

AIR EMISSION PERMIT NO. 12300019- 001

IS ISSUED TO

Minnesota Brewing Company
882 West 7th Street
St. Paul, Ramsey County, Minnesota 55102

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

Permit Type

Total Facility Operating Permit

Application Date

November 20, 1997

This permit authorizes the Permittee to modify and operate 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: Federal ; Part 70

Issue Date: April 15, 1998

Expiration: April 15, 2003

All Title I Conditions do not expire.

Carolina Schutt for
Michael J. Sandusky
Division Manager
Air Quality Division

for Peder A. Larson
Commissioner
Minnesota Pollution Control Agency

TLV:yma

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NOTICE TO THE PERMITTEE:

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

Metro Area	(612)296-6300
Outside Metro Area	1-800-657-3864
TTY	(612)282-5332

The rule 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. Certain requirements which have been determined not to apply are listed in Table A of this permit.

The permit shield, however does not apply to:

1. Any national ambient air quality standards adopted under section 109 of the Clean Air Act or increment or visibility requirement under Part C of Title I of the Clean Air Act, and
2. Any state ambient air quality standard under Minn. R. ch. 7009, and
3. Any state noise pollution control rules, Minn. R. ch. 7030.

FACILITY DESCRIPTION:

Minnesota Brewing Company operates an existing facility producing bottled and canned beer and water. Existing operations resulting in air emissions include grain receiving and handling, boilers, fermentation of beer, and application of labels and dates.

The facility is authorized by this permit to use existing grain receiving and handling capacity, existing boiler capacity, and existing fermentation capacity to produce ethanol for use in fuels. Additional equipment required and authorized by this permit include that for distillation of ethanol, processing spent corn (the raw material used for fuel ethanol production), and for storage of ethanol, denatured ethanol, and denaturant (gasoline).

The portion of the facility producing fuel ethanol will be subject to a 100 ton per year emission threshold for each criteria pollutant, under the federal Prevention of Significant Deterioration (PSD) program, 40 CFR § 52.21. The facility has accepted emission limits and operating limitations such that the emissions of each criteria pollutant resulting from the production of fuel ethanol is below 100 tpy.

The entire facility (beverage alcohol plus fuel ethanol production) is subject to the 250 tpy emission threshold under PSD. The facility has accepted emission limits and operating limitations such that the emissions of each criteria pollutant from the facility is less than 250 tpy.

The facility is a major source under the Part 70 program (40 CFR § 70.2).

TABLE A: LIMITS AND OTHER REQUIREMENTS

04/15/98

Facility Name: Minnesota Brewing Co

Permit Number: 12300019 - 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
Production: less than or equal to 18000000 gallons/year using 12-month Rolling Sum of fuel ethanol. Production during the first 11 months of operation is limited to 1,500,000 gallons of fuel ethanol per calendar month. For purposes of this permit, the terms "fuel ethanol" or "fuel alcohol" are interchangeable and refer to the pure ethanol produced by fermentation of corn, to be denatured and used as fuel or a fuel additive.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21
Recordkeeping: by the 15th day of each month, calculate and record the fuel ethanol production for the previous month.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21
Recordkeeping: By the 15th day of each month, calculate and record the total fuel ethanol production for the previous 12-month period (12-month rolling sum).	Title I Condition: To avoid major source classification under 40 CFR Section 52.21
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. The plan shall specify the minimum values for pressure drop and water flow rate for CE 005, and the minimum and maximum values for pressure drop for CE 002, CE 003, and CE 006.	Minn. R. 7007.0800, subp. 14 and Minn. R. 7007.0800, subp. 16(J)
Shutdowns: Notify the Commissioner at least 24 hours in advance of a planned shutdown of any process or control equipment if the shutdown would cause an increase in the emissions of any regulated air pollutant. At the time of notification, notify the Commissioner of the cause of the shutdown and the estimated duration. Notify the Commissioner again when the shutdown is over.	Minn. R. 7019.1000, subp. 3
Breakdowns: Notify the Commissioner immediately of a breakdown of more than one hour duration of any process or control equipment if the breakdown causes an increase in the emissions of any regulated air pollutant. At the time of notification or as soon thereafter as possible, the permittee shall also notify the Commissioner of the cause of the breakdown and the estimated duration. Notify the Commissioner again when the breakdown is over.	Minn. R. 7019.1000, subp. 2
Monitoring Equipment: Install or make needed repairs to monitoring equipment within 60 days of issuance of the permit if monitoring equipment is not installed and operational on the date the permit is issued.	Minn. R. 7007.0800, subp. 4(D)
Monitoring Equipment Calibration: Annually calibrate all required monitoring equipment (any requirements applying to continuous emission monitors are listed separately in this permit).	Minn. R. 7007.0800, subp. 4(D)
Operation of Monitoring Equipment: Unless otherwise noted in Tables A, 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)
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
Oral Notification of Deviations Endangering Human Health or the Environment: As soon as possible after discovery, orally or by facsimile notify the Commissioner of any deviation from permit conditions which could endanger human health or the environment.	Minn. R. 7019.1000, subp. 1
Written 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: cause of the deviation; exact dates of the period of the deviation; if the deviation has not been corrected, the anticipated time it is expected to continue; and 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

TABLE A: LIMITS AND OTHER REQUIREMENTS

04/15/98

Facility Name: Minnesota Brewing Co

Permit Number: 12300019 - 001

Emission Fees: due 60 days after receipt of an MPCA bill.	Minn. R. 7002.0005 through Minn. R. 7002.0095
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. Do not cause or permit a building or its appurtenances or an open area 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
Inspections: Upon presentation of credentials and other documents as may be required by law, allow the Agency, or its representative, to enter the Permittee's premises to have access to and copy any records required by this permit, to inspect at reasonable times (which include any time the source is operating) any facilities, equipment, practices or operations, and to sample or monitor any substances or parameters at any location.	Minn. R. 7007.0800, subp. 9(A)
Record keeping: 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)
Record keeping: 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 strip-chart 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)
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)

TABLE A: LIMITS AND OTHER REQUIREMENTS

04/15/98

Facility Name: Minnesota Brewing Co

Permit Number: 12300019 - 001

Subject Item: GP 001 Cyclone Monitoring Requirement**Associated Items:** CE 002 Multiple Cyclone w/o Fly Ash Reinjection - Most Multiclones

CE 003 Multiple Cyclone w/o Fly Ash Reinjection - Most Multiclones

CE 006 Multiple Cyclone w/o Fly Ash Reinjection - Most Multiclones

What to do	Why to do it
Record the pressure drop at each cyclone once each day of operation.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21
Corrective Action: If the pressure drop is not in the range of values specified in the Operation and Maintenance Plan, the Permittee shall take corrective action as soon as possible to return the pressure drop to within the required range.	Title I Condition: Corrective action to avoid major source classification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 14
Recordkeeping of Corrective Action: The Permittee shall keep a record of the type and date of all corrective actions taken.	Title I Condition: Recordkeeping of corrective action to avoid major source classification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 5
Inspect quarterly, or as required by manufacturing specifications, all components that are not subject to wear or plugging, including structural components, housing, ducts, and hoods. Maintain a written record of the inspection and any action resulting from the inspection.	Minn. R. 7007.0800, subp. 2 and subp. 14
Inspect monthly, or as required by manufacturing specifications, all components that are subject to wear or plugging. Maintain a written record of the inspection and any action resulting from the inspection.	Minn. R. 7007.0800, subp. 2 and subp. 14
Calibrate the pressure drop gauge annually, or as often as required by manufacturer's specifications and maintain a written record of the calibration and any action resulting from the calibration.	Minn. R. 7007.0800, subp. 2 and subp. 14

TABLE A: LIMITS AND OTHER REQUIREMENTS

04/15/98

Facility Name: Minnesota Brewing Co

Permit Number: 12300019 - 001

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

CE 004 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

What to do	Why to do it
Operation and Maintenance of Fabric Filter: The Permittee shall operate and maintain the fabric filter according to the control equipment manufacturer's specifications.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 14
Visible Emissions: The Permittee shall check the outlet of each baghouse (SV 002 & SV 005) for any visible emissions, once each day of operation during daylight hours.	Minn. R. 7007.0800, subp. 4
Recordkeeping of Visible Emissions: The Permittee shall record the time and date of each visible emission inspection, and whether or not any visible emissions were observed.	Minn. R. 7007.0800, subp. 5
Recordkeeping of Corrective Actions: If visible emissions are observed, the Permittee shall follow the Operation and Maintenance plan for the fabric filter and take corrective actions as soon as possible to eliminate the visible emissions. The Permittee shall keep a record of the corrective actions taken.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 14

TABLE A: LIMITS AND OTHER REQUIREMENTS

04/15/98

Facility Name: Minnesota Brewing Co

Permit Number: 12300019 - 001

Subject Item: GP 003 Residual Oil Combustion**Associated Items:** EU 001 Boiler #1

EU 002 Boiler #2

What to do	Why to do it
A. OPERATING LIMITS	hdr
Fuel Usage: less than or equal to 636,000 gallons/year using 12-month Rolling Sum of residual fuel oil burned by the boilers in GP 002.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21
Sulfur Content of Fuel: less than or equal to 1.5 percent by weight for residual fuel oil.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 [Also meets the SO ₂ emission requirements of Minn. R. 7011.0510, subp. 1]
B. RECORDKEEPING REQUIREMENTS	hdr
Recordkeeping: by the 15th day of each month, calculate and record the residual fuel oil use for the previous month. Records shall be based on the actual amount of fuel combusted, as measured using an in-line flow meter.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21
Recordkeeping: By the 15th day of each month, calculate and record the total residual fuel oil used during the previous 12-month period (12-month rolling sum).	Title I Condition: To avoid major source classification under 40 CFR Section 52.21
Recordkeeping: Maintain residual oil vendor certifications of the sulfur content in percent by weight for all residual fuel oil combusted by the boilers in GP 003.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21

TABLE A: LIMITS AND OTHER REQUIREMENTS

04/15/98

Facility Name: Minnesota Brewing Co
Permit Number: 12300019 - 001

Subject Item: GP 004 Tanks subject to NSPS subp. Kb
Associated Items: TK 001 Ethanol
TK 002 Ethanol
TK 003 Gasoline
TK 004 Denatured Ethanol (95% Ethanol, 5% Gasoline)

What to do	Why to do it
Recordkeeping: Maintain records showing the dimensions of each tank and an analysis showing each tank's capacity.	40 CFR Section 60.116b(b); Minn. R. 7011.1520(C)

TABLE A: LIMITS AND OTHER REQUIREMENTS

04/15/98

Facility Name: Minnesota Brewing Co

Permit Number: 12300019 - 001

Subject Item: GP 005 Fermentation - No CO2 collection**Associated Items:** EU 016 Cellar A Fermenters (14) - beer

EU 018 Cellar C Fermenters (28) - beer

What to do	Why to do it
Process Throughput: less than or equal to 5600000 gallons/year using 12-month Rolling Sum of beverage alcohol beer. During the first 11 months of operation under this permit, beer production on Cellars A and C is limited to 466,700 gallons per calendar month.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21
Recordkeeping: by the 15th day of each month, calculate and record the beverage alcohol beer fermentation in Cellars A and C for the previous month. Beverage alcohol beer production is determined with a flow meter that measures flow into the fermenters.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21
Recordkeeping: by the 15th day of each month, calculate and record the beverage alcohol beer fermentation in Cellars A and C for the previous 12-month period (12-month rolling sum).	Title I Condition: To avoid major source classification under 40 CFR Section 52.21

TABLE A: LIMITS AND OTHER REQUIREMENTS

04/15/98

Facility Name: Minnesota Brewing Co

Permit Number: 12300019 - 001

Subject Item: GP 006 NOX emissions from ethanol production**Associated Items:** EU 001 Boiler #1

EU 002 Boiler #2

EU 050 Dryer

What to do	Why to do it
Nitrogen Oxides: less than or equal to 95 tons/year using 12-month Rolling Sum	Title I Condition: To avoid major source classification under 40 CFR Section 52.21
Recordkeeping - Fuel Oil Steam Production For Fuel Ethanol: Once each day record the pounds of steam produced by fuel oil combustion in the boilers (EU 001 and EU002) and used in the production of fuel ethanol during the previous day. Steam shall be measured using a steam gauge(s) or chart(s) measuring the steam that goes to the process line(s) making fuel ethanol.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21
Recordkeeping - Fuel Oil Total Steam Production: Once each day, record the total pounds of steam produced by the combustion of fuel oil in the boilers (EU 001 and EU 002) during the previous day.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21
Recordkeeping - Natural Gas Steam Production For Fuel Ethanol: Once each day, record the pounds of steam produced by the combustion of natural gas in the boilers (EU 001 and EU 002) and used in the production of fuel ethanol during the previous day. Steam shall be measured using a steam gauge(s) or chart(s) measuring the steam that goes to the process line(s) making fuel ethanol.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21
Recordkeeping - Natural Gas Total Steam Production: Once each day record the total pounds of steam produced by the combustion of natural gas in the boilers (EU 001 and EU 002) during the previous day.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21
Recordkeeping - Fuel Oil Usage: Once each day, record the gallons of fuel oil combusted in the boilers (EU 001 and EU 002) during the previous day. Fuel oil usage shall be measured using an in-line flow meter.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21
Recordkeeping - Boilers Natural Gas Usage: Once each day record the cubic feet of natural gas combusted in the boilers (EU 001 and EU 002) during the previous day.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21
Recordkeeping - Dryer Natural Gas Usage: Once each day, record the cubic feet of natural gas combusted in the dryer (EU 050) during the previous day.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21
Recordkeeping - Dryer Propane Usage: Once each day record the gallons of propane combusted in the dryer (EU 050) during the previous day.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21
Recordkeeping: By the 15th of each month, calculate and record the pounds of steam produced by the combustion of fuel oil in the boilers (EU 001 and EU 002) and used in the production of fuel ethanol during the previous month.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21
Recordkeeping: By the 15th of each month, calculate and record the gallons of fuel oil combusted in the boilers (EU 001 and EU 002) during the previous month.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21
Recordkeeping: By the 15th of each month, calculate and record the total pounds of steam produced by combustion of fuel oil in the boilers (EU 001 and EU 002) during the previous month.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21
Recordkeeping: By the 15th of each month, calculate and record the pounds of steam produced by the combustion of natural gas in the boilers (EU 001 and EU 002) and used in the production of fuel ethanol during the previous month.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21
Recordkeeping: By the 15th of each month, calculate and record the quantity of natural gas, in million cubic feet, combusted in the boilers (EU 001 and EU 002) during the previous month.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21
Recordkeeping: By the 15th of each month, calculate and record the total pounds of steam produced by the combustion of natural gas in the boilers (EU 001 and EU 002) during the previous month.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21
Recordkeeping: By the 15th of each month, calculate and record the quantity of natural gas, in million cubic feet, combusted in the dryer (EU 050) during the previous month.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21
Recordkeeping: By the 15th of each month, calculate and record the quantity of propane, in gallons, combusted in the dryer (EU 050) during the previous month.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21
Recordkeeping: By the 15th of each month, calculate and record the NOx emissions for the previous month, using the method provided in the Appendix materials.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21

TABLE A: LIMITS AND OTHER REQUIREMENTS

04/15/98

Facility Name: Minnesota Brewing Co

Permit Number: 12300019 - 001

Recordkeeping: By the 15th of each month, calculate the NOx emissions for the previous 12 months (12-month rolling sum).	Title I Condition: To avoid major source classification under 40 CFR Section 52.21
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TABLE A: LIMITS AND OTHER REQUIREMENTS

04/15/98

Facility Name: Minnesota Brewing Co

Permit Number: 12300019 - 001

Subject Item: SV 001**Associated Items:** EU 001 Boiler #1

EU 002 Boiler #2

What to do	Why to do it
Total Particulate Matter: less than or equal to 18.18 lbs/hour when combusting residual oil.	Minn. Stat. Section 116.07, subd. 4a; Minn. R. 7007.0800, subp. 2 [Based on physical capacity of equipment]
Total Particulate Matter: less than or equal to 2.22 lbs/hour when combusting natural gas	Minn. Stat. Section 116.07, subd. 4a; Minn. R. 7007.0800, subp. 2 [Based on physical capacity of equipment]
Total Particulate Matter: less than or equal to 0.4 lbs/million Btu heat input (applies individually to each boiler).	Minn. R. 7011.0510, subp. 1
Sulfur Dioxide: less than or equal to 2.0 lbs/million Btu heat input when combusting residual fuel oil (applies individually to each boiler and is met by fuel oil sulfur limit in GP 003).	Minn. R. 7011.0510, subp. 1
Opacity: less than or equal to 20 percent opacity except that a maximum of 60 percent opacity shall be permissible for four minutes in any 60-minute period and that a maximum of 40 percent opacity shall be permissible for four additional minutes in any 60-minute period (applies individually to each boiler).	Minn. R. 7011.0510, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS

04/15/98

Facility Name: Minnesota Brewing Co

Permit Number: 12300019 - 001

Subject Item: SV 002**Associated Items:** EU 004 Grain Receiving

EU 005 Elevator leg

EU 006 Corn Silo

EU 007 Corn Silo

EU 008 Corn Silo

EU 009 Corn Silo

EU 010 Barley Silo

EU 011 Barley Silo

EU 012 Barley Silo

EU 013 Barley Silo

EU 014 Barley Silo

What to do	Why to do it
A. EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 1.07 lbs/hour (met by equipment capacity and production limitations).	Title I Condition: To avoid major source classification under 40 CFR Section 52.21[Also meets the requirements of Minn. R. 7011.1005, subp. 3(D)]
Particulate Matter < 10 micron: less than or equal to 1.07 lbs/hour (met by equipment capacity and production limitations).	Title I Condition: To avoid major source classification under 40 CFR Section 52.21
Opacity: less than or equal to 10 percent opacity	Minn. R. 7011.1005, subp. 3(D)
B. CONTROL EQUIPMENT REQUIREMENTS	hdr
Total Particulate Matter: greater than or equal to 98.7 percent collection efficiency (CE 001).	Title I Condition: To avoid major source classification under 40 CFR Section 52.21
Particulate Matter < 10 micron: greater than or equal to 94.8 percent collection efficiency (CE 001).	Title I Condition: To avoid major source classification under 40 CFR Section 52.21

TABLE A: LIMITS AND OTHER REQUIREMENTS

04/15/98

Facility Name: Minnesota Brewing Co

Permit Number: 12300019 - 001

Subject Item: SV 003**Associated Items:** EU 050 Dryer

What to do	Why to do it
A. EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 9.68 lbs/hour	Title I Condition: To avoid major source classification under 40 CFR Section 52.21
Particulate Matter < 10 micron: less than or equal to 9.68 lbs/hour	Title I Condition: To avoid major source classification under 40 CFR Section 52.21
Volatile Organic Compounds: less than or equal to 10.3 lbs/hour	Title I Condition: To avoid major source classification under 40 CFR Section 52.21
Opacity: less than or equal to 10 percent opacity	Minn. R. 7011.1005, subp. 3(D)
B. CONTROL EQUIPMENT REQUIREMENTS	hdr
Total Particulate Matter: greater than or equal to 96.5 percent collection efficiency (CE 002).	Title I Condition: To avoid major source classification under 40 CFR Section 52.21
Particulate Matter < 10 micron: greater than or equal to 96.5 percent collection efficiency (CE 002).	Title I Condition: To avoid major source classification under 40 CFR Section 52.21
C. TESTING REQUIREMENTS	hdr
Initial Performance Test: due 180 days after Initial Startup of dryer (EU 050) to measure total particulate matter emissions.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21; Minn. R. 7017.2020, subp. 1
Initial Performance Test: due 180 days after Initial Startup of dryer to measure emissions of particulate matter <10 microns.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21; Minn. R. 7017.2020, subp. 1
Initial Performance Test: due 180 days after Initial Startup of dryer to measure emissions of volatile organic compounds.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21; Minn. R. 7017.2020, subp. 1
Initial Performance Test: due 180 days after Initial Startup of dryer to measure opacity.	Minn. R. 7017.2020, subp. 1
Performance Test Pre-test Meeting: due 7 days before Initial Performance Test	Minn. R. 7017.2030, subp. 4

TABLE A: LIMITS AND OTHER REQUIREMENTS

04/15/98

Facility Name: Minnesota Brewing Co

Permit Number: 12300019 - 001

Subject Item: SV 004**Associated Items:** EU 052 DDGS Elevator

EU 053 DDGS Loadout Spout

EU 054 DDGS Loadout Pit

What to do	Why to do it
A. EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 0.3 lbs/hour (met by equipment capacity and production limitations).	Title I Condition: To avoid major source classification under 40 CFR Section 52.21
Particulate Matter < 10 micron: less than or equal to 0.3 lbs/hour (met by equipment capacity and production limitations).	Title I Condition: To avoid major source classification under 40 CFR Section 52.21
Opacity: less than or equal to 10 percent opacity	Minn. R. 7011.1005, subp. 3(D)
B. CONTROL EQUIPMENT REQUIREMENTS	hdr
Total Particulate Matter: greater than or equal to 95.5 percent collection efficiency (CE 003).	Title I Condition: To avoid major source classification under 40 CFR Section 52.21
Particulate Matter < 10 micron: greater than or equal to 82.3 percent collection efficiency (CE 003).	Title I Condition: To avoid major source classification under 40 CFR Section 52.21

TABLE A: LIMITS AND OTHER REQUIREMENTS

04/15/98

Facility Name: Minnesota Brewing Co

Permit Number: 12300019 - 001

Subject Item: SV 005**Associated Items:** EU 015 Hammermill (Corn)

What to do	Why to do it
A. EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 2.19 lbs/hour (met by equipment capacity and production limitations).	Title I Condition: To avoid major source classification under 40 CFR Section 52.21[Also meets the requirements of Minn. R. 7011.1005, subp. 3(D)]
Particulate Matter < 10 micron: less than or equal to 2.19 lbs/hour (met by equipment capacity and production limitations).	Title I Condition: To avoid major source classification under 40 CFR Section 52.21
Opacity: less than or equal to 10 percent opacity	Minn. R. 7011.1005, subp. 3(D)
B. CONTROL EQUIPMENT REQUIREMENTS	hdr
Total Particulate Matter: greater than or equal to 89.5 percent collection efficiency (CE 004).	Title I Conditions: To avoid major source classification under 40 CFR Section 52.21
Particulate Matter < 10 micron: greater than or equal to 79 percent collection efficiency (CE 004).	Title I Condition: To avoid major source classification under 40 CFR Section 52.21

TABLE A: LIMITS AND OTHER REQUIREMENTS

04/15/98

Facility Name: Minnesota Brewing Co

Permit Number: 12300019 - 001

Subject Item: SV 006

Associated Items: EU 043 Whole Stillage Surge Tank
 EU 044 Thin Stillage Surge Tank
 EU 045 Process Condensate Storage Tank
 EU 048 Evaporator Separator
 EU 056 Beer Stripper
 EU 057 Rectifier
 EU 058 Side Stripper
 EU 059 Molecular Seive

What to do	Why to do it
A. EMISSION LIMITS	hdr
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
Volatile Organic Compounds: less than or equal to 1.80 lbs/hour at outlet of control device.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21
B. CONTROL EQUIPMENT REQUIREMENTS	hdr
Volatile Organic Compounds: greater than or equal to 98 percent collection efficiency (CE005).	Title I Condition: To avoid major source classification under 40 CFR Section 52.21
C. TESTING REQUIREMENTS	hdr
Initial Performance Test: due 180 days after Initial Startup of CE005 to measure emissions of volatile organic compounds.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21; Minn. R. 7017.2020, subp. 1
Performance Test Pre-test Meeting: due 7 days before Initial Performance Test	Minn. R. 7017.2030, subp. 4

TABLE A: LIMITS AND OTHER REQUIREMENTS

04/15/98

Facility Name: Minnesota Brewing Co

Permit Number: 12300019 - 001

Subject Item: SV 008**Associated Items:** EU 055 Cooling/Separating Cyclone

What to do	Why to do it
A. EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 1.0 lbs/hour	Title I Condition: To avoid major source classification under 40 CFR Section 52.21[Also meets the requirements of Minn. R. 7011.1005, subp. 3(D)]
Particulate Matter < 10 micron: less than or equal to 1.0 lbs/hour	Title I Condition: To avoid major source classification under 40 CFR Section 52.21
Opacity: less than or equal to 10 percent opacity	Minn. R. 7011.1005, subp. 3(D)
B. CONTROL EQUIPMENT REQUIREMENTS	hdr
Total Particulate Matter: greater than or equal to 96.5 percent collection efficiency (CE 006).	Title I Condition: To avoid major source classification under 40 CFR Section 52.21
Particulate Matter < 10 micron: greater than or equal to 96.5 percent collection efficiency (CE 006).	Title I Condition: To avoid major source classification under 40 CFR Section 52.21
C. TESTING REQUIREMENTS	hdr
Initial Performance Test: due 180 days after Initial Startup of dryer to measure total particulate matter emissions.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21; Minn. R. 7017.2020, subp. 1
Initial Performance Test: due 180 days after Initial Startup of dryer to measure emissions of particulate matter <10 microns.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21; Minn. R. 7017.2020, subp. 1
Initial Performance Test: due 180 days after Initial Startup of dryer to measure opacity.	Minn. R. 7017.2020, subp. 1
Performance Test Pre-test Meeting: due 7 days before Initial Performance Test	Minn. R. 7017.2030, subp. 4

TABLE A: LIMITS AND OTHER REQUIREMENTS

04/15/98

Facility Name: Minnesota Brewing Co
Permit Number: 12300019 - 001

Subject Item: EU 050 Dryer
Associated Items: CE 002 Multiple Cyclone w/o Fly Ash Reinjection - Most Multiclones
GP 006 NOX emissions from ethanol production
SV 003

What to do	Why to do it
Fuel Burned: Natural gas and propane only.	Minn. Stat. Section 116.07, subd. 4a; Minn. R. 7007.0800, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS

04/15/98

Facility Name: Minnesota Brewing Co

Permit Number: 12300019 - 001

Subject Item: CE 005 Wet Scrubber-High Efficiency w/o Lime**Associated Items:** EU 043 Whole Stillage Surge Tank

EU 044 Thin Stillage Surge Tank

EU 045 Process Condensate Storage Tank

EU 048 Evaporator Separator

EU 056 Beer Stripper

EU 057 Rectifier

EU 058 Side Stripper

EU 059 Molecular Seive

What to do	Why to do it
Record the pressure drop and water flow rate once each day of operation.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21
Corrective Action: If the pressure drop and/or water flow rate are not equal to or greater than the minimum values specified in the Operation and Maintenance Plan, the Permittee shall take corrective action as soon as possible to achieve the required operating values.	Title I Condition: Corrective action to avoid major source classification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 14
Recordkeeping of Corrective Action: The Permittee shall keep a record of the type and date of all corrective actions taken.	Title I Condition: Recordkeeping of corrective action to avoid major source classification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 5
Inspect quarterly, or as required by manufacturing specifications, all components that are not subject to wear or plugging, including structural components, housing, ducts, and hoods. Maintain a written record of the inspection and any action resulting from the inspection.	Minn. R. 7007.0800, subp. 2 and subp. 14
Inspect monthly, or as required by manufacturing specifications, all components that are subject to wear or plugging. Maintain a written record of the inspection and any action resulting from the inspection.	Minn. R. 7007.0800, subp. 2 and subp. 14
Calibrate 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 subp. 14

TABLE A: LIMITS AND OTHER REQUIREMENTS

04/15/98

Facility Name: Minnesota Brewing Co

Permit Number: 12300019 - 001

Subject Item: TK 004 Denatured Ethanol (95% Ethanol, 5% Gasoline)**Associated Items:** GP 004 Tanks subject to NSPS subp. Kb

What to do	Why to do it
A. 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 floating 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 seals mounted one above the other so that each forms a continuous closure that completely covers the space between the wall of the storage vessel and the edge of the internal floating roof. The lower seal may be vapor-mounted, but both must be continuous.	40 CFR Section 60.112b(a)(1)(ii)(B); Minn. R. 7011.1520(C)
B. 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, then 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)
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 as required by this paragraph.	40 CFR Section 60.113b(a)(3)(ii); Minn. R. 7011.1520(C)
Visually inspect the internal floating roof, the primary seal, the secondary seal, gaskets, slotted membranes, and sleeve seals (if any) each time each storage vessel is emptied and degassed as required by this paragraph. In no event shall inspections conducted in accordance with this provision occur at intervals greater than five (5) years.	40 CFR Section 60.113b(a)(3)(i); Minn. R. 7011.1520(C)
C. RECORDKEEPING REQUIREMENTS	hdr
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 60.115b(a)(2); Minn. R. 7011.1520(C)
D. REPORTING REQUIREMENTS	hdr
After each inspection required by 40 CFR Section 60.113b(a)(3) that finds holes or tears in the seal or seal fabric, or defects in the internal floating roof, or other control equipment defects listed in 40 CFR Section 60.113b(a)(3)(ii), a report shall be furnished to the Administrator within 30 days of the inspection. The report shall identify the storage vessel and the reason it did not meet the specifications of 40 CFR Section 60.112b(a)(1) or 40 CFR Section 60.113b(a)(3)(ii) and list each repair made.	40 CFR Section 60.115b(a)(4); Minn. R. 7011.1520(C)
Notification: 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 30 days prior to the filling or refilling of each 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)

TABLE A: LIMITS AND OTHER REQUIREMENTS

04/15/98

Facility Name: Minnesota Brewing Co
Permit Number: 12300019 - 001

Subject Item: FS 001 Uncaptured Grain Emissions

What to do	Why to do it
Clean up commodities spilled on the driveway and other facility property as required to minimize fugitive emissions to a level consistent with RACT (Reasonably Available Control Technology).	Minn. R. 7011.1005, subp. 1(A)
Opacity: less than or equal to 5 percent opacity for fugitive emissions from truck unloading of grain or grain handling activities.	Minn. R. 7011.1005, subp. 3(A)

TABLE A: LIMITS AND OTHER REQUIREMENTS

04/15/98

Facility Name: Minnesota Brewing Co
Permit Number: 12300019 - 001

Subject Item: FS 002 Uncaptured DDGS Emissions

What to do	Why to do it
Clean up commodities spilled on the driveway and other facility property as required to minimize fugitive emissions to a level consistent with RACT (Reasonably Available Control Technology).	Minn. R. 7011.1005, subp. 1(A)
Opacity: less than or equal to 5 percent opacity for fugitive emissions from railcar loading of DDGS or DDGS handling activities.	Minn. R. 7011.1005, subp. 3(A)
Opacity: less than or equal to 10 percent opacity for fugitive emissions from DDGS truck loading.	Minn. R. 7011.1005, subp. 3(B)

TABLE A: LIMITS AND OTHER REQUIREMENTS

04/15/98

Facility Name: Minnesota Brewing Co
Permit Number: 12300019 - 001

Subject Item: FS 005 Truck Traffic

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 a driveway to be constructed, used, repaired, or demolished without applying all such reasonable measures as may be required to prevent particulate matter from becoming airborne.	Minn. R. 7011.0150

TABLE A: LIMITS AND OTHER REQUIREMENTS

04/15/98

Facility Name: Minnesota Brewing Co
Permit Number: 12300019 - 001

Subject Item: FS 006 Uncontrolled Truck/Railcar loadout

What to do	Why to do it
Clean up commodities spilled on the driveway or other facility property as required to minimize fugitive emissions to a level consistent with RACT (Reasonably Available Control Technology).	Minn. R. 7011.1005, subp. 1(A)
Opacity: less than or equal to 10 percent opacity	Minn. R 7011.1005, subp. 3(B)

TABLE B: SUBMITTALS

04/15/98

Facility Name: Minnesota Brewing Co
Permit Number: 12300019 - 001

Table B lists the submittals you must send to the Commissioner. Table B is divided into two sections, for source-specific submittal requirements and for submittals required of all permittees. Source-specific submittals are further organized as either one-time only or recurrent requirements. You may also be subject to additional reporting requirements contained in the compliance schedule located in Table C of this permit. All submittals must be postmarked or received by the date specified in the table, and certified by a responsible official, defined in Minn. R. 7007.0100, subp. 21. Submittals which must be provided on standardized forms approved by the Commissioner are noted in Tables B and C.

Send any application for a permit or permit amendment to: Permit Information Coordinator, Permit Section, Air Quality Division, Minnesota Pollution Control Agency, 520 Lafayette Road North, St. Paul, Minnesota 55155-4914. Also send the Permit Information Coordinator notices of: accumulated insignificant activities, installation of control equipment, replacement of an emissions unit, and changes that contravene a permit term.

Send all other submittals to: Compliance Tracking Coordinator, Compliance Determination Unit, Air Quality Division, Minnesota Pollution Control Agency, 520 Lafayette Road North, St. Paul, Minnesota 55155-4194.

TABLE B: ONE TIME SUBMITTALS OR NOTIFICATIONS

04/15/98

Facility Name: Minnesota Brewing Co

Permit Number: 12300019 - 001

What to send	When to send	Portion of Facility Affected
Computer Dispersion Modeling Protocol	due 1,096 days after Permit Issuance for Nitrogen Oxides. This protocol will describe the proposed modeling methodology and input data, in accordance with all requirements of 40 CFR pt. 51, App. W.	Total Facility
Computer Dispersion Modeling Results	due 1,462 days after Permit Issuance for Nitrogen Oxides. Results shall be submitted after MPCA review and approval of the modeling protocol.	Total Facility
Notification of the Actual Date of Initial Startup	due 15 days after Initial Startup	CE005, EU050
Performance Test Notification (written)	due 30 days before Initial Performance Test	SV003, SV006, SV008
Performance Test Plan	due 30 days before Initial Performance Test	SV003, SV006, SV008
Performance Test Report - Microfiche Copy	due 105 days after Initial Performance Test	SV003, SV006, SV008
Performance Test Report	due 45 days after Initial Performance Test	SV003, SV006, SV008
Testing Frequency Plan	due 60 days after Initial Performance Test for emissions of total particulate matter and particulate matter <10 microns. The plan shall specify a testing frequency using the test data and MPCA guidance. Future performance tests based on year (12 month), 36 month, and 60 month intervals, or as applicable, shall be required on written approval of MPCA per Minn. R. 7017.2020, subp. 1.	SV008
Testing Frequency Plan	due 60 days after Initial Performance Test for total particulate matter, particulate matter <10 microns and volatile organic compound emissions. The plan shall specify a testing frequency using the test data and MPCA guidance. Future performance tests based on year (12 month), 36 month, and 60 month intervals, or as applicable, shall be required on written approval of MPCA per Minn. R. 7017.2020, subp. 1.	SV003
Testing Frequency Plan	due 60 days after Initial Performance Test for volatile organic compound emissions. The plan shall specify a testing frequency using the test data and MPCA guidance. Future performance tests based on year (12 month), 36 month, and 60 month intervals, or as applicable, shall be required on written approval of MPCA per Minn. R. 7017.2020, subp. 1.	SV006

TABLE B: RECURRENT SUBMITTALS

04/15/98

Facility Name: Minnesota Brewing Co

Permit Number: 12300019 - 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 occur, permittee shall submit a report stating that no deviations occurred.	Total Facility
Compliance Certification	due 30 days after end of each calendar year following Permit Issuance (for the previous calendar year). To be submitted on a form approved by the Commissioner. The report covers all deviations experienced during the calendar year.	Total Facility
Emissions Inventory Report	due 91 days after end of each calendar year following Permit Issuance (April 1). To be submitted on a form approved by the Commissioner.	Total Facility

APPENDIX MATERIAL

Facility Name: Minnesota Brewing Company

Permit Number: 12300019-001

Calculation of NO_x emissions generated due to the production of fuel ethanol

NO_x emissions are to be calculated monthly, as follows:

Step 1: Calculate NO_x emissions for the previous month, using the following equation:

$$(A \times \frac{B}{C} \times EF_{NOxFO}) + (D \times \frac{E}{F} \times EF_{NOxNG}) + (G \times EF_{NOxNG}) + (H \times EF_{NOxP}) = N$$

Where:

- A = The quantity of steam generated by the combustion of fuel oil in the boilers and used in the production of ethanol during the previous month, in pounds
- B = The total quantity of fuel oil combusted in the boilers during the previous month, in gallons
- C = The total quantity of steam produced by the combustion of fuel oil in the boilers during the previous month, in pounds
- D = The quantity of steam generated by the combustion of natural gas in the boilers and used in the production of ethanol during the previous month, in pounds
- E = The total quantity of natural gas combusted in the boilers during the previous month, in million cubic feet
- F = The total quantity of steam produced by the combustion of natural gas in the boilers during the previous month, in pounds
- G = The quantity of natural gas combusted in the dryer during the previous month, in million cubic feet
- H = The quantity of propane combusted in the dryer during the previous month, in gallons
- EF_{NOxFO} = The appropriate emission factor for nitrogen oxide emissions from the combustion of fuel oil, in tons of NO_x per gallon of fuel oil. The appropriate emission factor is either
1. A site-specific emission factor obtained from an MPCA approved stack test, or

2. The most current emission factor from AP-42. At the time of permit issuance, the most current AP-42 emission factor is 2.75×10^{-5} tons of NO_x per gallon of oil, but may change over the life of this permit.

EF_{NOXNG} = The appropriate emission factor for nitrogen oxide emissions from the combustion of natural gas, in tons of NO_x per million cubic feet of natural gas. The appropriate emission factor is either

1. A site-specific emission factor obtained from an MPCA approved stack test, or
2. The most current emission factor from AP-42. At the time of permit issuance, the most current AP-42 emission factor is 0.07 tons of NO_x per million cubic feet of natural gas, but may change over the life of this permit.

EF_{NOXP} = The appropriate emission factor for nitrogen oxide emissions from the combustion of propane, in tons of NO_x per gallon of propane. The appropriate emission factor is either

1. A site-specific emission factor obtained from an MPCA approved stack test, or
2. The most current emission factor from AP-42. At the time of permit issuance, the most current AP-42 emission factor is 9.5×10^{-6} tons of NO_x per gallon of propane, but may change over the life of this permit.

N = NO_x emissions, in tons, for the previous month

Step 2: Calculate annual NO_x emissions, using a 12-month rolling sum.

Each month, add together the NO_x emissions from the previous 12 months.

TECHNICAL SUPPORT DOCUMENT
For
AIR EMISSION PERMIT NO. 12300019-001

This technical support document is intended for all parties interested in the permit. The purpose of this document is to set forth the legal and factual basis for the permit conditions, including references to the applicable statutory or regulatory provisions.

1. General Information

1.1 Applicant and Stationary Source Location:

Owner/Operator Address and Phone Number	Facility Location (SIC Code: 2808/2869)
Minnesota Brewing Company 882 West 7th Street St. Paul, Minnesota 55102 Jack Lee, President/CEO Phone: (612)228-9173 Fax: (612)290-8220	Minnesota Brewing Company 882 West 7th Street St. Paul, Ramsey County

1.2 Description Of The Facility

Minnesota Brewing Company operates an existing facility producing bottled and canned beer and water. Existing emission sources include grain receiving and handling, boilers, fermentation of beer, bottling and canning of beer and water, and application of labels and dates.

The facility proposes to use existing grain receiving and handling capacity and existing fermentation capacity to produce ethanol for use in fuels. Additional equipment is required for distillation of ethanol, for processing of spent corn, and for storage of ethanol, denatured ethanol, and denaturant (gasoline). Primary pollutants include particulate matter (PM), particulate matter smaller than 10 microns (PM₁₀), nitrogen oxides (NO_x), sulfur dioxide (SO₂), and volatile organic compounds (VOC).

The portion of the facility producing fuel alcohol will be subject to a 100 tpy emission threshold for each criteria pollutant, under the federal Prevention of Significant Deterioration (PSD) program, 40 CFR Section 52.21. The facility has accepted emission limits and operating limitations such that the emissions of each criteria pollutant resulting from the production of fuel alcohol is below 100 tpy.

The entire facility (beverage alcohol production plus fuel alcohol production) is subject to the 250 tpy emission threshold under PSD. The facility has accepted emission limits and operating limitations such that the emissions of each criteria pollutant from the facility is less than 250 tpy.

The facility is a major source under the Part 70 program (40 CFR Section 70.2).

1.3 Description of the Activities Allowed By This Permit Action

This permit action allows continued operation of the brewery facility, and development and operation of a fuel alcohol production facility to produce up to 18,000,000 gallons of fuel alcohol (ethanol) per year. Physical modifications authorized include installation of distillation equipment to be used in the ethanol process, installation of a grain dryer, and installation of a new hammermill to be used for grinding corn. The permit includes federally enforceable operating requirement limiting emissions to non-major levels.

1.4. Facility Emissions:

Table 1. Emissions Associated With the Modification
(Emissions associated with the production of ethanol)

Pollutant	Potential to Emit from the mod (lb/hr)	Potential to Emit from the mod (TPY)	Emission Increases Authorized with this Permit Action (TPY)	Emission Decreases Authorized with this Permit Action (TPY)	*Other contempo raneous emission increases/ decreases (TPY)	Overall Emission Change (TPY)	NSR Threshold Level (TPY)	NSR/ MACT Review Required (Yes or No)
PM	20.48	89.7	89.7	none	none	89.7	100	NO
PM ₁₀	18.01	78.8	78.8	none	none	78.8	100	NO
SO ₂	17.26	75.59	75.59	none	none	75.59	100	NO
NO _x	22.6	95.0	95.0	none	none	95.0	100	NO
VOC	16.95	74.26	74.26	none	none	74.26	100	NO
CO	7.76	34.01	34.01	none	none	34.01	100	NO
Lead	0.0003	0.0013	0.0013	none	none	0.0013	100	NO
Benzene	0.03	0.13	0.13	none	none	0.13	N/A	NO
Total HAPs	0.04	0.173	0.173	none	none	0.173	N/A	NO

*Other emission changes during the contemporaneous period as defined by 40 CFR 52.21, 40 CFR 52.24 or 40 CFR 51

Table 2. Total Facility Potential to Emit Summary:
(See GI-07 and attached calculations for details)

	PM	PM ₁₀	SO ₂	NO _x	VOC	CO	Lead	Benzene	Methanol	MEK*	Total HAP
Total Facility Limited Potential Emissions	90.4	79.3	75.6	164.6	190.4	34.0	0.0013	0.13	7.1	8.3	15.8

* MEK = methyl ethyl ketone

Table 3. Permit Action Classification

Classification	Major/Affected Source	*Synthetic Minor	*Minor
PSD	NO	PM, PM ₁₀ , SO ₂ , NO _x , VOC	Pb
NAAR	NO	N/A	CO
Part 70	Yes	N/A	N/A

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

1.5 Changes made since beginning the 30 day public notice

PERMIT

No requests were made during the public notice period for any changes to the permit. However, the following changes were made, at the discretion of the AQD:

- Added a requirement to notify the MPCA upon initial startup of the dryer (EU 050). Performance testing is required “180 days after initial startup” but the draft permit failed to require notification of initial startup. This was an oversight.
- Added a requirement to notify the MPCA upon initial startup of the scrubber controlling the distillation operations (CE 005). Performance testing is required “180 days after initial startup” but the draft permit failed to require notification of initial startup. This was an oversight.
- Clarification was added under SV003 (dryer) and SV006 (scrubber), describing when performance testing is required: 180 days after initial start up of the dryer (EU 050) and 180 days after initial startup of the scrubber (CE 005).

APPLICATION FORMS

- Further information regarding stack size and height was added to GI-04. This has no effect on the permit, since no modeling was done. It merely completes information that was missing when the application was initially submitted.
- Further information regarding manufacturers and construction/startup dates of existing equipment was added to GI-05B. This has no effect on the contents of the permit, no effect emissions, and no effect on applicability. It merely completes information that was missing when the application was initially submitted.

PLANT LAYOUT

The planned location of EU 050 (dryer) and its associated stack and control equipment was moved to further within the boundaries of the facility. This was a result of public comment that was made during the EAW process regarding the proximity of the stack and its steam plume to land that is planned for redevelopment by the City of St. Paul. This has no effect on the emissions from the dryer, and since modeling was not done, has no effect on the project as analyzed.

1.6 Changes made since beginning the 45-day EPA review period

PERMIT

- Added the word “pure” to the definition of fuel ethanol, under the total facility requirements. This was for clarification, to show that the production limit on fuel ethanol is a limit on ethanol prior to being denatured (the limit does not include the volume of gasoline required for denaturing).
- Miscellaneous changes to language under Total Facility, to reflect language changes in Minnesota Rules which became effective 1/19/98.

2. Regulatory and/or Statutory Basis

Regulatory Overview of Units Affected by the Modification

Table 4. Regulatory Overview

EU, GP, or SV #	Applicable Regulations	Comments
FC	Minn. R. 7009 and 40 CFR 50	Modeling is required for NO _x , because the total facility emissions exceed 100 tpy. Modeling is not generally required from ethanol plants, because they typically are below 100 tpy for all pollutants.
GP 005	Title I	Uncontrolled VOC emissions from these fermenters would exceed 250 tpy. All other fermenters in beverage alcohol production have CO ₂ /VOC collected by a closed system with no emission points. Therefore, throughput of these fermenters only

		is limited.
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GP 006	Title I	NO _x emissions from ethanol production must be less than 100 tpy for the source to be non-major under PSD. The boilers are shared between the fuel alcohol production activities and the beverage alcohol production activities. PTE of all other pollutants from the boiler are less than 100 tpy; NO _x emissions are greater than 100 tpy. Therefore, it must be shown that the portion of the NO _x emissions from boiler use going to fuel alcohol production, plus NO _x emissions from the dryer (fuel alcohol dedicated equipment) is less than 100 tpy.
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3. Conclusion

Based on the information provided by Minnesota Brewing Company, the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission Permit No. 12300019-001 and this technical support document, will not cause or contribute to a violation of applicable federal regulations and Minnesota Rules.

Staff Members on Permit Team: Toni Volkmeier, Cary Hernandez, Marshall Cole, Dave Vaaler, Bob Berg, Rhonda Land

Attachments: GI-07, calculations, Forms GI-4, GI-05A-D, CD-01