

AIR EMISSION PERMIT NO. 02700001-011
Major Amendment

IS ISSUED TO

American Crystal Sugar Company

AMERICAN CRYSTAL SUGAR - MOORHEAD
2500 11th Street North
Moorhead, Clay County, MN 56560

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	Issue Date	Action
Total Facility Operating Permit -Reissuance	September 12, 2002	June 6, 2006	009
Major Amendment	March 6, 2008	November 10, 2008	010
Major Amendment	June 20, 2008	See Below	011

This permit supersedes permit 02700001-010 and authorizes the Permittee to operate and modify 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; Pt 70/Major for NSR
Issue Date: June 6, 2006
Expiration: June 6, 2011
Title I Conditions do not expire.

Major Amendment
Issue Date: March 5, 2009

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

for Paul Eger
Commissioner
Minnesota Pollution Control Agency

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NOTICE TO THE PERMITTEE:

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

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

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

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

PERMIT SHIELD:

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

FACILITY DESCRIPTION:

American Crystal Sugar's Moorhead plant consists of three coal-fired (subbituminous) boilers, each with an Electrostatic Precipitator (ESP); two natural gas-fired pulp dryers each with a fabric filter and cyclone; one pulp pellet cooler; pulp pellet handling, storage and loading equipment; one lime kiln (calciner) with cyclones; one lime slaker; one sugar dryer; one sugar cooler; and dry sugar storage with fabric filters, handling, and sacking equipment. The Moorhead plant operates from late August through May of each year, 24 hours per day. The plant typically starts up two to three days before starting to slice sugar beets and shuts down two to four days after beet slicing has stopped.

PERMIT ACTION 011 (MAJOR AMENDMENT):

This permit amendment allows the combustion of anthracite coal, pulverized coal and natural gas at the existing lime kiln (EU 004). This permit amendment also allows the combustion of biogas generated from an on-site anaerobic digester at the existing three (3) coal-fired boilers (EU 001, 002, and 003). The additional fuel type allowed in the existing units does not result in significant emission increases from the existing emission units. In addition, this permit amendment also replaces the requirements of NESHAP, Subpart DDDDD for Industrial, Commercial, and Institutional Boilers and Process Heaters by the CAA 112 (j) (MACT) submittal requirements because the requirements of NESHAP, Subpart DDDDD have been vacated.

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: American Crystal Sugar - Moorhead

Permit Number: 02700001 - 011

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
EMISSION AND OPERATIONAL REQUIREMENTS	hdr
The Permittee shall comply and upon written request demonstrate compliance, 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.	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. 7009.0100-7009.0080
Hydrogen Sulfide: less than or equal to 0.050 parts per million as a half hour average not to be exceeded more than twice per year in the ambient air around the facility. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.	Minn. R. 7009.0080
Hydrogen Sulfide: less than or equal to 0.030 parts per million as a half hour average not to be exceeded more than twice in any five consecutive days in the ambient air around the facility. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.	Minn. R. 7009.0080
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.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 & 16(J)
Operation and Maintenance (O&M) Plan: Retain at the stationary source an O&M 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, subps. 14 & 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 and the Facility's Fugitive Dust Plan.	Minn. R. 7011.0150
Noise: The Permittee shall comply with the noise standards set forth in Minn. R. 7030.0010 to 7030.0080 at all times during the operation of any emission units. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.	Minn. R. 7030.0010 - 7030.0080
Inspections: The Permittee shall comply with the inspection procedures and requirements as found in Minn. R. 7007.0800, subp. 9(A).	Minn. R. 7007.0800, subp. 9(A)
The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16.	Minn. R. 7007.0800, subp. 16
PERFORMANCE TESTING	hdr
Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017.	Minn. R. ch. 7017
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

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: American Crystal Sugar - Moorhead

Permit Number: 02700001 - 011

<p>Performance Test Notifications and Submittals:</p> <p>Performance Tests are due as outlined in Table A of the permit.</p> <p>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 - CD Copy: due 105 days after each Performance Test</p> <p>The Notification, Test Plan, and Test Report may be submitted in alternative format as allowed by Minn. R. 7017.2018.</p>	<p>Minn. R. 7017.2018; Minn. R. 7017.2030, subps. 1-4; Minn. R. 7017.2035, subps. 1-2</p>
<p>MONITORING REQUIREMENTS</p>	<p>hdr</p>
<p>Monitoring Equipment Calibration: Annually calibrate all required monitoring equipment.</p>	<p>Minn. R. 7007.0800, subp. 4(D)</p>
<p>Operation of Monitoring Equipment: 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.</p>	<p>Minn. R. 7007.0800, subp. 4(D)</p>
<p>Hydrogen Sulfide Ambient Monitoring: the Permittee shall continue to operate a hydrogen sulfide monitoring network in accordance with the plan approved by the MPCA to measure the ambient concentration of hydrogen sulfide during the warm weather months (April through October). The Permittee may make a written request to the North District Manager to cease operation of the network at any time. An analysis of the ambient H2S data collected to date shall accompany this request. This is a state only requirement and is not enforceable by the EPA Administrator citizens under the Clean Air Act.</p>	<p>Minn. R. 7007.0800, subp. 4</p>
<p>MODELING REQUIREMENTS</p>	<p>hdr</p>
<p>Parameters Used in Modeling: The stack heights, emission rates, and other parameters used in the modeling for this major PSD modification are listed in the Appendix of this permit. The Permittee must submit to the Commissioner for approval any revisions of these parameters and must wait for a written approval before making such changes. The information submitted must include, at a minimum, the locations, heights and diameters of the stacks, locations and dimensions of nearby buildings, the velocity and temperatures of the gases emitted, and the emission rates. The plume dispersion characteristics due to the revisions of the information must be equivalent to or better than the dispersion characteristics modeled in the application for this permit as approved in a memo from Margaret McCourtney to Trent Wickman, dated March 8, 1999. The Permittee shall demonstrate this equivalency in the proposal.</p>	<p>Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000</p>
<p>If the information does not demonstrate equivalent or better dispersion characteristics, or if a conclusion cannot readily be made about the dispersion, the Permittee must remodel.</p> <p>For changes that do not require a permit amendment or require a minor permit amendment, the proposal must be submitted as soon as practicable, but no less than 60 days before beginning actual construction of the stack or associated emission unit.</p> <p>For changes that require a permit amendment other than a minor amendment, the proposal must be submitted with the permit application.</p>	<p>Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000</p>
<p>RECORDKEEPING</p>	<p>hdr</p>
<p>Recordkeeping: Retain all records required by this permit 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).</p>	<p>Minn. R. 7007.0800, subp. 5(C)</p>
<p>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.</p>	<p>Minn. R. 7007. 0800, subp. 5(B)</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: American Crystal Sugar - Moorhead

Permit Number: 02700001 - 011

<p>If the Permittee determines that no permit amendment or notification is required prior to making a change, the Permittee must retain records of all calculations required under Minn. R. 7007.1200. These records shall be kept for a period of five years from the date the change was made or until permit reissuance, whichever is longer. The records shall be kept at the stationary source for the current calendar year of operation and may be kept at the office of the stationary source for all other years. The records may be maintained in either electronic or paper format.</p>	<p>Minn. R. 7007.1200, subp. 4</p>
<p>REPORTING/SUBMITTALS</p>	<p>hdr</p>
<p>Shutdown Notifications: Notify the Commissioner at least 24 hours in advance of a planned shutdown of any control equipment or process equipment if the shutdown would cause any increase in the emissions of any regulated air pollutant. If the owner or operator does not have advance knowledge of the shutdown, notification shall be made to the Commissioner as soon as possible after the shutdown. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 3.</p> <p>At the time of notification, the owner or operator shall inform the Commissioner of the cause of the shutdown and the estimated duration. The owner or operator shall notify the Commissioner when the shutdown is over.</p>	<p>Minn. R. 7019.1000, subp. 3</p>
<p>Breakdown Notifications: Notify the Commissioner within 24 hours of a breakdown of more than one hour duration of any control equipment or process equipment if the breakdown causes any increase in the emissions of any regulated air pollutant. The 24-hour time period starts when the breakdown was discovered or reasonably should have been discovered by the owner or operator. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 2.</p> <p>At the time of notification or as soon as possible thereafter, the owner or operator shall inform the Commissioner of the cause of the breakdown and the estimated duration. The owner or operator shall notify the Commissioner when the breakdown is over.</p>	<p>Minn. R. 7019.1000, subp. 2</p>
<p>Notification of Deviations Endangering Human Health or the Environment: As soon as possible after discovery, notify the Commissioner or the state duty officer, either orally or by facsimile, of any deviation from permit conditions which could endanger human health or the environment.</p>	<p>Minn. R. 7019.1000, subp. 1</p>
<p>Notification of Deviations Endangering Human Health or the Environment Report: Within 2 working days of discovery, notify the Commissioner in writing of any deviation from permit conditions which could endanger human health or the environment. Include the following information in this written description:</p> <ol style="list-style-type: none"> 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. 	<p>Minn. R. 7019.1000, subp. 1</p>
<p>Application for Permit Amendment: If a permit amendment is needed, submit an application in accordance with the requirements of Minn. R. 7007.1150-7007.1500. Submittal dates vary, depending on the type of amendment needed.</p>	<p>Minn. R. 7007.1150 - 7007.1500</p>
<p>Extension Requests: The Permittee may apply for an Administrative Amendment to extend a deadline in a permit by no more than 120 days, provided the proposed deadline extension meets the requirements of Minn. R. 7007.1400, subp. 1(H).</p>	<p>Minn. R. 7007.1400, subp. 1(H)</p>
<p>Emission Inventory Report: due on or before April 1 of each calendar year following permit issuance. To be submitted on a form approved by the Commissioner.</p>	<p>Minn. R. 7019.3000 - 7019.3010</p>
<p>Emission Fees: due 60 days after receipt of an MPCA bill.</p>	<p>Minn. R. 7002.0005 - 7002.0095</p>
<p>Inapplicable Requirements: at the time of the issuance of this permit the Permittee did not contain any affected facilities under 40 CFR Section 60, subps: D, Db, Dc, HH, or Kb. At the time of the issuance of this permit EU 001, EU 002, and EU 003 are existing facilities with respect to 40 CFR Section 60, subp Db. The Permittee is not subject to 40 CFR Section 61.</p>	<p>40 CFR Section 60; 40 CFR Section 61; Minn. R. 7007.1800</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: American Crystal Sugar - Moorhead

Permit Number: 02700001 - 011

<p>The Permittee shall submit a Part 1 MACT application within 30 days of startup of any 112(j) affected source. The application shall meet the requirements of 40 CFR Section 63.53(a).</p> <p>The Permittee shall submit a Part 2 MACT application within 90 days of startup of any 112(j) affected source. The application shall meet the requirements of 40 CFR Section 63.53(b).</p> <p>112(j) affected source is defined in 40 CFR Section 63.51. As of permit issuance, 112(j) affected sources include industrial, commercial, and institutional boilers and process heaters; brick and structural clay products manufacturing; clay ceramics manufacturing.</p>	<p>40 CFR Sections 63.52(b)(1) & (e)(1)</p>
<p>DETERMINING IF A PROJECT/MODIFICATION IS SUBJECT TO NSR</p>	<p>hdr</p>
<p>These requirements apply where there is a reasonable possibility that a proposed project, analyzed using the actual-to-projected-actual (ATPA) test and found to not be part of a major modification, may result in a significant emissions increase. If the ATPA test is not used for a particular project, or if there is not a reasonable possibility that the proposed project could result in a significant emissions increase, then these requirements do not apply to that project.</p> <p>Even though a particular modification is not subject to New Source Review (NSR), a permit amendment, recordkeeping, or notification may still be required under Minn. R. 7007.1150 - 7007.1500.</p>	<p>Title I Condition: 40 CFR Section 52.21(r)(6); Minn. R. 7007.3000</p>
<p>Preconstruction Documentation -- Before beginning actual construction on a project, the Permittee shall document the following information:</p> <ol style="list-style-type: none"> 1. A description of the project; 2. Identification of the emission unit(s) whose emissions of an NSR pollutant could be affected; and 3. A description of the applicability test used to determine that the project is not a major modification for any regulated NSR pollutant, including the baseline actual emissions, the potential emissions, the projected actual emissions, the amount of emissions excluded due to increases not associated with the modification and that the unit(s) could have accommodated during the baseline period, an explanation of why the amounts were excluded, and any creditable contemporaneous increases and decreases that were considered in the determination. <p>The Permittee shall maintain records of this documentation.</p>	<p>Title I Condition: 40 CFR Section 52.21(r)(6); Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 4 & 5</p>
<p>The Permittee shall monitor the actual emissions of any regulated NSR pollutant that could increase as a result of the project and that were analyzed using the ATPA test, and the potential emissions of any regulated NSR pollutant that could increase as a result of the project and that were analyzed using potential emissions. The Permittee shall calculate and maintain a record of the sum of the actual and potential (if used in the analysis) emissions of the regulated pollutant, in tons per year on a calendar year basis, for a period of 5 years following resumption of regular operations after the change, or for a period of 10 years following resumption of regular operations after the change if the project increases the design capacity of or potential to emit of any unit associated with the project.</p>	<p>Title I Condition: 40 CFR Section 52.21(r)(6); Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 4 & 5</p>
<p>The Permittee must submit a report to the Agency if the annual summed (actual plus potential, if applicable) emissions differ from the preconstruction projection and exceed the baseline actual emissions by a significant amount as listed at 40 CFR Section 52.21(b)(23). Such report shall be submitted to the Agency within 60 days after the end of the year in which the exceedances occur, and shall contain:</p> <ol style="list-style-type: none"> 1. The name and ID number of the facility, and the name and telephone number of the facility contact person; 2. The annual emissions (actual plus potential, if any part of the project was analyzed using potential emissions) for each pollutant for which the preconstruction projection and significant emissions increase are exceeded; and 3. Any other information, such as an explanation as to why the summed emissions differ from the preconstruction projection. 	<p>Title I Condition: 40 CFR Section 52.21(r)(6); Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 4 & 5</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS

A-5

03/05/09

Facility Name: American Crystal Sugar - Moorhead

Permit Number: 02700001 - 011

Subject Item: GP 001 Boilers #1, #2, and #3**Associated Items:** EU 001 Boiler #1, North

EU 002 Boiler #2, Center

EU 003 Boiler #3, South

What to do	Why to do it
Fuel Usage: less than or equal to 1,250 gallons/month using 12-month Rolling Average of on-site generated used oil/used oil sorbents. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.	Minn. R. 7007.0800, subp. 2
Fuel Usage Recordkeeping: The Permittee shall calculate the 12-month rolling average by the 15th day of each month for the previous month. The Permittee shall keep records of the amount of used oil and used oil sorbents combusted in the boilers every month and the 12-month rolling average calculation on site. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.	Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: American Crystal Sugar - Moorhead

Permit Number: 02700001 - 011

Subject Item: GP 003 Sugar Silos

- Associated Items:** EU 016 Sugar Silo Dust Control System
 EU 017 Sugar Silo Dust Control System
 EU 018 Sugar Silo Dust Control System
 EU 019 Sugar Silo Dust Control System
 EU 020 Sugar Silo Dust Control System
 EU 021 Sugar Silo Dust Control System
 EU 022 Sugar Silo Dust Control System
 EU 023 Sugar Silo Dust Control System

What to do	Why to do it
EMISSION AND OPERATIONAL LIMITS	hdr
Particulate Matter < 10 micron: less than or equal to 0.020 grains/dry standard cubic foot	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 0.020 grains/dry standard cubic foot	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000; also meets Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
Only two silos may be operated at one time.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
CONTROL EQUIPMENT OPERATING REQUIREMENTS	hdr
Operation and Maintenance: The Permittee shall operate and maintain the associated control equipment (CE 018 - CE 025) according to the manufacturer's specifications and the facility O&M plan.	Minn. R. 7007.0800, subp. 14; meets CAM requirements per 40 CFR Section 64.7
TESTING REQUIREMENTS	hdr
Performance Test: due before end of each 60 months starting 11/07/2008 to measure particulate matter and particulate matter less than 10 microns from one representative sugar silo dust control system at intervals not to exceed 60 months. Testing shall be conducted on a system that has not been tested. After all the systems have been tested, testing shall be conducted on the system for which testing is least current.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000; Minn. R. 7017.2020, subp. 1
Performance Test: due before end of each 60 months starting 11/07/2008 to measure opacity from one representative sugar silo dust control system at intervals not to exceed 60 months. Testing shall be conducted at the same time as the performance test for particulate matter and particulate matter < 10 microns and on the same system.	Minn. R. 7017.2020, subp. 1
MONITORING AND RECORDKEEPING REQUIREMENTS	hdr
Recordkeeping: once each day record the number of silos operating	Minn. R. 7007.0800, subp. 4
Monitoring of Pollution Control Equipment: The Permittee shall monitor and record the presence or absence of visible emissions from each baghouse once each day while in operation. If visible emissions are observed, the Permittee shall take corrective action as soon as possible and make a record of the corrective action taken.	Minn. R. 7007.0800, subp. 4, 5, & 14; meets CAM requirements per 40 CFR Section 64.3

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: American Crystal Sugar - Moorhead

Permit Number: 02700001 - 011

Subject Item: GP 006 Material Handling Source Requirements (NOT Subject to CAM)

- Associated Items:**
- EU 009 Pneumatic Pellet Conveying System
 - EU 012 Packaging Vacuum System
 - EU 024 Sugar storage conveyor system
 - EU 032 Sugar Reclaim (Azo) System
 - EU 034 Brown Sugar Batching Conveying System
 - EU 035 Powdered Sugar Reclaim/Cube Line Conveyor
 - EU 036 Bag in box conveyor system
 - SV 012 Pellet Convey System/Pulp Pellet Area Dust Control
 - SV 013 Packaging Vacuum
 - SV 025 Sugar Storage Conveyor
 - SV 030 Sugar Reclaim (Azo) System
 - SV 032 Brown Sugar Batching Convey
 - SV 033 Powdered Sugar Reclaim
 - SV 034 Bag-in-Box Conveyor

What to do	Why to do it
EMISSION AND OPERATIONAL LIMITS	hdr
Particulate Matter < 10 micron: less than or equal to 0.020 grains/dry standard cubic foot (this limit applies individually to each emission unit listed in GP 006).	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 0.020 grains/dry standard cubic foot (this limit applies individually to each emission unit listed in GP 006).	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000; meets Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity (this limit applies individually to each emission unit listed in GP 006).	Minn. R. 7011.0715, subp. 1(B)
CONTROL EQUIPMENT OPERATING REQUIREMENTS	hdr
Operation and Maintenance: The Permittee shall operate and maintain the associated control equipment according to the manufacturer's specifications and the facility O&M plan.	Minn. R. 7007.0800, subp. 14
MONITORING AND RECORDKEEPING REQUIREMENTS	hdr
Monitoring of Pollution Control Equipment: The Permittee shall monitor and record the presence or absence of visible emissions from each baghouse once each day while in operation. If visible emissions are observed, the Permittee shall take corrective action as soon as possible and make a record of the corrective action taken.	Minn. R. 7007.0800, subps. 4, 5, & 14

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: American Crystal Sugar - Moorhead

Permit Number: 02700001 - 011

Subject Item: GP 007 Material Handling Source Requirements (Subject to CAM)

- Associated Items:** EU 013 Packaging Dust Control System No. 1
 EU 014 Packaging Dust Control System No. 2
 EU 015 Packaging Dust Control System No. 3
 EU 025 Weibull Bin Dust Control System
 EU 033 Bag Clipping Collection System
 SV 014 Packaging Dust Control #1
 SV 015 Packaging Dust Control #2
 SV 016 Packaging Dust Control #3
 SV 026 Weibull Bin Dust Control
 SV 029 Starch Bin Receiving
 SV 031 Bag Clipping Collection

What to do	Why to do it
EMISSION AND OPERATIONAL LIMITS	hdr
Particulate Matter < 10 micron: less than or equal to 0.020 grains/dry standard cubic foot (this limit applies individually to each emission unit listed in GP 007).	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 0.020 grains/dry standard cubic foot (this limit applies individually to each emission unit listed in GP 007).	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000; meets Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity (this limit applies individually to each emission unit listed in GP 007).	Minn. R. 7011.0715, subp. 1(B)
CONTROL EQUIPMENT OPERATING REQUIREMENTS	hdr
Operation and Maintenance: The Permittee shall operate and maintain the associated control equipment according to the manufacturer's specifications and the facility O&M plan.	Minn. R. 7007.0800, subp. 14; meets CAM requirements per 40 CFR Section 64.7
TESTING REQUIREMENTS	hdr
Performance Test: due before end of each 60 months starting 09/21/2005 to measure particulate matter and particulate matter < 10 microns from one representative packaging dust control system at intervals not to exceed 60 months. The next test shall be on EU 015 (SV 016) and subsequent tests shall be conducted on the system for which testing is least current.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000; Minn. R. 7017.2020, subp. 1
Performance Test: due before end of each 60 months starting 09/21/2005 to measure opacity from one representative packaging dust control system at intervals not to exceed 60 months. Testing shall be conducted at the same time as the performance test for particulate matter and particulate matter < 10 microns and on the same system.	Minn. R. 7017.2020, subp. 1
MONITORING AND RECORDKEEPING REQUIREMENTS	hdr
Monitoring of Pollution Control Equipment: The Permittee shall monitor and record the presence or absence of visible emissions from each baghouse once each day while in operation. If visible emissions are observed, the Permittee shall take corrective action as soon as possible and make a record of the corrective action taken.	Minn. R. 7007.0800, subp. 4, 5, & 14; meets CAM requirements per 40 CFR Section 64.3

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: American Crystal Sugar - Moorhead

Permit Number: 02700001 - 011

Subject Item: EU 001 Boiler #1, North

Associated Items: CE 001 Electrostatic Precipitator - High Efficiency

GP 001 Boilers #1, #2, and #3

SV 001 Boiler #1

What to do	Why to do it
EMISSION AND OPERATIONAL LIMITS	hdr
Particulate Matter < 10 micron: less than or equal to 15.0 lbs/hour	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 15.0 lbs/hour	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 0.60 lbs/million Btu heat input	Minn. R. 7011.0510, subp. 1
Opacity: less than or equal to 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity.	Minn. R. 7011.0510, subp. 2
Sulfur Content of Fuel: less than or equal to 0.50 percent by weight (0.93 lb/MMBTU) for subbituminous coal as received. The long term emission rate of 0.93 lb/MMBTU is equivalent to a short-term (1- to 3-hour) emission rate of 1.23 lb/MMBTU, based on the coal sulfur analysis methodology contained in this permit.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Sulfur Dioxide: less than or equal to 1.0 lbs/million Btu heat input	Minn. R. 7007.0800, subp. 2; meets requirements of Minn. R. 7011.0510, subp. 1
Fuels Allowed: Subbituminous coal, on-site generated used oil, used oil sorbents, and on-site generated biogas.	Minn. R. 7007.0800, subp. 2
CONTROL EQUIPMENT OPERATING REQUIREMENTS	hdr
Boiler Pollution Control Equipment Requirement: The Permittee shall operate the electrostatic precipitator (CE 001) on EU 001 with no less than 3 fields online. This limit may be amended as specified in Minn. R. 7017.2025 upon completion of each subsequent performance test.	Minn. R. 7007.0800, subp. 14; Minn. R. 7017.2025, subp. 3; meets CAM requirements per 40 CFR Section 64.3
Operation and Maintenance: The Permittee shall operate and maintain CE 001 according to the manufacturer's specifications and the facility O&M plan.	Minn. R. 7007.0800, subp. 14; meets CAM requirements per 40 CFR Section 64.7
TESTING REQUIREMENTS	hdr
Performance Test: due before end of each 60 months starting 11/07/2008 to measure particulate matter, particulate matter < 10 microns, and sulfur dioxide at intervals not to exceed 60 months.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000; Minn. R. 7017.2020, subp. 1
Performance Test: due before end of each 60 months starting 11/07/2008 to measure opacity at intervals not to exceed 60 months.	Minn. R. 7017.2020, subp. 1
MONITORING AND RECORDKEEPING REQUIREMENTS	hdr
Boiler Pollution Control Equipment Monitoring/Recordkeeping: The Permittee shall record the number of fields online in the electrostatic precipitator for EU 001, once each day while in operation. If the number of fields observed to be online is less than the number during the last performance test that demonstrated compliance, take corrective action and record the action taken.	Minn. R. 7007.0800, subps. 4, 5, & 14; meets CAM requirements per 40 CFR Section 64.3
<p>Fuel Sulfur Content: The Permittee shall determine the sulfur content of each delivery of coal by either of the following methods:</p> <ol style="list-style-type: none"> 1. Obtain from the fuel supplier, for each shipment of fuel delivered, a signed certification of the sulfur content of the fuel, or 2. According to the current ASTM sampling and analysis methods. <p>With either method, the weight represented by each sulfur content analysis shall be less than or equal to five train cars. Maintain these records for a minimum of five years from the date the information was obtained.</p>	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 4 & 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: American Crystal Sugar - Moorhead

Permit Number: 02700001 - 011

Subject Item: EU 002 Boiler #2, Center

Associated Items: CE 002 Electrostatic Precipitator - High Efficiency

GP 001 Boilers #1, #2, and #3

SV 002 Boiler #2

What to do	Why to do it
EMISSION AND OPERATIONAL LIMITS	hdr
Particulate Matter < 10 micron: less than or equal to 15.0 lbs/hour	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 15.0 lbs/hour	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 0.60 lbs/million Btu heat input	Minn. R. 7011.0510, subp. 1
Opacity: less than or equal to 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity.	Minn. R. 7011.0510, subp. 2
Sulfur Content of Fuel: less than or equal to 0.50 percent by weight (0.93 lb/MMBTU) for subbituminous coal as received. The long term emission rate of 0.93 lb/MMBTU is equivalent to a short-term (1- to 3-hour) emission rate of 1.23 lb/MMBTU, based on the coal sulfur analysis methodology contained in this permit.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Sulfur Dioxide: less than or equal to 1.0 lbs/million Btu heat input	Minn. R. 7007.0800, subp. 2; meets requirements of Minn. R. 7011.0510, subp. 1
Fuels Allowed: Subbituminous coal, on-site generated used oil, used oil sorbents, and on-site generated biogas.	Minn. R. 7007.0800, subp. 2
CONTROL EQUIPMENT OPERATING REQUIREMENTS	hdr
Boiler Pollution Control Equipment Requirement: The Permittee shall operate the electrostatic precipitator (CE 002) on EU 002 with no less than 3 fields online. This limit may be amended as specified in Minn. R. 7017.2025 upon completion of each subsequent performance test.	Minn. R. 7007.0800, subp. 14; Minn. R. 7017.2025, subp. 3; meets CAM requirements per 40 CFR Section 64.3
Operation and Maintenance: The Permittee shall operate and maintain CE 002 according to the manufacturer's specifications and the facility O&M plan.	Minn. R. 7007.0800, subp. 14; meets CAM requirements per 40 CFR Section 64.7
TESTING REQUIREMENTS	hdr
Performance Test: due before end of each 60 months starting 11/07/2008 to measure particulate matter, particulate matter < 10 microns, and sulfur dioxide at intervals not to exceed 60 months.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000; Minn. R. 7017.2020, subp. 1
Performance Test: due before end of each 60 months starting 11/07/2008 to measure opacity at intervals not to exceed 60 months.	Minn. R. 7017.2020, subp. 1
MONITORING AND RECORDKEEPING REQUIREMENTS	hdr
Boiler Pollution Control Equipment Monitoring/Recordkeeping: The Permittee shall record the number of fields online in the electrostatic precipitator for EU 002, once each day while in operation. If the number of fields observed to be online is less than the number during the last performance test that demonstrated compliance, take corrective action and record the action taken.	Minn. R. 7007.0800, subps. 4, 5, & 14; meets CAM requirements per 40 CFR Section 64.3
<p>Fuel Sulfur Content: The Permittee shall determine the sulfur content of each delivery of coal by either of the following methods:</p> <ol style="list-style-type: none"> Obtain from the fuel supplier, for each shipment of fuel delivered, a signed certification of the sulfur content of the fuel, or According to the current ASTM sampling and analysis methods. <p>With either method, the weight represented by each sulfur content analysis shall be less than or equal to five train cars. Maintain these records for a minimum of five years from the date the information was obtained.</p>	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 4 & 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

A-11

03/05/09

Facility Name: American Crystal Sugar - Moorhead

Permit Number: 02700001 - 011

Subject Item: EU 003 Boiler #3, South

Associated Items: CE 003 Electrostatic Precipitator - High Efficiency

GP 001 Boilers #1, #2, and #3

SV 003 Boiler #3

What to do	Why to do it
EMISSION AND OPERATIONAL LIMITS	hdr
Particulate Matter < 10 micron: less than or equal to 15.0 lbs/hour	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 15.0 lbs/hour	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 0.60 lbs/million Btu heat input	Minn. R. 7011.0510, subp. 1
Opacity: less than or equal to 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity.	Minn. R. 7011.0510, subp. 2
Sulfur Content of Fuel: less than or equal to 0.50 percent by weight (0.93 lb/MMBTU) for subbituminous coal as received. The long term emission rate of 0.93 lb/MMBTU is equivalent to a short-term (1- to 3-hour) emission rate of 1.23 lb/MMBTU, based on the coal sulfur analysis methodology contained in this permit.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Sulfur Dioxide: less than or equal to 1.0 lbs/million Btu heat input	Minn. R. 7007.0800, subp. 2; meets requirements of Minn. R. 7011.0510, subp. 1
Fuels Allowed: Subbituminous coal, on-site generated used oil, used oil sorbents, and on-site generated biogas.	Minn. R. 7007.0800, subp. 2
Steam Flow: less than or equal to 123,291 lbs/hour using 8-hour Block Average . This limit may be amended as specified in Minn. R. 7017.2025 upon completion of each subsequent performance test. If the 8-hour block average rises above the maximum steam flow, this shall be reported as a deviation. Divide the total weight by the total operating time in each eight-hour block. Downtime of 15 or more minutes is not to be included as operating time.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7017.2025, subp. 3
CONTROL EQUIPMENT OPERATING REQUIREMENTS	hdr
Boiler Pollution Control Equipment Requirement: The Permittee shall operate the electrostatic precipitator (CE 003) on EU 003 with no less than 3 fields online. This limit may be amended as specified in Minn. R. 7017.2025 upon completion of each subsequent performance test.	Minn. R. 7007.0800, subp. 14; Minn. R. 7017.2025, subp. 3; meets CAM requirements per 40 CFR Section 64.3
Operation and Maintenance: The Permittee shall operate and maintain CE 003 according to the manufacturer's specifications and the facility O&M plan.	Minn. R. 7007.0800, subp. 14; meets CAM requirements per 40 CFR Section 64.7
TESTING REQUIREMENTS	hdr
Performance Test: due before end of each 60 months starting 12/15/2004 to measure particulate matter, particulate matter < 10 microns, and sulfur dioxide at intervals not to exceed 60 months.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000; Minn. R. 7017.2020, subp. 1
Performance Test: due before end of each 60 months starting 12/15/2004 to measure opacity at intervals not to exceed 60 months.	Minn. R. 7017.2020, subp. 1
MONITORING AND RECORDKEEPING REQUIREMENTS	hdr
Boiler Pollution Control Equipment Monitoring/Recordkeeping: The Permittee shall record the number of fields online in the electrostatic precipitator for EU 003, once each day while in operation. If the number of fields observed to be online is less than the number during the last performance test that demonstrated compliance, take corrective action and record the action taken.	Minn. R. 7007.0800, subsps. 4, 5, & 14; meets CAM requirements per 40 CFR Section 64.3
<p>Fuel Sulfur Content: The Permittee shall determine the sulfur content of each delivery of coal by either of the following methods:</p> <ol style="list-style-type: none"> Obtain from the fuel supplier, for each shipment of fuel delivered, a signed certification of the sulfur content of the fuel, or According to the current ASTM sampling and analysis methods. <p>With either method, the weight represented by each sulfur content analysis shall be less than or equal to five train cars. Maintain these records for a minimum of five years from the date the information was obtained.</p>	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000; Minn. R. 7007.0800, subsps. 4 & 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: American Crystal Sugar - Moorhead

Permit Number: 02700001 - 011

Subject Item: EU 004 Vertical Lime kiln

Associated Items: CE 004 Centrifugal Collector - High Efficiency

CE 005 Other

SV 004 Vertical Lime Kiln

SV 005 Carbonation Process Vent

What to do	Why to do it
EMISSION AND OPERATIONAL LIMITS	hdr
Particulate Matter < 10 micron: less than or equal to 5.0 lbs/hour during normal operation	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 5.0 lbs/hour during normal operation	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Particulate Matter < 10 micron: less than or equal to 15.0 lbs/hour during bypass	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 15.0 lbs/hour during bypass	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Sulfur Dioxide: less than or equal to 2.51 lbs/hour during normal operation	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Sulfur Dioxide: less than or equal to 45 lbs/hour during bypass	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	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 percent opacity.	Minn. R. 7011.0610, subp. 1(A)(2)
Sulfur Dioxide: less than or equal to 4.0 lbs/million Btu heat input	Minn. R. 7011.0610, subp. 2(B)
Sulfur Content of Fuel: less than or equal to 0.9 percent by weight for coke as received.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Sulfur Content of Fuel: less than or equal to 0.50 percent by weight for pulverized coal.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Fuels Allowed: Industrial oven coke (coal coke), anthracite coal, pulverized coal, and natural gas as the main fuel source. Propane and wood as fuels for initiating combustion of the solid fuels.	Minn. R. 7007.0800, subp. 2
Process Throughput: less than or equal to 26,000 lbs/hour using 8-hour Block Average of lime rock. This limit may be amended as specified in Minn. R. 7017.2025 upon completion of each subsequent performance test. If the 8-hour block average rises above the maximum lime rock throughput, this shall be reported as a deviation. Divide the total weight by the total operating time in each eight-hour block. Downtime of 15 or more minutes is not to be included as operating time.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7017.2025, subp. 3
Damper Position: less than or equal to 55% open at all times that the unit is in operation. This limit may be amended as specified in Minn. R. 7017.2025 upon completion of each subsequent performance test.	Minn. R. 7017.2025, subp. 3
CONTROL EQUIPMENT OPERATING REQUIREMENTS	hdr
Pressure Drop: greater than or equal to 2.0 inches of water column and less than or equal to 6.0 inches of water column across the cyclones. This limit may be amended as specified in Minn. R. 7017.2025 upon completion of each subsequent performance test.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 & 4; meets CAM requirements per 40 CFR Section 64.3
Operation and Maintenance: The Permittee shall operate and maintain CE 004 according to the manufacturer's specifications and the facility O&M plan.	Minn. R. 7007.0800, subp. 14; meets CAM requirements per 40 CFR Section 64.7
<p>Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur:</p> <ul style="list-style-type: none"> - The recorded pressure drop is outside the required operating range; or - The centrifugal collector or any of its components are found during the inspections to need repair. <p>Corrective actions shall return the pressure drop to within the permitted range, and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O&M Plan for the centrifugal collector. The Permittee shall keep a record of the type and date of any corrective action taken for each collector.</p>	Minn. R. 7007.0800, subps. 4, 5, & 14

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: American Crystal Sugar - Moorhead

Permit Number: 02700001 - 011

TESTING REQUIREMENTS	hdr
Performance Test: due before end of each 60 months starting 11/30/2006 to measure sulfur dioxide emissions at intervals not to exceed 60 months.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000; Minn. R. 7017.2020, subp. 1
Performance Test: due before end of each 36 months starting 11/27/2007 to measure particulate matter and paticulate matter < 10 microns at intervals not to exceed 36 months.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000; Minn. R. 7017.2020, subp. 1
Performance Test: due before end of each 36 months starting 11/27/2007 to measure opacity at intervals not to exceed 36 months.	Minn. R. 7017.2020, subp. 1
MONITORING AND RECORDKEEPING REQUIREMENTS	hdr
Monitoring of Pollution Control Equipment: The Permittee shall monitor and record the pressure drop across the dual cyclone system once each day while in operation.	Minn. R. 7007.0800, subps. 4, 5, & 14; meets CAM requirements per 40 CFR Section 64.3
Fuel Sulfur Content: The Permittee shall determine the sulfur content of each delivery of coal by either of the following methods: 1. Obtain from the fuel supplier, for each shipment of fuel delivered, a signed certification of the sulfur content of the fuel, or 2. According to the current ASTM sampling and analysis methods. With either method, the weight represented by each sulfur content analysis shall be less than or equal to five train cars. Maintain these records for a minimum of five years from the date the information was obtained.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 4 & 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: American Crystal Sugar - Moorhead

Permit Number: 02700001 - 011

Subject Item: EU 006 South Pulp Dryer

Associated Items: CE 007 Multiple Cyclone w/o Fly Ash Reinjection - Most Multiclones

CE 008 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

SV 007 South Pulp Dryer

What to do	Why to do it
EMISSION AND OPERATIONAL LIMITS	hdr
Particulate Matter < 10 micron: less than or equal to 20 lbs/hour	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 20 lbs/hour	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	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 percent opacity.	Minn. R. 7011.0610, subp. 1(A)(2)
Fuels Allowed: natural gas and on-site generated biogas.	Minn. R. 7007.0800, subp. 2
Process Throughput: less than or equal to 9.13 tons/hour using 8-hour Block Average (bone dry pulp rate). This limit may be amended as specified in Minn. R. 7017.2025 upon completion of each subsequent performance test.	Minn. R. 7017.2025, subp. 3
CONTROL EQUIPMENT OPERATING REQUIREMENTS	hdr
Pressure Drop: greater than or equal to 2.0 inches of water column and less than or equal to 6.0 inches of water column across the fabric filter. This limit may be amended as specified in Minn. R. 7017.2025 upon completion of each subsequent performance test.	Minn. R. 7007.0800, subps. 2 & 4; Minn. R. 7017.2025, subp. 3; meets CAM requirements per 40 CFR Section 64.3
Pressure Drop: greater than or equal to 2.0 inches of water column and less than or equal to 8.0 inches of water column across the multiclone. This limit may be amended as specified in Minn. R. 7017.2025 upon completion of each subsequent performance test.	Minn. R. 7007.0800, subps. 2 & 4; Minn. R. 7017.2025, subp. 3; meets CAM requirements per 40 CFR Section 64.3
Operation and Maintenance: The Permittee shall operate and maintain CE 007 & CE 008 according to the manufacturer's specifications and the facility O&M plan.	Minn. R. 7007.0800, subp. 14; meets CAM requirements per 40 CFR Section 64.7
<p>Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur:</p> <ul style="list-style-type: none"> - Visible emissions are observed; - The recorded pressure drop is outside the required operating range; or - The centrifugal collector or any of its components are found during the inspections to need repair. <p>Corrective actions shall return the pressure drop to within the permitted range, and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O&M Plan for the fabric filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter.</p>	Minn. R. 7007.0800, subps. 4, 5, & 14
TESTING REQUIREMENTS	hdr
Performance Test: due before end of each 60 months starting 11/30/2006 to measure total particulate matter at intervals not to exceed 60 months.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000; Minn. R. 7017.2020, subp. 1
Performance Test: due before end of each 36 months starting 11/30/2006 to measure particulate matter < 10 microns at intervals not to exceed 36 months.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000; Minn. R. 7017.2020, subp. 1
MONITORING AND RECORDKEEPING REQUIREMENTS	hdr
Monitoring of Pollution Control Equipment: The Permittee shall monitor and record the pressure drops across the multiclone and the fabric filter once each day while in operation.	Minn. R. 7007.0800, subps. 4, 5, & 14; meets CAM requirements per 40 CFR Section 64.3
Record and maintain records of the amounts of each fuel combusted.	Minn. R. 7007.0800, subps. 4 & 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: American Crystal Sugar - Moorhead

Permit Number: 02700001 - 011

Subject Item: EU 007 North Pulp Dryer

Associated Items: CE 009 Multiple Cyclone w/o Fly Ash Reinjection - Most Multiclones

CE 010 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

SV 008 North Pulp Dryer

What to do	Why to do it
EMISSION AND OPERATIONAL LIMITS	hdr
Particulate Matter < 10 micron: less than or equal to 20 lbs/hour	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 20 lbs/hour	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	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 percent opacity.	Minn. R. 7011.0610, subp. 1(A)(2)
Fuels Allowed: natural gas and on-site generated biogas.	Minn. R. 7007.0800, subp. 2
Process Throughput: less than or equal to 6.3 tons/hour using 8-hour Block Average (bone dry pulp rate). This limit may be amended as specified in Minn. R. 7017.2025 upon completion of each subsequent performance test.	Minn. R. 7017.2025, subp. 3
CONTROL EQUIPMENT OPERATING REQUIREMENTS	hdr
Pressure Drop: greater than or equal to 2.0 inches of water column and less than or equal to 6.0 inches of water column across the fabric filter. This limit may be amended as specified in Minn. R. 7017.2025 upon completion of each subsequent performance test.	Minn. R. 7007.0800, subps. 2 & 4; Minn. R. 7017.2025, subp. 3; meets CAM requirements per 40 CFR Section 64.3
Pressure Drop: greater than or equal to 2.0 inches of water column and less than or equal to 8.0 inches of water column across the multiclone. This limit may be amended as specified in Minn. R. 7017.2025 upon completion of each subsequent performance test.	Minn. R. 7007.0800, subps. 2 & 4; Minn. R. 7017.2025, subp. 3; meets CAM requirements per 40 CFR Section 64.3
Operation and Maintenance: The Permittee shall operate and maintain CE 009 & CE 010 according to the manufacturer's specifications and the facility O&M plan.	Minn. R. 7007.0800, subp. 14; meets CAM requirements per 40 CFR Section 64.7
<p>Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur:</p> <ul style="list-style-type: none"> - Visible emissions are observed; - The recorded pressure drop is outside the required operating range; or - The centrifugal collector or any of its components are found during the inspections to need repair. <p>Corrective actions shall return the pressure drop to within the permitted range, and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O&M Plan for the fabric filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter.</p>	Minn. R. 7007.0800, subps. 4, 5, & 14
TESTING REQUIREMENTS	hdr
Performance Test: due before end of each 60 months starting 11/30/2006 to measure particulate matter and particulate matter < 10 microns at intervals not to exceed 60 months.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000; Minn. R. 7017.2020, subp. 1
MONITORING AND RECORDKEEPING REQUIREMENTS	hdr
Monitoring of Pollution Control Equipment: The Permittee shall monitor and record the pressure drops across the multiclone and the fabric filter once each day while in operation.	Minn. R. 7007.0800, subps. 4, 5, & 14; meets CAM requirements per 40 CFR Section 64.3
Record and maintain records of the amounts of each fuel combusted.	Minn. R. 7007.0800, subps. 4 & 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: American Crystal Sugar - Moorhead

Permit Number: 02700001 - 011

Subject Item: EU 008 Pulp Pellet Cooler

Associated Items: CE 011 Centrifugal Collector - High Efficiency

SV 009 Pulp Pellet Cooler

What to do	Why to do it
EMISSION AND OPERATIONAL LIMITS	hdr
Particulate Matter < 10 micron: less than or equal to 2.0 lbs/hour	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 2.0 lbs/hour	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
CONTROL EQUIPMENT OPERATING REQUIREMENTS	hdr
Pressure Drop: greater than or equal to 1.0 inches of water column and less than or equal to 6.0 inches of water column across the cyclone	Minn. R. 7007.0800, subps. 2 & 4
Operation and Maintenance: The Permittee shall operate and maintain CE 011 according to the manufacturer's specifications and the facility O&M plan.	Minn. R. 7007.0800, subp. 14
TESTING REQUIREMENTS	hdr
Performance Test: due before end of each 60 months starting 10/18/2005 to measure particulate matter and particulate matter < 10 microns at intervals not to exceed 60 months.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000; Minn. R. 7017.2020, subp. 1
Performance Test: due before end of each 60 months starting 11/30/2006 to measure opacity at intervals not to exceed 60 months.	Minn. R. 7017.2020, subp. 1
MONITORING AND RECORDKEEPING REQUIREMENTS	hdr
Monitoring of Pollution Control Equipment: The Permittee shall monitor and record the pressure drops across the cyclone once each day while in operation. If the pressure drop is found to be outside the range in the permit, the Permittee shall take corrective action as soon as possible to restore the parameter within the proper range and make a record of the corrective action taken.	Minn. R. 7007.0800, subps. 4, 5, & 14

TABLE A: LIMITS AND OTHER REQUIREMENTS

A-17

03/05/09

Facility Name: American Crystal Sugar - Moorhead

Permit Number: 02700001 - 011

Subject Item: EU 010 Sugar Dryer

What to do	Why to do it
EMISSION AND OPERATIONAL LIMITS	hdr
Particulate Matter < 10 micron: less than or equal to 1.0 lbs/hour	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 1.0 lbs/hour	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
CONTROL EQUIPMENT OPERATING REQUIREMENTS	hdr
Pressure Drop: greater than or equal to 0.50 inches of water column and less than or equal to 8.0 inches of water column across the baghouse	Minn. R. 7007.0800, subps. 2 & 4
Operation and Maintenance: The Permittee shall operate and maintain CE 037 according to the manufacturer's specifications and the facility O&M plan.	Minn. R. 7007.0800, subp. 14; meets CAM requirements per 40 CFR Section 64.7
TESTING REQUIREMENTS	hdr
Performance Test: due before end of each 60 months starting 12/15/2004 to measure particulate matter and particulate matter < 10 microns at intervals not to exceed 60 months.	Title I Condition: To avoid classification as a major modification under 40 CFR Section 52.21; Minn. R. 7007.3000; Minn. R. 7017.2020, subp. 1
Performance Test: due before end of each 60 months starting 12/15/2004 to measure opacity at intervals not to exceed 60 months.	Minn. R. 7017.2020, subp. 1
MONITORING AND RECORDKEEPING REQUIREMENTS	hdr
Monitoring of Pollution Control Equipment: The Permittee shall monitor and record the pressure drops across the baghouse once each day while in operation. If the pressure drop is found to be outside the range in the permit, the Permittee shall take corrective action as soon as possible to restore the parameter within the proper range and make a record of the corrective action taken.	Minn. R. 7007.0800, subps. 4, 5, & 14
Monitoring of Pollution Control Equipment: The Permittee shall monitor and record the presence or absence of visible emissions from each baghouse once each day while in operation for EU 010 (CE 037). If visible emissions are observed, the Permittee shall take corrective action as soon as possible and make a record of the corrective action taken.	Minn. R. 7007.0800, subps. 4, 5, & 14; meets CAM requirements per 40 CFR Section 64.3

TABLE A: LIMITS AND OTHER REQUIREMENTS

A-18

03/05/09

Facility Name: American Crystal Sugar - Moorhead

Permit Number: 02700001 - 011

Subject Item: EU 011 Sugar Cooler

What to do	Why to do it
EMISSION AND OPERATIONAL LIMITS	hdr
Particulate Matter < 10 micron: less than or equal to 1.0 lbs/hour	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 1.0 lbs/hour	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
CONTROL EQUIPMENT OPERATING REQUIREMENTS	hdr
Pressure Drop: greater than or equal to 0.50 inches of water column and less than or equal to 8.0 inches of water column across the baghouse	Minn. R. 7007.0800, subps. 2 & 4
Operation and Maintenance: The Permittee shall operate and maintain CE 038 according to the manufacturer's specifications and the facility O&M plan.	Minn. R. 7007.0800, subp. 14; meets CAM requirements per 40 CFR Section 64.7
TESTING REQUIREMENTS	hdr
Performance Test: due before end of each 60 months starting 12/15/2004 to measure particulate matter and particulate matter < 10 microns at intervals not to exceed 60 months.	Title I Condition: To avoid classification as a major modification under 40 CFR Section 52.21; Minn. R. 7007.3000; Minn. R. 7017.2020, subp. 1
Performance Test: due before end of each 60 months starting 12/15/2004 to measure opacity at intervals not to exceed 60 months.	Minn. R. 7017.2020, subp. 1
MONITORING AND RECORDKEEPING REQUIREMENTS	hdr
Monitoring of Pollution Control Equipment: The Permittee shall monitor and record the pressure drops across the baghouse once each day while in operation. If the pressure drop is found to be outside the range in the permit, the Permittee shall take corrective action as soon as possible to restore the parameter within the proper range and make a record of the corrective action taken.	Minn. R. 7007.0800, subps. 4, 5, & 14
Monitoring of Pollution Control Equipment: The Permittee shall monitor and record the presence or absence of visible emissions from each baghouse once each day while in operation for EU 011 (CE 038). If visible emissions are observed, the Permittee shall take corrective action as soon as possible and make a record of the corrective action taken.	Minn. R. 7007.0800, subps. 4, 5, & 14; meets CAM requirements per 40 CFR Section 64.3

TABLE A: LIMITS AND OTHER REQUIREMENTS

A-19

03/05/09

Facility Name: American Crystal Sugar - Moorhead

Permit Number: 02700001 - 011

Subject Item: EU 029 Emergency Electrical Generator Set**Associated Items:** SV 035 Emergency Electrical Generator

What to do	Why to do it
Fuels Allowed: distillate fuel oil only.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Sulfur Dioxide: less than or equal to 0.50 lbs/million Btu heat input	Minn. R. 7011.2300, subp. 2
Opacity: less than or equal to 20 percent opacity once operating temperatures have been attained.	Minn. R. 7011.2300, subp. 1
Recordkeeping: Retain on site for each shipment of fuel oil received that is subsequently combusted in the generator fuel supplier certification that indicates the grade of the fuel oil and the sulfur content.	Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

A-20

03/05/09

Facility Name: American Crystal Sugar - Moorhead

Permit Number: 02700001 - 011

Subject Item: EU 030 Ground Flare**Associated Items:** SV 036 Ground Flare

What to do	Why to do it
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0110

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: American Crystal Sugar - Moorhead

Permit Number: 02700001 - 011

Subject Item: EU 031 Pulp Pellet Area Dust Control System

Associated Items: CE 031 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

SV 037 Pulp Pellet Area Dust Control System

What to do	Why to do it
EMISSION AND OPERATIONAL LIMITS	hdr
Particulate Matter < 10 micron: less than or equal to 0.69 lbs/hour	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 0.69 lbs/hour	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011. 0735.	Minn. R. 7011.0715, subp. 1(A)
The Permittee shall 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 10 percent opacity for fugitive emissions from truck loading at EU 031.	Minn. R. 7011.1005, subp. 3(B)
Opacity: less than or equal to 10 percent opacity for emissions vented through SV 037.	Minn. R. 7011.1005, subp. 3(D)
Total Particulate Matter: greater than or equal to 80 percent collection efficiency	Minn. R. 7011.1005, subp. 3(E)
CONTROL EQUIPMENT OPERATING REQUIREMENTS	hdr
Operation and Maintenance: The Permittee shall operate and maintain CE 031 according to the manufacturer's specifications and the facility O&M plan.	Minn. R. 7007.0800, subp. 14; meets CAM requirements per 40 CFR Section 64.7
MONITORING AND RECORDKEEPING REQUIREMENTS	hdr
Monitoring of Pollution Control Equipment: The Permittee shall monitor and record the presence or absence of visible emissions from each baghouse once each day while in operation for EU 031 (CE 031). If visible emissions are observed, the Permittee shall take corrective action as soon as possible and make a record of the corrective action taken.	Minn. R. 7007.0800, subps. 4, 5, & 14; meets CAM requirements per 40 CFR Section 64.3

TABLE A: LIMITS AND OTHER REQUIREMENTS

A-22

03/05/09

Facility Name: American Crystal Sugar - Moorhead

Permit Number: 02700001 - 011

Subject Item: FS 002 Vehicle Traffic on Paved Roads

What to do	Why to do it
Control Operations: greater than or equal to 7 per day during beet delivery period (approximately September 1 through October 31). Control operations include vacuum sweeping, water flushing, or broom sweeping and flushing.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Recordkeeping: once per day during the period September 1 through October 31 record the total number of control operations.	Minn. R. 7007.0800, subps. 4, 5, & 14

TABLE B: SUBMITTALS

B-1 03/05/09

Facility Name: American Crystal Sugar - Moorhead
Permit Number: 02700001 - 011

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

B-2 03/05/09

Facility Name: American Crystal Sugar - Moorhead

Permit Number: 02700001 - 011

What to send	When to send	Portion of Facility Affected
Application for Permit Reissuance	due 180 days before expiration of Existing Permit	Total Facility

TABLE B: RECURRENT SUBMITTALS

B-3 03/05/09

Facility Name: American Crystal Sugar - Moorhead

Permit Number: 02700001 - 011

What to send	When to send	Portion of Facility Affected
Semiannual Deviations Report	due 30 days after end of each calendar half-year starting 06/06/2006 . The first semiannual report submitted by the Permittee shall cover the calendar half-year in which the permit is issued. The first report of each calendar year covers January 1 - June 30. The second report of each calendar year covers July 1 - December 31. If no deviations have occurred, the Permittee shall submit the report stating no deviations.	Total Facility
Compliance Certification	due 30 days after end of each calendar year starting 06/06/2006 . To be submitted to the Commissioner on a form approved by the Commissioner. The report covers all deviations experienced during the calendar year. A copy of this report shall also be submitted to the U.S. EPA Regional Office in Chicago.	Total Facility

APPENDIX A

Modeling Parameters

Facility Name: American Crystal Sugar - Moorhead

Permit Number: 02700001-011

These modeling parameters were approved in a memo from Margaret McCourtney to Trent Wickman, dated March 8, 1999. Revised SO₂ modeling was submitted in a letter from Greg Raetz to Trent Wickman dated September 8 and 15, 1999.

TABLE 1 - Modeled Emission Rates (lb/hr)

Stack #	PM ₁₀	SO ₂	NO _x	CO
001*	15.0	126.9, 168.5	99.4	159.9
002*	15.0	126.9, 168.5	99.4	159.9
003*	15.0	155.6, 203.0	121.8	192.6
004*	5.0, 15.0	2.51, 45	0.979	0.701
005	0.33	2.37	19.6	14.0
006	0.20	-	-	-
007	20.0	0.043	10.1	2.53
008	20.0	0.043	10.1	2.53
009	2.00	-	-	-
010	1.0	-	-	-
011	1.0	-	-	-
012	0.23	-	-	-
013	0.15	-	-	-
014	1.71	-	-	-
015	0.38	-	-	-
016	0.38	-	-	-
017	0.86	-	-	-
018	0.86	-	-	-
019	0.86	-	-	-
020	0.86	-	-	-
021	0.86	-	-	-
022	0.86	-	-	-
023	0.86	-	-	-
024	0.86	-	-	-
025	0.82	-	-	-
026	0.26	-	-	-
027	2.03	-	-	-
028	2.03	-	-	-
029	0.21	-	-	-
030	0.05	-	-	-
031	0.55	-	-	-
032	0.05	-	-	-
033	0.02	-	-	-
034	0.05	-	-	-
035	0.71	0.660	10.0	2.16
036	1.06	0.046	10.8	2.70
037	0.69	-	-	-
paved traffic**	6.62, 8.18, 5.58	-	-	-
unpaved traffic**	2.02, 0.09, 3.16	-	-	-

*values represent: long term average, short term average

** values represent: long term average, short term average during the beet haul period (September 1 through October 31), short term average during the non-beet haul period

TABLE 2 - Modeled Stack Parameters

Stack #	Height (ft)	Diameter (ft)	Flow Rate (acfm)	Temperature (°F)	Orientation
001	150.0	5.0	91,700	410	Vertical
002	150.0	5.0	91,700	410	Vertical
003	150.0	5.0	95,300	410	Vertical
004	102.0	1.0	400 (8,000)	163	Vertical
005	75.0	2.5	7,600 (0)	70	Vertical
006	90.0	5.0	10,000	120	Vertical
007	142.5	5.0	95,000	120	Vertical
008	142.5	4.0	95,000	120	Vertical
009	57.5	3.2	24,430	105	Vertical
010	99.3	2.25	21,000	130	Vertical
011	100.3	2.5	21,000	130	Vertical
012	34.5	0.58	1,340	70	Vertical
013	43.0	0.58	860	70	Vertical
014	49.0	2.08	10,000	70	Vertical
015	43.0	1.58	2,200	70	Vertical
016	43.0	0.92	2,200	70	Vertical
017	109.0	2.18	5,000	70	Horizontal
018	109.0	2.18	5,000	70	Horizontal
019	109.0	2.18	5,000	70	Vertical
020	109.0	2.18	5,000	70	Vertical
021	109.0	2.18	5,000	70	Vertical
022	109.0	2.18	5,000	70	Vertical
023	109.0	2.18	5,000	70	Vertical
024	109.0	2.18	5,000	70	Vertical
025	90.0	1.0	4,800	70	Vertical
026	104.0	0.5	1,500	70	Vertical
027	40.0	1.0	3,000	212	Vertical
028	40.0	1.0	3,000	212	Vertical
029	42.0	3.0	1,200	70	Vertical
030	43.0	0.5	310	70	Vertical
031	43.0	0.5	3200	70	Vertical
032	43.0	0.5	300	70	Vertical
033	43.0	0.5	130	70	Vertical
034	43.0	0.5	300	70	Vertical
035	15.0	0.67	8,000	800	Vertical
036	21.0	1.0	15,000	1,000	Vertical
037	24.0	2.0	8,000	70	Horizontal

APPENDIX B**Insignificant Activities**

Facility Name: American Crystal Sugar - Moorhead

Permit Number: 02700001-011

Moorhead Factory Insignificant Activities as of March 6, 2008

Mud Press Bldg.	3 - Natural Gas Fired heaters 1 - Natural gas fired pressure washer
Screen House	2 - Propane Fired Heaters 1 - Kerosene fired pressure Washer
Clarified Pump House	1 - Propane fired heater
East Rock Catcher	1 - Natural gas fired heater
West Rock Catcher	1 - Natural gas fired heater
North Storage Garage	1 - Natural Gas Fired Heater
Main Factory Bldg.	5 - Natural Gas Fired Pressure Washers 1 - Natural Gas heater in washhouse
Precipitator Building	1 - Propane fired Heater
Vehicle Maintenance Shop	5 - Propane fired infrared heaters 1 - Propane fired space heater 1 - Propane fired pressure washer
Transystem Shop	5 - Propane fired infrared heaters 1 - Propane fired space heater 1 - Waste oil burning furnace 2 - Nipco Style Portable heaters
Bulk Fuel Storage Tanks	1 - Unleaded Gasoline Tank 3 - Diesel Fuel Tanks-- 2 On Transystem Site 6 - Propane Storage Tanks
New Ag Shop	1 - Propane fired Heater
Pallet Storage Building	4 - Natural Gas Fired Heaters
Process Equipment	Lime Slacker (EU004) Pneumatic Pellet Conveying System (EU009) Packing Vacuum System (EU012) Sugar Storage Conveyor System (EU024) Starch Bin Receiving System (EU028) Sugar Reclaim (Azo) System (EU032) Bag Clipping Collection System (EU033) Brown Sugar Batching Conveyor (EU034) Powdered Sugar Reclaim (EU035) Bag in Box Conveyor System (EU036)

TECHNICAL SUPPORT DOCUMENT
For
AIR EMISSION PERMIT NO. 02700001-011

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: 2063)
American Crystal Sugar - Moorhead 101 3rd Street, Moorhead, MN 56560	2500 11th Street North Moorhead, Clay County, MN 56560
Contact: Annette Cederberg	Phone: 218-236-4304

1.2 Description of the Facility

American Crystal Sugar's Moorhead plant consists of three coal-fired (subbituminous) boilers, each with an Electrostatic Precipitator (ESP); two natural gas-fired pulp dryers each with a fabric filter and cyclones; one pulp pellet cooler; pulp pellet handling, storage and loading equipment; one lime kiln (calciner) with cyclones; one lime slaker; one sugar dryer; one sugar cooler; and dry sugar storage with fabric filters, handling, and sacking equipment. The Moorhead plant operates from late August through May of each year, 24 hours per day. The plant typically starts up two to three days before starting to slice sugar beets and shuts down two to four days after beet slicing has stopped.

1.3 Description of the Activities Allowed by this Permit Action

This permit action is a major amendment to allow the use of additional fuels in the lime kiln and boilers. The primary fuel combusted for the existing lime kiln (EU 004) at this plant was industrial oven coke (coal coke). Due to the low supply of coke, American Crystal Sugar requested permission to combust anthracite coal, pulverized coal and natural gas at the existing lime kiln. In addition, the Permittee requested to combust biogas generated from an on-site anaerobic digester at the existing three (3) coal-fired boilers (EU 001, EU 002, and EU 003). The biogas would displace, but not eliminate the need for coal or oil combustion in the boilers.

This facility is an existing major source for HAP and NESHAPs. Since the NESHAP Subpart DDDDD for boilers has been vacated, this facility is subject to the requirements of CAA 112 (j). Therefore, the Maximum Achievable Control Technology (MACT) application submittal requirements have been added to the amended permit. The requirements of this NESHAP have been removed from the amended permit.

1.4 Facility Emissions:

Table 1. Title I Emissions Increase Summary

Pollutant	Emissions Increase from the Modification* (tpy)	PSD/112(g) Significant Thresholds for major sources	NSR/112(g) Review Required? (Yes or No)
PM	10.7	25	No
PM ₁₀	10.7	15	No
NO _x	0	40	No
SO ₂	0	40	No
CO	0	100	No
Ozone (VOC)	1.51	40	No
Lead	0	0.6	No
Individual and Total HAPs	3.03/3.44	10/25	No

* Note: The emissions increase from the boilers was calculated based on Actual-to-Projected Actual emissions and the emissions increase from the lime kiln was calculated based on Actual-to-Potential emissions; no baseline was taken for HAPs.

Table 2. Total Facility Potential to Emit Summary (tpy)

	PM	PM ₁₀	SO ₂	NO _x	CO	VOC	Lead	Single HAP	All HAPs
Total Facility Limited Potential Emissions (Non Fugitive)	494	556	1,808	1,136	723	45	1.03	123	144
Total Facility Potential Fugitive Emissions	49	49	0	0	0	0	0	0	0
Total Facility Actual Emissions (2006)	76	152	438	490	446	240	0.11	HAPs not reported in emission inventory	

Table 3. Facility Classification

Classification	Major/Affected Source	Synthetic Minor	Minor
PSD	PM, PM ₁₀ , SO ₂ , NO, and CO	N/A	VOC
Part 70 Permit Program	PM ₁₀ , SO ₂ , NO, and CO	N/A	VOC
Part 63 NESHAP	Single and Total HAPs	N/A	N/A

2. Regulatory and/or Statutory Basis

New Source Review

The total heat input capacity of the coal-fired boilers at this source is greater than 250 MMBtu/hr. Therefore, this source is considered in one of 28 source categories specified in New Source Review regulations. The facility is an existing major source under New Source Review regulations. The changes requested by the source do not trigger New Source Review.

Part 70 Permit Program

The facility is a major source under the Part 70 permit program.

New Source Performance Standards (NSPS)

There are no New Source Performance Standards applicable to the operations at this facility.

The fuel switch in the existing coal fired boilers (EU 001, EU 002, and EU 003) does not involve physical changes or result in an increase in the emission rate to the atmosphere of any pollutant to which a standard applies. Therefore, the proposed fuel switch project is not considered a modification to the existing coal fired boilers, pursuant to 40 CFR § 60.14.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

The existing facility is a major source of HAPs. The existing coal fired boilers (EU 001, EU 002, and EU 003) were subject to 40 CFR pt. 63, Subpart DDDDD (NESHAP for Industrial, Commercial, and Institutional Boilers and Process Heaters) and the requirements of this NESHAP were included in the reissuance of the Title V permit for this plant (Permit No. 02700001-009, issued on June 6, 2006). However, 40 CFR pt. 63, Subpart DDDDD was vacated by the U.S. EPA on March 26, 2007. Therefore, MPCA has removed the requirements of NESHAP, Subpart DDDDD from the revised permit.

Since this source is still a major source for HAPs and is subject to CAA 112 (j), the Permittee is required to submit MACT applications for the 112 (j) affected sources. Therefore, the MACT application submittal requirements have been added to the amended permit.

CAM Assurance Monitoring (CAM)

The uncontrolled PM/PM₁₀ emissions from existing coal fired boilers (EU 001, EU 002, and EU 003) and the lime kiln (EU 004) are each greater than the Part 70 major source thresholds. Particulate emissions from the coal fired boilers are currently controlled by ESPs (CE 001, CE 002, and CE 003) and the emissions from the lime kiln are controlled by cyclone CE 004. The control devices associated with these emission units are necessary to ensure compliance with the applicable emission limits. Therefore, these units are subject to the requirements of 40 CFR pt. 64 (CAM). The CAM requirements have been included in the reissuance of the total facility operating permit (#02700001-009, issued on June 6, 2006) and will remain unchanged in the amended permit.

Minnesota State Rules

The affected units under this amendment include the coal fired boilers (EU 001, EU 002, and EU 003) and the lime kiln (EU 004). These units are subject to the following state rules:

- Minn. R. 7011.0510 Standards of Performance for Existing Indirect Heating Equipment
- Minn. R. 7011.0610 Standards of Performance for Fossil-Fuel-Burning Direct Heating Equipment

Table 4. Regulatory Overview of Units Affected by the Modification/Permit Amendment

GP/EU	Applicable Regulations	Comments
GP001	CAA 112 (j)	MACT application submittal requirements
EU001, EU002, EU003	Title I Condition: 40 CFR § 52.21(k); Minn. R. 7007.3000	Limit to avoid violation of national ambient air quality standards
	Minn. R. 7011.0510	Standards of Performance for Existing Indirect Heating Equipment
EU004	Title I Condition: 40 CFR § 52.21(k); Minn. R. 7007.3000	Limit to avoid violation of national ambient air quality standards
	Minn. R. 7011.0610	Standards of Performance for Fossil-Fuel-Burning Direct Heating Equipment

3. Technical Information

3.1 Calculations of Potential to Emit and Emissions Increase Analysis

Attachment 1 to this TSD contains the Title I net emissions increase calculations for the fuel switch project for the coal-fired boilers (EU 001, EU 002, and EU 003) and the lime kiln (EU 004). This demonstrates that this fuel switch project is not a major modification for PSD.

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 5 summarizes the periodic monitoring requirements for those emission units affected by this amendment for which the monitoring required by the applicable requirement is nonexistent or inadequate.

Table 5. Periodic Monitoring

EU	Requirement (basis)	Additional Monitoring	Discussion
EU001 EU002 EU003	PM & PM10: ≤ 15 lbs/hr, each boiler (Title I condition: 52.21(k)) PM: ≤ 0.6 lb/MMbtu Opacity $\leq 20\%$ (Minn. R. 7011.0510)	Recordkeeping: Once daily, record the number of fields online for the associated electrostatic precipitator. Periodic stack testing.	The electrostatic precipitators must be operated with the same number of fields online as the last compliant performance test. This insures compliance by maintaining the same conditions that were present when compliance was last demonstrated. Opacity testing will also be conducted to show compliance with the standard. The ESP must be operated with the same number of fields online as during the last compliant performance test.
	SO ₂ : ≤ 1.0 lb/MMbtu (Minn. R. 7007.0800 & Minn. R. 7011.0510)	Fuel Testing: Determine the sulfur content of each fuel delivery.	The facility can use either a supplier certification or the current ASTM sampling and analysis methods.
EU004	PM & PM10: ≤ 5 lbs/hr, normal operation; ≤ 15 lbs/hr, bypass conditions (Title I condition: 52.21(k)) PM: ≤ 0.3 gr/dscf Opacity $\leq 20\%$ (Minn. R. 7011.0610)	Recordkeeping: Daily records of the pressure drop across the cyclone system. Periodic stack testing.	The cyclone system must be operated at the same pressure drop range as the last compliant performance test. This insures compliance by maintaining the same conditions that were present when compliance was last demonstrated. Opacity testing will also be conducted to show compliance with the standard. As with particulate matter, the cyclone system must be operated with the same pressure drop range as the last compliant performance test.
	SO ₂ : ≤ 4.0 lb/MMbtu (Title I condition: 52.21(k) & Minn. R. 7007.0800) Sulfur Content: ≤ 0.9 wt% (Title I condition: 52.21(k) & Minn. R. 7007.3000) Sulfur Content: ≤ 0.50 wt% for pulverized coal (Title I condition: 52.21(k) & Minn. R. 7007.3000)	Fuel Testing: Determine the sulfur content of each coke delivery. Periodic stack testing.	The facility can use either a supplier certification or the current ASTM sampling and analysis methods. The Pulverized coal will be taken from the coal stock for the boilers; therefore it has the same limit. Anthracite coal is < 1.0 wt% sulfur by definition; therefore no limit is needed.

3.3 Insignificant Activities

American Crystal Sugar - Moorhead has several operations which are classified as insignificant activities. These units are listed in Appendix B to the permit. No changes to the insignificant units are being made.

3.4 Permit Organization

In general, the permit meets the MPCA Delta Guidance for ordering and grouping of requirements. One area where this permit deviates slightly from Delta guidance is in the use of appendices. While appendices are fully enforceable parts of the permit, in general, any requirement that the MPCA thinks should be tracked (e.g., limits, submittals, etc.), should be in Table A or B. The main reason is that the appendices are word processing sections and are not part of the tracking system. Violation of the appendices can be enforced, but the computer system will not automatically generate the necessary enforcement notices or documents. Staff must generate these.

3.5 Comments Received

Public Notice Period: January 17, 2009 – February 17, 2009

EPA 45-day Review Period: January 17, 2009 – March 2, 2009

No comments were received

4. Conclusion

Based on the information provided by American Crystal Sugar - Moorhead, the MPCA has reasonable assurance that the operation of the emission facility, as described in the Air Emission Permit No. 02700001-010, and this TSD, will not cause or contribute to a violation of applicable federal regulations and Minnesota Rules.

Staff Members on Permit Team: Trevor Shearen (permit writer/engineer)
Yu Lien Chu (MPCA Contractor/permit writer)
Cary Hernandez (enforcement)
Andy Place (stack testing)
Toni Volkmeier (peer reviewer)

AQ File No. 29A, DQ 2128

Attachments: 1. Emissions Increase Calculation Spreadsheets
2. CD-01 Forms