AIR EMISSION PERMIT NO. 12700053- 001

IS ISSUED TO

Highwater Ethanol LLC

HIGHWATER ETHANOL LLC
205 Main Street
Lamberton, Redwood County, MN 56152

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	09/12/2006

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 31, 2007

Expiration: Permit does not expire.
All Title I Conditions do not expire.

Richard J. Sandberg, Manager
Air Quality Permits Section
Industrial Division

for Brad Moore
Commissioner
Minnesota Pollution Control Agency

TABLE OF CONTENTS

Notice to the Permittee

Permit Shield

Facility Description

Table A: Limits and Other Requirements

Table B: Submittals

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:

Highwater Ethanol, LLC (Highwater) is a fuel-grade ethanol production facility in rural Redwood County, Minnesota. The facility is located approximately 0.8 miles west of Lamberton, Minnesota on the south side of Trunk Highway 14. Highwater has capacity to produce approximately 55 million gallons per year of ethanol. The facility has capacity to process about 20 million bushels of corn per year and in addition to ethanol, can produce by-products consisting of distillers' dried grains and wetcake. Air emission sources at the facility include grain handling and processing units, fermentation tanks, boilers, liquid storage tanks, valves and other process equipment, ethanol loadout, and vehicular road traffic. Emissions are reduced though use of control devices such as a thermal oxidizer, as well as various baghouses, flares, and scrubbers.

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Highwater Ethanol LLC

Permit Number: 12700053 - 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 REQUIREMENTS	hdr
Production: less than or equal to 55.0 million gallons/year using 12-month Rolling Sum of denatured ethanol. Calculate a new 12-month rolling sum by the 15th day of each month. Maintain records of the 12-month rolling sum at the facility.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Process Throughput: less than or equal to 550000 tons/year using 12-month Rolling Sum of grain assuming 56 pounds per bushel of grain. Calculate a new 12-month rolling sum by the 15th day of each month. Maintain records of the 12-month rolling sum at the facility.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Process Throughput: less than or equal to 178359 tons/year using 12-month Rolling Sum of distillers dry grains (DDGS). Calculate a new 12-month rolling sum by the 15th day of each month. Maintain records of the 12-month rolling sum at the facility.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Fuel Use: Fuel used in all production units is limited to natural gas, except for Dryer A (EU049) which is authorized to use biogas from the Methanators (EU054 and EU055).	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
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)
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: Conduct all performance tests in accordance with Minn. R. ch. 7017 unless otherwise noted in Tables A, B, and/or C.	Minn. R. ch. 7017

Facility Name: Highwater Ethanol LLC

Permit Number: 12700053 - 001

Performance Test Notifications and Submittals: Performance Tests are due as outlined in Tables A and B of the permit. See Table B for additional testing requirements. Performance Test Notification (written): due 30 days before each Performance Test Performance Test Plan: due 30 days before each Performance Test Performance Test Pre-test Meeting: due 7 days before each Performance Test Performance Test Report: due 45 days after each Performance Test Performance Test Report - Microfiche Copy: due 105 days after each Performance Test The Notification, Test Plan, and Test Report may be submitted in alternative format as allowed by Minn. R. 7017.2018.	Minn. Rs. 7017.2030, subp. 1-4, 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 stated in the MPCA's Notice of Compliance letter granting preliminary approval. Preliminary approval is based on formal review of a subsequent performance test on the same unit as specified by Minn. R. 7017.2025, subp. 3. The limit is final upon issuance of a permit amendment incorporating the change.	Minn. R. 7017.2025
MODELING REQUIREMENTS	hdr
The Permittee shall comply with National Primary and Secondary Ambient Air Quality Standards, 40 CFR pt. 50, and the Minnesota Ambient Air Quality Standards, Minn. R. 7009.0010 to 7009.0080. Compliance shall be demonstrated upon written request by the MPCA.	40 CFR pt. 50; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subps. 7A, 7L & 7M; Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080.
The Permittee shall install fencing around the Facility. The fencing shall be fully installed prior to receipt of corn at the Facility. In areas where fencing is not permissible by set-backs, 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.	Minn. R. 7009.0020; Minn. R. 7007.0800, subp. 2
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.	Minn. R. 7009.0020; Minn. R. 7007.0800, subp. 2
MONITORING REQUIREMENTS	hdr
Monitoring Equipment Calibration: Calibrate annually, at a minimum, 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, B, and/or C, monitoring a process or control equipment connected to that process is not necessary during periods when the process is shutdown, or during checks of the monitoring systems, such as calibration checks and zero and span adjustments. If monitoring records are required, they should reflect any such periods of process shutdown or checks of the monitoring system.	Minn. R. 7007.0800, subp. 4(D)
RECORDKEEPING	hdr
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

Facility Name: Highwater Ethanol LLC

Permit Number: 12700053 - 001

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
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
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 http://www.epa.gov/swercepp or by calling 1-800-424-9346.	40 CFR Pt. 68

Facility Name: Highwater Ethanol LLC

Permit Number: 12700053 - 001

Subject Item: **GP 001 Dry Bulk Commodity Facility**

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

EU 001 Phase 1 - Truck Receiving 1

EU 002 Phase 1 - Truck Receiving 2 & Rail Receiving

EU 003 Phase 1 - Elevator Leg 1

EU 004 Phase 1 - Grain Bin Fill Conveyor

EU 005 Phase 1 - Grain Bin 1

EU 006 Phase 1 - Grain Bin 2

EU 007 Phase 1 - Emptying Conveyor

EU 008 Phase 1 - Elevator Leg 2

EU 009 Phase 1 - Grain Day Bin

EU 010 Phase 1 - Hammermill Feed Conveyor

EU 011 Phase 1 - Hammermill 1

EU 012 Phase 1 - Hammermill 2

EU 058 Phase 2 - Grain Bin 3

EU 062 Phase 1 - Hammermill 3

SV 001 Grain Unloading

SV 002 Hammermill Baghouse

What to do	Why to do it
Opacity: less than or equal to 5.0 percent opacity	Minn. R. 7011.1005, subp. 3(A)
Opacity: less than or equal to 10.0 percent opacity for fugitive emissions associated with truck loading operations.	Minn. R. 7011.1005, subp. 3(B)
Process Throughput: less than or equal to 550000 tons/year using 12-month Rolling Sum of grain assuming 56 pounds per bushel of grain. Calculate a new 12-month rolling sum by the 15th day of each month. Maintain records of the 12-month rolling sum at the facility.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Vent all captured emissions through a baghouse. See GP002 and GP003 for baghouse operation and maintenance.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Once per day a visual inspection shall be made of the dry bulk commodity facility. If fugitive emissions are observed, corrective actions shall be taken. Record each inspection, the condition of the roads, and corrective action(s) taken, if any.	Minn. R. 7007.0800, subp. 4, 5, and 14
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), maintain air pollution control equipment in proper operating condition and utilize the air pollution control systems s designed.	Minn. R. 7011.1005, subp. 1(A)

Facility Name: Highwater Ethanol LLC

Permit Number: 12700053 - 001

Subject Item: **GP 003 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 005 Centrifugal Collector - High Efficiency

CE 006 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 009 Centrifugal Collector - High Efficiency

What to do	Why to do it
Opacity: less than or equal to 10.0 percent opacity	Minn. R. 7011.1005, subp. 3(D)
This requirement applies individually to each fabric filter. The Permittee shall operate and maintain the control equipment such that it achieves an overall collection efficiency for Particulate Matter < 10 micron: greater than or equal to 99 percent capture efficiency	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
This requirement applies individually to each fabric filter. The Permittee shall operate and maintain the control equipment such that it achieves an overall collection efficiency for Total Particulate Matter: greater than or equal to 99 percent collection efficiency	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Pressure Drop: greater than or equal to 1 inches of water column and less than or equal to 6 inches of water column	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
The Permittee shall operate and maintain the fabric filter at all times that any emission unit controlled by the fabric filter is in operation. The Permittee shall document periods of non-operation of the control equipment.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Operation and Maintenance of the Fabric Filter: The Permittee shall operate and maintain each fabric filter according to the control equipment manufacturer's specifications and/or in accordance with the Operation and Maintenance Plan (O&M Plan).	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Visible Emissions: The Permittee shall check the fabric filter stacks for any visible emissions once each day of operation during daylight hours, or the pressure drop across the fabric filter once each day of operation if inclement weather prevents a visible emissions check.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Recordkeeping of visible emissions and pressure drop: The Permittee shall record the time and date of each visible emissions inspection and pressure drop reading, and whether or not the pressure drop was within the range specified in the Operation and Maintenance Plan required by this permit.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Corrective Action: If visible emissions are observed, if the pressure drop is outside the specified range, and/or if the fabric filter or any of its components are found to need repair, the Permittee shall follow the corrective action procedures in the Operation and Maintenance Plant for the fabric filter as soon as possible to eliminate the visible emissions, return the pressure drop to within the specified range, and/or complete the identified repairs. The Permittee shall keep a record of the type and date of all corrective actions taken.	Minn. R. 7007.0800, subp. 4, 5, and 14
Inspect quarterly, or more frequently if required by manufacturers' 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 taken as a result of the inspection.	Minn. R. 7007.0800, subp. 2 and subp. 14
Inspect quarterly, or more frequently if required by manufacturers' specifications, all components that are subject to wear or plugging. Maintain a written record of the inspection and any action taken as a result of the inspection.	Minn. R. 7007.0800, subp. 2 and subp. 14
Calibrate the gauges annually, or more frequently if required by manufacturers' specifications, and maintain a written record of the calibration and any action resulting from the calibration.	Minn. R. 7007.0800, subp. 2 and subp. 14
Monitoring Equipment: The Permittee shall install and maintain the necessary monitoring equipment for measuring and recording pressure drop as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored fabric filter is in operation.	Minn. R. 7007.0800, subp. 4

Facility Name: Highwater Ethanol LLC

Permit Number: 12700053 - 001

Subject Item: **GP 004 Fermentation Units Controlled by Gas Scrubber CE003**

Associated Items: CE 003 Packed-Gas Adsorption Column

EU 026 Phase 1 - Fermenter 4

EU 027 Phase 1 - Beer Well

EU 028 Phase 1 - Beer Column

EU 029 Phase 1 - Side Stripper

EU 030 Phase 1 - Rectifier Column

SV 003 CO2 Scrubber

What to do	Why to do it
Volatile Organic Compounds: greater than or equal to 95.0 percent control efficiency	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Vent all emissions to the CO2 (fermentation) scrubber (CE003).	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Pressure Drop: Within the range specified in the approved Operation and Maintenance Plan for the CO2 scrubber, or as measured during the most recent stack emissions test that demonstrated compliance.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Scrubber Water Flow Rate: Within the range specified in the Operation and Maintenance Plan for the CO2 scrubber, or as measured during the most recent MPCA approved stack emissions test that demonstrated compliance.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
If the pressure drop and/or scrubber water flow rate are not within the specified range, the Permittee shall take corrective action as soon as possible to achieve the required operating conditions. The Permittee shall keep a record of the type and date of all corrective actions taken.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Calibrate the gauges annually or as often as required by manufacturer s specifications and maintain a written record of the calibration and any action resulting from the calibration.	Minn. R. 7007.0800, subp. 2 and 14
Inspect monthly, or as required by manufacturers 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 14
Initial Performance Test: due 180 days after Initial Startup for total mass VOC emissions.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
The Permittee shall operate and maintain the gas scrubber at all times that any emission unit controlled by the gas scrubber is in operation. The Permittee shall document periods of non-operation of the control equipment.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Operation and Maintenance of the Gas Scrubber: The Permittee shall operate and maintain each gas scrubber according to the control equipment manufacturer's specifications and/or in accordance with the Operation and Maintenance Plan (O&M Plan).	Minn. R. 7007.0800, subp. 14
Recordkeeping of water flow rate and pressure drop: The Permittee shall record the time and date of each water flow rate measurement and pressure drop reading, and whether or not the water flow rate and pressure drop were within the ranges specified in the Operation and Maintenance Plan required by this permit.	Minn. R. 7007.0800, subp. 4, 5, and 14
Monitoring Equipment: The Permittee shall install and maintain the necessary monitoring equipment for measuring and recording water flow rate and pressure drop as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored gas scrubber is in operation.	Minn. R. 7007.0800, subp. 4

Facility Name: Highwater Ethanol LLC

Permit Number: 12700053 - 001

Subject Item: **GP 005 Distillation and Units Venting to the Thermal Oxidizer**

Associated Items: CE 004 Direct Flame Afterburner w/Heat Exchanger

EU 016 Phase 1 - Cook Tube

EU 017 Phase 1 - Flash Tank

EU 018 Phase 1 - Receiver Tank

EU 019 Phase 1 - Liquifaction Tank 1

EU 022 Phase 1 - Yeast Tank 2

EU 031 Phase 1 - 190 Proof Condenser

EU 032 Phase 1 - Molecular Sieve

EU 033 Phase 1 - 200 Proof Condenser

EU 034 Phase 1 - Centrifuge 1

EU 035 Phase 1 - Centrifuge 2

EU 036 Phase 1 - Centrifuge 3

EU 037 Phase 1 - Evaporator 1

SV 004 TO/HRSG

What to do	Why to do it
Vent all emissions to the Thermal Oxidizer (CE004). See Thermal Oxidizer (CE004) for operation and maintenance requirements for the Thermal Oxidizer.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200

Facility Name: Highwater Ethanol LLC

Permit Number: 12700053 - 001

Subject Item: **GP 006 Dryers**

Associated Items: EU 045 Phase 1 - Dryer A

EU 046 Phase 1 - Dryer B

What to do	Why to do it
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. 7001.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0610, subp. 1(A)(1)
Opacity: less than or equal to 20 percent opacity except for one six minute period per hour of not more than 60% Opacity.	Minn. R. 7011.0610, subp. 1(A)(2)
Vent all emissions to the Thermal Oxidizer (CE004). See Thermal Oxidizer (CE004) for operation and maintenance requirements for the Thermal Oxidizer.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
The Permittee shall operate and maintain the dryers in accordance with the Operation and Maintenance (O&M) Plan. The Permittee shall keep copies of the O&M Plan onsite for use by staff and MPCA staff.	Minn. R. 7007.0800, subp. 14

Facility Name: Highwater Ethanol LLC

Permit Number: 12700053 - 001

Subject Item: **GP 007 Tanks**

Associated Items: TK 001 190 Proof Ethanol

TK 002 200 Proof Ethanol

TK 003 Gasoline Denaturant

TK 004 Denatured Ethanol 1

TK 005 Denatured Ethanol 2

What to do	Why to do it
POLLUTION CONTROL REQUIREMENTS	hdr
The storage vessel shall be equipped with a fixed roof in combination with an internal floating roof meeting the specifications of paragraph (a)(1) of this section.	40 CFR Section 60.112b(a); Minn. R. 7011.1520(C)
The internal roof shall be equipped with the following closure devices between the wall of the storage vessel and the edge of the internal floating roof. (B) Two seal mounted one above the other so that each forms a continuous closure that completely covers the space between the wall of the storage vessel and the edge of the internal floating roof. The lower seal may be vapor-mounted, but both must be continuous.	40 CFR Section 60.112b(a)(1)(ii)(B); Minn. R. 7011.1520(C)
MONITORING REQUIREMENTS	hdr
Visually inspect the internal floating roof, the primary seal, and the secondary seal, prior to filling the storage vessel with Volatile Organic Liquid (VOL). If there are holes, tears, or other openings in the primary seal, the secondary seal, or the seal fabric, or defects in the internal floating roof, or both, the owner or operator shall repair the items before filling the storage vessel.	40 CFR Section 60.113b(a)(1); Minn. R. 7011.1520(C)
For vessels equipped with a liquid-mounted or mechanical shoe primary seal, visually inspect the internal floating roof, the primary seal, and the secondary seal through manholes and roof hatches on the fixed roof at least once every twelve (12) months after initial fill in accordance with 40 CFR Section 60.113b(a)(2).	40 CFR Section 60.113b(a)(2); Minn. R. 7011.1520(C)
For vessels equipped with a double-seal system as specified in 40 CFR Section 60.112b(a)(1)(ii)(B): (i) Visually inspect the internal floating roof, the primary seal, the secondary seal, gaskets, slotted membranes, and sleeve seals (if any) each time the storage vessel is emptied and degassed, in accordance with 40 CFR Section 60.113b(a)(4). In no event shall inspections conducted in accordance with this provision occur at intervals greater than five (5) years; or (ii) Visually inspect the internal floating roof, the primary seal, and the secondary seal through manholes and roof hatches on the fixed roof at least once every twelve (12) months after initial fill in accordance with 40 CFR Section 60.113b(a)(2).	40 CFR Section 60.113b(a)(3); Minn. R. 7011.1520(C)
RECORDKEEPING REQUIREMENTS	hdr
Recordkeeping: Maintain records showing the dimensions of each tank and an analysis showing the tank capacity.	40 CFR Section 60.116b(b); Minn. R. 7011.1520(c)
Keep a record of each inspection performed as required by 40 CFR Section 60.113b(a)(1), (a)(2), (a)(3), and (a)(4). Each record shall identify the storage vessel on which the inspection was performed and shall contain the date the vessel was inspected and the observed condition of each component of the control equipment (seals, internal floating roof, and fittings).	40 CFR Section 60.116b(a)(2); Minn. R. 7011.1520(c)
Recordkeeping: Maintain a record of the volatile organic liquid stored, the period of storage, and the maximum true vapor pressure during the respective storage period.	40 CFR Section 60.116b(c); Minn. R. 7011.1520(c)
REPORTING REQUIREMENTS	hdr
After each inspection required by 40 CFR Section 60.113b(a)(3) that finds holes or tears in the 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)

Facility Name: Highwater Ethanol LLC

Permit Number: 12700053 - 001

Notification: If an inspection is required (under 40 CFR Section 60.113b(a)(1) or 40 CFR Section 60.113b(a)(3)(i), notify the Administrator in writing at least thirty (30) days prior to the filling or refilling of the storage vessel, to afford the Administrator the opportunity to have an observer present. If the inspection is not planned and the owner or operator could not have known about the inspection 30 days in advance of refilling the tank, the owner or operator shall notify the Administrator at least 7 days prior to refilling the storage vessel. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent by express mail so that it is received by the Administrator at least 7 days prior to refilling.	40 CFR Section 60.115b(a)(5); Minn. R. 7011.1520(c)

Facility Name: Highwater Ethanol LLC

Permit Number: 12700053 - 001

Subject Item: **GP 008 Grain Receiving and DDGS Loadout**

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

EU 001 Phase 1 - Truck Receiving 1

EU 002 Phase 1 - Truck Receiving 2 & Rail Receiving

EU 003 Phase 1 - Elevator Leg 1

What to do	Why to do it
The Permittee shall keep at least one door to the DDGS loadout area closed while loading DDGS.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Vent all captured emissions from the grain receiving area to the Unloading/Loading Baghouse (CE001) and all emissions from the DDGS loadout area to the DDGS Loading Baghouse (CE006).	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200

Facility Name: Highwater Ethanol LLC

Permit Number: 12700053 - 001

Subject Item: **GP 009 Hammermills**

Associated Items: CE 002 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

EU 010 Phase 1 - Hammermill Feed Conveyor

EU 011 Phase 1 - Hammermill 1

EU 012 Phase 1 - Hammermill 2

EU 062 Phase 1 - Hammermill 3

SV 002 Hammermill Baghouse

What to do	Why to do it
Opacity: less than or equal to 5.0 percent opacity	Minn. R. 7011.1005, subp. 3(A)
Periodic monitoring requirements for baghouses can be found under GP002 and GP003 Baghouses.	Minn. R. 7007.0800, subp. 4(B)
Process Throughput: less than or equal to 550000 tons/year using 12-month Rolling Sum of grain assuming 56 pounds per bushel of grain. Calculate a new 12-month rolling sum by the 15th day of each month. Maintain records of the 12-month rolling sum at the facility.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Vent all captured emissions through a baghouse. See GP002 and GP003 for baghouse operation and maintenance.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200

Facility Name: Highwater Ethanol LLC

Permit Number: 12700053 - 001

Subject Item: **GP 010 Flaring**

Associated Items: CE 007 Flaring

CE 008 Flaring

EU 052 Phase 1 - Methanator Flare

EU 055 Phase 1 - Fuel Loadout - Flare

SV 007 Methanator Flare

SV 008 Truck Loadout Flare

What to do	Why to do it
EMISSION LIMITS	hdr
Visible Emissions: No visible emissions except for a period not to exceed 5 minutes in any 2 consecutive hours.	40 CFR Section 60.18(c)(1)
OPERATING REQUIREMENTS	hdr
Records Requirement: Keep a record of any startup, shutdown, or malfunction in the affected facility or malfunction of the pollution control equipment.	NSPS Subpart A 40 CFR Section 60.7(b)
Summary Report: Submit report quarterly, postmarked by the 30th day following the end of each calendar quarter. Summary Report content and format is defined in 40 CFR Section 60.7(e).	40 CFR Section 60.7(c)
Summary report submittal frequency may be reduced according to compliance status and notification procedures defined in 40 CFR Section 60.7(e).	40 CFR Section 60.7(e)
Recordkeeping: Maintain a file of all measurements, CMS performance evaluations, calibration checks, adjustments and maintenance, and all other information required by this part in permanent form, suitable for inspection for at least two years following the date of such measurements, maintenance, and records.	40 CFR Section 60.7(f)
Compliance Requirement: For opacity standards, use Reference Method 9 to determine initial compliance; the minimum total time of observations shall be 3 hours (30-6 minute averages) for the performance test or other set of observations (meaning those fugitive type emission sources subject only to an opacity standard).	40 CFR Section 60.11(b)
Operation Requirement: At all times, including periods of startup, shutdown, and malfunction, owners shall maintain and operate any affected facility in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.	40 CFR Section 60.11(d)
Performance and Opacity Tests: Results shall be sent to the Commissioner.	40 CFR Section 60.11(e)(2)
Operating Requirement: Flares shall be operated with a flame present at all times.	40 CFR Section 60.18(c)(2)
Operating Requirement: Flares must be used only if the combustion gas has a heating value of 300 Btu/scf or greater.	40 CFR Section 60.18(c)(3)
Construction and Operation Requirement: Steam assisted flares designed and operated with an exit velocity less than Vmax (as determined by the method specified in 40 CFR Section 60.18(f)(5) and less than 400 ft/sec are allowed.	40 CFR Section 60.18(c)(4)(iii)
Construction Requirement: Flares used to comply with this section shall be steam assisted, air assisted, or nonassisted.	40 CFR Section 60.18(c)(6)
Operation Requirement: Flares shall be monitored to ensure that they are operated and maintained in conformance with their design.	40 CFR Section 60.18(d)
Operation Requirement: Flares shall be operated at all times when emissions may be vented to them.	40 CFR Section 60.18(e)
Compliance Requirement: After initial compliance has been demonstrated, Reference Method 22 shall be used to determine the compliance of flares with the visible emissions provisions of this subpart.	40 CFR Section 60.18(f)(1)
Operation Requirement: Flame presence shall be monitored using a thermocouple or any other equivalent device.	40 CFR Section 60.18(f)(2)

Facility Name: Highwater Ethanol LLC

Permit Number: 12700053 - 001

Subject Item: **GP 011 Ethanol Loadout**

Associated Items: EU 053 Phase 1 - Fuel Loadout - Rail

EU 054 Phase 1 - Fuel Loadout - Truck

What to do	Why to do it
Vent all emissions when loading ethanol into trucks to a flare. See GP010 for requirements for the flare.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
All rail cars must be dedicated fleet (carry only ethanol). No loadout controls are required for the dedicated fleet rail cars. To be considered dedicated, the rail cars must be placarded as ethanol transportation cars.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Highwater Ethanol LLC

Permit Number: 12700053 - 001

Subject Item: **GP 012 Methanators**

Associated Items: EU 050 Phase 1 - Methanator 1

EU 051 Phase 1 - Methanator 2

What to do	Why to do it
Vent all emissions to the flare or to dryer A (EU049). See EU049 and GP010 for requirements for the control equipment.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200

Facility Name: Highwater Ethanol LLC

Permit Number: 12700053 - 001

Subject Item: **EU 052 Phase 1 - Methanator Flare**

Associated Items: CE 007 Flaring

GP 010 Flaring

SV 007 Methanator Flare

What to do	Why to do it
Operating Hours: less than or equal to 500 hours/year using 12-month Rolling Sum . Calculate a new 12-month rolling sum by the 15th day of each month. Maintain records of the 12-month rolling sum at the facility.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Maintain records of all usage of the Methanator Flare. The records shall include, at a minimum, the date of each use and the hours of operation.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200

Facility Name: Highwater Ethanol LLC

Permit Number: 12700053 - 001

Subject Item: **EU 055 Phase 1 - Fuel Loadout - Flare**

Associated Items: CE 008 Flaring

GP 010 Flaring

SV 008 Truck Loadout Flare

What to do	Why to do it
Operating Hours: less than or equal to 69.44 hours/year using 12-month Rolling Sum . Calculate a new 12-month rolling sum by the 15th day of each month. Maintain records of the 12-month rolling sum at the facility.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Maintain records of all usage of the Fuel Loadout Flare. The records shall include, at a minimum, the date of each use and the hours of operation.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200

Facility Name: Highwater Ethanol LLC

Permit Number: 12700053 - 001

Subject Item: **EU 057 Phase 1 - Diesel Fire Water Pump Engine**

Associated Items: SV 010 Fire Water Pump Engine

What to do	Why to do it
Operating Hours: less than or equal to 500 hours/year using 12-month Rolling Sum . Calculate a new 12-month rolling sum by the 15th day of each month. Maintain records of the 12-month rolling sum at the facility.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Maintain records of all usage of the Fire Water Pump. The records shall include, at a minimum, the date of each use and the hours of operation.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.2300, subp. 1
Sulfur Dioxide: less than or equal to 0.5 lbs/million Btu heat input	Minn. R. 7011.2300, subp. 2
Fuel type: No. 2 diesel fuel	Minn. R. 7005.0100, subp. 35a
Fuel Supplier Certification: The Permittee shall obtain and maintain a fuel supplier certification for each shipment of No. 2 diesel fuel, certifying that the sulfur content does not exceed 0.5% by weight.	Minn. R. 7007.0800, subps. 4 & 5

Facility Name: Highwater Ethanol LLC

Permit Number: 12700053 - 001

Subject Item: EU 061 Phase 1 - Wet Cake Storage and Loadout

What to do	Why to do it
Volatile Organic Compounds: less than or equal to 18.15 tons/year using 12-month Rolling Sum . Calculate a new 12-month rolling sum by the 15th day of each month. Maintain records of the 12-month rolling sum at the facility. During the first 12 months of operation, VOC emissions will be limited on the following monthly rolling sum basis: Month 1: 6.50 tons Month 2: 7.50 tons Month 3: 8.50 tons Month 4: 9.50 tons Month 5: 10.5 tons Month 6: 11.50 tons Month 7: 12.50 tons Month 8: 13.5 tons Month 9: 14.5 tons Month 10: 15.5 tons Month 11: 17.00 tons	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Within 30 days of permit issuance, the Permittee shall submit to the MPCA for Commissioner approval, a methodology for determining the total VOC emissions and speciated VOC emissions including acetaldehyde, acrolein, formaldehyde, methanol, and furancarboxaldehyde (furfuraldehyde) from wetcake production, storage, and loadout.	Minn. R. 7007.0800, subp. 2
Within 60 days of MPCA approval of the wetcake VOC emission determination methodology, the Permittee shall conduct testing in accordance with the methodology.	Minn. R. 7007.0800, subp. 2
Within 60 days after conducting the wetcake VOC emission testing, the Permittee shall submit to the MPCA the results of the testing including an emission factor in pounds of VOC per ton of wetcake produced, stored, and loaded.	Minn. R. 7007.0800, subp. 2
The Permittee may produce wetcake as part of its normal operations.	Minn. R. 7007.0800, subp. 2
When wetcake by-product is produced, it may be stored for no more than 72 hours on-site unless the outside temperature is less than 55 degrees F. In all cases, the wetcake will be moved off-site as soon as possible. Maintain daily records of wetcake storage, including quantity of wetcake stored, ambient temperature, and duration of wetcake storage.	Minn. R. 7007.0800, subp. 2

Facility Name: Highwater Ethanol LLC

Permit Number: 12700053 - 001

Subject Item: **CE 004 Direct Flame Afterburner w/Heat Exchanger**

Associated Items: EU 013 Phase 1 - Mixer

EU 014 Phase 1 - Slurry Tank 1

EU 015 Phase 1 - Slurry Tank 2

EU 016 Phase 1 - Cook Tube

EU 017 Phase 1 - Flash Tank

EU 018 Phase 1 - Receiver Tank

EU 019 Phase 1 - Liquifaction Tank 1

EU 020 Phase 1 - Liquifaction Tank 2

EU 021 Phase 1 - Yeast Tank 1

EU 022 Phase 1 - Yeast Tank 2

EU 028 Phase 1 - Beer Column

EU 029 Phase 1 - Side Stripper

EU 030 Phase 1 - Rectifier Column

EU 031 Phase 1 - 190 Proof Condenser

EU 032 Phase 1 - Molecular Sieve

EU 033 Phase 1 - 200 Proof Condenser

EU 034 Phase 1 - Centrifuge 1

EU 035 Phase 1 - Centrifuge 2

EU 036 Phase 1 - Centrifuge 3

EU 037 Phase 1 - Evaporator 1

EU 038 Phase 1 - Evaporator 2

EU 039 Phase 1 - Evaporator 3

EU 040 Phase 1 - Evaporator 4

EU 041 Phase 1 - Evaporator 5

EU 042 Phase 1 - Evaporator 6

EU 043 Phase 1 - Evaporator 7

EU 044 Phase 1 - Evaporator 8

EU 045 Phase 1 - Dryer A

EU 046 Phase 1 - Dryer B

EU 047 Phase 1 - Thermal Oxidizer

GP 005 Distillation and Units Venting to the Thermal Oxidizer

What to do	Why to do it
EMISSION LIMITS	hdr
Volatile Organic Compounds: less than or equal to 0.3834 lbs/million Btu heat input	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Volatile Organic Compounds: greater than or equal to 95 percent destruction efficiency	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200

Nitrogen Oxides: less than or equal to 0.10 lbs/million Btu heat input	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200; this limit also satisfies the requirements of 40 CFR Section 60.44b
Nitrogen Oxides: greater than or equal to 95 percent destruction efficiency	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Carbon Monoxide: less than or equal to 0.099 lbs/million Btu heat input	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Carbon Monoxide: greater than or equal to 95 percent destruction efficiency	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Total Particulate Matter: less than or equal to 0.0169 lbs/million Btu heat input	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Total Particulate Matter: greater than or equal to 90 percent destruction efficiency	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. 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 0.0169 lbs/million Btu heat input	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. 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 90 percent destruction efficiency	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
OPERATING REQUIREMENTS	hdr
Temperature: greater than or equal to 1500 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. 7007.0300. 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. The Permittee shall document all periods of non-operation of the thermal oxidizer.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Quarterly Inspections: At least once per calendar quarter, the Permittee shall inspect the control equipment external system components, including but not limited to the heat exchanger and electrical systems. The Permittee shall maintain a written record of the inspection and any corrective action taken as a result of the inspection. The Permittee shall inspect the control equipment internal components during all planned shutdowns and not less than annually, including, but not limited to, the refractory.	Minn. R. 7007.0800, subp. 4, 5, and 14
Corrective Actions: If the temperature is below the minimum specified by this permit or if any of its components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall return the temperature to at least the permitted minimum and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O&M Plan for the thermal oxidizer. The Permittee shall keep a record of the type and date of any corrective action taken.	Minn. R. 7007.0800, subp. 4, 5, and 14
The Permittee shall operate and maintain the thermal oxidizer in accordance with the Operations and Maintenance (O&M) Plan. The Permittee shall keep copies of the O&M Plan available on-site for use by staff and MPCA staff.	Minn. R. 7007.0800, subp. 14
PERFORMANCE TESTING REQUIREMENTS	hdr

Facility Name: Highwater Ethanol LLC

Permit Number: 12700053 - 001

Performance Test: due 180 days after Permit Issuance for Volatile Organic Compounds.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Performance Test: due 180 days after Permit Issuance for Nitrogen Oxides.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Performance Test: due 180 days after Permit Issuance for Carbon Monoxide.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Performance Test: due 180 days after Initial Startup for Particulate Matter.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Performance Test: due 180 days after Permit Issuance for Particulate Matter less than 10 microns.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
MONITORING REQUIREMENTS	hdr
Monitoring Equipment: The Permittee shall install and maintain thermocouples to conduct temperature monitoring required by this permit. The monitoring equipment must be installed, in use, and properly maintained whenever operation of the monitored equipment is required.	Minn. R. 7007.0800, subp. 4
The Permittee shall maintain a continuous hard copy readout or computer disk file of the temperature readings and three-hour rolling average temperatures for the thermal oxidizer combustion chamber.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Daily Monitoring: The Permittee shall physically check the temperature recording device at least once each operating day to verify that it is working and recording properly.	Minn. R. 7007.0800, subp. 4 and 5
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
The temperature monitoring device shall have a margin of error less than the greater of +/-0.75 percent of the temperature being measured or +/-2.5 Celsius. The recording device shall also calculate the three-hour rolling average combustion chamber temperature.	Minn. R. 7007.0800, subp. 4 and 5
RECORDKEEPING	hdr
Recordkeeping: Record and maintain records of the amounts of fuels combusted on a daily basis. These records may consist of purchase record or receipts.	40 CFR Section 60.13(i) and February 20, 1992 EPA memorandum to meet the requirements of 40 CFR Section 60.48c(g) and (i)
Maintain records of fuel combusted each day and calculate annual capacity factors for each fuel.	40 CFR Section 60.49b(d)
Maintain the following records for each operating day, and submit the information to the Agency quarterly: 1. Calendar date. 2. Average hourly nitrogen oxides emission rates expressed as NO2. 3. The 30-day average nitrogen oxides emission rate in lb/million Btu calculated at the end of each operating day. 4. Identification of the operating days when the calculated 30-day average nitrogen oxide emission rates are in excess of the standards in this permit. 5. Identification of the operating days for which pollutant data have not been obtained, including reasons for not obtaining sufficient data and a description of corrective action taken. 6. Identification of the times when emission data have been excluded from the calculation of average emission rates and reasons for excluding the data.	40 CFR Section 60.49b(g) and (h)
The Permittee subject to the nitrogen oxides standards of 40 CFR Section 60.44b who seeks to demonstrate compliance with those standards through the monitoring of steam generating unit operating conditions under the provisions of 40 CFR Section 60.48b(g)(2) shall submit to the Administrator a plan that identifies the operating conditions to be monitored under 40 CFR Section 60.48b(g)(2) and the records to be maintained under 40 CFR Section 60.49b(j).	40 CFR Section 60.49b(c)

This plan shall be submitted to the Administrator for approval within 360 days of the initial startup of the facility. The plan shall: 1. Identify the specific operating conditions to be monitored and the relationship between these operating conditions and nitrogen oxide emission rates (i.e. ng/J or lbs/million Btu heat input). Steam generating unit operating conditions include, but are not limited to, the degree of stage combustion (i.e. the ratio of primary air to secondary and/or tertiary air) and the level of excess air (i.e. flue gas oxygen level); 2. Include the data and information that the Permittee used to identify the relationship between nitrogen oxide emission rates and these operating conditions;	40 CFR Section 60.49b(c) CONTINUED
3. Identify how these operating conditions, including steam generating unit load, will be monitored under 40 CFR Section 60.48b(g) on an hourly basis by the Permittee during the period of operation of the affected facility; the quality assurance procedures or practices that will be employed to ensure that the data generated by monitoring these operating conditions will be representative and accurate; and the type and format of these operating conditions, including steam generating unit load, that will be maintained by the Permittee under 40 CFR Section 60.49b(j). If the plan is approved, the Permittee shall maintain records of predicted nitrogen oxide emission rates and the monitored operating conditions, including steam generating unit load, identified in the plan.	40 CFR Section 60.49b(c) CONTINUED

Facility Name: Highwater Ethanol LLC

Permit Number: 12700053 - 001

Subject Item: FS 001 Truck Traffic on Paved Roads

What to do	Why to do it
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 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

Facility Name: Highwater Ethanol LLC

Permit Number: 12700053 - 001

Subject Item: FS 002 Equipment Leaks

What to do	Why to do it
STANDARDS: PUMPS	hdr
Pumps in light liquid service: (a)(1) Each pump in light liquid service shall be monitored monthly to detect leaks by methods specified in 40 CFR Section 60.482-1(c) and paragraphs (d), (e), and (f). (2) Each pump in light liquid service shall be checked by visual inspection each calendar week for indications of liquids dripping from the seal.	40 CFR Section 60.482-2(a)
(b)(1) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected. (2) If there are indications of liquids dripping from the pump seal, a leak is detected. (c)(1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in 40 CFR Section 60.482-9 (Delay of Repair).	40 CFR Section 60.482-2(b) and (c)
STANDARDS: COMPRESSORS	hdr
(a) Each compressor shall be equipped with a seal system that includes a barrier fluid system and that prevents leakage of VOC to the atmosphere, except as provided in 40 CFR Section 60.482-1(c) and 40 CFR Section 60.482-3(h) and (i).	40 CFR Section 60.482-3(a)
(b) Each compressor seal system shall be: (1) Operated with the barrier fluid at a pressure that is greater than the compressor stuffing box pressure; or (2) Equipped with a barrier fluid system that is connected by a closed vent system to a control device that complies with the requirements of 40 CFR Section 60.482-10; or (3) Equipped with a system that purges the barrier fluid into a process stream with zero VOC emissions to the atmosphere.	40 CFR Section 60.482-3(b)
(c) The barrier fluid system shall be in heavy liquid service or shall not be in VOC service. (d) Each barrier fluid system shall be equipped with a sensor that will detect failure of the seal system, barrier fluid system, or both.	40 CFR Section 60.482-3(c) and (d)
(e)(1) Each senor shall be checked daily or shall be equipped with an audible alarm. (2) The owner or operator shall determine, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both.	40 CFR Section 60.482-3(e)
(f) If the sensor indicates failure of the seal system, the barrier system, or both based on the criterion determined under paragraph (e)(2), a leak is detected.	40 CFR Section 60.482-3(f)
(g)(1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in 40 CFR Section 60.482-9 (Delay of Repair). (2) A first attempt at repair shall be made no later than 15 calendar days after it is detected, except as provided in 40 CFR Section 60.482-9.	40 CFR Section 60.482-3(g)
STANDARDS: PRESSURE RELIEF DEVICES IN GAS/VAPOR SERVICE	hdr
(a) Except during pressure releases, each pressure relief device in gas/vapor service shall be operated with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background as determined by the methods specified in 40 CFR Section 60.485(c).	40 CFR Section 60.482-4(a)
(b)(1) After each pressure release, the pressure relief device shall be returned to a condition of no detectable emissions as indicated by an instrument reading of less than 500 ppm above background, as soon as practicable, but no later than 5 calendar days after the pressure release, except as provided in 40 CFR Section 60.482-9 (Delay of Repair).	40 CFR Section 60.482-4(b)
STANDARDS: SAMPLING CONNECTION SYSTEMS	hdr
(a) Each sampling connection system shall be equipped with a closed-purged, closed loop, or closed-vent system, except as provided in 40 CFR Section 60.482-1(c).	40 CFR Section 60.482-5(a)

(b) Each closed-purge, closed-loop, or closed-vent system shall: (1) Return the purged process fluid directly to the process line; or (2) Collect and recycle the purged process fluid to a process; or (3) Be designed and operated to capture and transport all the purged process fluid to a control device that complies with the requirements of 40 CFR Section 60.482-10. (c) In situ sampling systems are exempt from these requirements:	40 CFR Section 60.482-5(b) and (c)
STANDARDS: OPEN ENDED VALVES OR LINES	hdr
(a)(1) Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or second valve, except as provided in 40 CFR Section 60.482-1(c). (2) The cap, blind flange, plug, or second valve shall seal the open end at all times except during operations requiring process fluid flow through the open-ended valve or line.	40 CFR Section 60.482-6(a)
(b) Each open-ended valve or line equipped with a second valve shall be operated in a manner such that the valve on the process fluid end is closed before the second valve is closed. (c) When a double block and bleed system is being used, the bleed valve or line may remain open during operations that require venting the line between the block valves but shall comply with paragraph (a) at all other times.	40 CFR Section 60.482-6(b) and (c)
STANDARDS: VALVES	hdr
(a) Each valve shall be monitored monthly to detect leaks by the methods specified in 40 CFR Section 60.485(b).	40 CFR Section 60.482-7(a)
(b) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected. (c)(1) Any valve for which a leak is not detected for 2 successive months may be monitored the first month of every quarter, beginning with the next quarter, until a leak is detected. (2) If a leak is detected, the valve shall be monitored monthly until a leak is not detected for 2 successive months.	40 CFR Section 60.482-7(b) and (c)
(d)(1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in 40 CFR Section 60.482-9. (2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.	40 CFR Section 60.482-7(d)
(e) First attempts at repair include, but are not limited to, the following best practices where practicable: (1) Tightening of bonnet bolts; (2) Replacement of bonnet bolts; (3) Tightening of packing gland nuts; (4) Injection of lubricant into lubricated packing.	40 CFR Section 60.482-7(e)
STANDARDS: PUMPS AND VALVES IN HEAVY LIQUID SERVICE, PRESSURE RELIEF DEVICES IN LIGHT LIQUID OR HEAVY LIQUID SERVICE, AND FLANGES, AND OTHER CONNECTORS	hdr
(a) Pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and flanges and other connectors shall be monitored within 5 days by the method specified in 40 CFR Section 60.485(b) if evidence of a potential leak is found by visual, audible, olfactory, or any other detection method.	40 CFR Section 60.482-8(a)
(b) If an instrument reading of 10,000 ppm and greater is measured, a leak is detected. (c)(1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in 40 CFR Section 60.482-9.	40 CFR Section 60.482-8(b) and (c)
(d) First attempts at repair include, but are not limited to, the best practices described under 40 CFR Section 60.482-7(e).	40 CFR Section 60.482-8(d)
DELAY OF REPAIR	hdr
(a) Delay of repair of equipment for which leaks have been detected will be allowed if the repair is technically infeasible without a process unit shutdown. Repair of this equipment shall occur before the end of the next process shutdown. (b) Delay of repair of equipment will be allowed for equipment which is isolated from the process and which does not remain in VOC service.	40 CFR Section 60.482-9(a) and (b)

Delay of repair for valves will be allowed if: (1) The owner or operator demonstrates that emissions of purged material resulting from the immediate repair are greater than the fugitive emissions likely to result from the delay of repair, and (2) When repair procedures are effected, the purged material is collected and destroyed or recovered in a control device complying with 40 CFR Section 60.482-10.	40 CFR Section 60.482-9(c)
(d) Delay of repair for pumps will be allowed if: (1) Repair required the use of a dual mechanical seal system that includes a barrier fluid system, and (2) Repair is completed as soon as practicable, but not later than 6 months after the leak is detected.	40 CFR Section 60.482-9(d)
Delay of repair beyond a process unit shutdown will be allowed for a valve, if valve assembly replacement is necessary during the process unit shutdown, valve assembly supplies have been depleted, and valve assembly supplies had been sufficiently stocked before the supplies were depleted. Delay of repair beyond the next process unit shutdown will not be allowed unless the next process unit shutdown occurs sooner than 6 months after the first process unit shutdown.	40 CFR Section 60.482-9(e)
TESTING PROCEDURES	hdr
Compliance shall be determined by the methods specified in 40 CFR Section 60.485.	40 CFR Section 60.485
RECORDKEEPING	hdr
(b) When each leak is detected, the following requirements apply: (1) A weatherproof and readily visible identification, marked with the equipment identification number, shall be attached to the leaking equipment. (2) The identification on a valve may be removed after it has been monitored for 2 successive months as specified in 40 CFR Section 60.482-7(c) and no leak has been detected during those 2 months. (3) The identification on equipment except on a valve may be removed after it has been repaired.	40 CFR Section 60.485b
(c) When each leak is detected the following information shall be recorded in a log and shall be kept for 2 years in a readily accessible location: (1) The instrument and operator identification numbers and the equipment identification number. (2) The date the leak was detected and the dates of each attempt to repair the leak. (3) Repair methods applied in each attempt to repair the leak. (4) "Above 10,000" if the maximum instrument reading measured by the methods specified in 40 CFR Section 60.485(a) after each repair attempt is equal to or greater than 10,000 ppm. (5) "Repair Delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak. (6) The signature of the owner or operator whose decision it was that the repair could not be effected without a process shutdown.	40 CFR Section 60.486(c)
(7) The expected date of the successful repair of the leak if a leak is not repaired within 15 days. (8) Dates of process unit shutdowns that occur while the equipment is unrepaired. (9) The date of successful repair of the leak.	40 CFR Section 60.486(c) CONTINUED
REPORTING REQUIREMENTS	hdr
Each owner or operator subject to the provisions of this subpart shall submit semiannual reports to the Administrator beginning six months after the initial startup date.	40 CFR Section 60.487(a)
(b) The initial semiannual report to the Administrator shall include the following information: (1) Process unit identification. (2) Number of valves subject to the requirements of 40 CFR Section 60.482-7. (3) Number of pumps subject to the requirements of 40 CFR Section 60.482-2. (4) Number of compressors subject to the requirements of 40 CFR Section 60.482-3.	40 CFR Section 60.487(b)

(c) All semiannual reports to the Administrator shall include the following information, summarized from the information in 40 CFR Section 60.486: (1) Process unit identification. (2) For each month during the semiannual reporting period, (i) Number of valves for which leaks were detected as described in 40 CFR Section 60.482(7) or 40 CFR Section 60.483-2, (ii) Number of valves for which leaks were not repaired as required in 40 CFR Section 60.482-7(d)(1), (iii) Number of pumps for which leaks were detected as described in 40 CFR Section 60.482-2(b) and (d)(6)(i), (iv) Number of pumps for which leaks were not repaired as required in 40 CFR Section 60.482-2(c)(1) and (d)(6)(ii),	40 CFR Section 60.487(c)
(v) Number of compressors for which leaks were detected as described in 40 CFR Section 60.482-3(f), (vi) Number of compressors for which leaks were not repaired as required in 40 CFR Section 60.482-3(g)(1), (vii) The facts that explain each delay of repair and, where appropriate, why a process unit shutdown was technically infeasible. (3) Dates of process unit shutdowns which occurred within the semiannual reporting period. (4) Revisions to items reported according to paragraph (b) if changes have occurred since the initial report or subsequent revisions to the initial report.	40 CFR Section 60.487(c) Continued
(e) Report the results of all performance tests in accordance with 40 CFR Section 60.8. The provisions of 40 CFR Section 60.8(d) do not apply to affected facilities subject to the provisions of this subpart except that an owner or operator must notify the Administrator of the schedule for the initial performance tests at least 30 days before the initial performance tests.	40 CFR Section 60.487(e)

TABLE B: SUBMITTALS

Facility Name: Highwater Ethanol LLC

Permit Number: 12700053 - 001

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.

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 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 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

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

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

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

TABLE B: ONE TIME SUBMITTALS OR NOTIFICATIONS

Facility Name: Highwater Ethanol LLC

Permit Number: 12700053 - 001

What to send	When to send	Portion of Facility Affected
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.	GP004

TABLE B: RECURRENT SUBMITTALS

Facility Name: Highwater Ethanol LLC

Permit Number: 12700053 - 001

What to send	When to send	Portion of Facility Affected
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 occured, 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

TECHNICAL SUPPORT DOCUMENT
For
AIR EMISSION PERMIT NO. 12700053-001

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 determination to issue the permit.

1. General Information

1.1. Applicant and Stationary Source Location

Applicant/Address	Stationary Source/Address (SIC Code: 2869
Highwater Ethanol 205 Main Street Lamberton, Minnesota 56152 Redwood County	Highwater Ethanol 205 Main Street Lamberton, Minnesota 56152 Redwood County
Contact: Brian Kletscher, Board Chairman Phone: 507-762-3376	

1.2. Description of the Permit Action

Highwater Ethanol, LLC (Highwater) proposes to construct a dry mill fuel ethanol production facility (Facility) in Redwood County. The Facility will be located approximately 0.8 miles west of Lamberton, Minnesota on the south side of Trunk Highway 14. The Facility will have the capacity to produce approximately 55 million gallons per year (MGY) of undenatured ethanol. Typically, the Facility will operate 24 hours per day, seven days per week, with periodic maintenance shutdown periods scheduled throughout the year.

Ethanol is an alcohol that is used as a fuel additive or extender produced by fermenting corn. The basic steps in ethanol production are preparation of the feedstock, fermentation, distillation, and recovery of the alcohol and residual corn solids in the form of either wetcake and/or Distiller's Dried Grains with Solubles (DDGS). The Facility will process approximately 27 million bushels of corn per year. The Facility is expected to produce up to 179,359 tons per year (TPY) DDGS and up to 107,018 TPY of wetcake, which will be used as high protein animal feed. The Facility will control odor using a Thermal Oxidizer (TO) that will have at least 97 percent destruction efficiency for Volatile Organic Compounds (VOC).

The following process description summarizes each process as it will exist at the Facility upon completion of construction:

Storage/Corn Processing Facility. Corn from the local area will be received via trucks and rail cars. Corn would be unloaded into a dust-controlled dump pit that will feed into grain bins. From the storage bins the corn will be transferred to a surge bin from which metered amounts of grain will be discharged into a hammermill system.

Hammermills. Two hammermills will then grind the corn into flour. The corn flour will be pneumatically conveyed to a flour receiver. The exhaust from both the hammermill and the conveyance system will be controlled by a baghouse.

Starch Conversion Process. The starch conversion process will break down the starch available in the corn and covert it to sugar. The corn meal will be metered into the slurry blender by means of a feed screw, where it will be converted into a liquefied mash suitable for cooking and blending with backset (thin stillage) for subsequent saccharification and fermentation. In the slurry tank the meal will be mixed with hot water, steam, and some backset. Liquefying enzyme will be added to the slurry blender to initiate the breakdown of long-chain starch molecules. Ammonia will be added to maintain the pH at a range of 5.5 to 6.5, which is optimum for the liquefying enzyme.

Mash will be pumped from the slurry tank to the jet cooker. The jet cooker will inject 150 pounds per square inch (psig) of steam under temperature control into the process stream, raising the mash temperature to a cooking temperature of approximately 280 degrees Fahrenheit (138 degrees Celsius). Mash will leave the jet cooker and will be cooled by flashing in the flash tank. Provisions will be made to add backset (thin stillage recycle) as part of the hot process water make-up. Mash will then be pumped to the liquefaction tank with liquefaction enzyme added to allow time for the enzyme to react with the starch, thereby reducing the mash viscosity. The mash will then be cooled and pH adjusted.

Fermentation Process. During the fermentation process, sugars (dextrins) in the mash will nourish the yeast to allow it to ferment to ethanol. Cooled liquefied mash from the liquefaction tank will be transferred to the fermenters. Yeast solids and urea will be added. Enzymes break the dextrins down into glucose, a simple sugar, which will be converted by the yeast into ethanol and Carbon Dioxide (CO2). The contents of the fermenters will be recirculated through the fermenter cooler to remove excess heat and to maintain a consistent temperature range. When fermentation is complete, the fermented beer will be transferred to the beer well. The beer well will serve as a surge tank connecting batch fermentation with continuous distillation.

The tanks will be cleaned and sterilized and a caustic solution will be applied to all internal surfaces to prevent infection. The fermenters and beer well will be vented to the CO2 scrubber. The recovered scrubber water, which contains some ethanol, will be returned to the process and the CO2 will be vented to the atmosphere. The caustic solution will be screened for reuse. The wastewaters (including reverse osmosis permeate flush, boiler wastewaters, washdown waters and floor drainage and wet air emission control wastewaters) generated by the ethanol, stillage and DDGS production processes are recycled and contained within the boiler and production process systems, and will have no blowdown or other release to the utility wastewater streams that ultimately discharge through outfall SD002. Clean-in-place (CIP) activities will be conducted periodically for the Facility as maintenance; CIP rinse waters, sediments and the residuals from the other non-utility waste streams noted above are returned to the ethanol manufacturing process, which leads to the ultimate generation of ethanol, stillage, wetcake and DDGS by-products. None of the Facility stillage, wetcake, DDGS or other by-products will be land-applied.

Distillation and Dehydration Process. In this process, the ethanol will be separated from the beer and purified to 200-proof anhydrous ethanol. Fermented beer from the beer well will be preheated and transferred to the beer column. The beer column alcohol vapors will be vented to the side stripper. In the stripper/rectifier fusel oils will be removed. The upper layer of the decanted fusel oil will be re-blended with anhydrous ethanol product.

The 190 proof ethanol feed vapor exciting from the top of the stripper/rectifier will pass through a molecular sieve bed and the ethanol vapors will be dehydrated to 199 proof. The anhydrous ethanol draw at 199+ proof will be condensed, cooled, and passed to ethanol product storage.

Ethanol Storage Tanks. The Facility will have seven aboveground storage tanks (AST), including two 750,000-gallon denatured ethanol storage ASTs, one 165,000-gallon 190-proof AST, one 165,000-gallon 200-proof AST, one 165,000-gallon denaturant AST, one 8,000-gallon sulfuric acid AST, and a 2,300-gallon corrosion inhibitor AST. All seven ASTs will be located within the Facilities tank farm, which will provide secondary containment for 110 percent of the contents of the largest AST as well as runoff from a significant rainfall event.

All water treatment chemicals will be stored indoors in 350-gallon totes, with the exception of Biotrol 509 (110-gallon tote) and MegaFloc 4302G (55-gallon drum). The water treatment chemicals will be stored in either the energy center or the water treatment building. The buildings will provide secondary containment for the water treatment chemicals

By-product Processing. Stillage, a by-product of distillation, consists of the remaining solids and water coming off the bottom of the stripper column. The stillage will be dried for storage and shipping. The stillage will be centrifuged to yield thin stillage and solids fractions. The thin stillage will become backset water for the cooking (starch conversion) system and will be fed to the evaporator. The evaporator will remove water from the thin stillage to create a 32 percent dry

matter syrup. The syrup will be pumped to the mixing auger to be combined with the wet distillers grains (solids coming off the centrifuge). The proposed Facility has the capacity to dry 100 percent of the wet distillers' grains with solubles and produce up to 178,359 TPY of DDGS. However, the Facility has proposed an alternative operating scenario allowing for the production of up to 107,018 TPY of wet distillers' grains with solubles (wetcake), if a local market is present. The wetcake will be stored in a partially walled and fully roofed outdoor concrete pad. The wetcake will be shipped off-site by truck within 72 hours of production.

The particulate emissions from the dryers will be controlled by cyclone separators. Fifty percent of the exhaust will be recycled to the dryers inlet and the balance will be vented to the atmosphere. The resulting DDGS will exit the cyclone via an air lock divided by two screw conveyors. The first will recycle two-thirds to three-fourths of the product back to the mixing auger and the second will convey the remainder to storage.

Three 45 million British Thermal Unit per hour (MMBTU/hr) multiple cyclone dryers and a 122 MMBTU/hr TO/Heat Recovery Boiler (HRB) will be used at the Facility to control VOC air emissions, Particulate matter (PM) air emissions, and PM smaller than ten micron (PM_{10}) air emissions. The cyclone dryers and the TO/HRB will exhaust into a common stack 72 inches in diameter and 125 feet above grade.

Product Shipping. Product will be transferred to trucks and/or rail cars in the ethanol load-out area for shipping off-site. A flare will be used to control emissions from ethanol truck loading.

Heating/Steam. A TO/HRB will be used at the proposed Facility. The TO/HRB will provide steam for cooking, distilling, evaporating, and other plant uses.

Diesel-powered Fire Water Pump Engine. A 300 horsepower diesel powered fire water pump will also be used at the Facility in case of a fire. The fire water pump engine will be limited to 500 hours of operation on a 12-month rolling sum basis.

Air emissions from the following process and storage equipment will be controlled by the TO, which will be rated at 122 MMBTU/hr: 190 and 200 proof condensers, slurry mix tanks (2), yeast tanks (2), and DDGS dryers (3).

1.3. Facility Emissions

Table 1. Total Facility Potential to Emit Summary

	PM tpy	PM_{10} tpy	SO_2 tpy	NO_x tpy	CO tpy	VOC tpy	Single HAP[1] tpy	All HAPs tpy
Total Facility Uncontrolled Potential Emissions	1498	1485	28.74	101	89.5	324	6.3	7.7
Total Facility Limited Emissions	46	34	28	95	95	95	6.3	7.7

[1]Acetaldehyde is the single HAP with the greatest PTE from this facility, so it is shown in this table. Other specific chemicals with lesser PTE values include acrolein and formic acid.

Table 2. Facility Classification

Classification	Major/Affected Source	Synthetic Minor	Minor
PSD		VOC, PM, PM_{10}, NO_x, CO	SO_2, Pb
Part 70 Permit Program		VOC, PM, PM_{10}, NO_x, CO	HAPs

2. Regulatory and/or Statutory Basis

Federal New Source Review: The permit contains limits that restrict annual air emissions of PM, PM_{10}, NO_x, CO, SO_2, and VOC to less than 100 tons per year. Therefore, the facility will be considered synthetic minor with regard to this regulatory program.

Part 70 Permit Program: The permit contains limits that restrict annual air emissions of PM, PM_{10}, NO_x, CO, SO_2, and VOC to less than 100 tons per year. Therefore, the facility will be considered synthetic minor with regard to this regulatory 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 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 particulate matter, 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) was publicly noticed on April 23, 2007.

NESHAPs: The facility has limited potential Hazardous Air Pollutant (HAP) emissions of less than 10 tons per year of a single HAP, and less than 25 tons total HAPs. It is, therefore, not considered a major source of hazardous air pollutants.

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 and other limits will be determined monthly, on a 12 month rolling sum using records.

The language 'This is a state-only requirement and is not enforceable by the U.S. Environmental Protection Agency (EPA) Administrator and citizens under the Clean Air Act' refers to permit requirements that are 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.

Table 3. Regulatory Overview of Facility

EU, GP, or SV	Applicable Regulations	Comments:
FC	40 CFR § 52.21 40 CFR § 70.2 Minn. R. 7011.0150 Minn. R. 7007.0800	Limits set on throughput and production to prevent potential emissions from exceeding major source levels. Preventing particulate emissions from becoming airborne General monitoring and recordkeeping requirements
GP001	40 CFR § 52.21 40 CFR § 70.2 Minn. R. 7011.1005	Grain handling emissions and hammermill emissions are to be controlled by baghouse to prevent potential emissions from exceeding major source levels. Minnesota performance standards for bulk agricultural commodity facilities
GP002	40 CFR § 52.21 40 CFR § 70.2	Control of PM, PM10, and opacity from commodity loading/unloading, hammermill, and DDGS cooling through baghouses. Compliance demonstration is by performance testing and

		performing visible emissions checks.
GP003	40 CFR § 52.21 40 CFR § 70.2 Minn. R. 7007.0800	99 % capture efficiency of PM and PM10. Compliance demonstration is by maintaining pressure drop, O&M plan and inspections. Inspection, maintenance, and calibration requirements
GP004	40 CFR § 52.21 40 CFR § 70.2	Requirement for venting fermentation and beer well emissions to the fermentation scrubber (CE 003) for control. Performance testing for VOC emissions is required.
GP005	40 CFR § 52.21 40 CFR § 70.2	Requirement for venting various process equipment to the thermal oxidizer (CE 004) for control.
GP006	Minn. R. 7011.0610 40 CFR § 52.21 40 CFR § 70.2	Standards of performance for fossil fuel burning direct heating equipment. Operational requirements and monitoring to prevent potential emissions from exceeding major source levels.
GP007	40 CFR Subp. Kb	Standards of Performance for Petroleum Storage Vessels
GP008	40 CFR § 52.21 40 CFR § 70.2	Vent all captured emissions to a baghouse and close doors if visible emissions are detected.
GP009	40 CFR § 52.21 40 CFR § 70.2	Process throughput limits to prevent potential emissions from exceeding major source levels. Emissions are required to be vented through a baghouse.
GP010	40 CFR § 60.18	New Source Performance Standard for general control devices
GP011	40 CFR § 52.21 40 CFR § 70.2	Vent emissions during ethanol loading to a flare to prevent potential emissions from exceeding major source levels.
GP012	40 CFR § 52.21 40 CFR § 70.2	Vent all emissions to a flare or dryer to prevent potential emissions from exceeding major source levels.
CE004	40 CFR pt. 60, Subp. Db	New Source Performance Standard for steam generating units
EU057	40 CFR § 52.21 40 CFR § 70.2	Limit hours of operation of the diesel fire water pump on a 12-month rolling sum basis to prevent potential emissions from exceeding major source levels.
EU061	40 CFR § 52.21 40 CFR § 70.2	Store wetcake on-site for no more than 72 hours unless outside temperature is less than 55 degrees F to prevent potential emissions from exceeding major source levels.
FS002	40 CFR pt. 60, Subp. VV	Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry

3. Technical Information

The proposed Facility will be a natural gas fired ethanol plant and will be a new source of air emissions in the Lamberton area. The following is a summary of air emission sources and emission control equipment at the Facility:

Grain Receiving and Handling. Fugitive particulate emissions from the truck and rail unloading area, elevators, conveyers, and corn bins will be exhausted through a negative pressure ventilation system, which will continuously pull air from these sources through a baghouse.

Hammermills. The air exiting the hammermills will be routed to a baghouse. There will be one baghouse to control particulate emissions from all hammermills

Batch Fermentation. The vents of the fermenters, as well as the vents from other vessels in the process building, will all be tied into the inlet of one direct contact scrubber. The gas coming off the fermenters and other vessels will flow up through a bed of nylon packing. Water will flow down through the bed. A continuous blow-down of this water will flow back into the process stream. Carbon dioxide and other non-condensing gases leaving the scrubber will be vented to the atmosphere.

Distillation/Dehydration. The beer resulting from the fermentation will run through a continuous vacuum distillation system to remove and rectify the ethanol. The vapor outlet of the distillation column will be piped directly to a set of condensers that discharge liquid ethanol to the 190-proof tank. From the 190 proof tank the liquid will pass through a molecular sieve and then to the 200 proof condenser and will then be stored in the 200 proof storage tank. The gases leaving the condensers will be vented to the TO prior to venting to the atmosphere.

Dried Distillers Grain and Handling. Distillers grain will be dried in a rotary drum dryer system. All of the exhaust from the dryers will pass through the TO to control particulate and VOC emissions. DDGS will be cooled in a cyclone type cooler system. Gases leaving the cooler will be vented to the DDG cooling cyclone and baghouse to control particulate emissions prior to venting to the atmosphere. Dried distillers grain is pneumatically conveyed to an enclosed building. Dried distillers grain will be pneumatically loaded into trucks/railcars with the exhaust air passing through a baghouse prior to venting to the atmosphere.

Ethanol Storage Tanks. The product will be pumped daily from the 200-Proof tank to one of the Denatured Ethanol tanks. A small amount of natural gasoline will be simultaneously pumped from the Denaturant Tank to the Denatured Ethanol tank involved. All of these tanks will be fitted with internal floating roofs to control air emissions. Each tank will also have a fire valve, a level gauge, and overfill protection.

Thermal Oxidizer/Heat Recovery Boiler (TO/HRB). A 122 MMBTU/hr TO/HRB will provide steam for cooking, distilling, evaporating, and other plant uses. Because the two 45 MMBTU/hr dryers will vent to the TO the HRB inlet includes this heat. The TO will be used to control air emissions and reduce odors from plant operations.

Flares. Methanator and load-out flares will be used to control emissions from the methanators and ethanol loading operations.

Diesel-powered Fire Water Pump Engine. The Facility will operate one 300 horsepower emergency diesel generator to run a fire pump. The fire water pump engine will be limited to 500 hours of operation on a 12-month rolling sum basis.

Rail Cars Loading/Unloading. Ethanol rail cars will be limited to rail cars that are dedicated to handling ethanol. Emissions from this loading operation will be uncontrolled.

The proposed Facility has the capacity to dry 100 percent of the wet distillers grains with solubles and produce up to 178,359 TPY of DDGS. However, Highwater has proposed an alternative operating scenario allowing for the production of up to 107,018 TPY (up to 25 percent) of wet distillers grains with solubles (wetcake), if a local market is present. The wetcake will be stored in a partially walled and fully roofed outdoor concrete pad. The wetcake will be shipped by truck within 72 hours of production.

As part of the permitting process, an Air Emissions Risk Analysis (AERA) was performed. Unlike other ethanol facility AERA studies, wetcake fugitive VOC emissions were not accounted for in the risk determination. For this reason, the AERA is not considered conservative or, in other words, the determined risk is likely a close estimate of actual risk that may occur during routine operating conditions. There were no recommendations as a result of the AERA process for mitigation beyond what is contained in the draft permit.

3.1. Calculations of Potential to Emit

Attachment 1 to this TSD contains Form GI-07, which summarizes the Potential To Emit (PTE) for the facility. Attachment 2 contains supporting information prepared by the Permittee.

3.2. Periodic Monitoring

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

In evaluating the monitoring included in the permit, the MPCA 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; and
- 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

Emission Unit or Group	Requirement	Additional Monitoring	Discussion
Total Facility	Production and fuel use limits	Recordkeeping	Limits to avoid major source classification
GP003	Operational requirements	Inspections and recordkeeping	Operational requirements to avoid major source classification
GP004	Operational requirements	Inspections, recordkeeping, and performance testing	The fermentation scrubber is required to be performance tested within 180 days of permit issuance; records of pressure drop and water flow rate must be maintained.
GP008	Operational requirements	Observe for visible emissions	If visible emissions are observed exiting the loadout area, the grain receiving and DDGS loadout area doors must be closed.
EU052	Operating limits	Recordkeeping	Limits to avoid major source classification
EU055	Operating limits	Recordkeeping	Limits to avoid major source classification
EU057	Operating limits	Recordkeeping	Limits to avoid major source classification
EU061	VOC emission limits	Emission testing and recordkeeping	Limits to avoid major source classification

3.3. Insignificant Activities

Highwater Ethanol has several operations which are classified as insignificant activities. These operations each have the potential to emit less than one ton per year of pollutants. Therefore, periodic monitoring is not required.

3.4. Permit Organization

In general, the permit meets the MPCA Delta Guidance for ordering and grouping of requirements.

3.5. Comments Received

The public comment period for the draft permit began on May 10, 2007 and ended on June 11, 2007. No comments were received regarding the draft air emission permit during the public comment period. The corresponding Environmental Assessment Worksheet (EAW) for this project was challenged, however, and brought before the MPCA Citizen's Board. As a result of the board process, a reduction in scope of the project occurred and a Negative Declaration for the EAW was subsequently granted. The scope reduction consisted of lowering the ultimate ethanol production rate for the proposed facility from 75 to 55 MMGY. The physical components of the proposed facility are unchanged. The project proposer agreed to the lower production limits, so the draft permit and this TSD were changed accordingly.

4. Conclusion

Based on the information provided by Highwater Ethanol, LLC, the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission Permit No. 12700053-001, and this TSD, will not cause or contribute to a violation of applicable federal regulations and Minnesota Rules.

Staff Members on Permit Team: Jim Robin (permit writer/engineer)
Sarah Kilgriff (enforcement)
Curt Stock (stack testing)
Jessica Forsberg (peer reviewer)

AQ File No. 4326; DQ No. 1222

Attachments: 1. Permit Application Form GI-07
2. Supporting Information Supplied by Permittee