company:	DENCO II, LLC
Type of Tank:	Internal Floating Roof Tank
Description:	Denatured Ethanol Storage Tank

Tank Dimensions

Diameter (ft):	36.00
Volume (gallons):	250,000.00
Turnovers:	63.00
Self Supp. Roof? (y/n):	N
No. of Columns:	1.00
Eff. Col. Diam. (ft):	1.00

Paint Characteristics

Internal Shell Condition:	Light Rust
Shell Color/Shade:	White/White
Shell Condition	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Rim-Seal System

Primary Seal:	Liquid-mounted
Secondary Seal	None

Deck Characteristics

Deck Fitting Category:	Detail
Deck Type:	Welded

Deck Fitting/Status	Quantity
Access Hatch (24-in. Diam.)/Unbolted Cover, Gasketed	1
Automatic Gauge Float Well/Unbolted Cover, Gasketed	1
Column Well (24-in. Diam.)/Built-Up Col.-Sliding Cover, Gask.	1
Ladder Well (36-in. Diam.)/Sliding Cover, Gasketed	1
Roof Leg or Hanger Well/Adjustable	11
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1

Meterological Data used in Emissions Calculations: St. Cloud, Minnesota (Avg Atmospheric Pressure = 14.18 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

DEN-2012-MOD-TK011 - Internal Floating Roof Tank
Morris, Minnesota

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Denatured Ethanol	All	43.16	37.69	48.64	41.54	0.4589	N/A	N/A	52.2803			46.81	Option 2: A=8.12187, B=1598.673, C=226.726
Benzene						0.7182	N/A	N/A	78.1100	0.0021	0.0029	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Ethyl alcohol						0.3610	N/A	N/A	46.0700	0.9580	0.6748	46.07	Option 2: A=8.321, B=1718.21, C=237.52
Hexane (-n)						1.2130	N/A	N/A	86.1700	0.0042	0.0099	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Pentane (-n)						4.6457	N/A	N/A	72.1500	0.0344	0.3118	72.15	Option 3: A=27691, B=7.558
Toluene						0.1912	N/A	N/A	92.1300	0.0013	0.0005	92.13	Option 2: A=6.954, B=1344.8, C=219.48

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

DEN-2012-MOD-TK011 - Internal Floating Roof Tank
Morris, Minnesota

Annual Emission Calcaulations	
Rim Seal Losses (lb):	24.7661
Seal Factor A (lb-mole/ft-yr):	1.6000
Seal Factor B (lb-mole/ft-yr (mph)^n):	0.3000
Value of Vapor Pressure Function:	0.0082
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.4589
Tank Diameter (ft):	36.0000
Vapor Molecular Weight (lb/lb-mole):	52.2803
Product Factor:	1.0000
Withdrawal Losses (lb):	99.1696
Number of Columns:	1.0000
Effective Column Diameter (ft):	1.0000
Annual Net Throughput (gal/yr.):	15,750,000.0000
Shell Clingage Factor (bbl/1000 sqft):	0.0015
Average Organic Liquid Density (lb/gal):	6.5486
Tank Diameter (ft):	36.0000
Deck Fitting Losses (lb):	98.6343
Value of Vapor Pressure Function:	0.0082
Vapor Molecular Weight (lb/lb-mole):	52.2803
Product Factor:	1.0000
Tot. Roof Fitting Loss Fact.(lb-mole/yr):	229.4000
Deck Seam Losses (lb):	0.0000
Deck Seam Length (ft):	0.0000
Deck Seam Loss per Unit Length Factor (lb-mole/ft-yr):	0.0000
Deck Seam Length Factor(ft/sqft):	0.0000
Tank Diameter (ft):	36.0000
Vapor Molecular Weight (lb/lb-mole):	52.2803
Product Factor:	1.0000
Total Losses (lb):	222.5700

Roof Fitting/Status	Quantity	Roof Fitting Loss Factors KFa(lb-mole/yr)	KFb(lb-mole/(yr mph^n))	m	Losses(lb)
Access Hatch (24-in. Diam.)/Unbolted Cover, Gasketed	1	31.00	5.20	1.30	13.3290
Automatic Gauge Float Well/Unbolted Cover, Gasketed	1	4.30	17.00	0.38	1.8489
Column Well (24-in. Diam.)/Built-Up Col.-Sliding Cover, Gask.	1	33.00	0.00	0.00	14.1889
Ladder Well (36-in. Diam.)/Sliding Cover, Gasketed	1	56.00	0.00	0.00	24.0781
Roof Leg or Hanger Well/Adjustable	11	7.90	0.00	0.00	37.3641
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1	12.00	0.00	0.00	5.1596
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1	6.20	1.20	0.94	2.6658

TANKS 4.0.9d
Emissions Report - Detail Format

Individual Tank Emission Totals

Emissions Report for: Annual

DEN-2012-MOD-TK011 - Internal Floating Roof Tank
Morris, Minnesota

	Losses(lbs)				
Components	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Denatured Ethanol	24.77	99.17	98.63	0.00	222.57
Ethyl alcohol	16.71	95.00	66.56	0.00	178.28
Benzene	0.07	0.21	0.29	0.00	0.57
Toluene	0.01	0.13	0.05	0.00	0.19
Pentane (-n)	7.72	3.41	30.76	0.00	41.89
Hexane (-n)	0.25	0.42	0.98	0.00	1.64

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	DEN-2012-MOD-TK012
City:	Morris
State:	Minnesota
Company:	DENCO II, LLC
Type of Tank:	Internal Floating Roof Tank
Description:	Denaturant Storage Tank #2

Tank Dimensions

Diameter (ft):	45.00
Volume (gallons):	500,000.00
Turnovers:	31.50
Self Supp. Roof? (y/n):	N
No. of Columns:	1.00
Eff. Col. Diam. (ft):	1.00

Paint Characteristics

Internal Shell Condition:	Light Rust
Shell Color/Shade:	White/White
Shell Condition	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Rim-Seal System

Primary Seal:	Liquid-mounted
Secondary Seal	None

Deck Characteristics

Deck Fitting Category:	Typical
Deck Type:	Welded

Deck Fitting/Status	Quantity
Access Hatch (24-in. Diam.)/Unbolted Cover, Ungasketed	1
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1
Column Well (24-in. Diam.)/Built-Up Col.-Sliding Cover, Ungask.	1
Ladder Well (36-in. Diam.)/Sliding Cover, Ungasketed	1
Roof Leg or Hanger Well/Adjustable	13
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1

Meterological Data used in Emissions Calculations: St. Cloud, Minnesota (Avg Atmospheric Pressure = 14.18 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

DEN-2012-MOD-TK012 - Internal Floating Roof Tank
Morris, Minnesota

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Denatured ethanol	All	43.16	37.69	48.64	41.54	0.3507	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

DEN-2012-MOD-TK012 - Internal Floating Roof Tank
Morris, Minnesota

Annual Emission Calcaulations	
Rim Seal Losses (lb):	20.7634
Seal Factor A (lb-mole/ft-yr):	1.6000
Seal Factor B (lb-mole/ft-yr (mph)^n):	0.3000
Value of Vapor Pressure Function:	0.0063
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.3507
Tank Diameter (ft):	45.0000
Vapor Molecular Weight (lb/lb-mole):	46.0700
Product Factor:	1.0000
Withdrawal Losses (lb):	79.6468
Number of Columns:	1.0000
Effective Column Diameter (ft):	1.0000
Annual Net Throughput (gal/yr.):	15,750,000.0000
Shell Clingage Factor (bbl/1000 sqft):	0.0015
Average Organic Liquid Density (lb/gal):	6.6100
Tank Diameter (ft):	45.0000
Deck Fitting Losses (lb):	84.7548
Value of Vapor Pressure Function:	0.0063
Vapor Molecular Weight (lb/lb-mole):	46.0700
Product Factor:	1.0000
Tot. Roof Fitting Loss Fact.(lb-mole/yr):	293.9000
Deck Seam Losses (lb):	0.0000
Deck Seam Length (ft):	0.0000
Deck Seam Loss per Unit Length Factor (lb-mole/ft-yr):	0.0000
Deck Seam Length Factor(ft/sqft):	0.0000
Tank Diameter (ft):	45.0000
Vapor Molecular Weight (lb/lb-mole):	46.0700
Product Factor:	1.0000
Total Losses (lb):	185.1650

Roof Fitting/Status	Quantity	Roof Fitting Loss Factors KFa(lb-mole/yr)	KFb(lb-mole/(yr mph^n))	m	Losses(lb)
Access Hatch (24-in. Diam.)/Unbolted Cover, Ungasketed	1	36.00	5.90	1.20	10.3817
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1	14.00	5.40	1.10	4.0373
Column Well (24-in. Diam.)/Built-Up Col.-Sliding Cover, Ungask.	1	47.00	0.00	0.00	13.5539
Ladder Well (36-in. Diam.)/Sliding Cover, Ungasketed	1	76.00	0.00	0.00	21.9169
Roof Leg or Hanger Well/Adjustable	13	7.90	0.00	0.00	29.6166
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1	12.00	0.00	0.00	3.4606
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1	6.20	1.20	0.94	1.7880

TANKS 4.0.9d
Emissions Report - Detail Format

Individual Tank Emission Totals

Emissions Report for: Annual

DEN-2012-MOD-TK012 - Internal Floating Roof Tank
Morris, Minnesota

	Losses(lbs)				
Components	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Denatured ethanol	20.76	79.65	84.75	0.00	185.17

TANKS 4.0.9d
Emissions Report - Detail Format
Total Emissions Summaries - All Tanks in Report

Emissions Report for: Annual

Tank Identification				Losses (lbs)
DEN-2012-MOD-TK011	DENCO II, LLC	Internal Floating Roof Tank	Morris, Minnesota	222.57
DEN-2012-MOD-TK012	DENCO II, LLC	Internal Floating Roof Tank	Morris, Minnesota	185.17
Total Emissions for all Tanks:				407.74

ATTACHMENT 2 Facility Description

MINNESOTA POLLUTION CONTROL AGENCY
AIR QUALITY
520 LAFAYETTE ROAD
ST. PAUL, MN 55155-4194

FACILITY DESCRIPTION: EMISSION UNIT (EU)

Show: Active and Pending Records
Action: PER 005
AQD Facility ID: 14900013
Facility Name: DENCO II LLC

	ID No.	Emission Unit Status	Added By (Action)	Retired By (Action)	Insignif-icant Activity	Operator ID for Item	Stack/ Vent ID No(s).	Control Equip. ID No(s).	Operator Description	Manufacturer	Model Number	SIC	Max. Design Capacity	Maximum Design Capacity			Max Fuel Input (mil Btu)
														Materials	Units n	Units d	
1	EU 001	Active	PER 001		☐		SV 001 (M)		Boiler No. 1	Stone Johnson		2869	24.5	Heat	Mmbtu	Hr	24.5
2	EU 002	Active	PER 001		☐		SV 002 (M)		Boiler No. 2	Stone Johnson		2869	24.5	Heat	Mmbtu	Hr	24.5
3	EU 003	Removed	EIS 002		☐				Boiler No. 3	Kewanee		2869	16.7	Heat	Mmbtu	Hr	16.7
4	EU 004	Removed	EIS 002		☐				Boiler No. 4	Kewanee		2869	16.7	Heat	Mmbtu	Hr	16.7
5	EU 005	Active	EIS 008		☐		SV 005 (M)	CE 019	Corn Dump Pit	Butler Manufacturing		2869	130	Corn	Ton	Hr	
6	EU 006	Active	EIS 008		☐		SV 005 (M)	CE 019	Grain Elevator			2869	3000		Bushel	Hr	
7	EU 007	Active	EIS 008		☐		SV 005 (M)	CE 019	Corn Bin 1 (storage bin)	Hutchinson Div of Lear		2869	18000		Bushel		
8	EU 008	Active	EIS 008		☐		SV 005 (M)	CE 019	Corn Bin 2 (surge bin)	TBD		2869	12000		Bushel		
9	EU 009	Active	EIS 008		☐		SV 005 (M)	CE 019	Corn Bin 3 (storage bin)	TBD		2869	20000		Bushel		
10	EU 010	Active	PER 002		☐		SV 005 (M)	CE 019	Scalper	Henke Manufacturing		2869	2000		Bushel	Hr	
11	EU 011	Removed	EIS 002		☐			CE 007	Hammermill 1	Westphal		2869	3.50	Corn	Ton	Hr	
12	EU 012	Removed	EIS 002		☐			CE 008	Hammermill 2	Westphal		2869	3.50	Corn	Ton	Hr	
13	EU 013	Removed	EIS 002		☐			CE 009	Hammermill 3	Westphal		2869	3.50	Corn	Ton	Hr	
14	EU 014	Removed	EIS 002		☐			CE 010	Hammermill 4	Westphal		2869	15.5	Corn	Ton	Hr	
15	EU 015	Removed	EIS 002		☐			CE 011	Hammermill 5	Westphal		2869	15.5	Corn	Ton	Hr	
16	EU 016	Active	EIS 008		☐		SV 018 (M)	CE 020	Yeast Propagation Tank	Morris Ag-Energy	Custom	2869	14500		Gal		
17	EU 017	Active	EIS 008		☐		SV 018 (M)	CE 020	Yeast Propagation Tank	Morris Ag-Energy	Custom	2869	14500		Gal		
18	EU 018	Active	EIS 009		☐		SV 018 (M)	CE 020	Fermenter A-3	Morris Ag-Energy	Custom	2869	14500		Gal		
19	EU 019	Active	EIS 009		☐		SV 018 (M)	CE 020	Fermenter A-4	Morris Ag-Energy	Custom	2869	14500		Gal		
20	EU 020	Removed	EIS 002		☐		SV 011 (M)		Fermenter A-5	Morris Ag-Energy	Custom	2869	14500		Gal		
21	EU 021	Removed	EIS 002		☐		SV 011 (M)		Fermenter A-6	Morris Ag-Energy	Custom	2869	14500		Gal		
22	EU 022	Removed	EIS 002		☐		SV 011 (M)		Fermenter A-7	Morris Ag-Energy	Custom	2869	14500		Gal		
23	EU 023	Removed	EIS 002		☐		SV 011 (M)		Fermenter A-8	Morris Ag-Energy	Custom	2869	14500		Gal		
24	EU 024	Removed	EIS 002		☐		SV 011 (M)		Fermenter A-9	Morris Ag-Energy	Custom	2869	14500		Gal		
25	EU 025	Removed	EIS 002		☐		SV 011 (M)		Fermenter A-10	Morris Ag-Energy	Custom	2869	14500		Gal		
26	EU 026	Removed	EIS 002		☐		SV 011 (M)		Fermenter A-11	Morris Ag-Energy	Custom	2869	14500		Gal		

FACILITY DESCRIPTION: EMISSION UNIT (EU)

	ID No.	Emission Unit Status	Added By (Action)	Comm-ence Const. Date	Initial Startup Date	Removal Date	Firing Method	Pct. Fuel/ Space Heat	Bottleneck	Elevator Type
1	EU 001	Active	PER 001	01/01/1985						
2	EU 002	Active	PER 001	01/01/1985						
3	EU 003	Removed	EIS 002	01/01/1985		02/26/1999				
4	EU 004	Removed	EIS 002	01/01/1985		02/26/1999				
5	EU 005	Active	EIS 008	06/01/1990						
6	EU 006	Active	EIS 008	06/01/1990						
7	EU 007	Active	EIS 008							
8	EU 008	Active	EIS 008							
9	EU 009	Active	EIS 008							
10	EU 010	Active	PER 002	06/01/1990						
11	EU 011	Removed	EIS 002	01/01/1990	06/01/1990	02/26/1999				
12	EU 012	Removed	EIS 002	01/01/1990	06/01/1990	02/26/1999				
13	EU 013	Removed	EIS 002	01/01/1990	06/01/1990	02/26/1999				
14	EU 014	Removed	EIS 002	09/01/1995	12/01/1995	02/26/1999				
15	EU 015	Removed	EIS 002			02/26/1999				
16	EU 016	Active	EIS 008	01/01/1990	06/01/1990					
17	EU 017	Active	EIS 008	01/01/1990	06/01/1990					
18	EU 018	Active	EIS 009	01/01/1990	06/01/1990					
19	EU 019	Active	EIS 009	01/01/1990	06/01/1990					
20	EU 020	Removed	EIS 002	01/01/1990	06/01/1990	02/26/1999				
21	EU 021	Removed	EIS 002	01/01/1990	06/01/1990	02/26/1999				
22	EU 022	Removed	EIS 002	01/01/1990	06/01/1990	02/26/1999				
23	EU 023	Removed	EIS 002	01/01/1990	06/01/1990	02/26/1999				
24	EU 024	Removed	EIS 002	01/01/1990	06/01/1990	02/26/1999				
25	EU 025	Removed	EIS 002	01/01/1990	06/01/1990	02/26/1999				
26	EU 026	Removed	EIS 002	01/01/1990	06/01/1990	02/26/1999				

MINNESOTA POLLUTION CONTROL AGENCY
AIR QUALITY
520 LAFAYETTE ROAD
ST. PAUL, MN 55155-4194

FACILITY DESCRIPTION: EMISSION UNIT (EU)

Show: Active and Pending Records
Action: PER 005
AQD Facility ID: 14900013
Facility Name: DENCO II LLC

	ID No.	Emission Unit Status	Added By (Action)	Retired By (Action)	Insignif-icant Activity	Operator ID for Item	Stack/ Vent ID No(s).	Control Equip. ID No(s).	Operator Description	Manufacturer	Model Number	SIC	Max. Design Capacity	Maximum Design Capacity			Max Fuel Input (mil Btu)
														Materials	Units n	Units d	
27	EU 027	Removed	EIS 002		☐		SV 011 (M)		Fermenter A-12	Morris Ag-Energy	Custom	2869	14500		Gal		
28	EU 028	Removed	EIS 002		☐		SV 011 (M)		Fermenter A-13	Morris Ag-Energy	Custom	2869	14500		Gal		
29	EU 029	Removed	EIS 002		☐		SV 011 (M)		Fermenter A-14	Morris Ag-Energy	Custom	2869	14500		Gal		
30	EU 030	Removed	EIS 002		☐		SV 011 (M)		Fermenter A-15	Morris Ag-Energy	Custom	2869	14500		Gal		
31	EU 031	Removed	EIS 002		☐		SV 011 (M)		Beerwell A-1	Morris Ag-Energy	Custom	2869	14500		Gal		
32	EU 032	Removed	EIS 002		☐		SV 011 (M)		Beerwell A-2	Morris Ag-Energy	Custom	2869	14500		Gal		
33	EU 033	Removed	EIS 002		☐		SV 011 (M)		Beerwell A-3	Morris Ag-Energy	Custom	2869	14500		Gal		
34	EU 034	Removed	EIS 002		☐		SV 012 (M)		Fermenter B-1	Morris Ag-Energy	Custom	2869	117000		Gal		
35	EU 035	Removed	EIS 002		☐		SV 012 (M)		Fermenter B-2	Morris Ag-Energy	Custom	2869	117000		Gal		
36	EU 036	Removed	EIS 002		☐		SV 012 (M)		Fermenter B-3	Morris Ag-Energy	Custom	2869	117000		Gal		
37	EU 037	Removed	EIS 002		☐		SV 012 (M)		Fermenter B-4	Morris Ag-Energy	Custom	2869	14500		Gal		
38	EU 038	Removed	EIS 002		☐		SV 012 (M)		Fermenter B-5	Morris Ag-Energy	Custom	2869	14500		Gal		
39	EU 039	Removed	EIS 002		☐		SV 012 (M)		Fermenter B-6	Morris Ag-Energy	Custom	2869	14500		Gal		
40	EU 040	Removed	EIS 002		☐		SV 012 (M)		Fermenter B-7	Morris Ag-Energy	Custom	2869	14500		Gal		
41	EU 041	Removed	EIS 002		☐		SV 012 (M)		Fermenter B-8	Morris Ag-Energy	Custom	2869	14500		Gal		
42	EU 042	Removed	EIS 002		☐		SV 012 (M)		Beerwell B-1	Morris Ag-Energy	Custom	2869	14500		Gal		
43	EU 043	Removed	EIS 002		☐		SV 013 (M)		Fermenter C-1	Morris Ag-Energy	Custom	2869	117000		Gal		
44	EU 044	Removed	EIS 002		☐		SV 013 (M)		Fermenter C-2	Morris Ag-Energy	Custom	2869	117000		Gal		
45	EU 045	Removed	EIS 002		☐		SV 013 (M)		Fermenter C-3	Morris Ag-Energy	Custom	2869	117000		Gal		
46	EU 046	Removed	EIS 002		☐		SV 013 (M)		Fermenter C-4	Morris Ag-Energy	Custom	2869	117000		Gal		
47	EU 047	Removed	EIS 002		☐		SV 013 (M)		Beerwell C-1	Morris Ag-Energy	Custom	2869	85000		Gal		
48	EU 048	Removed	EIS 002		☐		SV 013 (M)		Beerwell C-2	Morris Ag-Energy	Custom	2869	85000		Gal		
49	EU 049	Removed	EIS 002		☐		SV 014 (M)		Dryer A	Heil	85	2869	25200	DDGS	Lb	Hr	14.0
50	EU 050	Removed	EIS 002		☐		SV 015 (M)		Dryer B	Heil	85	2869	25200	DDGS	Lb	Hr	14.0
51	EU 051	Active	EIS 002		☐		SV 018 (M)	CE 020	Stripper			2869	17	Ethanol	Mgal	Yr	
52	EU 052	Removed	EIS 002		☐		SV 005 (M)		DDGS Legging			2869	4.2		Ton	Hr	

FACILITY DESCRIPTION: EMISSION UNIT (EU)

	ID No.	Emission Unit Status	Added By (Action)	Comm-ence Const. Date	Initial Startup Date	Removal Date	Firing Method	Pct. Fuel/ Space Heat	Bottleneck	Elevator Type
27	EU 027	Removed	EIS 002	01/01/1990	06/01/1990	02/26/1999				
28	EU 028	Removed	EIS 002	01/01/1990	06/01/1990	02/26/1999				
29	EU 029	Removed	EIS 002	01/01/1990	06/01/1990	02/26/1999				
30	EU 030	Removed	EIS 002	01/01/1990	06/01/1990	02/26/1999				
31	EU 031	Removed	EIS 002	01/01/1990	06/01/1990	02/26/1999				
32	EU 032	Removed	EIS 002	01/01/1990	06/01/1990	02/26/1999				
33	EU 033	Removed	EIS 002	01/01/1990	06/01/1990	02/26/1999				
34	EU 034	Removed	EIS 002	07/01/1995	04/16/1996	02/26/1999				
35	EU 035	Removed	EIS 002	07/01/1995	04/16/1996	02/26/1999				
36	EU 036	Removed	EIS 002	07/01/1995	04/16/1996	02/26/1999				
37	EU 037	Removed	EIS 002	07/01/1995	09/01/1995	02/26/1999				
38	EU 038	Removed	EIS 002	07/01/1995	09/01/1995	02/26/1999				
39	EU 039	Removed	EIS 002	07/01/1995	09/01/1995	02/26/1999				
40	EU 040	Removed	EIS 002	07/01/1995	09/01/1995	02/26/1999				
41	EU 041	Removed	EIS 002	07/01/1995	09/01/1995	02/26/1999				
42	EU 042	Removed	EIS 002	07/01/1995	09/01/1995	02/26/1999				
43	EU 043	Removed	EIS 002	08/01/1995	04/16/1996	02/26/1999				
44	EU 044	Removed	EIS 002			02/26/1999				
45	EU 045	Removed	EIS 002			02/26/1999				
46	EU 046	Removed	EIS 002			02/26/1999				
47	EU 047	Removed	EIS 002	08/01/1995	04/16/1996	02/26/1999				
48	EU 048	Removed	EIS 002			02/26/1999				
49	EU 049	Removed	EIS 002	10/01/1994	04/01/1995	02/26/1999				
50	EU 050	Removed	EIS 002	09/01/1995	12/01/1995	02/26/1999				
51	EU 051	Active	EIS 002	01/01/1990	06/01/1990					
52	EU 052	Removed	EIS 002	01/01/1990	06/01/1990	02/26/1999				

MINNESOTA POLLUTION CONTROL AGENCY
AIR QUALITY
520 LAFAYETTE ROAD
ST. PAUL, MN 55155-4194

FACILITY DESCRIPTION: EMISSION UNIT (EU)

Show: Active and Pending Records
Action: PER 005
AQD Facility ID: 14900013
Facility Name: DENCO II LLC

	ID No.	Emission Unit Status	Added By (Action)	Retired By (Action)	Insignif-icant Activity	Operator ID for Item	Stack/ Vent ID No(s).	Control Equip. ID No(s).	Operator Description	Manufacturer	Model Number	SIC	Max. Design Capacity	Maximum Design Capacity			Max Fuel Input (mil Btu)
														Materials	Units n	Units d	
53	EU 053	Removed	EIS 002		☐		SV 005 (M)		DDGS Bin Loading			2869	4.2		Ton	Hr	
54	EU 054	Removed	EIS 002		☐		SV 005 (M)		Truck Load Spout 1			2869	4.2		Ton	Hr	
55	EU 055	Active	PER 002		☐		SV 016 (M)		DDGS Storage Pile			2869	4.2		Ton	Hr	
56	EU 056	Active	PER 001		☐		SV 016 (M)	CE 018	DDGS Dump Pit			2869	5.5		Ton	Hr	
57	EU 057	Active	PER 001		☐		SV 016 (M)	CE 018	DDGS Elevator			2869	5.5		Ton	Hr	
58	EU 058	Active	PER 002		☐		SV 016 (M)	CE 018	Truck Load Spout			2869	5.5		Ton	Hr	
59	EU 059	Active	PER 004		☐		SV 017 (M)		Boiler No. 3	Superior		2869	60	Heat	Mmbtu	Hr	60
60	EU 060	Active	EIS 008		☐		SV 021 (M)	CE 024	Hammermill	Westphal		2869	20		Ton	Hr	
61	EU 061	Active	PER 002		☐		SV 018 (M)	CE 020	Fermenter	Diversified Energy Co.	custom	2869	250000		Gal		
62	EU 062	Active	PER 002		☐		SV 018 (M)	CE 020	Fermenter	Diversified Energy Co.	custom	2869	250000		Gal		
63	EU 063	Active	PER 002		☐		SV 018 (M)	CE 020	Fermenter	Diversified Energy Co.	custom	2869	250000		Gal		
64	EU 064	Active	PER 002		☐		SV 018 (M)	CE 020	Beer Well	Diversified Energy Co.	custom	2869	125000		Gal		
65	EU 065	Active	PER 002		☐		SV 018 (M)	CE 020	Beer Well	Diversified Energy Co.	custom	2869	125000		Gal		
66	EU 066	Active	PER 004		☐		SV 019 (M)	CE 021 CE 027	DDGS Dryer	Heil	85	2869	50400	DDGS	Lb	Hr	38
67	EU 067	Active	PER 002		☐		SV 020 (M)	CE 023	Bio-digester	TBD	TBD	2869	12600		Ft3	Day	0.0147
68	EU 068	Active	EIS 002		☐		SV 018 (M)	CE 020	Rectifier			2869					
69	EU 069	Active	EIS 002		☐		SV 018 (M)	CE 020	Side Stripper			2869					
70	EU 070	Active	EIS 002		☐		SV 018 (M)	CE 020	Molecular Sieve			2869					
71	EU 071	Active	PER 003		☐		SV 022		Cooling Cyclone			2869					
72	EU 072	Active	EIS 005		☐			CE 020	Fermenter			2869					
73	EU 072	Active	PER 005		☐		SV 018	CE 020	Fermenter			2869					
74	EU 073	Retired	EIS 008		☐				DDGS Bin			2869					
75	EU 074	Retired	EIS 008		☐				Corn Gluten Bin			2869					
76	EU 075	Retired	EIS 008		☐				Premix Bin			2869					
77	EU 076	Active	PER 004		☐		SV 023 (M)	CE 025	Ethanol loadout flare	TBD	TBD	2869	14,700	Heat	Btu	Hr	0.0147
78	EU 077	Active	PER 004		☐		SV 024	CE 026	DDGS Storage Bin	TBD	TBD	2869	2150		Ft3	Day	

FACILITY DESCRIPTION: EMISSION UNIT (EU)

	ID No.	Emission Unit Status	Added By (Action)	Comm-ence Const. Date	Initial Startup Date	Removal Date	Firing Method	Pct. Fuel/ Space Heat	Bottleneck	Elevator Type
53	EU 053	Removed	EIS 002	01/01/1990	06/01/1990	02/26/1999				
54	EU 054	Removed	EIS 002	01/01/1990	06/01/1990	02/26/1999				
55	EU 055	Active	PER 002							
56	EU 056	Active	PER 001							
57	EU 057	Active	PER 001							
58	EU 058	Active	PER 002							
59	EU 059	Active	PER 004	04/01/1999						
60	EU 060	Active	EIS 008	04/01/1999	09/01/1999					
61	EU 061	Active	PER 002	04/01/1999	09/01/1999					
62	EU 062	Active	PER 002	04/01/1999	09/01/1999					
63	EU 063	Active	PER 002	04/01/1999	09/01/1999					
64	EU 064	Active	PER 002	04/01/1999	09/01/1999					
65	EU 065	Active	PER 002	04/01/1999	09/01/1999					
66	EU 066	Active	PER 004	04/01/1999	09/01/1999					
67	EU 067	Active	PER 002	04/01/1999	09/01/1999					
68	EU 068	Active	EIS 002							
69	EU 069	Active	EIS 002							
70	EU 070	Active	EIS 002							
71	EU 071	Active	PER 003							
72	EU 072	Active	EIS 005							
73	EU 072	Active	PER 005							
74	EU 073	Retired	EIS 008			12/31/2003				
75	EU 074	Retired	EIS 008			12/31/2003				
76	EU 075	Retired	EIS 008			12/31/2003				
77	EU 076	Active	PER 004	07/01/2004	09/01/2004			0		
78	EU 077	Active	PER 004	07/01/2004	09/01/2004					

MINNESOTA POLLUTION CONTROL AGENCY
AIR QUALITY
520 LAFAYETTE ROAD
ST. PAUL, MN 55155-4194

FACILITY DESCRIPTION: EMISSION UNIT (EU)

Show: Active and Pending Records
Action: PER 005
AQD Facility ID: 14900013
Facility Name: DENCO II LLC

	ID No.	Emission Unit Status	Added By (Action)	Retired By (Action)	Insignif-icant Activity	Operator ID for Item	Stack/ Vent ID No(s).	Control Equip. ID No(s).	Operator Description	Manufacturer	Model Number	SIC	Max. Design Capacity	Maximum Design Capacity			Max Fuel Input (mil Btu)
														Materials	Units n	Units d	
79	EU 078	Active	PER 004		☐		SV 024	CE 026	Corn Gluten Storage Bin	TBD	TBD	2869	1500		Ft3	Day	
80	EU 079	Active	PER 004		☐		SV 024	CE 026	Premix Storage Bin	TBD	TBD	2869	625		Ft3	Day	
81	EU 080	Active	PER 004		☐		SV 024	CE 026	Phosphorous Storage Bin	TBD	TBD	2869	625		Ft3	Day	
82	EU 081	Active	PER 004		☐		SV 024	CE 026	Magnesium Oxide Storage Bin	TBD	TBD	2869	1000		Ft3	Day	
83	EU 082	Active	PER 004		☐		SV 024	CE 026	Calcium Carbonate Storage Bin	TBD	TBD	2869	1000		Ft3	Day	
84	EU 083	Active	PER 004		☐		SV 019	CE 027	Regenerative Thermal Oxidizer	TBD	TBD	2869	8	Heat	Mmbtu	Hr	
85	EU 083	Active	PER 005		☐		SV 019	CE 027	Regenerative Thermal Oxidizer CE027	TBD	TBD	2869	8	Heat	Mmbtu	Hr	
86	EU 084	Active	PER 004		☐		SV 025	CE 028	Hammermill 2	TBD	TBD	2869	40		Ton	Hr	
87	EU 085	Active	EIS 009		☐				Slurry Tank			2869					
88	EU 086	Active	PER 005		☐		SV 005 (P)	CE 019	Grain Bin	Brock		2869	295000	Grain	Bushel		
89	EU 087	Active	PER 005		☐		SV 005 (P)	CE 019	Grain Bin	Brock		2869	295000	Grain	Bushel		

FACILITY DESCRIPTION: EMISSION UNIT (EU)

	ID No.	Emission Unit Status	Added By (Action)	Comm-ence Const. Date	Initial Startup Date	Removal Date	Firing Method	Pct. Fuel/ Space Heat	Bottleneck	Elevator Type
79	EU 078	Active	PER 004	07/01/2004	09/01/2004					
80	EU 079	Active	PER 004	07/01/2004	09/01/2004					
81	EU 080	Active	PER 004	07/01/2004	09/01/2004					
82	EU 081	Active	PER 004	07/01/2004	09/01/2004					
83	EU 082	Active	PER 004	07/01/2004	09/01/2004					
84	EU 083	Active	PER 004	07/01/2004	09/01/2004			0		
85	EU 083	Active	PER 005	07/01/2004	09/01/2004			0		
86	EU 084	Active	PER 004	07/01/2004	09/01/2004					
87	EU 085	Active	EIS 009							
88	EU 086	Active	PER 005	08/01/2012	09/01/2012					
89	EU 087	Active	PER 005	08/01/2012	09/01/2012					

MINNESOTA POLLUTION CONTROL AGENCY
AIR QUALITY
520 LAFAYETTE ROAD
ST. PAUL, MN 55155-4194

FACILITY DESCRIPTION: STACK/VENTS (SV)

Show: Active and Pending Records
Action: PER 005
AQD Facility ID: 14900013
Facility Name: DENCO II LLC

	ID No.	Stack/ Vent Status	Added By (Action)	Retired By (Action)	Operator ID for Item	Operators Description	Height of Opening From Ground (feet)	Inside Dimensions		Design Flow Rate at Top (ACFM)	Exit Gas Temperature at Top (ºF)	Flow Rate/ Temperature Information Source	Discharge Direction
								Diameter or Length (feet)	Width (feet)				
1	SV 001	Active	PER 001			Boiler #1	34.0	2.00		5095	350	Manufacturer	Up, With Cap
2	SV 002	Active	PER 001			Boiler #2	34.0	2.00		5095	350	Manufacturer	Up, With Cap
3	SV 003	Removec	PER 002			Boiler #3	34.0	2.00		3390	350	Manufacturer	Up, With Cap
4	SV 004	Removec	PER 002			Boiler #4	34.0	2.00		3390	350	Manufacturer	Up, With Cap
5	SV 005	Active	PER 004			Grain Handling Baghouse (CE 019)	6.0	1.67	2.17	12000	60	Test	Up, No Cap
6	SV 006	Removec	PER 002			Hammermill Baghouse #1	28.0	1.25	1.25	2650	60	Estimate	Up, No Cap
7	SV 007	Removec	PER 002			Hammermill Baghouse #2	28.0	1.25	1.25	2650	60	Estimate	Up, No Cap
8	SV 008	Removec	PER 002			Hammermill Baghouse #3	28.0	1.25	1.25	2650	60	Estimate	Up, No Cap
9	SV 009	Removec	PER 002			Hammermill Baghouse #4	28.0	1.25	1.25	2650	60	Estimate	Up, No Cap
10	SV 010	Removec	PER 002			Hammermill Baghouse #5	28.0	1.25	1.25	2650	60	Estimate	Up, No Cap
11	SV 011	Removec	PER 002			Fermentation A Scrubber	52.0	0.50		380	85	Test	Up, No Cap
12	SV 012	Removec	PER 002			Fermentation B Scrubber	52.0	0.50		380	80	Test	Up, No Cap
13	SV 013	Removec	PER 002			Fermentation C Scrubber	52.0	0.50		380	85	Test	Up, No Cap
14	SV 014	Removec	PER 002			Dryer A Cyclone	70.0	2.00		12500	180	Test	Up, No Cap
15	SV 015	Removec	PER 002			Dryer B Cyclone	70.0	2.00		12500	180	Test	Up, No Cap
16	SV 016	Active	PER 004			DDGS Building Exhaust (CE 018)	34.0	1.00		6000	80	Test	Up, No Cap
17	SV 017	Active	PER 002			New Boiler Stack	34	2.67		30000	410	Manufacturer	Up, With Cap
18	SV 018	Active	PER 004			Fermentation Scrubber (CE 020)	30	1		2700	90	Estimate	Up, No Cap
19	SV 019	Active	PER 004			Dryer	80	2.83		26400	210	Estimate	Up, No Cap
20	SV 019	Active	PER 005			Dryer (CE021 and CE027)	80	2.83		26400	210	Estimate	Up, No Cap
21	SV 020	Active	PER 002			Biodigester Flare	20	.33		500	1400	Estimate	Up, No Cap
22	SV 021	Active	PER 003			Hammermill Baghouse	60	2.83		26400	210	Estimate	Up, No Cap
23	SV 022	Active	PER 003			Cooling Cyclone Stack	15	1.33		8500	90	Test	Up, No Cap
24	SV 023	Active	PER 004			Ethanol loadout flare	36	3.5		200	1400	Estimate	Up, No Cap
25	SV 024	Active	PER 004			Golden Lyk storage bins 1-6	0	2		4000	70	Estimate	Horizontal
26	SV 025	Active	PER 004			Hammermill #2	60	2.83		26400	210	Estimate	Up, No Cap
27	SV 026	Active	PER 005			Corn Bin 1							

MINNESOTA POLLUTION CONTROL AGENCY
AIR QUALITY
520 LAFAYETTE ROAD
ST. PAUL, MN 55155-4194

FACILITY DESCRIPTION: STACK/VENTS (SV)

Show: Active and Pending Records
Action: PER 005
AQD Facility ID: 14900013
Facility Name: DENCO II LLC

	ID No.	Stack/ Vent Status	Added By (Action)	Retired By (Action)	Operator ID for Item	Operators Description	Height of Opening From Ground (feet)	Inside Dimensions		Design Flow Rate at Top (ACFM)	Exit Gas Temperature at Top (ºF)	Flow Rate/ Temperature Information Source	Discharge Direction
								Diameter or Length (feet)	Width (feet)				
28	SV 027	Active	PER 005			Corn Bin 4							
29	SV 028	Active	PER 005			Corn Bin 5							

MINNESOTA POLLUTION CONTROL AGENCY
AIR QUALITY
520 LAFAYETTE ROAD
ST. PAUL, MN 55155-4194

FACILITY DESCRIPTION: CONTROL EQUIPMENT (CE)

Show: Active and Pending Records
Action: PER 005
AQD Facility ID: 14900013
Facility Name: DENCO II LLC

	ID No.	Control Equip. Status	Added By (Action)	Retired By (Action)	Operator ID for Item	Control Equip. Type	Control Equipment Description	Manufacturer	Model	Pollutants Controlled	Capture Efficiency (%)	Destruction/ Collection Efficiency (%)	Afterburner Combustion Parameters
1	CE 001	Removed	PER 002			018	Fabric Filter - Low Temperature, i.e., T<180 Degrees F	AAF Amerpulse	1048-660	PM	80	99	
2	CE 002	Removed	PER 002			007	Centrifugal Collector - High Efficiency	Westphal	NR-1.1-8885	PM	100	80	
3	CE 003	Removed	PER 002			007	Centrifugal Collector - High Efficiency	Westphal	NR-1.2-8886	PM	100	80	
4	CE 004	Removed	PER 002			007	Centrifugal Collector - High Efficiency	Westphal	NR-1.3-8887	PM	100	80	
5	CE 005	Removed	PER 002			007	Centrifugal Collector - High Efficiency	Westphal	TBD	PM	100	80	
6	CE 006	Removed	PER 002			007	Centrifugal Collector - High Efficiency	Westphal	TBD	PM	100	80	
7	CE 007	Removed	PER 002			018	Fabric Filter - Low Temperature, i.e., T<180 Degrees F	Westphal	NA	PM	100	99	
8	CE 008	Removed	PER 002			018	Fabric Filter - Low Temperature, i.e., T<180 Degrees F	Westphal	NA	PM	100	99	
9	CE 009	Removed	PER 002			018	Fabric Filter - Low Temperature, i.e., T<180 Degrees F	Westphal	NA	PM	100	99	
10	CE 010	Removed	PER 002			018	Fabric Filter - Low Temperature, i.e., T<180 Degrees F	Westphal	NA	PM	100	99	
11	CE 011	Removed	PER 002			018	Fabric Filter - Low Temperature, i.e., T<180 Degrees F	Westphal	NA	PM	100	99	
12	CE 012	Removed	PER 002			013	Gas Scrubber (General, Not Classified)	Morris Ag-Energy	NA				
13	CE 013	Removed	PER 002			013	Gas Scrubber (General, Not Classified)	Morris Ag-Energy	NA				
14	CE 014	Removed	PER 002			013	Gas Scrubber (General, Not Classified)	Morris Ag-Energy	NA				
15	CE 015	Removed	PER 002			007	Centrifugal Collector - High Efficiency	Thompson Dehydrating	Custom	PM	100	80	
16	CE 016	Removed	PER 002			007	Centrifugal Collector - High Efficiency	Thompson Dehydrating	Custom	PM	100	80	
17	CE 017	Retired	PER 002			047	Vapor Recovery System-Condensers, Hoods, & Other Enclosures	Diversified Energy design					
18	CE 018	Active	PER 001			007	Centrifugal Collector - High Efficiency	TBD	TBD	PM	100	80	
19	CE 019	Active	PER 002			018	Fabric Filter - Low Temperature, i.e., T<180 Degrees F	TBD	TBD	PM10 PM	80% 80%	99% 99%	
20	CE 019	Active	PER 005			018	Fabric Filter - Low Temperature, i.e., T<180 Degrees F	TBD	TBD	PM10 PM10 PM PM	80% 80 80% 80	99% 99 99% 99	
21	CE 020	Active	PER 002			013	Gas Scrubber (General, Not Classified)	Diversified Energy Co., LLC	Custom	VOC	100%	70%	
22	CE 020	Active	PER 005			013	Gas Scrubber (General, Not Classified)	Diversified Energy Co., LLC	Custom	VOC VOC	100% 100	70% 70	
23	CE 021	Active	PER 002			076	Multiple Cyclone w/o Fly Ash Reinjection - Most Multiclones	Thompson Dehydrating	custom	PM10 PM	100% 100%	80% 80%	

MINNESOTA POLLUTION CONTROL AGENCY
AIR QUALITY
520 LAFAYETTE ROAD
ST. PAUL, MN 55155-4194

FACILITY DESCRIPTION: CONTROL EQUIPMENT (CE)

Show: Active and Pending Records
Action: PER 005
AQD Facility ID: 14900013
Facility Name: DENCO II LLC

	ID No.	Control Equip. Status	Added By (Action)	Retired By (Action)	Operator ID for Item	Control Equip. Type	Control Equipment Description	Manufacturer	Model	Pollutants Controlled	Capture Efficiency (%)	Destruction/ Collection Efficiency (%)	Afterburner Combustion Parameters
24	CE 021	Active	PER 005			076	Multiple Cyclone w/o Fly Ash Reinjection - Most Multiclones	Thompson Dehydrating	custom	PM10 PM10 PM PM	100% 100 100% 100	80% 80 80% 80	
25	CE 023	Active	PER 002			023	Flaring	TBD	TBD	VOC	100%	98%	
26	CE 023	Active	PER 005			023	Flaring	TBD	TBD	VOC VOC	100% 100	98% 98	
27	CE 024	Active	PER 003			018	Fabric Filter - Low Temperature, i.e., T<180 Degrees F	TBD	TBD	PM10 PM	100% 100%	99% 99%	
28	CE 024	Active	PER 005			018	Fabric Filter - Low Temperature, i.e., T<180 Degrees F	TBD	TBD	PM10 PM10 PM PM	100% 100 100% 100	99% 99 99% 99	
29	CE 025	Active	PER 004			023	Flaring	TBD	TBD	VOC	100	95	
30	CE 026	Active	PER 004			018	Fabric Filter - Low Temperature, i.e., T<180 Degrees F	Dynequip	030467	PM10 PM	100 100	99 99	
31	CE 027	Active	PER 004			021	Direct Flame Afterburner	TBD	TBD	CO PM10 PM VOC	100 100 100 100	90 90 60 95	
32	CE 027	Active	PER 005			021	Direct Flame Afterburner	TBD	TBD	CO PM10 PM10 PM VOC	100 100 100 100 100	90 90 60 60 95	
33	CE 028	Active	PER 004			018	Fabric Filter - Low Temperature, i.e., T<180 Degrees F	TBD	TBD	PM10 PM	100 100	99 99	

MINNESOTA POLLUTION CONTROL AGENCY
AIR QUALITY
520 LAFAYETTE ROAD
ST. PAUL, MN 55155-4194

FACILITY DESCRIPTION: STORAGE TANKS (TK)

Show: Active and Pending Records
Action: PER 005
AQD Facility ID: 14900013
Facility Name: DENCO II LLC

	ID No.	Tank Status	Added By (Action)	Retired By (Action)	Insignif-icant Activity	Operator ID for Item	Control Equip. ID No(s).	Product Stored	Interior Height (ft.)	Interior Diameter (ft.)	Capacity (1000 gal)	Construction Type
1	TK 001	Active	PER 001		☐			Ethanol 100%	40.	8.8	19	Fixed Roof
2	TK 001	Active	PER 005		☐			Ethanol 200 proof	40.	8.8	19	Fixed Roof
3	TK 002	Active	PER 001		☐			Ethanol 100%	40.	8.8	19	Fixed Roof
4	TK 002	Active	PER 005		☐			Ethanol 200 proof	40.	8.8	19	Fixed Roof
5	TK 003	Active	PER 001		☐			Ethanol 100%	40.	8.8	19	Fixed Roof
6	TK 003	Active	PER 005		☐			Ethanol 200 proof	40.	8.8	19	Fixed Roof
7	TK 004	Active	PER 001		☐			Ethanol 100%	40.	8.8	19	Fixed Roof
8	TK 004	Active	PER 005		☐			Ethanol 200 proof	40.	8.8	19	Fixed Roof
9	TK 005	Active	PER 001		☐			Gasoline	24.	11	9.5	Internal Floating Roof
10	TK 005	Active	PER 005		☐			E-85	24.	11	11.5	Internal Floating Roof
11	TK 006	Active	PER 001		☐			Ethanol 100%	21	11	15	Fixed Roof
12	TK 006	Active	PER 005		☐			Ethanol 190 proof	21	11	15	Fixed Roof
13	TK 007	Active	PER 001		☐			Ethanol 100%	21.	11.	15	Fixed Roof
14	TK 007	Active	PER 005		☐			Ethanol 190 proof	21.	11.	15	Fixed Roof
15	TK 008	Removed	EIS 002		☐			Gasoline	43.	14.	50	Internal Floating Roof
16	TK 008	Removed	PER 005		☐			removed	43.	14.	50	Internal Floating Roof
17	TK 009	Removed	EIS 002		☐			Ethanol 100%	70.	16.	100	Internal Floating Roof
18	TK 009	Removed	PER 005		☐			removed	70.	16.	100	Internal Floating Roof
19	TK 010	Removed	EIS 002		☐			Ethanol 100%	70.	16.	100	Internal Floating Roof
20	TK 010	Removed	PER 005		☐			removed	70.	16.	100	Internal Floating Roof
21	TK 011	Active	PER 002		☐			Denatured Ethanol	36	35	250	Internal Floating Roof
22	TK 012	Active	PER 004		☐			Denatured Ethanol			250	Internal Floating Roof
23	TK 013	Active	PER 004		☐			Denaturant			39	Fixed Roof
24	TK 014	Active	PER 005		☐			Denatured Ethanol	42	45	500	Internal Floating Roof

FACILITY DESCRIPTION: STORAGE TANKS (TK)

	ID No.	Tank Status	Added By (Action)	Support Type (floating roof only)	Column Count	Column Diameter (ft.)	Deck Type (floating roof only)	Seal Type (floating roof only)	Year Installed	Year Removed
1	TK 001	Active	PER 001							
2	TK 001	Active	PER 005							
3	TK 002	Active	PER 001							
4	TK 002	Active	PER 005							
5	TK 003	Active	PER 001							
6	TK 003	Active	PER 005							
7	TK 004	Active	PER 001							
8	TK 004	Active	PER 005							
9	TK 005	Active	PER 001	Column Supported Roof, Construction Type I		1	Welded	Resilient seal (nonmetallic), liquid mounted, p		
10	TK 005	Active	PER 005	Column Supported Roof, Construction Type I		1	Welded	Resilient seal (nonmetallic), liquid mounted, p		
11	TK 006	Active	PER 001							
12	TK 006	Active	PER 005							
13	TK 007	Active	PER 001							
14	TK 007	Active	PER 005							
15	TK 008	Removed	EIS 002	Column Supported Roof, Construction Type I		1.0	Welded	Resilient seal (nonmetallic), liquid mounted, p		1999
16	TK 008	Removed	PER 005	Column Supported Roof, Construction Type I		1.0	Welded	Resilient seal (nonmetallic), liquid mounted, p		1999
17	TK 009	Removed	EIS 002	Column Supported Roof, Construction Type I		1.0	Welded	Resilient seal (nonmetallic), liquid mounted, p		1999
18	TK 009	Removed	PER 005	Column Supported Roof, Construction Type I		1.0	Welded	Resilient seal (nonmetallic), liquid mounted, p		1999
19	TK 010	Removed	EIS 002	Column Supported Roof, Construction Type I		1.0	Welded	Resilient seal (nonmetallic), liquid mounted, p		1999
20	TK 010	Removed	PER 005	Column Supported Roof, Construction Type I		1.0	Welded	Resilient seal (nonmetallic), liquid mounted, p		1999
21	TK 011	Active	PER 002	Column Supported Roof, Construction Type I		1.0	Welded	Resilient seal (nonmetallic), liquid mounted, p		
22	TK 012	Active	PER 004	Column Supported Roof, Construction Type I	1		Bolted, Cont. Sheet Const. 5 Ft Wide		2004	
23	TK 013	Active	PER 004							
24	TK 014	Active	PER 005						2012	

MINNESOTA POLLUTION CONTROL AGENCY
AIR QUALITY
520 LAFAYETTE ROAD
ST. PAUL, MN 55155-4194

FACILITY DESCRIPTION: FUGITIVE SOURCES (FS)

Show: Active and Pending Records
Action: PER 005
AQD Facility ID: 14900013
Facility Name: DENCO II LLC

	ID No.	Fugitive Source Status	Added By (Action)	Retired By (Action)	Insignif-icant Activity	Operator ID for Item	Pollutant(s) Emitted	Control Equip. ID No(s).	Fugitive Source Description	Year Installed	Year Removed
1	FS 001	Active	PER 001		☐		PM		Unpaved Roads (truck traffic)		
2	FS 001	Active	PER 005		☐		PM		Roads (truck traffic)		
3	FS 002	Active	PER 001		☐		PM		Grain Fugitives		
4	FS 003	Active	PER 001		☐		PM		DDGS Fugitives		
5	FS 004	Active	PER 001		☐		VOC		Ethanol Loadout		
6	FS 005	Active	EIS 002		☐		VOC		Equipment Leaks (valves, flanges and seals)		
7	FS 006	Active	PER 005		☐		PM		Cooling Towers		
8	FS 007	Active	PER 005		☐		PM		Flat Storage		

ATTACHMENT 3 CD-01 Forms

MINNESOTA POLLUTION CONTROL AGENCY
AIR QUALITY
520 LAFAYETTE ROAD
ST. PAUL, MN 55155-4194

COMPLIANCE PLAN CD-01

Facility Name: DENCO II LLC

Permit Number: 14900013 - 005

Subject Item: **Total Facility**

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	SOURCE-SPECIFIC REQUIREMENTS
2.0		CD	Minn. R. 7007.0800, subp. 2	Permit Appendix: This permit contains an appendix as listed in the permit Table of Contents. The modeling parameters in Appendix I are included for reference only as described elsewhere in Table A.
3.0		LIMIT	Title I Condition: To avoid major source classification under 40 CFR Section 52.21and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 & Minn. R. 7007.0200	Production: less than or equal to 30 million gallons/year using 12-month Rolling Sum of undenatured ethanol.
4.0		CD	Title I Condition: To avoid major source classification under 40 CFR Section 52.21and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 & Minn. R. 7007.0200	Recordkeeping: By the 15th day of every month, calculate and record the gallons of ethanol produced during the previous month, and the gallons of ethanol produced during the previous 12 months (12-month rolling sum).
5.0		CD	hdr	OPERATIONAL REQUIREMENTS
6.0		CD	40 CFR pt. 50; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080	The Permittee shall comply with National Primary and Secondary Ambient Air Quality Standards, 40 CFR pt. 50, and the Minnesota Ambient Air Quality Standards, Minn. R. 7009.0010 to 7009.0080. Compliance shall be demonstrated upon written request by the MPCA.
7.0		CD	Minn. R. 7011.0020	Circumvention: Do not install or use a device or means that conceals or dilutes emissions, which would otherwise violate a federal or state air pollution control rule, without reducing the total amount of pollutant emitted.
8.0		CD	Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, subp. 16(J)	Air Pollution Control Equipment: Operate all pollution control equipment whenever the corresponding process equipment and emission units are operated.
9.0		CD	Minn. R. 7007.0800, subps. 14 and 16(J)	Operation and Maintenance Plan: Retain at the stationary source an operation and maintenance plan for all air pollution control equipment. At a minimum, the O & M plan shall identify all air pollution control equipment and control practices and shall include a preventative maintenance program for the equipment and practices, a description of (the minimum but not necessarily the only) corrective actions to be taken to restore the equipment and practices to proper operation to meet applicable permit conditions, a description of the employee training program for proper operation and maintenance of the control equipment and practices, and the records kept to demonstrate plan implementation.
10.0		CD	Minn. R. 7019.1000, subp. 4	Operation Changes: In any shutdown, breakdown, or deviation the Permittee shall immediately take all practical steps to modify operations to reduce the emission of any regulated air pollutant. The Commissioner may require feasible and practical modifications in the operation to reduce emissions of air pollutants. No emissions units that have an unreasonable shutdown or breakdown frequency of process or control equipment shall be permitted to operate.
11.0		CD	Minn. R. 7011.0150	Fugitive Emissions: Do not cause or permit the handling, use, transporting, or storage of any material in a manner which may allow avoidable amounts of particulate matter to become airborne. Comply with all other requirements listed in Minn. R. 7011.0150.
12.0		CD	Minn. R. 7030.0010 - 7030.0080	Noise: The Permittee shall comply with the noise standards set forth in Minn. R. 7030.0010 to 7030.0080 at all times during the operation of any emission units. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.
13.0		CD	Minn. R. 7007.0800, subp. 9(A)	Inspections: The Permittee shall comply with the inspection procedures and requirements as found in Minn. R. 7007.0800, subp. 9(A).
14.0		CD	Minn. R. 7007.0800, subp. 16	The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16.
15.0		CD	hdr	PERFORMANCE TESTING

COMPLIANCE PLAN CD-01

Facility Name: DENCO II LLC

Permit Number: 14900013 - 005

16.0		CD	Minn. R. ch. 7017	Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017 unless otherwise noted in Tables A and/or B.
17.0		CD	Minn. R. 7017.2018; Minn. R. 7017.2030, subps. 1-4, Minn. R. 7017.2035, subps. 1-2	Performance Test Notifications and Submittals: Performance Tests are due as outlined in Table A of the permit. See Table B for additional testing requirements. Performance Test Notification (written): due 30 days before each Performance Test Performance Test Plan: due 30 days before each Performance Test Performance Test Pre-test Meeting: due 7 days before each Performance Test Performance Test Report: due 45 days after each Performance Test Performance Test Report - Microfiche Copy: due 105 days after each Performance Test The Notification, Test Plan, and Test Report may be submitted in an alternative format as allowed by Minn. R. 7017.2018.
18.0		CD	Minn. R. 7017.2025, subp. 3	Limits set as a result of a performance test (conducted before or after permit issuance) apply until superseded as stated in the MPCA's Notice of Compliance letter granting preliminary approval. Preliminary approval is based on formal review of a subsequent performance test on the same unit as specified by Minn. R. 7017.2025, subp. 3. The limit is final upon issuance of a permit amendment incorporating the change.
19.0		CD	hdr	MONITORING REQUIREMENTS
20.0		CD	Minn. R. 7007.0800, subp. 4(D)	Monitoring Equipment Calibration: The Permittee shall calibrate all required monitoring equipment at least once every 12 months (any requirements applying to continuous emission monitors are listed separately in this permit).
21.0		CD	Minn. R. 7007.0800, subp. 4(D)	Operation of Monitoring Equipment: Unless otherwise noted in Tables A, B, and/or C, monitoring a process or control equipment connected to that process is not necessary during periods when the process is shutdown, or during checks of the monitoring systems, such as calibration checks and zero and span adjustments. If monitoring records are required, they should reflect any such periods of process shutdown or checks of the monitoring system.
22.0		CD	hdr	RECORDKEEPING
23.0		CD	Minn. R. 7007.0800, subp. 5(C)	Recordkeeping: Retain all records at the stationary source, unless otherwise specified within this permit, for a period of five (5) years from the date of monitoring, sample, measurement, or report. Records which must be retained at this location include all calibration and maintenance records, all original recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. Records must conform to the requirements listed in Minn. R. 7007.0800, subp. 5(A).
24.0		CD	Minn. R. 7007.0800, subp. 5(B)	Recordkeeping: Maintain records describing any insignificant modifications (as required by Minn. R. 7007.1250, subp. 3) or changes contravening permit terms (as required by Minn. R. 7007.1350, subp. 2), including records of the emissions resulting from those changes.
25.0		CD	Minn. R. 7007.1200, subp. 4	If the Permittee determines that no permit amendment or notification is required prior to making a change, the Permittee must retain records of all calculations required under Minn. R. 7007.1200. For nonexpiring permits, these records shall be kept for a period of five years from the date that the change was made. The records shall be kept at the stationary source for the current calendar year of operation and may be kept at the stationary source or office of the stationary source for all other years. The records may be maintained in either electronic or paper format.
26.0		CD	hdr	REPORTING/SUBMITTALS
27.0		CD	Minn. R. 7019.1000, subp. 3	Shutdown Notifications: Notify the Commissioner at least 24 hours in advance of a planned shutdown of any control equipment or process equipment if the shutdown would cause any increase in the emissions of any regulated air pollutant. If the owner or operator does not have advance knowledge of the shutdown, notification shall be made to the Commissioner as soon as possible after the shutdown. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 3. At the time of notification, the owner or operator shall inform the Commissioner of the cause of the shutdown and the estimated duration. The owner or operator shall notify the Commissioner when the shutdown is over.

COMPLIANCE PLAN CD-01

Facility Name: DENCO II LLC

Permit Number: 14900013 - 005

28.0		CD	Minn. R. 7019.1000, subp. 2	Breakdown Notifications: Notify the Commissioner within 24 hours of a breakdown of more than one hour duration of any control equipment or process equipment if the breakdown causes any increase in the emissions of any regulated air pollutant. The 24-hour time period starts when the breakdown was discovered or reasonably should have been discovered by the owner or operator. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 2. At the time of notification or as soon as possible thereafter, the owner or operator shall inform the Commissioner of the cause of the breakdown and the estimated duration. The owner or operator shall notify the Commissioner when the breakdown is over.
29.0		CD	Minn. R. 7019.1000, subp. 1	Notification of Deviations Endangering Human Health or the Environment: As soon as possible after discovery, notify the Commissioner or the state duty officer, either orally or by facsimile, of any deviation from permit conditions which could endanger human health or the environment.
30.0		CD	Minn. R. 7019.1000, subp. 1	Notification of Deviations Endangering Human Health or the Environment Report: Within 2 working days of discovery, notify the Commissioner in writing of any deviation from permit conditions which could endanger human health or the environment. Include the following information in this written description: 1. the cause of the deviation; 2. the exact dates of the period of the deviation, if the deviation has been corrected; 3. whether or not the deviation has been corrected; 4. the anticipated time by which the deviation is expected to be corrected, if not yet corrected; and 5. steps taken or planned to reduce, eliminate, and prevent reoccurrence of the deviation.
31.0		S/A	Minn. R. 7007.0800, subp. 6(A)(2)	Semiannual Deviations Report: due 30 days after end of each calendar half-year following Permit Issuance. The first semiannual report submitted by the Permittee shall cover the calendar half-year in which the permit is issued. The first report of each calendar year covers January 1 - June 30. The second report of each calendar year covers July 1 - December 31. If no deviations have occurred, the Permittee shall submit the report stating no deviations.
32.0		CD	Minn. R. 7007.1150 - 7007.1500	Application for Permit Amendment: If a permit amendment is needed, submit an application in accordance with the requirements of Minn. R. 7007.1150 through Minn. R. 7007.1500. Submittal dates vary, depending on the type of amendment needed.
33.0		CD	Minn. R. 7007.1400, subp. 1(H)	Extension Requests: The Permittee may apply for an Administrative Amendment to extend a deadline in a permit by no more than 120 days, provided the proposed deadline extension meets the requirements of Minn. R. 7007.1400, subp. 1(H). Performance testing deadlines from the General Provisions of 40 CFR pt. 60 and pt. 63 are examples of deadlines for which the MPCA does not have authority to grant extensions and therefore do not meet the requirements of Minn. R. 7007.1400, subp. 1(H).
34.0		S/A	Minn. R. 7007.0800, subp. 6(C)	Compliance Certification: due 31 days after end of each calendar year following Permit Issuance (for the previous calendar year). The Permittee shall submit this to the Commissioner on a form approved by the Commissioner. This report covers all deviations experienced during the calendar year.
35.0		CD	Minn. R. 7019.3000 - 7019.3100	Emission Inventory Report: due on or before April 1 of each calendar year following permit issuance, to be submitted on a form approved by the Commissioner.
36.0		CD	Minn. R. 7002.0005 - 7002.0095	Emission Fees: due 60 days after receipt of an MPCA bill.
37.0		CD	hdr	REQUIREMENTS RELATED TO AIR DISPERSION MODELING SUBMITTED WITH THE APPLICATION These are state only requirements and are not enforceable by the EPA Administrator and citizens under the Clean Air Act.

COMPLIANCE PLAN CD-01

Facility Name: DENCO II LLC

Permit Number: 14900013 - 005

38.0		CD	Minn. R. 7009.0020; Minn. R. 7007.0800, subp. 2	Parameters Used in Modeling: The parameters used in the modeling performed for an Environmental Assessment Worksheet under Minn. R. ch. 4410 and particulate modeling for permit action 005 for this facility are listed in the air dispersion modeling documents. If the Permittee intends to change any of these parameters, the Permittee must submit the revised parameters to the Commissioner and receive written approval before making any changes. The revised parameter information submittal must include, but is not limited to: the locations, heights and diameters of the stacks; locations and dimensions of nearby buildings; velocity and temperatures of the gases emitted; and the emission rates. The plume dispersion characteristics due to the parameter revisions must equal or exceed the dispersion characteristics modeled for this permit, and the Permittee shall demonstrate this in the proposal.
39.0		CD	CONTINUED: Minn. R. 7009.0020; Minn. R. 7007.0800, subp. 2	If the information does not demonstrate equivalent or better dispersion characteristics, or if a conclusion cannot readily be made about the dispersion, the Permittee must remodel. This is a state only requirement and is not enforceable by the EPA Administrator and citizens under the Clean Air Act.
40.0		CD	CONTINUED: Minn. R. 7009.0020; Minn. R. 7007.0800, subp. 2	Parameters Used in Modeling (continued): Pollutant Emission Rates: If the Permittee proposes to increase the emission rate of any pollutant listed in Appendix I or Appendix II, the Permittee shall first use the air dispersion modeling document report as a template for recalculating the risk due to the change in emissions or for remodeling particulate emissions. The Permittee shall submit a report to the MPCA of the proposed change and demonstrate that the recalculated risk for all pollutants emitted from the facility does not exceed the acceptable risk criteria used in the air dispersion modeling document or ambient air impact for particulate matter, or other report as applicable. The Permittee must receive written approval from the MPCA before making any changes.
41.0		CD	CONTINUED: Minn. R. 7009.0020; Minn. R. 7007.0800, subp. 2	For changes that do not involve an increase in an emission rate and that do not require a permit amendment, the proposal must be submitted as soon as practicable, but no less than 60 days before making the change to any parameter. This is a state only requirement and is not enforceable by the EPA Administrator and citizens under the Clean Air Act.
42.0		CD	CONTINUED: Minn. R. 7009.0020; Minn. R. 7007.0800, subp. 2	Parameters Used in Modeling (continued): For changes involving increases in emission rates and that require a minor permit amendment, the proposal must be submitted as soon as practicable, but no less than 60 days before making the change to any parameter. For changes involving increases in emission rates and that require a permit amendment other than a minor amendment, the proposal must be submitted prior to or with the permit amendment application. This is a state only requirement and is not enforceable by the EPA Administrator and citizens under the Clean Air Act.

COMPLIANCE PLAN CD-01

Facility Name: DENCO II LLC

Permit Number: 14900013 - 005

Subject Item: **GP 001 Tanks subject to NSPS subp. Kb**

Associated Items: TK 011 Denatured Ethanol

TK 012 Denatured Ethanol

TK 014 Denatured Ethanol

	NC/ CA	Type	Citation	Requirement
1.0		CD	40 CFR Section 60.116b(b); Minn. R. 7011.1520(C)	Recordkeeping: Maintain records showing the dimensions of each tank and an analysis showing each tank's capacity.
2.0		CD	40 CFR Section 60.112b(a); Minn. R. 7011.1520(C)	The storage vessel shall be equipped with a fixed roof in combination with an internal floating roof meeting the requirements of 40 CFR Section 60.112b(a)(1).
3.0		CD	40 CFR Section 60.112b(a)(1)(ii)(B); Minn. R. 7011.1520(C)	The storage vessel shall be equipped with the following closure devices between the wall of the storage vessel and the edge of the internal floating roof consisting of two seals mounted one above the other so that each forms a continuous closure that completely covers the space between the wall of the storage vessel and the edge of the internal floating roof. The lower seal may be vapor mounted, but both must be continuous.
4.0		CD	40 CFR Section 60.113b(a)(1); Minn. R. 7011.1520(C)	Inspection before initial fill: Visually inspect the internal floating roof, the primary seal, and the secondary seal, prior to filling the storage vessel with Volatile Organic Liquid (VOL). If there are holes, tears, or other openings in the primary seal, the secondary seal, or the seal fabric, or defects in the internal floating roof, or both, the owner or operator shall repair the items before filling the storage vessel.
5.0		CD	40 CFR Section 60.113b(a)(3)(ii); Minn. R. 7011.1520(C)	Visually inspect the internal floating roof, the primary seal, and the secondary seal through manholes and roof hatches on the fixed roof at least once every 12 months after initial fill as required by this paragraph.
6.0		CD	40 CFR Section 60.113b(a)(3)(i); Minn. R. 7011.1520(C)	Visually inspect the internal floating roof, the primary seal, the secondary seal, gaskets, slotted membranes and sleeve seals (if any) each time the storage vessel is emptied and degassed, as required by this paragraph. In no event shall inspections conducted in accordance with this provision occur at intervals greater than 10 years.
7.0		CD	40 CFR Section 60.113b(a)(5); Minn. R. 7011.1520(C)	Notification: If an inspection is required (under 40 CFR Section 60.113b(a)(1) or 40 CFR Section 60.113b(a)(3)(i)), notify the Commissioner in writing at least 30 days prior to the filling or refilling of the storage vessel, to afford the Commissioner the opportunity to have an observer present. If the inspection is not planned and the owner or operator could not have known about the inspection 30 days in advance of the refilling the tank, the owner or operator shall notify the Commissioner at least 7 days prior to the refilling of the storage vessel. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent by express mail so that it is received by the Commissioner at least 7 days prior to refilling.
8.0		CD	40 CFR Section 60.115b(a)(1); Minn. R. 7011.1520(C)	Notification: Furnish the Commissioner with a report describing the internal floating roof and certifying that it meets the specifications of 40 CFR Section 60.112b(a)(1) and 40 CFR Section 60.113b(a)(1). The report shall be an attachment to the notification of actual date of initial startup required by 40 CFR Section 60.7(a)(3).
9.0		CD	40 CFR Section 60.115b(a)(2); Minn. R. 7011.1520(C)	Keep a record of each inspection performed as required by 40 CFR Section 60.113b(a)(1), (a)(2), (a)(3), and (a)(4). Each record shall identify the storage vessel on which the inspection was performed and shall contain the date the vessel was inspected and the observed condition of each component of the control equipment (seals, internal floating roof, and fittings).
10.0		CD	40 CFR Section 60.115b(a)(4); Minn. R. 7011.1520(C)	After each inspection required under 40 CFR Section 60.113b(a)(3) that finds holes or tears in the seal or seal fabric, or defects in the internal floating roof, or other control equipment defects listed in 40 CFR Section 60.113b(a)(3)(ii), a report shall be furnished to the Commissioner within 30 days of the inspection. The report shall indentify the storage vessel and the reason it did not meet the specifications of 40 CFR Section 60.112b(a)(1) or 40 CFR Section 60.113b(a)(3)(ii), and list each repair made.

COMPLIANCE PLAN CD-01

Facility Name: DENCO II LLC

Permit Number: 14900013 - 005

Subject Item: **GP 002 Tanks subject to State Rule**

Associated Items: TK 001 Ethanol 200 proof

TK 002 Ethanol 200 proof

TK 003 Ethanol 200 proof

TK 004 Ethanol 200 proof

TK 005 E-85

TK 006 Ethanol 190 proof

TK 007 Ethanol 190 proof

	NC/ CA	Type	Citation	Requirement
1.0		CD	Minn. R. 7011.1505, subp. 3	Equip each storage tank with a submerged fill pipe.
2.0		CD	Minn. R. 7007.0800, subp. 5	Recordkeeping: Maintain records showing the dimensions of each tank and an analysis showing each tank's capacity.

COMPLIANCE PLAN CD-01

Facility Name: DENCO II LLC

Permit Number: 14900013 - 005

Subject Item: **GP 008 Boilers 001 and 002**

Associated Items: EU 001 Boiler No. 1

EU 002 Boiler No. 2

	NC/ CA	Type	Citation	Requirement
1.0		LIMIT	Minn. R. 7011.0515, subp. 2	Opacity: less than or equal to 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity. This limit applies individually to each emission unit.
2.0		CD	Minn. Stat. Section 116.07, subd. 4a; Minn. R. 7007.0800; most stringent, meets limit set by Minn. R. 7011.0515, subp. 1	Fuel used: Limited to natural gas and propane; for recordkeeping requirements, see GP011.

COMPLIANCE PLAN CD-01

Facility Name: DENCO II LLC

Permit Number: 14900013 - 005

Subject Item: **GP 010 Propane Users**

Associated Items: EU 001 Boiler No. 1

EU 002 Boiler No. 2

EU 059 Boiler No. 3

EU 066 DDGS Dryer

	NC/ CA	Type	Citation	Requirement
1.0		LIMIT	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200, subp. 2	Fuel Usage: less than or equal to 2032787 gallons/year using 12-month Rolling Sum of total propane combustion (in all 4 units combined).
2.0		CD	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200, subp. 2	Recordkeeping: By the 15th day of each month, calculate and record the quantity of propane, in gallons, used during the previous month and during the previous 12 months (12-month rolling sum).

COMPLIANCE PLAN CD-01

Facility Name: DENCO II LLC

Permit Number: 14900013 - 005

Subject Item: **GP 011 NOx Group**

Associated Items: EU 001 Boiler No. 1

EU 002 Boiler No. 2

EU 059 Boiler No. 3

EU 066 DDGS Dryer

EU 083 Regenerative Thermal Oxidizer CE027

	NC/ CA	Type	Citation	Requirement
1.0		LIMIT	Title I Condition: Limit to avoid classification as major source and modification under 40 CFR Section 52.21 and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	Nitrogen Oxides: less than or equal to 28.7 tons/year calculated as a 52-week rolling sum
2.0		CD	Title I Condition: Monitoring for Limit to avoid classification as major source and modification under 40 CFR 52.21 and Minn. R. 7007.3000; to avoid major source classification under 40 CFR 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800. subp. 4 and 5	Daily Recordkeeping. On each day of operation, the Permittee shall calculate, record, and maintain a record of the total quantity of each fuel used in each item in this Group. For natural gas, this shall be based on flowmeter readings. For propane, this shall be based on delivery records.
3.0		CD	Title I Condition: Monitoring for Limit to avoid classification as major source and modification under 40 CFR 52.21 and Minn. R. 7007.3000; to avoid major source classification under 40 CFR 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800. subp. 4 and 5	Weekly Recordkeeping -- NOx emissions By Thursday of each week, the Permittee shall calculate and record the following: 1) The NOx emissions for the previous calendar week using the daily fuel use records specified above. 2) The weekly rolling sum NOx emissions for the previous 52-week period by summing the monthly NOx emissions data.

COMPLIANCE PLAN CD-01

Facility Name: DENCO II LLC

Permit Number: 14900013 - 005

Subject Item: **SV 005 Grain Handling Baghouse (CE 019)**

Associated Items: EU 005 Corn Dump Pit

EU 006 Grain Elevator

EU 007 Corn Bin 1 (storage bin)

EU 008 Corn Bin 2 (surge bin)

EU 009 Corn Bin 3 (storage bin)

EU 010 Scalper

EU 086 Grain Bin

EU 087 Grain Bin

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	A. EMISSION LIMITS
2.0		LIMIT	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	Total Particulate Matter: less than or equal to 0.46 lbs/hour
3.0		LIMIT	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	PM < 10 micron: less than or equal to 0.46 lbs/hour
4.0		LIMIT	Minn. R. 7011.1005, subp. 3(D)	Opacity: less than or equal to 10 percent opacity
5.0		CD	hdr	B. POLLUTION CONTROL REQUIREMENTS CE019
6.0		LIMIT	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	Total Particulate Matter: greater than or equal to 97 percent collection efficiency (See CE 019 for monitoring and maintenance requirements).
7.0		LIMIT	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	Particulate Matter < 10 micron: greater than or equal to 92 percent collection efficiency (See CE 019 for monitoring and maintenance requirements).
8.0		CD	hdr	C. FOR POLLUTION CONTROL AND PERIODIC MONITORING REQUIREMENTS, SEE CE019

COMPLIANCE PLAN CD-01

Facility Name: DENCO II LLC

Permit Number: 14900013 - 005

Subject Item: **SV 016 DDGS Building Exhaust (CE 018)**

Associated Items: EU 055 DDGS Storage Pile

EU 056 DDGS Dump Pit

EU 057 DDGS Elevator

EU 058 Truck Load Spout

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	A. EMISSION LIMITS
2.0		LIMIT	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	Total Particulate Matter: less than or equal to 0.11 lbs/hour
3.0		LIMIT	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	PM < 10 micron: less than or equal to 0.11 lbs/hour
4.0		LIMIT	Minn. R. 7011.1005, subp. 3(D)	Opacity: less than or equal to 10 percent opacity
5.0		CD	hdr	B. POLLUTION CONTROL REQUIREMENTS CE018
6.0		LIMIT	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	Total Particulate Matter: greater than or equal to 86 percent collection efficiency (See CE 018 for monitoring and maintenance requirements).
7.0		LIMIT	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	Particulate Matter < 10 micron: greater than or equal to 62 percent collection efficiency (See CE 018 for monitoring and maintenance requirements).
8.0		CD	Minn. R. 7007.0800, subps. 4 and 5	Visible Emissions: The Permittee shall check the stack (SV016) for any visible emissions once each day of operation during daylight hours.
9.0		CD	hdr	C. FOR POLLUTION CONTROL AND PERIODIC MONITORING REQUIREMENTS, SEE CE018

COMPLIANCE PLAN CD-01

Facility Name: DENCO II LLC

Permit Number: 14900013 - 005

Subject Item: **SV 018 Fermentation Scrubber (CE 020)**

Associated Items: EU 016 Yeast Propagation Tank

EU 017 Yeast Propagation Tank

EU 018 Fermenter A-3

EU 019 Fermenter A-4

EU 051 Stripper

EU 061 Fermenter

EU 062 Fermenter

EU 063 Fermenter

EU 064 Beer Well

EU 065 Beer Well

EU 068 Rectifier

EU 069 Side Stripper

EU 070 Molecular Sieve

EU 072 Fermenter

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	A. EMISSION LIMITS
2.0		LIMIT	Title I Condition: BACT-equivalent emission limit under 40 CFR Sec. 52.21 and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	Volatile Organic Compounds: less than or equal to 5.0 lbs/hour using 3-hour Average measured on a total mass of VOC basis
3.0		CD	hdr	B. POLLUTION CONTROL REQUIREMENTS CE020
4.0		LIMIT	Title I Condition: BACT-equivalent emission limit under 40 CFR Sec. 52.21 and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	Volatile Organic Compounds: greater than or equal to 96.5 percent collection efficiency (See CE 020 for monitoring and maintenance requirements.)
5.0		LIMIT	Title I Condition: BACT-equivalent emission limit under 40 CFR Sec. 52.21 and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	Alternative to the above efficiency requirement, if the inlet VOC concentration is less than 200 ppm, Volatile Organic Compounds: less than or equal to 20 parts per million using 3-hour Average
6.0		CD	hdr	C. TESTING REQUIREMENTS
7.0		S/A	Title I Condition: Emission testing for BACT-equivalent emission limits; Minn. R. 7017.2020, subp. 1	Performance Test: due before end of each 60 months starting 12/14/2010 to measure emissions of volatile organic compounds from SV 018. The performance tests shall be conducted at an interval not to exceed 60 months between tests. The first test required under this condition shall be conducted by 12/14/2015.
8.0		CD	hdr	D. FOR POLLUTION CONTROL AND PERIODIC MONITORING REQUIREMENTS, SEE CE020

COMPLIANCE PLAN CD-01

Facility Name: DENCO II LLC

Permit Number: 14900013 - 005

Subject Item: **SV 019 Dryer (CE021 and CE027)**

Associated Items: EU 066 DDGS Dryer

EU 083 Regenerative Thermal Oxidizer CE027

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	A. EMISSION LIMITS
2.0		LIMIT	Title I Condition: BACT-equivalent emission limit under 40 CFR Sec. 52.21 and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	Total Particulate Matter: less than or equal to 7.11 lbs/hour
3.0		LIMIT	Minn. R. 7011.0610, subp. 1.A(1)	Total Particulate Matter: less than or equal to 0.070 grains/dry standard cubic foot or the allowable concentration at the exhaust flow rate, as described in Minn. R. 7011.0735.
4.0		LIMIT	Title I Condition: BACT-equivalent emission limit under 40 CFR Sec. 52.21 and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	PM < 10 micron: less than or equal to 7.11 lbs/hour
5.0		LIMIT	Minn. R. 7011.0610, subp. 1.A(2)	Opacity: less than or equal to 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity.
6.0		LIMIT	Title I Condition: BACT-equivalent emission limit under 40 CFR Sec. 52.21 and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	Volatile Organic Compounds: less than or equal to 6.0 lbs/hour using 3-hour Average measured on a total mass of VOC basis
7.0		LIMIT	Title I Condition: BACT-equivalent emission limit under 40 CFR Sec. 52.21 and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	Carbon Monoxide: less than or equal to 9.0 lbs/hour
8.0		CD	hdr	B. POLLUTION CONTROL REQUIREMENTS
9.0		LIMIT	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	Total Particulate Matter: greater than or equal to 80 percent collection efficiency (See CE 021 Multiclone for monitoring and maintenance requirements.)
10.0		LIMIT	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	Particulate Matter < 10 micron: greater than or equal to 80 percent collection efficiency (See CE 021 for monitoring and maintenance requirements.)
11.0		CD	Minn. R. 7007.0800, subp. 2	Thermal Oxidizer Breakdown (CE027): In the event of a breakdown of the thermal oxidizer, the Permittee shall stop feed to the dryer as soon as the breakdown is discovered. Dryer operation may continue only as long as necessary to empty the dryer. The Permittee shall also submit the notification required by Minn. R. 7019.1000, subp. 2, if required.
12.0		CD	hdr	C. TESTING REQUIREMENTS
13.0		S/A	Title I Condition: Emission testing for BACT-equivalent emission limit; Minn. R. 7017.2020, subp. 1	Performance Test: due before 04/07/2013 to measure emissions of total particulate matter. The next test is duer April 7, 2013, then every 36 months thereafter.

COMPLIANCE PLAN CD-01

Facility Name: DENCO II LLC

Permit Number: 14900013 - 005

14.0		S/A	Title I Condition: Emission testing for BACT-equivalent emission limit; Minn. R. 7017.2020, subp. 1	Performance Test: due before 04/07/2013 to measure emissions of PM10. The first test is due April 7, 2013, then every 36 months thereafter.
15.0		S/A	Title I Condition: Emission testing for BACT-equivalent emission limit; Minn. R. 7017.2020, subp. 1	Performance Test: due before 04/07/2013 to measure emissions of CO. the first test is due April 7, 2013, then every 36 months thereafter.
16.0		S/A	Title I Condition: Emission testing for BACT-equivalent emission limit; Minn. R. 7017.2020, subp. 1	Performance Test: due before 12/31/2012 to measure VOC emissions. A test frequency will be established based on the results of this test.

COMPLIANCE PLAN CD-01

Facility Name: DENCO II LLC

Permit Number: 14900013 - 005

Subject Item: **SV 020 Biodigester Flare**

Associated Items: EU 067 Bio-digester

	NC/ CA	Type	Citation	Requirement
1.0		LIMIT	Minn. R. 7011.0715, subp. 1(B)	Opacity: less than or equal to 20 percent opacity
2.0		CD	Minn. R. 7007.0800, subps. 4 and 5	Visible Emissions: The Permittee shall check the stack (SV020) for any visible emissions once each day of operation during daylight hours.

COMPLIANCE PLAN CD-01

Facility Name: DENCO II LLC

Permit Number: 14900013 - 005

Subject Item: **EU 059 Boiler No. 3**

Associated Items: GP 010 Propane Users

GP 011 NOx Group

SV 017 New Boiler Stack

	NC/ CA	Type	Citation	Requirement
1.0		CD	Minn. Stat. Section 116.07, subd. 4a; Minn. R. 7007.0800	Fuel used: Limited to natural gas and propane.
2.0		CD	February 20, 1992, EPA memorandum and 40 CFR Section 60.13(i) to meet requirements of 40 CFR Section 60.48c(g); Minn. R. 7011.0570	Recordkeeping: By the 15th day of each month, record the amount of fuel used during the previous month. These records may consist of fuel bill or meter readings.

COMPLIANCE PLAN CD-01

Facility Name: DENCO II LLC

Permit Number: 14900013 - 005

Subject Item: **EU 060 Hammermill**

Associated Items: CE 024 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

SV 021 Hammermill Baghouse

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	A. EMISSION LIMITS
2.0		LIMIT	Title I Condition: To avoid major source classification under 40 CFR Section 52.21and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	Total Particulate Matter: less than or equal to 0.60 lbs/hour
3.0		LIMIT	Title I Condition: To avoid major source classification under 40 CFR Section 52.21and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	Particulate Matter < 10 micron: less than or equal to 0.60 lbs/hour
4.0		LIMIT	Minn. R. 7011.1005, subp. 3(D)	Opacity: less than or equal to 10 percent opacity
5.0		CD	hdr	B. POLLUTION CONTROL REQUIREMENTS
6.0		LIMIT	Title I Condition: To avoid major source classification under 40 CFR Section 52.21and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	Total Particulate Matter: greater than or equal to 98 percent collection efficiency (See CE 024 for monitoring and maintenance requirements).
7.0		LIMIT	Title I Condition: To avoid major source classification under 40 CFR Section 52.21and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	Particulate Matter < 10 micron: greater than or equal to 96 percent collection efficiency (see CE 024 for monitoring and maintenance requirements).
8.0		CD	hdr	C. FOR POLLUTION CONTROL AND PERIODIC MONITORING REQUIREMENTS, SEE CE024

COMPLIANCE PLAN CD-01

Facility Name: DENCO II LLC

Permit Number: 14900013 - 005

Subject Item: **EU 066 DDGS Dryer**

Associated Items: CE 021 Multiple Cyclone w/o Fly Ash Reinjection - Most Multiclones

CE 027 Direct Flame Afterburner

GP 010 Propane Users

GP 011 NOx Group

SV 019 Dryer (CE021 and CE027)

	NC/ CA	Type	Citation	Requirement
1.0		CD	Minn. Stat. Section 116.07, subd. 4a; Minn. R. 7007.0800	Fuel used: Limited to natural gas, propane and bio-digester gas from EU 067; for recordkeeping requirements, see GP011.
2.0		CD	hdr	OPERATING REQUIREMENTS
3.0		CD	Minn. R. 7007.0800, subp. 2	Thermal Oxidizer Breakdown: In the event of a breakdown of the thermal oxidizer, the Permittee shall stop feed to the dryer as soon as the breakdown is discovered. Dryer operation may continue only as long as necessary to empty the dryer. The Permittee shall also submit the notification required by Minn. R. 7019.1000, subp. 2, if required.
4.0		CD	Minn. R. 7007.0800, subp. 2	Wet cake storage limitation: When wet cake by-product is produced, it will be stored for no more than 72 hours on-site unless the outside temperature is less than 55 degrees F (daily maximum). In all cases, the wet cake will be moved off-site as soon as possible.
5.0		LIMIT	Title I Condition: limit to avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	Temperature: less than or equal to 1350 degrees F using 1-Hour Average
6.0		CD	Title I Condition: recordkeeping for temperature limit	Recordkeeping: Observe and record the dryer inlet temperature once each day the dryer is operated
7.0		CD	hdr	CENTRIFUGE AND SYRUP FEED RATE REQUIREMENTS
8.0		LIMIT	Minn. R. 7017.2025, subp. 3(A)	Centrifuge Feedrate Process Throughput: less than or equal to 310 gallons/minute using 1-Hour Average
9.0		CD	Minn. R. 7007.0800, subp. 4C and subp. 5	Recordkeeping: The permittee shall record dryer centrifuge feed rate as a 24-hour average once each day of operation
10.0		CD	Minn. R. 7007.0800, subp. 4C and 5	The Permittee shall maintain and operate a flow monitoring device that continuously indicates and records the centrifuge flowrate to the dryer. The monitoring device shall have a margin of error of no more than +/- 2 percent of the flowrate being measured. The recording device shall also calculate the 24-hour average flowrate.
11.0		LIMIT	Minn. R. 7017.2025, subp. 3(A)	Syrup Feedrate Process Throughput: less than or equal to 49 gallons/minute using 1-Hour Average
12.0		CD	Minn. R. 7007.0800, subp. 4C and subp. 5	Recordkeeping: The permittee shall record the dryer syrup feed rate as a 24-hour average once each day of operation
13.0		CD	Minn. R. 7007.0800, subp. 4 and 5	The Permittee shall maintain and operate a flow monitoring device that continuously indicates and records the syrup flowrate to the dryer. The monitoring device shall have a margin of error of no more than +/- 2 percent of the flowrate being measured. The recording device shall also calculate the 24-hour average flowrate.
14.0		CD	hdr	MAINTENANCE REQUIREMENTS
15.0		CD	Minn. R. 7007.0800, subp. 14 and 7007.0800, subp. 15J	RTO (CE 027) burnouts and other maintenance activities: During RTO burnouts and any other maintenance for which the manufacturer recommends that dryer emissions bypass the RTO, the dryer (EU 066) shall be shutdown. Wet DDGS shall be stored and handled in a manner to minimize VOC emissions and odors during these maintenance activities. The Permittee shall maintain a record of such maintenance activities in the O and M Plan for CE 027.

COMPLIANCE PLAN CD-01

Facility Name: DENCO II LLC

Permit Number: 14900013 - 005

Subject Item: **EU 071 Cooling Cyclone**

Associated Items: SV 022 Cooling Cyclone Stack

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	A. EMISSION LIMITS
2.0		LIMIT	Title I Condition: To avoid major source classification under 40 CFR Section 52.21and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	Total Particulate Matter: less than or equal to 0.3 lbs/hour
3.0		LIMIT	Title I Condition: To avoid major source classification under 40 CFR Section 52.21and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	Particulate Matter < 10 micron: less than or equal to 0.3 lbs/hour
4.0		LIMIT	Minn. R. 7011.1005, subp. 3(D)	Opacity: less than or equal to 10 percent opacity
5.0		LIMIT	Title I Condition: BACT-equivalent emission limit under 40 CFR Sec. 52.21and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	Volatile Organic Compounds: less than or equal to 3.0 lbs/hour using 3-hour Average measured on a total mass of VOC basis
6.0		CD	hdr	B. MONITORING REQUIREMENTS
7.0		CD	Title I Condition: To avoid major source classification under 40 CFR Section 52.21and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800, subp. 14	Operation and Maintenance of the Cooling Cyclone: The Permittee shall operate and maintain the control device according to the equipment manufacturer's specifications.
8.0		LIMIT	Title I Condition: To avoid major source classification under 40 CFR Section 52.21and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800, subp. 14	Pressure Drop: greater than or equal to 2.0 inches of water column and less than or equal to 8.0 inches of water column. An alternate pressure drop range may be approved by the Agency based on performance testing.
9.0		CD	Title I Condition: To avoid major source classification under 40 CFR Section 52.21and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800, subp. 14	Record the pressure drop once each day of operation.
10.0		CD	Title I Condition: To avoid major source classification under 40 CFR Section 52.21and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800, subp. 14	Corrective Action: If the pressure drop is not within the ranges specified herein, the Permittee shall take corrective action as soon as possible (within 24 hours) to achieve the required operating values. The Permittee shall keep a record of the type and date of all corrective actions taken.
11.0		CD	Minn. R. 7007.0800, subp. 2	Inspect quarterly, or as required by manufacturing specifications, all components that are not subject to wear or plugging, including structural components, housings, ducts, and hoods. Maintain a written record of the inspection and any action resulting from the inspection.

COMPLIANCE PLAN CD-01

Facility Name: DENCO II LLC

Permit Number: 14900013 - 005

12.0		CD	Minn. R. 7007.0800, subp. 2	Inspect quarterly, or as required by manufacturing specifications, all components that are subject to wear or plugging. Maintain a written record of the inspection and any action resulting from the inspection.
13.0		CD	Minn. R. 7007.0800, subp. 2	Calibrate the pressure drop gauges annually or as often as required by manufacturing specifications and maintain a written record of the calibration and any action resulting from the calibration.
14.0		CD	hdr	C. TESTING REQUIREMENTS
15.0		S/A	Minn. R. 7017.2020, subp. 1	Performance Test: due before end of each 60 months starting 12/14/2010 to measure total particulate matter emissions, not to exceed 60 months between test dates.
16.0		S/A	Minn. R. 7017.2020, subp. 1	Performance Test: due before end of each 60 months starting 12/14/2010 to measure PM10 emissions, not to exceed 60 months between test dates.
17.0		S/A	Minn. R. 7017.2020, subp. 1	Performance Test: due before end of each 60 months starting 12/14/2010 to measure VOC emissions, not to exceed 60 months between test dates.
18.0		S/A	Minn. R. 7017.2020, subp. 1	Performance Test: due before end of each 60 months starting 12/14/2010 to measure opacity, not to exceed 60 months between test dates.

COMPLIANCE PLAN CD-01

Facility Name: DENCO II LLC

Permit Number: 14900013 - 005

Subject Item: **EU 084 Hammermill 2**

Associated Items: CE 028 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

SV 025 Hammermill #2

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	A. EMISSION LIMITS
2.0		LIMIT	Title I Condition: To avoid major source classification under 40 CFR Section 52.21and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	Total Particulate Matter: less than or equal to 0.60 lbs/hour
3.0		LIMIT	Title I Condition: To avoid major source classification under 40 CFR Section 52.21and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	Particulate Matter < 10 micron: less than or equal to 0.60 lbs/hour
4.0		LIMIT	Minn. R. 7011.1005, subp. 3(D)	Opacity: less than or equal to 10 percent opacity
5.0		CD	hdr	B. POLLUTION CONTROL REQUIREMENTS
6.0		LIMIT	Title I Condition: To avoid major source classification under 40 CFR Section 52.21and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	Total Particulate Matter: greater than or equal to 98 percent collection efficiency (See CE 028 for monitoring and maintenance requirements).
7.0		LIMIT	Title I Condition: To avoid major source classification under 40 CFR Section 52.21and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	Particulate Matter < 10 micron: greater than or equal to 96 percent collection efficiency (see CE 028 for monitoring and maintenance requirements).
8.0		CD	hdr	C. FOR POLLUTION CONTROL AND PERIODIC MONITORING REQUIREMENTS, SEE CE028

COMPLIANCE PLAN CD-01

Facility Name: DENCO II LLC

Permit Number: 14900013 - 005

Subject Item: **CE 018 Centrifugal Collector - High Efficiency**

Associated Items: EU 056 DDGS Dump Pit

EU 057 DDGS Elevator

EU 058 Truck Load Spout

	NC/ CA	Type	Citation	Requirement
1.0		CD	Title I Condition: To avoid major source classification under 40 CFR Section 52.21and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800, subp. 14	Operation and Maintenance of Control Device: The Permittee shall operate and maintain the control device according to the equipment manufacturer's specifications
2.0		LIMIT	Title I Condition: To avoid major source classification under 40 CFR Section 52.21and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800, subp. 14	Pressure Drop: greater than or equal to 1.0 inches of water column and less than or equal to 6.0 inches of water column . An alternate pressure drop range may be approved by the Agency based on performance testing.
3.0		CD	Title I Condition: To avoid major source classification under 40 CFR Section 52.21and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800, subp. 14	Read and record the pressure drop once each day of operation.
4.0		CD	Title I Condition: Corrective action to avoid major source classification under 40 CFR Section 52.21and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800, subp. 14	Corrective Action: if the pressure drop is not within the range of values specified herein, the Permittee shall take corrective action as soon as possible (within 24 hours) to return the pressure drop to within the required operating values. The Permittee shall keep a record of the type and date of all corrective actions taken.
5.0		CD	Minn. R. 7007.0800, subp. 4, 5, ands 14	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections.
6.0		CD	Minn. R. 7007.0800, subp. 2 and subp. 14	Calibrate the pressure drop gauge annually, or as often as required by manufacturer's specifications and maintain a written record of the calibration and any action resulting from the calibration.
7.0		CD	Minn. R. 7007.0800, subp. 4, 5 and 14	Initial Hood Certification and Evaluation: The control device hood must conform to the requirements listed in Minn. R. 7011.0070, subp. 1, and the Permittee shall certify this as specified in Minn. R. 7011.0070, subp. 3. The Permittee shall maintain a copy of the evaluation and certification on site.
8.0		CD	Minn. R. 7007.0800, subp. 4, 5 and 14	Annual Hood Evaluation: The Permittee shall measure and record at least once every 12 months the fan rotation speed, fan power draw, or face velocity of each hood, or other comparable air flow indication method. The Permittee shall maintain a copy of the annual evaluation on site.

COMPLIANCE PLAN CD-01

Facility Name: DENCO II LLC

Permit Number: 14900013 - 005

Subject Item: **CE 019 Fabric Filter - Low Temperature, i.e., T<180 Degrees F**

Associated Items: EU 005 Corn Dump Pit

EU 006 Grain Elevator

EU 007 Corn Bin 1 (storage bin)

EU 008 Corn Bin 2 (surge bin)

EU 009 Corn Bin 3 (storage bin)

EU 010 Scalper

EU 086 Grain Bin

EU 087 Grain Bin

	NC/ CA	Type	Citation	Requirement
1.0		CD	Title I Condition: To avoid classification as a major source and modification under 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid classification as major source under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800, subps. 2 and 14	The Permittee shall operate and maintain the fabric filter at all times that any emission unit controlled by the fabric filter is in operation. The Permittee shall document periods of non-operation of the control equipment.
2.0		LIMIT	Title I Condition: To avoid major source classification under 40 CFR Section 52.21and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800, subp. 14	Pressure Drop: greater than or equal to 1.0 inches of water column and less than or equal to 6.0 inches of water column . An alternate pressure drop range may be approved by the Agency based on performance testing.
3.0		CD	Title I Condition: To avoid classification as a major source and modification under 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid classification as a major source under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800, subps. 4 and 5	Visible Emissions: The Permittee shall check the fabric filter stack for any visible emissions once each day of operation during daylight hours. During inclement weather, the Permittee shall read and record the pressure drop across the fabric filter, once each day of operation.
4.0		CD	Title I Condition: To avoid classification as a major source and modification under 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid classification as a major source under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800, subps. 4 and 5	Recordkeeping of Visible Emissions and Pressure Drop. The Permittee shall record the time and date of each visible emission inspection and pressure drop reading, and whether or not any visible emissions were observed, and whether or not the observed pressure drop was within the range specified in this permit
5.0		CD	Minn. R. 7007.0800, subp. 14	The Permittee shall operate and maintain the fabric filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.
6.0		CD	Minn. R. 7007.0800, subp. 4	Monitoring Equipment: The Permittee shall install and maintain the necessary monitoring equipment for measuring and recording pressure drop as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored fabric filter is in operation.
7.0		CD	Minn. R. 7007.0800, subps. 4, 5 and 14	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections.
8.0		CD	Minn. R. 7007.0800, subp. 2 and subp. 14	Calibrate the pressure drop gauge annually, or as often as required by manufacturer's specifications and maintain a written record of the calibration and any action resulting from the calibration.

COMPLIANCE PLAN CD-01

Facility Name: DENCO II LLC

Permit Number: 14900013 - 005

9.0		CD	Minn. R. 7007.0800, subps. 4, 5, and 14	Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - visible emissions are observed; - the recorded pressure drop is outside the required operating range; or - the fabric filter or any of its components are found during the inspections to need repair. Corrective actions shall return the pressure drop to within the permitted range, eliminate visible emissions, and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the fabric filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter.
10.0		CD	Minn. R. 7007.0800, subp. 4, 5 and 14	Initial Hood Certification and Evaluation: The control device hood must conform to the requirements listed in Minn. R. 7011.0070, subp. 1, and the Permittee shall certify this as specified in Minn. R. 7011.0070, subp. 3. The Permittee shall maintain a copy of the evaluation and certification on site.
11.0		CD	Minn. R. 7007.0800, subp. 4, 5 and 14	Annual Hood Evaluation: The Permittee shall measure and record at least once every 12 months the fan rotation speed, fan power draw, or face velocity of each hood, or other comparable air flow indication method. The Permittee shall maintain a copy of the annual evaluation on site.

COMPLIANCE PLAN CD-01

Facility Name: DENCO II LLC

Permit Number: 14900013 - 005

Subject Item: **CE 020 Gas Scrubber (General, Not Classified)**

Associated Items: EU 016 Yeast Propagation Tank

EU 017 Yeast Propagation Tank

EU 018 Fermenter A-3

EU 019 Fermenter A-4

EU 051 Stripper

EU 061 Fermenter

EU 062 Fermenter

EU 063 Fermenter

EU 064 Beer Well

EU 065 Beer Well

EU 068 Rectifier

EU 069 Side Stripper

EU 070 Molecular Sieve

EU 072 Fermenter

	NC/ CA	Type	Citation	Requirement
1.0		CD	Title I Condition: To avoid major source classification under 40 CFR Section 52.21and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800, subp. 14	Operation and Maintenance of Control Device: The Permittee shall operate and maintain the control device according to the equipment manufacturer's specifications
2.0		LIMIT	Title I Condition: To avoid major source classification under 40 CFR Section 52.21and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800, subp. 14	Pressure Drop: greater than or equal to 3.0 inches of water column and less than or equal to 10.0 inches of water column . An alternate pressure drop range may be approved by the Agency based on performance testing.
3.0		LIMIT	Title I Condition: To avoid major source classification under 40 CFR Section 52.21and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800, subp. 14	Water flow rate: greater than or equal to 25 gallons/minute . An alternate minimum water flow rate may be approved by the Agency based on performance testing.
4.0		CD	Title I Condition: To avoid major source classification under 40 CFR Section 52.21and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800, subp. 14	Record the pressure drop and water flow rate for CE020 scrubber once each day of operation.
5.0		CD	Title I Condition: Corrective action to avoid major source classification under 40 CFR Section 52.21and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800, subp. 14	Corrective Action: if the pressure drop and/or water flow rate are not within the ranges specified herein, the Permittee shall take corrective action as soon as possible (within 24 hours) to achieve the required operating values. The Permittee shall keep a record of the type and date of all corrective actions taken.

COMPLIANCE PLAN CD-01

Facility Name: DENCO II LLC

Permit Number: 14900013 - 005

6.0		CD	Minn. R. 7007.0800, subps. 4, 5, and 14	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections.
7.0		CD	Minn. R. 7007.0800, subp. 2 and subp. 14	Calibrate the gauges annually, or as often as required by manufacturing specifications and maintain a written record of the calibration and any action resulting from the calibration.
8.0		CD	Minn. R. 7007.0800, subp. 4, 5 and 14	Initial Hood Certification and Evaluation: The control device hood must conform to the requirements listed in Minn. R. 7011.0070, subp. 1, and the Permittee shall certify this as specified in Minn. R. 7011.0070, subp. 3. The Permittee shall maintain a copy of the evaluation and certification on site.
9.0		CD	Minn. R. 7007.0800, subp. 4, 5 and 14	Annual Hood Evaluation: The Permittee shall measure and record at least once every 12 months the fan rotation speed, fan power draw, or face velocity of each hood, or other comparable air flow indication method. The Permittee shall maintain a copy of the annual evaluation on site.

COMPLIANCE PLAN CD-01

Facility Name: DENCO II LLC

Permit Number: 14900013 - 005

Subject Item: **CE 021 Multiple Cyclone w/o Fly Ash Reinjection - Most Multiclones**

Associated Items: EU 066 DDGS Dryer

	NC/ CA	Type	Citation	Requirement
1.0		CD	Title I Condition: To avoid major source classification under 40 CFR Section 52.21and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800, subp. 14	Operation and Maintenance of Control Device: The Permittee shall operate and maintain the control device according to the equipment manufacturer's specifications
2.0		LIMIT	Title I Condition: To avoid major source classification under 40 CFR Section 52.21and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800, subp. 14	Pressure Drop: greater than or equal to 4.0 inches of water column and less than or equal to 8.0 inches of water column . An alternate pressure drop range may be approved by the Agency based on performance testing.
3.0		CD	Title I Condition: To avoid major source classification under 40 CFR Section 52.21and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800, subp. 14	Record the pressure drop once each day of operation.
4.0		CD	Title I Condition: Corrective action to avoid major source classification under 40 CFR Section 52.21and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800, subp. 14	Corrective Action: if the pressure drop is not within the range of values specified herein, the Permittee shall take corrective action as soon as possible (within 24 hours) to return the pressure drop to within the required operating values. The Permittee shall keep a record of the type and date of all corrective actions taken.
5.0		CD	Minn. R. 7007.0800, subp. 4, 5, and 14	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections.
6.0		CD	Minn. R. 7007.0800, subp. 2 and subp. 14	Calibrate the pressure drop gauge annually, or as often as required by manufacturer's specifications and maintain a written record of the calibration and any action resulting from the calibration.
7.0		CD	Minn. R. 7007.0800, subp. 4, 5 and 14	Initial Hood Certification and Evaluation: The control device hood must conform to the requirements listed in Minn. R. 7011.0070, subp. 1, and the Permittee shall certify this as specified in Minn. R. 7011.0070, subp. 3. The Permittee shall maintain a copy of the evaluation and certification on site.
8.0		CD	Minn. R. 7007.0800, subp. 4, 5 and 14	Annual Hood Evaluation: The Permittee shall measure and record at least once every 12 months the fan rotation speed, fan power draw, or face velocity of each hood, or other comparable air flow indication method. The Permittee shall maintain a copy of the annual evaluation on site.

COMPLIANCE PLAN CD-01

Facility Name: DENCO II LLC

Permit Number: 14900013 - 005

Subject Item: **CE 023 Flaring**

Associated Items: EU 067 Bio-digester

	NC/ CA	Type	Citation	Requirement
1.0		CD	Minn. R. 7007.0800, subp. 4, 5 and 14	Initial Hood Certification and Evaluation: The control device hood must conform to the requirements listed in Minn. R. 7011.0070, subp. 1, and the Permittee shall certify this as specified in Minn. R. 7011.0070, subp. 3. The Permittee shall maintain a copy of the evaluation and certification on site.
2.0		CD	Minn. R. 7007.0800, subp. 4, 5 and 14	Annual Hood Evaluation: The Permittee shall measure and record at least once every 12 months the fan rotation speed, fan power draw, or face velocity of each hood, or other comparable air flow indication method. The Permittee shall maintain a copy of the annual evaluation on site.

COMPLIANCE PLAN CD-01

Facility Name: DENCO II LLC

Permit Number: 14900013 - 005

Subject Item: **CE 024 Fabric Filter - Low Temperature, i.e., T<180 Degrees F**

Associated Items: EU 060 Hammermill

	NC/ CA	Type	Citation	Requirement
1.0		CD	Title I Condition: To avoid classification as a major source and modification under 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid classification as major source under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800, subps. 2 and 14	The Permittee shall operate and maintain the fabric filter at all times that any emission unit controlled by the fabric filter is in operation. The Permittee shall document periods of non-operation of the control equipment.
2.0		LIMIT	Title I Condition: To avoid major source classification under 40 CFR Section 52.21and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800, subp. 14	Pressure Drop: greater than or equal to 1.0 inches of water column and less than or equal to 6.0 inches of water column . An alternate pressure drop range may be approved by the Agency based on performance testing.
3.0		CD	Title I Condition: To avoid classification as a major source and modification under 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid classification as a major source under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800, subps. 4 and 5	Visible Emissions: The Permittee shall check the fabric filter stack for any visible emissions once each day of operation during daylight hours. During inclement weather, the Permittee shall read and record the pressure drop across the fabric filter, once each day of operation.
4.0		CD	Title I Condition: To avoid classification as a major source and modification under 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid classification as a major source under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800, subps. 4 and 5	Recordkeeping of Visible Emissions and Pressure Drop. The Permittee shall record the time and date of each visible emission inspection and pressure drop reading, and whether or not any visible emissions were observed, and whether or not the observed pressure drop was within the range specified in this permit
5.0		CD	Minn. R. 7007.0800, subp. 14	The Permittee shall operate and maintain the fabric filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.
6.0		CD	Minn. R. 7007.0800, subp. 4	Monitoring Equipment: The Permittee shall install and maintain the necessary monitoring equipment for measuring and recording pressure drop as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored fabric filter is in operation.
7.0		CD	Minn. R. 7007.0800, subps. 4, 5 and 14	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections.
8.0		CD	Minn. R. 7007.0800, subp. 2 and subp. 14	Calibrate the pressure drop gauge annually, or as often as required by manufacturer's specifications and maintain a written record of the calibration and any action resulting from the calibration.
9.0		CD	Minn. R. 7007.0800, subps. 4, 5, and 14	Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - visible emissions are observed; - the recorded pressure drop is outside the required operating range; or - the fabric filter or any of its components are found during the inspections to need repair. Corrective actions shall return the pressure drop to within the permitted range, eliminate visible emissions, and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the fabric filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter.

COMPLIANCE PLAN CD-01

Facility Name: DENCO II LLC

Permit Number: 14900013 - 005

10.0		CD	Minn. R. 7007.0800, subp. 4, 5 and 14	Initial Hood Certification and Evaluation: The control device hood must conform to the requirements listed in Minn. R. 7011.0070, subp. 1, and the Permittee shall certify this as specified in Minn. R. 7011.0070, subp. 3. The Permittee shall maintain a copy of the evaluation and certification on site.
11.0		CD	Minn. R. 7007.0800, subp. 4, 5 and 14	Annual Hood Evaluation: The Permittee shall measure and record at least once every 12 months the fan rotation speed, fan power draw, or face velocity of each hood, or other comparable air flow indication method. The Permittee shall maintain a copy of the annual evaluation on site.

COMPLIANCE PLAN CD-01

Facility Name: DENCO II LLC

Permit Number: 14900013 - 005

Subject Item: **CE 025 Flaring**

Associated Items: EU 076 Ethanol loadout flare

	NC/ CA	Type	Citation	Requirement
1.0		CD	Title I Condition: BACT-equivalent emission limit under 40 CFR Sec. 52.21 and Minn. R. 7007.3000	Opacity: not greater than 0 percent opacity using a 6-minute average except for periods not to exceed 5 minutes in any 2 consecutive hours
2.0		CD	Minn. R. 7007.0800, subp. 14	Operate the flare only with a net heating value of the gas combusted of 300 Btu/scf or greater with a steam-assisted or air assisted flarre; or with the net heating value of the gas being combusted of 200 Btu/scf with a nonassisted flare
3.0		CD	Minn. R. 7007.0800, subp. 16J	The Permittee shall operate and maintain the flare any time that any process equipment controlled by the flare is in operation.
4.0		CD	Minn. R. 7007.0800, subp. 14	The Permittee shall operate and maintain the flare in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.
5.0		CD	Minn. R. 7007.0800, subp. 4 Consent Decree para. 7 and 21	Monitoring Equipment: The Permittee shall install and maintain thermocouples to monitor the presence of a pilot flame. The monitoring equipment must be installed, in use, and properly maintained whenever operation of the monitored control equipment is required.
6.0		CD	Minn. R. 7007.0800, subp. 4, 5, and 14	Quarterly Inspections: At least once per calendar quarter, the Permittee shall inspect the control equipment internal and external system components, including but not limited to the refractory and electrical systems. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection.
7.0		CD	Minn. R. 7007.0800, subp. 4, 5, and 14	Corrective Actions: If a pilot flame is not present or if the flare or any of its components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall result in return to operation of the pilot flame and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the flare. The Permittee shall keep a record of the type and date of any corrective action taken.
8.0		CD	Minn. R. 7007.0800, subp. 4, 5 and 14	Initial Hood Certification and Evaluation: The control device hood must conform to the requirements listed in Minn. R. 7011.0070, subp. 1, and the Permittee shall certify this as specified in Minn. R. 7011.0070, subp. 3. The Permittee shall maintain a copy of the evaluation and certification on site.
9.0		CD	Minn. R. 7007.0800, subp. 4, 5 and 14	Annual Hood Evaluation: The Permittee shall measure and record at least once every 12 months the fan rotation speed, fan power draw, or face velocity of each hood, or other comparable air flow indication method. The Permittee shall maintain a copy of the annual evaluation on site.

COMPLIANCE PLAN CD-01

Facility Name: DENCO II LLC

Permit Number: 14900013 - 005

Subject Item: **CE 026 Fabric Filter - Low Temperature, i.e., T<180 Degrees F**

Associated Items: EU 077 DDGS Storage Bin

EU 078 Corn Gluten Storage Bin

EU 079 Premix Storage Bin

EU 080 Phosphorous Storage Bin

EU 081 Magnesium Oxide Storage Bin

EU 082 Calcium Carbonate Storage Bin

	NC/ CA	Type	Citation	Requirement
1.0		CD	Minn. R. 7007.0800, subp. 14	The Permittee shall operate and maintain the fabric filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.
2.0		CD	Title I Condition: To avoid classification as a major source and modification under 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid classification as major source under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800, subps. 2 and 14	The Permittee shall operate and maintain the fabric filter at all times that any emission unit controlled by the fabric filter is in operation. The Permittee shall document periods of non-operation of the control equipment.
3.0		LIMIT	Title I Condition: Limit taken to avoid classification as a major source and modification under 40 CFR Section 52.21and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800, subp. 2 and 14	The Permittee shall operate and maintain the control equipment such that it achieves an overall collection efficiency for Total Particulate Matter: greater than or equal to 99 percent collection efficiency
4.0		LIMIT	Title I Condition: Limit taken to avoid classification as a major source and modification under 40 CFR Section 52.21and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800, subp. 2 and 14	The Permittee shall operate and maintain the control equipment such that it achieves an overall collection efficiency for PM < 10 micron: greater than or equal to 99 percent collection efficiency
5.0		LIMIT	Title I Condition: To avoid major source classification under 40 CFR Section 52.21and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800, subp. 14	Pressure Drop: greater than or equal to 1.0 inches of water column and less than or equal to 6.0 inches of water column . An alternate pressure drop range may be approved by the Agency based on performance testing.
6.0		CD	Title I Condition: To avoid classification as a major source and modification under 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid classification as a major source under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800, subps. 4 and 5	Visible Emissions: The Permittee shall check the fabric filter stack for any visible emissions once each day of operation during daylight hours. During inclement weather, the Permittee shall read and record the pressure drop across the fabric filter, once each day of operation.
7.0		CD	Minn. R. 7007.0800, subp. 4	Monitoring Equipment: The Permittee shall install and maintain the necessary monitoring equipment for measuring and recording pressure drop as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored fabric filter is in operation.

COMPLIANCE PLAN CD-01

Facility Name: DENCO II LLC

Permit Number: 14900013 - 005

8.0		CD	Title I Condition: To avoid classification as a major source and modification under 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid classification as a major source under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800, subps. 4 and 5	Recordkeeping of Visible Emissions and Pressure Drop. The Permittee shall record the time and date of each visible emission inspection and pressure drop reading, and whether or not any visible emissions were observed, and whether or not the observed pressure drop was within the range specified in this permit
9.0		CD	Minn. R. 7007.0800, subps. 4, 5, and 14	Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - visible emissions are observed; - the recorded pressure drop is outside the required operating range; or - the fabric filter or any of its components are found during the inspections to need repair. Corrective actions shall return the pressure drop to within the permitted range, eliminate visible emissions, and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the fabric filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter.
10.0		CD	Minn. R. 7007.0800, subp. 4, 5, and 14	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections.
11.0		CD	Minn. R. 7007.0800, subp. 2 and subp. 14	Calibrate the pressure drop gauge annually, or as often as required by manufacturer's specifications and maintain a written record of the calibration and any action resulting from the calibration.
12.0		CD	Minn. R. 7007.0800, subp. 4, 5 and 14	Initial Hood Certification and Evaluation: The control device hood must conform to the requirements listed in Minn. R. 7011.0070, subp. 1, and the Permittee shall certify this as specified in Minn. R. 7011.0070, subp. 3. The Permittee shall maintain a copy of the evaluation and certification on site.
13.0		CD	Minn. R. 7007.0800, subp. 4, 5 and 14	Annual Hood Evaluation: The Permittee shall measure and record at least once every 12 months the fan rotation speed, fan power draw, or face velocity of each hood, or other comparable air flow indication method. The Permittee shall maintain a copy of the annual evaluation on site.

COMPLIANCE PLAN CD-01

Facility Name: DENCO II LLC

Permit Number: 14900013 - 005

Subject Item: **CE 027 Direct Flame Afterburner**

Associated Items: EU 066 DDGS Dryer

EU 083 Regenerative Thermal Oxidizer CE027

	NC/ CA	Type	Citation	Requirement
1.0		LIMIT	Title I Condition: BACT-equivalent emission under 40 CFR Sec. 52.21 and Minn. R. 7007.3000	The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for Volatile Organic Compounds: greater than or equal to 95 percent control efficiency
2.0		LIMIT	Title I Condition: BACT-equivalent emission limit under 40 CFR Sec. 52.21 and Minn. R. 7007.3000	Alternative to the above efficiency requirement, Volatile Organic Compounds: less than or equal to 10 parts per million using 3-hour Average
3.0		LIMIT	Title I Condition: BACT-equivalent emission limit under 40 CFR Sec. 52.21 and Minn. R. 7007.3000	The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for Carbon Monoxide: greater than or equal to 90 percent control efficiency
4.0		LIMIT	Title I Condition: BACT-equivalent emission limit under 40 CFR Sec. 52.21 and Minn. R. 7007.3000	Alternative to the above efficiency requirement, Carbon Monoxide: less than or equal to 100 parts per million using 3-hour Average
5.0		LIMIT	Title I Condition: BACT-equivalent operational limit under 40 CFR Sec. 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 2 and 14	Temperature: greater than or equal to 1600 degrees F using 3-hour Average at the Combustion Chamber unless a new minimum is set pursuant to Minn. R. 7017.2025, subp. 3, based on the average temperature recorded during the most recent MPCA approved performance test where compliance for VOC and CO emissions was demonstrated. If the three-hour rolling average temperature drops below the minimum temperature limit, the VOC and CO shall be considered uncontrolled until the average minimum temperature limit is once again achieved. This shall be reported as a deviation.
6.0		CD	Minn. R. 7007.0800, subp. 14	The Permittee shall operate and maintain the thermal oxidizer in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.
7.0		CD	Minn. R. 7007.0800, subp. 4	Monitoring Equipment: The Permittee shall install and maintain thermocouples to conduct temperature monitoring required by this permit. The monitoring equipment must be installed, in use, and properly maintained whenever operation of the monitored control equipment is required.
8.0		CD	Title I Condition: Monitoring for Limit taken to avoid classification as a major source and modification under 40 CFR Section 52.21and Minn. R. 7007.3000; to avoid classification as a major source under 40 CFR Section 70.2; Minn. R. 7007.0800, subp. 4 and 5	The Permittee shall maintain a continuous hard copy readout or computer disk file of the temperature readings and calculated three hour rolling average temperatures for the combustion chamber.
9.0		CD	Minn. R. 7007.0800, subp. 4 and 5	Daily Monitoring: The Permittee shall physically verify the operation of the temperature recording device at least once each operating day to verify that it is working and recording properly. The Permittee shall maintain a written record of the daily verifications.
10.0		CD	Minn. R. 7007.0800, subp. 4, 5, and 14	Quarterly Inspections: At least once per calendar quarter, the Permittee shall inspect the control equipment internal and external system components, including but not limited to the refractory, heat exchanger, and electrical systems. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection.
11.0		CD	Minn. R. 7007.0800, subp. 4, 5, and 14	Annual Calibration: The Permittee shall calibrate the temperature monitor at least annually and shall maintain a written record of the calibration and any action resulting from the calibration.
12.0		CD	Minn. R. 7007.0800, subp. 4, 5, and 14	Corrective Actions: If the temperature is below the minimum specified by this permit or if the thermal oxidizer or any of its components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall return the temperature to at least the permitted minimum and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the thermal oxidizer. The Permittee shall keep a record of the type and date of any corrective action taken.

COMPLIANCE PLAN CD-01

Facility Name: DENCO II LLC

Permit Number: 14900013 - 005

Subject Item: **CE 028 Fabric Filter - Low Temperature, i.e., T<180 Degrees F**

Associated Items: EU 084 Hammermill 2

	NC/ CA	Type	Citation	Requirement
1.0		CD	Title I Condition: To avoid classification as a major source and modification under 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid classification as major source under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800, subps. 2 and 14	The Permittee shall operate and maintain the fabric filter at all times that any emission unit controlled by the fabric filter is in operation. The Permittee shall document periods of non-operation of the control equipment.
2.0		LIMIT	Title I Condition: To avoid major source classification under 40 CFR Section 52.21and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800, subp. 14	Pressure Drop: greater than or equal to 1.0 inches of water column and less than or equal to 6.0 inches of water column . An alternate pressure drop range may be approved by the Agency based on performance testing.
3.0		CD	Title I Condition: To avoid classification as a major source and modification under 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid classification as a major source under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800, subps. 4 and 5	Visible Emissions: The Permittee shall check the fabric filter stack for any visible emissions once each day of operation during daylight hours. During inclement weather, the Permittee shall read and record the pressure drop across the fabric filter, once each day of operation.
4.0		CD	Title I Condition: To avoid classification as a major source and modification under 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid classification as a major source under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800, subps. 4 and 5	Recordkeeping of Visible Emissions and Pressure Drop. The Permittee shall record the time and date of each visible emission inspection and pressure drop reading, and whether or not any visible emissions were observed, and whether or not the observed pressure drop was within the range specified in this permit
5.0		CD	Minn. R. 7007.0800, subp. 14	The Permittee shall operate and maintain the fabric filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.
6.0		CD	Minn. R. 7007.0800, subp. 4	Monitoring Equipment: The Permittee shall install and maintain the necessary monitoring equipment for measuring and recording pressure drop as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored fabric filter is in operation.
7.0		CD	Minn. R. 7007.0800, subps. 4, 5 and 14	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections.
8.0		CD	Minn. R. 7007.0800, subp. 2 and subp. 14	Calibrate the pressure drop gauge annually, or as often as required by manufacturer's specifications and maintain a written record of the calibration and any action resulting from the calibration.
9.0		CD	Minn. R. 7007.0800, subps. 4, 5, and 14	Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - visible emissions are observed; - the recorded pressure drop is outside the required operating range; or - the fabric filter or any of its components are found during the inspections to need repair. Corrective actions shall return the pressure drop to within the permitted range, eliminate visible emissions, and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the fabric filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter.

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10.0		CD	Minn. R. 7007.0800, subp. 4, 5 and 14	Initial Hood Certification and Evaluation: The control device hood must conform to the requirements listed in Minn. R. 7011.0070, subp. 1, and the Permittee shall certify this as specified in Minn. R. 7011.0070, subp. 3. The Permittee shall maintain a copy of the evaluation and certification on site.
11.0		CD	Minn. R. 7007.0800, subp. 4, 5 and 14	Annual Hood Evaluation: The Permittee shall measure and record at least once every 12 months the fan rotation speed, fan power draw, or face velocity of each hood, or other comparable air flow indication method. The Permittee shall maintain a copy of the annual evaluation on site.

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Facility Name: DENCO II LLC

Permit Number: 14900013 - 005

Subject Item: TK 013 Denaturant

	NC/ CA	Type	Citation	Requirement
1.0		CD	40 CFR Section 60.116b	(d) For each storage vessel with a design capacity greater than or equal to 75 m3 (20,000 gallons) but less than 151 m3 (40,000) storing a liquid with a maximum true vapor pressure that is normally less than 27.6 kPa (4.0 psi), the Permittee shall notify the Commissioner within 30 days when the maximum true vapor pressure of the liquid exceeds 27.6 kPa.

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Facility Name: DENCO II LLC

Permit Number: 14900013 - 005

Subject Item: FS 001 Roads (truck traffic)

	NC/ CA	Type	Citation	Requirement
1.0		CD	Minn. R. 7011.0150	Fugitive emissions: Do not cause or permit the transporting of any material in a manner which may allow avoidable amounts of particulate matter to become airborne. Do not cause or permit a road or a driveway to be constructed, used, repaired, or demolished without applying all such reasonable measures as may be required to prevent particulate matter from becoming airborne.
2.0		CD	Minn. R. 7011.0150	Paved roads: The Permittee shall inspect paved roads weekly. The roads shall be cleaned if there is visible accumulation of silt and/or fugitive emissions are observed from traffic. The Permittee shall maintain a record of the weekly inspections and corrective actions.

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Facility Name: DENCO II LLC

Permit Number: 14900013 - 005

Subject Item: FS 002 Grain Fugitives

	NC/ CA	Type	Citation	Requirement
1.0		LIMIT	Minn. R. 7011.1005, subp. 3(A)	Opacity: less than or equal to 5 percent opacity for fugitive emissions from truck unloading of grain or grain handling activities.
2.0		CD	Minn. R. 7011.1005, subp. 1(A)	Clean up commodities spilled on the driveway and other facility property as required to minimize fugitive emissions to a level consistent with RACT (Reasonably Available Control Technology).
3.0		CD	Minn. R. ch. 7009	Grain receiving: Limited to the hours of 7 am to 5 pm Monday through Friday year round plus 7 am to 5pm on Saturdays during the month of October

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Facility Name: DENCO II LLC

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Subject Item: FS 003 DDGS Fugitives

	NC/ CA	Type	Citation	Requirement
1.0		LIMIT	Minn. R. 7011.1005, subp. 3(A)	Opacity: less than or equal to 5 percent opacity for fugitive emissions from DDGS handling activities.
2.0		LIMIT	Minn. R. 7011.1005, subp. 3(B)	Opacity: less than or equal to 10 percent opacity for fugitive emissions from DDGS truck loading.
3.0		CD	Minn. R. 7011.1005, subp. 1(A)	Clean up commodities spilled on the driveway and other facility property as required to minimize fugitive emissions to a level consistent with RACT (Reasonably Available Control Technology).

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Facility Name: DENCO II LLC

Permit Number: 14900013 - 005

Subject Item: FS 004 Ethanol Loadout

	NC/ CA	Type	Citation	Requirement
1.0		CD	Minn. R. 7007.0800, subp. 16(J)	Railcar Loadout: Railcars dedicated to ethanol are not required to be vented to the loadout flare (CE025). All other railcars must be vented to the loadout flare.

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Facility Name: DENCO II LLC

Permit Number: 14900013 - 005

Subject Item: FS 005 Equipment Leaks (valves, flanges and seals)

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	STANDARDS: PUMPS
2.0		CD	40 CFR Section 60.482-2(a); Minn. R. 7011.2900	Pumps in light liquid service (a)(1) Each pump in light liquid service shall be monitored monthly to detect leaks by the methods specified in 40 CFR Section 60.485(b) except as provided in 40 CFR Section 60.482-1(c) and paragraphs (d), (e), and (f) (2) Each pump in light liquid service shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal
3.0		CD	40 CFR Section 60.482-2(b) and (c)	(b)(1) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected (2) If there are indications of liquids dripping from a pump seal, a leak is detected (c)(1)When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 days after it is detected, except as provided in 40 CFR Section 60.482-9, delay of repair (2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected
4.0		CD	hdr	STANDARDS: COMPRESSORS
5.0		CD	40 CFR Section 60.482-3(a)	Each compressor shall be equipped with a seal system that includes a barrier fluid system and that prevents leakage of VOC to the atmosphere, except as provided in 40 CFR Section 60.482-1(c) and 40 CFR Section 60.482-3(h) and (i)
6.0		CD	40 CFR Section 60.482-3(b)	(b) Each compressor seal system shall be: (1) operated with the barrier fluid at a pressure that is greater than the compressor stuffing box pressure; or (2) equipped with a barrier fluid system that is connected by a closed vent system to a control device that complies with the requirements of 40 CFR Section 60.482-10; or (3) equipped with a system that purges the barrier fluid into a process stream with zero VOC emissions
7.0		CD	40 CFR Section 60.482-3(c) and (d)	(c) The barrier fluid system shall be in heavy liquid service or shall not be in VOC service (d) Each barrier fluid system shall be equipped with a sensor that will detect failure of the seal system, barrier fluid system or both
8.0		CD	40 CFR Section 60.482-3(e)	(e)(1) Each sensor shall be checked daily or equipped with an audible alarm (2) The owner or operator shall determine, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system or both
9.0		CD	40 CFR Section 60.482-3(f)	(f) If the sensor indicates a failure of the seal system, barrier fluid system, or both, a leak is detected
10.0		CD	40 CFR Section 60.482-3(g)	(g)(1)When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 days after it is detected, except as provided in 40 CFR Section 60.482-9, delay of repair (2) A first attempt at repair shall be made no later than 15 calendar days after each leak is detected, except as provided in 40 CFR Section 60.482-9
11.0		CD	hdr	STANDARDS: PRESSURE RELIEF DEVICES IN GAS/VAPOR SERVICE
12.0		CD	40 CFR Section 60.482-4(a)	(a) Except during pressure releases, each pressure relief device in gas/vapor service shall be operated with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as determined by the methods specified in 40 CFR Section 60.485(c)

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13.0		CD	40 CFR Section 60.482-4(b)	(b)(1) After each pressure release, the PRV shall be returned to a condition of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as soon as practicable, but no later than 5 calendar days after the pressure release, except as provided in 40 CFR Section 60.482-9, Delay of Repair
14.0		CD	hdr	STANDARDS: SAMPLING CONNECTION SYSTEMS
15.0		CD	40 CFR Section 60.482-5(a)	(a) Each sampling connection system shall be equipped with a closed-purge, closed-loop, or closed-vent system, except as provided in 40 CFR Section 60.482-1(c)
16.0		CD	40 CFR Section 60.482-5(b) and (c)	(b) Each closed-purge, closed-loop, or closed-vent system as required by 40 CFR Section 60.482-5(a) shall comply with the applicable requirement following: (1) return the purged process fluid directly to the process line; or (2) collect and recycle the purged process fluid to a process; or (3) be designed and operated to capture and transport all the purged fluid to a control device that complies with the requirements of 40 CFR Section 60.482-10 (c) In-situ sampling systems are exempt from these requirements
17.0		CD	hdr	STANDARDS: OPEN-ENDED VALVES OR LINES
18.0		CD	40 CFR Section 60.482-6(a)	(a)(1) Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or second valve except as provided in 40 CFR Section 60.482-1(c) (2) The cap, blind flange, plug, or second valve shall seal the open end at all times except during operations requiring process fluid flow through the open-ended valve or line
19.0		CD	40 CFR Section 60.482-6(b) and (c)	(b) Each open-ended valve or line equipped with a second valve shall be operated in a manner such that the valve on the process fluid is closed before the second valve is opened (c) When a double block-and-bleed system is being used, the bleed valve or line may remain open during operations that require venting the line between the block valves but shall comply with 40 CFR Section 60.482-6(a) at all other times
20.0		CD	hdr	STANDARDS: VALVES
21.0		CD	40 CFR Section 60.482-7(a)	(a) Each valve shall be monitored monthly to detect leaks by the methods specified in 40 CFR Section 60.485(b)
22.0		CD	40 CFR Section 60.482-7(b) and (c)	(b) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected (c)(1) Any valve for which a leak is not detected for 2 successive months may be monitored the first month of every quarter, beginning with the next quarter, until a leak is detected (c)(2) If a leak is detected in a valve which is being monitored quarterly, the valve shall be monitored monthly until a leak is not detected for 2 successive months
23.0		CD	40 CFR Section 60.482-7(d)	(d)(1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in 40 CFR Section 60.482-9 (2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected
24.0		CD	40 CFR Section 60.482-7(e)	(e) First attempts at repair include, but are not limited to, the following practices where practicable: (1) tightening of bonnet bolts, (2) replacement of bonnet bolts, (3) tightening of packing gland nuts, and (4) injection of lubricant into lubricated packings
25.0		CD	hdr	STANDARDS: PUMPS AND VALVES IN HEAVY LIQUID SERVICE, PRESSURE RELIEF DEVICES IN LIGHT LIQUID OR HEAVY LIQUID SERVICE, AND FLANGES AND OTHER CONNECTIONS

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26.0		CD	40 CFR Section 60.482-8(a)	(a) Pumps and valves in heavy liquid service, pressure relief valves in light liquid or heavy liquid service, and flanges and other connectors shall be monitored within 5 days by the method specified in 40 CFR Section 60.485(b) if evidence of a potential leak is found by visual, audible, olfactory, or any other detection method
27.0		CD	40 CFR Section 60.482-8(b) and (c)	(b) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected (c)(1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in 40 CFR Section 60.482-9, Delay of Repair (2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected
28.0		CD	40 CFR Section 60.482-8(d)	(d) First attempts at repair include, but are not limited to, the practices described under 40 CFR Section 60.482-7(e)
29.0		CD	hdr	DELAY OF REPAIR
30.0		CD	40 CFR Section 60.482-9(a) and (b)	(a) Delay of repair of equipment for which leaks have been detected will be allowed if the repair is technically infeasible without a process unit shutdown; repair of this equipment is to occur before the end of the next process unit shutdown (b) Delay of repair of equipment will be allowed for equipment which is isolated from the process and which does not remain in VOC service
31.0		CD	40 CFR Section 60.482-9(c)	(c) Delay of repair for valves will be allowed if : (1) the owner or operator demonstrates that emissions of purged material resulting from the immediate repair are greater than the fugitive emissions likely to result from delay of repair, and (2) when repair procedures are effected, the purged material is collected and destroyed or recovered in a control device complying with 40 CFR Section 60.482-10
32.0		CD	40 CFR Section 60.482-9(d)	(d) Delay of repair for pumps will be allowed if : (1) Repair required the use of a dual mechanical seal system that includes a barrier fluid system, and (2) repair is completed as soon as practicable, but not later than 6 months after the leak was detected
33.0		CD	40 CFR Section 60.482-9(e)	(e) Delay of repair beyond a process unit shutdown will be allowed for a valve if valve assembly replacement is necessary during the process unit shoudown, valve asssembly supplies have been depleted, and valve assembly supplies had been sufficiently stocked before the supplies were depleted. Delay of repair beyond the next process unit shutdown will not be allowed unless the next process unit shutdown occurs sooner than 6 months after the first process unit shutdown.
34.0		CD	hdr	TESTING PROCEDURES
35.0		CD	40 CFR Section 60.486(b)	Compliance shall be demonstrated by the methods specified in 40 CFR Section 60.485.
36.0		CD	hdr	RECORDKEEPING
37.0		CD	40 CFR Section 60.496(b)	(b) When each leak is detected, the following requirements apply: (1) a weatherproof and readily visible identification, marked with the equipment identification number, shall be attached to the leaking equipment (2) the identification on a valve may be removed after it has been monitored for 2 successive months as specified in 40 CFR Section 60.482-7(c) and no leak has been detected during those two months (3) the identification on equipment, except on a valve, may be removed after it has been repaired

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38.0		CD	40 CFR Section 60.486(c)(1)-(4)	(c) When a leak is detected, the following information shall be recorded in a log and shall be kept for 2 years in a readily accessible location: (1) the instrument and operator ID numbers and the equipment ID number, (2) the date the leak was detected and the dates of each attempt to repair the leak, (3) repair methods applied in each attempt to repair the leak, (4) "Above 10,000" if the instrument reading measured by the methods specified in 40 CFR Section 60.485(a) after each repair attempt is equal to or greater than 10,000 ppm
39.0		CD	40 CFR Section 60.486(c)(5)-(9)	(5) "Repair delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak, (6) the signature of the owner or operator whose decision it was that repair could not be effected without a process shutdown, (7) the expected date of successful repair of the leak if a leak is not repaired within 15 days, (8) dates of process unit shutdowns that occur while the leaking equipment is unrepaired, and (9) the date of successful repair of the leak
40.0		CD	hdr	REPORTING REQUIREMENTS
41.0		S/A	40 CFR Section 60.487(a)	LDAR Report: due 30 days after half-year following permit issuance The reports are due by July 30 and January 30 for the respective 6-month periods.
42.0		CD	40 CFR Section 60.487(b)	The first semiannual report submitted for htis purpose shall include the following information: (1) process unit identification (2) number of valves subject to the requirements of 40 CFR Section 60.482-7 (3) number of pumps subject to the requirements of 40 CFR Section 60.482-2 (4) number of compressors subject to the requirements of 40 CFR Section 60.482-3
43.0		CD	40 CFR Section 60.487(c)(1) and (2)(i)-(2)(iv)	(c) All semiannual reports shall include the following information summarized from the information in 40 CFR 60.486: (1) process unit identification (2) for each month during the semiannual reporting period, (i) number of valves for which leaks were detected as described in 40 CFR Section 60.482-7(b) or 40 CFR Section 60.483-2 (ii) number of valves for which leaks were not repaired as required in 40 CFR Section 60.482-7(d)(1) (iii) number of pumps for which leaks were detected as described in 40 CFR Section 60.482-2(b) and (d)(6)(i) (iv) number of pumps for which leaks were not repaired as required in 40 CFR Section 60.482-2(c)(1) and (d)(6)(ii)
44.0		CD	40 CFR Section 60.487(c)(2)(v)-(vii)	(v) number of compressors for which leaks were detected as described in 40 CFR Section 60.482-3(f) (vi) number of compressors for which leaks were not repaired as required in 40 CFR Section 60.482-3(g)(1) (vii) the facts that explain each delay of repair and, where appropriate, why a process unit shutdown was technically infeasible
45.0		CD	40 CFR Section 60.487(c)(3) and (4)	(3) dates of process unit shutdowns which occurred within the semiannual reporting period (4) revisions to items reported according to paragraph (b) if changes have occurred since the initial report or subsequent revisions to the initial report
46.0		CD	40 CFR Section 60.487(e)	(e) Report the results of all performance tests in accordance with 40 CFR Section 60.8. The provisions of 40 CFR Section 60.8 do not apply to affected facilities subject to the provisions of this subpart except that an owner or operator must notify the Administrator of the schedule for the intial performance tests at least 30 days before the initial performance tests.

ATTACHMENT 4 Additional Points for Fees

Additional Points (15) are assessed for review of dispersion modeling.