

**AIR EMISSION PERMIT NO. 11900002-001
IS ISSUED TO**

American Crystal Sugar Company

American Crystal Sugar - E Grand Forks
US Highway 2 E
East Grand Forks, Polk County, MN 56721

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
Major Amendment (PSD)	October 21, 1996
Total Facility Operating Permit	January 15, 1995

This permit authorizes the permittee to 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 and with all general conditions listed in Minn. R. 7007.0800, subp. 16 and all standard permit requirements listed in 40 CFR Section 70.6(a) which are incorporated by reference. Any changes or modifications to the stationary source must be performed in compliance with Minn. Rules pts. 7007.1150 to 7007.1500. Terms used in the permit as defined in the state air pollution control rules unless the term is explicitly defined in the permit.

Permit Type: Pt. 70/NSR Authorization

Issue Date:

Expiration: Five years after issuance. All Title I Conditions do not expire.

Rodney E. Massey, P.E.
District Manager
North/South District

for Karen A. Studders
Commissioner
Minnesota Pollution Control Agency

TRW:kmt

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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 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. If certain requirements have been determined to not apply they are listed in Table A of this permit.

FACILITY DESCRIPTION:

The Permittee owns and operates a sugar beet processing facility. The emission units at this stationary source consists of two coal-fired boilers, a natural gas-fired boiler, three natural gas-fired pulp dryers, a pulp pellet cooler, a pulp pellet loadout operation, two lime kilns, two lime slakers, two sugar dryers, two sugar coolers, and dust collection systems from sugar packaging and storage operations.

The primary products from the facility are beet sugar, beet pulp, and beet molasses. Portions of the facility operate year round. Raw sugar beets are processed during the slicing campaign, which runs from the early fall to late spring. The juice and molasses campaigns run into the summer.

This Part 70 permit incorporates two previous PSD permits, one issued in 1992 and one issued in 1997. Some of the existing PSD limits have been modified, but no construction is authorized with this permit. See the technical support document for more details.

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/02/00

Facility Name: American Crystal Sugar - E Grand Forks
 Permit Number: 11900002 - 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
Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017 unless otherwise noted in Tables A and B.	Minn. R. ch. 7017
Limits set as a result of a performance test (conducted before or after permit issuance) apply until superseded as specified by Minn. R. 7017.2025 following formal review of a subsequent performance test on the same unit.	Minn. R. 7017.2025
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 in accordance with Tables A and B.	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 and B, monitoring a process or control equipment connected to that process is not necessary during periods when the process is shutdown, or during checks of the monitoring systems, such as calibration checks and zero 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 federal or state air pollution control rule, without reducing the total amount of pollutant emitted.	Minn. R. 7011.0020
Shutdown Notifications: Notify the Commissioner at least 24 hours in advance of a planned shutdown of any control equipment or process equipment if the shutdown would cause any increase in the emissions of any regulated air pollutant. If the owner or operator does not have advance knowledge of the shutdown, notification shall be made to the Commissioner as soon as possible after the shutdown. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 3. At the time of notification, the owner or operator shall inform the Commissioner of the cause of the shutdown and the estimated duration. The owner or operator shall notify the Commissioner when the shutdown is over.	Minn. R. 7019.1000, subp. 3
Breakdown Notifications: Notify the Commissioner within 24 hours of a breakdown of more than one hour duration of any control equipment or process equipment if the breakdown causes any increase in the emissions of any regulated air pollutant. The 24-hour time period starts when the breakdown was discovered or reasonably should have been discovered by the owner or operator. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 2. At the time of notification or as soon as possible thereafter, the owner or operator shall inform the Commissioner of the cause of the breakdown and the estimated duration. The owner or operator shall notify the Commissioner when the breakdown is over.	Minn. R. 7019.1000, subp. 2
Notification of Deviations Endangering Human Health or the Environment: As soon as possible after discovery, notify the Commissioner or the state duty officer, either orally or by facsimile, of any deviation from permit conditions which could endanger human health or the environment.	Minn. R. 7019.1000, subp. 1
Notification of Deviations Endangering Human Health or the Environment Report: Within 2 working days of discovery, notify the Commissioner in writing of any deviation from permit conditions which could endanger human health or the environment. Include the following information in this written description: 1. the cause of the deviation; 2. the exact dates of the period of the deviation, if the deviation has been corrected; 3. whether or not the deviation has been corrected; 4. the anticipated time by which the deviation is expected to be corrected, if not yet corrected; and 5. steps taken or planned to reduce, eliminate, and prevent reoccurrence of the deviation.	Minn. R. 7019.1000, subp. 1

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/02/00

Facility Name: American Crystal Sugar - E Grand Forks

Permit Number: 11900002 - 001

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
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)
Fugitive Emissions: Do not cause or permit the handling, use, transporting, or storage of any material in a manner which may allow avoidable amounts of particulate matter to become airborne. Comply with all other requirements listed in Minn. R. 7011.0150.	Minn. R. 7011.0150
Application for Permit Amendment: If you need a permit amendment, submit application in accordance with the requirements of Minn. R. 7007.1150 through Minn. R. 7007.15000. Submittal dates vary, depending on the type of amendment needed.	Minn. R. 7007.1150 through Minn. R. 7007.1500
Extension Requests: The Permittee may apply for an Administrative Amendment to extend a deadline in a permit by no more than 120 days, provided the proposed deadline extension meets the requirements of Minn. R. 7007.1400, subp. 1(H)	Minn. R. 7007.0800, subp. 1(H)
Record Keeping: Maintain records describing any insignificant modification (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)
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
The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16.	Minn. R. 7007.0800, subp. 16
Inspections: The permittee shall comply with the inspection procedures and requirements as found at Minn. R. 7007.0800, subp 9(A).	Minn. R. 7007.0800, subp. 9(A)
Emission Fees: due 60 days after receipt of an MPCA bill.	Minn. R. 7002.0005 through Minn. R. 7002.0095
Parameters Used in Modeling: The stack heights, emission rates, and other parameters used in the modeling for Air Emission Permit No. 11900002-012 are listed in the Appendix of this permit. The Permittee must submit to the Commissioner for approval any revisions of these parameters, that are caused by a physical change or change in the method of operation at the facility, and must wait for a written approval before making such changes.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
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 AEP No. 11900002-012 (see the Appendix to this permit) and approved in a memo from Margaret McCourtney to Tom Holstrom dated May 14, 1997. The Permittee shall demonstrate this equivalency in the proposal.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
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. For changes that do not involve an increase in an emission rate and that do not require a permit amendment, this 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. For changes involving increases in emission rates and that 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. For changes involving increases in emission rates and that require a permit amendment other than a minor amendment, the proposal must be submitted with the permit application.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/02/00

Facility Name: American Crystal Sugar - E Grand Forks

Permit Number: 11900002 - 001

Hydrogen Sulfide: less than or equal to 0.05 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 0.03 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
Hydrogen Sulfide Ambient Monitoring: the Permittee shall establish a hydrogen sulfide monitoring network to measure the ambient concentration of hydrogen sulfide during the warm weather months (April through October). The network must be in place and operating by April 1, 2000. A Hydrogen Sulfide Monitoring Plan shall be submitted to the MPCA and approved before the network can be constructed. The Permittee shall operate the network in subsequent years. The Permittee may make a written request to the Commissioner to cease operation of the network at any time. An analysis of the ambient H ₂ S data collected to date shall accompany this request. 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. 4
State Performance Standards: Opacity standards apply at all times except during periods of start-up, shutdown, and malfunction, and as otherwise provided in an applicable requirement or compliance document. The exemption for periods of start-up, shutdown and malfunction applies only if the conditions of Minn. R. 7011.0010, subp. 4(A), (B), and (C) are met.	Minn. R. 7011.0010, subp. 4
Federal Performance Standards: Opacity standards apply at all times except during periods of start-up, shutdown, and malfunction, and as otherwise provided in an applicable requirement or compliance document.	40 CFR Section 60.11(c); EPA Memo & Guidance on 'Affirmative Defense,' September 20, 1999.

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/02/00

Facility Name: American Crystal Sugar - E Grand Forks

Permit Number: 11900002 - 001

Subject Item: GP 001 East and West Lime Slakers

Associated Items: CE 014 Venturi Scrubber

EU 010 East Lime Slaker

EU 011 West Lime Slaker

SV 010

What to do	Why to do it
EMISSION LIMITS	hdr
Particulate Matter < 10 micron: less than or equal to 4.82 lbs/hour	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to meet the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
MONITORING REQUIREMENTS	hdr
Monitoring of Pollution Control Equipment: the Permittee shall monitor and record the scrubber liquid flow rate, supply pressure and the gas pressure drop across the scrubber once each operating day. If any of the monitored parameters are found to be outside the ranges in the permit, take corrective action (as outlined in the operation and maintenance plan for the facility) within 24-hours of discovery to restore the parameter(s) to the proper range. Make a record of all corrective actions taken.	Title I Condition: control equipment requirement for emissions subject to a limit based on 40 CFR Section 52.21(k); Minn. R. 7007.0800, subp. 4; Minn. R. 7007.0800, subp. 5; Minn. R. 7007.0800, subp. 15
Pressure Drop: greater than or equal to 5 inches of water column and less than or equal to 15 inches of water column	Minn. R. 7007.0800, subp.2; Minn. R. 7007.0800, subp.4
Water flow rate: greater than or equal to 30 gallons/minute and less than or equal to 60 gallons/minute	Minn. R. 7007.0800, subp.2; Minn. R. 7007.0800, subp.4
Water pressure: greater than or equal to 10 psi (gauge) and less than 60 psi (gauge)	Minn. R. 7007.0800, subp.2; Minn. R. 7007.0800, subp.4
TESTING REQUIREMENTS	hdr
Performance Test: due 180 days after Permit Issuance to measure PM10 emissions.	Title I Condition: testing of emissions subject to a limit based on 40 CFR Section 52.21(k); Minn. R. 7017.2020, subp. 1
Performance Test: due 180 days after Permit Issuance to measure TSP and opacity emissions.	Minn. R. 7017.2020, subp. 1
Performance Test Pre-test Meeting: due 7 days before Performance Test	Minn. R. 7017.2030, subp. 4

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/02/00

Facility Name: American Crystal Sugar - E Grand Forks

Permit Number: 11900002 - 001

Subject Item: GP 002 East and West Lime Kilns

Associated Items: CE 012 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 013 Carbonation System

EU 008 East Lime Kiln

EU 009 West Lime Kiln

SV 009

SV 030 Carbonation Vent

What to do	Why to do it
EMISSION LIMITS	hdr
Particulate Matter < 10 micron: less than or equal to 4.36 lbs/hour	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Sulfur Dioxide: less than or equal to 27.0 lbs/hour during startup	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Nitrogen Oxides: less than or equal to 34.1 lbs/hour	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to meet 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 lbs/million Btu heat input	Minn. R. 7011.0610, subp. 2(B)
Sulfur Content of Fuel: less than or equal to 0.75 percent by weight for coke as received	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Fuels Allowed: industrial oven coke as the main fuel source and propane and wood fuels for initiating combustion of the coke.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
MONITORING REQUIREMENTS	hdr
Monitoring of Pollution Control Equipment: the Permittee shall monitor and record the pressure drop across the baghouse once each operating day. If the monitored parameter is found to be outside the range in the permit, take corrective action (as outlined in the operation and maintenance plan for the facility) within 24-hours of discovery to restore the parameter(s) to the proper range. Make a record of all corrective actions taken.	Title I Condition: control equipment requirement for emissions subject to a limit based on 40 CFR Section 52.21(k); Minn. R. 7007.0800, subp. 4; Minn. R. 7007.0800, subp. 5; Minn. R. 7007.0800, subp. 15
Pressure Drop: greater than or equal to 1 inches of water column and less than or equal to 6 inches of water column	Minn. R. 7007.0800, subp.2; Minn. R. 7007.0800, subp.4
Fuel Sulfur Content: Determine the sulfur content of each delivery of coke by either of the following methods: 1) obtain from the fuel supplier a signed certification of the sulfur content of the fuel for each shipment of fuel delivered, or 2) according to the current American Society of Testing and Materials (ASTM) sampling and analysis methods. With either method, the weight represented by each separate sulfur content analysis shall be less than or equal to one train car. These records shall be maintained for a minimum of five years from the date the information was obtained.	Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5
TESTING REQUIREMENTS	hdr
Performance Test: due 180 days after Permit Issuance to measure PM10, sulfur dioxide, and oxides of nitrogen emissions.	Title I Condition: testing of emissions subject to a limit based on 40 CFR Section 52.21(k); Minn. R. 7017.2020, subp. 1
Performance Test: due 180 days after Permit Issuance to measure TSP and opacity emissions.	Minn. R. 7017.2020, subp. 1
Performance Test Pre-test Meeting: due 7 days before Performance Test	Minn. R. 7017.2030, subp. 4

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/02/00

Facility Name: American Crystal Sugar - E Grand Forks

Permit Number: 11900002 - 001

Subject Item: GP 003 Sugar Handling System - Group A

- Associated Items:** CE 021 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
 CE 022 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
 CE 024 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
 CE 025 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
 CE 026 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
 EU 020 Weibull Bin No. 1 Dust Control System
 EU 021 Weibull Bin No. 2 Dust Control System
 EU 023 8A Screening Tower Central Vacuum
 EU 024 Weibull Bin No. 3 Dust Control
 EU 025 Weibull Bin No. 3, Central Vacuum
 SV 019
 SV 020
 SV 022
 SV 023
 SV 024

What to do	Why to do it
EMISSION LIMITS	hdr
Particulate Matter < 10 micron: less than or equal to 0.86 lbs/hour (this limit applies individually to each emission unit listed above under Associated Items).	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to meet the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735 (this limit applies individually to each emission unit listed above under Associated Items).	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 above under Associated Items).	Minn. R. 7011.0715, subp. 1(B)
POLLUTION CONTROL EQUIPMENT REQUIREMENTS	hdr
Operation and Maintenance of Fabric Filter: The Permittee shall operate and maintain each fabric filter listed above under Associated Items according to the operation and maintenance plan for the facility and the applicable control equipment manufacturer's specifications contained therein.	Title I Condition: to meet increment and NAAQS standards under 40 CFR Section 52.21(k)
Visible Emissions Monitoring: the Permittee shall perform a visible emission check on each stack/vent listed above under Associated Items once each day while its associated emission unit is in operation (during daylight hours). A visible emission check shall consist of viewing the exhaust gas exiting the stack and recording whether visible emissions are present or not.	Title I Condition: to meet increment and NAAQS standards under 40 CFR Section 52.21(k); Minn. R. 7007.0800, subp. 4
Visible Emissions Corrective Actions: if visible emissions (VEs) are observed, determine the cause and take corrective actions within 24 hours of discovery to eliminate VEs.	Title I Condition: to meet increment and NAAQS standards under 40 CFR Section 52.21(k); Minn. R. 7007.0800, subp. 2
Visible Emissions Recordkeeping: record the time and date of each VE inspection, and whether or not any VEs were observed. If VEs were observed, also record a brief description of the type of corrective actions taken, and the time and date the actions were taken.	Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/02/00

Facility Name: American Crystal Sugar - E Grand Forks

Permit Number: 11900002 - 001

Subject Item: GP 004 Sugar Handling System - Group B

- Associated Items:** CE 027 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
 CE 029 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
 CE 030 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
 CE 031 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
 EU 026 Remelt Conveyor Dust Control System
 EU 028 Sugar Bagger Dust Control System
 EU 029 Packer Dust Control System
 EU 030 Screening Tower Dust Control System
 SV 025
 SV 027
 SV 028
 SV 029

What to do	Why to do it
EMISSION LIMITS	hdr
Particulate Matter < 10 micron: less than or equal to 0.1 lbs/hour (this limit applies individually to each emission unit listed above under Associated Items).	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to meet the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735 (this limit applies individually to each emission unit listed above under Associated Items).	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 above under Associated Items).	Minn. R. 7011.0715, subp. 1(B)
POLLUTION CONTROL EQUIPMENT REQUIREMENTS	hdr
Operation and Maintenance of Fabric Filter: The Permittee shall operate and maintain each fabric filter listed above under Associated Items according to the operation and maintenance plan for the facility and the applicable control equipment manufacturer's specifications contained therein.	Title I Condition: to meet increment and NAAQS standards under 40 CFR Section 52.21(k)
Visible Emissions Monitoring: the Permittee shall perform a visible emission check on each stack/vent listed above under Associated Items once each day while its associated emission unit is in operation (during daylight hours). A visible emission check shall consist of viewing the exhaust gas exiting the stack and recording whether visible emissions are present or not.	Title I Condition: to meet increment and NAAQS standards under 40 CFR Section 52.21(k); Minn. R. 7007.0800, subp. 4
Visible Emissions Corrective Actions: if visible emissions (VEs) are observed, determine the cause and take corrective actions within 24 hours of discovery to eliminate VEs.	Title I Condition: to meet increment and NAAQS standards under 40 CFR Section 52.21(k); Minn. R. 7007.0800, subp. 2
Visible Emissions Recordkeeping: record the time and date of each VE inspection, and whether or not any VEs were observed. If VEs were observed, also record a brief description of the type of corrective actions taken, and the time and date the actions were taken.	Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/02/00

Facility Name: American Crystal Sugar - E Grand Forks

Permit Number: 11900002 - 001

Subject Item: EU 001 Boiler No. 1

Associated Items: CE 001 Electrostatic Precipitator - High Efficiency

MR 001

MR 002

MR 003

SV 001

What to do	Why to do it
EMISSION LIMITS	hdr
Particulate Matter < 10 micron: less than or equal to 14.2 lbs/hour	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 0.10 lbs/million Btu heat input	40 CFR Section 60.42(a)(1); Minn. R. 7007.0555
Sulfur Dioxide: less than or equal to 427.2 lbs/hour using 3-hour Average	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Sulfur Dioxide: less than or equal to 1.2 lbs/million Btu heat input using 3-hour Average	40 CFR Section 60.43(a)(2); Minn. R. 7007.0555
Nitrogen Oxides: less than or equal to 227.9 lbs/hour using 1-Hour Average	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Nitrogen Oxides: less than or equal to 0.70 lbs/million Btu heat input using 3-hour Average	40 CFR Section 60.44(a)(3); Minn. R. 7007.0555
Opacity: less than or equal to 20 percent opacity except for one 6-minute period per hour of not more than 27% opacity.	40 CFR Section 60.42(a)(2); Minn. R. 7007.0555
Fuels Allowed: Subbituminous coal and less than 600 tons per year (total for both EU 001 and EU 002) of coke fines. The Permittee may also burn less than 15,000 gallons per year of on-site generated used oil and used oil sorbents. Both fuel limits are based on 12-month rolling sums.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
CONTROL EQUIPMENT OPERATING REQUIREMENTS	hdr
Boiler Pollution Control Equipment Requirement: the Permittee shall operate CE 001 with no less than the minimum number of fields online during the most-recent performance test that measured PM10 emissions less than the applicable limit in table A of this permit.	Title I Condition: control equipment requirement for emissions subject to a limit based on 40 CFR Section 52.21(k); Minn. R. 7007.0800, subp. 14
Boiler Pollution Control Equipment Monitoring/Recordkeeping: the Permittee shall record the minimum number of fields online in CE 001 once each day of operation of EU 001. If the minimum number of fields are found to not be online, take corrective action (as outlined in the operation and maintenance plan for the facility) within 24-hours of discovery to return the minimum number of fields online. Make a record of all corrective actions taken.	Title I Condition: control equipment requirement for emissions subject to a limit based on 40 CFR Section 52.21(k); Minn. R. 7007.0800, subp. 5
TESTING REQUIREMENTS	hdr
Performance Test: due 180 days after Permit Issuance to measure particulate matter less than 10 microns (PM10) and oxides of nitrogen (NOx).	Title I Condition: testing of emissions subject to a limit based on 40 CFR Section 52.21(k); Minn. R. 7017.2020, subp. 1
Performance Test: due 180 days after Permit Issuance to measure total particulate (TSP).	Minn. R. 7017.2020, subp. 1
Performance Test Pre-test Meeting: due 7 days before Performance Test	Minn. R. 7017.2030, subp. 4
MONITORING REQUIREMENTS	hdr
Fuel Usage: By the 15th day of each calendar month calculate the total amount of coke fines and used oil/sorbents combusted in EU 001 and EU002 for the previous month. At this time also calculate the new 12-month rolling sum.	Minn. R. 7007.0800, subp. 2
Emissions Monitoring: the owner or operator shall use CEMS to measure SO2 and NOx emissions from SV 001 (EU 001).	Title I Condition: monitoring of emissions subject to a limit based on 40 CFR Section 52.21(k); 40 CFR Section 60.45(a); Minn. R. 7007.0555; Minn. R. 7017.1006
CEMS/COMS Continuous Operation: CEMS/COMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS/COMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	Minn. R. 7017.1090, subp. 1

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/02/00

Facility Name: American Crystal Sugar - E Grand Forks

Permit Number: 11900002 - 001

CEMS Daily Calibration Drift (CD) Test: the CD shall be quantified and recorded at zero (low-level) and upscale (high-level) gas concentrations at least once daily. The CEMS shall be adjusted whenever the CD exceeds twice the specification of 40 CFR pt. 60, Appendix B. 40 CFR pt. 60, Appendix F, shall be used to determine out-of-control periods for CEMS.	40 CFR pt. 60, Appendix F, section 4.1; 40 CFR Section 60.13(d)(1); Minn. R. 7017.1170, subp. 3
Cylinder Gas Audit: due before end of each calendar half-year following Permit Issuance . Conduct CGA at least 3 months apart and not greater than 8 months apart. Follow the procedures in 40 CFR pt. 60, Appendix F.	Minn. R. 7017.1170, subp. 4
CEMS Relative Accuracy Test Audit (RATA): due before end of each calendar year following Permit Issuance . If the relative accuracy is 15% or less the next CEMS RATA is not due for 24 months. Follow the procedures in 40 CFR pt. 60, Appendix B and Appendix F. The reference method shall be conducted in a location that is at least 2 duct diameters downstream and one-half duct diameter upstream from the nearest flow disturbance.	Minn. R. 7017.1170, subp. 5
Emissions Monitoring: the owner or operator shall use a COMS to measure opacity emissions from SV 001 (EU 001).	40 CFR Section 60.45(a); Minn. R. 7007.0555; Minn. R. 7017.1006
COMS Daily Calibration Drift (CD) Check: the CD shall be quantified and recorded at zero (low-level) and upscale (high-level) opacity at least once daily. The COMS must be adjusted whenever the calibration drift (CD) exceeds twice the specification of PS-1 of 40 CFR 60, Appendix B.	40CFR Section 60.13(d); Minn. R. 7017.1210, subp. 2
COMS Calibration Error Audit: due before end of each calendar half-year following Permit Issuance . Conduct audits at least 3 months apart but no greater than 8 months apart.	Minn. R. 7017.1210, subp. 3
COMS Monitoring Data: Owners or operators of all COMS shall reduce all data to 6 minute averages. Opacity averages shall be calculated from all equally spaced consecutive 10-second (or shorter) data points in the 6 minute averaging period.	40 CFR Section 60.13(h); Minn. R. 7017.1200, subp. 1, 2, & 3
QA Plan: Develop and implement a written quality assurance plan that covers each CEMS. The plan shall be on site and available for inspection within 30 days after monitor certification. The plan shall contain all of the information required by 40 CFR 60, App. F, Section 3.	Minn. R. 7017.1170, subp. 2
QA Plan: Develop and implement a written quality assurance plan that covers each COMS. The plan shall be on site and available for inspection within 30 days after monitor certification. The plan shall contain the written procedures listed in Minn. R. 7017.1210, subp. 1.	Minn. R. 7017.1210
RECORDKEEPING	hdr
Recordkeeping: the owner or operator must retain records of all CEMS monitoring data and support information for a period of five years from the date of the monitoring sample, measurement or report. Records shall be kept at the source.	Minn. R. 7017.1130; Minn. R. 7007.0800, subp. 5
Recordkeeping: the owner or operator must retain records of all COMS monitoring data and support information for a period of five years from the date of the monitoring sample, measurement or report. Records shall be kept at the source.	Minn. R. 7017.1130; Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/02/00

Facility Name: American Crystal Sugar - E Grand Forks

Permit Number: 11900002 - 001

Subject Item: EU 002 Boiler No. 2

Associated Items: CE 002 Electrostatic Precipitator - High Efficiency

MR 004

MR 005

MR 006

SV 002

What to do	Why to do it
EMISSION LIMITS	hdr
Particulate Matter < 10 micron: less than or equal to 14.2 lbs/hour	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 0.10 lbs/million Btu heat input	40 CFR Section 60.42(a)(1); Minn. R. 7007.0555
Sulfur Dioxide: less than or equal to 427.2 lbs/hour using 3-hour Average	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Sulfur Dioxide: less than or equal to 1.2 lbs/million Btu heat input using 3-hour Average	40 CFR Section 60.43(a)(2); Minn. R. 7007.0555
Nitrogen Oxides: less than or equal to 227.9 lbs/hour using 1-Hour Average	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Nitrogen Oxides: less than or equal to 0.70 lbs/million Btu heat input using 3-hour Average	40 CFR Section 60.44(a)(3); Minn. R. 7007.0555
Opacity: less than or equal to 20 percent opacity except for one 6-minute period per hour of not more than 27% opacity.	40 CFR Section 60.42(a)(2); Minn. R. 7007.0555
Fuels Allowed: Subbituminous coal and less than 600 tons per year (total for both EU 001 and EU 002) of coke fines. The Permittee may also burn less than 15,000 gallons per year of on-site generated used oil and used oil sorbents. Both fuel limits are based on 12-month rolling sums.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
CONTROL EQUIPMENT OPERATING REQUIREMENTS	hdr
Boiler Pollution Control Equipment Requirement: the Permittee shall operate CE 002 with no less than the minimum number of fields online during the most-recent performance test that measured PM10 emissions less than the applicable limit in table A of this permit.	Title I Condition: control equipment requirement for emissions subject to a limit based on 40 CFR Section 52.21(k); Minn. R. 7007.0800, subp. 14
Boiler Pollution Control Equipment Monitoring/Recordkeeping: the Permittee shall record the minimum number of fields online in CE 002 once each day of operation of EU 002. If the minimum number of fields are found to not be online, take corrective action (as outlined in the operation and maintenance plan for the facility) within 24-hours of discovery to return the minimum number of fields online. Make a record of all corrective actions taken.	Title I Condition: control equipment requirement for emissions subject to a limit based on 40 CFR Section 52.21(k); Minn. R. 7007.0800, subp. 5
TESTING REQUIREMENTS	hdr
Performance Test: due 180 days after Permit Issuance to measure particulate matter less than 10 microns (PM10) and oxides of nitrogen (NOx).	Title I Condition: testing of emissions subject to a limit based on 40 CFR Section 52.21(k); Minn. R. 7017.2020, subp. 1
Performance Test: due 180 days after Permit Issuance to measure total particulate (TSP).	Minn. R. 7017.2020, subp. 1
Performance Test Pre-test Meeting: due 7 days before Performance Test	Minn. R. 7017.2030, subp. 4
MONITORING REQUIREMENTS	hdr
Fuel Usage: By the 15th day of each calander month calculate the total amount of coke fines and used oil/sorbents combusted in EU 001 and EU002 for the previous month. At this time also calculate the new 12-month rolling sum.	Minn. R. 7007.0800, subp. 2
Emissions Monitoring: the owner or operator shall use CEMS to measure SO2 and NOx emissions from SV 002 (EU 002).	Title I Condition: monitoring of emissions subject to a limit based on 40 CFR Section 52.21(k); 40 CFR Section 60.45(a); Minn. R. 7007.0555; Minn. R. 7017.1006
CEMS/COMS Continuous Operation: CEMS/COMS must be operated and data recorded during all periods of emission unit operation including periods of emisssion unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS/COMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	Minn. R. 7017.1090, subp. 1

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/02/00

Facility Name: American Crystal Sugar - E Grand Forks

Permit Number: 11900002 - 001

CEMS Daily Calibration Drift (CD) Test: the CD shall be quantified and recorded at zero (low-level) and upscale (high-level) gas concentrations at least once daily. The CEMS shall be adjusted whenever the CD exceeds twice the specification of 40 CFR pt. 60, Appendix B. 40 CFR pt. 60, Appendix F, shall be used to determine out-of-control periods for CEMS.	40 CFR pt. 60, Appendix F, section 4.1; 40 CFR Section 60.13(d)(1); Minn. R. 7017.1170, subp. 3
Cylinder Gas Audit: due before end of each calendar half-year following Permit Issuance . Conduct CGA at least 3 months apart and not greater than 8 months apart. Follow the procedures in 40 CFR pt. 60, Appendix F.	Minn. R. 7017.1170, subp. 4
CEMS Relative Accuracy Test Audit (RATA): due before end of each calendar year following Permit Issuance . If the relative accuracy is 15% or less the next CEMS RATA is not due for 24 months. Follow the procedures in 40 CFR pt. 60, Appendix B and Appendix F. The reference method shall be conducted in a location that is at least 2 duct diameters downstream and one-half duct diameter upstream from the nearest flow disturbance.	Minn. R. 7017.1170, subp. 5
Emissions Monitoring: the owner or operator shall use a COMS to measure opacity emissions from SV 001 (EU 001).	40 CFR Section 60.45(a); Minn. R. 7007.0555; Minn. R. 7017.1006
COMS Daily Calibration Drift (CD) Check: the CD shall be quantified and recorded at zero (low-level) and upscale (high-level) opacity at least once daily. The COMS must be adjusted whenever the calibration drift (CD) exceeds twice the specification of PS-1 of 40 CFR 60, Appendix B.	40CFR Section 60.13(d); Minn. R. 7017.1210, subp. 2
COMS Calibration Error Audit: due before end of each calendar half-year following Permit Issuance . Conduct audits at least 3 months apart but no greater than 8 months apart.	Minn. R. 7017.1210, subp. 3
COMS Monitoring Data: Owners or operators of all COMS shall reduce all data to 6 minute averages. Opacity averages shall be calculated from all equally spaced consecutive 10-second (or shorter) data points in the 6 minute averaging period.	40 CFR Section 60.13(h); Minn. R. 7017.1200, subp. 1, 2, & 3
QA Plan: Develop and implement a written quality assurance plan that covers each CEMS. The plan shall be on site and available for inspection within 30 days after monitor certification. The plan shall contain all of the information required by 40 CFR 60, App. F, Section 3.	Minn. R. 7017.1170, subp. 2
QA Plan: Develop and implement a written quality assurance plan that covers each COMS. The plan shall be on site and available for inspection within 30 days after monitor certification. The plan shall contain the written procedures listed in Minn. R. 7017.1210, subp. 1.	Minn. R. 7017.1210
RECORDKEEPING	hdr
Recordkeeping: the owner or operator must retain records of all CEMS monitoring data and support information for a period of five years from the date of the monitoring sample, measurement or report. Records shall be kept at the source.	Minn. R. 7017.1130; Minn. R. 7007.0800, subp. 5
Recordkeeping: the owner or operator must retain records of all COMS monitoring data and support information for a period of five years from the date of the monitoring sample, measurement or report. Records shall be kept at the source.	Minn. R. 7017.1130; Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/02/00

Facility Name: American Crystal Sugar - E Grand Forks

Permit Number: 11900002 - 001

Subject Item: EU 003 Pulp Dryer A

Associated Items: CE 003 Multiple Cyclone w/Fly Ash Reinjection-Common w/Coal Boilers

CE 004 Fabric Filter - Medium Temperature i.e., 180 F<T<250 F

SV 003

What to do	Why to do it
EMISSION LIMITS	hdr
Particulate Matter < 10 micron: less than or equal to 17.4 lbs/hour	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to meet 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 biogas (methane generated at the wastewater treatment system) only.	Minn. R. 7007.0800, subp. 2
MONITORING REQUIREMENTS	hdr
Monitoring of Pollution Control Equipment: the Permittee shall monitor and record the pressure drop across the multiclone and the baghouse once each operating day. If any of the monitored parameters are found to be outside the ranges in the permit, take corrective action (as outlined in the operation and maintenance plan for the facility) within 24-hours of discovery to restore the parameter(s) to the proper range. Make a record of all corrective actions taken.	Title I Condition: control equipment requirement for emissions subject to a limit based on 40 CFR Section 52.21(k); Minn. R. 7007.0800, subp. 4; Minn. R. 7007.0800, subp. 5; Minn. R. 7007.0800, subp. 15
Pressure Drop: greater than or equal to 2 inches of water column and less than or equal to 6 inches of water column across the multiclone	Minn. R. 7007.0800, subp.2; Minn. R. 7007.0800, subp.4
Pressure Drop: greater than or equal to 3 inches of water column and less than or equal to 6 inches of water column across the baghouse	Minn. R. 7007.0800, subp.2; Minn. R. 7007.0800, subp.4
TESTING REQUIREMENTS	hdr
Performance Test: due before end of each 36 months starting 03/07/1998 to measure PM10 emissions. The test shall be conducted at an interval not to exceed 36 months between test dates.	Title I Condition: testing of emissions subject to a limit based on 40 CFR Section 52.21(k); Minn. R. 7017.2020, subp. 1
Performance Test: due before end of each 36 months starting 03/07/1998 to measure TSP emissions. The test shall be conducted at an interval not to exceed 36 months between test dates.	Minn. R. 7017.2020, subp. 1
Performance Test Pre-test Meeting: due 7 days before end of each 36 months starting 03/07/1998 (7 days before each Performance Test)	Minn. R. 7017.2030, subp. 4

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/02/00

Facility Name: American Crystal Sugar - E Grand Forks

Permit Number: 11900002 - 001

Subject Item: EU 004 Pulp Dryer B

Associated Items: CE 005 Multiple Cyclone w/Fly Ash Reinjection-Common w/Coal Boilers

CE 006 Fabric Filter - Medium Temperature i.e., 180 F<T<250 F

SV 004

What to do	Why to do it
EMISSION LIMITS	hdr
Particulate Matter < 10 micron: less than or equal to 17.4 lbs/hour	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to meet 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 biogas (methane generated from the wastewater treatment system) only.	Minn. R. 7007.0800, subp. 2
MONITORING REQUIREMENTS	hdr
Monitoring of Pollution Control Equipment: the Permittee shall monitor and record the pressure drop across the multiclone and the baghouse once each operating day. If any of the monitored parameters are found to be outside the ranges in the permit, take corrective action (as outlined in the operation and maintenance plan for the facility) within 24-hours of discovery to restore the parameter(s) to the proper range. Make a record of all corrective actions taken.	Title I Condition: control equipment requirement for emissions subject to a limit based on 40 CFR Section 52.21(k); Minn. R. 7007.0800, subp. 4; Minn. R. 7007.0800, subp. 5; Minn. R. 7007.0800, subp. 15
Pressure Drop: greater than or equal to 2 inches of water column and less than or equal to 6 inches of water column across the multiclone	Minn. R. 7007.0800, subp.2; Minn. R. 7007.0800, subp.4
Pressure Drop: greater than or equal to 3 inches of water column and less than or equal to 6 inches of water column across the baghouse	Minn. R. 7007.0800, subp.2; Minn. R. 7007.0800, subp.4
TESTING REQUIREMENTS	hdr
Performance Test: due before end of each 36 months starting 06/01/97 to measure PM10 emissions. The tests shall be conducted at an interval not to exceed 36 months between test dates.	Title I Condition: testing of emissions subject to a limit based on 40 CFR Section 52.21(k); Minn. R. 7017.2020, subp. 1
Performance Test: due 180 days after Permit Issuance to measure TSP emissions.	Minn. R. 7017.2020, subp. 1
Performance Test Pre-test Meeting: due 7 days before end of each 36 months starting 06/01/97 (7 days before each Performance Test)	Minn. R. 7017.2030, subp. 4
Performance Test Pre-test Meeting: due 7 days before Performance Test (for the TSP performance test)	Minn. R. 7017.2030, subp. 4

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/02/00

Facility Name: American Crystal Sugar - E Grand Forks

Permit Number: 11900002 - 001

Subject Item: EU 005 Pulp Dryer C

Associated Items: CE 007 Multiple Cyclone w/Fly Ash Reinjection-Common w/Coal Boilers

CE 008 Fabric Filter - Medium Temperature i.e., 180 F<T<250 F

SV 005

What to do	Why to do it
EMISSION LIMITS	hdr
Particulate Matter < 10 micron: less than or equal to 17.4 lbs/hour	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to meet 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 biogas (methane generated from the wastewater treatment system) only.	Minn. R. 7007.0800, subp. 2
MONITORING REQUIREMENTS	hdr
Monitoring of Pollution Control Equipment: the Permittee shall monitor and record the pressure drop across the multiclone and the baghouse once each operating day. If any of the monitored parameters are found to be outside the ranges in the permit, take corrective action (as outlined in the operation and maintenance plan for the facility) within 24-hours of discovery to restore the parameter(s) to the proper range. Make a record of all corrective actions taken.	Title I Condition: control equipment requirement for emissions subject to a limit based on 40 CFR Section 52.21(k); Minn. R. 7007.0800, subp. 4; Minn. R. 7007.0800, subp. 5; Minn. R. 7007.0800, subp. 15
Pressure Drop: greater than or equal to 2 inches of water column and less than or equal to 6 inches of water column across the multiclone	Minn. R. 7007.0800, subp.2; Minn. R. 7007.0800, subp.4
Pressure Drop: greater than or equal to 3 inches of water column and less than or equal to 6 inches of water column across the baghouse	Minn. R. 7007.0800, subp.2; Minn. R. 7007.0800, subp.4
TESTING REQUIREMENTS	hdr
Performance Test: due before end of each 36 months starting 02/08/1998 to measure PM10 emissions. The tests shall be conducted at an interval not to exceed 36 months between test dates.	Title I Condition: testing of emissions subject to a limit based on 40 CFR Section 52.21(k); Minn. R. 7017.2020, subp. 1
Performance Test: due before end of each 36 months starting 02/08/1998 to measure TSP emissions. The tests shall be conducted at an interval not to exceed 36 months between test dates.	Minn. R. 7017.2020, subp. 1
Performance Test Pre-test Meeting: due 7 days before end of each 36 months starting 02/08/1998 (7 days before each Performance Test)	Minn. R. 7017.2030, subp. 4

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/02/00

Facility Name: American Crystal Sugar - E Grand Forks

Permit Number: 11900002 - 001

Subject Item: EU 006 Pellet Cooler

Associated Items: CE 009 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

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

SV 006

SV 007

What to do	Why to do it
EMISSION LIMITS	hdr
Particulate Matter < 10 micron: less than or equal to 0.25 lbs/hour for each stack (SV 006 and SV 007)	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to meet the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
MONITORING REQUIREMENTS	hdr
Monitoring of Pollution Control Equipment: the Permittee shall monitor and record the pressure drop across each baghouse once each operating day. If any of the monitored parameters are found to be outside the ranges in the permit, take corrective action (as outlined in the operation and maintenance plan for the facility) within 24-hours of discovery to restore the parameter(s) to the proper range. Make a record of all corrective actions taken.	Title I Condition: control equipment requirement for emissions subject to a limit based on 40 CFR Section 52.21(k); Minn. R. 7007.0800, subp. 4; Minn. R. 7007.0800, subp. 5; Minn. R. 7007.0800, subp. 15
Pressure Drop: greater than or equal to 1 inches of water column and less than or equal to 6 inches of water column for each baghouse	Minn. R. 7007.0800, subp.2; Minn. R. 7007.0800, subp.4
TESTING REQUIREMENTS	hdr
Performance Test: due before end of each 60 months starting 11/19/97 to measure PM10 emissions for both SV006 and SV007. The tests shall be conducted at an interval not to exceed 60 months between test dates.	Title I Condition: testing of emissions subject to a limit based on 40 CFR Section 52.21(k); Minn. R. 7017.2020, subp. 1
Performance Test: due before end of each 60 months starting 11/19/97 to measure TSP and opacity emissions. The tests shall be conducted at an interval not to exceed 60 months between test dates.	Minn. R. 7017.2020, subp. 1
Performance Test Pre-test Meeting: due 7 days before end of each 60 months starting 11/19/97 (7 days before each Performance Test)	Minn. R. 7017.2030, subp. 4

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/02/00

Facility Name: American Crystal Sugar - E Grand Forks

Permit Number: 11900002 - 001

Subject Item: EU 007 Pulp Pellet Loadout

Associated Items: CE 011 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
SV 008

What to do	Why to do it
EMISSION LIMITS	hdr
Particulate Matter < 10 micron: less than or equal to 1.89 lbs/hour	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011. 0735.	Minn. R. 7011.0715, 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 007.	Minn. R. 7011.1005, subp. 3(B)
Opacity: less than or equal to 10 percent opacity for emissions vented through SV 008.	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)
POLLUTION CONTROL EQUIPMENT REQUIREMENTS	hdr
Operation and Maintenance of Fabric Filter: The permittee shall operate and maintain the fabric filter according to the operation and maintenance plan for the facility and the applicable control equipment manufacturer's specifications contained therein..	Title I Condition: to meet increment and NAAQS standards under 40 CFR Section 52.21(k)
Visible Emissions Monitoring: the Permittee shall perform a visible emission check on SV 008 once each day while EU 007 is in operation (during daylight hours). A visible emission check shall consist of viewing the exhaust gas exiting the stack and recording whether visible emissions are present or not.	Title I Condition: to meet increment and NAAQS standards under 40 CFR Section 52.21(k); Minn. R. 7007.0800, subp. 4
Visible Emissions Corrective Actions: if visible emissions (VEs) are observed, determine the cause and take corrective actions within 24 hours of discovery to eliminate VEs.	Title I Condition: to meet increment and NAAQS standards under 40 CFR Section 52.21(k); Minn. R. 7007.0800, subp. 2
Visible Emissions Recordkeeping: record the time and date of each VE inspection, and whether or not any VEs were observed. If VEs were observed, also record a brief description of the type of corrective actions taken, and the time and date the actions were taken.	Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/02/00

Facility Name: American Crystal Sugar - E Grand Forks

Permit Number: 11900002 - 001

Subject Item: EU 012 A-Side Sugar Dryer

Associated Items: CE 015 Dynamic Separator (Wet)
SV 011

What to do	Why to do it
EMISSION LIMITS	hdr
Particulate Matter < 10 micron: less than or equal to 0.40 lbs/hour	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to meet the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
MONITORING REQUIREMENTS	hdr
Monitoring of Pollution Control Equipment: the Permittee shall monitor and record the liquid supply pressure and liquid flow rate once each operating day. If any of the monitored parameters are found to be outside the ranges in the permit, take corrective action (as outlined in the operation and maintenance plan for the facility) within 24-hours of discovery to restore the parameter(s) to the proper range. Make a record of all corrective actions taken.	Title I Condition: control equipment requirement for emissions subject to a limit based on 40 CFR Section 52.21(k); Minn. R. 7007.0800, subp. 4; Minn. R. 7007.0800, subp. 5; Minn. R. 7007.0800, subp. 15
Water flow rate: greater than or equal to 2 gallons/minute and less than or equal to 5 gallons/minute	Minn. R. 7007.0800, subp.2; Minn. R. 7007.0800, subp.4
Water pressure: greater than or equal to 20 psi (gauge) and less than or equal to 60 psi (gauge)	Minn. R. 7007.0800, subp.2; Minn. R. 7007.0800, subp.4
TESTING REQUIREMENTS	hdr
Performance Test: due 180 days after Permit Issuance to measure PM10 emissions.	Title I Condition: testing of emissions subject to a limit based on 40 CFR Section 52.21(k); Minn. R. 7017.2020, subp. 1
Performance Test: due 180 days after Permit Issuance to measure TSP emissions.	Minn. R. 7017.2020, subp. 1
Performance Test Pre-test Meeting: due 7 days before Performance Test	Minn. R. 7017.2030, subp. 4

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/02/00

Facility Name: American Crystal Sugar - E Grand Forks

Permit Number: 11900002 - 001

Subject Item: EU 013 A-Side Sugar Cooler

Associated Items: CE 016 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
SV 012

What to do	Why to do it
EMISSION LIMITS	hdr
Particulate Matter < 10 micron: less than or equal to 0.11 lbs/hour	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to meet the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
MONITORING REQUIREMENTS	hdr
Monitoring of Pollution Control Equipment: the Permittee shall monitor and record the pressure drop across the baghouse once each operating day. If the pressure drop is found to be outside the range in the permit, take corrective action (as outlined in the operation and maintenance plan for the facility) within 24-hours of discovery to restore the parameter to the proper range. Make a record of all corrective actions taken.	Title I Condition: control equipment requirement for emissions subject to a limit based on 40 CFR Section 52.21(k); Minn. R. 7007.0800, subp. 4; Minn. R. 7007.0800, subp. 5; Minn. R. 7007.0800, subp. 15
Pressure Drop: greater than or equal to 1 inches of water column and less than or equal to 6 inches of water column across the multiclone	Minn. R. 7007.0800, subp.2; Minn. R. 7007.0800, subp.4

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/02/00

Facility Name: American Crystal Sugar - E Grand Forks

Permit Number: 11900002 - 001

Subject Item: EU 014 B-Side Sugar Dryer

Associated Items: CE 017 Dynamic Separator (Wet)
SV 013

What to do	Why to do it
EMISSION LIMITS	hdr
Particulate Matter < 10 micron: less than or equal to 1.00 lbs/hour	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to meet the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
MONITORING REQUIREMENTS	hdr
Monitoring of Pollution Control Equipment: the Permittee shall monitor and record the liquid supply pressure and liquid flow rate once each operating day. If any of the monitored parameters are found to be outside the ranges in the permit, take corrective action (as outlined in the operation and maintenance plan for the facility) within 24-hours of discovery to restore the parameter(s) to the proper range. Make a record of all corrective actions taken.	Title I Condition: control equipment requirement for emissions subject to a limit based on 40 CFR Section 52.21(k); Minn. R. 7007.0800, subp. 4; Minn. R. 7007.0800, subp. 5; Minn. R. 7007.0800, subp. 15
Water flow rate: greater than or equal to 3 gallons/minute and less than or equal to 8 gallons/minute	Minn. R. 7007.0800, subp.2; Minn. R. 7007.0800, subp.4
Water pressure: greater than or equal to 20 psi (gauge) and less than or equal to 60 psi (gauge)	Minn. R. 7007.0800, subp.2; Minn. R. 7007.0800, subp.4
TESTING REQUIREMENTS	hdr
Performance Test: due 180 days after Permit Issuance to measure PM10 emissions.	Title I Condition: testing of emissions subject to a limit based on 40 CFR Section 52.21(k); Minn. R. 7017.2020, subp. 1
Performance Test: due 180 days after Permit Issuance to measure TSP emissions.	Minn. R. 7017.2020, subp. 1
Performance Test Pre-test Meeting: due 7 days before Performance Test	Minn. R. 7017.2030, subp. 4

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/02/00

Facility Name: American Crystal Sugar - E Grand Forks

Permit Number: 11900002 - 001

Subject Item: EU 015 B-Side Sugar Cooler

Associated Items: CE 018 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
SV 014

What to do	Why to do it
EMISSION LIMITS	hdr
Particulate Matter < 10 micron: less than or equal to 0.59 lbs/hour	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to meet the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
MONITORING REQUIREMENTS	hdr
Monitoring of Pollution Control Equipment: the Permittee shall monitor and record the pressure drop across the baghouse once each operating day. If the pressure drop is found to be outside the range in the permit, take corrective action (as outlined in the operation and maintenance plan for the facility) within 24-hours of discovery to restore the parameter to the proper range. Make a record of all corrective actions taken.	Title I Condition: control equipment requirement for emissions subject to a limit based on 40 CFR Section 52.21(k); Minn. R. 7007.0800, subp. 4; Minn. R. 7007.0800, subp. 5; Minn. R. 7007.0800, subp. 15
Pressure Drop: greater than or equal to 1 inches of water column and less than or equal to 8 inches of water column across the multiclone	Minn. R. 7007.0800, subp.2; Minn. R. 7007.0800, subp.4

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/02/00

Facility Name: American Crystal Sugar - E Grand Forks

Permit Number: 11900002 - 001

Subject Item: EU 016 B-Side Dust Control System

Associated Items: CE 019 Dynamic Separator (Wet)

SV 015

What to do	Why to do it
EMISSION LIMITS	hdr
Particulate Matter < 10 micron: less than or equal to 1.14 lbs/hour	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to meet with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
MONITORING REQUIREMENTS	hdr
Monitoring of Pollution Control Equipment: the Permittee shall monitor and record the liquid supply pressure and liquid flow rate once each operating day. If any of the monitored parameters are found to be outside the ranges in the permit, take corrective action (as outlined in the operation and maintenance plan for the facility) within 24-hours of discovery to restore the parameter(s) to the proper range. Make a record of all corrective actions taken.	Title I Condition: control equipment requirement for emissions subject to a limit based on 40 CFR Section 52.21(k); Minn. R. 7007.0800, subp. 4; Minn. R. 7007.0800, subp. 5; Minn. R. 7007.0800, subp. 15
Water flow rate: greater than or equal to 1 gallons/minute and less than or equal to 3 gallons/minute	Minn. R. 7007.0800, subp.2; Minn. R. 7007.0800, subp.4
Water pressure: greater than or equal to 20 psi (gauge) and less than or equal to 60 psi (gauge)	Minn. R. 7007.0800, subp.2; Minn. R. 7007.0800, subp.4

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/02/00

Facility Name: American Crystal Sugar - E Grand Forks

Permit Number: 11900002 - 001

Subject Item: EU 017 Boiler No. 3 (Ion Exclusion)

Associated Items: SV 016

What to do	Why to do it
EMISSION LIMITS	hdr
Nitrogen Oxides: less than or equal to 0.075 lbs/million Btu heat input using 1-Hour Average. This limit does not apply during startup or shutdown (as defined under EU017 of Table A of this permit) of EU017.	Title I Condition: 40 CFR Section 52.21(j)(3) BACT
Nitrogen Oxides: less than or equal to 0.1 lbs/million Btu heat input using 30-day Rolling Average. This limit applies at all times.	40 CFR Section 60.44b(a)(1); Minn. R. 7011.0565
Fuel Use: restricted to natural gas only	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
MONITORING REQUIREMENTS	hdr
PEMS Monitoring Plan for Nitrogen Oxides Emissions. The PEMS Monitoring Plan shall include the required items identified in 60.49b(c)(1), (2), and (3). If at any time the Permittee discovers that the approved PEMS Monitoring Plan no longer provides valid emissions data, the Permittee shall make corrections and revise the PEMS Monitoring Plan within 30 days of discovery.	40 CFR Section 60.49b(c); Minn. R. 7011.0565; Minn. R. 7007.0800, subp. 2
Startup Period: Defined as the initial 120 minutes of operation of EU017 after any time during which operation of EU017 ceased for more than 60 consecutive minutes. Shutdown Period: Defined as the final 60 minutes of operation of EU017 immediately preceding the time that fuel flow is shut off to EU017. Operation of EU017: Defined as whenever there is any fuel flow to EU017.	Minn. R. 7007.0800, subp. 2
PEMS Relative Accuracy Test Audit (RATA): due before end of each 24 months following PEMS Certification Test. Each RATA shall be conducted at an interval not to exceed 24 months. PEMS Certification was completed 3/5/1998.	Minn. R. 7007.0800, subp. 2
PEMS Monitoring Data: The owner or operator shall obtain a minimum of one data point in each 15-minute period while EU017 is operating. The owner or operator shall calculate hourly averages from a minimum of four equally spaced data points in each 60 minute period. If EU017 is operated for less than 60-minutes, the hourly average shall be calculated from at least one data point in a 15-minute period.	Minn. R. 7007.0800, subp. 2
Continuous Operation: Except for system breakdowns, repairs, and calibration checks, the PEMS shall be in continuous operation.	Title I Condition: monitoring of emissions subject to a limit based on 40 CFR Section 52.21(k); 40 CFR Section 60.48b(g)(2); Minn. R. 7007.0800, subp.2
RECORDKEEPING	hdr
Recordkeeping: The owner or operator must retain records of all PEMS monitoring data and support information for a period of five years from the date of the monitoring sample, measurement, or report. Records shall be kept at the source and include predicted NOx emission rates and the monitored operating conditions, including steam generating unit load, identified in the PEMS Monitoring Plan.	40 CFR Sections 60.7(f) and 60.49b(c)(3); Minn. R. 7011.0565; Minn. R. 7007.0800, subp. 5
Records of Startup, Shutdown, or Malfunction: Any owner or operator subject to the provisions of this part shall maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative.	40 CFR Section 60.7(b)

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/02/00

Facility Name: American Crystal Sugar - E Grand Forks

Permit Number: 11900002 - 001

Subject Item: EU 018 Waste Water Ground Flare**Associated Items: SV 017**

What to do	Why to do it
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0110
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to meet the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1(A)

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/02/00

Facility Name: American Crystal Sugar - E Grand Forks

Permit Number: 11900002 - 001

Subject Item: EU 022 Conveying Dust System

Associated Items: CE 023 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
SV 021

What to do	Why to do it
EMISSION LIMITS	hdr
Particulate Matter < 10 micron: less than or equal to 5.14 lbs/hour	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
MONITORING REQUIREMENTS	hdr
Operation and Maintenance of Fabric Filter: The permittee shall operate and maintain the fabric filter according to the operation and maintenance plan for the facility and the applicable control equipment manufacturer's specifications contained therein.	Title I Condition: to meet increment and NAAQS standards under 40 CFR Section 52.21(k)
Visible Emissions Monitoring: the Permittee shall perform a visible emission check on SV 021 once each day while EU 022 is in operation (during daylight hours). A visible emission check shall consist of viewing the exhaust gas exiting the stack and recording whether visible emissions are present or not.	Title I Condition: to meet increment and NAAQS standards under 40 CFR Section 52.21(k); Minn. R. 7007.0800, subp. 4
Visible Emissions Corrective Actions: if visible emissions (VEs) are observed, determine the cause and take corrective actions within 24 hours of discovery to eliminate VEs.	Title I Condition: to meet increment and NAAQS standards under 40 CFR Section 52.21(k); Minn. R. 7007.0800, subp. 2
Visible Emissions Recordkeeping: record the time and date of each VE inspection, and whether or not any VEs were observed. If VEs were observed, also record a brief description of the type of corrective actions taken, and the time and date the actions were taken.	Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/02/00

Facility Name: American Crystal Sugar - E Grand Forks

Permit Number: 11900002 - 001

Subject Item: FS 030 Vehicle Traffic

What to do	Why to do it
<p>Dust Control for Paved Roads: all trucks delivering beets shall drive on paved roads. At the beginning of the dust control season, during non-freezing weather, (about April 15), and at the beginning of the beet slicing campaign (about September 1), the permittee shall water flush and vacuum sweep the paved roads once.</p> <p>During the part of the beet slicing campaign which also falls during non-freezing weather of the dust control season (about April 15 to May 15, and September 1 to November 1), the permittee shall water flush and vacuum sweep the paved roads one time each week.</p> <p>During periods of the dust control season that do not fall in the beet slicing campaign (about May 15 through September 1), the permittee shall vacuum sweep the paved roads one time each week.</p> <p>The permittee shall maintain records indicating the date of the sweeping, operator's initials, start and stop times, and weather conditions.</p>	<p>Title I Condition: 40 CFR 52.21(k); Minn. R. 7007.3000</p>
<p>Dust Control For Paved Parking Areas: parking areas shall be cleaned with pressurized water at the beginning of the dust control season during non-freezing weather (about April 15). The paved parking areas shall be cleaned with pressurized water once each month after the initial cleaning, during non-freezing weather, throughout the dust control season (about April 15 to November 15). The permittee shall maintain records indicating the date of cleaning, crew supervisor initials, start and stop times, and weather conditions.</p>	<p>Title I Condition: 40 CFR 52.21(k); Minn. R. 7007.3000</p>
<p>Dust Control For Unpaved Roads: unpaved roads shall be inspected regularly, and whenever dusty conditions occur during non-freezing conditions, the roads will be watered with a truck equipped with a water tank and spray nozzles. The Permittee will provide a map as part of its Fugitive Control Plan which will show the unpaved roads subject to dust control measures.</p>	<p>Title I Condition: 40 CFR 52.21(k); Minn. R. 7007.3000</p>

TABLE B: SUBMITTALS

06/02/00

Facility Name: American Crystal Sugar - E Grand Forks
Permit Number: 11900002 - 001

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

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

Send any application for a permit or permit amendment to:

Permit Technical Advisor
Permit Section
Air Quality Division
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

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

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

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

Supervisor
Compliance Determination Unit
Air Quality Division
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

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

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

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

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

TABLE B: ONE TIME SUBMITTALS OR NOTIFICATIONS

06/02/00

Facility Name: American Crystal Sugar - E Grand Forks

Permit Number: 11900002 - 001

What to send	When to send	Portion of Facility Affected
Application for Permit Reissuance	due 180 days before expiration of Existing Permit	Total Facility
Fugitive Control Plan	due 60 days after Permit Issuance for review and approval by Commissioner. The plan shall identify all fugitive emission sources, primary and contingent control measures, and records kept. The Permittee shall follow the actions and record keeping specified in the control plan. The plan may be amended by the Permittee with the Commissioner's approval.	Total Facility
Operation and Maintenance Plan	due 60 days after Permit Issuance summarizing the operation and maintenance for all pollution control equipment. Included in the plan should be the corrective action procedures to be followed to return the control equipment to within specified range(s); corrective action procedures to be followed in the event of a malfunction or breakdown; a description of inspection procedures to be followed; and records kept to demonstrate plan implementation.	Total Facility
Performance Test Notification (written)	due 30 days before Performance Test	EU001, EU002, EU012, EU014, GP001, GP002
Performance Test Notification (written)	due 30 days before Performance Test (for the TSP performance test)	EU004
Performance Test Plan	due 30 days before Performance Test	EU001, EU002, EU012, EU014, GP001, GP002
Performance Test Plan	due 30 days before Performance Test (for the TSP performance test)	EU004
Performance Test Report - Microfiche Copy	due 105 days after Performance Test	EU001, EU002, EU012, EU014, GP001, GP002
Performance Test Report - Microfiche Copy	due 105 days after Performance Test (for the TSP performance test)	EU004
Performance Test Report	due 45 days after Performance Test	EU001, EU002, EU012, EU014, GP001, GP002
Performance Test Report	due 45 days after Performance Test (for the TSP performance test)	EU004
Relative Accuracy Test Audit (RATA) Notification	due 30 days before CEMS Relative Accuracy Test Audit (RATA)	EU001, EU002
Relative Accuracy Test Audit (RATA) Notification	due 30 days before PEMS Relative Accuracy Test Audit (RATA) .	EU017
Testing Frequency Plan	due 60 days after Performance Test for TSP and PM10 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.	EU014
Testing Frequency Plan	due 60 days after Performance Test for TSP and PM10 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. The Company will be allowed to alternate testing between East and West Slakers provided the testing frequency determined by the initial performance test is greater than a year (12-months) for both units.	GP001

TABLE B: ONE TIME SUBMITTALS OR NOTIFICATIONS

06/02/00

Facility Name: American Crystal Sugar - E Grand Forks

Permit Number: 11900002 - 001

Testing Frequency Plan	due 60 days after Performance Test for TSP and PM10 emissions. The plan shall specify a testing frequency using the test data, the results of testing required by permit 11900002-012 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.	EU012
Testing Frequency Plan	due 60 days after Performance Test for TSP 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.	EU004
Testing Frequency Plan	due 60 days after Performance Test for TSP, PM10 and NOx 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 of MPCA per Minn. R. 7017.2020, subp. 1	EU001, EU002
Testing Frequency Plan	due 60 days after Performance Test for TSP, PM10, sulfur dioxide, and oxides of nitrogen 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. The Company will be allowed to alternate testing between East and West Slakers provided the testing frequency determined by the initial performance test is greater than a year (12-months) for both units.	GP002

TABLE B: RECURRENT SUBMITTALS

06/02/00

Facility Name: American Crystal Sugar - E Grand Forks

Permit Number: 11900002 - 001

What to send	When to send	Portion of Facility Affected
Excess Emissions/Downtime Reports (EER's)	due 30 days after end of each calendar quarter following Permit Issuance (Submit Deviations Reporting Form DRF-1 as amended). The EER must contain all of the information requested in 40 CFR60.7(c). The EER shall indicate all periods of exceedances of the limit.	EU017
Excess Emissions/Downtime Reports (EER's)	due 30 days after end of each calendar quarter following Permit Issuance . The EER must contain all of the information requested in 40 CFR 60.7(c). The EER shall indicate all periods of monitor bypass and all periods of exceedances of the limit including exceedances allowed by an applicable standard, i.e. during startup, shutdown, and malfunctions.	EU001, EU002
COMS Calibration Error Audit Results Summary	due 30 days after end of each calendar half-year following COMS Calibration Error Audit .	EU001, EU002
Cylinder Gas Audit (CGA) Results Summary	due 30 days after end of each calendar half-year following Cylinder Gas Audit.	EU001, EU002
Semiannual Deviations Report	due 30 days after end of each calendar half-year following Permit Issuance . The first report of each calendar year covers January 1 - June 30. The second report of each calendar year covers July 1 - December 31.	Total Facility
Compliance Certification	due 30 days after end of each calendar year following Permit Issuance. 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.	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
Relative Accuracy Test Audit (RATA) Results Summary	due 30 days after end of each calendar year following CEMS Relative Accuracy Test Audit (RATA).	EU001, EU002
Relative Accuracy Test Audit (RATA) Results Summary	due 30 days after end of each 24 months following PEMS Relative Accuracy Test Audit (RATA).	EU017
Performance Test Notification (written)	due 30 days before end of each 36 months starting 02/08/1998 (30 days before each Performance Test)	EU005
Performance Test Notification (written)	due 30 days before end of each 36 months starting 03/07/1998 (30 days before each Performance Test)	EU003
Performance Test Notification (written)	due 30 days before end of each 36 months starting 06/01/97 (30 days before each Performance Test).	EU004
Performance Test Plan	due 30 days before end of each 36 months starting 02/08/1998 (30 days before each Performance Test)	EU005
Performance Test Plan	due 30 days before end of each 36 months starting 03/07/1998 (30 days before each Performance Test)	EU003
Performance Test Plan	due 30 days before end of each 36 months starting 06/01/97 (30 days before each Performance Test)	EU004
Performance Test Report - Microfiche Copy	due 105 days after end of each 36 months starting 02/08/1998 (105 days after each Performance Test)	EU005

TABLE B: RECURRENT SUBMITTALS

06/02/00

Facility Name: American Crystal Sugar - E Grand Forks

Permit Number: 11900002 - 001

Performance Test Report - Microfiche Copy	due 105 days after end of each 36 months starting 03/07/1998 (105 days after each Performance Test)	EU003
Performance Test Report - Microfiche Copy	due 105 days after end of each 36 months starting 06/01/97 (105 days after each Performance Test)	EU004
Performance Test Report	due 45 days after end of each 36 months starting 02/08/1998 (45 days after each Performance Test)	EU005
Performance Test Report	due 45 days after end of each 36 months starting 03/07/1998 (45 days after each Performance Test)	EU003
Performance Test Report	due 45 days after end of each 36 months starting 06/01/97 (45 days after each Performance Test)	EU004
Performance Test Notification (written)	due 30 days before end of each 60 months starting 11/19/97 (30 days before each Performance Test)	EU006
Performance Test Plan	due 30 days before end of each 60 months starting 11/19/97 (30 days before each Performance Test)	EU006
Performance Test Report - Microfiche Copy	due 105 days after end of each 60 months starting 11/19/97 (105 days after each Performance Test)	EU006
Performance Test Report	due 45 days after end of each 60 months starting 11/19/97 (45 days after each Performance Test)	EU006

APPENDIX MATERIAL

Facility Name: American Crystal Sugar – East Grand Forks

Permit Number: 11900002-001

Note: This data came from 3 memos: PM₁₀ emission rates from a 5/8/97 letter from Joel Smith to Tom Holstrom; NO_x emission rates from a 1/17/97 letter from Greg Raetz to Margaret McCourtney. SO₂ emission rates from a 1/26/00 letter from Greg Raetz to Trent Wickman.

TABLE 1 - Modeled Emission Rates (lb/hr)

Stack #	PM ₁₀	SO ₂	NO _x	CO
001	14.2	427.2	227.9	182.5
002	14.2	427.2	227.9	182.5
003	17.4	0.03	6.57	NA*
004	17.4	0.03	7.44	NA*
005	17.4	0.03	6.57	NA*
006	0.25	-	-	-
007	0.25	-	-	-
008	1.89	-	-	-
009	4.36	27.0**	34.1	21.0
010	4.82	-	-	-
011	0.40	-	-	-
012	0.11	-	-	-
013	1.00	-	-	-
014	0.59	-	-	-
015	1.14	-	-	-

Air Emission Permit No. 11900002-001

016	1.00	0.12	15.0	16.0
017	0.16	0.01	1.61	0.86
019	0.86	-	-	-
020	0.86	-	-	-
021	5.14	-	-	-
022	0.86	-	-	-
023	0.86	-	-	-
024	0.86	-	-	-
ID 024***	0.25	-	-	-
ID 025***	0.25	-	-	-

*CO modeling was conducted as a part of a backwards PSD application (dated July 29, 1994) submitted for the installation of the C Pulp Dryer. The pulp dryers were modeled burning coal so those limits are no longer applicable since they have since been switched to natural gas. See the attachments to the technical support document for an estimate of the current CO PTE of the pulp dryers.

**This is the emission rate for the lime kilns during startup when none of the flue gas goes to the carbonation process and the throughput is 0.9 ton of coke per hour for both kilns.

***ID 024 and 025 were used in the modeling to represent stacks SV 025-029. SV 025-029 each have an emission rate of 0.10 lb/hr which were represented by ID 024 and 024 (i.e., $5 * 0.1 = 0.5 = 0.25 + 0.25$)

Note: Fugitive sources were also included in the particulate modeling.

TABLE 2 - Modeled Stack Parameters

Stack #	Height (ft)	Diameter (ft)	Flow Rate (acfm)	Temperature (°F)	Orientation
001	171	9.0	166,000	408	Vertical
002	171	9.0	144,000	394	Vertical
003	150	4.0	67,600	230	Vertical
004	150	5.0	67,100	245	Vertical
005	150	4.0	67,600	230	Vertical
006	54.5	2.0	15,000	95	Vertical
007	54.5	2.0	15,000	95	Vertical
008	27.5	2.0	10,900	70	Vertical
009	110	1.7	4,200	109	Vertical
010	110	2.7	6,200	120	Vertical
011	110	1.6	3,200	95	Vertical
012	110	1.6	2,700	75	Vertical
013	110	2.5	14,000	88	Vertical
014	110	2.5	15,600	184	Vertical
015	85.1	1.2	2,100	153	Vertical
016	140	5.0	65,600	350	Vertical
017	18.0	9.5	18,000	1340	Vertical
019	27.3	0.50	1,000	68	Vertical
020	26.8	0.50	1,000	68	Vertical

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021	35.3	1.7	5,900	68	Vertical
022	39.6	0.46	1,000	68	Vertical
023	8.0	1.3	1,000	68	Vertical
024	8.8	1.3	1,000	68	Vertical
ID 024*	4.0	2.0	*0	70	Horizontal
ID 025*	4.0	2.0	*0	70	Horizontal

* the combined airflow for the 5 units represented by ID 024 and 025 is 13,200 acfm

TECHNICAL SUPPORT DOCUMENT
For
AIR EMISSION PERMIT NO. 11900002-001

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

1. General Information

1.1. Applicant and Stationary Source Location:

Applicant/Address	Stationary Source/Address (SIC Code: 2063)
American Crystal Sugar Company	Highway US 2 E.
Corporate Headquarters	East Grand Forks, Minnesota 56721
101 North Third Street	Polk County
Moorhead, Minnesota 56560	Contact: Mr. Joel Smith, (218) 236-4347

1.2. Description Of The Permit Action

American Crystal Sugar Company (Company) owns and operates a sugar beet processing plant at Highway US 2 E., East Grand Forks, Polk County, Minnesota. In addition to this stationary source, the Company owns beet processing plants in both Moorhead and Crookston, Minnesota and also has a research center in Moorhead, Minnesota. The East Grand Forks plant consists of two coal-fired (subbituminous) boilers and one natural gas boiler which all produce process steam; three natural gas-fired pulp dryers; one pulp pellet cooler; pulp pellet handling, storage and loading equipment; two lime kilns; two lime slakers; two sugar dryers; two sugar coolers; ash removal systems and dry sugar storage, handling, and sacking equipment.

The general sugar making process can be divided into 4 steps: extraction, purification, evaporation and crystallization. In the extraction process beets are received, cleaned, sliced and then the sugar-containing liquid, called raw juice, is extracted by diffusion. The leftover material, called pulp, is dried and pressed to be sold as animal feed. During purification, milk of lime and carbon dioxide gas are all added to the raw juice in a series of carbonation tanks and non-sucrose impurities are removed by precipitation. The lime and carbon dioxide are produced in lime kilns and the lime is converted to milk of lime in a lime slaker. The evaporation process concentrates the juice in a series of evaporators. The concentrated liquid, now called thick juice, is crystallized, dried, cooled, screened, and stored or packaged for shipment. During the crystallization process, a liquid is centrifuged from the sugar crystals called molasses. Sugar can be extracted from this liquid by repeated boilings and ion exchange. The remaining molasses can be used in the production of livestock feed.

The three boilers, pulp dryers, and lime kilns are sources of combustion emissions. Particulate matter (PM) is emitted from the other sources at the facility due to product handling. Electrostatic precipitators (ESPs) control PM emissions from the two coal-fired boilers. Other pollution control equipment at the facility consists of: a multiclone with a hopper-aspirated fabric filter system for each pulp dryer, baghouses for the pellet cooler, fabric filters for sugar storage and conveying sources, baghouses for the lime kilns, and rotoclones for the sugar dryers and baghouses for the sugar coolers. Coal, coke and limerock are received by rail and stored in uncovered storage piles. These can all be source of fugitive particulate emissions along with paved and unpaved roads at the facility

The entire facility operates only part of the year during a period of time referred to as the campaign. Harvest can begin as early as August and usually ends in November. During harvest, sugar beets are stockpiled at the factory and at remote stockpiling sites in the outlying areas. The goal is to have the beets stored in a frozen condition in the piles until they can be processed at the factory. The facility's beet slicing campaign will generally run from September until April or May, twenty-four hours per day. The East Grand Forks plant employs about 425 people at the height of the campaign.

1.3. Description of any changes allowed with this permit issuance

This permit authorizes no changes to the facility other than to require the installation, operation, and maintenance of ambient hydrogen sulfide monitoring equipment. This permit does make some minor changes to some existing permit conditions and adds some new ones. Parametric monitoring requirements for the pollution control equipment were added. Two previous federal Prevention of Significant Deterioration (PSD) program limits were increased at the request of the permittee because the averaging time used previously was deemed to be inappropriate (due to its length, see Part 3). In addition the fugitive source requirements in the permit were clarified.

No comments were received from the public during the public notice period. In addition no comments were received from EPA during their comment period. After the permit went on public notice a few small typographic changes were made to the permit including: adding a stack to the lime kiln for the carbonation system vent, removing EU027/SV026 from the permit because it has been removed from the facility, clarifying the coke sulfur analysis description to improve readability, and editing the CO PTE for Boilers #1 and #2 in the TSD due to a typographical error.

1.4. Description of previous permits issued to this facility

Permit Number and Issuance Date	Action Authorized
29B-75-I-2 January 15, 1975	Installation of boiler #1
29B-76-I-4 March 16, 1976	Installation of boiler #2
29B-77-O-1	Operating permit for the boilers

May 3, 1977	
29B-92-OT-1 December 15, 1992	Permit to add boiler #3 and molasses processing. Permit was major for Oxides of Nitrogen (NOx) and included a NOx Best Available Control Technology (BACT) limit on boiler #3. Synthetic minor limits were established for the other criteria pollutants.
Amendment 1 to 29B-92-OT-1 February 14, 1994	Permit for performance test extensions, clarification on CEM requirements, approval to burn a limited amount of used oil
11900002-011 August 15, 1995	Permit to switch the 3 pulp dryers from coal to natural gas
11900002-012 June 23, 1997	Permit to modify previous synthetic minor limits and to increase throughput. New diffuser, cossette mixer, cutters, conveyors, heat exchangers and a new pulp press. Lime presses were installed to eliminate the lime pond. Major for all pollutants but Volatile Organic Compounds (VOC) and Lead (Pb). It was essentially a new total facility permit.
11900002-013 December 30, 1997	Permit to extend performance testing deadlines from AEP 11900002-012
11900002-014 April 14, 1999	Permit to remove non-Title I operational limits on boilers 1 and 2

1.5. Facility Emissions:

Table 1. Total Facility Potential to Emit Summary for Point Sources:

SV#	Emission Unit Description	PM tpy	PM ₁₀ tpy	SO ₂ tpy	NO _x tpy	CO tpy	VOC tpy	Pb tpy	All HAPs tpy
1, 2	Boiler #1 & #2 (Coal)	124.4	124.4	3742	1996	1599	8.2	1.6	13.5
16	Boiler #3 (NG)	4.4	4.4	0.5	65.7	70.1	1.2	0	0.5
3,4,5	Pulp Dryers A, B, C	228.6	228.6	0.4	90.1	96.4	1.6	0	1
9	Lime Kilns East, West	19.1	19.1	118.3	149.2	98.1	0.9	0	1
6,7,8	Pellet Cooler/Loadout	10.5	10.5						
10	Lime Slaker	21.1	21.1						
11-15	Sugar Dryers/Coolers	14.2	14.2						
19-29	Sugar Handling	43.5	43.5						
17	WWTP Flare	0.2	0.2	<0.1	1.6	1.7	<0.1	0	

	PM tpy	PM ₁₀ tpy	SO ₂ tpy	NO _x tpy	CO tpy	VOC tpy	Pb tpy	All HAPs tpy
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Total Facility Potential Emissions (from point sources only)	466	466	3862	2303	1865	11.9	1.6	16
Total Facility Actual Emissions*	463	145	758	750	774	7.7	0.2	NA

*These emissions were taken from the 1996 Emissions Inventory Report

Table 2. Total Facility and Permit Classification

Classification	Major/Affected Source	*Synthetic Minor	*Minor
PSD	PM ₁₀ , SO ₂ , NO _x , CO		VOC, Pb
NAAR (not applicable)			
Part 70 Permit Program	PM ₁₀ , SO ₂ , NO _x , CO		VOC, Pb

* 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.

2. Regulatory and/or Statutory Basis

Summary Regulatory and/or Statutory Basis of the Emission or operational Limit

Regulatory Overview of Facility

EU, GP, or SV #	Applicable Regulations	Comments:
Total Facility	40 CFR § 52.21	Prevention of Significant Deterioration. Limits based on BACT and/or modeling. PSD modeling was done for PM ₁₀ , Sulfur Dioxide (SO ₂) and NO _x .
SV 001, 002	40 CFR 60, subp D	Standards of Performance for Fossil-Fuel-Fired Generators
SV 016	40 CFR 60, subp Db	Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units
SV 016	40 CFR § 52.21	Prevention of Significant Deterioration. BACT limit set for NO _x .

3. Technical Information

Summary of Federal Regulation Applicability

Prevention of Significant Deterioration (PSD), 40 CFR § 52.21 - The stationary source is a major source under PSD. PSD review has been conducted for two modifications in the past.

- In 1992 a modification to the facility to add Boiler No. 3 and molasses processing was permitted. This modification was major for NO_x, synthetic minor for PM₁₀, SO₂, and CO, and

minor for VOC. A BACT analysis was completed for NOx from boiler 3 and the result was an emission limit of 0.075 lb NOx/MMBtu. A number of types of synthetic minor limits were imposed, i.e. emission limits, production limits, throughput limits, etc.

- In 1997 a modification was permitted to the facility to replace the diffuser and pulp press, and remove the various synthetic minor limits from the previous permit. This action debottlenecked the plant and increased sugar production. The modification was major for all criteria pollutants except for VOC and Pb. BACT analyses were not required because the only production units that were being physically modified were not considered “emission units.” Ambient modeling was done for the whole facility for PM₁₀, SO₂, and NOx and, in general, it is the emission rates used in this analysis that are still applicable in the current Title V permit. The key memos containing the parameters used in the modeling analysis, and results of the modeling, are attached (see attachment 1).

Standards of Performance for New Stationary Sources (NSPS), 40 CFR pt. 60 - Boiler Nos. 1 & 2 are subject to Subpart D, Standards of Performance for Fossil-Fuel Fired Steam Generators for Which Construction is Commenced After August 17, 1971. Boiler No. 3 is subject to Subpart Db, Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units.

National Emission Standards for Hazardous Air Pollutants (NESHAP), 40 CFR pt. 61 and 63 - There are no Part 61 NESHAP applicable to this facility. The existing facility is not a major source for Hazardous Air Pollutant (HAP) source under Part 63 based on the emissions data currently available. There is no promulgated Part 63 NESHAP currently applicable to the facility as a whole, and none are proposed for the future. The boilers may be subject to the Part 63 NESHAP for Industrial Combustion due to be proposed within the next year.

Compliance Assurance Monitoring (CAM), 40 CFR pt. 64 - The date when a CAM plan is due for any applicable pollutant specific emission unit depends on both the size of the unit and whether a significant permit revision to a Part 70 permit is being made. At the latest, CAM plans are due upon renewal of a source’s Part 70 permit. For large pollutant specific emission units (post-controlled emissions are greater than the major source threshold) CAM plans are required as a part of an application for a significant permit revision, but only for those emission units “for which the proposed permit revision is applicable.”

Two general total facility requirements were changed in this permit. The wording in the “Inspections” and “Parameters Used in Modeling” requirements was changed in an attempt to clarify them. These changes were approved in the January 19, 2000 Leads meeting.

Performance testing was included for emission units according to MPCA internal guidance and policy. A copy of this document is available upon request.

Air Emission Characterization

Boiler Nos. 1 and 2 (EU 001, EU 002) –

- Boilers 1 and 2 are coal-fired, are rated at 356 million Btu per hour, and are subject to the emission limits of NSPS, subp. D for PM, SO₂, NOx, and opacity. The PSD model based limits from the previous PSD permit are more restrictive than the NSPS limits for SO₂ and NOx. 0.64 lb NOx/MMBtu (227.9 lb/hr) was the limit in 1992 PSD permit. CO permit limits are not

necessary since all associated PSD requirements (modeling) were subsequently satisfied for this pollutant and the emission rate used in the analysis was the unrestricted PTE. Since another standard of performance is applicable, the state performance standards at Minn. R. ch. 7011 for PM, SO₂ and opacity do not apply to these units. Each boiler has an ESP to control particulate emissions. To satisfy periodic monitoring, ACS monitors the number of fields online daily. Per NSPS subp. D, these boilers have continuous emission monitors (CEMs) for SO₂, NO_x, and opacity. Recent test data includes particulate matter, NO_x, and CO in 1993 and particulate matter and CO in 1994.

- The SO₂ limit of 231 lb/hr (0.65 lb/MMBtu) was established in the 1997 PSD permit as a 30-day rolling average limit. This limit was used in the PSD ambient modeling analysis, which has ambient standards based on averaging times as short as 3-hour (Federal) and 1-hour (State). It is not technically correct to allow a 30 day rolling average to apply to a limit that was used to demonstrate compliance with a 1- to 3-hour ambient standard. To address this inconsistency, the averaging time of the limit was changed to 3-hour and as a consequence the Company requested that the limit be raised to 1.2 lb/MMBtu. The Company remodeled at the higher emission rate and showed compliance with the ambient standards (see attachments).
- A limit was added to these boilers to allow them to burn a limited amount (600 tons per year for both boilers) of coke fines that are generated at the facility from handling the coke used in the lime kilns. It is felt that this will not cause a significant change in air emissions due to the small amount of material involved, and the fact that coke is similar to coal.

Boiler No. 3 (EU 017) –

- Boiler 3 is subject to the emission limits of NSPS, subp. Db. For a natural gas boiler this reduces down to a NO_x limit. The BACT NO_x limit (0.075 lb/MMBtu) contained in the 1992 PSD permit is more restrictive than the NSPS limit of 0.1 lb/MMBtu. Even though the BACT limit is lower than the applicable NSPS limit, the NSPS limit applies at ALL times including startup and shutdown whereas the BACT limit does not apply at these times (see 40 CFR § 60.44b(h) and 60.46b(a)). Therefore both NO_x limits are included in the permit. The CO limit is a synthetic minor limit from the 1992 PSD permit.
- Per 40 CFR § 60.48b (g)(2), the Company uses a predictive emission monitoring system (PEMS) for NO_x. The original PEMS plan was submitted to the MPCA in 1993. The Company monitors boiler steam flow and fuel flow and uses these parameters to predict NO_x emissions based on the relationships developed between these parameters through stack testing. The data from the PEMS must be equivalent to that provided by a CEM. Since another standard of performance is applicable, the state performance standards at Minn. R. ch. 7011 do not apply at this unit. Boiler 3 was tested for PM in 1994.

Pulp Dryers A, B, and C (EU 003, EU 004, and EU 005) -

These units burned coal until 1995 when they were converted to natural gas (Air Emission Permit No. 11900002-011, issued 8/15/95). They also may burn biogas generated from the wastewater treatment system. Particulate matter from the units is controlled with multiclones with hopper aspirated baghouses. The emission limits are based on PSD modeling and Minn. R. ch. 7011. Periodic monitoring is daily monitoring of the pressure drop at multiclones and baghouses. The identification of any monitored parameter out of the normal operating range in the permit (or as

determined during the last performance test demonstrating compliance with the emission limits in the permit) will require the Company to take corrective actions to determine the cause of this deviation and bring the parameter back within the normal operating range. One or more of these units have been tested for particulate matter in 1993, 1994, 1996, and 1997 and 1998.

Pulp Pellet Cooler (EU 006, SV 007 and 007) -

This is one emission unit that vents to two stacks. Particulate matter from the unit is controlled with baghouses. The emission limits are based on PSD modeling and Minn. R. ch. 7011. Periodic monitoring for the control equipment is the daily monitoring of pressure drop. The identification of any monitored parameter out of the normal operating range in the permit (or as determined during the last performance test demonstrating compliance with the emission limits in the permit) will require the Company to take corrective actions to determine the cause of this deviation and bring the parameter back within the normal operating range. This unit has been tested for particulate matter in 1993 and 1997.

Pulp Pellet Loadout (EU 007) -

Particulate matter from the unit is controlled with a baghouse. The emission limits are based on PSD modeling and Minn. R. ch. 7011. This unit is subject to portions of Minn. R. 7011.1005 (Standards Of Performance For Dry Bulk Agricultural Commodity Facilities). Periodic monitoring for the control equipment is the daily monitoring of visible emissions. The identification of visible emissions will require the Company to take corrective actions to determine the cause of the emissions and eliminate them. This unit has been tested for particulate matter in 1993 and 1997.

Lime Kilns, East and West (EU 008 and 009, SV 009, GP 002) -

These are two vertical kilns that vent to one stack. The large majority of the flue gas from the lime kilns go to the carbonators as a part of the sugar making process. The units have a bypass stack that is controlled with a baghouse. The emission limits are based on PSD modeling and Minn. R. ch. 7011. The 1997 permit, AEP No. 11900002-012, mistakenly swapped the NO_x and SO₂ limits. That error was corrected in this permit. A sulfur content limit for the coke used in the lime kilns was added with this permit to fulfill periodic monitoring requirements with respect to the SO₂ limit. Periodic monitoring for the PM control equipment is the daily monitoring of pressure drop. The identification of any monitored parameter out of the normal operating range in the permit (or as determined during the last performance test demonstrating compliance with the emission limits in the permit) will require the Company to take corrective actions to determine the cause of this deviation and bring the parameter back within the normal operating range. This unit has been tested for particulate matter in 1993.

Lime Slakers, East and West (EU 008 and 009, SV 009, GP 001) -

These are two units that vent to one stack. The units are controlled with a scrubber. The emission limits are based on PSD modeling and Minn. R. ch. 7011. Periodic monitoring for the control equipment is the daily monitoring of gas pressure drop, scrubber liquid pressure, and flow rate. The identification of any monitored parameter out of the normal operating range in the permit (or as determined during the last performance test demonstrating compliance with the emission limits in the permit) will require the Company to take corrective actions to determine the cause of this deviation and bring the parameter back within the normal operating range. This unit has been tested for particulate matter in 1993.

Sugar Dryers, A and B (EU 012 and 014, SV 011 and 013) -

The units are controlled with rotoclones. As a part of the 1997 PSD permit application the Company proposed upgrading the control equipment on these units to venturi scrubbers but this idea was later dropped. The emission limits are based on PSD modeling and Minn. R. ch. 7011. Periodic monitoring for the control equipment is the daily monitoring of liquid pressure and flow rate. The identification of any monitored parameter out of the normal operating range in the permit (or as determined during the last performance test demonstrating compliance with the emission limits in the permit) will require the Company to take corrective actions to determine the cause of this deviation and bring the parameter back within the normal operating range. One or both of these units have been tested for particulate matter in 1993, 1997, and 1998.

Sugar Coolers, A and B; B-side Sugarway (EU 013, 015, and 016; SV 012 and 014, and 015) -

The coolers are controlled with baghouses, while the sugarway is controlled with a rotoclone. The emission limits are based on PSD modeling and Minn. R. ch. 7011. Periodic monitoring for the control equipment is the daily monitoring of pressure drop for the baghouses and liquid pressure and flow rate for the rotoclone. The identification of any monitored parameter out of the normal operating range in the permit (or as determined during the last performance test demonstrating compliance with the emission limits in the permit) will require the Company to take corrective actions to determine the cause of this deviation and bring the parameter back within the normal operating range. These units have been tested for particulate matter in 1993 and 1997.

WWTP Flare (EU 018, SV 017) -

This unit is used to combust excess biogas from the wastewater treatment system. It is only subject to generic state particulate and opacity limits. No periodic monitoring is included because this unit is viewed as one for which there would be inconsequential environmental impact.

Sugar Handling, Conveying, and Storage Sources (GP 003 and 004; EU 020 through 030) -

These units are involved in transporting, storing and bagging sugar. They are controlled with low temperature baghouses. The emission limits are used in PSD modeling and based on Minn. R. ch. 7011. The modeling assumes that the fabric filters controlling all of these units are operating properly. The Company will use daily visible emission monitoring to fulfill periodic monitoring requirements. The identification of visible emissions will require the Company to take corrective actions to determine the cause of the emissions and eliminate them. Performance testing at these units is difficult at best because many of these units have airflows and/or stack diameters that make testing technically infeasible. In addition, some of these units may vent internally some of the time. While reviewing the draft permit facility personnel noted that CE 028 has been removed and CE 029 now controls EU 027 in addition to EU 028.

Fugitive Particulate Sources (Paved and Unpaved Roads, FS 030) – This requirement was clarified for readability. The time periods involved were changed so that they are specified in such a way so as to allow flexibility in application since both the beet slicing campaign and the dust control season vary from year to year. It is felt that it will be clear, to both company and MPCA compliance staff, when the “beet slicing campaign” is underway and when it is “non-freezing weather of the dust control season.”

Hydrogen Sulfide (H₂S)

The MPCA is aware of ambient levels of H₂S over the state standard, which have been measured at the other sugar beet plants in the state. As a result, an ambient H₂S monitoring network will be required at the East Grand Forks facility. The other three sugar beet plants in Minnesota already have installed these monitoring networks. The Minnesota Department of Health was given a draft version of this permit to comment on, per the ongoing agreement between the two agencies, and their only comment was that H₂S monitoring be initiated at the East Grand Forks facility (phone call between Chuck Stroebel, MDH and Trent Wickman on December 27, 1999).

The network involves upwind and downwind MDA monitors to measure H₂S and the submittal of meteorological data. The sources of H₂S at the facility are thought to be primarily associated with the wastewater treatment system. The locations of concern in the wastewater treatment system are where wastewater, that has become anaerobic, is in contact with ambient air. The Company must submit a monitoring plan for approval before the network can be constructed. The plan will then be reviewed by the MPCA and revised or approved. The network must be operating by April 1, 2000 and be run until October 31, 2000. The network must also be run in subsequent years, although the Company may ask the division manager to discontinue it at any time.

4. Conclusion

Based on the information provided by American Crystal Sugar Company, the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission Permit No. 11900002-001 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: Trent Wickman, Tom Kosevich, Cary Hernandez

Attachment: Modeling Summary Memos (dated 5/8/97, 1/17/97, 1/26/00)
Potential Emissions Calculations
ACSC Parametric Monitoring Spreadsheets