

**AIR EMISSION PERMIT NO. 09100060- 001**

**IS ISSUED TO**

**BUFFALO LAKE ENERGY LLC**  
201 10<sup>th</sup> Street  
Fairmont, Martin County, MN 56031

The emission units, control equipment and emission stacks at the stationary source authorized in this permit are as described in the following permit application(s):

Permit Type	Application Date
Total Facility Operating Permit	09/16/2005

This permit 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.

**Permit Type:** State; Limits to Avoid Pt 70/Limits to Avoid NSR

**Issue Date:** August 24, 2006

**Expiration:** August 24, 2011  
All Title I Conditions do not expire.

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Michael (Mike) J. Tibbetts, Manager  
Land and Water Quality Permits Section  
Industrial Division

for Brad Moore  
Acting Commissioner  
Minnesota Pollution Control Agency

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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:**

Buffalo Lake Energy, LLC is a fuel-grade ethanol production facility in Fairmont, Minnesota. The facility has a design capacity of 118 million gallons of undenatured ethanol. The plant will also produce distillers dried grains and solubles (DDGS) for animal feed as a by-product of the ethanol production process. Emission sources at the facility include fermentation, distillation, DDGS handling and drying, combustion sources, storage tanks, production loadout, and fugitive sources.

The ethanol facility is located adjacent to an existing Cargill grain elevator (permit # 09100061-001). The grain for the ethanol facility will be provided from and stored at the Cargill facility. The Cargill grain elevator was classified as a Country Grain Elevator according to the May 1999 MPCA Air Quality Rules and Permitting for the Grain and Feed Industry fact sheet. A conveying system will transport the grain from the Cargill facility to the hammermilling process at the facility.

The primary emissions are Volatile Organic Compounds (VOC), Particulate Matter (PM), Particulate Matter less than 10 um in size (PM/PM<sub>10</sub>), NO<sub>x</sub>, and CO. VOC are emitted by fermentation, distillation, DDGS drying, wetcake production and storage, ethanol loading, and VOC liquid storage and piping. PM/PM<sub>10</sub> is emitted by DDGS handling and drying, corn receiving and handling, and vehicle traffic. Nitrogen oxides (NO<sub>x</sub>) and Carbon Monoxide (CO) are emitted by combustion sources.

The primary pieces of control equipment are fabric filters (CE001 to CE017), the Wet Scrubber (CE018), Multiclones (CE019 and CE021) and the Thermal Oxidizers (CE020 and CE022). The scrubber controls emissions from the fermentation and distillation units including the beer well, evaporators and centrifuges; and the thermal oxidizer controls emissions from the Dryers, distillation process and DDGS coolers. A flare is used to control emissions from truck and rail ethanol loadout. Baghouses control PM/PM<sub>10</sub> from the corn and DDGS handling and storage systems and the Truck/Rail Loadout area. There are five internal floating roof tanks for ethanol, denaturant, and denatured ethanol. Emissions from process valves and piping will be controlled through an inspection and maintenance program.

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

Facility Name: Buffalo Lake Energy LLC

Permit Number: 09100060 - 001

**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
What to do	Why to do it
OPERATIONAL LIMITS	hdr
Production: less than or equal to 118,000,000 gallons per year using 12-month rolling sum of ethanol (200-proof, prior to addition of denaturant).	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; and to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Process Throughput: less than or equal to 1223704 tons/year using 12-month Rolling Sum of corn, based on a 56 pound bushel. That is equivalent to 43,703,704 bushels per year.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; and to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Process Throughput: less than or equal to 360000 tons/year using 12-month Rolling Sum of Distillers Dried Grains (DDGS) on a dry basis.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; and to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
FACILY-WIDE LIMITS	hdr
Total Particulate Matter: less than or equal to 51.04 tons/year using 12-month Rolling Sum . The above limit is based on a 12-month rolling sum to be calculated by the 15th day of each month for the previous 12 months.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; and to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Particulate Matter < 10 micron: less than or equal to 45.53 tons/year using 12-month Rolling Sum . The above limit is based on a 12-month rolling sum to be calculated by the 15th day of each month for the previous 12 months.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; and to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Sulfur Dioxide: less than or equal to 65.8 tons/year using 12-month Rolling Sum . The above limit is based on a 12-month rolling sum to be calculated by the 15th day of each month for the previous 12 months.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; and to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Nitrogen Oxides: less than or equal to 84.31 tons/year using 12-month Rolling Sum . The above limit is based on a 12-month rolling sum to be calculated by the 15th day of each month for the previous 12 months.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; and to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Volatile Organic Compounds: less than or equal to 89.25 tons/year using 12-month Rolling Sum . The above limit is based on a 12-month rolling sum to be calculated by the 15th day of each month for the previous 12 months.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; and to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Carbon Monoxide: less than or equal to 92.37 tons/year using 12-month Rolling Sum . The above limit is based on a 12-month rolling sum to be calculated by the 15th day of each month for the previous 12 months.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; and to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
HAP-Single: less than or equal to 9.0 tons/year using 12-month Rolling Sum to be calculated by the 15th day of each month for the previous 12-month period.	Title I Condition: To avoid major source classification under 40 CFR Section 63.2
HAPs - Total: less than or equal to 24.0 tons/year using 12-month Rolling Sum to be calculated by the 15th day of each month for the previous 12-month period.	Title I Condition: To avoid major source classification under 40 CFR Section 63.2
SOURCE-SPECIFIC REQUIREMENTS	hdr
Comply with Fugitive Emission 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 fugitive 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
Follow the Odor Action Plan which is attached to this permit.	Minn. R. 7007.0800, subp. 2
OPERATIONAL REQUIREMENTS	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, unless otherwise noted in Table A.	Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, subp. 16(J)

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

Facility Name: Buffalo Lake Energy LLC

Permit Number: 09100060 - 001

Operation and Maintenance Plan: Retain at the stationary source an operation and maintenance plan for all air pollution control equipment. At a minimum, the O & M plan shall identify all air pollution control equipment and control practices and shall include a preventative maintenance program for the equipment and practices, a description of (the minimum but not necessarily the only) corrective actions to be taken to restore the equipment and practices to proper operation to meet applicable permit conditions, a description of the employee training program for proper operation and maintenance of the control equipment and practices, and the records kept to demonstrate plan implementation.	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)
The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16.	Minn. R. 7007.0800, subp. 16
PERFORMANCE TESTING	hdr
Performance Test: due 180 days after Startup of the ethanol plant to measure emissions and verify compliance with permitted emission limits. Testing shall be required for all units and pollutants for which a emission limit has been required in the permit.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; and to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R 7017.2020, subp. 1
Performance Test Pre-test Meeting: due 7 days before Performance Test	Minn. R. 7017.2030, subp. 1-4; Minn. R. 7017.2018 and Minn. R. 7017.2035, subp. 1-2
Limits set as a result of a performance test (conducted before or after permit issuance) apply until superseded as specified by Minn. R. 7017.2025 following formal review of a subsequent performance test on the same unit.	Minn. R. 7017.2025
Silt Loading Testing (Paved Roads) The facility shall conduct onsite silt loading testing from paved roads in accordance with a performance test plan approved by the Commissioner. The initial testing shall be conducted within 12 months of the start-up of the facility; subsequent testing shall be conducted as per Appendix II (semi-annual [January and July] silt loading tests in the draft Haul Roads Fugitive Dust Control Plan). The tests shall be conducted in accordance with EPA guidance in Appendix C.1 and Appendix C.2 of AP42. The permittee shall keep records of silt loading testing.  (continued below)	40 CFR Section 52.21 and Minn. R. 7009.0020
(continued)  If tested silt loading values together with other paved roads terms (e.g. vehicle weight, vehicle speed) yields PM10 emission factors (pounds per vehicle-mile-traveled, lb/vmt) that are found to be greater than those assumed in the most recent approved modeling, then the road cleaning (sweeping and vacuuming) frequency will be revised so that lb/vmt values are low enough to comport with the most recent approved modeling (March 13, 2006): 0.106 lb/vmt (April through November), and 0.166 lb/vmt (December through March).	40 CFR Section 52.21 and Minn. R. 7009.0020
MONITORING REQUIREMENTS	hdr
Monitoring Equipment Calibration: Annually calibrate all required monitoring equipment (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)
RECORDKEEPING	hdr

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

Facility Name: Buffalo Lake Energy LLC

Permit Number: 09100060 - 001

Recordkeeping: Retain all records at the stationary source 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)
REPORTING/SUBMITTALS	hdr
Shutdown Notifications: Notify the Commissioner at least 24 hours in advance of a planned shutdown of any control equipment or process equipment if the shutdown would cause any increase in the emissions of any regulated air pollutant. If the owner or operator does not have advance knowledge of the shutdown, notification shall be made to the Commissioner as soon as possible after the shutdown. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 3.  At the time of notification, the owner or operator shall inform the Commissioner of the cause of the shutdown and the estimated duration. The owner or operator shall notify the Commissioner when the shutdown is over.	Minn. R. 7019.1000, subp. 3
Breakdown Notifications: Notify the Commissioner within 24 hours of a breakdown of more than one hour duration of any control equipment or process equipment if the breakdown causes any increase in the emissions of any regulated air pollutant. The 24-hour time period starts when the breakdown was discovered or reasonably should have been discovered by the owner or operator. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 2.  At the time of notification or as soon as possible thereafter, the owner or operator shall inform the Commissioner of the cause of the breakdown and the estimated duration. The owner or operator shall notify the Commissioner when the breakdown is over.	Minn. R. 7019.1000, subp. 2
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.	Minn. R. 7019.1000, subp. 1
Notification of Deviations Endangering Human Health or the Environment Report: Within 2 working days of discovery, notify the Commissioner in writing of any deviation from permit conditions which could endanger human health or the environment. Include the following information in this written description: 1. the cause of the deviation; 2. the exact dates of the period of the deviation, if the deviation has been corrected; 3. whether or not the deviation has been corrected; 4. the anticipated time by which the deviation is expected to be corrected, if not yet corrected; and 5. steps taken or planned to reduce, eliminate, and prevent reoccurrence of the deviation.	Minn. R. 7019.1000, subp. 1
Fugitive Emissions Control Plan: The Permittee shall submit a fugitive emissions control plan within 60 days of the date of permit issuance for review and approval by the Commissioner. The plan shall identify all fugitive emission sources, primary and contingent control measures, and record keeping. The Permittee shall follow the actions and record keeping 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 fugitive emission control plan, then the Permittee may be required to amend the control plan and/or to install and operate particulate matter ambient monitors.	Minn. Stat. Section 116.07, subd. 4a; Minn. R. 7007.0800, subp. 2
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.	Minn. R. 7007.1150 through Minn. R. 7007.1500
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).	Minn. R. 7007.1400, subp. 1(H)
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.	Minn. R. 7019.3000 through Minn. R. 7019.3100
Emission Fees: due 60 days after receipt of an MPCA bill.	Minn. R. 7002.0005 through Minn. R. 7002.0095

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

Facility Name: Buffalo Lake Energy LLC

Permit Number: 09100060 - 001

<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>	<p>40 CFR pt. 68</p>
<p>The Permittee shall submit a diesel emission idling prevention plan within 180 days after permit issuance. The plan must be reviewed and approved by the MPCA.</p>	<p>40 CFR Section 52.21 and Minn. R. 7009.0020</p>
<p>MODELING REQUIREMENTS</p>	<p>hdr</p>
<p>Parameters Used in Modeling: The parameters used in the modeling performed for an Environmental Assessment Worksheet under Minn. R. ch. 4410 and for determining emission and/or operational limits, if applicable for this facility are listed in Appendix III of this permit. If the Permittee intends to change any of these parameters, the Permittee must submit the revised parameters to the Commissioner and receive written approval before making any changes. The revised parameter information submittal must include, but is not limited to: the locations, heights and diameters of the stacks; locations and dimensions of nearby buildings; velocity and temperatures of the gases emitted; and the emission rates. The plume dispersion characteristics due to the parameter revisions must equal or exceed the dispersion characteristics modeled for this permit, and the Permittee shall demonstrate this in the proposal.</p>	<p>Minn. R. 7009.0020; Minn. R. 7007.0800, subp. 2</p>
<p>Parameters Used in Modeling: The stack heights, stack diameters, air flow rates, and exhaust gas temperatures used in the modeling performed for the PSD analysis for this permit are listed in Appendix III of this permit. The Permittee must submit to the Agency for approval any revisions of these parameters that are caused by a physical change or change in the method of operation of the facility and must wait for a written approval before making such changes. The information submitted must include, at a minimum, the locations, heights and diameters of the stacks, locations and dimensions of nearby buildings, the velocity and temperature of the gases emitted, and the PM10 emission rates. The plume dispersion characteristics after the proposed revisions must be equivalent to or better than the dispersion characteristics used in the model dated March 13, 2006. The Permittee shall demonstrate this equivalency in the proposal.</p>	<p>Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000</p>
<p>If the information submitted does not demonstrate equivalent or better dispersion characteristics, or if a conclusion cannot readily be made about the dispersion, the Permittee must remodel.</p> <p>For any physical change to or change in the method of operation of a stack emitting PM10 or for any increase in PM10 emissions (whether or not the increase would require a permit amendment of any type), the Permittee must remodel.</p> <p>For changes that do not involve any increase to any emission rate or any emissions from a new emission point, this proposal must be submitted as soon as practicable, but no less than 60 days before beginning actual construction of the modification, stack, or associated emission unit(s).</p>	<p>Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000</p>
<p>For changes involving increases in emission rates or emissions from a new emission point and that require a minor permit amendment, the proposal and/or required modeling analysis must be submitted as soon as practicable, but no less than 60 days before beginning actual construction of the modification, stack, or associated emission unit(s).</p> <p>For changes involving increases in emission rates or emissions from a new emission point and that require a permit amendment other than a minor amendment, the proposal and/or modeling analysis must be submitted with the permit application.</p>	<p>Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000</p>
<p>The Permittee shall install fencing around the facility. The fencing shall be fully installed prior to the start-up of any portion of the facility. In areas where fencing is not permissible by setbacks, right-of-ways, safety concerns, or clearances, the Permittee will commit to installation of signage and patrolling to sufficiently restrict public access to the property outlined as fenced in the dispersion modeling.</p>	<p>Minn. R. 7009</p>



**TABLE A: LIMITS AND OTHER REQUIREMENTS**

Facility Name: Buffalo Lake Energy LLC

Permit Number: 09100060 - 001

**Subject Item: GP 001 Baghouses**

- Associated Items:** CE 001 Fabric Filter - Low Temperature, i.e., T<180 Degrees F  
 CE 002 Fabric Filter - Low Temperature, i.e., T<180 Degrees F  
 CE 003 Fabric Filter - Low Temperature, i.e., T<180 Degrees F  
 CE 004 Fabric Filter - Low Temperature, i.e., T<180 Degrees F  
 CE 005 Fabric Filter - Low Temperature, i.e., T<180 Degrees F  
 CE 006 Fabric Filter - Low Temperature, i.e., T<180 Degrees F  
 CE 007 Fabric Filter - Low Temperature, i.e., T<180 Degrees F  
 CE 008 Fabric Filter - Low Temperature, i.e., T<180 Degrees F  
 CE 009 Fabric Filter - Low Temperature, i.e., T<180 Degrees F  
 CE 010 Fabric Filter - Low Temperature, i.e., T<180 Degrees F  
 CE 011 Fabric Filter - Low Temperature, i.e., T<180 Degrees F  
 CE 012 Fabric Filter - Low Temperature, i.e., T<180 Degrees F  
 CE 013 Fabric Filter - Low Temperature, i.e., T<180 Degrees F  
 CE 014 Fabric Filter - Low Temperature, i.e., T<180 Degrees F  
 CE 015 Fabric Filter - Low Temperature, i.e., T<180 Degrees F  
 CE 016 Fabric Filter - Low Temperature, i.e., T<180 Degrees F  
 CE 017 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

What to do	Why to do it
POLLUTION CONTROL REQUIREMENTS	hdr
Total Particulate Matter: greater than or equal to 99 percent control efficiency . The Permittee shall operate and maintain the fabric filters such that they achieve 99% overall control efficiency. This limit applies to each fabric filter individually.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; and to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Particulate Matter < 10 micron: greater than or equal to 99 percent control efficiency . The Permittee shall operate and maintain the fabric filters such that they achieve 99% overall control efficiency. This limit applies to each fabric filter individually.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; and to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
OPERATIONAL LIMITS	hdr
Pressure Drop: greater than or equal to 1 inches of water column and less than or equal to 6 inches of water column , unless a new range is set by permit reopening or permit amendment, based on the values recorded during the most recent MPCA approved performance test where compliance was demonstrated. The Permittee shall record the pressure drop once every 24 hours when in operation.	Minn. R. 7007.0800, subp. 2 and 14
Visible Emissions: The Permittee shall check the fabric filter stacks (SV001 and SV002) 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: Monitoring for Limit taken to avoid classification as a major source and modification under 40 CFR Section 52.21; to avoid classification as a major source under 40 CFR Section 70.2; Minn. R. 7011.0080
OPERATIONAL REQUIREMENTS	hdr
The Permittee shall operate and maintain the fabric filters at all times that any emission unit controlled by the fabric filter is in operation. The Permittee shall document periods of non-operation of the control equipment. Vent emissions from all units controlled by the baghouses CE001 through CE017, through the baghouses at all times that the associated units are in operation.	Minn. R. 7007.0800, subp. 2 and 14
The Permittee shall operate and maintain the fabric filter according to the control equipment manufacturer's specifications and/or 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 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
Visible Emissions: The Permittee shall check each fabric filter stack for any visible emissions once each day of operation during daylight hours. During inclement weather, the Permittee shall read and record the pressure drop across the fabric filter, once each day of operation.	Minn. R. 7007.0800, subp. 4 and 5

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

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Facility Name: Buffalo Lake Energy LLC

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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.	Minn. R. 7007.0800, subp. 4 and 5
Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - visible emissions are observed; - the recorded pressure drop is outside the required operating range; or - the fabric filter or any of its components are found during the inspections to need repair. Corrective actions shall return the pressure drop to within the permitted range, eliminate visible emissions, and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the fabric filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter.	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. 2 and subp. 14

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

Facility Name: Buffalo Lake Energy LLC

Permit Number: 09100060 - 001

**Subject Item: GP 003 Dryers**

**Associated Items:** EU 056 DDGS Dryer A

EU 058 DDGS Dryer B

What to do	Why to do it
LIMITS	hdr
Total Particulate Matter: less than or equal to 0.3 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	Minn. R. 7011.0610, subp. 1(A)(1)
Opacity: less than or equal to 20.0 percent opacity	Minn. R. 7011.0610, subp. 1(A)(2)
OPERATIONAL LIMITS	hdr
Fuel Burned: Natural gas only	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; and to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Pressure Drop: greater than or equal to 2 inches of water column and less than or equal to 8 inches of water column , unless a new range is set by permit reopening or permit amendment, based on the values recorded during the most recent MPCA approved performance test where compliance was demonstrated. The Permittee shall record the pressure drop once every 24 hours when in operation.	Minn. R. 7007.0800, subp. 2 and 14
Process Throughput: less than or equal to 41.1 tons/hour using 24-hour Block Average (dry basis) for both dryers, or the maximum product throughput during the most recent performance test demonstrating compliance.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; and to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Centrifuge (Beer) Feed Rate: Limited to a maximum of 1600 gpm using a 24-hour block average, or to the maximum feed rate measured during the most recent performance test demonstrating compliance.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; and to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Syrup Feed Rate: Limited to a maximum of 190 gpm using a 24-hour block average, or to the maximum feed rate measured during the most recent performance test demonstrating compliance.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; and to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
POLLUTION CONTROL REQUIREMENTS	hdr
Vent all emissions to the thermal oxidizer (CE020 and CE022).	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; and to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
The Permittee shall operate and maintain each 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.	Minn. R. 7007.0800, subp. 14
PROCESS MONITORING	hdr
Measure and record the process throughput, centrifuge (beer) feed rate and syrup feed rate on an hourly basis.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; and to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Record the pressure drop once each day of operation.	Minn. R. 7007.0800, subp. 2 and subp. 14
Inspect quarterly, or as required by manufacturing specifications, all components that are not subject to wear or plugging, including structural components, housing, ducts, and hoods. Maintain a written record of the inspection and any action resulting from the inspection.	Minn. R. 7007.0800, subp. 2 and subp. 14
Inspect monthly or as required by manufacturing specifications, all components that are subject to wear or plugging. Maintain a written record of the inspection and any action resulting from the inspection.	Minn. R. 7007.0800, subp. 2 and 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
Corrective Actions: If the pressure drop is outside of the range specified by this permit or if the dryers or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall return the pressure drop to 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 dryers. The Permittee shall keep a record of the type and date of any corrective action taken.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; and to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

Facility Name: Buffalo Lake Energy LLC

Permit Number: 09100060 - 001

**Subject Item: GP 004 Thermal Oxidizer with Heat Recovery Boiler**

- Associated Items:**
- EU 011 Slurry Tank 1
  - EU 012 Liquefaction Tank 1
  - EU 013 Yeast Tank 1
  - EU 014 Yeast Tank 2
  - EU 015 Process Condensate Tank
  - EU 016 Beer Column 1
  - EU 017 Beer Column 2
  - EU 018 Stripper 1
  - EU 019 Stripper 2
  - EU 020 Rectifier 1
  - EU 021 Rectifier 2
  - EU 022 Evaporator 1
  - EU 023 Evaporator 2
  - EU 024 Syrup Tank
  - EU 025 Centrifuge 1
  - EU 026 Centrifuge 2
  - EU 027 Centrifuge 3
  - EU 028 Centrifuge 4
  - EU 029 Centrifuge 5
  - EU 030 Centrifuge 6
  - EU 031 Centrifuge 7
  - EU 032 Centrifuge 8
  - EU 033 Molecular Sieve 1
  - EU 034 Molecular Sieve 2
  - EU 035 Molecular Sieve 3
  - EU 036 Molecular Sieve 4
  - EU 037 200 Proof Condenser
  - EU 038 200 Proof Condenser
  - EU 057 Thermal Oxidizer/Heat Recovery Generator 1
  - EU 059 Thermal Oxidizer/Heat Recovery Generator 2

What to do	Why to do it
SUBPART Db REQUIREMENTS	hdr
Nitrogen Oxides: less than or equal to 0.10 lbs/million Btu heat input using 30-day Rolling Average	40 CFR 60.44b(a)(1)(i)
The Permittee shall install, calibrate, maintain, and operate a continuous monitoring system, and record the output of the system, for measuring nitrogen oxides emissions discharged to the atmosphere.	40 CFR 60.48b(b)(1)
The Permittee shall submit notification of the date of initial startup, as provided by 40 CFR 60.7. This notification shall include the design heat input capacity of the affected facility and identification of the fuels to be combusted in the affected facility, and the annual capacity factor at which the Permittee anticipates operating the facility based on all fuels fired and based on each individual fuel fired.	40 CFR 60.49b(a)
The Permittee subject to the nitrogen oxides emission limit under 40 CFR 60.44b shall submit to the Administrator the performance test data from the initial performance test and the performance evaluation of the CEMS using the applicable performance specifications in 40 CFR Part 60, appendix B.	40 CFR 60.49b(b)
The Permittee shall record and maintain records of the amounts of natural gas combusted during each day and calculate the annual capacity factor individually for natural gas for the reporting period. The annual capacity factor is determined on a 12-month rolling average basis with a new annual capacity factor calculated at the end of each calendar month.	40 CFR 60.49b(d)

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

Facility Name: Buffalo Lake Energy LLC

Permit Number: 09100060 - 001

Opacity: less than or equal to 20.0 percent opacity (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity. The limit applies at all times, except during periods of startup, shutdown, or malfunction.	40 CFR 60.43b(f); 40 CFR 60.43b(g); Minn. R. 7011.0610, subp. 1(A)(2)
This is more stringent than Minn. R. 7011.0610, subp. 1(A)(2).	
<b>OPERATIONAL REQUIREMENTS</b>	hdr
Temperature: greater than or equal to 1400 degrees F using 3-hour Rolling Average at the combustion chamber unless a new minimum is set pursuant to Minn. R. 7017.2025, subp. 3, based on the average temperature recorded during the most recent MPCA approved performance test where compliance for VOC emissions was demonstrated. If the three-hour rolling average temperature drops below the minimum temperature limit, the VOC used during that time shall be considered uncontrolled until the average minimum temperature limit is once again achieved. This shall be reported as a deviation.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; and to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for Volatile Organic Compounds: greater than or equal to 98.0 percent control efficiency	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; and to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Fuel Burned: Natural gas only	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; and to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Vent all emissions from DDGS Dryers (EU 056 and EU 058) and DDGS Coolers to the Thermal Oxidizers/Heat Recovery Boilers (EU 057 and EU 059)	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; and to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
The Permittee shall operate and maintain the thermal oxidizer any time that any process equipment controlled by the thermal oxidizer is in operation 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. The Permittee shall document periods of non-operation of the control equipment. Vent emissions from all units controlled by the thermal oxidizers EU057 and EU059, through the thermal oxidizers at all times that the associated units are in operation.	Minn. R. 7007.0800, subp. 14
<b>MONITORING REQUIREMENTS</b>	hdr
The Permittee shall maintain and operate a thermocouple monitoring device that continuously indicates and records the combustion chamber temperature of the thermal oxidizer. The thermocouple must be installed, in use, and properly maintained whenever operation of the thermal oxidizer is required. 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
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.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; and to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
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
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
<b>RECORDKEEPING AND REPORTING</b>	hdr
The Permittee shall maintain a continuous hard copy readout or computer disk file of the temperature readings for the combustion chamber.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; and to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
<b>CONTINUOUS MONITORING REQUIREMENTS</b>	hdr
CEMS Installation: Install NOx and CO CEMS.	Minn. R. 7017.1006

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

A-10 08/29/06

Facility Name: Buffalo Lake Energy LLC

Permit Number: 09100060 - 001

Installation Notification: due 60 days before installing the continuous emissions monitoring system. The notification shall include plans and drawings of the system.	Minn. R. 7017.1040, subp. 1
CEMS Certification Test: due within 90 days after the due date of the first excess emissions report required for the CEMS. Follow the Performance Specifications listed in 40 CFR pt. 60, Appendix B.	Minn. R. 7017.1050, subp. 1
CEM Certification Test Pretest Meeting: due 7 days before CEM Certification Test	Minn. R. 7017.1060, subp. 3
CEMS Daily Calibration Drift (CD) Test: The CD shall be quantified and recorded at zero (low-level) and upscale (high-level) gas concentrations at least once daily. The CEMS shall be adjusted whenever the CD exceeds twice the specification of 40 CFR pt. 60, Appendix B. 40 CFR pt. 60, Appendix F, shall be used to determine out-of-control periods for CEMS. Follow the procedures in 40 CFR pt. 60, Appendix F.	Minn. R. 7017.1170, subp. 3
CEMS Cylinder Gas Audit (CGA): due before end of each calendar quarter following CEM Certification Test. Conduct CGA at least 3 months apart and not greater than 8 months apart. Follow the procedures in 40 CFR pt. 60, Appendix F.	Minn. R. 7017.1170, subp. 4
CEMS Relative Accuracy Test Audit (RATA): due before end of each year following CEM Certification Test. If the relative accuracy is 15% or less the next CEMS RATA is not due for 24 months. Follow the procedures in 40 CFR pt. 60, Appendix B and Appendix F.	Minn. R. 7017.1170, subp. 5
Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.  Acceptable monitor downtime includes reasonable periods as listed in Items A, B, C and D of Minn. R. 7017.1090, subp. 2.	Minn. R. 7017.1090, subp. 1
Recordkeeping: The owner or operator must retain records of all CEMS monitoring data and support information for a period of five years from the date of the monitoring sample, measurement or report. Records shall be kept at the source.	Minn. R. 7007.1130
QA Plan: Develop and implement a written quality assurance plan that covers each CEMS. The plan shall be on site and available for inspection within 30 days after monitor certification. The plan shall contain all of the information required by 40CFR 60, App. F, section 3.	Minn. R. 7017.1170, subp. 2

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

Facility Name: Buffalo Lake Energy LLC

Permit Number: 09100060 - 001

**Subject Item: GP 005 Internal Floating Roof Tanks**

**Associated Items:** TK 001 200 Proof Ethanol

TK 002 200 Proof Ethanol

TK 003 Denaturant

TK 004 Denatured Ethanol

TK 005 Denatured Ethanol

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 initial fill of tanks: 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 6.113b(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)
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.	40 CFR Section 60.115b(a)(1); Minn. R. 7011.1520(C)

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

A-12 08/29/06

Facility Name: Buffalo Lake Energy LLC

Permit Number: 09100060 - 001

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)
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**TABLE A: LIMITS AND OTHER REQUIREMENTS**

A-13 08/29/06

Facility Name: Buffalo Lake Energy LLC

Permit Number: 09100060 - 001

**Subject Item:** GP 006 Ethanol Loadout**Associated Items:** EU 060 Ethanol Loadout (Truck)

EU 061 Ethanol Loadout (Rail)

<b>What to do</b>	<b>Why to do it</b>
Vent all emissions when loading ethanol into trucks and/or railcars to the Loadout Flare (EU066).	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; and to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

Facility Name: Buffalo Lake Energy LLC

Permit Number: 09100060 - 001

**Subject Item:** GP 007 Multiclones

**Associated Items:** CE 019 Centrifugal Collector - High Efficiency

CE 021 Centrifugal Collector - High Efficiency

What to do	Why to do it
Pressure Drop: greater than or equal to 2 inches of water column and less than or equal to 8 inches of water column , unless a new range is set by permit reopening or permit amendment, based on the values recorded during the most recent MPCA approved performance test where compliance was demonstrated. The Permittee shall record the pressure drop once every 24 hours when in operation.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; and to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200. Minn. R. 7007.0800, subp. 2 and 14
Record pressure drop once each day of operation.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; and to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Vent all emissions to the thermal oxidizers (CE020 and CE022).	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; and to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Inspect monthly, or as required by manufacturing specifications, all components that are subject to wear or plugging. Maintain a written record of the inspections and any corrective actions resulting from the inspection.	Minn. R. 7007.0800, subp. 2 and subp. 14
Calibrate the pressure gauge 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
Corrective Actions: If the pressure drop is outside of the range specified by this permit or if the dryers or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall return the pressure drop to 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 dryers. The Permittee shall keep a record of the type and date of any corrective action taken.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; and to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

Facility Name: Buffalo Lake Energy LLC

Permit Number: 09100060 - 001

**Subject Item: GP 008 Limited Baghouses**

- Associated Items:**
- SV 001 Corn Conveyor Baghouse 1
  - SV 002 Corn Conveyor Baghouse 2
  - SV 003 Corn Bulk Weigher Baghouse 1
  - SV 004 Corn Elevator Baghouse 1
  - SV 005 Corn Storage Silo Baghouse 1
  - SV 006 Hammermill Baghouse 1
  - SV 007 Hammermill Baghouse 2
  - SV 008 Hammermill Baghouse 3
  - SV 009 Hammermill Baghouse 4
  - SV 015 DDGS Handling Baghouse 6
  - SV 016 DDGS Loadout Baghouse 1
  - SV 017 DDGS Loadout Baghouse 2

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.002 grains/dry standard cubic foot	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; and to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Particulate Matter < 10 micron: less than or equal to 0.002 grains/dry standard cubic foot	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; and to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Initial Performance Test: due 180 days after Initial Startup for PM and PM10.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; and to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Performance Test Notifications and Submittals; 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 day before each Performance Test Performance Test Report: due 45 days after each Performance Test Performance Test Report - Microfiche Copy or CD: due 105 day after each Performance Test. The Notification, Test Plan, and Test Report may be submitted in alternate format as allowed by Minn. R. 7017.2018.	Minn. R. 7017.2030, subp. 1-4; Minn. R. 7017.2018 and Minn. R. 7017.2035, subp. 1-2

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

Facility Name: Buffalo Lake Energy LLC

Permit Number: 09100060 - 001

**Subject Item: SV 019 TO/HRBs**

- Associated Items:**
- EU 011 Slurry Tank 1
  - EU 012 Liquefaction Tank 1
  - EU 013 Yeast Tank 1
  - EU 014 Yeast Tank 2
  - EU 015 Process Condensate Tank
  - EU 016 Beer Column 1
  - EU 017 Beer Column 2
  - EU 018 Stripper 1
  - EU 019 Stripper 2
  - EU 020 Rectifier 1
  - EU 021 Rectifier 2
  - EU 022 Evaporator 1
  - EU 023 Evaporator 2
  - EU 024 Syrup Tank
  - EU 025 Centrifuge 1
  - EU 026 Centrifuge 2
  - EU 027 Centrifuge 3
  - EU 028 Centrifuge 4
  - EU 029 Centrifuge 5
  - EU 030 Centrifuge 6
  - EU 031 Centrifuge 7
  - EU 032 Centrifuge 8
  - EU 033 Molecular Sieve 1
  - EU 034 Molecular Sieve 2
  - EU 035 Molecular Sieve 3
  - EU 036 Molecular Sieve 4
  - EU 037 200 Proof Condenser
  - EU 038 200 Proof Condenser
  - EU 056 DDGS Dryer A
  - EU 057 Thermal Oxidizer/Heat Recovery Generator 1
  - EU 058 DDGS Dryer B
  - EU 059 Thermal Oxidizer/Heat Recovery Generator 2
  - EU 062 DDGS Cooler #1
  - EU 063 DDGS Cooler #2

What to do	Why to do it
LIMITS	hdr
Volatile Organic Compounds: less than or equal to 4.0 lbs/hour using 12-month Rolling Sum	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; and to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Total Particulate Matter: less than or equal to 5.7 lbs/hour	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000
Particulate Matter < 10 micron: less than or equal to 5.7 lbs/hour	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; and to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

Facility Name: Buffalo Lake Energy LLC

Permit Number: 09100060 - 001

Carbon Monoxide: less than or equal to 20.0 lbs/hour	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; and to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Nitrogen Oxides: less than or equal to 18.0 lbs/hour	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; and to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Sulfur Dioxide: less than or equal to 15.0 lbs/hour	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; and to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
PERFORMANCE TESTING REQUIREMENTS	hdr
Performance Test: due 180 days after Initial Startup to measure PM emissions.	Minn. R. 7017.2020, subp. 1
Performance Test: due 180 days after Initial Startup to measure PM-10 emissions.	Minn. R. 7017.2020, subp. 1
Performance Test: due 180 days after Initial Startup to measure NOx emissions.	Minn. R. 7017.2020, subp. 1
Performance Test: due 180 days after Initial Startup to measure CO emissions.	Minn. R. 7017.2020, subp. 1
Performance Test: due 180 days after Initial Startup to measure VOC emissions including HAPS as outlined in Appendix VI.	Minn. R. 7017.2020, subp. 1
Performance Test Notifications and Submittals;  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 day before each Performance Test Performance Test Report: due 45 days after each Performance Test Performance Test Report - Microfiche Copy or CD: due 105 day after each Performance Test. The Notification, Test Plan, and Test Report may be submitted in alternative format as allowed by Minn. R. 7017.2018.	Minn. R. 7017.2030, subp. 1-4; Minn. R. 7017.2018 and Minn. R. 7017.2035, subp. 1-2

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

A-18 08/29/06

Facility Name: Buffalo Lake Energy LLC

Permit Number: 09100060 - 001

**Subject Item:** EU 065 Emergency Fire Pump**Associated Items:** SV 021 Emergency Fire Pump

<b>What to do</b>	<b>Why to do it</b>
Opacity: less than or equal to 20.0 percent opacity Once operating temperatures have been attained.	Minn. R. 7011.2300, subp. 1
Operating Hours: Less than or equal to 100 hours per year using a 12-month rolling sum for the pump for routine testing and maintenance. The sum for the previous 12-month period is to be calculated by the 15th day of each month.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; and to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Hours of Operation: The Permittee shall record each month the number of hours of operation of the fire pump and a monthly record of 12-month rolling sum of the hours of operation.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; and to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

A-19 08/29/06

Facility Name: Buffalo Lake Energy LLC

Permit Number: 09100060 - 001

**Subject Item:** EU 066 Loadout Flare**Associated Items:** CE 023 Flaring

SV 022 Flare

<b>What to do</b>	<b>Why to do it</b>
For requirements on the Loadout Flare, see Flaring CE 023.	hdr

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

Facility Name: Buffalo Lake Energy LLC

Permit Number: 09100060 - 001

**Subject Item: CE 018 Wet Scrubber - High Efficiency**

- Associated Items:** EU 039 Fermenter 1  
 EU 040 Fermenter 2  
 EU 041 Fermenter 3  
 EU 042 Fermenter 4  
 EU 043 Fermenter 5  
 EU 044 Fermenter 6  
 EU 045 Fermenter 7  
 EU 046 Fermenter 8  
 EU 047 Beer Well  
 GP 002 Wet Scrubber

What to do	Why to do it
OPERATIONAL LIMITS	hdr
Volatile Organic Compounds: less than or equal to 12.5 lbs/hour	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; and to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Pressure Drop: greater than or equal to 2.0 inches of water column and less than or equal to 10 inches of water column or as determined by the most recent performance testing that demonstrated compliance with the permitted emission limit.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; and to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Water flow rate: greater than or equal to 35.0 gallons/minute or as determined by the most recent performance testing that demonstrated compliance with the permitted emission limit.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; and to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Total Fermentation Tank Volume: Limited to 6,517,912 gallons.	Minn. R. 4410
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for Volatile Organic Compounds: greater than or equal to 97.0 percent control efficiency	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; and to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
OPERATIONAL REQUIREMENTS	hdr
Vent all emissions from all fermentation units EU039 through EU047 to the Wet Scrubber (CE018) at all times that the associated units are in operation.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; and to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Record the pressure drop and water flow rate of the scrubber once each day of operation.	Minn. R. 7007.0800, subp. 2 and subp. 14
The Permittee shall operate and maintain the scrubber 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.	Minn. R. 7007.0800, subp. 2 and 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 scrubber is in operation.	Minn. R. 7007.0800, subp. 4
The Permittee shall operate and maintain the scrubber 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 the gauges annually, or as often as required by manufacturing specifications and maintain a written record of the calibration and any action resulting from the calibration.	Minn. R. 7007.0800, subp. 2 and subp. 14
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 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**

Facility Name: Buffalo Lake Energy LLC

Permit Number: 09100060 - 001

PERFORMANCE TESTING	hdr
Performance Test: due 180 days after Initial Startup for total mass VOC emissions including HAPS as outlined in Appendix VI.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; and to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
<p>Performance Test Notifications and Submittals;</p> <p>Performance Test Notification (written): due 30 days before each Performance Test</p> <p>Performance Test Plan: due 30 days before each Performance Test</p> <p>Performance Test Pre-Test Meeting: due 7 day before each Performance Test</p> <p>Performance Test Report: due 45 days after each Performance Test</p> <p>Performance Test Report - Microfiche Copy or CD: due 105 day after each Performance Test.</p> <p>The Notification, Test Plan, and Test Report may be submitted in alternative format as allowed by Minn. R. 7017.2018.</p>	Minn. R. 7017.2030, subp. 1-4; Minn. R. 7017.2018 and Minn. R. 7017.2035, subp. 1-2

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

Facility Name: Buffalo Lake Energy LLC

Permit Number: 09100060 - 001

**Subject Item:** CE 023 Flaring

**Associated Items:** EU 060 Ethanol Loadout (Truck)

EU 061 Ethanol Loadout (Rail)

EU 066 Loadout Flare

What to do	Why to do it
Opacity: less than or equal to 0.0 percent opacity except for periods not to exceed a total of 5 minutes during any 2 consecutive hours.	Minn. R. 7007.0800, subp. 2
Emissions from the ethanol loadout units (EU060 and EU061) will be controlled by the flare (CE023) that shall meet 98 percent control efficiency.	Minn. R. 7007.0800, subp. 2
Fuel Usage: The flare shall be used only with the net heating value of the gas being combusted being 300 Btu/scf or greater if the flare is steam-assisted or air-assisted; or with the net heating value of the gas being combusted being 200 Btu/scf or greater if the flare is non-assisted.	Minn. R. 7007.0800, subp. 2
The flare shall be operated at all times when emission units may be vented to them. Vent emissions from all units controlled by the flare EU066, through the flare at all times that the associated units are in operation.	Minn. R. 7007.0800, subp. 2
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. 2

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

Facility Name: Buffalo Lake Energy LLC

Permit Number: 09100060 - 001

**Subject Item: FS 001 Truck Traffic**

What to do	Why to do it
Truck Traffic: less than or equal to 280 trucks/day (grain receiving trucks) during the months of April through November.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Truck Traffic: less than or equal to 150 trucks/day (grain receiving trucks) during the months of December through March.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Recordkeeping: The Permittee shall record the number of grain delivery trucks entering the facility each calendar day and keep these records on-site.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Truck Traffic: less than or equal to 30 trucks/day for DDGS load-out. Annual DDGS loadout will be limited to 50 percent truck loadout or 180,000 tons of DDGS loadout by truck per year.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Recordkeeping: The Permittee shall record the number of DDGS loadout trucks entering the facility each calendar day and keep these records on-site.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Truck Traffic: less than or equal to 30 trucks/day for ethanol load-out. Annual denatured ethanol loadout will be limited to 50 percent truck loadout or 61,950,000 gallons of denatured ethanol loadout by truck per year.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Recordkeeping: The Permittee shall record the number of ethanol loadout trucks entering the facility each calendar day and keep these records on-site.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Truck Traffic: less than or equal to 5 trucks/day for denaturant delivery. Annual denaturant delivery will be limited to 50 percent truck loadout or 2,950,000 gallons of denaturant delivery by truck per year.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Recordkeeping: The Permittee shall record the number of denaturant delivery trucks entering the facility each calendar day and keep these records on-site.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Recordkeeping: The Permittee shall record the number and type of receiving and hauling trucks entering the facility each calendar day and keep these records on-site.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Fugitive Emissions: Do not cause or permit the transporting of any material in a manner which may allow avoidable amounts of particulate matter to become airborne. Do not cause or permit a road or a driveway to be constructed, used, repaired or demolished without applying all such reasonable measures as may be required to prevent particulate matter from becoming airborne.	Minn. R. 7011.0150
Abide by the Fugitive Dust Control Plan in Appendix II.	Minn. R. 7011.0150

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

Facility Name: Buffalo Lake Energy LLC

Permit Number: 09100060 - 001

**Subject Item: FS 002 DDGS Storage Building**

<b>What to do</b>	<b>Why to do it</b>
Opacity: less than or equal to 5.0 percent opacity for fugitive emissions from DDGS handling activities or DDGS railcar loading.	Minn. R. 7011.1005, subp. 3(A)
Opacity: less than or equal to 10.0 percent opacity for fugitive emissions from DDGS truck loading.	Minn. R. 7011.1005, subp. 3(B)
Clean up commodities spilled on the driveway and other facility property as required to minimize fugitive emissions to a level consistent with RACT (Reasonably Available Control Technology).	Minn. R. 7011.1005, subp. 1(A)

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

A-25 08/29/06

Facility Name: Buffalo Lake Energy LLC

Permit Number: 09100060 - 001

**Subject Item: FS 003 Uncaptured Emissions from DDGS Handling**

<b>What to do</b>	<b>Why to do it</b>
Opacity: less than or equal to 5.0 percent opacity for fugitive emissions from DDGS handling activities or DDGS railcar loading.	Minn. R. 7011.1005, subp. 3(A)
Opacity: less than or equal to 10.0 percent opacity for fugitive emissions from DDGS truck loading.	Minn. R. 7011.1005, subp. 3(B)
Clean up commodities spilled on the driveway and other facility property as required to minimize fugitive emissions to a level consistent with RACT (Reasonably Available Control Technology).	Minn. R. 7011.1005, subp. 1(A)

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

Facility Name: Buffalo Lake Energy LLC

Permit Number: 09100060 - 001

**Subject Item: FS 004 Equipment Leaks**

What to do	Why to do it
STANDARDS: PUMPS	hdr
<p>Pumps in light liquid service:</p> <p>Each pump in light liquid service shall be monitored monthly to detect leaks by the methods specified in 40 CFR Section 60.485(b), except as provided in 40 CFR Section 60.482-1(c) and paragraphs (d), (e), and (f).</p> <p>Each pump in light liquid service shall be checked by visual inspection each calendar week for indications of liquids dripping from the seal.</p>	40 CFR Section 60.482-2
<p>If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.</p> <p>If there are indications of liquids dripping from the pump seal, a leak is detected.</p> <p>When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in 40 CFR Section 60.482-9 (Delay of Repair).</p> <p>A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.</p>	40 CFR Section 60.482-2(b) and (c)
STANDARDS: COMPRESSORS	hdr
<p>Each compressor shall be equipped with a seal system that includes a barrier fluid system that prevents leakage of VOC to the atmosphere, except as provided in 40 CFR Section 60.482-1(c) and 40 CFR Section 60.482-3(h) and (i).</p>	40 CFR Section 60.482-3(a)
<p>Each compressor seal system shall be:</p> <ul style="list-style-type: none"> <li>- Operated with the barrier fluid at a pressure that is greater than the compressor stuffing box pressure; or</li> <li>- Equipped with a barrier fluid system that is connected by a closed vent system to a control device that complies with the requirements of 40 CFR Section 60.482-10; or</li> <li>- Equipped with a system that purges the barrier fluid into a process stream with zero VOC emissions to the atmosphere.</li> </ul>	40 CFR Section 60.482-3(b)
<p>The barrier fluid system shall be in heavy liquid service or shall not be in VOC service.</p> <p>Each barrier fluid system shall be equipped with a sensor that will detect failure of the seal system, barrier fluid system, or both.</p>	40 CFR Section 60.482-3(c) and (d)
<p>Each sensor shall be checked daily or shall be equipped with an audible alarm.</p> <p>The Permittee shall determine, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both.</p>	40 CFR Section 60.482-3(e)
<p>If the sensor indicates failure of the seal system, the barrier system, or both based on the criterion determined under paragraph 40 CFR Section 60.482-3(e)(2), a leak is detected.</p>	40 CFR Section 60.482-3(f)
<p>When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected except as provided in 40 CFR Section 60.482-9 (Delay of Repair).</p> <p>A first attempt at repair shall be made no later than 5 calendar days after it is detected, except as provided in 40 CFR Section 60.482-9.</p>	40 CFR Section 60.482-3(g)
STANDARDS: PRESSURE RELIEF DEVICES IN GAS/VAPOR SERVICE	hdr
<p>Except during pressure releases, each pressure relief device in gas/vapor service shall be operated with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background as determined by the methods specified in 40 CFR Section 60.485(c).</p>	40 CFR Section 60.482-4(a)
<p>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 60.482-9 (Delay of Repair).</p>	40 CFR Section 60.482-4(b)
STANDARDS: VALVES	hdr

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

Facility Name: Buffalo Lake Energy LLC

Permit Number: 09100060 - 001

<p>Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve, except as provided in 40 CFR Section 60.482-1(c).</p> <p>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 60.482-6(a)
<p>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>When a double block and bleed system is being used, the bleed valve or line may remain open during operations that require venting the line between the block valves but shall comply with 40 CFR Section 60.482-6(a) at all other times.</p>	40 CFR Section 60.482-6(b) and (c)

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

A-28 08/29/06

Facility Name: Buffalo Lake Energy LLC

Permit Number: 09100060 - 001

**Subject Item: FS 006 Wet Cake Storage**

<b>What to do</b>	<b>Why to do it</b>
Wet cake storage limitation: When wet cake by-product is produced, it will be stored for no longer than 72 hours on-site unless the outside temperature is less than 55 degrees F (daily maximum). In all cases, the wet cake will be moved off-site as soon as possible.	Minn. R. 7007.0800, subp. 2



**TABLE B: SUBMITTALS**

B-1 08/29/06

Facility Name: Buffalo Lake Energy LLC  
Permit Number: 09100060 - 001

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.

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 any application for a permit or permit amendment to:

AQ Permit Technical Advisor  
Industrial Division  
Minnesota Pollution Control Agency  
520 Lafayette Road North  
St. Paul, Minnesota 55155-4194

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

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

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

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

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

**TABLE B: ONE TIME SUBMITTALS OR NOTIFICATIONS**

Facility Name: Buffalo Lake Energy LLC

Permit Number: 09100060 - 001

What to send	When to send	Portion of Facility Affected
Application for Permit Reissuance	due 180 days before expiration of Existing Permit	Total Facility
CEM Certification Test Plan	due 30 days before CEM Certification Test	GP004
CEM Certification Test Report - Microfiche Copy	due 105 days after CEM Certification Test	GP004
CEM Certification Test Report	due 45 days after CEM Certification Test	GP004
Notification of the Actual Date of Initial Startup	due 15 days after Initial Startup	GP005
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.	GP005
Performance Test Notification (written)	due 30 days before Performance Test	Total Facility
Performance Test Plan	due 30 days before Performance Test	Total Facility
Performance Test Report - Microfiche Copy	due 105 days after Performance Test	Total Facility
Performance Test Report	due 45 days after Performance Test	Total Facility
Relative Accuracy Test Audit (RATA) Notification	due 30 days before CEMS Relative Accuracy Test Audit (RATA)	GP004
Relative Accuracy Test Audit (RATA) Results Summary	due 45 days after CEMS Relative Accuracy Test Audit (RATA)	GP004
Testing Frequency Plan	due 60 days after Initial Performance Test for PM, PM-10, NOx, CO, and VOC emissions. The plan shall specify a testing frequency based on the test data and MPCA guidance. Future performance tests based on one-year (12 month), 36 month, and 60 month intervals, or as applicable, shall be required upon written approval of the MPCA.	SV019
Testing Frequency Plan	due 60 days after Initial Performance Test for VOC emissions. The plan shall specify a testing frequency based on the test data and MPCA guidance. Future performance tests based on one-year (12 month), 36 month, and 60 month intervals, or as applicable, shall be required upon written approval of the MPCA.	CE018

**TABLE B: RECURRENT SUBMITTALS**

B-3 08/29/06

Facility Name: Buffalo Lake Energy LLC

Permit Number: 09100060 - 001

What to send	When to send	Portion of Facility Affected
Cylinder Gas Audit (CGA) Results Summary	due 30 days after end of each calendar quarter following end of the calendar quarter in which the Audit was performed	GP004
Excess Emissions/Downtime Reports (EER's)	due 30 days after end of each calendar quarter following Initial Startup of the Monitor (Submit Deviations Reporting Form DRF-1 as amended). The EER shall indicate all periods of monitor bypass and all periods of exceedances of the limit including exceedances allowed by an applicable standard, i.e. during startup, shutdown, and malfunctions.	GP004
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). To be submitted to the Commissioner on a form approved by the Commissioner. This report covers all deviations experienced during the calendar year.	Total Facility

APPENDIX MATERIAL

Facility Name: Buffalo Lake Energy LLC

Permit Number: 09100060-001

**Appendix I**

**Insignificant Activities and Applicable Requirements**

The table below lists the insignificant activities that are currently at the facility and their associated general applicable requirements.

<b>Minn. R. 7007.1300, subpart</b>	<b>Rule Description of the Activity</b>	<b>Applicable Requirement</b>
3(A)	Fuel use: space heaters fueled by natural gas or propane. <i>These space heaters will have less than 30,000 BTU/hr heating capacity.</i>	Minn. R. 7011.0510/0515
3(E)(1)	Small gasoline storage tanks (1-10 gallon fuel cans) for lawn mowers and other small equipment, etc.	
3(G)	The Facility will have a product testing laboratory.	
3(H)(3) 3(H)(4)	Welding Equipment for plant maintenance Normal-scale office equipment will be present in the facility office.	
3(J)	Fugitive Emissions from roads and parking lots. Main facility haul roads will be paved. Unpaved pull-offs may exist but are not used on a regular basis.	Minn. R. 7011.0150
3(K)	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.	Minn. R. 7011.0710/0715

## **Appendix II**

### **Haul Roads Fugitive Dust Control Plan Buffalo Lake Energy, LLC**

This document outlines the truck haul road fugitive dust control measures that will be implemented at the proposed Buffalo Lake Energy, LLC (BLE) ethanol production facility. Through the hauling process, fugitive dust is generated from the contact between the roads and the vehicle tires causing the re-suspension of loose material on the road surface.

BLE ethanol production facility is proposed to be located next to the existing Cargill grain elevator in Fairmont, Martin County, Minnesota. The two sites together will be referred to as the "Source" in regards to this document. The Source proposes to control the fugitive dust generated from the following truck hauling processes:

- Grain Receiving Haul Trucks to Cargill
- Grain Shipping Haul Trucks from Cargill
- DDGS Shipping Haul Trucks from BLE
- Denaturant Receiving Haul Trucks to BLE
- Ethanol Shipping Haul Trucks from BLE

#### **Proposed Dust Control Measures**

The Source proposes the following dust control measures to mitigate emissions from the truck hauling activities at the site:

- Haul roads at the site will be paved;
- Haul roads at the site near the grain receiving building, the DDGS loadout building, and the ethanol loadout area as well as the north entrance to the facility will be swept and vacuumed daily as illustrated in Appendix V of the Air Permit;
- Visual inspections of the haul roads will be performed daily; and
- Haul roads at the site will be swept and vacuumed weekly or when silt has accumulated to visible levels on the road.
- Signage will be posted to limit the truck traffic speed to 10 miles/hour.

#### **Testing**

The Source proposes to conduct a vacuum pump test of the silt loading semiannually. The tests will occur in July and January in order to collect data during both normal baseline conditions and winter baseline conditions, respectively. The MPCA will be notified of the testing procedure under a submitted testing protocol. The results of the test will be kept on file and provided to the MPCA upon request.

**Appendix III**  
**Modeling Inputs**



## **Modeling Parameters Used for Buffalo Lake Energy (BLE) in Fairmont, Martin County, Minnesota**

### Hardcopy Report Submittal

Total Facility Permit Application, Buffalo Lake Energy, LLC, submitted September 2005 (revised November 2005; January 2006; March 2006).

### Electronic (CD-ROM) Submittal

Buffalo Lake Energy, Revised PSD Increment & NAAQS, prepared by Natural Resource Group, Inc., March 13, 2006.

### Appendix III – Full Details

See CD-ROM for full data details.

### Appendix III – Summary Report (A Computer-Generated “REPORT” Format with Simple Headers, Simple Sources, and Selected Parameters)

The summary report is for simple (constant) emission rates and corresponding stack/source parameters. It does not fully document details regarding model control options, emission rates with varying emission scalars, corresponding stack/source parameters, wind speed categories for wind erosion, building profile input program (BPIP) outputs, various output selections (e.g., EVENTFIL, MULTYEAR, PLOTFILE, POSTFILE, MAXIFILE), applicable “INCLUDED” file information, receptor grids, or other special features described in the following EPA modeling user guides:

ISCST3: <http://www.epa.gov/scram001/userg/regmod/isc3v1.pdf>

AERMOD: <http://www.epa.gov/scram001/7thconf/aermod/aermodugb.pdf>

Note: Separate tables are shown for the 24-hour PM10 increment analysis with past actual (PA) emissions denoted as negative emission rate values, and the 24-hour PM10 NAAQS analysis without past actual (PA) emissions. If any difference exists between summary values in this appendix vs. the hardcopy report vs. the electronic CD-ROM modeled values, the electronic CD-ROM modeled values prevail.



\*\*\* Buffalo Lake Energy

C:\PROJECTS\BLEMAR06\MAR\_13TH\BLE\_FM10\_24HR\_NEW\_GRID\_96\_FM1024\_LST

\*\*This Run Includes: 153 Source(s); 2 Source Group(s); and 158 Receptor(s)

Table with columns: AREA SRCINDT, EASTINGNORTHING, ELEV(M), G/SEC, #/HOUR, T/YEAR, HGT(M), HGT(FT), XDIM(M), YDIM(M), DEG(K), DEG(C), DEG(F), VS(M/S), VS(F/M), ACFM. Rows include various area sources like COOL1, COOL2, COOL3, etc., and road sources like AREA ROAD1, AREA ROAD2, etc.





**Appendix IV:**  
**Truck Traffic**  
**Fence Diagram**



## **Appendix V:**

### **Daily Sweeping and Vacuuming Road Segments**



## **Appendix VI:**

### **HAP Performance Testing**

When conducting performance testing for HAP, the Permittee must test for:

CO2 Scrubber and Process Scrubber Compounds: ethanol, acetaldehyde, ethyl acetate, isoamyl alcohol, acetic acid, acrolien, formaldehyde, and methanol

Cooling Cyclone and RTO Compounds: acetaldehyde, ethyl acetate, methanol, ethanol, acetone, 2,3-butadione, formaldehyde, isoamyl alcohol, acetic acid, furfural, 2,3-butanediol, formic acid, and acrolien

Additional chemicals may be required by the MPCA Performance Test Coordinator.



**TECHNICAL SUPPORT DOCUMENT**  
**For**  
**AIR EMISSION PERMIT NO. 09100060-001**

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

**1. General Information**

**1.1. Applicant and Stationary Source Location:**

Applicant/Address	Stationary Source/Address (SIC Code: 2869)
BioFuel Solutions 2211 Elk River Road Steamboat Springs, CO 80477	Buffalo Lake Energy, LLC East ½ Section 1, Twp 102N, Range 31West Fairmont, Martin County, MN 56031
Contact: Mr. Scott Pearce Phone: (757) 220-1136	Mr. Jonalan Page (360) 263-6685

**1.2. Description of the Permit Action**

Buffalo Lake Energy, LLC is a fuel-grade ethanol production facility in Fairmont, Minnesota. The facility has a design capacity of 118 million gallons of undenatured ethanol. The plant will also produce Distillers Dried Grains and Solubles (DDGS) for animal feed as a by-product of the ethanol production process. Emission sources at the facility include fermentation, distillation, DDGS handling and drying, combustion sources, storage tanks, production loadout, and fugitive sources such as grain handling and dust from haul roads.

The ethanol facility is located adjacent to an existing Cargill grain elevator (permit # 09100061-001). The grain for the ethanol facility will be provided from and stored at the Cargill facility. The Cargill grain elevator was classified as a Country Grain Elevator according to the May 1999 MPCA Air Quality Rules and Permitting for the Grain and Feed Industry fact sheet. A conveying system will transport the grain from the Cargill facility to the hammermilling process at the facility. The two facilities are considered a single source for PSD purposes but they are being permitted separately.

The primary emissions are Volatile Organic Compounds (VOC), Particulate Matter (PM) Particulate Matter less than 10 um in size (PM<sub>10</sub>), Nitrogen oxides(NO<sub>x</sub>), and Carbon Monoxide (CO). VOCs are emitted by fermentation, distillation, DDGS drying, wetcake production and storage, ethanol loading, and VOC liquid storage and piping. PM/PM<sub>10</sub> is emitted by DDGS handling and drying, corn receiving and handling, and vehicle traffic. NO<sub>x</sub> and CO are emitted by combustion sources.

The primary pieces of control equipment are fabric filters (CE001 to CE017), the Wet Scrubber (CE018), Multiclones (CE019 and CE021) and the Thermal Oxidizers (CE020 and CE022). The scrubber controls emissions from the fermentation and distillation units including the beer well, evaporators and centrifuges; and the thermal oxidizer controls emissions from the Dryers, distillation process and DDGS coolers. A flare is use to control emissions from truck and rail ethanol loadout. Baghouses control PM/PM<sub>10</sub> from the corn and DDGS handling and storage systems and the Truck/Rail Loadout area. There are five internal floating roof tanks for ethanol, denaturant, and denatured ethanol. Emissions from process valves and piping will be controlled through an inspection and maintenance program.

**1.3. Description of any Changes Allowed with this Permit Issuance**

This permit is for new construction of a facility

**1.4. Facility Emissions:**

**Table 1. Total Facility Potential to Emit Summary**

	PM tpy	PM <sub>10</sub> tpy	SO <sub>2</sub> tpy	NO <sub>x</sub> tpy	CO tpy	VOC tpy	Single HAP tpy	All HAPs tpy
Ethanol Facility Limited Potential Emissions	51.04	45.53	65.79	84.31	92.37	89.25	9.0 Acetaldehyde	14.5
Cargill Grain Handling Facility	29.62	14.02	0.01	0.64	1.22	0.08	0.17 Hexane	0.18
Total	80.66	59.56	65.80	84.95	93.59	89.33	9.0	14.7

**Table 2. Facility Classification**

Classification	Major/Affected Source	Synthetic Minor*	Minor
PSD		VOC, PM, PM <sub>10</sub> , NO <sub>x</sub> , CO	SO <sub>2</sub> , Pb
Part 70 Permit Program		PM <sub>10</sub> , VOC, NO <sub>x</sub> , CO	
Part 63 NESHAP		Single and Total HAPs	

\* Refers to potential emissions that are less than those specified as major by 40 CFR § 52.21. 40 CFR pt. 51 Appendix S, 40 CFR pt. 70 and 40 CFR pt. 63.

**2. Regulatory and/or Statutory Basis**

Federal New Source Review: The permit contains limits on fuel use, and ethanol DDGS production that restrict annual emissions of PM, PM<sub>10</sub>, NO<sub>x</sub>, CO, SO<sub>2</sub>, and VOC to less than 100 tons per year. VOCs are measured, and compliance is determined, as total VOCs by mass. The ethanol facility and the Cargill grain Elevator are considered one source for Prevention of Significant Deterioration (PSD) purposes and must add the emissions from the two facilities.

The proposed facility is located in Martin County. In Martin County, the minor source baseline for PM<sub>10</sub> was established in 1999, when Lakefield Junction submitted a permit application for a major PM<sub>10</sub> source. Because the minor source baseline has been established and because this source is co-located next to a major PSD source (Cenex Harvest States), the facility must account for its consumption of PM<sub>10</sub> increment.

#### Part 70 Permit Program

The facility has taken limits to remain a minor source under the Part 70 permit program.

Federal New Source Performance Standards: The tanks are subject to 40 CFR pt. 60, subp. Kb., The fluid handling equipment is subject to 40 CFR pt 60, subp. VV, and the thermal oxidizer heat recovery steam generating unit is subject to 40 CFR pt. 60, subp. Db.

Minnesota Performance Standards: As noted above, the entire facility is subject to requirements for controlling fugitive PM, Minn. R. 7011.0150, the grain and DDGS handling portions of the facility are subject to Minnesota Performance Standards for Bulk Agricultural Handling Facilities, and the dryers are subject to Minn. R. 7011.0610, Standards of Performance for Fossil Fuel Burning Direct Heating Equipment.

Environmental Review: An Environmental Assessment Worksheet (EAW) is mandatory if any plant that is built has the capacity to produce more than five million gallons of ethanol per year. That EAW was prepared and made available for public notice on March 27, 2006.

NESHAPs: The facility has limited potential Hazardous Air Pollutant (HAP) emissions of less than 9 tons per year of a single HAP, and less than 24 tons total HAPs. It is, therefore, not considered a major source of HAP.

Title IV, Acid Rain Program: The facility is not subject to the Acid Rain Program codified at 40 CFR pt. 72. The Acid Rain Program is applicable to electric utilities only.

CAM Applicability: 40 CFR pt. 64, Compliance Assurance Monitoring (CAM) addresses emission sources having major emissions of regulated air pollutants under Title V at major Title V sources. Since the source is not a major Part 70 source, CAM is not applicable.

Nevertheless, the permit does require compliance demonstration. Compliance with the annual throughput limits is determined monthly, on a 12 month rolling sum using records. The largest emission sources are required to perform periodic stack emissions testing with the frequency based on the outcome of the initial performance tests. It is currently MPCA policy to require testing annually if initial performance test results are 90 percent or greater of the emission limit, every third year if the results are 60 – 90 percent of the emission limit, and every five years if the test results are less than 60 percent of the emission limit. A nitrogen oxides predictive emission monitoring system is required for the thermal oxidizer by 40 CFR pt. 60, Subp. Db. The permit also specifies operating conditions for pollution control equipment, as well as inspection and maintenance.

**Table 3. Regulatory Overview of Facility**

EU, GP, or SV	Applicable Regulations	Comments:
<b>FC</b>	40 CFR § 52.21 40 CFR § 70.2  Minn. R. 7011.0150	Limits set on throughput, production, and criteria pollutants to prevent permitted emissions from exceeding major source levels.  Preventing Particulate Emissions from Becoming Airborne
<b>GP001</b>	40 CFR § 52.21 40 CFR § 70.2	Grain handling emissions, DDGS handling emissions and hammermill emissions are to be controlled by a baghouse to prevent potential emissions from exceeding major source levels. 99% capture efficiency of PM and PM <sub>10</sub> . Compliance demonstration is by maintaining pressure drop, O&M plan and inspections.
<b>GP002</b>	40 CFR § 52.21 40 CFR § 70.2	Control of VOCs from fermentation operations in a scrubber. Compliance demonstration is by performance testing and maintaining pressure drop.  Requirement for venting fermentation and Beerwell emissions to the Fermentation Scrubber (CE 004) for control. Emission limits set at the scrubber stack for PM, PM <sub>10</sub> , and VOC to prevent potential emissions from exceeding major source levels.
<b>GP003</b>	40 CFR § 52.21 40 CFR § 70.2	Limits on Wet Cake, Beer and Syrup feed rates, natural gas only, and vent all emissions to the Thermal Oxidizer.
<b>GP004</b>	40 CFR § 52.21 40 CFR § 70.2	Temperature requirements. Requirement for venting various dryers and process vents to the thermal oxidizer (CE 001) for control. Emission limits set at the thermal oxidizer stacks for PM, PM <sub>10</sub> , and VOC, NO <sub>x</sub> , SO <sub>2</sub> , and CO to prevent potential emissions from exceeding major source levels.
<b>GP005</b>	40 CFR Subp. Kb	Standards of Performance for Petroleum Storage Vessels
<b>GP006</b>	40 CFR § 52.21 40 CFR § 70.2	Vent all emissions to the loadout flare.
<b>GP007</b>	40 CFR § 52.21 40 CFR § 70.2	Vent all emissions to the thermal oxidizer. Compliance demonstration is by performance testing and maintaining pressure drop.
<b>SV018</b>	40 CFR § 52.21 40 CFR § 70.2	Maintain and monitor pressure drop and water flow rate to control particulate matter and VOCs.
<b>SV019</b>	40 CFR § 52.21 40 CFR § 70.2	Pound per hour limits for criteria pollutants and performance testing
<b>FS001</b>	Minn. R. 7011.0150	Follow the Fugitive Dust Control Plan and the sweeping requirements from modeling
<b>FS004</b>	40 CFR § 60.482	Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry

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

### **3. Technical Information**

#### **3.1. VOC/HAP/Odor Control**

Buffalo Lake Energy proposes to control VOC and HAP emissions and reduce odor from some of the fermentation processes and most of the distillation processes by routing all emissions from these emissions units through a wet scrubber. The following emissions units are controlled by the scrubber (CE 018):

- Slurry Tank 1 (EU 011)
- Liquefaction Tank 1 (EU 012)
- Yeast Tank 1 (EU 013)
- Yeast Tank 2 (EU 014)
- Process Condensate Tank (EU 015)
- Beer Column 1 (EU 016)
- Beer Column 2 (EU 017)
- Stripper 1 (EU 018)
- Stripper 2 (EU 019)
- Rectifier 1 (EU 020)
- Rectifier 2 (EU 021)
- Evaporator 1 (EU 022)
- Evaporator 2 (EU 023)
- Syrup Tank (EU 024)
- Centrifuges 1 to 8 (EU 025 to EU 032)
- Molecular Sieve 1 to 4 (EU 033 to EU 036)
- 200 Proof Condenser (EU 037)
- 200 Proof Condenser (EU 038)
- Fermenter 1 to 8 (EU 039 and EU 046)
- Beer Well (EU 047)

Buffalo Lake also proposes to control VOC and HAP emissions and reduce odor from the DDGS units (EU 056, EU 058, EU 062, and EU 063) by routing all emissions from these emissions units through thermal oxidizers. Emissions from the ethanol loadout units (EU060 and EU061) will be controlled by a flare.

### **3.2. Air Emissions Risk Assessment (AERA) and PM<sub>10</sub> Modeling**

In accordance with MPCA instructions, Buffalo Lake Energy completed a Risk Assessment Spread Sheet (RASS) of the AERA. A completed RASS shows a quantification of the risk to human health from emissions of specific pollutants. Under the RASS analysis, the Buffalo Lake Ethanol facility does not present an unacceptable risk to human health. The AERA (Impact Analysis) Summary is attached to this document as Attachment 1.

The 24 hour averaging period PM<sub>10</sub> PSD increment analysis results submitted March 7, 2006 as well as the updated results incorporating downwash parameters for the nearby sources demonstrate that predicted ambient concentrations for the project will comply with the PSD increment threshold of 30 micrograms/cubic meter (ug/m<sup>3</sup>). It should be noted that some of the predicted impacts do exceed 25 ug/m<sup>3</sup>. With results greater than 25 ug/m<sup>3</sup>, Buffalo Lake Energy (BLE) must conduct a full PSD increment modeling analysis in the future if a modification to the facility is implemented.

As a result of the cumulative PM<sub>10</sub> analysis BLE has submitted an amendment to the BLE and Cargill air permit applications to

- remove the emergency generator
- take a more stringent PM/PM<sub>10</sub> limit on baghouses
- decommission the Cargill Grain Dryer EU001
- reduce the water flowrate to the cooling towers

After consultation with AG staff and several Air Quality staff and supervisors MPCA concluded that there is no need to renounce the BLE Air permit due to the changes made as a result of the Cumulative impacts PM-10 modeling. The changes made in the permit were the removal of an emergency generator, the addition of concentration based limits for baghouses, decommissioning the Cargill Grain Dryer EU001, and reduction of the water flow-rate to the cooling towers. A rule of thumb had been that whenever a limit changed, up or down, we had renounced the permit. But, we also have had cases where limits have been changed to make a permit more stringent and we have not renounced the permit. In this case since this permit has not yet been issued, the air permit was not controversial, the changes have not changed the classification of the facility (it was noticed as a synthetic minor and it is still synthetic minor, and all of the changes will reduce impacts from the facility; I don't see the need to renounce the permit. I will document these changes in the TSD and plan to issue the permit when appropriate.

### **3.3 Periodic Monitoring**

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

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

- The likelihood of violating the applicable requirements.
- Whether add-on controls are necessary to meet the emission limits.

- The variability of emissions over time.
- The type of monitoring, process, maintenance, or control equipment data already available for the emission unit.
- The technical and economic feasibility of possible periodic monitoring methods.
- The kind of monitoring found on similar units elsewhere:

Table 4 summarizes the periodic monitoring requirements for those emission units for which the monitoring required by the applicable requirement is nonexistent or inadequate.

**Table 4. Periodic Monitoring**

<b>Emission Unit or Group</b>	<b>Requirement (basis)</b>	<b>Additional Monitoring</b>	<b>Discussion</b>
<b>Total Facility</b>	Production Limits for Title I Condition	Recordkeeping	Production and Processing records of Ethanol produced, corn processed and DDGS produced.
<b>Baghouses: GP001</b>	Title I Condition	Recordkeeping	Read and record the pressure drop of the baghouses and maintain and inspect the control equipment such that they achieve a 99 % overall capture efficiency.
<b>Wet Scrubber: GP 002</b>	Title I Condition	Recordkeeping	Read and record the pressure drop and water flow rate of the scrubber and maintain and inspect the control equipment such that they achieve a 98 % overall capture efficiency.
<b>Dryers: GP003</b>	Title I Condition; PM $\leq$ 0.3 grains/dry standard cubic foot; Opacity.	Performance tests and recordkeeping	Measurement of process throughputs of DDGS, Beer Feed Rate and Syrup Feed Rate and read and record the pressure drop.
<b>Thermal Oxidizer with heat Recovery Boiler: GP004</b>	Part 60 Subpart Db—Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units; NO <sub>x</sub> ; Title I Condition, VOC	CEMS, performance testing	Install a CEMS for NO <sub>x</sub> ; temperature requirement

### **3.4 Calculations of Potential to Emit**

Attachment 2 to this TSD contains the General Information (GI) Forms, which summarizes the units at the Facility. Attachment 3 contains emissions calculation information prepared by the Permittee.

### **3.5 Insignificant Activities**

Buffalo Lake has operations which are classified as insignificant activities. These include space heaters, gas furnaces, welding equipment and paved roadways. Periodic monitoring is not necessary as emissions from these units are insignificant.

### **3.6 Permit Organization**

Emissions units, control equipment and stack/vents are grouped by common requirements. The emission limits are placed at the SV level. Operating requirements are placed at the EU or GP level.

### **3.7 Comments Received**

Public Notice Period: March 27 – April 26

Comments were received from the public during the public notice period. The comments received did include adverse comments on overall environmental effects of the facility though not any specific applicable requirements of the permit. Changes to the permit were not made as a result of the comments though certain requirements which were already in the permit were identified.

Comment: "...diesel smell of the trucks & the noise from the trucks & the plant."

Response: MPCA has a requirement in the permit for the Permittee to prepare a diesel emission idling prevention plan within 180 days of permit issuance. It is assumed that this may include hauling as much material by rail as possible, and/or including truck staging areas, and including signage to shut engines off if expected wait is longer than X amount of time. The language in the permit is: "The Permittee shall submit a diesel emission idling prevention plan within 180 days after permit issuance. The plan must be reviewed and approved by the MPCA."

Comment: There were some general comments regarding dust and fugitive emissions. The following requirements are in the Air permit to minimize the amount of dust and fugitive emissions from the facility.

"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."

"Silt Loading Testing (Paved Roads): The facility shall conduct onsite silt loading testing from paved roads in accordance with a performance test plan approved by the Commissioner. The initial testing shall be conducted within 12 months of the start-up of the facility; subsequent testing shall be conducted as per Appendix II (semi-annual [January and July] silt loading tests in the draft Haul Roads Fugitive Dust Control Plan). The tests shall be conducted in accordance



with EPA guidance in Appendix C.1 and Appendix C.2 of AP42. The Permittee shall keep records of silt loading testing.”

“If tested silt loading values together with other paved roads terms (e.g. vehicle weight, vehicle speed) yields PM10 emission factors (pounds per vehicle-mile-traveled, lb/vmt) that are found to be greater than those assumed in the most recent approved modeling, then the road cleaning (sweeping and vacuuming) frequency will be revised so that lb/vmt values are low enough to comport with the most recent approved modeling (March 13, 2006): 0.106 lb/vmt (April through November), and 0.166 lb/vmt (December through March).”

“Fugitive Emissions Control Plan: The Permittee shall submit a fugitive emissions control plan within 60 days of the date of permit issuance for review and approval by the Commissioner. The plan shall identify all fugitive emission sources, primary and contingent control measures, and record keeping. The Permittee shall follow the actions and record keeping 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 fugitive emission control plan, then the Permittee may be required to amend the control plan and/or to install and operate particulate matter ambient monitors.”

Comment: There were some general comments regarding noise. The Air permit includes the following requirement to address noise concerns from the facility:

“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.”

Comment: There were some general comments regarding Volatile Organic Compounds or VOC's. Concerning VOC's, the Air permit has limited the Total Facility to 89.25 tons of VOC's per year and Hazardous Air Pollutants, or HAPs, are limited to less than minor source levels.

#### **4. Conclusion**

Based on the information provided by Buffalo Lake Energy, the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission Permit No. 09100060-001, and this TSD, will not cause or contribute to a violation of applicable federal regulations and Minnesota Rules.

Staff Members on Permit Team:      Greg Kvaal (permit writer/engineer)  
   Sarah Kilgriff (enforcement)  
   Curt Stock (stack testing)  
   Beth Freymiller (peer reviewer)

Attachments: 1. AERA (Impact Analysis) Summary  
                  2. GI Forms  
                  3. Emissions Calculations  
                  4. Public Notice Comment Letters Received

**Attachment 1**

**AERA (Impact Analysis) Summary**



**Attachment 2**

**General Information Forms**



## **Attachment 3**

### **Emissions Calculations**