

# DRAFT

## AIR EMISSION PERMIT NO. 11100077- 004 Major Amendment

### IS ISSUED TO

Green Plains Renewable Energy Inc

**GREEN PLAINS OTTER TAIL LLC**  
24096 170th Avenue  
Fergus Falls, Otter Tail County, Minnesota 56537

The emission units, control equipment and emission stacks at the stationary source authorized in this permit amendment and issuance are as described in the Permit Applications Table.

This permit amendment and issuance supersedes Air Emission Permit No. 11100077-003, and authorizes the Permittee to operate and construct the stationary source at the address listed above unless otherwise noted in Table A. The Permittee must comply with all the conditions of the permit. Any changes or modifications to the stationary source must be performed in compliance with Minn. R. 7007.1150 to 7007.1500. Terms used in the permit are as defined in the state air pollution control rules unless the term is explicitly defined in the permit.

Unless otherwise indicated, all the Minnesota rules cited as the origin of the permit terms are incorporated into the SIP under 40 CFR § 52.1220 and as such as are enforceable by U.S. Environmental Protection Agency (EPA) Administrator or citizens under the Clean Air Act.

**Permit Type:** Federal Permit; Part 70/Limits to Avoid NSR

**Operating Permit Issue Date:** < >

**Major Amendment Issue Date:** < >

**Expiration Date:** \* – Title I Conditions do not expire.

\* The Permittee may continue to operate this facility after the expiration date of the permit, per the provision under Minn. R. 7007.0450, subp. 3.

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Don Smith, P.E., Manager  
Air Quality Permits Section  
Industrial Division

for John Linc Stine  
Commissioner  
Minnesota Pollution Control Agency

**Permit Applications Table**

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Major Amendment	5/12/2012	004
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**NOTICE TO THE PERMITTEE:**

Your stationary source may be subject to the requirements of the Minnesota Pollution Control Agency's (MPCA) solid waste, hazardous waste, and water quality programs. If you wish to obtain information on these programs, including information on obtaining any required permits, please contact the MPCA general information number at:

Metro Area	651-296-6300
Outside Metro Area	1-800-657-3864
TTY	651-282-5332

The rules governing these programs are contained in Minn. R. chs. 7000-7105. Written questions may be sent to: Minnesota Pollution Control Agency, 520 Lafayette Road North, St. Paul, Minnesota 55155-4194.

Questions about this air emission permit or about air quality requirements can also be directed to the telephone numbers and address listed above.

**PERMIT SHIELD:**

Subject to the limitations in Minn. R. 7007.1800, compliance with the conditions of this permit shall be deemed compliance with the specific provision of the applicable requirement identified in the permit as the basis of each condition. Subject to the limitations of Minn. R. 7007.1800 and 7017.0100, subp. 2, notwithstanding the conditions of this permit specifying compliance practices for applicable requirements, any person (including the Permittee) may also use other credible evidence to establish compliance or noncompliance with applicable requirements.

**FACILITY DESCRIPTION:**

Green Plains Otter Tail, LLC (Facility) is a fuel-grade ethanol production plant in Fergus Falls, Minnesota. The facility emits VOC, PM, PM<sub>10</sub>, PM<sub>2.5</sub>, NO<sub>x</sub>, and CO. Volatile organic compounds (VOC) are emitted by fermentation, distillation, dried distiller grains with solubles (DDGS), ethanol loading, and VOC liquid storage and piping. Particulate matter (PM, PM<sub>10</sub>, PM<sub>2.5</sub>) is emitted by the DDGS handling and drying, corn receiving and handling, and vehicle traffic. Nitrogen oxides (NO<sub>x</sub>) and carbon monoxide (CO) are primarily emitted by two natural gas-fired boilers and the natural gas-fired regenerative thermal oxidizer (RTO). The plant is permitted to produce 65 million gallons of 200-proof ethanol annually.

The control equipment at the facility includes fabric filters, scrubbers, and a regenerative thermal oxidizer (RTO). The scrubbers control VOC emissions from fermentation and distillation. The RTO controls VOC emissions from DDGS cooling and DDGS drying. Fabric filters control PM, PM<sub>10</sub>, PM<sub>2.5</sub> from the corn and DDGS handling and storage systems. A flare controls emissions from truck and rail ethanol loadout. There are five large, internal floating roof tanks for ethanol, denaturant, and denatured ethanol. Emissions from process valves and piping are minimized through an inspection and maintenance program.

**AMENDMENT DESCRIPTION:**

This permit action allows the facility to add three more grain bins and changes the permit from a State Permit to Part 70 permit due to greenhouse gas (GHG) emissions. This permit action includes an administrative amendment for a change of ownership for the facility, and an administrative amendment for a test extension.

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

A-1 12/18/12

Facility Name: Green Plains Otter Tail LLC

Permit Number: 11100077 - 004

**Table A contains limits and other requirements with which your facility must comply. The limits are located in the first column of the table (What To do). The limits can be emission limits or operational limits. This column also contains the actions that you must take and the records you must keep to show that you are complying with the limits. The second column of Table A (Why to do it) lists the regulatory basis for these limits. Appendices included as conditions of your permit are listed in Table A under total facility requirements.**

**Subject Item: Total Facility**

<b>What to do</b>	<b>Why to do it</b>
<b>SOURCE-SPECIFIC REQUIREMENTS</b>	hdr
Production: less than or equal to 65000000 gallons/year using 12-month Rolling Sum of ethanol (without denaturant).	Title I Condition: to avoid major source classification under 40 CFR Section 52.21; 40 CFR Section 63.2; and Minn. R. 7007.3000
Permit Appendices: This permit contains appendices as listed in the permit Table of Contents. The Permittee shall comply with all requirements contained in the appendices.	Minn. R. 7011.0150; Minn. R. 7007.0800, subp. 2
Odor: The Permittee shall comply with the plan for odor management, submitted by the Permittee and attached in Appendix IV of this permit.	Minn. R. 7007.0800, subp. 2
Notwithstanding any provisions in Minn. R. 7011.1000 to 7011.1015, no owner or operator of a dry bulk agricultural commodity facility may operate or maintain a facility that creates a public nuisance. If the commissioner determines that operation or maintenance of a commodity facility creates a public nuisance, the commissioner may require the owner or operator to take measures necessary to eliminate the nuisance.	Minn. R. 7011.1010
Comply with Dust Control Plan: The Permittee shall follow the actions and recordkeeping specified in the control plan. The plan may be amended by the Permittee with the Commissioner's approval. If the Commissioner determines the Permittee is out of compliance with Minn. R. 7011.0150 or the dust control plan, then the Permittee may be required to amend the control plan and/or to install and operate particulate matter ambient monitors as requested by the Commissioner.	Minn. Stat. Section 116.07, subd. 4a; Minn. R. 7007.0100; Minn. R. 7007.0800, subp. 2; Minn. R. 7011.0150; Minn. R. 7009.0020
Clean up commodities spilled on the driveway and other facility property as required to minimize fugitive emissions; maintain air pollution control equipment in proper operating condition and utilize the air pollution control systems as designed.	Minn.R. 7011.1005, Subp. 1
<b>OPERATIONAL REQUIREMENTS</b>	hdr
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.	Minn. R. 7011.0020
Air Pollution Control Equipment: Operate all pollution control equipment whenever the corresponding process equipment and emission units are operated.	Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, subp. 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 shall include a preventative maintenance program for that equipment, a description of (the minimum but not necessarily the only) corrective actions to be taken to restore the equipment 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 the records kept to demonstrate plan implementation.	Minn. R. 7007.0800, subp. 14 and Minn. R. 7007.0800, subp. 16(J)
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.	Minn. R. 7019.1000, subp. 4
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.	Minn. R. 7011.0150
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.	Minn. R. 7030.0010 - 7030.0080
Inspections: The Permittee shall comply with the inspection procedures and requirements as found in Minn. R. 7007.0800, subp. 9(A).	Minn. R. 7007.0800, subp. 9(A)

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-2**

12/18/12

Facility Name: Green Plains Otter Tail LLC

Permit Number: 11100077 - 004

The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16.	Minn. R. 7007.0800, subp. 16
<b>PERFORMANCE TESTING</b>	hdr
Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017 unless otherwise noted in Tables A and/or B.	Minn. R. ch. 7017
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.	Minn. R. 7017.2018; Minn. R. 7017.2030, subps. 1-4, Minn. R. 7017.2035, subps. 1-2
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.	Minn. R. 7017.2025, subp. 3
<b>MONITORING REQUIREMENTS</b>	hdr
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).	Minn. R. 7007.0800, subp. 4(D)
Operation of Monitoring Equipment: Unless otherwise noted in Tables A and/or B, 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.	Minn. R. 7007.0800, subp. 4(D)
<b>MODELING REQUIREMENTS</b>	hdr
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.	40 CFR pt. 50; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subps. 7A, 7L & 7M; Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080.
The parameters used in PM10 modeling for permit number 11100077-001 are listed in Appendix III of this permit. The parameters describe the operation of the facility at maximum permitted capacity. The purpose of listing the parameters in the appendix is to provide a benchmark for future changes.  Modeling was performed for an Environmental Assessment Worksheet under Minn. R. ch. 4410.	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
Modeling Triggers: For changes that do not require a permit amendment and affect any modeled parameter or emission rate documented in Appendix III, or are an addition to the information documented in Appendix III, a Remodeling Submittal requirement is not triggered at the time of the change. The Permittee shall keep updated records on site of all parameters and emission rates. The Permittee shall submit any changes to parameters and emission rates with the next required Remodeling Submittal.  For changes that require a minor, moderate, or major permit amendment and affect any modeled parameter or emission rate documented in Appendix III, or are an addition to the information documented in Appendix III, a Remodeling Submittal requirement is triggered. The Permittee shall include previously made changes to parameters and emission rates that did not trigger a Remodeling Submittal.	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

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-3**

12/18/12

Facility Name: Green Plains Otter Tail LLC

Permit Number: 11100077 - 004

Remodeling Submittal: The Permittee must submit to the Commissioner for approval changes meeting the above criteria and must wait for a written approval before making such changes. For minor amendments, written approval of the modeling may be given before permit issuance; however, this approval applies only to the modeling and not to any other changes. The information submitted must include, for stack and vent sources, source emission rate, location, height, diameters, exit velocity, exit temperature, discharge direction, use of rain caps or rain hats, and, if applicable, locations and dimensions of nearby buildings. For non-stack/vent sources, this includes the source emission rate, location, size and shape, release height, and, if applicable, any emission rate scalars, and the initial lateral dimensions and initial vertical dimensions and adjacent building heights.	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
Remodeling Submittal, continued: The plume dispersion characteristics due to the revisions of the information must be equivalent to or better than the dispersion characteristics modeled June 2006. The Permittee shall demonstrate this equivalency in the proposal. 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 submit full remodeling.	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
Modeling at Reissuance: The Permittee shall submit an assessment with the reissuance application (due as stated elsewhere in this permit) that addresses any changes made during the permit term that did not require a permit amendment but that affected any modeled parameter or emission rate (including adding sources beyond those documented in Appendix III) and were not assessed in a later modeling submittal. The information in this submittal shall be the same as listed in the requirement entitled "Remodeling Submittal".	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
Access Restriction Plan: The Permittee shall maintain at the stationary source an Access Restriction Plan prior to startup of ethanol production. The Plan shall include physical and active barriers to restrict public access to the property as delineated in the most recent compliant dispersion modeling analysis.	Minn. R. 7009.0020; Minn. R. 7007.0800, subp. 2
RECORDKEEPING	hdr
Ethanol Production Daily Recordkeeping: On each day of operation, the Permittee shall record and maintain the total quantity of all ethanol produced at the facility. This shall be based on a flow meter of 200-proof ethanol transferred to the storage tanks.	Title I Condition: to avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 4 and 5
Ethanol Monthly Recordkeeping: By the 15th of the month, the Permittee shall calculate and record the following:  1) The total ethanol production for the previous calendar month using the daily production records. 2) The 12-month rolling sum ethanol production in gallons for the previous 12-month period by summing the monthly ethanol production data for the previous 12 months.	Minn. R. 7007.0800, subps. 4 and 5
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).	Minn. R. 7007.0800, subp. 5(C)
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.	Minn. R. 7007.0800, subp. 5(B)
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. These records shall be kept for a period of five years from the date the change was made or until permit reissuance, whichever is longer. 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.	Minn. R. 7007.1200, subp. 4
REPORTING/SUBMITTALS	hdr

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-4**

12/18/12

Facility Name: Green Plains Otter Tail LLC

Permit Number: 11100077 - 004

<p>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.</p> <p>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.</p>	Minn. R. 7019.1000, subp. 3
<p>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.</p> <p>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.</p>	Minn. R. 7019.1000, subp. 2
<p>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.</p>	Minn. R. 7019.1000, subp. 1
<p>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:</p> <ol style="list-style-type: none"> <li>1. the cause of the deviation;</li> <li>2. the exact dates of the period of the deviation, if the deviation has been corrected;</li> <li>3. whether or not the deviation has been corrected;</li> <li>4. the anticipated time by which the deviation is expected to be corrected, if not yet corrected; and</li> <li>5. steps taken or planned to reduce, eliminate, and prevent reoccurrence of the deviation.</li> </ol>	Minn. R. 7019.1000, subp. 1
<p>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.</p>	Minn. R. 7007.1150 through Minn. R. 7007.1500
<p>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).</p>	Minn. R. 7007.1400, subp. 1(H)
<p>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.</p>	Minn. R. 7019.3000 through Minn. R. 7019.3100
<p>Emission Fees: due 60 days after receipt of an MPCA bill.</p>	Minn. R. 7002.0005 through Minn. R. 7002.0095
<p>The Permittee must submit a Risk Management Plan (RMP) under 40 CFR pt. 68. Each owner or operator of a stationary source, at which a regulated substance is present above a threshold quantity in a process, shall design and implement an accidental release prevention program. An initial RMP must be submitted no later than the latest of the following dates: 1) June 21, 1999; 2) Three years after the date on which a regulated substance is first listed under 40 CFR Section 68.130; or 3) The date on which a regulated substance is first present above a threshold quantity in a process. A full update and resubmission of the RMP is required at least once every five years. The five-year anniversary date is reset whenever your facility fully updates and resubmits their RMP. Submit RMPs to the Risk Management Plan Reporting Center, P.O. Box 1515, Lanham-Seabrook, Maryland 20703-1515. RMP information may be obtained at <a href="http://www.epa.gov/swercepp">http://www.epa.gov/swercepp</a> or by calling 1-800-424-9346.</p>	40 CFR pt. 68



**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-5**

12/18/12

Facility Name: Green Plains Otter Tail LLC

Permit Number: 11100077 - 004

**Subject Item:** GP 001 Tanks subject to NSPS Subpart Kb**Associated Items:** TK 001 200 Proof Tank

TK 002 200 Proof Tank

TK 003 Denaturant Storage Tank

TK 004 Denatured Ethanol Tank 1

TK 005 Denatured Ethanol Tank 2

What to do	Why to do it
<b>POLLUTION CONTROL REQUIREMENTS</b>	hdr
The storage vessels 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).	40 CFR Section 60.112b(a); Minn. R. 7011.1520(C)
Internal Floating Roof Seal Requirement: Each internal roof shall be equipped with one of the closure devices between the wall of the storage vessel and the edge of the internal floating roof as described in Section 60.112b(a)(1)(ii).	40 CFR Section 60.112b(a)(1)(ii); Minn. R. 7011.1520(C)
<b>MONITORING REQUIREMENTS</b>	hdr
Inspection- Prior to filling the storage vessel: Visually inspect the internal floating roof, the primary seal, and the secondary seal (if one is in service), 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 Permittee shall repair the items before filling the storage vessel.	40 CFR Section 60.113b(a)(1); Minn. R. 7011.1520(C)
Inspection - Annual: Visually inspect the internal floating roof, the primary seal, and the secondary seal (if one is in service) through manholes and roof hatches on the fixed roof at least once every twelve (12) months after initial fill as required by Section 60.113b(a)(2).	40 CFR Section 60.113b(a)(2) and (4); Minn. R. 7011.1520(C)
Inspection - Tank Empty and Degassed: Visually inspect the internal floating roof, the primary seal, and the secondary seal (if one is in service), gaskets, slotted membranes and sleeve seals (if any) each time the tank is emptied and degassed as required by Section 60.113b(a)(4). In no event shall inspections conducted in accordance with this provision occur at intervals greater than 10 years.	40 CFR Section 60.113b(a)(2) and (4); Minn. R. 7011.1520(C)
<b>RECORDKEEPING REQUIREMENTS</b>	hdr
Keep a record of each inspection performed as required by 40 CFR Section 60.113b(a). 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.)	40 CFR Section 60.115b(a)(2); Minn. R. 7011.1520(C)
Recordkeeping: Maintain records showing the dimensions of each tank and an analysis showing tank capacity.	40 CFR Section 60.116b(c); Minn. R. 7011.1520(C)
Recordkeeping: Maintain records of the volatile organic liquid (VOL) stored, the period of storage, and the maximum true vapor pressure of the VOL during the respective storage period, calculated as described in 40 CFR Section 60.116b(e).	40 CFR Section 60.116b(c); Minn. R. 7011.1520(C)
<b>REPORTING REQUIREMENTS</b>	hdr
Notification: Notify the Commissioner in writing at least 30 days prior to the filling or refilling of each tank for which an inspection is required by 40 CFR Section 60.113b(a)(1) and (a)(4) to afford the Commissioner the opportunity to have an observer present. If the inspection required by 40 CFR 60.113b(a)(4) is not planned and the Permittee could not have known about the inspection 30 days in advance of refilling the tank, the Permittee shall notify the Administrator at least 7 days prior to the refilling of the tank. Notification shall be made by telephone 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 the refilling.	40 CFR Section 60.113b(a)(5); Minn. R. 7011.1520(C)
After each inspection required by 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 Administrator within thirty (30) days of the inspection. The report shall identify 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.	40 CFR Section 60.115b(a)(4); Minn. R. 7011.1520 (C)

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-6**

12/18/12

Facility Name: Green Plains Otter Tail LLC

Permit Number: 11100077 - 004

Notification - Control Equipment Installation and Certification: After installing the internal floating roofs, furnish the Administrator with a report describing the control equipment (fixed roof/internal floating roof combination) and certifying that the control equipment meets the specifications of Sections 60.112b(a)(1) and 60.113b(a)(1). This report shall be attached to the initial startup notification required by Section 60.7(a)(3) and located in Table B of this permit.  This requirement was completed on April 29, 2005.	40 CFR Section 60.115b(a)(1); Minn. R. 7011.1520(C)
Reporting - Annual Inspection Results: If any of the conditions described in 40 CFR Section 60.113b(a)(2) are detected during the annual visual inspection required by 40 CFR Section 60.113b(a)(2), a report shall be furnished to the Administrator within 30 days of the inspection. Each report shall identify the tank, the nature of the defects, and the date the tank was emptied or the nature of and date the repair was made.	40 CFR Section 60.115b(a)(3); Minn. R. 7011.1520(C)

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-7** 12/18/12

Facility Name: Green Plains Otter Tail LLC

Permit Number: 11100077 - 004

**Subject Item:** GP 002 Grain Handling Fabric Filters**Associated Items:** CE 001 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 008 Fabric Filter - Low Temperature, i.e., T&lt;180 Degrees F

CE 011 Fabric Filter - Low Temperature, i.e., T&lt;180 Degrees F

What to do	Why to do it
EMISSION AND OPERATIONAL LIMITS	hdr
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for Total Particulate Matter: greater than or equal to 99 percent control efficiency	Title I Condition: To avoid major source classification under 40 CFR 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14; Minn. R. 7011.0070, subp. 1(A)
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for PM < 10 micron: greater than or equal to 93 percent control efficiency	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14; Minn. R. 7011.0070, subp. 1(A)
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for PM <sub>2.5</sub> PM < 2.5 micron: greater than or equal to 93 percent control efficiency	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14; Minn. R. 7011.0070, subp. 1(A)
Pressure Drop: greater than or equal to 0.5 inches of water column and less than or equal to 6.0 inches of water column, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. subps. 2 and 14; Minn. R. 7011.0080
The Permittee shall operate and maintain the fabric filter (CE 001, CE 008, CE 011) at all times that any emission unit (EU 001, EU 008, EU 011) controlled by the fabric filter is in operation. The Permittee shall document periods of non-operation of the control equipment.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14
Total Particulate Matter: greater than or equal to 80 percent control efficiency for the control equipment.	Minn. R. 7011.1005, subp. 3(E)
MONITORING AND RECORDKEEPING	hdr
Visible Emissions: The Permittee shall check the fabric filter stack (SV 001, SV 008, SV 011) 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.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14; Minn. R. 7011.0080
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.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14; Minn. R. 7011.0080
The control equipment is considered listed control equipment under Minn. R. 7011.0060 to 7011.0080. The Permittee shall operate and maintain the fabric filter at all times that any process equipment controlled by the fabric filter is operating. The Permittee shall document periods of non-operation of the control equipment.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7011.0075, subp. 1
The Permittee shall maintain each piece of control equipment according to the manufacturer's specification, shall conduct inspections, and maintain documentation of those actions as required by Minn. R. 7011.0075, subp. 2(A) to 2(I).	Minn. R. 7011.0075, subp. 2
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.	Minn. R. 7007.0800, subp. 14
Calibrate 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.	Minn. R. 7007.0800, subp. 2 and subp. 14.
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.	Minn. R. 7007.0800, subp. 4; Minn. R. 7011.0075, subp. 3

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-8**

12/18/12

Facility Name: Green Plains Otter Tail LLC

Permit Number: 11100077 - 004

<p>Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur:</p> <ul style="list-style-type: none"><li>- visible emissions are observed;</li><li>- the recorded pressure drop is outside the required operating range;</li><li>- the fabric filter or any of its components are found during the inspections to need repair.</li></ul> <p>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 &amp; 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.</p>	<p>Minn. R. 7007.0800, subps. 4,5 and 14</p>
<p>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.</p>	<p>Minn. R. 7007.0800, subp. 4, 5 and 14.</p>

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-9**

12/18/12

Facility Name: Green Plains Otter Tail LLC

Permit Number: 11100077 - 004

**Subject Item: SV 001 Grain Receiving with Baghouse - CE 001****Associated Items:** EU 001 Corn Dump Pit/Auger 1

EU 002 Corn Conveyor 1

EU 003 Corn Elevator 1

EU 004 Corn Dump Pit/Auger 2

EU 005 Corn Conveyor 2

EU 006 Corn Elevator 2

EU 007 Transfer Conveyor 1

EU 056 Silo #3 Conveyer

EU 061 Silo #4 Conveyer

EU 064 Silo #5 Conveyer

What to do	Why to do it
EMISSION LIMITS	;hdr
Total Particulate Matter: less than or equal to 3.17 lbs/hour	Title I Condition: To avoid classification as major source under 40 CFR Section 52.21 & Minn. R. 7007.3000
Particulate Matter < 10 micron: less than or equal to 3.17 lbs/hour	Title I Condition: To avoid classification as major source under 40 CFR Section 52.21 & Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
PM < 2.5 micron: less than or equal to 3.17 lbs/hour	Minn. R. 7007.0800, subp. 2; Minn. R. 7005.0100, subp. 35a
Opacity: less than or equal to 10 percent opacity	Minn. R. 7011.1005, subp. 3(D)
POLLUTION CONTROL REQUIREMENTS	hdr
Vent all emissions through a fabric filter. See GP002 for requirements for fabric filter operation and maintenance.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000
Maintain air pollution control equipment in proper operating condition and utilize the air pollution control systems as designed.	Minn. R. 7011.1005, subp. 1(B)
Total Particulate Matter: greater than or equal to 80 percent control efficiency for the control equipment.	Minn. R. 7011.1005, subp. 3(E)
PERFORMANCE TESTING REQUIREMENTS	hdr
Performance Test: due before end of each 60 months starting 06/26/2008 to measure Total Particulate Matter emissions.	Minn. R. 7017.2020, subp. 1
Performance Test: due before end of each 60 months starting 06/26/2008 to measure Particulate Matter < 10 microns emissions.	Minn. R. 7017.2020, subp. 1

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-10**

12/18/12

Facility Name: Green Plains Otter Tail LLC

Permit Number: 11100077 - 004

**Subject Item: SV 008 Hammermill with Baghouse - CE 008**

**Associated Items:** EU 008 Scalper  
 EU 009 Reclaim System  
 EU 010 Grinder Surge Bin  
 EU 011 Hammermill 1  
 EU 012 Hammermill 2  
 EU 055 Hammermill #3  
 EU 057 Silo #3 Reclaim  
 EU 062 Silo #4 Reclaim  
 EU 065 Silo #5 Reclaim

What to do	Why to do it
EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 2.04 lbs/hour	Title I Condition: To avoid classification as major source under 40 CFR Section 52.21 & Minn. R. 7007.3000
Particulate Matter < 10 micron: less than or equal to 2.04 lbs/hour	Title I Condition: To avoid classification as major source under 40 CFR Section 52.21 & Minn. R. 7007.3000
PM < 2.5 micron: less than or equal to 2.04 lbs/hour	Minn. R. 7007.0800, subp. 2; Minn. R. 7005.0100, subp. 35a
Opacity: less than or equal to 10 percent opacity	Minn. R. 7011.1005, subp. 3(D)
POLLUTION CONTROL REQUIREMENTS	hdr
Vent all emissions through a fabric filter. See GP 002 for requirements for fabric filter operation and maintenance.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000
PERFORMANCE TESTING REQUIREMENTS	hdr
Performance Test: due before end of each 60 months starting 06/26/2008 to measure Total Particulate Matter emissions.	Minn. R. 7017.2020, subp. 1
Performance Test: due before end of each 60 months starting 06/26/2008 to measure Particulate Matter < 10 microns emissions.	Minn. R. 7017.2020, subp. 1

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-11**

12/18/12

Facility Name: Green Plains Otter Tail LLC

Permit Number: 11100077 - 004

**Subject Item:** SV 011 DDGS Loadout with Baghouse - CE 011**Associated Items:** EU 013 DDGS Storage Reclaim

EU 014 Bulkweigher

EU 015 DDGS Conveyor

EU 016 DDGS Load Spout

What to do	Why to do it
EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 0.41 lbs/hour	Title I Condition: To avoid classification as major source under 40 CFR Section 52.21 & Minn. R. 7007.3000
Particulate Matter < 10 micron: less than or equal to 0.41 lbs/hour	Title I Condition: To avoid classification as major source under 40 CFR Section 52.21 & Minn. R. 7007.3000
PM < 2.5 micron: less than or equal to 0.41 lbs/hour	Minn. R. 7007.0800, subp. 2; Minn. R. 7005.0100, subp. 35a
Opacity: less than or equal to 10 percent opacity	Minn. R. 7011.1005, subp. 3(D)
POLLUTION CONTROL REQUIREMENTS	hdr
Vent all emissions through a fabric filter. See GP 002 for requirements for fabric filter operation and maintenance.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000
PERFORMANCE TESTING REQUIREMENTS	hdr
Performance Test: due before end of each 60 months starting 06/26/2008 to measure Total Particulate Matter emissions.	Minn. R. 7017.2020, subp. 1
Performance Test: due before end of each 60 months starting 06/26/2008 to measure Particulate Matter < 10 microns emissions.	Minn. R. 7017.2020, subp. 1

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-12**

12/18/12

Facility Name: Green Plains Otter Tail LLC

Permit Number: 11100077 - 004

**Subject Item: SV 026 Fermentation with CO2 Scrubber - CE 027**

**Associated Items:** EU 033 Yeast Tank  
 EU 034 Fermenter 1  
 EU 035 Fermenter 2  
 EU 036 Fermenter 3  
 EU 037 Fermenter 4  
 EU 038 Beerwell

What to do	Why to do it
EMISSION LIMITS	hdr
Volatile Organic Compounds: less than or equal to 11.28 lbs/hour	Title I Condition: to avoid major source classification under 40 CFR Section 52.21; to avoid major source classification under 40 CFR Section 63.2; and Minn. R. 7007.3000
POLLUTION CONTROL REQUIREMENTS	hdr
Volatile Organic Compounds: greater than or equal to 95 percent control efficiency	Title I Condition: to avoid major source classification under 40 CFR Section 52.21; to avoid major source classification under 40 CFR Section 63.2; and Minn. R. 7007.3000
Pressure Drop: greater than or equal to 2.0 inches of water column and less than or equal to 6.0 inches of water column or as determined during compliance testing.	Title I Condition: to avoid major source classification under 40 CFR Section 52.21; to avoid major source classification under 40 CFR Section 63.2; and Minn. R. 7007.3000
Water flow rate: greater than or equal to 45.0 gallons/minute or as determined during compliance testing.	Title I Condition: to avoid major source classification under 40 CFR Section 52.21; to avoid major source classification under 40 CFR Section 63.2; and Minn. R. 7007.3000
MONITORING REQUIREMENTS	hdr
The Permittee shall record the Pressure Drop and Water Flow Rate of each scrubber once each day of operation.	Title I Condition: to avoid major source classification under 40 CFR Section 52.21; to avoid major source classification under 40 CFR Section 63.2; and Minn. R. 7007.3000
The Permittee shall operate and maintain the scrubber (CE 027) at all times that any emission unit controlled by the scrubber is in operation. The Permittee shall document periods of non-operation of the control equipment.	Title I Condition: to avoid major source classification under 40 CFR Section 52.21; to avoid major source classification under 40 CFR Section 63.2; and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 2 and 14
The Permittee shall add sodium bisulfite (SBS) or ammonium bisulfite (ABS) to the scrubber. The additive dosing rate shall be 1.40 gal/hr of SBS or 0.70 gal/hr of ABS.	Title I Condition: To avoid classification as major source under 40 CFR Section 63.2
The Permittee shall operate and maintain the scrubber in accordance with the control equipment manufacturer's specifications and/or in accordance with 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.	Minn. R. 7007.0800, subp. 14
Calibrate 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.	Minn. R. 7007.0800, subp. 2 and subp. 14
Monitoring Equipment: The Permittee shall install and maintain the necessary monitoring equipment for measuring and recording pressure drop and water flow rate as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored scrubber is in operation.	Minn. R. 7007.0800, subp. 4
Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - the recorded pressure drop or water flow rate is outside the required operating range; or - the scrubber or any of its components are found during the inspections to need repair. Corrective actions shall return the pressure drop and/or water flow rate to within the permitted range, 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 scrubber. The Permittee shall keep a record of the type and date of any corrective action taken for each scrubber.	Minn. R. 7007.0800, subp. 4, 5, and 14



**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-13**

12/18/12

Facility Name: Green Plains Otter Tail LLC

Permit Number: 11100077 - 004

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.	Minn. R. 7007.0800, subp. 4, 5 and 14
PERFORMANCE TESTING REQUIREMENTS	hdr
Performance Test: due before end of each 60 months starting 12/09/2011 to measure VOC emissions	Minn. R. 7017.2020, subp. 1

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-14**

12/18/12

Facility Name: Green Plains Otter Tail LLC

Permit Number: 11100077 - 004

**Subject Item: SV 027 Distillation (Vent Gas) Scrubber****Associated Items:** EU 039 Liquefaction Tank

EU 040 Beer Stripper

EU 041 Side Stripper

EU 042 Rectifier

EU 043 Molecular Sieve

EU 044 Evaporator

EU 045 Centrifuge 1

EU 046 Centrifuge 2

EU 047 Centrifuge 3

EU 048 Centrifuge 4

EU 049 Centrate Tank

What to do	Why to do it
EMISSION LIMITS	hdr
Volatile Organic Compounds: less than or equal to 4.75 lbs/hour	Title I Condition: to avoid major source classification under 40 CFR Section 52.21; to avoid major source classification under 40 CFR Section 63.2; and Minn. R. 7007.3000
POLLUTION CONTROL REQUIREMENTS	hdr
Volatile Organic Compounds: greater than or equal to 95 percent control efficiency	Title I Condition: to avoid major source classification under 40 CFR Section 52.21; to avoid major source classification under 40 CFR Section 63.2; and Minn. R. 7007.3000
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 or as determined during compliance testing.	Title I Condition: to avoid major source classification under 40 CFR Section 52.21; to avoid major source classification under 40 CFR Section 63.2; and Minn. R. 7007.3000
Water flow rate: greater than or equal to 40.0 gallons/minute or as determined during compliance testing.	Title I Condition: to avoid major source classification under 40 CFR Section 52.21; to avoid major source classification under 40 CFR Section 63.2; and Minn. R. 7007.3000
MONITORING REQUIREMENTS	hdr
The Permittee shall record the Pressure Drop and Water Flow Rate of each scrubber once each day of operation.	Title I Condition: To avoid classification as major source and modification under 40 CFR Section 52.21 & Minn. R. 7007.3000
The Permittee shall operate and maintain the scrubber (CE 028) at all times that any emission unit controlled by the scrubber is in operation. The Permittee shall document periods of non-operation of the control equipment.	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 2 and 14
The Permittee shall add sodium bisulfite (SBS) or ammonium bisulfite (ABS) to the scrubber. The additive dosing rate shall be 0.60 gal/hr of SBS or 0.40 gal/hr of ABS.	Title I Condition: To avoid classification as major source under 40 CFR Section 63.2
The Permittee shall operate and maintain the scrubber in accordance with the control equipment manufacturer's specifications and/or in accordance with 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.	Minn. R. 7007.0800, subp. 14
Calibrate 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.	Minn. R. 7007.0800, subp. 2 and subp.14.
Monitoring Equipment: The Permittee shall install and maintain the necessary monitoring equipment for measuring and recording pressure drop and water flow rate as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored scrubber is in operation.	Minn. R. 7007.0800, subp. 4

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-15**

12/18/12

Facility Name: Green Plains Otter Tail LLC

Permit Number: 11100077 - 004

Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - the recorded pressure drop or water flow rate is outside the required operating range; or - the scrubber or any of its components are found during the inspections to need repair. Corrective actions shall return the pressure drop and/or water flow rate to within the permitted range, 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 scrubber. The Permittee shall keep a record of the type and date of any corrective action taken for each scrubber.	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.	Minn. R. 7007.0800, subp. 4, 5 and 14
PERFORMANCE TESTING REQUIREMENTS	hdr
Performance Test: due before end of each 60 months starting 12/09/2011 to measure VOC emissions	Minn. R. 7017.2020, subp. 1

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-16**

12/18/12

Facility Name: Green Plains Otter Tail LLC

Permit Number: 11100077 - 004

**Subject Item:** EU 026 Fire Pump**Associated Items:** SV 020 Fire Pump

What to do	Why to do it
EMISSION LIMITS	hdr
Opacity: less than or equal to 20 percent opacity once operating temperatures have been attained.	Minn. R. 7011.2300, subp. 1
Sulfur Dioxide: less than or equal to 0.5 lbs/million Btu heat input	Minn. R. 7011.2300, subp. 2
OPERATING REQUIREMENTS	hdr
Fuel type: No. 2 fuel oil only	Title I Condition: To avoid classification as major source under 40 CFR Section 52.21 & Minn. R. 7007.3000; Minn. R. 7005.0100, subp. 35a
Operating Hours: less than or equal to 500 hours/year using 12-month Rolling Sum to be calculated by the 15th day of each month for maintenance and testing.	Title I Condition: To avoid classification as major source under 40 CFR Section 52.21 & Minn. R. 7007.3000
RECORDKEEPING REQUIREMENTS	hdr
Hours of Operation: The Permittee shall maintain documentation on site that the unit is an emergency generator by design that qualifies under the U.S. EPA memorandum entitled "Calculating Potential to Emit (PTE) for Emergency Generators" dated September 6, 1995.	Minn. R. 7007.0800, subp. 4 & 5
Fuel Supplier Certification: The Permittee shall obtain and maintain a fuel supplier certification for each shipment of No. 2 fuel oil, certifying that the sulfur content does not exceed 0.5% by weight.	Minn. R. 7007.0800, subp. 4 & 5
Fuel Use: The Permittee shall maintain fuel use records, documenting that only #2 fuel oil is used.	Minn. R. 7007.0800, subp. 4 & 5
NEW SOURCE PERFORMANCE STANDARDS	hdr
Total Particulate Matter: less than or equal to 0.40 grams/horsepower-hour	40 CFR Section 60.4205(c); Minn. R. 7011.3520
NMHC+NOx: less than or equal to 7.8 grams/horsepower-hour	40 CFR Section 60.4205(c); Minn. R. 7011.3520
Carbon Monoxide: less than or equal to 2.6 grams/horsepower-hour	40 CFR Section 60.4205(c); Minn. R. 7011.3520
The Permittee shall operate and maintain the stationary CI ICE according to the manufacturer's written instructions or procedures developed by the Permittee that are approved by the engine manufacturer, over the entire life of the engine. The Permittee may only change those settings that are permitted by the manufacturer.	40 CFR Section 60.4206; 40 CFR Section 60.4211(a); Minn. R. 7011.3520
Diesel fuel must meet the requirements of 40 CFR Section 80.510(a). All NRLM diesel fuel is subject to the following per-gallon standards: (1) Sulfur content: 500 parts per million (ppm) maximum; and (2) Cetane index or aromatic content: (i) a minimum cetane index of 40, or (ii) a maximum aromatic content of 35 volume percent.	40 CFR Section 60.4207(a); Minn. R. 7011.3520
Beginning June 1, 2010, diesel fuel must meet the requirements of 40 CFR Section 80.510(b). All NR and LM diesel fuel is subject to the following per-gallon standards: (1) Sulfur content: (i) 15 ppm maximum for NR diesel fuel and/or (ii) 500 ppm maximum for LM diesel fuel; and (2) Cetane index or aromatic content: (i) a minimum cetane index of 40, or (ii) a maximum aromatic content of 35 volume percent.	40 CFR Section 60.4207(b); Minn. R. 7011.3520
The Permittee must install a non-resettable hour meter prior to startup of the emergency engine.	40 CFR Section 60.4209(a); Minn. R. 7011.3520
NESHAP	hdr
EU 026 is a new affected source as defined under 40 CFR pt. 63, subp. ZZZZ, and the facility is an area source as defined at 40 CFR Section 63.2. The Permittee shall meet the requirements of 40 CFR pt. 63, subp. ZZZZ by meeting the requirements of 40 CFR pt. 63, subp. IIII. No further requirements of 40 CFR pt. 63, subp. ZZZZ apply to EU 026.	40 CFR Section 63.6590(c); Minn. R. 7011.8150

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

A-17 12/18/12

Facility Name: Green Plains Otter Tail LLC

Permit Number: 11100077 - 004

**Subject Item:** EU 027 Emergency Generator**Associated Items:** SV 034 Emergency Generator

SV 035 Emergency Generator

What to do	Why to do it
EMISSION LIMITS	hdr
Opacity: less than or equal to 20 percent opacity once operating temperatures have been attained.	Minn. R. 7011.2300, subp. 1
Sulfur Dioxide: less than or equal to 0.50 lbs/million Btu heat input	Minn. R. 7011.2300, subp. 2
OPERATING REQUIREMENTS	hdr
Fuel type: No. 2 fuel oil only.	Title I Condition: To avoid classification as major source under 40 CFR Section 52.21 & Minn. R. 7007.3000; Minn. R. 7005.0100, subp. 35a
Operating Hours: less than or equal to 250 hours/year using 12-month Rolling Sum to be calculated by the 15th day of each month for maintenance and testing.	Title I Condition: To avoid classification as major source under 40 CFR Section 52.21 & Minn. R. 7007.3000
RECORDKEEPING REQUIREMENTS	hdr
Hours of Operation: The Permittee shall maintain documentation on site that the unit is an emergency generator by design that qualifies under the U.S. EPA memorandum entitled "Calculating Potential to Emit (PTE) for Emergency Generators" dated September 6, 1995.	Minn. R. 7007.0800, subp. 4 & 5
Fuel Supplier Certification: The Permittee shall obtain and maintain a fuel supplier certification for each shipment of No. 2 fuel oil, certifying that the sulfur content does not exceed 0.5% by weight.	Minn. R. 7007.0800, subp. 4 & 5
Fuel Use: The Permittee shall maintain fuel use records, documenting that only #2 fuel oil is used.	Minn. R. 7007.0800, subp. 4 & 5
NEW SOURCE PERFORMANCE STANDARDS	hdr
Total Particulate Matter: less than or equal to 0.40 grams/horsepower-hour	40 CFR Section 60.4205(c); Minn. R. 7011.3520
NMHC+NOx: less than or equal to 7.8 grams/horsepower-hour	40 CFR Section 60.4205(c); Minn. R. 7011.3520
Carbon Monoxide: less than or equal to 2.6 grams/horsepower-hour	40 CFR Section 60.4205(c); Minn. R. 7011.3520
The Permittee shall operate and maintain the stationary CI ICE according to the manufacturer's written instructions or procedures developed by the Permittee that are approved by the engine manufacturer, over the entire life of the engine. The Permittee may only change those settings that are permitted by the manufacturer.	40 CFR Section 60.4206; 40 CFR Section 60.4211(a); Minn. R. 7011.3520
Diesel fuel must meet the requirements of 40 CFR Section 80.510(a). All NRLM diesel fuel is subject to the following per-gallon standards: (1) Sulfur content: 500 parts per million (ppm) maximum; and (2) Cetane index or aromatic content: (i) a minimum cetane index of 40, or (ii) a maximum aromatic content of 35 volume percent.	40 CFR Section 60.4207(a); Minn. R. 7011.3520
Beginning June 1, 2010, diesel fuel must meet the requirements of 40 CFR Section 80.510(b). All NR and LM diesel fuel is subject to the following per-gallon standards: (1) Sulfur content: (i) 15 ppm maximum for NR diesel fuel and/or (ii) 500 ppm maximum for LM diesel fuel; and (2) Cetane index or aromatic content: (i) a minimum cetane index of 40, or (ii) a maximum aromatic content of 35 volume percent.	40 CFR Section 60.4207(b); Minn. R. 7011.3520
The Permittee must install a non-resettable hour meter prior to startup of the emergency engine.	40 CFR Section 60.4209(a); Minn. R. 7011.3520
NESHAP	hdr
EU 027 is a new affected source as defined under 40 CFR pt. 63, subp. ZZZZ, and the facility is an area source as defined at 40 CFR Section 63.2. The Permittee shall meet the requirements of 40 CFR pt. 63, subp. ZZZZ by meeting the requirements of 40 CFR pt. 60, subp. IIII. No further requirements of 40 CFR pt. 63, subp. ZZZZ apply to EU 027.	40 CFR Section 63.6590(c); Minn. R. 7011.8150

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-18**

12/18/12

Facility Name: Green Plains Otter Tail LLC

Permit Number: 11100077 - 004

**Subject Item:** EU 028 Boiler 1**Associated Items:** CE 023 Low NOx Burners

SV 022 Boiler 1

What to do	Why to do it
LIMITS	hdr
Nitrogen Oxides: less than or equal to 4.62 lbs/hour using 3-hour Rolling Average	Title I Condition: To avoid classification as major source under 40 CFR Section 52.21 & Minn. R. 7007.3000
Carbon Monoxide: less than or equal to 4.16 lbs/hour using 3-hour Rolling Average	Title I Condition: To avoid classification as major source under 40 CFR Section 52.21 & Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 0.40 lbs/million Btu heat input	Minn. R. 7011.0515, subp. 1
Opacity: less than or equal to 20 percent except for one six-minute period per hour of not more than 60 percent opacity.	Minn. R. 7011.0515, subp. 2
OPERATIONAL REQUIREMENTS	hdr
Fuel Type: Natural Gas with propane back-up.	Minn. R. 7005.0100, subp. 35a
RECORDKEEPING REQUIREMENTS	hdr
Recordkeeping: By the last day of each calendar month, the Permittee shall record the amount of natural gas combusted in the boilers during the previous calendar month. These records shall consist of purchase records, receipts, or fuel meter readings.	40 CFR Section 60.48c(g); Minn. R. 7011.0570
PERFORMANCE TESTING REQUIREMENTS	hdr
Performance Test: due before end of each 60 months starting 06/26/2008 to measure NOx emissions.	Minn. R. 7017.2020, subp. 1
Performance Test: due before end of each 60 months starting 06/26/2008 to measure CO emissions.	Minn. R. 7017.2020, subp. 1

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-19**

12/18/12

Facility Name: Green Plains Otter Tail LLC

Permit Number: 11100077 - 004

**Subject Item:** EU 029 Boiler 2**Associated Items:** CE 024 Low NOx Burners

SV 023 Boiler 2

What to do	Why to do it
LIMITS	hdr
Nitrogen Oxides: less than or equal to 4.62 lbs/hour using 3-hour Rolling Average	Title I Condition: To avoid classification as major source under 40 CFR Section 52.21 & Minn. R. 7007.3000
Carbon Monoxide: less than or equal to 4.16 lbs/hour using 3-hour Rolling Average	Title I Condition: To avoid classification as major source under 40 CFR Section 52.21 & Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 0.40 lbs/million Btu heat input	Minn. R. 7011.0515, subp. 1
Opacity: less than or equal to 20 percent except for one six-minute period per hour of not more than 60 percent opacity.	Minn. R. 7011.0515, subp. 2
OPERATIONAL REQUIREMENTS	hdr
Fuel Type: Natural Gas with propane back-up.	Minn. R. 7005.0100, subp. 35a
RECORDKEEPING REQUIREMENTS	hdr
Recordkeeping: By the last day of each calendar month, the Permittee shall record the amount of natural gas combusted in the boilers during the previous calendar month. These records shall consist of purchase records, receipts, or fuel meter readings.	40 CFR Section 60.48c(g); Minn. R. 7011.0570
PERFORMANCE TESTING REQUIREMENTS	hdr
Performance Test: due before end of each 60 months starting 06/26/2008 to measure NOx emissions.	Minn. R. 7017.2020, subp. 1
Performance Test: due before end of each 60 months starting 06/26/2008 to measure CO emissions.	Minn. R. 7017.2020, subp. 1

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Green Plains Otter Tail LLC  
Permit Number: 11100077 - 004

Subject Item: EU 031 Truck Loadout

Associated Items: CE 026 Flaring

What to do	Why to do it
POLLUTION CONTROL REQUIREMENTS	hdr
The Permittee shall vent all emissions when loading ethanol to trucks to the flare (CE026).	Title I Condition: To avoid major source classification under 40 CFR Section 52.21; under 40 CFR Section 63.2 and Minn. R. 7007.3000



**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-21**

12/18/12

Facility Name: Green Plains Otter Tail LLC

Permit Number: 11100077 - 004

**Subject Item:** EU 050 DDGS Dryer**Associated Items:** CE 029 Multiple Cyclone w/o Fly Ash Reinjection - Most Multiclones

CE 030 Thermal Oxidizer

SV 028 DDGS with Thermal Oxidizer - CE 030

What to do	Why to do it
EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735. Because it has been shown that the facility does not cause a violation of ambient air quality standards, and is located outside the Mpls/St. Paul air quality control region and the city of Duluth, and is located at least ¼ mile from any residence or public roadway, and EU050 and EU051 are controlled by control equipment which has a collection efficiency of 85% by weight, EU050 and EU051 are considered to be in compliance with this requirement.	Minn. R. 7011.0610, subp. 1(A)(1) and Minn. R. 7011.0715 subp. 3
Opacity: less than or equal to 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity.	Minn. R. 7011.0610, subp. 1(A)(2)
OPERATIONAL REQUIREMENTS	hdr
Fuel type: Limited to natural gas only, by design.	Minn. R. 7005.0100, subp. 35a
The Permittee shall operate and maintain the dryer 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.	Minn. R. 7007.0800, subp. 14
POLLUTION CONTROL REQUIREMENTS	hdr
The Permittee shall vent all emissions to the RTO (CE 030) and cyclones (CE 029). When a shutdown or breakdown of CE 030 occurs, the Permittee shall stop wetcake feed to the dryer as soon as CE 030 is shutdown or the breakdown is discovered. The Permittee may continue operation of the dryer only as long as necessary to empty material already in the dryer.	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21; to avoid major source classification under 40 CFR Section 63.2, and Minn. R. 7007.3000

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-22**

12/18/12

Facility Name: Green Plains Otter Tail LLC

Permit Number: 11100077 - 004

**Subject Item:** EU 051 DDGS Cooler**Associated Items:** CE 030 Thermal Oxidizer

SV 028 DDGS with Thermal Oxidizer - CE 030

What to do	Why to do it
POLLUTION CONTROL REQUIREMENTS	hdr
The Permittee shall vent all emissions to the RTO (CE 030). When a shutdown or breakdown of CE 030 occurs, the Permittee shall stop wetcake feed to the dryer as soon as CE 030 is shutdown or the breakdown is discovered.	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21; to avoid major source classification under 40 CFR Section 63.2; and Minn. R. 7007.3000

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

Facility Name:      Green Plains Otter Tail LLC  
Permit Number:      11100077 - 004

**Subject Item:**      **EU 052   Regenerative Thermal Oxidizer**  
**Associated Items:**      CE 030   Thermal Oxidizer  
                                 SV 028   DDGS with Thermal Oxidizer - CE 030

What to do	Why to do it
Fuel type: Limited to natural gas only, by design.	Minn. R. 7005.0100, subp. 35a

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-24**

12/18/12

Facility Name: Green Plains Otter Tail LLC

Permit Number: 11100077 - 004

**Subject Item:** CE 026 Flaring**Associated Items:** EU 031 Truck Loadout

What to do	Why to do it
<b>EMISSION LIMITS</b>	hdr
The Permittee shall operate and maintain control equipment such that it achieves an overall control efficiency for Volatile Organic Compounds: greater than or equal to 98 percent control efficiency	Title I Condition: 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 63.2; Minn. R. 7007.0800, subps. 2 and 14
Flares must be designed and operated with no visible emissions except for a period not to exceed a total of 5 minutes during any 2 consecutive hours.	Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
<b>OPERATING REQUIREMENTS</b>	hdr
The flare shall be operated at all times when emissions may be vented to them.	Title I Condition: 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 63.2; Minn. R. 7007.0800, subps. 2 and 14
The flare shall be operated with a flame present at all times.	Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
The presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame.	Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
Compliance Requirement: Reference Method 22 shall be used to determine the compliance of flares with visible emissions provisions.	Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
Operation Requirement: At all times, including periods of startup, shutdown, and malfunction, owners shall maintain and operate any affected facility in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.	Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
Operation Requirement: Flares shall be monitored to ensure that they are operated and maintained in conformance with their design.	Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
<b>RECORDKEEPING</b>	hdr
Records Requirement: Keep a record of any startup, shutdown, or malfunction in the affected facility or malfunction of the air pollution control equipment.	Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
Recordkeeping: Maintain a file of all measurements, CMS performance evaluations, calibration checks, adjustments and maintenance, and all other information required by this part in permanent form, suitable for inspection for at least two years following the date of such measurements, maintenance, and records.	Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-25**

12/18/12

Facility Name: Green Plains Otter Tail LLC

Permit Number: 11100077 - 004

**Subject Item:** CE 030 Thermal Oxidizer**Associated Items:** EU 050 DDGS Dryer

EU 051 DDGS Cooler

EU 052 Regenerative Thermal Oxidizer

What to do	Why to do it
EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 5.15 lbs/hour using 3-hour Rolling Average	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000
PM < 10 micron: less than or equal to 5.15 lbs/hour using 3-hour Rolling Average	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000
PM < 2.5 micron: less than or equal to 5.15 lbs/hour using 3-hour Rolling Average	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000
Nitrogen Oxides: less than or equal to 11.32 lbs/hour using 3-hour Rolling Average	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000
Volatile Organic Compounds: less than or equal to 1.11 lbs/hour using 3-hour Rolling Average	Title I Condition: to avoid major source classification under 40 CFR Section 52.21; To avoid major source classification under 40 CFR Section 63.2; and Minn. R. 7007.3000
Carbon Monoxide: less than or equal to 12.91 lbs/hour using 3-hour Rolling Average	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000
OPERATIONAL LIMITS	hdr
The Permittee shall operate and maintain control equipment such that it achieves an overall control efficiency for Volatile Organic Compounds: greater than or equal to 97 percent destruction efficiency	Title I Condition: to avoid major source classification under 40 CFR Section 52.21; To avoid major source classification under 40 CFR Section 63.2; and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 2 and 14
The Permittee shall operate and maintain control equipment such that it achieves an overall control efficiency for Carbon Monoxide: greater than or equal to 97 percent destruction efficiency	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 2 and 14
The Permittee shall operate and maintain control equipment such that it achieves an overall control efficiency for Total Particulate Matter: greater than or equal to 62 percent destruction efficiency	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 2 and 14
The Permittee shall operate and maintain control equipment such that it achieves an overall control efficiency for PM < 10 micron: greater than or equal to 62 percent destruction efficiency	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 2 and 14
The Permittee shall operate and maintain control equipment such that it achieves an overall control efficiency for PM < 2.5 micron: greater than or equal to 62 percent destruction efficiency	Title I Condition: To avoid classification as a major source under 40 CFR Section 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 Rolling Average as a 3-hour rolling average at the combustion chamber outlet, unless a new limit is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new limit shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The limit is final upon issuance of a permit amendment incorporating the change. If the 3-hour rolling average temperature is below the minimum temperature limit, the VOC used during that time shall be considered uncontrolled until the average temperature is above the minimum temperature limit. This shall be reported as a deviation.	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 2 and 14
The Permittee shall operate and maintain the thermal oxidizer any time that any process equipment controlled by the thermal oxidizer is in operation. The Permittee shall document periods of non-operation of the control equipment.	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 2 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.	Minn. R. 7007.0800, subp. 4, 5, and 14

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-26**

12/18/12

Facility Name: Green Plains Otter Tail LLC

Permit Number: 11100077 - 004

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.	Minn. R. 7007.0800, subp. 14
MONITORING/RECORDKEEPING	hdr
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.	Title I Condition: To avoid classification as a major source 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, subp. 4 and 5
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.	Minn. R. 7007.0800, subp. 4
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.	Minn. R. 7007.0800, subp. 4 and 5
The Permittee shall maintain and operate a thermocouple monitoring device that continuously indicates and records the combustion chamber temperature of the thermal oxidizer. The monitoring device shall have a margin of error less than the greater of +/- 0.75 percent of the temperature being measured or +/- 2.5 degrees Celsius. The recording device shall also calculate the three-hour rolling average combustion chamber temperature.	Minn. R. 7007.0800, subp. 4 and 5
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.	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.	Minn. R. 7007.0800, subp. 4, 5, and 14
PERFORMANCE TESTING	hdr
Performance Test: due before end of each 60 months starting 10/28/2008 to measure PM emissions.	Minn. R. 7017.2020, subp. 1
Performance Test: due before end of each 60 months starting 10/28/2008 to measure PM<10 micron emissions.	Minn. R. 7017.2020, subp. 1
Performance Test: due before end of each 60 months starting 10/28/2008 to measure NOx emissions.	Minn. R. 7017.2020, subp. 1
Performance Test: due before end of each 60 months starting 10/28/2008 to measure CO emissions.	Minn. R. 7017.2020, subp. 1
Performance Test: due before end of each 60 months starting 10/28/2008 to measure VOC emissions	Minn. R. 7017.2020, subp. 1

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-27**

12/18/12

Facility Name: Green Plains Otter Tail LLC

Permit Number: 11100077 - 004

**Subject Item: FS 004 Truck Traffic**

What to do	Why to do it
<p>All haul roads will be paved and maintained.</p> <p>The Permittee shall conduct and keep a written record of yearly inspections of all haul roads for wear and tear and subsequent repairs.</p> <p>All haul roads should use only salt and not sand for wintertime ice abatement.</p> <p>The Permittee shall conduct and keep a written record of weekly visual inspections of all haul roads for visible silt loading.</p> <p>All haul roads will be swept/cleaned monthly or when silt has accumulated to visible levels on the road, whichever occurs first.</p> <p>Speed limit signage: 10 mph on truck entrance road, 30 mph on employee entrance road, 5 mph on all other haul roads.</p>	<p>Minn. R. 7009.0020</p>

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-28**

12/18/12

Facility Name: Green Plains Otter Tail LLC

Permit Number: 11100077 - 004

**Subject Item: FS 005 Equipment Leaks**

What to do	Why to do it
STANDARDS: GENERAL	hdr
Notification of any physical or operational change which increases emission rate: due 60 days (or as soon as practical) before the change is commenced.	40 CFR Section 60.7(a)(4); Minn. R. 7019.0100, subp. 1
Recordkeeping: Maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of the facility including; any malfunction of the air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative.	40 CFR Section 60.7(b), Minn. R. 7019.0100, subp. 1
Recordkeeping: Maintain a file of all measurements, maintenance, reports and records for at least five years. 40 CFR Section 60.7(f) specifies two years.	Minn. R. 7997.0800, subp. 5(C); meets requirements of 40 CFR Section 60.7(f); Minn. R. 7019.0100, subp. 1
No owner or operator shall build, erect, install, or use any article, machine, equipment or process, the use of which conceals an emission which would otherwise constitute a violation of an applicable standard.	40 CFR Section 60.12; Minn. R. 7011.0050
Each owner or operator subject to the provisions of this subpart shall demonstrate compliance with the requirements of 40 CFR Sections 60.482-1a through 60.482-10a or Section 60.480a(e) for all equipment within 180 days of initial startup.	40 CFR Section 60.482-1a(a)
(g) If the storage vessel is shared with multiple process units, the process unit with the greatest annual amount of stored materials (predominant use) is the process unit the storage vessel is assigned to. If the storage vessel is shared equally among process units, and one of the process units has equipment subject to this subpart, the storage vessel is assigned to that process unit. If the storage vessel is shared equally among process units, none of which have equipment subject to this subpart of this part, the storage vessel is assigned to any process unit subject to subpart VVa of this part. If the predominant use of the storage vessel varies from year to year, then the owner or operator must estimate the predominant use initially and reassess every 3 years. The owner or operator must keep records of the information and supporting calculations that show how predominant use is determined. All equipment on the storage vessel must be monitored when in VOC service.	40 CFR Section 60.482-1a(g)
STANDARDS: PUMPS	hdr
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 Section 60.485a(b), except as provided in Section 60.482-1a(c) and (f) and paragraphs (d), (e), and (f) of this section. A pump that begins operation in light liquid service after the initial startup date for the process unit must be monitored for the first time within 30 days after the end of its startup period, except for a pump that replaces a leaking pump and except as provided in Section 60.482-1a(c) and paragraphs (d), (e), and (f) of this section.  (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, except as provided in Section 60.482-1a(f).	40 CFR Section 60.482-2a
The instrument reading that defines a leak is specified in paragraphs (b)(1)(i) and (ii) of this section.  (i) 5,000 parts per million (ppm) or greater for pumps handling polymerizing monomers;  (ii) 2,000 ppm or greater for all other pumps.	40 CFR Section 60.482-2a(b)(1)



**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-29**

12/18/12

Facility Name: Green Plains Otter Tail LLC

Permit Number: 11100077 - 004

<p>If there are indications of liquids dripping from the pump seal, the owner or operator shall follow the procedure specified in either paragraph (b)(2)(i) or (ii) of this section. This requirement does not apply to a pump that was monitored after a previous weekly inspection and the instrument reading was less than the concentration specified in paragraph (b)(1)(i) or (ii) of this section, whichever is applicable.</p> <p>(i) Monitor the pump within 5 days as specified in Section 60.485a(b). A leak is detected if the instrument reading measured during monitoring indicates a leak as specified in paragraph (b)(1)(i) or (ii) of this section, whichever is applicable. The leak shall be repaired using the procedures in paragraph (c) of this section.</p> <p>(ii) Designate the visual indications of liquids dripping as a leak, and repair the leak using either the procedures in paragraph (c) of this section or by eliminating the visual indications of liquids dripping.</p>	40 CFR Section 60.482-2a(b)(2)
<p>(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 Section 60.482-9a.</p> <p>(2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected. First attempts at repair include, but are not limited to, the practices described in paragraphs (c)(2)(i) and (ii) of this section, where practicable.</p>	40 CFR Section 60.482-2a(c)
<p>(d) Each pump equipped with a dual mechanical seal system that includes a barrier fluid system is exempt from the requirements of paragraph (a) of this section, provided the requirements specified in paragraphs (d)(1) through (6) of this section are met.</p>	40 CFR Section 60.482-2a(d)
<p>(e) Any pump that is designated, as described in Section 60.486a(e)(1) and (2), for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of paragraphs (a), (c), and (d) of this section if the pump:</p> <p>(1) Has no externally actuated shaft penetrating the pump housing;</p> <p>(2) Is demonstrated to be operating with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background as measured by the methods specified in Section 60.485a(c); and</p> <p>(3) Is tested for compliance with paragraph (e)(2) of this section initially upon designation, annually, and at other times requested by the Administrator.</p>	40 CFR Section 60.482-2a(e)
<p>(f) If any pump is equipped with a closed vent system capable of capturing and transporting any leakage from the seal or seals to a process or to a fuel gas system or to a control device that complies with the requirements of Section 60.482-10a, it is exempt from paragraphs (a) through (e) of this section.</p>	40 CFR Section 60.482-2a(f)
<p>(g) Any pump that is designated, as described in Section 60.486a(f)(1), as an unsafe-to-monitor pump is exempt from the monitoring and inspection requirements of paragraphs (a) and (d)(4) through (6) of this section if:</p> <p>(1) The owner or operator of the pump demonstrates that the pump is unsafe-to-monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with paragraph (a) of this section; and</p> <p>(2) The owner or operator of the pump has a written plan that requires monitoring of the pump as frequently as practicable during safe-to-monitor times, but not more frequently than the periodic monitoring schedule otherwise applicable, and repair of the equipment according to the procedures in paragraph (c) of this section if a leak is detected.</p>	40 CFR Section 60.482-2a(g)
<p>(h) Any pump that is located within the boundary of an unmanned plant site is exempt from the weekly visual inspection requirement of paragraphs (a)(2) and (d)(4) of this section, and the daily requirements of paragraph (d)(5) of this section, provided that each pump is visually inspected as often as practicable and at least monthly.</p>	40 CFR Section 60.482-2a(h)
STANDARDS: COMPRESSORS	hdr

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-30**

12/18/12

Facility Name: Green Plains Otter Tail LLC

Permit Number: 11100077 - 004

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 Section 60.482-1a(c) and paragraphs (h), (i), and (j).	40 CFR Section 60.482-3a(a)
(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 degassing reservoir that is routed to a process or fuel gas system or connected by a closed vent system to a control device that complies with the requirements of Section 60.482-10a; or  (3) Equipped with a system that purges the barrier fluid into a process stream with zero VOC emissions to the atmosphere.	40 CFR Section 60.482-3a(b)
(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.	40 CFR Section 60.482-3a(c) and (d)
(e)(1) Each sensor shall be checked daily or shall be 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.	40 CFR Section 60.482-3a(e)
(f) If the sensor indicates failure of the seal system, the barrier system, or both based on the criterion determined under paragraph (e)(2), a leak is detected.	40 CFR Section 60.482-3a(f)
(g)(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 60.482-9a (Delay of Repair).  (2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected, except as provided in 40 CFR Section 60.482-9a.	40 CFR Section 60.482-3a(g)
(h) A compressor is exempt from the requirements of paragraphs (a) and (b) of this section, if it is equipped with a closed vent system to capture and transport leakage from the compressor drive shaft back to a process or fuel gas system or to a control device that complies with the requirements of Section 60.482-10a, except as provided in paragraph (i) of this section.	40 CFR Section 60.482-3a(h)
(i) Any compressor that is designated, as described in Section 60.486a(e)(1) and (2), for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of paragraphs (a) through (h) of this section if the compressor:  (1) Is demonstrated to be operating with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as measured by the methods specified in Section 60.485a(c); and  (2) Is tested for compliance with paragraph (i)(1) of this section initially upon designation, annually, and at other times requested by the Administrator.	40 CFR Section 60.482-3a(i)
(j) Any existing reciprocating compressor in a process unit which becomes an affected facility under provisions of Section 60.14 or Section 60.15 is exempt from paragraphs (a) through (e) and (h) of this section, provided the owner or operator demonstrates that recasting the distance piece or replacing the compressor are the only options available to bring the compressor into compliance with the provisions of paragraphs (a) through (e) and (h) of this section.	40 CFR Section 60.482-3a(j)
<b>STANDARDS: PRESSURE RELIEF DEVICES IN GAS/VAPOR SERVICE</b>	hdr
(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 60.485a(c).	40 CFR Section 60.482-4a(a)
(b)(1) After each pressure release, the pressure relief device 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 60.482-9a (Delay of Repair).	40 CFR Section 60.482-4(b)

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-31**

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Facility Name: Green Plains Otter Tail LLC

Permit Number: 11100077 - 004

<p>(c) Any pressure relief device that is routed to a process or fuel gas system or equipped with a closed vent system capable of capturing and transporting leakage through the pressure relief device to a control device as described in Section 60.482-10a is exempted from the requirements of paragraphs (a) and (b) of this section.</p> <p>(d)(1) Any pressure relief device that is equipped with a rupture disk upstream of the pressure relief device is exempt from the requirements of paragraphs (a) and (b) of this section, provided the owner or operator complies with the requirements in paragraph (d)(2) of this section.</p> <p>(2) After each pressure release, a new rupture disk shall be installed upstream of the pressure relief device as soon as practicable, but no later than 5 calendar days after each pressure release, except as provided in Section 60.482-9a.</p>	40 CFR Section 60.482-4a(c) and (d)
STANDARDS: SAMPLING CONNECTION SYSTEMS	hdr
(a) Each sampling connection system shall be equipped with a closed-purge, closed-loop, or closed-vent system, except as provided in Section 60.482-1a(c) and paragraph (c) of this section.	40 CFR Section 60.482-5(a)
<p>(b) Each closed-purge, closed-loop, or closed-vent system as required in paragraph (a) of this section shall comply with the requirements specified in paragraphs (b)(1) through (4).</p> <p>(1) Gases displaced during filling of the sample container are not required to be collected or captured.</p> <p>(2) Containers that are part of a closed-purge system must be covered or closed when not being filled or emptied.</p> <p>(3) Gases remaining in the tubing or piping between the closed-purge system valve(s) and sample container valve(s) after the valves are closed and the sample container is disconnected are not required to be collected or captured.</p> <p>(4) Each closed-purge, closed-loop, or closed-vent system shall be designed and operated to meet requirements in either paragraph (b)(4)(i), (ii), (iii), or (iv).</p>	40 CFR Section 60.482-5(b)
(c) In-situ sampling systems and sampling systems without purges are exempt from the requirements of paragraphs (a) and (b) of this section.	40 CFR Section 60.482-5(c)
STANDARDS: VALVES	hdr
<p>(a)(1) Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve, except as provided in Section 60.482-1a(c) and paragraphs (d) and (e) of this section.</p> <p>(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.</p>	40 CFR Section 60.482-6a(a)
<p>(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 end is closed before the second valve is closed.</p> <p>(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 paragraph (a) of this section at all other times.</p>	40 CFR Section 60.482-6a(b) and (c)
<p>(d) Open-ended valves or lines in an emergency shutdown system which are designed to open automatically in the event of a process upset are exempt from the requirements of paragraphs (a), (b), and (c) of this section.</p> <p>(e) Open-ended valves or lines containing materials which would autocatalytically polymerize or would present an explosion, serious overpressure, or other safety hazard if capped or equipped with a double block and bleed system as specified in paragraphs (a) through (c) of this section are exempt from the requirements of paragraphs (a) through (c) of this section.</p>	40 CFR Section 60.482-6a(d) and (e)

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-32**

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Facility Name: Green Plains Otter Tail LLC

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(a)(1) Each valve shall be monitored monthly to detect leaks by the methods specified in Section 60.485a(b) and shall comply with paragraphs (b) through (e) of this section, except as provided in paragraphs (f), (g), and (h) of this section, Section 60.482-1a(c) and (f), and Sections 60.483-1a and 60.483-2a.	40 CFR Section 60.482-7a(a)
<p>(b) If an instrument reading of 500 ppm or greater is measured, a leak is detected.</p> <p>(c)(1)(i) 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.</p> <p>(ii) As an alternative to monitoring all of the valves in the first month of a quarter, an owner or operator may elect to subdivide the process unit into two or three subgroups of valves and monitor each subgroup in a different month during the quarter, provided each subgroup is monitored every 3 months. The owner or operator must keep records of the valves assigned to each subgroup.</p> <p>(2) If a leak is detected, the valve shall be monitored monthly until a leak is not detected for 2 successive months.</p>	40 CFR Section 60.482-7a(b) and (c)
<p>(d)(1) When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in Section 60.482-9a.</p> <p>(2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.</p>	40 CFR Section 60.482-7a(d)
<p>(e) First attempts at repair include, but are not limited to, the following best practices where practicable:</p> <p>(1) Tightening of bonnet bolts;</p> <p>(2) Replacement of bonnet bolts;</p> <p>(3) Tightening of packing gland nuts;</p> <p>(4) Injection of lubricant into lubricated packing.</p>	40 CFR Section 60.482-7a(e)
<p>(f) Any valve that is designated, as described in Section 60.486a(e)(2), for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of paragraph (a) of this section if the valve:</p> <p>(1) Has no external actuating mechanism in contact with the process fluid,</p> <p>(2) Is operated with emissions less than 500 ppm above background as determined by the method specified in Section 60.485a(c), and</p> <p>(3) Is tested for compliance with paragraph (f)(2) of this section initially upon designation, annually, and at other times requested by the Administrator.</p>	40 CFR Section 60.482-7a(f)
<p>(g) Any valve that is designated, as described in Section 60.486a(f)(1), as an unsafe-to-monitor valve is exempt from the requirements of paragraph (a) of this section if:</p> <p>(1) The owner or operator of the valve demonstrates that the valve is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with paragraph (a) of this section, and</p> <p>(2) The owner or operator of the valve adheres to a written plan that requires monitoring of the valve as frequently as practicable during safe-to-monitor times.</p>	40 CFR Section 60.482-7a(g)

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-33**

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Facility Name: Green Plains Otter Tail LLC

Permit Number: 11100077 - 004

<p>(h) Any valve that is designated, as described in Section 60.486a(f)(2), as a Any valve that is designated, as described in Section 60.486a(f)(2), as a difficult-to-monitor valve is exempt from the requirements of paragraph (a) f:</p> <p>(1) The Permittee demonstrates that the valve cannot be monitored without elevating the monitoring personnel more than 2 meters above a support surface.</p> <p>(2) The process unit within which the valve is located:</p> <p>(i) Becomes an affected facility through Section 60.14 or 60.15 and was constructed on or before January 5, 1981; or</p> <p>(ii) Has less than 3.0 percent of its valves designated as difficult-to-monitor by the owner or operator.</p> <p>(3) The owner or operator of the valve follows a written plan that requires monitoring of the valve at least once per calendar year</p>	40 CFR Section 60.482-7a(h)
STANDARDS: PUMPS AND VALVES IN HEAVY LIQUID SERVICE, PRESSURE RELIEF DEVICES IN LIGHT LIQUID OR HEAVY LIQUID SERVICE, AND FLANGES AND OTHER CONNECTORS	hdr
<p>(a) If evidence of a potential leak is found by visual, audible, olfactory, or any other detection method at pumps, valves, and connectors in heavy liquid service and pressure relief devices in light liquid or heavy liquid service, the owner or operator shall follow either one of the following procedures:</p> <p>(1) The owner or operator shall monitor the equipment within 5 days by the method specified in Section 60.485a(b) and shall comply with the requirements of paragraphs (b) through (d) of this section.</p> <p>(2) The owner or operator shall eliminate the visual, audible, olfactory, or other indication of a potential leak within 5 calendar days of detection.</p>	40 CFR Section 60.482-8a(a)
<p>(b) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.</p> <p>(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 60.482-9a (delay of repair).</p> <p>(2) The first attempt at repair shall be made no later than 5 calendar days after each leak is detected.</p>	40 CFR Section 60.482-8a(b) and (c)
(d) First attempts at repair include, but are not limited to, the best practices described under Sections 60.482-2a(c)(2) and 60.482-7a(e).	40 CFR Section 60.482-8a(d)
DELAY OF REPAIR	hdr
<p>(a) Delay of repair of equipment for which leaks have been detected will be allowed if repair within 15 days is technically infeasible without a process unit shutdown. Repair of this equipment shall occur before the end of the next process unit shutdown. Monitoring to verify repair must occur within 15 days after startup of the process unit.</p> <p>(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.</p>	40 CFR Section 60.482-9a(a) and (b)
<p>(c) Delay of repair for valves and connectors will be allowed if:</p> <p>(1) The owner or operator demonstrates that emissions of purged material resulting from immediate repair are greater than the fugitive emissions likely to result from delay of repair, and</p> <p>(2) When repair procedures are effected, the purged material is collected and destroyed or recovered in a control device complying with Section 60.482-10a.</p>	40 CFR Section 60.482-9a(c)
<p>(d) Delay of repair for pumps will be allowed if:</p> <p>(1) Repair required the use of a dual mechanical seal system that includes a barrier fluid system, and</p> <p>(2) Repair is completed as soon as practicable, but not later than 6 months after the leak was detected.</p>	40 CFR Section 60.482-9a(d)

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-34**

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<p>(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 shutdown, valve assembly 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.</p> <p>(f) When delay of repair is allowed for a leaking pump, valve, or connector that remains in service, the pump, valve, or connector may be considered to be repaired and no longer subject to delay of repair requirements if two consecutive monthly monitoring instrument readings are below the leak definition.</p>	40 CFR 60.482-9a(e) and (f)
STANDARDS: CLOSED VENT SYSTEMS AND CONTROL DEVICES	hdr
<p>(a) Owners or operators of closed vent systems and control devices used to comply with provisions of this subpart shall comply with the provisions of this section.</p> <p>(b) Vapor recovery systems (for example, condensers and absorbers) shall be designed and operated to recover the VOC emissions vented to them with an efficiency of 95 percent or greater, or to an exit concentration of 20 parts per million by volume (ppmv), whichever is less stringent.</p>	40 CFR 60.482-10a(a) and (b)
<p>(c) Enclosed combustion devices shall be designed and operated to reduce the VOC emissions vented to them with an efficiency of 95 percent or greater, or to an exit concentration of 20 ppmv, on a dry basis, corrected to 3 percent oxygen, whichever is less stringent or to provide a minimum residence time of 0.75 seconds at a minimum temperature of 816 °C.</p> <p>(d) Flares used to comply with this subpart shall comply with the requirements of Section 60.18.</p> <p>(e) Owners or operators of control devices used to comply with the provisions of this subpart shall monitor these control devices to ensure that they are operated and maintained in conformance with their designs.</p>	40 CFR 60.482-10a(c), (d) and (e)
<p>(f) Except as provided in paragraphs (i) through (k), each closed vent system shall be inspected according to the procedures and schedule specified in paragraphs (f)(1) and (2).</p> <p>(1) If the vapor collection system or closed vent system is constructed of hard-piping, the owner or operator shall comply with the requirements specified in paragraphs (f)(1)(i) and (ii):</p> <p>(i) Conduct an initial inspection according to the procedures in Section 60.485a(b); and</p> <p>(ii) Conduct annual visual inspections for visible, audible, or olfactory indications of leaks.</p> <p>(2) If the vapor collection system or closed vent system is constructed of ductwork, the owner or operator shall:</p> <p>(i) Conduct an initial inspection according to the procedures in Section 60.485a(b); and</p> <p>(ii) Conduct annual inspections according to the procedures in Section 60.485a(b).</p>	40 CFR 60.482-10a(f)
<p>(g) Leaks, as indicated by an instrument reading greater than 500 ppmv above background or by visual inspections, shall be repaired as soon as practicable except as provided in paragraph (h) of this section.</p> <p>(1) A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.</p> <p>(2) Repair shall be completed no later than 15 calendar days after the leak is detected.</p>	40 CFR 60.482-10a(g)

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-35**

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<p>(h) Delay of repair of a closed vent system for which leaks have been detected is allowed if the repair is technically infeasible without a process unit shutdown or if the owner or operator determines that emissions resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair. Repair of such equipment shall be complete by the end of the next process unit shutdown.</p> <p>(i) If a vapor collection system or closed vent system is operated under a vacuum, it is exempt from the inspection requirements of paragraphs (f)(1)(i) and (f)(2) of this section.</p>	40 CFR 60.482-10a(h) and (i)
<p>(j) Any parts of the closed vent system that are designated, as described in paragraph (l)(1) of this section, as unsafe to inspect are exempt from the inspection requirements of paragraphs (f)(1)(i) and (f)(2) of this section if they comply with the requirements specified in paragraphs (j)(1) and (2) of this section:</p> <p>(1) The owner or operator determines that the equipment is unsafe to inspect because inspecting personnel would be exposed to an imminent or potential danger as a consequence of complying with paragraphs (f)(1)(i) or (f)(2) of this section; and</p> <p>(2) The owner or operator has a written plan that requires inspection of the equipment as frequently as practicable during safe-to-inspect times.</p>	40 CFR 60.482-10a(j)
<p>(k) Any parts of the closed vent system that are designated, as described in paragraph (l)(2) of this section, as difficult to inspect are exempt from the inspection requirements of paragraphs (f)(1)(i) and (f)(2) of this section if they comply with the requirements specified in paragraphs (k)(1) through (3) of this section:</p> <p>(1) The owner or operator determines that the equipment cannot be inspected without elevating the inspecting personnel more than 2 meters above a support surface; and</p> <p>(2) The process unit within which the closed vent system is located becomes an affected facility through Sections 60.14 or 60.15, or the owner or operator designates less than 3.0 percent of the total number of closed vent system equipment as difficult to inspect; and</p> <p>(3) The owner or operator has a written plan that requires inspection of the equipment at least once every 5 years. A closed vent system is exempt from inspection if it is operated under a vacuum.</p>	40 CFR 60.482-10a(k)
<p>(l) The Permittee shall record the information specified in paragraphs (l)(1) through (5).</p> <p>(1) Identification of all parts of the closed vent system that are designated as unsafe to inspect, an explanation of why the equipment is unsafe to inspect, and the plan for inspecting the equipment.</p> <p>(2) Identification of all parts of the closed vent system that are designated as difficult to inspect, an explanation of why the equipment is difficult to inspect, and the plan for inspecting the equipment.</p> <p>(3) For each inspection during which a leak is detected, a record of the information specified in Section 60.486a(c).</p> <p>(4) For each inspection conducted in accordance with Section 60.485a(b) during which no leaks are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected.</p> <p>(5) For each visual inspection conducted in accordance with paragraph (f)(1)(ii) of this section during which no leaks are detected, a</p>	40 CFR 60.482-10a(l)
<p>(m) Closed vent systems and control devices used to comply with provisions of this subpart shall be operated at all times when emissions may be vented to them.</p>	40 CFR 60.482-10a(m)
STANDARDS: CONNECTORS IN GAS/VAPOR SERVICE AND IN LIGHT LIQUID SERVICE	hdr

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-36**

12/18/12

Facility Name: Green Plains Otter Tail LLC

Permit Number: 11100077 - 004

<p>(a) The permittee shall initially monitor all connectors in the process unit for leaks by the later of either 12 months after the compliance date or 12 months after initial startup. If all connectors in the process unit have been monitored for leaks prior to the compliance date, no initial monitoring is required provided either no process changes have been made since the monitoring or the owner or operator can determine that the results of the monitoring, with or without adjustments, reliably demonstrate compliance despite process changes. If required to monitor because of a process change, the owner or operator is required to monitor only those connectors involved in the process change.</p>	40 CFR 60.482-11a(a)
<p>(b) Except as allowed in Section 60.482-1a(c), Section 60.482-10a, or as specified in paragraph (e) of this section, the owner or operator shall monitor all connectors in gas and vapor and light liquid service as specified in paragraphs (a) and (b)(3) of this section.</p> <p>(1) The connectors shall be monitored to detect leaks by the method specified in Section 60.485a(b) and, as applicable, Section 60.485a(c).</p> <p>(2) If an instrument reading greater than or equal to 500 ppm is measured, a leak is detected.</p>	40 CFR 60.482-11a(b)(1) and (2)
<p>(3) The owner or operator shall perform monitoring, subsequent to the initial monitoring required in paragraph (a) of this section, as specified in paragraphs (b)(3)(i) through (iii) of this section, and shall comply with the requirements of paragraphs (b)(3)(iv) and (v) of this section. The required period in which monitoring must be conducted shall be determined from paragraphs (b)(3)(i) through (iii) of this section using the monitoring results from the preceding monitoring period. The percent leaking connectors shall be calculated as specified in paragraph (c) of this section.</p>	40 CFR 60.482-11a(b)(3)
<p>(c) For use in determining the monitoring frequency, as specified in paragraphs (a) and (b)(3) of this section, the percent leaking connectors as used in paragraphs (a) and (b)(3) of this section shall be calculated by using the following equation:</p> $\%CL = CL / Ct \times 100$ <p>Where:</p> <p>%CL= Percent of leaking connectors as determined through periodic monitoring required in paragraphs (a) and (b)(3)(i) through (iii) of this section.</p> <p>CL= Number of connectors measured at 500 ppm or greater, by the method specified in Section 60.485a(b).</p> <p>Ct= Total number of monitored connectors in the process unit or affected facility.</p>	40 CFR 60.482-11a(c)
<p>(d) When a leak is detected pursuant to paragraphs (a) and (b) of this section, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in Section 60.482-9a. A first attempt at repair as defined in this subpart shall be made no later than 5 calendar days after the leak is detected.</p>	40 CFR 60.482-11a(d)
<p>(e) Any connector that is designated, as described in Section 60.486a(f)(1), as an unsafe-to-monitor connector is exempt from the requirements of paragraphs (a) and (b) of this section if:</p> <p>(1) The owner or operator of the connector demonstrates that the connector is unsafe-to-monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with paragraphs (a) and (b) of this section; and</p> <p>(2) The owner or operator of the connector has a written plan that requires monitoring of the connector as frequently as practicable during safe-to-monitor times but not more frequently than the periodic monitoring schedule otherwise applicable, and repair of the equipment according to the procedures in paragraph (d) of this section if a leak is detected.</p>	40 CFR 60.482-11a(e)



**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-37**

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(f) Inaccessible, ceramic, or ceramic-lined connectors . (1) Any connector that is inaccessible or that is ceramic or ceramic-lined (e.g., porcelain, glass, or glass-lined), is exempt from the monitoring requirements of paragraphs (a) and (b) of this section, from the leak repair requirements of paragraph (d) of this section, and from the recordkeeping and reporting requirements of Sections 63.1038 and 63.1039. An inaccessible connector is one that meets any of the provisions specified in paragraphs (f)(1)(i) through (vi) of this section, as applicable.	40 CFR 60.482-11a(f)
(g) Except for instrumentation systems and inaccessible, ceramic, or ceramic-lined connectors meeting the provisions of paragraph (f) of this section, identify the connectors subject to the requirements of this subpart. Connectors need not be individually identified if all connectors in a designated area or length of pipe subject to the provisions of this subpart are identified as a group, and the number of connectors subject is indicated.	40 CFR 60.482-11a(g)
TESTING PROCEDURES	hdr
Compliance shall be determined by the methods specified in 40 CFR Section 60.485a.	40 CFR Section 60.486a(b)
RECORDKEEPING	hdr
(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 60.482-7a(c) and no leak has been detected during those 2 months.  (3) The identification on a connector may be removed after it has been monitored as specified in Section 60.482-11a(b)(3)(iv) and no leak has been detected during that monitoring.  (4) The identification on equipment, except on a valve or connector, may be removed after it has been repaired.	40 CFR Section 60.486a(b)
(c) When each 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 identification numbers and the equipment identification 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) Maximum instrument reading measured by Method 21 of appendix A-7 of this part at the time the leak is successfully repaired or determined to be nonrepairable, except when a pump is repaired by eliminating indications of liquids dripping.	40 CFR Section 60.486a(c)(1)-(4)
(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 the 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 shutdown that occur while the equipment is unrepaired. (9) The date of successful repair of the leak.	40 CFR Section 60.486a(c)(5)-(9)

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-38**

12/18/12

Facility Name: Green Plains Otter Tail LLC

Permit Number: 11100077 - 004

<p>(d) The information pertaining to the design requirements for closed vent systems and required control devices described in Section 60.482-10a shall be recorded and kept in a readily accessible location:</p> <p>(1) Detailed schematics, design specifications, and piping and instrumentation diagrams.</p> <p>(2) The dates and descriptions of any changes in the design specifications.</p> <p>(3) A description of the parameter(s) monitored per Section 60.482-10a(e), to ensure that control devices are operated and maintained in conformance with their design and an explanation of why that parameter(s) was selected.</p> <p>(4) Periods when the closed vent systems and required control devices are not operated as designed, including periods when a flare pilot light does not have a flame.</p> <p>(5) Dates of startups and shutdowns of the closed vent systems and required control devices.</p>	40 CFR Section 60.486a(d)
<p>(e) Information pertaining to all equipment subject to the requirements in Section 60.482-1a to 60.482-11a shall be recorded in a log that is kept in a readily accessible location and contain the information specified in 40 CFR Section 486a(e)(1) through (10).</p>	40 CFR Section 60.486a(e)
<p>(f) The following information pertaining to all valves subject to the requirements of Section 60.482-7a(g) and (h), all pumps subject to the requirements of Section 60.482-2a(g), and all connectors subject to the requirements of Section 60.482-11a(e) shall be recorded in a log that is kept in a readily accessible location:</p> <p>(1) A list of identification numbers for valves, pumps, and connectors that are designated as unsafe-to-monitor, an explanation for each valve, pump, or connector stating why the valve, pump, or connector is unsafe-to-monitor, and the plan for monitoring each valve, pump, or connector.</p> <p>(2) A list of identification numbers for valves that are designated as difficult-to-monitor, an explanation for each valve stating why the valve is difficult-to-monitor, and the schedule for monitoring each valve.</p>	40 CFR Section 60.486a(f)
<p>(g) The following information shall be recorded for valves complying with Section 60.483-2a:</p> <p>(1) A schedule of monitoring.</p> <p>(2) The percent of valves found leaking during each monitoring period.</p>	40 CFR Section 60.486a(g)
<p>(h) The following information shall be recorded in a log that is kept in a readily accessible location:</p> <p>(1) Design criterion required in Sections 60.482-2a(d)(5) and 60.482-3a(e)(2) and explanation of the design criterion; and</p> <p>(2) Any changes to this criterion and the reasons for the changes.</p>	40 CFR Section 60.486a(h)
<p>(i) The following information shall be recorded in a log that is kept in a readily accessible location for use in determining exemptions as provided in Section 60.480a(d):</p> <p>(1) An analysis demonstrating the design capacity of the affected facility,</p> <p>(2) A statement listing the feed or raw materials and products from the affected facilities and an analysis demonstrating whether these chemicals are heavy liquids or beverage alcohol, and</p> <p>(3) An analysis demonstrating that equipment is not in VOC service.</p>	40 CFR Section 60.486a(i)
<p>(j) Information and data used to demonstrate that a piece of equipment is not in VOC service shall be recorded in a log that is kept in a readily accessible location.</p> <p>(k) The provisions of Section 60.7(b) and (d) do not apply to affected facilities subject to this subpart.</p>	40 CFR Section 60.486a(j) and (k)
REPORTING REQUIREMENTS	hdr

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-39**

12/18/12

Facility Name: Green Plains Otter Tail LLC

Permit Number: 11100077 - 004

(a) Each owner or operator subject to the provisions of this subpart shall submit semiannual reports to the Administrator beginning six months after the initial startup date.	40 CFR Section 60.487a(a)
(b) The initial semiannual report to the Administrator shall include the following information:  (1) Process unit identification, (2) Number of valves subject to the requirements of 40 CFR Section 60.482-7a, (3) Number of pumps subject to the requirements of 40 CFR Section 60.482-2a, (4) Number of compressors subject to the requirements of 40 CFR Section 60.482-3a (5) Number of connectors subject to the requirements of 40 CFR Section 60.482-11a	40 CFR Section 60.487a(b)
(c) All semiannual reports to the Administrator shall include the following information, summarized from the information in 40 CFR Section 60.486a;  (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(7a)(b) or 40 CFR 60.483-2a (ii) Number of valves for which leaks were not repaired as required in 40 CFR Section 60.482-7a(d)(1), (iii) Number of pumps for which leaks were detected as described in Section 60.482-2a(b), (d)(4)(ii)(A) or (B), or (d)(5)(iii), (iv) Number of pumps for which leaks were not repaired as required in Section 60.482-2a(c)(1) and (d)(6),	40 CFR Section 60.487a(c)(1) and (2)(i)-(2)(iv)
continued.... (c) All semiannual reports to the Administrator shall include the following information, summarized from the information in 40 CFR Section 60.486a;  (2) For each month during the semiannual reporting period,  (v) Number of compressors for which leaks were detected as described in Section 60.482-3a(f), (vi) Number of compressors for which leaks were not repaired as required in Section 60.482-3a(g)(1),  vii) Number of connectors for which leaks were detected as described in Section 60.482-11a(b), and  (viii) Number of connectors for which leaks were not repaired as required in Section 60.482-11a(d).	40 CFR Section 60.487a(c)(2)(v)-(viii)
(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.	40 CFR Section 60.487a(c)(3) and (4)
(e) Report the results of all performance tests in accordance with 40 CFR Section 60.8. The provisions of 40 CFR Section 60.8(d) 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 initial performance tests at least 30 days before the initial performance tests.	40 CFR Section 60.487a(e)
(f) The requirements of paragraphs (a) through (c) of this section remain in force until and unless EPA, in delegating enforcement authority to a state under section 111(c) of the CAA, approves reporting requirements or an alternative means of compliance surveillance adopted by such state. In that event, affected sources within the state will be relieved of the obligation to comply with the requirements of paragraphs (a) through (c) of this section, provided that they comply with the requirements established by the state.	40 CFR Section 60.487a(f)

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-40**

12/18/12

Facility Name: Green Plains Otter Tail LLC

Permit Number: 11100077 - 004

**Subject Item: FS 006 Wetcake -AOS**

What to do	Why to do it
Wetcake Storage Limitation: When wetcake by-product is produced, it shall be stored for no longer than 72 hours on-site. In all cases, the wetcake shall be removed from the facility as soon as possible.	Minn. R. 7007.0800, subp. 2.
Recordkeeping: Record date and time of beginning wetcake production and how much was produced. Record date and time wetcake was removed from storage and how much.	Minn. R. 7007.0800, subp. 4 & 5

## TABLE B: SUBMITTALS

B-1 12/18/12

Facility Name: Green Plains Otter Tail LLC  
Permit Number: 11100077 - 004

Also, where required by an applicable rule or permit condition, send to the Permit Document Coordinator notices of:

- accumulated insignificant activities,
- installation of control equipment,
- replacement of an emissions unit, and
- changes that contravene a permit term.

Send submittals that are required to be submitted to the U.S. EPA regional office to:

Mr. George Czerniak  
Air and Radiation Branch  
EPA Region V  
77 West Jackson Boulevard  
Chicago, Illinois 60604

Each submittal must be postmarked or received by the date specified in the applicable Table. Those submittals required by parts 7007.0100 to 7007.1850 must be certified by a responsible official, defined in Minn. R. 7007.0100, subp. 21. Other submittals shall be certified as appropriate if certification is required by an applicable rule or permit condition.

Send submittals that are required by the Acid Rain Program to:

U.S. Environmental Protection Agency  
Clean Air Markets Division  
1200 Pennsylvania Avenue NW (6204N)  
Washington, D.C. 20460

Send any application for a permit or permit amendment to:

Fiscal Services  
Minnesota Pollution Control Agency  
520 Lafayette Road North  
St. Paul, Minnesota 55155-4194

Table B lists most of the submittals required by this permit. Please note that some submittal requirements may appear in Table A or, if applicable, within a compliance schedule located in Table C. Table B is divided into two sections in order to separately list one-time only and recurrent submittal requirements.

Unless another person is identified in the applicable Table, send all other submittals to:

AQ Compliance Tracking Coordinator  
Industrial Division  
Minnesota Pollution Control Agency  
520 Lafayette Road North  
St. Paul, Minnesota 55155-4194

**TABLE B: ONE TIME SUBMITTALS OR NOTIFICATIONS****B-2** 12/18/12

Facility Name: Green Plains Otter Tail LLC

Permit Number: 11100077 - 004

What to send	When to send	Portion of Facility Affected
Application for Permit Reissuance	due 180 days before expiration of Existing Permit	Total Facility
Notification of the Actual Date of Initial Startup	due 15 days after Initial Startup	FS005
Notification of the Date Construction Began	due 30 days after Start Of Construction Submit the name and number of each unit and the date construction of each unit began.	FS005

**TABLE B: RECURRENT SUBMITTALS****B-3** 12/18/12

Facility Name: Green Plains Otter Tail LLC

Permit Number: 11100077 - 004

What to send	When to send	Portion of Facility Affected
Report	due 31 days after end of each calendar half-year following Initial Startup that includes the information specified in 40 CFR 60.487. The required information is summarized on pages A-27 and A-28 of this permit.	FS005
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.	Total Facility
Compliance Certification	due 31 days after end of each calendar year following Permit Issuance (for the previous calendar year). The Permittee shall submit this on a form approved by the Commissioner, both to the Commissioner and to the US EPA regional office in Chicago. This report covers all deviations experienced during the calendar year.	Total Facility

APPENDIX MATERIAL

Facility Name: Otter Tail Ag Enterprises LLC

Permit Number: 11100077-004

**Appendix A: Insignificant Activities**

**Insignificant Activities and Applicable Requirements**

Minn. R. 7007.1300, subpart	Rule Description of the Activity	Applicable Requirement
3(A)	Fuel use: space heaters fueled by, kerosene, natural gas, or propane, <b>but only if the combined total capacity of all space heaters at the stationary source is less than or equal to 420,000 Btu/hr.</b>  <i>Less than 30,000 MMBTU/hr capacity for heating office areas.</i>	Minn. R. 7011.0510/0515
3(E)	Storage tanks:	
	1. gasoline storage tanks with a combined total tankage capacity of not more than 10,000 gallons; and  2. non-hazardous air pollutant VOC storage tanks with a combined total tankage capacity of not more than 10,000 gallons of non-hazardous air pollutant VOCs and with a vapor pressure of not more than 1.0 psia at 60 degrees Fahrenheit.  <i>The facility has a 1,000 gallon gasoline storage tank and a 1,000 diesel storage tank and storage for lawn mowers and other small equipment in portable 1-10 gallon fuel cans.</i>	Minn. R. 7011.0710/0715
3(G)	Emissions from a laboratory, as defined in the subpart.  <i>The facility has a product testing laboratory.</i>	Minn. R. 7011.0510/0515, Minn. R. 7011.0610, Minn. R. 7011.0710/0715
3(H)	Miscellaneous:	
	(3) Brazing, soldering or welding equipment;  <i>The facility performs welding activities associated with facility maintenance.</i>	Minn. R. 7011.0510/.0515 + Minn. R. 7011.0610 + Minn. R. 7011.0710/0715
	(4) Blueprint copiers and photographic processes;  <i>Normal scale office equipment is present at the facility office.</i>	Minn. R. 7011.0105/0110
	(7) cleaning operations: alkaline/phosphate cleaners, associated cleaners, and associated burners.  <i>Cleaning in place process uses an alkaline cleaner (caustic soda) and is heated using plant stream.</i>	



APPENDIX MATERIAL

Facility Name: Otter Tail Ag Enterprises LLC

Permit Number: 11100077-004

Minn. R. 7007.1300, subpart	Rule Description of the Activity	Applicable Requirement
3(J)	<p>Fugitive Emissions from roads and parking lots.</p> <p><i>All main facility haul roads will be paved. There may exist pull-offs, parking spaces, or unpaved areas where a vehicle could drive, but does not do so on a regular basis.</i></p>	Minn. R. 7011.0150
3(K)	<p>Infrequent use of spray paint equipment for routine housekeeping or plant upkeep activities not associated with primary production processes at the stationary source, such as spray painting of buildings, machinery, vehicles, and other supporting equipment.</p> <p><i>Small scale spray painting may occur, but only associated with construction of maintenance activities.</i></p>	Minn. R. 7011.0710/0715
4	<p><i>A scalper bin downstream of the scalper (EU008) catches debris discharged by the scalper and is open to atmosphere. No applicable emission factors have been found to estimate potential emissions</i></p>	

## APPENDIX MATERIAL

Facility Name: Otter Tail Ag Enterprises LLC

Permit Number: 11100077-004

### Appendix B: Modeled Parameters



Microsoft Excel  
Worksheet

Source ID	Description	UTM (NAD83)		Elev. (m)	Stack Height		Temperature		Flow Rate		Diameter		Emission Rate	
		X (m)	Y (m)		(m)	(ft)	(K)	(F)	(m/s)	(acfm)	(m)	(ft)	(g/s)	(lb/hr)
SV001	Grain Receiving Baghouse	259064.5	5133741.0	377.2	29.3	96.3	298.0	77	18	37000.0	0.96	3.7	4.00E-01	3.17
SV008	Hammermill #2	259056.9	5133712.5	377.1	12.2	40.0	298.0	77	17	23800.0	0.56	3.0	2.60E-01	2.04
SV011	DDGS Loadout Baghouse	259082.6	5133757.0	376.5	10.1	33.0	298.0	77	16	4800.0	0.20	1.4	5.00E-02	0.41
SV012	Cooling Cell #1	259000.7	5133589.5	376.2	7.6	25.0	294.3	70	5		3	9.8	3.94E-02	0.31
SV013	Cooling Cell #2	259003.4	5133587.5	376.2	7.6	25.0	294.3	70	5		3	9.8	3.94E-02	0.31
SV014	Cooling Cell #3	259006.4	5133585.5	376.2	7.6	25.0	294.3	70	5		3	9.8	3.94E-02	0.31
SV020	Fire Pump	258891.6	5133687.0	377.8	2.4	8.0	699.8	800	0		0.15	0.5	5.75E-03	0.05
SV021	Generator	259062.9	5133690.0	377.5	3.0	10.0	699.8	800	0		0.46	1.5	2.59E-03	0.02
SV022	Boiler #1	258976.7	5133669.5	377.0	13.7	45.0	394.3	250	25	34755.9	0.91	3.0	8.43E-02	0.67
SV023	Boiler #2	258970.6	5133662.5	376.9	13.7	45.0	394.3	250	25	34755.9	0.91	3.0	8.43E-02	0.67
SV025	Loadout Flare	258870.0	5133866.0	375.5	10.7	35.0	699.8	800	25	47365.8	1.07	3.5	2.88E-04	0.00
SV028	RTO	258955.0	5133701.5	377.3	27.4	90.0	366.5	200	13.5	75015.7	1.83	6.0	6.49E-01	5.15

Source ID	Description	UTM (NAD83)		Elevation (m)	Release Height		Easterly Length		Northerly Length		Angle	Z-Dim (m)	24-Hr Emission Rate	
		X (m)	Y (m)		(m)	(ft)	(m)	(ft)	(m)	(ft)			(g/s)	(lb/hr)
FS001&2	Grain & DDGS Fugitives	259100.4	5133744.5	377.35	1.52	5.0	38.1	125.0	14.02	46.0	-140	1.42	1.64E-02	0.130
FS003	DDGS Storage Fugitives	259060.9	5133738.0	376.839	1.52	5.0	48.77	160.0	30.48	100.0	-140	1.42	3.74E-03	0.030

Source ID	Description	UTM (NAD83)		Elevation (m)	Release Height		Horizontal Dimension		Vertical Dimension		24-Hr Emission Rate	
		X (m)	Y (m)		(m)	(ft)	(m)	(ft)	(m)	(ft)	(g/s)	(lb/hr)
RD_A_001	Road Segment	258769.7	5133397.5	378.7	2.33	7.6	4.65	15.3	2.17	7.1	4.95E-03	0.04
RD_A_002	Road Segment	258770.0	5133407.5	379.0	2.33	7.6	4.65	15.3	2.17	7.1	4.95E-03	0.04
RD_A_003	Road Segment	258770.2	5133417.5	379.0	2.33	7.6	4.65	15.3	2.17	7.1	4.95E-03	0.04
RD_A_004	Road Segment	258770.5	5133427.5	378.8	2.33	7.6	4.65	15.3	2.17	7.1	4.95E-03	0.04
RD_A_005	Road Segment	258770.7	5133437.5	378.8	2.33	7.6	4.65	15.3	2.17	7.1	4.95E-03	0.04
RD_A_006	Road Segment	258770.9	5133447.5	378.6	2.33	7.6	4.65	15.3	2.17	7.1	4.95E-03	0.04
RD_A_007	Road Segment	258771.2	5133457.5	378.4	2.33	7.6	4.65	15.3	2.17	7.1	4.95E-03	0.04
RD_A_008	Road Segment	258771.4	5133467.5	378.4	2.33	7.6	4.65	15.3	2.17	7.1	4.95E-03	0.04
RD_A_009	Road Segment	258771.7	5133477.5	378.2	2.33	7.6	4.65	15.3	2.17	7.1	4.95E-03	0.04
RD_A_010	Road Segment	258771.9	5133487.5	378.1	2.33	7.6	4.65	15.3	2.17	7.1	4.95E-03	0.04
RD_A_011	Road Segment	258772.1	5133497.5	378.0	2.33	7.6	4.65	15.3	2.17	7.1	4.95E-03	0.04
RD_A_012	Road Segment	258772.4	5133507.5	377.8	2.33	7.6	4.65	15.3	2.17	7.1	4.95E-03	0.04
RD_B_013	Road Segment	258777.7	5133515.3	377.7	2.33	7.6	4.65	15.3	2.17	7.1	3.50E-03	0.03
RD_B_014	Road Segment	258784.9	5133522.0	377.5	2.33	7.6	4.65	15.3	2.17	7.1	3.50E-03	0.03
RD_B_015	Road Segment	258794.9	5133521.9	377.5	2.33	7.6	4.65	15.3	2.17	7.1	3.50E-03	0.03
RD_B_016	Road Segment	258804.9	5133521.7	377.4	2.33	7.6	4.65	15.3	2.17	7.1	3.50E-03	0.03
RD_B_017	Road Segment	258814.9	5133521.6	377.1	2.33	7.6	4.65	15.3	2.17	7.1	3.50E-03	0.03
RD_B_018	Road Segment	258824.9	5133521.5	377.0	2.33	7.6	4.65	15.3	2.17	7.1	3.50E-03	0.03
RD_B_019	Road Segment	258834.9	5133521.3	376.7	2.33	7.6	4.65	15.3	2.17	7.1	3.50E-03	0.03
RD_B_020	Road Segment	258844.9	5133521.2	376.1	2.33	7.6	4.65	15.3	2.17	7.1	3.50E-03	0.03

# APPENDIX MATERIAL

Facility Name: Otter Tail Ag Enterprises LLC

Permit Number: 11100077-004

Source ID	Description	UTM (NAD83)		Elevation (m)	Release Height		Horizontal Dimension		Vertical Dimension		24-Hr Emission Rate	
		X (m)	Y (m)		(m)	(ft)	(m)	(ft)	(m)	(ft)	(g/s)	(lb/hr)
RD_B_021	Road Segment	258854.9	5133521.0	375.9	2.33	7.6	4.65	15.3	2.17	7.1	3.50E-03	0.03
RD_B_022	Road Segment	258862.9	5133525.9	375.6	2.33	7.6	4.65	15.3	2.17	7.1	3.50E-03	0.03
RD_B_023	Road Segment	258870.0	5133532.9	375.5	2.33	7.6	4.65	15.3	2.17	7.1	3.50E-03	0.03
RD_B_024	Road Segment	258877.1	5133539.9	375.0	2.33	7.6	4.65	15.3	2.17	7.1	3.50E-03	0.03
RD_B_025	Road Segment	258884.3	5133546.9	375.0	2.33	7.6	4.65	15.3	2.17	7.1	3.50E-03	0.03
RD_B_026	Road Segment	258891.4	5133554.0	374.9	2.33	7.6	4.65	15.3	2.17	7.1	3.50E-03	0.03
RD_B_027	Road Segment	258898.5	5133561.0	374.9	2.33	7.6	4.65	15.3	2.17	7.1	3.50E-03	0.03
RD_B_028	Road Segment	258905.7	5133568.0	374.9	2.33	7.6	4.65	15.3	2.17	7.1	3.50E-03	0.03
RD_C_029	Road Segment	258914.4	5133571.5	374.8	2.33	7.6	4.65	15.3	2.17	7.1	2.03E-03	0.02
RD_C_030	Road Segment	258924.4	5133572.4	374.9	2.33	7.6	4.65	15.3	2.17	7.1	2.03E-03	0.02
RD_C_031	Road Segment	258932.7	5133567.6	374.9	2.33	7.6	4.65	15.3	2.17	7.1	2.03E-03	0.02
RD_C_032	Road Segment	258940.8	5133561.6	374.9	2.33	7.6	4.65	15.3	2.17	7.1	2.03E-03	0.02
RD_C_033	Road Segment	258948.8	5133555.7	374.9	2.33	7.6	4.65	15.3	2.17	7.1	2.03E-03	0.02
RD_C_034	Road Segment	258956.9	5133549.8	374.9	2.33	7.6	4.65	15.3	2.17	7.1	2.03E-03	0.02
RD_C_035	Road Segment	258964.9	5133543.8	374.9	2.33	7.6	4.65	15.3	2.17	7.1	2.03E-03	0.02
RD_C_036	Road Segment	258973.0	5133537.9	375.0	2.33	7.6	4.65	15.3	2.17	7.1	2.03E-03	0.02
RD_C_037	Road Segment	258982.4	5133534.7	375.1	2.33	7.6	4.65	15.3	2.17	7.1	2.03E-03	0.02
RD_C_038	Road Segment	258992.0	5133532.1	375.2	2.33	7.6	4.65	15.3	2.17	7.1	2.03E-03	0.02
RD_C_039	Road Segment	259001.7	5133530.2	375.5	2.33	7.6	4.65	15.3	2.17	7.1	2.03E-03	0.02
RD_C_040	Road Segment	259011.7	5133531.2	375.5	2.33	7.6	4.65	15.3	2.17	7.1	2.03E-03	0.02
RD_C_041	Road Segment	259021.6	5133532.2	375.6	2.33	7.6	4.65	15.3	2.17	7.1	2.03E-03	0.02
RD_C_042	Road Segment	259030.7	5133535.8	375.9	2.33	7.6	4.65	15.3	2.17	7.1	2.03E-03	0.02
RD_C_043	Road Segment	259039.3	5133540.9	376.0	2.33	7.6	4.65	15.3	2.17	7.1	2.03E-03	0.02
RD_C_044	Road Segment	259047.9	5133546.0	376.4	2.33	7.6	4.65	15.3	2.17	7.1	2.03E-03	0.02
RD_C_045	Road Segment	259054.3	5133553.6	376.4	2.33	7.6	4.65	15.3	2.17	7.1	2.03E-03	0.02
RD_C_046	Road Segment	259060.5	5133561.5	376.8	2.33	7.6	4.65	15.3	2.17	7.1	2.03E-03	0.02
RD_C_047	Road Segment	259066.7	5133569.4	376.9	2.33	7.6	4.65	15.3	2.17	7.1	2.03E-03	0.02
RD_C_048	Road Segment	259072.9	5133577.2	377.1	2.33	7.6	4.65	15.3	2.17	7.1	2.03E-03	0.02
RD_C_049	Road Segment	259079.1	5133585.1	377.2	2.33	7.6	4.65	15.3	2.17	7.1	2.03E-03	0.02
RD_C_050	Road Segment	259085.2	5133592.9	377.2	2.33	7.6	4.65	15.3	2.17	7.1	2.03E-03	0.02
RD_C_051	Road Segment	259091.4	5133600.8	377.4	2.33	7.6	4.65	15.3	2.17	7.1	2.03E-03	0.02
RD_C_052	Road Segment	259097.6	5133608.7	377.6	2.33	7.6	4.65	15.3	2.17	7.1	2.03E-03	0.02
RD_C_053	Road Segment	259103.8	5133616.5	377.7	2.33	7.6	4.65	15.3	2.17	7.1	2.03E-03	0.02
RD_C_054	Road Segment	259110.0	5133624.4	377.7	2.33	7.6	4.65	15.3	2.17	7.1	2.03E-03	0.02
RD_C_055	Road Segment	259116.2	5133632.2	377.9	2.33	7.6	4.65	15.3	2.17	7.1	2.03E-03	0.02
RD_C_056	Road Segment	259122.3	5133640.1	377.9	2.33	7.6	4.65	15.3	2.17	7.1	2.03E-03	0.02
RD_C_057	Road Segment	259128.5	5133648.0	378.0	2.33	7.6	4.65	15.3	2.17	7.1	2.03E-03	0.02
RD_C_058	Road Segment	259134.7	5133655.8	378.1	2.33	7.6	4.65	15.3	2.17	7.1	2.03E-03	0.02
RD_C_059	Road Segment	259140.9	5133663.7	378.2	2.33	7.6	4.65	15.3	2.17	7.1	2.03E-03	0.02
RD_C_060	Road Segment	259147.1	5133671.5	378.2	2.33	7.6	4.65	15.3	2.17	7.1	2.03E-03	0.02
RD_C_061	Road Segment	259151.2	5133680.0	378.2	2.33	7.6	4.65	15.3	2.17	7.1	2.03E-03	0.02
RD_C_062	Road Segment	259150.5	5133690.0	378.2	2.33	7.6	4.65	15.3	2.17	7.1	2.03E-03	0.02
RD_C_063	Road Segment	259143.0	5133696.4	378.1	2.33	7.6	4.65	15.3	2.17	7.1	2.03E-03	0.02
RD_C_064	Road Segment	259135.1	5133702.5	378.1	2.33	7.6	4.65	15.3	2.17	7.1	2.03E-03	0.02
RD_C_065	Road Segment	259127.2	5133708.7	378.0	2.33	7.6	4.65	15.3	2.17	7.1	2.03E-03	0.02
RD_C_066	Road Segment	259119.3	5133714.8	378.0	2.33	7.6	4.65	15.3	2.17	7.1	2.03E-03	0.02
RD_C_067	Road Segment	259111.5	5133721.0	377.7	2.33	7.6	4.65	15.3	2.17	7.1	2.03E-03	0.02
RD_C_068	Road Segment	259103.6	5133727.1	377.7	2.33	7.6	4.65	15.3	2.17	7.1	2.03E-03	0.02
RD_C_069	Road Segment	259095.7	5133733.3	377.4	2.33	7.6	4.65	15.3	2.17	7.1	2.03E-03	0.02
RD_C_070	Road Segment	259087.8	5133739.4	377.3	2.33	7.6	4.65	15.3	2.17	7.1	2.03E-03	0.02
RD_C_071	Road Segment	259079.9	5133745.6	377.1	2.33	7.6	4.65	15.3	2.17	7.1	2.03E-03	0.02
RD_C_072	Road Segment	259072.1	5133751.7	376.7	2.33	7.6	4.65	15.3	2.17	7.1	2.03E-03	0.02
RD_D_073	Road Segment	259064.2	5133757.9	376.5	2.33	7.6	4.65	15.3	2.17	7.1	1.11E-03	0.01
RD_D_074	Road Segment	259056.3	5133764.1	376.4	2.33	7.6	4.65	15.3	2.17	7.1	1.11E-03	0.01
RD_D_075	Road Segment	259048.4	5133770.2	376.3	2.33	7.6	4.65	15.3	2.17	7.1	1.11E-03	0.01
RD_D_076	Road Segment	259040.5	5133776.4	376.3	2.33	7.6	4.65	15.3	2.17	7.1	1.11E-03	0.01
RD_D_077	Road Segment	259032.6	5133782.5	376.3	2.33	7.6	4.65	15.3	2.17	7.1	1.11E-03	0.01
RD_D_078	Road Segment	259024.8	5133788.7	375.9	2.33	7.6	4.65	15.3	2.17	7.1	1.11E-03	0.01
RD_D_079	Road Segment	259016.9	5133794.8	375.9	2.33	7.6	4.65	15.3	2.17	7.1	1.11E-03	0.01
RD_D_080	Road Segment	259008.9	5133800.3	376.0	2.33	7.6	4.65	15.3	2.17	7.1	1.11E-03	0.01
RD_I_081	Road Segment	258999.1	5133798.2	376.1	2.33	7.6	4.65	15.3	2.17	7.1	9.30E-04	0.01
RD_I_082	Road Segment	258990.7	5133793.8	376.4	2.33	7.6	4.65	15.3	2.17	7.1	9.30E-04	0.01
RD_I_083	Road Segment	258984.5	5133786.0	377.0	2.33	7.6	4.65	15.3	2.17	7.1	9.30E-04	0.01
RD_I_084	Road Segment	258978.2	5133778.2	377.4	2.33	7.6	4.65	15.3	2.17	7.1	9.30E-04	0.01
RD_I_085	Road Segment	258972.0	5133770.4	377.5	2.33	7.6	4.65	15.3	2.17	7.1	9.30E-04	0.01
RD_I_086	Road Segment	258965.7	5133762.6	377.6	2.33	7.6	4.65	15.3	2.17	7.1	9.30E-04	0.01
RD_I_087	Road Segment	258959.5	5133754.8	377.7	2.33	7.6	4.65	15.3	2.17	7.1	9.30E-04	0.01
RD_H_088	Road Segment	258953.2	5133747.0	377.7	2.33	7.6	4.65	15.3	2.17	7.1	9.30E-04	0.01
RD_H_089	Road Segment	258947.0	5133739.2	378.1	2.33	7.6	4.65	15.3	2.17	7.1	9.30E-04	0.01
RD_H_090	Road Segment	258940.7	5133731.4	378.1	2.33	7.6	4.65	15.3	2.17	7.1	9.30E-04	0.01
RD_H_091	Road Segment	258934.4	5133723.6	377.9	2.33	7.6	4.65	15.3	2.17	7.1	9.30E-04	0.01
RD_H_092	Road Segment	258928.2	5133715.8	377.9	2.33	7.6	4.65	15.3	2.17	7.1	9.30E-04	0.01
RD_H_093	Road Segment	258921.9	5133708.0	377.9	2.33	7.6	4.65	15.3	2.17	7.1	9.30E-04	0.01
RD_H_094	Road Segment	258915.7	5133700.2	377.9	2.33	7.6	4.65	15.3	2.17	7.1	9.30E-04	0.01

# APPENDIX MATERIAL

Facility Name: Otter Tail Ag Enterprises LLC

Permit Number: 11100077-004

Source ID	Description	UTM (NAD83)		Elevation (m)	Release Height		Horizontal Dimension		Vertical Dimension		24-Hr Emission Rate	
		X (m)	Y (m)		(m)	(ft)	(m)	(ft)	(m)	(ft)	(g/s)	(lb/hr)
RD_H_095	Road Segment	258909.4	5133692.4	377.7	2.33	7.6	4.65	15.3	2.17	7.1	9.30E-04	0.01
RD_H_096	Road Segment	258905.5	5133683.9	377.6	2.33	7.6	4.65	15.3	2.17	7.1	9.30E-04	0.01
RD_G_097	Road Segment	258906.7	5133674.0	377.5	2.33	7.6	4.65	15.3	2.17	7.1	1.49E-03	0.01
RD_G_098	Road Segment	258907.8	5133664.1	377.1	2.33	7.6	4.65	15.3	2.17	7.1	1.49E-03	0.01
RD_G_099	Road Segment	258909.0	5133654.1	376.9	2.33	7.6	4.65	15.3	2.17	7.1	1.49E-03	0.01
RD_G_100	Road Segment	258910.2	5133644.2	376.6	2.33	7.6	4.65	15.3	2.17	7.1	1.49E-03	0.01
RD_G_101	Road Segment	258911.4	5133634.3	376.4	2.33	7.6	4.65	15.3	2.17	7.1	1.49E-03	0.01
RD_G_102	Road Segment	258912.6	5133624.3	376.1	2.33	7.6	4.65	15.3	2.17	7.1	1.49E-03	0.01
RD_G_103	Road Segment	258913.7	5133614.4	375.9	2.33	7.6	4.65	15.3	2.17	7.1	1.49E-03	0.01
RD_G_104	Road Segment	258914.9	5133604.5	375.6	2.33	7.6	4.65	15.3	2.17	7.1	1.49E-03	0.01
RD_G_105	Road Segment	258916.1	5133594.6	375.4	2.33	7.6	4.65	15.3	2.17	7.1	1.49E-03	0.01
RD_G_106	Road Segment	258917.3	5133584.6	375.3	2.33	7.6	4.65	15.3	2.17	7.1	1.49E-03	0.01
RD_J_107	Road Segment	258921.1	5133584.2	375.3	2.33	7.6	4.65	15.3	2.17	7.1	2.20E-05	0.00
RD_J_108	Road Segment	258927.2	5133592.2	375.4	2.33	7.6	4.65	15.3	2.17	7.1	2.20E-05	0.00
RD_J_109	Road Segment	258933.3	5133600.1	375.5	2.33	7.6	4.65	15.3	2.17	7.1	2.20E-05	0.00
RD_J_110	Road Segment	258939.4	5133608.0	375.8	2.33	7.6	4.65	15.3	2.17	7.1	2.20E-05	0.00
RD_J_111	Road Segment	258945.4	5133616.0	376.0	2.33	7.6	4.65	15.3	2.17	7.1	2.20E-05	0.00
RD_J_112	Road Segment	258951.5	5133623.9	376.2	2.33	7.6	4.65	15.3	2.17	7.1	2.20E-05	0.00
RD_J_113	Road Segment	258957.6	5133631.8	376.3	2.33	7.6	4.65	15.3	2.17	7.1	2.20E-05	0.00
RD_J_114	Road Segment	258963.7	5133639.8	376.7	2.33	7.6	4.65	15.3	2.17	7.1	2.20E-05	0.00
RD_J_115	Road Segment	258969.8	5133647.7	376.8	2.33	7.6	4.65	15.3	2.17	7.1	2.20E-05	0.00
RD_J_116	Road Segment	258975.9	5133655.6	376.9	2.33	7.6	4.65	15.3	2.17	7.1	2.20E-05	0.00
RD_J_117	Road Segment	258982.0	5133663.6	376.9	2.33	7.6	4.65	15.3	2.17	7.1	2.20E-05	0.00
RD_J_118	Road Segment	258986.9	5133670.0	376.9	2.33	7.6	4.65	15.3	2.17	7.1	2.20E-05	0.00
RD_E_119	Road Segment	259010.1	5133800.0	376.0	2.33	7.6	4.65	15.3	2.17	7.1	1.55E-04	0.00
RD_E_120	Road Segment	259003.4	5133807.4	375.9	2.33	7.6	4.65	15.3	2.17	7.1	1.55E-04	0.00
RD_E_121	Road Segment	258996.6	5133814.8	375.8	2.33	7.6	4.65	15.3	2.17	7.1	1.55E-04	0.00
RD_E_122	Road Segment	258989.0	5133821.3	374.6	2.33	7.6	4.65	15.3	2.17	7.1	1.55E-04	0.00
RD_E_123	Road Segment	258981.0	5133827.2	374.5	2.33	7.6	4.65	15.3	2.17	7.1	1.55E-04	0.00
RD_E_124	Road Segment	258973.0	5133833.1	374.3	2.33	7.6	4.65	15.3	2.17	7.1	1.55E-04	0.00
RD_E_125	Road Segment	258964.9	5133839.1	374.0	2.33	7.6	4.65	15.3	2.17	7.1	1.55E-04	0.00
RD_E_126	Road Segment	258956.9	5133845.0	373.8	2.33	7.6	4.65	15.3	2.17	7.1	1.55E-04	0.00
RD_E_127	Road Segment	258948.8	5133851.0	372.7	2.33	7.6	4.65	15.3	2.17	7.1	1.55E-04	0.00
RD_E_128	Road Segment	258940.7	5133856.5	372.6	2.33	7.6	4.65	15.3	2.17	7.1	1.55E-04	0.00
RD_E_129	Road Segment	258930.7	5133856.5	373.0	2.33	7.6	4.65	15.3	2.17	7.1	1.55E-04	0.00
RD_E_130	Road Segment	258924.4	5133848.7	374.4	2.33	7.6	4.65	15.3	2.17	7.1	1.55E-04	0.00
RD_E_131	Road Segment	258918.2	5133840.9	375.2	2.33	7.6	4.65	15.3	2.17	7.1	1.55E-04	0.00
RD_E_132	Road Segment	258912.0	5133833.0	375.7	2.33	7.6	4.65	15.3	2.17	7.1	1.55E-04	0.00
RD_F_133	Road Segment	258905.8	5133825.2	376.0	2.33	7.6	4.65	15.3	2.17	7.1	4.59E-04	0.00
RD_F_134	Road Segment	258899.6	5133817.3	377.2	2.33	7.6	4.65	15.3	2.17	7.1	4.59E-04	0.00
RD_F_135	Road Segment	258893.4	5133809.5	377.5	2.33	7.6	4.65	15.3	2.17	7.1	4.59E-04	0.00
RD_F_136	Road Segment	258887.2	5133801.6	377.7	2.33	7.6	4.65	15.3	2.17	7.1	4.59E-04	0.00
RD_F_137	Road Segment	258881.0	5133793.8	378.2	2.33	7.6	4.65	15.3	2.17	7.1	4.59E-04	0.00
RD_F_138	Road Segment	258874.8	5133785.9	378.2	2.33	7.6	4.65	15.3	2.17	7.1	4.59E-04	0.00
RD_F_139	Road Segment	258868.6	5133778.1	378.3	2.33	7.6	4.65	15.3	2.17	7.1	4.59E-04	0.00
RD_F_140	Road Segment	258866.4	5133769.0	378.3	2.33	7.6	4.65	15.3	2.17	7.1	4.59E-04	0.00
RD_F_141	Road Segment	258869.1	5133759.5	378.4	2.33	7.6	4.65	15.3	2.17	7.1	4.59E-04	0.00
RD_F_142	Road Segment	258873.6	5133750.6	378.4	2.33	7.6	4.65	15.3	2.17	7.1	4.59E-04	0.00
RD_F_143	Road Segment	258878.1	5133741.7	378.4	2.33	7.6	4.65	15.3	2.17	7.1	4.59E-04	0.00
RD_F_144	Road Segment	258882.6	5133732.8	378.4	2.33	7.6	4.65	15.3	2.17	7.1	4.59E-04	0.00
RD_F_145	Road Segment	258887.1	5133723.8	378.3	2.33	7.6	4.65	15.3	2.17	7.1	4.59E-04	0.00
RD_F_146	Road Segment	258891.6	5133714.9	378.2	2.33	7.6	4.65	15.3	2.17	7.1	4.59E-04	0.00
RD_F_147	Road Segment	258896.1	5133706.0	378.1	2.33	7.6	4.65	15.3	2.17	7.1	4.59E-04	0.00
RD_F_148	Road Segment	258900.6	5133697.0	377.8	2.33	7.6	4.65	15.3	2.17	7.1	4.59E-04	0.00
RD_F_149	Road Segment	258905.1	5133688.1	377.7	2.33	7.6	4.65	15.3	2.17	7.1	4.59E-04	0.00
RD_K_150	Road Segment	258737.0	5133609.0	374.8	2.33	7.6	4.65	15.3	2.17	7.1	8.82E-05	0.00
RD_K_151	Road Segment	258747.0	5133608.8	374.8	2.33	7.6	4.65	15.3	2.17	7.1	8.82E-05	0.00
RD_K_152	Road Segment	258757.0	5133608.5	374.9	2.33	7.6	4.65	15.3	2.17	7.1	8.82E-05	0.00
RD_K_153	Road Segment	258767.0	5133608.3	375.2	2.33	7.6	4.65	15.3	2.17	7.1	8.82E-05	0.00
RD_K_154	Road Segment	258777.0	5133608.1	375.2	2.33	7.6	4.65	15.3	2.17	7.1	8.82E-05	0.00
RD_K_155	Road Segment	258787.0	5133607.9	375.3	2.33	7.6	4.65	15.3	2.17	7.1	8.82E-05	0.00
RD_K_156	Road Segment	258797.0	5133607.6	375.5	2.33	7.6	4.65	15.3	2.17	7.1	8.82E-05	0.00
RD_K_157	Road Segment	258807.0	5133607.4	375.6	2.33	7.6	4.65	15.3	2.17	7.1	8.82E-05	0.00
RD_K_158	Road Segment	258817.0	5133607.2	375.7	2.33	7.6	4.65	15.3	2.17	7.1	8.82E-05	0.00
RD_K_159	Road Segment	258827.0	5133606.9	375.8	2.33	7.6	4.65	15.3	2.17	7.1	8.82E-05	0.00
RD_K_160	Road Segment	258837.0	5133606.7	375.8	2.33	7.6	4.65	15.3	2.17	7.1	8.82E-05	0.00
RD_K_161	Road Segment	258847.0	5133606.5	375.8	2.33	7.6	4.65	15.3	2.17	7.1	8.82E-05	0.00
RD_K_162	Road Segment	258857.0	5133606.3	375.8	2.33	7.6	4.65	15.3	2.17	7.1	8.82E-05	0.00
RD_K_163	Road Segment	258867.0	5133606.0	375.8	2.33	7.6	4.65	15.3	2.17	7.1	8.82E-05	0.00
RD_K_164	Road Segment	258874.4	5133599.7	375.7	2.33	7.6	4.65	15.3	2.17	7.1	8.82E-05	0.00
RD_K_165	Road Segment	258881.7	5133592.8	375.4	2.33	7.6	4.65	15.3	2.17	7.1	8.82E-05	0.00
RD_K_166	Road Segment	258888.9	5133585.9	375.4	2.33	7.6	4.65	15.3	2.17	7.1	8.82E-05	0.00
RD_K_167	Road Segment	258896.1	5133578.9	375.0	2.33	7.6	4.65	15.3	2.17	7.1	8.82E-05	0.00

APPENDIX MATERIAL

Facility Name: Otter Tail Ag Enterprises LLC

Permit Number: 11100077-004

**Appendix C: Odor Management Plan**

## **Best Management Practices Plan**

### **Odor Prevention**

#### **Otter Tail Ag Enterprises, LLC Fergus Falls, MN**

*Prepared for:*

Otter Tail Ag Enterprises, LLC 1220 Tower Road  
Fergus Falls, MN 56538

*Prepared by:*

Natural Resource Group, Inc. 1000 IDS Center 80  
South Eighth Street Minneapolis, MN 55402

**April 2006**

## APPENDIX MATERIAL

Facility Name: Otter Tail Ag Enterprises LLC

Permit Number: 11100077-004

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### **Attachments:**

List of Emission Units This best management practices (BMP) odor prevention plan is intended to meet the requirements of Minnesota Pollution Control Agency (MPCA) Air Emission Permit Program (permit applied for) regarding any potential odors from the Otter Tail Ag Enterprises, LLC (facility), to be located near Fergus Falls, Minnesota. This BMP plan is contingent on the construction and subsequent operation of the proposed facility. The facility is intended to operate continuously (24 hours per day) and is not expected to produce odor during normal operations. Any possible exposure to malodorous emissions beyond the property boundaries, considering the intensity, frequency, and duration, will be a function of the prevailing weather conditions such as temperature, wind direction, wind speed, and humidity. These odor characteristics may also be affected by unpredicted and undesirable process upsets. In the event that odors from the facility are realized during normal operations, the response portion of this plan will be implemented once the odor complaint is validated by the local governing unit (LGU) or MPCA. This plan describes the response the facility will take if odor complaints, validated by the LGU or MPCA, occur. The plan also describes the potential odor sources and the odor abatement best management practices and controls in place to minimize or negate the possibility of odors at all times.

## APPENDIX MATERIAL

Facility Name: Otter Tail Ag Enterprises LLC

Permit Number: 11100077-004

### I. Possible Sources of Odorous Emissions

Fermentation Process and Vessels– The fermentation process uses a mixture of corn, yeast, and water to ferment into grain alcohol (ethanol). The yeast in the mixture aids in converting corn sugars to ethanol and carbon dioxide. The fermentation process is performed in large batch process vessels, called fermenters. Emissions from fermentation, that could possibly cause odors, are ethanol and a variety of trace volatile organic compounds (VOC), produced as part of the grain fermentation process. The evolved carbon dioxide (CO<sub>2</sub>) can serve as a carrier to the organic compounds. Fermentation equipment vents to a water scrubber where residual VOC (including ethanol) are removed from the exhaust CO<sub>2</sub> for emission and odor control.

Distillation– The distillation process follows fermentation. The purpose of distillation is to remove the ethanol from the fermented beer. Distillation is performed with a series of distillation columns. Further ethanol dewatering occurs with molecular sieves to separate the ethanol from the remaining water. The distillation equipment vents to a water scrubber where residual VOC (including ethanol) are removed. Emissions that could possibly cause odors are ethanol and a variety of trace VOC, inherent with the grain fermentation process, vacuum distillation, and molecular sieve dehydration.

Dried Distiller Grains and Solubles (DDGS) Dryers – The DDGS dryer system is used in series with a centrifuge and process evaporator to dry the spent grains (also known as DDGS) from the distillation process. The DDGS dryer is natural gas fired or a steam heated rotary drum dryer that use hot air to evaporate the water from the DDGS. Emissions that may cause odors are a variety of VOC and particulate matter inherent with the grain drying process. The emissions that come from the dryer stack (with an odor of cooking bread or corn); are the major odor source at the facility. Emissions from the DDGS dryer system are routed to the regenerative thermal oxidizer (RTO) for control.

Wet Cake (Distillers Grains) –Wet cake is the insoluble biomass remaining after extraction of starch from the corn at the centrifuge. Centrifuging is an enclosed process with any vents being routed to the RTO. The wet cake or spent grain is high moisture DDGS. This wet cake contains associated liquid water, proteins, yeast, oils and other fibrous carbohydrates. The facility will directly loadout the wet cake from the centrifuge to a covered concrete storage pad for truck loading. The wet cake is not significantly odorous, but it is a fertile medium for bacterial growth if exposed to warm ambient temperatures for an extended period of time. If it is not cleaned up during daily plant clean-up, it has the potential to generate odors. Good housekeeping will prevent any possible generation of offsite odors.

Storage Tanks and Ethanol loading facilities– Onsite storage tanks are used to store fuel-grade ethanol, 200 proof ethanol, and denaturant (gasoline). Emissions from these tanks that could possibly cause odors are various VOC's and ethanol. The total emissions from these tanks are estimated to be less than one ton per year. Thus, these emissions are not expected to have odor impacts outside of the facility's property boundaries.

Aqueous Ammonia – Aqueous ammonia is used to control the process fluid pH in various portions of the ethanol production process. While ammonia is known to have an offensive odor, this process is actually a closed system. There should be no release of this material to the atmosphere. The aqueous ammonia is readily consumed in the process stream.

Other emission sources – All other emission sources identified at the facility were evaluated as having insignificant odor potential. These include: corn unloading and DDGS loading, corn milling, DDGS cooling, maintenance activities, warehousing and transport engines, fire control equipment, office and janitorial activities, heating, small fuel storage, water for boilers, and sewer plumbing.

## APPENDIX MATERIAL

Facility Name: Otter Tail Ag Enterprises LLC

Permit Number: 11100077-004

### **II. Odor Abatement Practices and Controls**

Potential odor from sources from the facility will be controlled by abatement equipment (e.g., enclosed vessel for aqueous ammonia, floating roof tanks for ethanol storage, etc.) and control equipment (e.g., wet scrubber, regenerative thermal oxidizer). The source-specific odor controls planned for the facility are listed below.

Fermentation and Distillation equipment– The fermentation and distillation equipment will each be controlled with a high efficiency wet scrubber. The scrubbers capture efficiency will negate potential offsite odor impacts. The ethanol in equilibrium with the carbon dioxide leaving the fermentation and distillation processes will be absorbed in the water. A computerized control and data recording instrumentation system will provide the following scrubber parameters: fluid level, the pressure differential, the water pump on – off status, and the make-up water flow rate, with operator alarms and logical shut downs when abnormal conditions exist. The scrubbers will operate as a single-pass system without water recycles.

DDGS dryer system– The odors associated with the dryer system and will be controlled by the RTO. The RTO capture efficiency will negate potential offsite odor impacts and will reduce any odorous emissions to negligible levels. Therefore, no further steps should be necessary to reduce the odor.

Storage Tanks– Any potentially odorous VOC emissions from the storage tanks will be minimized by internal floating roofs according to Federal New Source Performance Standards (NSPS).

Aqueous Ammonia – Aqueous ammonia is stored in an enclosed tank and operates in a closed system. The ammonia is fed directly to the process for pH control and is consumed by the process liquid.

Wet Cake (Distillers Grains) – Wet cake will be sold and shipped as quickly as possible to avoid the potential for odor impacts near the facility. Wet cake will not be stored for more than 72 hours unless the outside temperature is less than 55 °F. Wetcake is a fast-turnaround product that is not typically produced unless there is an immediate plan to ship it out to a customer.

Other emissions sources – All other emission sources planned for the facility were evaluated as having insignificant odor potential. These include: corn unloading and DDGS loading, corn milling, DDGS cooling, maintenance activities, warehousing and transport engines, fire control equipment, office and janitorial activities, heating, small engine fuel storage, water for boilers, and sewer plumbing.

### **III. Maintenance Schedules for Maintaining Control Equipment Efficiency.**

Daily operational checks as well as monthly and quarterly maintenance schedules will be performed and recorded based on the air operating permit requirements and manufacturer specifications. These schedules will occur according to operation and maintenance plans and Best Management Practices as summarized below. The following items must be maintained for each unit:

#### DDGS Dryer System-

- Complete inventory of replacement parts on site
- Review burner control system and the mechanical components of the conveyors monthly.
- Check of fans, conveyors, drive motors, and centrifuges daily.
- Record status of drive motors, conveyors, and fans daily.

#### Wet Scrubbers-

- Complete inventory of replacement parts on site
- Check the circulation pump operation and packing monthly.
- Check scrubber level, differential pressure, and water flow rate daily.
- Record water pump status, liquid levels, differential pressure, and water flow rate daily.

#### Wet Cake (Distillers Grains)

- Record wet cake production daily.



## APPENDIX MATERIAL

Facility Name: Otter Tail Ag Enterprises LLC

Permit Number: 11100077-004

### **IV. Equipment Failure and Response Analysis**

In the event of a process or odor control equipment breakdown, the facility will comply with MN Rules 7019.1000 and will use this document as the "compliance document". The following steps will be taken in the event of process or odor control equipment failure:

DDGS Dryer System If the dryer system is not operating, the minimum operating conditions for this process will be production of wet cake limited by livestock feed markets.

#### Wet cake (stillage)

The facility will have the capacity to store 3 days of wet cake production. The minimum operating conditions for storage of this wet cake include:

Wet cake would not be stored for longer than 3 days on site, unless the ambient temperature is below 55 °F, or

The facility will sell the wet cake as soon as possible or transport the wet cake offsite for land application or agricultural bagging

Distillers wet or a dry grain is a valuable co-product. It would not be economical to produce distillers' grains without a market or sale of the product. Spoiled product is not suitable for sale to DDGS customers, so it must be avoided.

Fermentation Vessels Failure or malfunction of the CO<sub>2</sub> scrubber – If the scrubber is to fail, fermentation continues for up to 48 hours for batch completion. However, fermentation would be suspended thereafter; until the scrubber is operable.

### **IV. Notification**

If the facility does not follow the aforementioned response steps, the commissioner must be notified within 24 hours of the breakdown of more than one hour as specified in MN Rules 7019.1000. The plant electronic or written logs will serve as the record of compliance. Such records may include work orders or revised procedures for maintenance of odor abatement operations.

APPENDIX MATERIAL

Facility Name: Otter Tail Ag Enterprises LLC

Permit Number: 11100077-004

**Table 1**  
**Air Emission Units at the**  
**Otter Tail Ag Enterprises, LLC Plant**

Stack Vent ID	Control Equipment ID	Emission Unit ID	Emission Source
SV001	CE001	EU001-EU007	Grain Receiving Baghouse #1
SV008	CE008	EU008-EU012	Hammermill #2 Baghouse
SV011	CE011	EU013-EU016	DDGS Loadout Baghouse
SV012	CE012	EU017	Cooling Tower Cell #1
SV013	CE013	EU018	Cooling Tower Cell #2
SV014	CE014	EU019	Cooling Tower Cell #3
SV020	CE021	EU026	Fire Pump
SV022	CE023	EU028	Boiler #1
SV023	CE024	EU029	Boiler #2
SV024	CE025	EU030	Dedicated Fleet EtOH Loadout
SV025	CE026	EU031-EU032	Loadout Flare
SV026	CE027	EU033-EU038	CO2 Scrubber
SV027	CE028	EU039-EU050	Vent Gas Scrubber
SV028	CE030	EU051-EU052	RTO
SV034	CE022	EU027	Emergency Generator
SV035	CE022	EU027	Emergency Generator
Fug.		FS001	Grain Receiving Fugitives
Fug.		FS002	DDGS Loadout Fugitives
Fug.		FS003	DDGS Storage Fugitives
Fug.		FS004	Truck Traffic
Fug.		FS005	Equipment Leaks
Fug.		FS006	Wetcake (AOS)
Tank		TK001	200 Proof Ethanol
Tank		TK002	200 Proof Ethanol
Tank		TK003	Denaturant Storage
Tank		TK004	Denatured Ethanol Tank #1
Tank		TK005	Denatured Ethanol Tank #2