

**AIR EMISSION PERMIT NO. 13100022-001
IS ISSUED TO**

Malt-O-Meal Company

Malt-O-Meal Company - Plant 2 - Northfield
701 West 5th Street
Northfield, Rice County, MN 55057

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

Permit Type	Application Date
Total Facility Operating Permit	January 17, 1995

This permit authorizes the Permittee to operate and construct the stationary source at the address listed above unless otherwise noted in Table A. The Permittee must comply with all the conditions of the permit. Any changes or modifications to the stationary source must be performed in compliance with Minn. R. 7007.1150 to 7007.1500. Terms used in the permit as defined in the state air pollution control rules unless the term is explicitly defined in the permit.

Permit Type: Federal Part 70/Syn Minor PSD/NSR

Issue Date: April 11, 2000

Expiration: 5 years from date of this permit issuance.
All Title I Conditions do not expire.

Rodney E. Massey, P.E.
Director
South District

For Karen A. Studders
Commissioner
Minnesota Pollution Control Agency

DS:jfh

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NOTICE TO THE PERMITTEE:

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

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

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

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

PERMIT SHIELD:

Subject to the limitations in Minn. R. 7007.1800, compliance with the conditions of this permit shall be deemed compliance with the specific provision of the applicable requirement identified in the permit as the basis of each condition. Certain requirements which have been determined not to apply are listed in Table A of this permit.

The permit shield, however does not apply to:

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

FACILITY DESCRIPTION:

The Permittee operates an existing breakfast cereal (ready-to-eat) manufacturing facility. The stationary source currently consists of 13 separate product lines. Many of these lines can produce multiple products. The resultant cereal is either a wheat, rice, corn, oat, or some combination, thereof, product. The stationary source consists of scalpers, destoners, dryers, sifters, extrusion equipment, puffing equipment, conveyors, packaging machines, various cookers, boilers, intermediate storage equipment, and truck & railcar loading facilities.

TABLE A: LIMITS AND OTHER REQUIREMENTS

04/11/00

Facility Name: Malt-O-Meal Co - Plant 2 - Northfield

Permit Number: 13100022 - 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
A. EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 230 tons/year using 12-month rolling sum	Title I Condition: Limit to avoid classification as a major source under 40 CFR Section 52.21
Particulate Matter < 10 micron: less than or equal to 200 tons/year using 12-month rolling sum	Title I Condition: Limit to avoid classification as a major source under 40 CFR Section 52.21
Nitrogen Oxides: less than or equal to 230 tons/year using a 12-month rolling sum	Title I Condition: Limit to avoid classification as a major source under 40 CFR Section 52.21
Volatile Organic Compounds: less than or equal to 150 tons/year using a 12-month rolling sum	Title I Condition: Limit to avoid classification as a major source under 40 CFR Section 52.21
For the first eleven months after permit issuance, each pollutant emission limit shall be the 12-month rolling sum emission limit divided by the number of months from the issuance of this permit.	Title I Condition: Limit to avoid classification as a major source under 40 CFR 52.21; Minn. R. 7007.0800, subp. 5
The facility shall have less than 249 million Btu/hr of combined rated heat input capacity to fossil fuel fired boilers.	Title I Condition: Limit to avoid classification as a major source under 40 CFR Section 52.21
B. OPERATIONAL REQUIREMENTS	hdr
Addition/Modification of Emission Units: The Permittee may add or modify emission units to the stationary source. The addition of any new or modification of any existing emission unit must either: 1) qualify as an insignificant activity listed in Minn. R. 7007.1300, subp. 2; subp. 3; or subp. 4 (natural gas fuel burning units); 2) qualify as an insignificant modification under Minn. R. 7007.1250, subps. 1 and 2; 3) be within a class as categorically described in Appendix C and able to calculate emission changes according to the procedure specifically provided in this permit. This includes the fuel burning emission units from the Appendix C classes; or, 4) Make changes in VOC additives that are to be accounted for in the VOC 12-month rolling sum. If the addition of or modification of existing emission units do not fit into the above four categories, the Permittee must follow the permit amendment requirements provided in Minn. R. 7007.1150 through 7007.1500.	Title I Condition: To avoid classification as a major source under 40 CFR 52.21; Minn. R. 7007.0800, subp. 2; Minn. R. 7007.1150 through Minn. R. 7007.1500
Operation and Maintenance Plan: Retain at the stationary source an operation and maintenance plan for all product recovery system equipment. An updated Operation and Maintenance Plan shall be developed within 180 days of permit issuance.	Minn. R. 7007.0800, subp. 14 and Minn. R. 7007.0800, subp. 16(J)
Circumvention: Do not install or use a device or means that conceals or dilutes emissions, which would otherwise violate a federal or state air pollution control rule, without reducing the total amount of pollutant emitted.	Minn. R. 7011.0020
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)
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 federally enforceable.	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

TABLE A: LIMITS AND OTHER REQUIREMENTS

04/11/00

Facility Name: Malt-O-Meal Co - Plant 2 - Northfield

Permit Number: 13100022 - 001

Inspections: Upon presentation of credentials and other documents as may be required by law, allow the Agency, or its representative, to enter the Permittee's premises to have access to and copy any records required by this permit, to inspect at reasonable times (which include any time the source is operating) any facilities, equipment, practices or operations, and to sample or monitor any substances or parameters at any location.	Minn. R. 7007.0800, subp. 9(A)
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
Fuel Type: Natural gas only	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21
Corrective Action. If any of the following conditions are observed, the Permittee shall take corrective actions, within 24 hours, to eliminate: 1) Excess particulate emissions beyond what would be expected during normal operations for all Appendix C stack/vents (SV's), except Product Recovery System filters identified in GP004 and GP005; 2) Visible emissions from Product Recovery System filters identified in GP004 and GP005 of Appendix C; or, 3) Significant roof dust accumulation which could reasonably be expected to become airborne and create a nuisance.	Title I Condition: To avoid classification as a major source under 40 CFR 52.21
C. PERFORMANCE TESTING	hdr
Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017 unless otherwise noted in Tables A, B, and/or C.	Minn. R. ch. 7017
Testing of New Units: In addition to the performance test requirements found in Appendix C, testing will be conducted, for new units, installed under the permit, if: 1. The new unit has a higher capacity than any unit already tested in its class; or 2. The new unit is outside of a class and is not an insignificant activity.	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 4
Performance Test: due before 09/30/2003 to measure PM (includes organics), PM10, and VOC for the Retro Dryers (one mill room dryer). Performance Test Pre-test Meeting: due 7 days before each Performance Test.	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.12; Minn. R. 7017.2020, subp. 1 and Minn. R. 7017.2030, subp. 4
Performance Test: due before 09/30/2003 to measure PM (includes organics), PM10, and VOC for the Retro Coolers (one baked oven unit). Performance Test Pre-test Meeting: due 7 days before each Performance Test.	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21; Minn. R. 7017.2020, subp. 1 and Minn. R. 7017.2030, subp. 4
Performance Test: due before 09/30/2003 to measure PM (includes organics), PM10, and VOC, for one kettle, from the Sugar Coat Kettles/Cook Room Kettles. Performance Test Pre-test Meeting: due 7 days before each Performance Test.	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21; Minn. R. 7017.2020, subp. 1 and Minn. R. 7017.2030, subp. 4
General Performance Test (PT) Requirements: Performance Tests are due as outlined in Tables A and B of the permit. See Table B for additional testing requirements. PT Notifications (written): due 30 days before each Performance Test PT Plan: due 30 days before each Performance Test PT Pre-test Meeting: due 7 days before each Performance Test PT Report: due 45 days after each Performance Test PT Report-Microfiche: due 105 days after each Performance Test	Minn. R. 7017.2030, subp. 1-4 and Minn. R. 7017.2035, subp. 1-2
D. MONITORING REQUIREMENTS	hdr
Monitoring Equipment: Install or make needed repairs to monitoring equipment within 60 days of issuance of the permit if monitoring equipment is not installed and operational on the date the permit is issued.	Minn. R. 7007.0800, subp. 4(D)

TABLE A: LIMITS AND OTHER REQUIREMENTS

04/11/00

Facility Name: Malt-O-Meal Co - Plant 2 - Northfield

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<p>Daily Monitoring: Once daily, during daylight hours while in operation, monitor the rooftop and individual stack/vents (SV) within each Appendix C class as follows:</p> <p>1) All SV's for each Appendix C class, except GP004 and GP005 (Product Recovery System filters), shall be monitored for the presence of excess particulate matter emissions beyond what would be expected under normal operating conditions.</p> <p>2) All SV's for Product Recovery System filters, identified as GP004 and GP005, shall be monitored for any visible emissions.</p> <p>3) All rooftop areas shall be monitored for significant dust accumulation which could reasonably be expected to become airborne and pose a nuisance condition.</p> <p>Upon observation of any of the above three conditions, the Permittee shall investigate the process and implement corrective action, within 24 hours, to eliminate the visible emissions, excess particulate emissions, or significant roof dust accumulation.</p>	<p>Title I Condition: To avoid classification as a major source under 40 CFR 52.21; Minn. R. 7007.0800, subp. 5</p>
<p>Monitoring Equipment Calibration: Annually calibrate all required monitoring equipment.</p>	<p>Minn. R. 7007.0800, subp. 4(D)</p>
<p>Operation of Monitoring Equipment: Unless otherwise noted in Tables A, B, and/or C, monitoring a process or control equipment connected to that process is not necessary during periods when the process is shutdown, or during checks of the monitoring systems, such as calibration checks and zero and span adjustments. If monitoring records are required, they should reflect any such periods of process shutdown or checks of the monitoring system.</p>	<p>Minn. R. 7007.0800, subp. 4(D)</p>
<p>VOC Material Content Monitoring: Obtain from the supplier for all VOC-containing food additive materials used at the facility, the content of each VOC in each material. The supplier data shall specify the content of each VOC in each material. The VOC content may be expressed in pounds per gallon or as a percent by weight if the density of the material is also indicated. Maintain supplier data for a minimum of five years. If VOC content data is not available from the supplier, VOC content shall be determined by 40 CFR Part 60, Appendix A, Method 24. VOC content shall be determined at the highest temperature experienced by the material in the facility at or after application. This requirement only applies to food additives which are not accounted for through VOC emission factors from testing.</p>	<p>Title I Condition: To avoid classification as a major source under 40 CFR 52.21; Minn. R. 7007.0800, subps. 4 and 5</p>
<p>E. RECORDKEEPING</p>	<p>hdr</p>
<p>Recordkeeping of daily monitoring: the Permittee shall keep a daily record, that contains, at a minimum, the following information:</p> <p>1) Printed name of observer;</p> <p>2) Signature of observer;</p> <p>3) Date and time of observation;</p> <p>4a) Are there any visible emissions observed from the product recovery systems or penthouse? ("yes" or "no")</p> <p>4b) Are there any excess particulate emissions observed from other sacks? ("yes" or "no")</p> <p>4c) Is there any rooftop dust accumulation that could become airborne and pose a nuisance condition? ("yes" or "no");</p> <p>5) Stack/Vent ID number for each "yes";</p> <p>6) Description of investigation and corrective actions completed for each "yes"; and,</p> <p>7) Weather conditions (temperature, cloud cover, wind, precipitation).</p>	<p>Title I Condition: To avoid classification as a major source under 40 CFR 52.21; Minn. R. 7007.0800, subp. 5</p>
<p>Recordkeeping of corrective actions: If any of the following conditions are observed, the Permittee shall take corrective actions, within 24 hours, to eliminate:</p> <p>1) Excess particulate emissions beyond what would be expected during normal operations for all Appendix C SV's, except Product Recovery System filters identified in GP004 and GP005;</p> <p>2) Visible emissions from Product Recovery System filters identified in GP004 and GP005 of Appendix C; or,</p> <p>3) Significant roof dust accumulation which could reasonably be expected to become airborne and create a nuisance.</p> <p>The Permittee shall keep a record, on-site, of the corrective actions taken.</p>	<p>Title I Condition: To avoid classification as a major source under 40 CFR 52.21; Minn. R. 7007.0800, subp. 5</p>
<p>Recordkeeping: Maintain records describing any:</p> <p>1) addition of new units;</p> <p>2) modifications of existing units; and</p> <p>3) deletion of any existing units.</p> <p>Records do not have to be maintained for the addition, modification, or deletion of any insignificant activities listed in Minn. R. 7007.1300, subp. 2.</p> <p>Include in the records the emission increases or decreases resulting from each of the changes.</p>	<p>Minn. R. 7007.0800, subp. 5(B)</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS

04/11/00

Facility Name: Malt-O-Meal Co - Plant 2 - Northfield

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Recordkeeping: Retain all records at the stationary source for a period of five (5) years from the date of monitoring, sample, measurement, or report. Records which must be retained at this location include all calibration and maintenance records as well as copies of all reports required by the permit. Records must conform to the requirements listed in Minn. R. 7007.0800, subp. 5(A).	Minn. R. 7007.0800, subp. 5(C)
Recordkeeping: The Permittee shall maintain a record, at the facility, of the 12-month rolling sum of the PM, PM10, NOx, and VOC emissions.	Title I Condition: To avoid classification as a major source under 40 CFR 52.21
Record and maintain the 12-month rolling sum of the natural gas from purchase records. Keep these records on-site.	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21
By the last day of each month, record and maintain the sum of the facility's combined rated heat input capacity to fossil fuel fired boilers.	Title I Condition: To avoid classification as a major source under 40 CFR 52.21
Monthly VOC Material Usage and VOC Usage Recordkeeping: by the 30th day of each month, record the quantity of each VOC-containing food additive material and each VOC used during the previous month. Separate records shall be kept for each material and VOC. This requirement only applies to food additives which are not accounted for through VOC emission factors from testing.	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.2; Minn. R. 7007.0800, subp. 5
F. REPORTING	hdr
Shutdown Notifications: Notify the Commissioner at least 24 hours in advance of a planned shutdown of any control equipment or process equipment if the shutdown would cause any increase in the emissions of any regulated air pollutant. If the owner or operator does not have advance knowledge of the shutdown, notification shall be made to the Commissioner as soon as possible after the shutdown. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 3. At the time of notification, the owner or operator shall inform the Commissioner of the cause of the shutdown and the estimated duration. The owner or operator shall notify the Commissioner when the shutdown is over.	Minn. R. 7019.1000, subp. 3
Breakdown Notifications: Notify the Commissioner within 24 hours of a breakdown of more than one hour duration of any control equipment or process equipment if the breakdown causes any increase in the emissions of any regulated air pollutant. The 24-hour time period starts when the breakdown was discovered or reasonably should have been discovered by the owner or operator. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 2. At the time of notification or as soon as possible thereafter, the owner or operator shall inform the Commissioner of the cause of the breakdown and the estimated duration. The owner or operator shall notify the Commissioner when the breakdown is over.	Minn. R. 7019.1000, subp. 2
Notification of Deviations Endangering Human Health or the Environment: As soon as possible after discovery, notify the Commissioner or the state duty officer, either orally or by facsimile, of any deviation from permit conditions which could endanger human health or the environment.	Minn. R. 7019.1000, subp. 1
Notification of Deviations Endangering Human Health or the Environment Report: Within 2 working days of discovery, notify the Commissioner in writing of any deviation from permit conditions which could endanger human health or the environment. Include the following information in this written description: 1. the cause of the deviation; 2. the exact dates of the period of the deviation, if the deviation has been corrected; 3. whether or not the deviation has been corrected; 4. the anticipated time by which the deviation is expected to be corrected, if not yet corrected; and 5. steps taken or planned to reduce, eliminate, and prevent reoccurrence of the deviation.	Minn. R. 7019.1000, subp. 1
Extension Requests: The Permittee may apply for an Administrative Amendment to extend a deadline in a permit by no more than 120 days, provided the proposed deadline extension meets the requirements of Minn. R. 7007.1400, subp. 1(H).	Minn. R. 7007.1400, subp. 1(H)
Emission Fees: due 60 days after receipt of an MPCA bill.	Minn. R. 7002.0005 through Minn. R. 7002.0095
G. GENERAL REQUIREMENTS	hdr
Emission Factors: The Permittee shall use the emission factors that are found in Appendix B or subsequently updated and MPCA approved for emission calculations for those emission units described in Appendix C.	Title I Condition: To avoid classification as a major source under 40 CFR 52.21
Revision of Emission Factors: If a subsequent performance test results in an emission factor that has a higher emission rate than the current emission factor, the highest test result shall become the new emission factor. The use of the updated emission factor shall commence upon receipt of written MPCA notification that the performance test results were valid.	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS

04/11/00

Facility Name: Malt-O-Meal Co - Plant 2 - Northfield

Permit Number: 13100022 - 001

Natural gas emission factors: Pollutant Natural Gas (lb/million cubic feet) PM 7.6 PM10 7.6 NOx 100. VOC 5.5	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21
Grain Handling Fugitive Emission Factors: Source PM(lb/ton) PM10(lb/ton) Control Credit FS001 0.117 0.02925 50% FS002 0.0215 0.00585 75% FS003 0.0215 0.00585 75% FS004 0 0	Title I Condition: To avoid classification as a major source under 40 CFR 52.21
Calculations - Individual Class and Additives Emissions: By the 30th day of each month, the Permittee shall calculate emissions for the previous month as follows: a. For each individual Appendix C class emission unit, calculate PM, PM10, and VOC emissions: Emissions = Emission factor X unit design capacity X (8760/12) where emission factor = taken from Appendix B or a subsequently MPCA approved factor unit design capacity = rated design capacity of each unit b. For each VOC containing food additive (not already accounted for in Appendix B emission factors), multiply the percent VOC content times the quantity of each food additive used. c. Sum the total class monthly emissions of each pollutant and VOC monthly emissions.	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21
Calculations - Natural Gas Monthly Emissions: By the 30th day of each month, the Permittee shall calculate emissions for the previous month as follows: d. For natural gas, calculate PM, PM10, NOx,and VOC emissions: Emissions = Natural gas emission factor X monthly natural gas usage where monthly natural gas usage = total natural gas quantity purchased by the facility for the previous month.	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21
Calculations - Insignificant Modifications not already included in previous calculations a - d. By the 30th day of each month, the Permittee shall calculate emissions for the previous month for any units added an insignificant modifications that have not already been included in previous calculations a - d as follow. e. Emissions = (the appropriate AP-42 factors or calculation method used for that modification) X the unit design capacity X (8760/12)	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21
Calculations - Grain Handling Fugitive Emissions: By the 30th day of each month, the Permittee shall calculate emissions for the previous month as follows: f. For grain handling fugitive emissions, calculate PM and PM10 emissions: Emissions = Grain handling fugitive emission factor X unit process rate X 8760/12 where unit process rate = the process rate of each unit in tons/hour	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21

TABLE A: LIMITS AND OTHER REQUIREMENTS

04/11/00

Facility Name: Malt-O-Meal Co - Plant 2 - Northfield

Permit Number: 13100022 - 001

<p>Calculations: Calculate the total facility monthly emissions of each pollutant by summing:</p> <p>1) the monthly emissions for the above individual classes and additives (c);</p> <p>2) natural gas (d);</p> <p>3) insignificant activities listed in Minn. R. 7007.1300, subp. 3 or 4 that have not already been included in (c) or (d);</p> <p>4) insignificant modifications (e) that have not already been included in (c) or (d); and 5) grain handling fugitive emission sources (f).</p>	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21
<p>Calculations - 12-month Rolling Sum: Calculate the 12-month rolling sum emissions for each pollutant by summing the total facility monthly emissions and add it to the total from the previous 11 months.</p>	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21
<p>If a particular unit that has been removed that was previously included in the calculations as required in this permit, emissions from that particular unit shall not be included in the calculations in the subsequent month to its removal and henceforth.</p>	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21
<p>Labeling Requirements: The Permittee shall permanently display on each emission unit the Emission Unit (EU) and on each item of air pollution control equipment, the Control Equipment (CE) number. The identifying number shall be legible from a safe distance. This labeling requirement shall be completed within 180 days of permit issuance.</p>	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21
<p>Equipment List Inventory: The Permittee shall maintain a written list of all emission units on site except those insignificant activities listed as insignificant activities in Minn. R. 7007.1300, subp. 2. The list shall include the type of equipment; identifying number; dates of installation; modification and/or reconstruction; and reference to applicable Standards of Performance for New Stationary Sources (40 CFR pt. 60).</p>	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 5
<p>Updating the Equipment List Inventory: The list shall be updated to include new, modified, or relocated equipment before making a change.</p>	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 5
<p>Equipment List: due 30 days after end of each calendar year following Permit Issuance to be submitted with the Compliance Certification. This report shall describe changes made to the stationary source without applying for an amendment.</p>	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21
<p>Environmental Review: the Permittee shall not begin construction of any single project or projects that are connected or phased, which will cause a total increase in actual emissions of greater than 99 tons per year for any criteria pollutant, without first getting a permit amendment to authorize the project. Connected and phased have meanings as defined in Minn. R. 4410.0200, subps. 9(b) and 60. The Permittee shall not begin construction of any project which is listed in Minn. R. 4410.4300 or Minn. R. 4410.4400 without first obtaining a permit amendment to authorize the project. Such project(s) may require the completion of an Environmental Assessment Worksheet or an Environmental Impact Statement prior to issuance of the amendment.</p>	Minn. R. 4410.4300; Minn. R. 4410.4400

TABLE A: LIMITS AND OTHER REQUIREMENTS

04/11/00

Facility Name: Malt-O-Meal Co - Plant 2 - Northfield
Permit Number: 13100022 - 001

Subject Item: GP 001 Natural Gas Boilers (Pre Dc)

Associated Items: EU 001 Boiler No. 1
EU 002 Boiler No. 2
EU 003 Boiler No. 3

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.6 lbs/million Btu heat input	Minn. R. 7011.0510, subp. 1
Opacity: less than or equal to 20 percent except for one six-minute period per hour of not more than 60 percent opacity.	Minn. R. 7011.0510, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS

04/11/00

Facility Name: Malt-O-Meal Co - Plant 2 - Northfield

Permit Number: 13100022 - 001

Subject Item: GP 002 Natural Gas Boilers (Dc)**Associated Items:** EU 004 Boiler No. 4

EU 005 Future Boiler No. 5

What to do	Why to do it
Record quantity of natural gas that each of the Dc boilers combust on a monthly basis.	Title I Condition: To avoid classification as a major source under 40 CFR 52.21
Notification of the anticipated date of initial startup: due 30 days before (but no more than 60 days) prior to anticipated date of EU005 initial startup.	40 CFR 60.7(a)
Notification of Date that Construction Began: due 30 days after start of EU005 construction	40 CFR 60.7(a)
Notification of the actual date of initial startup: due 15 days after such date for EU005.	40 CFR 60.7(a)

TABLE A: LIMITS AND OTHER REQUIREMENTS

04/11/00

Facility Name: Malt-O-Meal Co - Plant 2 - Northfield

Permit Number: 13100022 - 001

Subject Item: GP 003 Grain Handling

Associated Items: FS 001 Old Receiving Pad - Truck/Rail Unload - 3 sided building, one end open at all times. 10% pit unload (Heavy Br
FS 002 Old Feed Loadout - partial enclosure - sealed truck bay, one end open during loadout. Loadout chute is aspira
FS 003 New Feed Loadout - partial enclosure - 3-sided enclosure - one end open during loading. Area is aspirated wit
FS 004 New Receiving Pad - Truck/Rail Unload - 100% sealed/pneumatic unload; vents through bin vent filters intern:

What to do	Why to do it
Clean up commodities spilled on facility property, as required, to minimize fugitive emissions to a level consistent with RACT	Minn. R. 7011.1005, subp. 1(A)
Maintain air pollution control equipment in proper operating condition and utilize the air pollution control systems as designed.	Minn. R. 7011.1005, subp. 1(B)
Opacity: less than or equal to 5 percent for fugitive emissions from grain unloading.	Minn. R. 7011.1005, subp. 3 (A)
Opacity: less than or equal to 10 percent for fugitive emissions from grain loading.	Minn. R. 7011.1005, subp. 3(B)

TABLE A: LIMITS AND OTHER REQUIREMENTS

04/11/00

Facility Name: Malt-O-Meal Co - Plant 2 - Northfield

Permit Number: 13100022 - 001

Subject Item: GP 004 Product Recovery Systems

Associated Items: SV 006 Feed Bin Cyclone Asp
SV 011 Old Mill Room Asp
SV 021 Puff W/R Vit Dry Filter
SV 022 #4 Asp Filter
SV 023 Rice Retro Dryer Filter
SV 024 #5 Asp Filter
SV 026 P1 Hoffman Filter
SV 027 Puffed Wheat Destoner
SV 030 #3 Asp Filter
SV 033 #7 Asp Filter
SV 037 #8 Asp Filter
SV 038 Mill Room Asp Filter
SV 043 #9 Asp Filter
SV 046 Phase 10 Cooler Area Asp
SV 049 #10 Asp Filter
SV 053 #11 Asp Filter
SV 057 #12 Asp Filter

What to do	Why to do it
Operation and Maintenance of Fabric Filter: the Permittee shall operate and maintain the product recovery systems according to the control equipment manufacturer's specifications.	Tile I Condition: To avoid classification as a major source under 40 CFR 52.21; Minn. R. 7007.0800, subp. 14

TABLE A: LIMITS AND OTHER REQUIREMENTS

04/11/00

Facility Name: Malt-O-Meal Co - Plant 2 - Northfield
Permit Number: 13100022 - 001

Subject Item: GP 005 Product Recovery Systems (Penthouses)

Associated Items: SV 025 Penthouse Ventillation

What to do	Why to do it
Operation and Maintenance of Fabric Filter: the Permittee shall operate and maintain the product recovery systems filters according to the control equipment manufacturer's specifications.	Tile I Condition: To avoid classification as a major source under 40 CFR 52.21; Minn. R. 7007.0800, subp. 14

TABLE A: LIMITS AND OTHER REQUIREMENTS

04/11/00

Facility Name: Malt-O-Meal Co - Plant 2 - Northfield

Permit Number: 13100022 - 001

Subject Item: GP 006 1/2 Product Dryers/Coolers

Associated Items: EU 008 Extruder #1 1/2 Product Dryer/Cooler
 EU 009 Extruder #2 1/2 Product Dryer/Cooler
 EU 010 Bran 1/2 Product Dryer
 EU 046 Phase 6 - Extruder #3 1/2 Product Dryer/Cooler
 EU 056 Phase 8 - Extruder 1/2 Product Dryer/Cooler
 EU 079 Phase 11 - Extruder 1/2 Product Dryer/Cooler
 EU 086 Phase 12 - Extruder 1/2 Product Dryer/Cooler

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent	Minn. R. 7011.0715, subp. 1(B)
Performance Test: due before 09/30/2003 to measure PM (includes organics), PM10, and VOC for one individual Emission Unit listed under GP006. Performance Test Pre-test Meeting: due 7 days before each Performance Test. (This is the first required test.)	Title I Condition: To avoid classification as a major source under 40 CFR 52.21; Minn. R. 7017.2020, subp. 1 and Minn. R. 7017.2030, subp. 4
Performance Test: due before 09/30/2003 to measure PM (includes organics) for one Emission Unit listed under GP006. Performance Test Pre-test Meeting: due 7 days before each Performance Test. (This is the second required test.)	Title I Condition: To avoid classification as a major source under 40 CFR 52.21; Minn. R. 7017.2020, subp. 1 and Minn. R. 7017.2030, subp. 4
General Performance Test (PT) Requirements: Performance Tests are due as outlined in Tables A and B of the permit. See Table B for additional testing requirements. PT Notifications (written): due 30 days before each Performance Test PT Plan: due 30 days before each Performance Test PT Pre-test Meeting: due 7 days before each Performance Test PT Report: due 45 days after each Performance Test PT Report-Microfiche: due 105 days after each Performance Test	Minn. R. 7017.2030, subp. 1-4 and Minn. R. 7017.2035, subp. 1-2

TABLE A: LIMITS AND OTHER REQUIREMENTS

04/11/00

Facility Name: Malt-O-Meal Co - Plant 2 - Northfield

Permit Number: 13100022 - 001

Subject Item: GP 007 Gun Systems (Single Cyclone)

Associated Items: SV 016 #2 Preh Gun & Cyclone
SV 017 #3 Preh Gun & Cyclone
SV 018 #4 Preh Gun & Cyclone
SV 019 #5 Preh Gun & Cyclone
SV 031 #7 Preh Gun & Cyclone
SV 035 #8 Preh Gun Cyclone
SV 047 #10 Preh Gun & Cyclone
SV 051 #11 Preh Gun & Cyclone

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735	Minn. R. 7011.0610, subp. 1(A)
Opacity: less than or equal to 20 percent except for one six-minute period per hour of not more than 60 percent opacity.	Minn. R. 7011.0610, subp. 1(A)
Performance Test: due before 09/30/2003 to measure PM (includes organics), PM10, and VOC. At least 3 tests shall be performed on different gun units. If a new gun is installed, it will be tested. The testing of a new gun will be included as one of the required 5 tests. Performance Test Pre-test Meeting: due 7 days before each Performance Test. (This is the first required test.)	Title I Condition: To avoid classification as a major source under 40 CFR 52.21; Minn. R. 7017.2020, subp. 1 and Minn. R. 7017.2030, subp. 4
Performance Test: due before 09/30/2003 to measure PM (includes organics). At least 3 tests shall be performed on different gun units. If a new gun is installed, it will be tested. The testing of a new gun will be included as one of the required 5 tests. Performance Test Pre-test Meeting: due 7 days before each Performance Test. (This is the second required test.)	Title I Condition: To avoid classification as a major source under 40 CFR 52.21; Minn. R. 7017.2020, subp. 1 and Minn. R. 7017.2030, subp. 4
Performance Test: due before 09/30/2003 to measure PM (includes organics). At least 3 tests shall be performed on different gun units. If a new gun is installed, it will be tested. The testing of a new gun will be included as one of the required 5 tests. Performance Test Pre-test Meeting: due 7 days before each Performance Test. (This is the third required test.)	Title I Condition: To avoid classification as a major source under 40 CFR 52.21; Minn. R. 7017.2020, subp. 1 and Minn. R. 7017.2030, subp. 4
Performance Test: due before 09/30/2003 to measure PM (includes organics). At least 3 tests shall be performed on different gun units. If a new gun is installed, it will be tested. The testing of a new gun will be included as one of the required 5 tests.. Performance Test Pre-test Meeting: due 7 days before each Performance Test. (This is the fourth required test.)	Title I Condition: To avoid classification as a major source under 40 CFR 52.21; Minn. R. 7017.2020, subp. 1 and Minn. R. 7017.2030, subp. 4
Performance Test: due before 09/30/2003 to measure PM (includes organics). At least 3 tests shall be performed on different gun units. If a new gun is installed, it will be tested. The testing of a new gun will be included as one of the required 5 tests. Performance Test Pre-test Meeting: due 7 days before each Performance Test. (This is the fifth required test.)	Title I Condition: To avoid classification as a major source under 40 CFR 52.21; Minn. R. 7017.2020, subp. 1 and Minn. R. 7017.2030, subp. 4
General Performance Test (PT) Requirements: Performance Tests are due as outlined in Tables A and B of the permit. See Table B for additional testing requirements. PT Notifications (written): due 30 days before each Performance Test PT Plan: due 30 days before each Performance Test PT Pre-test Meeting: due 7 days before each Performance Test PT Report: due 45 days after each Performance Test PT Report-Microfiche: due 105 days after each Performance Test	Minn. R. 7017.2030, subp. 1-4 and Minn. R. 7017.2035, subp. 1-2

TABLE A: LIMITS AND OTHER REQUIREMENTS

04/11/00

Facility Name: Malt-O-Meal Co - Plant 2 - Northfield
Permit Number: 13100022 - 001

Subject Item: GP 008 Gun Systems (Double Cyclone)

Associated Items: SV 055 #12 Preh Gun & Cyclone

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735	Minn. R. 7011.0610, subp. 1(A)
Opacity: less than or equal to 20 percent except for one six-minute period per hour of not more than 60 percent opacity	Minn. R. 7011.0610, subp. 1(A)

TABLE A: LIMITS AND OTHER REQUIREMENTS

04/11/00

Facility Name: Malt-O-Meal Co - Plant 2 - Northfield

Permit Number: 13100022 - 001

Subject Item: GP 009 Puffwe/Toaster (Jetzone) Dryers/Coolers**Associated Items:** EU 013 Puffer/Toaster #1

EU 016 Puffer/Toaster #2

EU 065 Phase 9 - Puffer/Toaster Dryer

EU 066 Phase 9 - Puffer/Toaster Cooler

EU 070 Phase 10 - Puffer/Toaster Dryer

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735	Minn. R. 7011.0610, subp. 1(A)
Opacity: less than or equal to 20 percent except for one six-minute period per hour of not more than 60 percent opacity	Minn. R. 7011.0610, subp. 1(A)
Performance Test: due before 09/30/2003 to measure PM (includes organics), PM10, and VOC for one Emission Unit listed under GP009. Performance Test Pre-test Meeting: due 7 days before each Performance Test. (This is the first required test.)	Title I Condition: To avoid classification as a major source under 40 CFR 52.21; Minn. R. 7017.2020, subp. 1 and Minn. R. 7017.2030, subp. 4
Performance Test: due before 09/30/2003 to measure PM (include organics) for one Emission Unit listed under GP009. Performance Test Pre-test Meeting: due 7 days before each Performance Test. (This is the second required test.)	Title I Condition: To avoid classification as a major source under 40 CFR 52.21; Minn. R. 7017.2020, subp. 1 and Minn. R. 7017.2030, subp. 4
General Performance Test (PT) Requirements: Performance Tests are due as outlined in Tables A and B of the permit. See Table B for additional testing requirements. PT Notifications (written): due 30 days before each Performance Test PT Plan: due 30 days before each Performance Test PT Pre-test Meeting: due 7 days before each Performance Test PT Report: due 45 days after each Performance Test PT Report-Microfiche: due 105 days after each Performance Test	Minn. R. 7017.2030, subp. 1-4 and Minn. R. 7017.2035, subp. 1-2

TABLE A: LIMITS AND OTHER REQUIREMENTS

04/11/00

Facility Name: Malt-O-Meal Co - Plant 2 - Northfield

Permit Number: 13100022 - 001

Subject Item: GP 010 Sugar Coat Coolers

Associated Items: EU 029 Sugar Coat Cooler #2
 EU 047 Phase 6 - Sugar Coat #3 Cereal Cooler
 EU 053 Phase 7 - Sugar Coat Cereal Cooler
 EU 060 Phase 8 - Sugar Coat Cereal Cooler
 EU 067 Phase 9 - Sugar Coat Cooler
 EU 076 Phase 10 - Sugar Coat Cooler
 EU 083 Phase 11 - Sugar Coat Cooler
 EU 090 Phase 12 - Sugar Coat Cooler

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent	Minn. R. 7011.0715, subp. 1(B)
Performance Test: due before 09/30/2003 to measure PM (includes organics), PM10, and VOC for one Emission Unit listed under GP010. Performance Test Pre-test Meeting: due 7 days before each Performance Test. (This is the first required test.)	Title I Condition: To avoid classification as a major source under 40 CFR 52.21; Minn. R. 7017.2020, subp. 1 and Minn. R. 7017.2030, subp. 4
Performance Test: due before 09/30/2003 to measure PM (includes organics) for one Emission Unit listed under GP010. Performance Test Pre-test Meeting: due 7 days before each Performance Test. (This is the second required test.)	Title I Condition: To avoid classification as a major source under 40 CFR 52.21; Minn. R. 7017.2020, subp. 1 and Minn. R. 7017.2030, subp. 4
General Performance Test (PT) Requirements: Performance Tests are due as outlined in Tables A and B of the permit. See Table B for additional testing requirements. PT Notifications (written): due 30 days before each Performance Test PT Plan: due 30 days before each Performance Test PT Pre-test Meeting: due 7 days before each Performance Test PT Report: due 45 days after each Performance Test PT Report-Microfiche: due 105 days after each Performance Test	Minn. R. 7017.2030, subp. 1-4 and Minn. R. 7017.2035, subp. 1-2

TABLE B: SUBMITTALS

04/11/00

Facility Name: Malt-O-Meal Co - Plant 2 - Northfield
Permit Number: 13100022 - 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

04/11/00

Facility Name: Malt-O-Meal Co - Plant 2 - Northfield

Permit Number: 13100022 - 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
Computer Dispersion Modeling Protocol	due 1,096 days after Permit Issuance for PM ₁₀ and NO _x . This protocol will describe the proposed modeling methodology and input data, in accordance with all requirements of 40 CFR pt. 51, App. W. The protocol will be based on projected operating conditions under the next permit term.	Total Facility
Computer Dispersion Modeling Results	due 1,462 days after Permit Issuance for PM ₁₀ and NO _x . To be submitted after the MPCA has reviewed and approved the modeling protocol.	Total Facility
Performance Test Notification (written)	due 30 days before Performance Test to measure PM (includes organics) for one Emission Unit listed under GP006. This requirement also includes submittal of a written Performance Test Plan. (This is the second required test.)	GP006
Performance Test Notification (written)	due 30 days before Performance Test to measure PM (includes organics) for one Emission Unit listed under GP009. This requirement also includes submittal of a written Performance Test Plan. (This is the second required test.)	GP009
Performance Test Notification (written)	due 30 days before Performance Test to measure PM (includes organics) for one Emission Unit listed under GP010. This requirement also includes submittal of a written Performance Test Plan. (This is the second required test.)	GP010
Performance Test Notification (written)	due 30 days before Performance Test to measure PM (includes organics), PM ₁₀ , and VOC for one Emission Unit listed under GP009. This requirement also includes submittal of a written Performance Test Plan. (This is the first required test.)	GP009
Performance Test Notification (written)	due 30 days before Performance Test to measure PM (includes organics), PM ₁₀ , and VOC for one Emission Unit listed under GP010. This requirement also includes submittal of a written Performance Test Plan. (This is the first required test.)	GP010
Performance Test Notification (written)	due 30 days before Performance Test to measure PM (includes organics), PM ₁₀ , and VOC for one individual Emission Unit listed under GP006. This requirement also includes submittal of a written Performance Test Plan. (This is the first required test.)	GP006

TABLE B: ONE TIME SUBMITTALS OR NOTIFICATIONS

04/11/00

Facility Name: Malt-O-Meal Co - Plant 2 - Northfield

Permit Number: 13100022 - 001

Performance Test Notification (written)	due 30 days before Performance Test to measure PM (includes organics), PM10, and VOC for the Retro Coolers (one baked oven unit). This requirement also includes submittal of a written Performance Test Plan.	Total Facility
Performance Test Notification (written)	due 30 days before Performance Test to measure PM (includes organics), PM10, and VOC for the Retro Dryers (one mill room dryer). This requirement also includes submittal of a written Performance Test Plan.	Total Facility
Performance Test Notification (written)	due 30 days before Performance Test to measure PM (includes organics), PM10, and VOC for the Sugar Coat Kettles/Cook Room Kettles. This requirement also includes submittal of a written Performance Test Plan.	Total Facility
Performance Test Notification (written)	due 30 days before Performance Test to measure PM (includes organics), PM10, and VOC. This requirement also includes submittal of a written Performance Test Plan. (This is the first required test.)	GP007
Performance Test Notification (written)	due 30 days before Performance Test to measure PM (includes organics). This requirement also includes submittal of a written Performance Test Plan. (This is the fifth required test.)	GP007
Performance Test Notification (written)	due 30 days before Performance Test to measure PM (includes organics). This requirement also includes submittal of a written Performance Test Plan. (This is the fourth required test.)	GP007
Performance Test Notification (written)	due 30 days before Performance Test to measure PM (includes organics). This requirement also includes submittal of a written Performance Test Plan. (This is the third required test.)	GP007
Performance Test Notification (written)	due 30 days before Performance Test to measure PM (includes organics). This requirement also includes submittal of a written Performance Test Plan. (This is the second required test.)	GP007
Performance Test Report - Microfiche Copy	due 105 days after Performance Test to measure PM (includes organics) for each Emission Unit listed under GP006. (This is the second required test.)	GP006
Performance Test Report - Microfiche Copy	due 105 days after Performance Test to measure PM (includes organics) for one Emission Unit listed under GP009. (This is the second required test.)	GP009
Performance Test Report - Microfiche Copy	due 105 days after Performance Test to measure PM (includes organics) for one Emission Unit listed under GP010. (This is the second required test.)	GP010

TABLE B: ONE TIME SUBMITTALS OR NOTIFICATIONS

04/11/00

Facility Name: Malt-O-Meal Co - Plant 2 - Northfield

Permit Number: 13100022 - 001

Performance Test Report - Microfiche Copy	due 105 days after Performance Test to measure PM (includes organics), PM10, and VOC for the Sugar Coat Kettles/Cook Room Kettles.	Total Facility
Performance Test Report - Microfiche Copy	due 105 days after Performance Test to measure PM (includes organics), PM10, and VOC for one Emission Unit listed under GP006. (This is the first required test.)	GP006
Performance Test Report - Microfiche Copy	due 105 days after Performance Test to measure PM (includes organics), PM10, and VOC for one Emission Unit listed under GP009. (This is the first required test.)	GP009
Performance Test Report - Microfiche Copy	due 105 days after Performance Test to measure PM (includes organics), PM10, and VOC for one Emission Unit listed under GP010. (This is the first required test.)	GP010
Performance Test Report - Microfiche Copy	due 105 days after Performance Test to measure PM (includes organics), PM10, and VOC for the Retro Coolers (one baked oven unit).	Total Facility
Performance Test Report - Microfiche Copy	due 105 days after Performance Test to measure PM (includes organics), PM10, and VOC for the Retro Dryers (one mill room dryer)	Total Facility
Performance Test Report - Microfiche Copy	due 105 days after Performance Test to measure PM (includes organics), PM10, and VOC. (This is the first required test.)	GP007
Performance Test Report - Microfiche Copy	due 105 days after Performance Test to measure PM (includes organics). (This is the fifth required test.)	GP007
Performance Test Report - Microfiche Copy	due 105 days after Performance Test to measure PM (includes organics). (This is the fourth required test.)	GP007
Performance Test Report - Microfiche Copy	due 105 days after Performance Test to measure PM (includes organics). (This is the second required test.)	GP007
Performance Test Report - Microfiche Copy	due 105 days after Performance Test to measure PM (includes organics). (This is the third required test.)	GP007
Performance Test Report	due 45 days after Performance Test to measure PM (includes organics) for each Emission Unit listed under GP006. (This is the second required test.)	GP006
Performance Test Report	due 45 days after Performance Test to measure PM (includes organics) for one Emission Unit listed under GP009. (This is the second required test.)	GP009
Performance Test Report	due 45 days after Performance Test to measure PM (includes organics) for one Emission Unit listed under GP010. (This is the second required test.)	GP010

TABLE B: ONE TIME SUBMITTALS OR NOTIFICATIONS

04/11/00

Facility Name: Malt-O-Meal Co - Plant 2 - Northfield

Permit Number: 13100022 - 001

Performance Test Report	due 45 days after Performance Test to measure PM (includes organics), PM10, and VOC for one Emission Unit listed under GP009. (This is the first required test.)	GP009
Performance Test Report	due 45 days after Performance Test to measure PM (includes organics), PM10, and VOC for one Emission Unit listed under GP010. (This is the first required test.)	GP010
Performance Test Report	due 45 days after Performance Test to measure PM (includes organics), PM10, and VOC for one individual Emission Unit listed under GP006. (This is the first required test.)	GP006
Performance Test Report	due 45 days after Performance Test to measure PM (includes organics), PM10, and VOC for the Retro Coolers (one baked oven unit).	Total Facility
Performance Test Report	due 45 days after Performance Test to measure PM (includes organics), PM10, and VOC for the Retro Dryers (one mill room dryer).	Total Facility
Performance Test Report	due 45 days after Performance Test to measure PM (includes organics), PM10, and VOC for the Sugar Coat Kettles/Cook Room Kettles. .	Total Facility
Performance Test Report	due 45 days after Performance Test to measure PM (includes organics), PM10, and VOC. (This is the first required test.)	GP007
Performance Test Report	due 45 days after Performance Test to measure PM (includes organics). (This is the fifth required test.)	GP007
Performance Test Report	due 45 days after Performance Test to measure PM (includes organics). (This is the fourth required test.)	GP007
Performance Test Report	due 45 days after Performance Test to measure PM (includes organics). (This is the second required test.)	GP007
Performance Test Report	due 45 days after Performance Test to measure PM (includes organics). (This is the third required test.)	GP007
Testing Frequency Plan	due 60 days after Computer Dispersion Modeling Results have been approved by the MPCA. The plan shall specify a future (upon completion of the testing required in this permit) testing frequency for Half Product Dryers/Coolers, Gun System-Single Cyclone, Puffer/Toaster Dryers/Coolers, Sugar Coater Coolers, Retro Dryers, Retro Coolers, and the Sugar Coat Kettles/Cook Room Kettles 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.	Total Facility

TABLE B: RECURRENT SUBMITTALS

04/11/00

Facility Name: Malt-O-Meal Co - Plant 2 - Northfield

Permit Number: 13100022 - 001

What to send	When to send	Portion of Facility Affected
Semiannual Deviations Report	due 30 days after end of each calendar half-year following Permit Issuance. The first semiannual report submitted by the Permittee shall cover the calendar half-year in which the permit is issued. The first report of each calendar year covers January 1 - June 30. The second report of each calendar year covers July 1 - December 31.	Total Facility
Compliance Certification	due 31 days after end of each calendar year following Permit Issuance (for the previous calendar year). To be submitted on a form approved by the Commissioner <, both to the Commissioner, and to the U.S. EPA regional office in Chicago>. This report covers all deviations experienced during the calendar year. < The EPA copy shall be sent to: Mr. George Czerniak, Chief, Air Enforcement and Compliance Assurance Branch, Air and Radiation Division, EPA Region V, 77 West Jackson Boulevard, Chicago, Illinois 60604> Air and Radiation Branch EPA Region V 77 West Jackson Boulevard Chicago, Illinois 60604	Total Facility
Emissions Inventory Report	due 91 days after end of each calendar year following Permit Issuance (April 1). To be submitted on a form approved by the Commissioner.	Total Facility

APPENDIX MATERIAL

Facility Name: Malt-O-Meal Co - Plant 2 - Northfield

Permit Number: 13100022-001

Appendix A: Emission Unit and Stack Vent Numbers

Emission Unit Unit ID Number	Stack/Vent Unit ID Number	Emission Unit Operator's Description
1	1	Boiler #1
2	2	Boiler #2
3	3	Boiler #3
4	4	Boiler #4
5	5	Future Boiler #5
6	6	Feed bin cyclone aspiration filter
7	6	Points cont. to feed bin cyclone aspir. filter
8	7, 8	Extruder #1 ½ product dryer/cooler
9	9	Extruder #2 ½ product dryer/cooler
10	10	Bran ½ product dryer
11	11	Old mill room aspiration filter
12	11	Points cont. to old mill room aspir. Filter
13	12, 13	Puffer/toaster #1
14	25	P/T #2 dryer infeed aspiration filter
15	25	Points cont. to P/T #2 infeed aspiration
16	14, 15	Puffer/toaster #2
17	16	#2 puffing gun
18	16	Gun #2 product collection cyclone
19	16	Gun #2 preheater
20	17	#3 puffing gun
21	17	Gun #3 product collection cyclone
22	17	Gun #3 preheater
23	18	Gun #4 preheater
24	18	#4 puffing gun
25	18	Gun #4 product collection cyclone
26	19	Gun #5 preheater
27	19	#5 puffing gun
28	19	Gun #5 product collection cyclone
29	20	Sugar coat cooler #2
30	21	Puffed wheat/rice vit. Dry filter
31	21	Points cont. to puff W/R vit. Dry filter
32	25	P-4 conveying aspiration
33	25	Points cont. to P-4 conveying aspiration
34	22	#4 product collection/aspiration filter
35	22	#4 filter – points contributing to filter
36	23	Rice retro dryer infeed aspiration filter

37	23	Points contributing to rice retro asp. filter
38	24	#5 product collection/aspiration filter
39	24	#5 filter – points contributing to filter
40	25	Hoffman aspiration filter system #2
41	25	Points cont. to hoffman system #2 filter
42	26	Phase 1 hoffman aspiration filter system
43	26	Points cont. to phase 1 hoffman system filter
44	27	Puffed wheat destoner filter
45	27	Points cont. to puffed wheat destoner filter
46	28	Phase 6 – extruder #3 ½ product dryer/cooler
47	29	Phase 6 – sugar coat #3 cereal cooler
48	30	Phase 6 – sugar coat #3 system prod. collect filter
49	30	Phase 6 – points contributing to #3 sugar coat filter
50	31	Phase 7 – gund #7 preheater
51	31	Phase 7 - #7 puffing gun
52	31	Phase 7 – gun #7 product collection cyclone
53	32	Phase 7 – sugar coat cereal cooler
54	33	Phase 7 – product collection/aspiration filter
55	33	Phase 7 – units contributing to filter
56	34	Phase 8 – Extruder ½ product dryer/cooler
57	35	Phase 8 – Gun #8 preheater
58	35	Phase 8 - #8 puffing gun
59	35	Phase 8 – gun #8 product collection cyclone
60	36	Phase 8 – sugar coat cereal cooler
61	37	Phase 8 – product collection/aspiration filter
62	37	Phase 8 – points contributing to filter
63	38	Phase 9 – mill room aspiration
64	38	Phase 9 – points cont. to mill room aspiration
65	39, 40	Phase 9 – puffer/toaster dryer
66	41	Phase 9 – puffer/toaster cooler
67	42	Phase 9 –sugar coat cooler
68	43	Phase 9 – product collection/aspiration filter
69	43	Phase 9 – points contributing to filter
70	44, 45	Phase 10 – puffer/toaster dryer
71	46	Phase 10 – puffer toaster cooler area aspiration
72	46	Phase 10 – points cont. to cooler area filter
73	47	Phase 10 – gun #10 preheater
74	47	Phase 10 - #10 puffing gun
75	47	Phase 10 – gun #10 product collection cyclone
76	48	Phase 10 – sugar coat cooler
77	49	Phase 10 – product collection/aspiration filter
78	49	Phase 10 – points contributing to filter
79	50	Phase 11 – extruder ½ product dryer/cooler
80	51	Phase 11 – gun #11 preheater
81	51	Phase 11 - #11 puffing gun
82	51	Phase 11 – gun #11 product collection cyclone

83	52	Phase 11 – sugar coat cooler
84	53	Phase 11 – product collection/aspiration filter
85	53	Phase 11 – points contributing to filter
86	54	Phase 12 – extruder ½ product dryer/cooler
87	55	Phase 12 – gun #12 preheater
88	55	Phase 12 - #12 puffing gun
89	55	Phase 12 – gun #12 product collection cyclone
90	56	Phase 12 – sugar coat cooler
91	57	Phase 12 – product collection/aspiration filter
92	57	Phase 12 – points contributing to filter
93	58, 59	Phase 12 - #13 baked product oven
94	60	General additive use

Appendix B: Class Emission Factors

Description	PM Emission Factor	PM10 Emission Factor	VOC Emission Factor
Product Recovery Systems (GP004)	0.01 gr/dscf	0.01 gr/dscf	5 % of TSP
Penthouse Product Recovery Systems (GP005) ⁽¹⁾	0.005 gr/dscf	0.005 gr/dscf	10 % of TSP
½ Product Dryer/Coolers (GP006)	0.242 lbs/ton	0.114 lbs/ton	0.0071 lbs/ton
Gun Systems (Single Cyclone) (GP007) ⁽²⁾	0.727 lbs/ton	0.727 lbs/ton	0.009 lbs/ton
Gun Systems (Double Cyclone) (GP008) ⁽²⁾	0.093 lbs/ton	0.093 lbs/ton	0.009 lbs/ton
Puffer Toaster Dryer/Coolers (GP009) ⁽³⁾	0.352 lbs/ton	0.122 lbs/ton	0.009 lbs/ton
Sugar Coat Dryers ⁽⁴⁾	0.031 lbs/ton	0.031 lbs/ton	0.031 lbs/ton
Sugar Coat Coolers (GP010)	0.151 lbs/ton	0.0093 lbs/ton	0.163 lbs/ton
Retro and Other Type 1 Dryers ⁽⁴⁾	0.022 lbs/ton	0.026 lbs/ton	0.0071 lbs/ton
Retro and Other Type 1 Coolers ⁽⁴⁾	0.031 lbs/ton	0.033 lbs/ton	0.0071 lbs/ton
Vitamin Dryers ⁽⁴⁾	0.029 lbs/ton	0.005 lbs/ton	0.031 lbs/ton
Cook Room & Sugar Coat Kettles ⁽⁴⁾	0.073 lbs/ton	0.073 lbs/ton	0.041 lbs/ton
Sugar Coat Concentrators ⁽⁴⁾	0.016 lbs/ton	0.016 lbs/ton	0.016 lbs/ton

(1) The Penthouse Product limit applies to the exhaust from the penthouse (not into the penthouse).

(2) GP007 and GP008 include preheater fuel burning emissions.

(3) GP009 includes fuel burning emissions.

(4) These individual emission units are insignificant activities. These units are as described within the Appendix C classes.

Appendix C: Description of Classes

Product Recovery Systems (GP004 & GP005): Filter systems consist of standard baghouse-type fabric filters. The units may use standard straight walled filter socks or pleated cartridge type filters. The units may range from 1,125 acfm to 20,000 acfm.

Half Product Dryer/Coolers (GP006): Half product dryer/coolers are steam heated units which remove moisture from extruded product prior to further processing (typically puffing). Product moves through the unit on perforated belts. The product on the belts is not agitated. The process rates may range from 1.35 to 3.25 tons/hour.

Gun Systems – Single Cyclone (GP007): Gun systems consist of a pre-heater, puffing gun, and a cyclone. The pre-heater is a natural gas fired unit. Product moves through the pre-heater on a belt and is somewhat fluidized by the hot air stream. The puffing gun is a cylindrical chamber in which pre-heated product and superheated steam are introduced. When the product is released from the chamber and returns to atmospheric pressure, it puffs giving the product its finished shape. Both the pre-heater and the puffing gun vent through a cyclone that separates the product from the air stream. The gun system has a single exhaust point (the cyclone exhaust). The process rates may range from 1.35 to 2.5 tons per hour. The pre-heaters rates may range from 1.125 to 1.875 million Btu/hour.

Gun Systems – Double Cyclone (GP008): Double cyclone gun systems consist of a pre-heater, puffing gun, and two cyclones. The pre-heater is a natural gas fired unit. Product moves through the pre-heater on a belt and is somewhat fluidized by the hot air stream. The puffing gun is a cylindrical chamber in which preheated product and superheated steam are introduced. When the product is released from the chamber and returns to atmospheric pressure, it puffs giving the product its finished shape. Both the pre-heater and the puffing gun vent through a series of two cyclones that separate the product from the air stream. The gun system has a single exhaust point (the exhaust from the second cyclone). The process rate may range from 1.5 to 2.5 tons/hour. The pre-heaters rates may range from 1.125 to 1.875 million Btu/hour.

Puffer/Toaster Dryer/Coolers (GP009): Puffer/toaster dryers are natural gas fired units. Product moves through the dryer on a belt and is somewhat fluidized by the hot air stream. Hot air is recirculating through the dryer through one or more cyclones. A portion of the recirculating air is exhausted to the outside through one or more stacks. Product exits the dryer section of this unit and enters the cooler section of the unit. In the cooler, product is conveyed on a perforated belt through which cool air is passed. The cooler exhaust vents to the outside through either a cyclone or filter system. The process flow rates may range from 1.35 to 2.5 tons/hour.

Sugar Coat Dryers (*): Sugar coat dryers are steam heated units which remove moisture from the sugar coating which has been applied to the product. Product passes through the dryer on a perforated belt. The product is not agitated on the belt. The process flow rates may range from 1.2 to 3.75 tons/hour.

Sugar Coat Coolers (GP010): The sugar coat cooler is integrated with the sugar coat dryer. Product exits the dryer section of this unit and enters the cooler section of the unit. In the cooler, product is conveyed on a perforated belt through which cool air is passed. The process flow rates may range from 1.2 to 3.75 tons/hour.

Retro and Other Type 1 Dryers (*): Type 1 dryers consist of retro dryers and mill room dryers. These dryers are steam heated units that remove moisture from cooked, milled product prior to further processing. Product entering these units contains a high level of moisture. Product passes through the dryer on a perforated belt. The product is not agitated on the belt. The process flow rate may range from 1.8 to 3.0 tons/hour. Type 1 drawers are physically located at the same process point as or prior to a retro dryer in a process line (i.e., where the inlet product has a higher moisture content, than a retro dryer).

Retro and Other Type 1 Coolers (*): Type 1 coolers consist of retro coolers, mill room coolers and the baked product oven. In the retro and mill room coolers, air is passed through the product to cool it. In the baked product oven, natural gas heat is used to bake the product. For all units of this type, the product passes through the unit on a belt with no agitation. The process flow rate may range between 1.8 to 3.0 tons/hour. Type 1 coolers are physically located at the same point as or prior to a retro cooler in a process line (i.e., where the inlet product has a higher moisture content, than a retro cooler).

Vitamin Dryers (*): Vitamin dryers may be steam or natural gas heated. These dryers remove a small amount of moisture that has been applied to the product with a liquid vitamin mixture. The process flow rate may range between 0.93 to 1.56 tons/hour.

Cook Room & Sugar Coat Kettles (*): In the cook room and sugar coat kettle systems, dry commodities (sugar, salt, etc.) are pneumatically delivered to kettles through a cyclone. The cyclone exhaust and kettle exhaust pass through a scrubber that removes any of the remaining commodity from the air. The scrubber water is returned to the kettle so that all of the captured raw material is used. The scrubber is the ultimate exhaust point for the system. The process flow rate may range between 1.35 to 1.5 tons/hour.

Sugar Coat Concentrators (*): Sugar concentrators are steam heated units that evaporate water from sugar mixtures. The process flow rate may range between 1.35 to 1.5 tons/hour.

* = Insignificant Activities

Appendix D: Insignificant Activities and Applicable Requirements

1. Minn. R. 7007.1300, subp. 3(G)
Emission from a Laboratory (food product testing for quality control)
Applicable Requirements: Minn. R. 7007.0715, subp. 1

2. Minn. R. 7007.1300, subp. 3(H)
Miscellaneous (one arc welder)

Applicable Requirements: Minn. R. 7007.0610

3. Minn. R. 7007.1300, subp. 3(I)

Process emission from small units:

Sugar Coat Dryers

Retro Dryers

Retro Coolers

Vitamin Dryers

Sugar Coat Kettles/Cook Room Kettles

Sugar Concentrators

Applicable Requirements: Minn. R. 7007.0715, subp. 1

Superheaters, glycol heaters, and other process units with fuel burning emissions and heat input less than 2.27 MMBtu/hr.

Unit and area heaters and air conditioning units with heat input less than 2.27 MMBtu/hr.

#13 cooked wheat dryer

Applicable Requirements: Minn. R. 7007.0610

4. Minn. R. 7007.1300 subp. 4(B)

Office Boilers

Unit and area heaters with heat input greater than 2.27 MMBtu/hr and less than 22.7 MMBtu/hr.

VOCs from packaging inks and cleaning chemicals. These VOC emissions are not included in the cap set by condition #5.

5. Minn. R. 7007.1300, subp. 4(C)(1) and (2)

HAP emissions from printing inks and cleaning chemicals.

TECHNICAL SUPPORT DOCUMENT
For
DRAFT AIR EMISSION PERMIT NO. 13100022-001

This Technical Support Document (TSD) is for all the interested parties of the draft permit. The purpose of this document is to set forth the legal and factual basis for the draft permit conditions, including references to the applicable statutory or regulatory provisions.

1. General Information

1.1. Applicant and Stationary Source Location:

Owner and Operator Address and Phone Number (list both if different)	Facility Address (SIC Code: 2043)
Malt-O-Meal Company 80 South 8 th Street – Suite 2600 Minneapolis, MN 55402-2297	Malt-O-Meal Company 701 W 5th Street Northfield, MN 55057

1.2. Description of the facility

The Permittee operates a breakfast cereal (ready-to-eat) manufacturing facility. The stationary source currently consists of 13 separate product lines. Many of these lines can produce multiple products. The resultant cereal is either a wheat, rice, corn, oat, or some combination, thereof, product. The stationary source consists of scalpers, destoners, dryers, sifters, extrusion equipment, puffing equipment, conveyors, packaging machines, various cookers, boilers, intermediate storage equipment, and truck and railcar loading facilities.

The pollutants of concern from the processes are PM, PM10, VOCs, and NOx. The main contributing sources of air pollution are particulate matter from the various emission units on the product lines and the use of natural gas. There are fabric filters on site, however, they are used to capture fines as a commercial byproduct. The smaller emission points are largely uncontrolled.

The appendix provides greater explanation of the processes in the filter.

1.3 Description of any changes allowed with this permit issuance

This permit is the Title V operating permit. The only changes to the previous permit were from the minor amendment submitted during the preparation of this permit. The operating permit will be a consolidation of all existing conditions from the Air Emission Permit No. 502B-90-OT, and it will incorporate all past modifications. This permit does establish site specific limits set for the purposes of limiting potential emissions to less than major source levels as defined by 40 CFR 52.21.

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1.4 Description of all amendments issued since the issuance of the last total facility permit and to be included in the Part 70 Permit.

The initial facility permit, 502B-90- OT, was issued August 7, 1990. It has been amended a number of times. The most recent amendment was 13100022-009. The date of issuance of the most recent amendment was May 14, 1998. A typical modification for the Permittee might be one, or a combination of, the following:

- * Installing new dryers or coolers.
- * Modify an existing dryer to work in a different part of the process line.
- * Replace older equipment with newer equipment.
- * Change internal or external venting of fabric filters to account for heat balance issues.
- * Add exhaust stack to existing puffer/toaster apparatus.

1.5. Facility Emissions:

Table 1. Total Facility Limited Potential to Emit Summary:

EU/ SV	Emission Unit Description	PM tpy	PM10 tpy	SO2 Tpy	NOx tpy	CO Tpy	VOC tpy	Pb tpy
SV1	Boiler 1	1.44	1.44	.063	10.51	8.83	.29	Neg.
SV2	Boiler 2	1.44	1.44	.063	10.51	8.83	.29	Neg.
SV3	Boiler 3	3.12	3.12	.137	22.78	19.13	.29	Neg.
SV4	Boiler 4	2.94	2.94	.129	21.46	18.03	.60	Neg.
SV5	Boiler 5	2.94	2.94	.129	21.46	18.03	.60	Neg.
FUG1	Old Receiving Pad	3.20	1.60					
FUG2	Old Feed Loadout	1.54	1.53					
FUG3	New Receiving Pad	1.54	1.53					
FUG4	New Receiving Pad							
SV6	Feed bin cyclone asp	.56	.56				.03	
SV11	Old mill room asp.	3.00	3.00				.15	
SV21	Puffed W/R Vit Dry Filter	3.75	3.75	.006	.96	.81	.24	
EU32	P-4 conveying asp.	1.50	1.5				.08	
EU/SV	EU Description	PM	PM10	SO2	NOx	CO	VOCs	Pb
SV22	#4 prod coll/asp filter	3.00	3.00				.15	
SV23	Rice retro dryer infeed asp	.75	0.75				.04	
SV24	#5 prod coll/asp filter	2.63	2.63				.13	
EU14	P/T #2 dryer infeed asp	1.13	1.13				.06	
EU40	Hoffman asp. Filter	.23	.23				.01	
SV26	Hoffman asp. Filter	.56	.56				.03	

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SV27	Puffed wheat destoner	1.02	1.02				.05	
SV30	Phase 6 SC #3 prod col filt	1.88	1.88				.09	
SV33	Phase 7 prod coll/asp filt	6.00	6.01				.30	
SV37	Phase 8 prod coll/asp filt	5.63	5.63				.28	
SV38	Phase 9 mill room asp	3.00	3.00				.15	
SV43	Phase 9 prod coll/asp filt	1.88	1.88				.09	
SV46	Phase 10 – P/T cooler asp	3.00	3.00				.15	
SV49	Phase 10 prod coll/asp filt	3.75	3.75				.19	
SV53	Phase 11 prod coll/asp filt	3.75	3.75				.19	
SV57	Phase 12 prod coll/asp filt	3.75	3.75				.19	
EU8	Extruder #1 ½ prod d/c	2.12	1.00				.06	
SV9	Extruder #2 ½ prod d/c	2.12	1.00				.06	
SV10	Bran ½ product dryer	2.12	1.00				.06	
SV28	Phase 6 Ext. #3 ½ Pro D/C	1.91	.90				.06	
SV34	Phase 8 Ext ½ Prod D/C	2.12	1.00				.06	
SV50	Phase 11 Ext ½ Prod D/C	2.76	1.30				.08	
SV54	Phase 12 Ext ½ Prod D/C	1.91	.90				.06	
SV16	#2 puff gun, cycl & prehea	5.73	5.73	.004	.66	.55	.07	Neg
SV17	Gun #3 cyclon & preheat	5.73	5.73	.004	.66	.55	.14	Neg
SV18	#4 puff gun/cycl/preheat	5.73	5.73	.004	.66	.55	.07	Neg
SV19	#5 puff gun/cycl/preheat	5.73	5.73	.004	.66	.55	.07	Neg
SV31	#7 puff gun/cycl/preheat	5.73	5.73	.004	.66	.55	.07	Neg
SV35	#8 puff gun/cycl/preheat	6.37	6.37	.004	.66	.55	.08	Neg
SV47	#10 puff gun/cycl/preheat	6.37	6.37	.004	.66	.55	.08	Neg
SV51	#11 puff gun/cycl/preheat	6.37	6.37	.004	.66	.55	.08	Neg
SV55	Ph #12 pufgun/cycl/prehe	.82	.81	.004	.66	.55	.080	Neg
EU13	Puffer/toaster #1	2.78	.96	.013	2.19	1.84	.07	Neg
EU16	Puffer/toaster #2	2.78	.96	.014	2.28	1.91	.07	Neg
EU/SV	EU Description	PM	PM10	SOx	NOx	CO	VOC	Pb
EU65	Phase 9 puffer/toast dry	3.08	1.07	.013	2.19	1.84	.08	Neg
SV41	Phase 9 puff/toast cool	3.08	1.07				.08	
EU70	Puffer/toaster #10 dryer	3.08	1.07	.026	4.38	3.68	.08	Neg
SV20	Sugar coat cooler #2	1.06	.07				1.14	
SV29	Sugar coat #3 cereal cool	1.32	.08				1.43	
SV32	Phase 7 sugar coat cooler	1.52	.09				1.64	
SV36	Phase 8 sugar coat cooler	1.32	.08				1.43	

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SV42	Phase 9 sugar coat cooler	1.32	.08				1.43	
SV48	Phase 10 sugar coat cooler	1.98	.12				2.14	
SV52	Phase 11 sugar coat cooler	1.98	.12				2.14	
SV56	Phase 12 sugar coat cooler	1.98	.12				2.14	
EU93	Phase 13 baked prod oven	3.35	3.36	.035	5.91	4.97	1.41	Neg
SV60	General additive use						116.0	
	Insignificant Activities	13.1	13.2	0.28	43.9	36.9	9.2	

	PM tpy	PM10 Tpy	SO2 Tpy	NOx tpy	CO Tpy	VOC tpy	Pb tpy
Total Facility Limited Potential Emissions*	190.64	148.37	0.95	154.48	129.79	146.68	neg

Table 2. Facility (TF) and Permit Classification

Classification (put x in appropriate box)	Major/Affected Source	*Synthetic Minor	*Minor
PSD (list pollutant)		PM, PM10, VOC, NOx, CO	SOx, HAP
NAAR (list pollutant)			
Part 70 Permit Program (list pollutant)	PM, PM10, VOC, NOx, CO		SOx, HAP

* 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

GRP #	Applicable Regulations	**Comments:
GP001	Minn. R. 7011.0510	Standards of Performance for Existing Indirect
GP002	40 CFR 60 Subp. Dc	Standards of Performance for Small and Industrial Commercial and Institutional Steam Generating Units
GP003	Minn. R. 7011.1005	Standards of Performance for Dry Bulk Agricultural Commodity Facilities
GP004	40 CFR 52.21	Daily visible emission checks

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GP005	40 CFR 52.21	Daily visible emission checks
GP006	Minn. R. 7011.0715	Standards of Performance for Post 1969 Industrial Process Equipment
GP007	Minn. R. 7011.0610	Standards of Performance for Fossil-Fuel-Burning Direct Heating Equipment
GP008	Minn. R. 7011.0610	Standards of Performance for Fossil-Fuel-Burning Direct Heating Equipment
GP009	Minn. R. 7011.0610	Standards of Performance for Fossil-Fuel-Burning Direct Heating Equipment
GP0010	Minn. R. 7011.0715	Standards of Performance for Post 1969 Industrial Process Equipment

3. Technical Information

The technical information pertaining to this permit is included in the attached “Technical Support Document Supplement.”

4. Conclusion

Based on the information provided by the Malt-O-Meal, the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission Permit No. 13100022-001 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: Bruce C. Braaten, Marshall Cole, David Vaaler

Attachment: Supplement to Title V Air Emission Permit Application
Supplement to Technical Support Document
Malt-O-Meal Technical Support Document Supplement

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I. BACKGROUND

The Malt-O-Meal facility produces breakfast (ready-to-eat) cereal. It is located in Northfield, Minnesota. It is located in an area that is attainment or unclassified for all criteria pollutants.

Malt-O-Meal plant operations currently consist of 13 separate product lines. Many of these lines can produce multiple products. The 13 lines and associated units have a total of approximately 140 particulate matter/particulate matter-10 (PM/PM10) emission points. Many of the emission rates are less than one ton per year and none are greater than ten tons per year.

As calculated for this Title V permit, the total facility potential to emit (PTE) emissions are as follows. All are in tons per year.

PM	PM10	VOC	SO ₂	NO _x	CO
190.64	148.37	137.48	0.95	154.48	129.79

Due to its potential emissions of PM, PM10, VOCs, CO, and NO_x being greater than 100 tons per year, Malt-O-Meal is a major Title V facility. The major source threshold for this facility under the Prevention of Significant Deterioration (PSD) New Source Review (NSR) is 250 tons per year. The facility has only one existing source subject to New Source Performance Standards (NSPS) of 40 CFR pt. 60. That is a natural gas burning boiler subject to NSPS Subpart Dc. There are no, nor will be, sources subject to National Emission Standards for Hazardous Air Pollutants (NESHAPs).

Malt-O-Meal is currently permitted (limited potential) to emit total facility PM emissions of 242.5 tons per year and total facility PM10 emissions of 172.6 tons per year. The facility seeks to remain a non-major source for the PSD NSR program.

The current (actual) emissions are below the potential emissions. As calculated for the Minnesota annual emission inventory purposes, the reported actual emissions¹ for the total facility are as follow:

	PM (tpy)	PM10 (tpy)
1997	143.9	90.5
1996	88.9	76.9
1995	70.8	71.9

¹ These actual emissions are calculated, by the MPCA, using actual hours of operation, actual material throughput provided by Malt-O-Meal, and AP-42 emission factors. The AP-42 emission factors are from the grain elevator industry. As discussed below, there are no specific AP-42 breakfast cereal factors for the specific cereal equipment processes. Hence, these values differ from those, which use emission factors based on performance tests. Due to 1994 decreases in the AP-42 grain elevator emission factors, calculations prior to 1994 are not included.

Emission factors (such as AP-42) are not available for the majority of the facility's PM/PM10 emission sources. The PM/PM10 emission sources account for the majority of operations at the facility. AP-42 Chapter 9.1.1 contains emission factors for grain elevators. Malt-O-Meal, however, receives clean grains and does not have many grain elevator-type sources. Most of its process equipment sources are unique to the breakfast cereal industry. These sources include puffing, toasting, packaging, and minimizing fines. AP-42 contains a chapter on Cereal Breakfast Foods (Chapter 9.9.2). However, the chapter does not contain any emission factors.

Prior to this Title V permit action, allowable emissions were used to determine the potential-to-emit (PTE) from the modifications. The allowable emissions have been determined using the Minnesota industrial process equipment rule (IPER) (process weight/airflow rate). Allowable emissions are much higher than expected maximum actual emissions.

The permitted PM emissions are close to the PSD major source level. Due to the high level of allowable emissions, nearly any proposed change, if permitted at allowable rates, would result in Malt-O-Meal being a major source.

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Hence, a relatively small modification could require a major amendment. The amendments would need to be processed as major (i.e., federally enforceable), in order to establish emission rates on a case-by-case basis that were below the level allowed by the IPER. Generally, performance tests were then conducted to verify that the permitted limits were not being exceeded. The permitted modification emissions have more realistically reflected the actual emissions, than do the emissions allowed by the IPER.

Due to the numerous product lines requiring relatively frequent operational and process equipment changes to keep up with changing demands of the product market, Malt-O-Meal has applied for and the MPCA has processed numerous major amendments.

A typical modification for Malt-O-Meal might be one, or a combination of, the following:

- Installing new dryers or coolers.
- Modify an existing dryer to work in a different part of the process line.
- Replace older equipment with newer equipment.
- Fabric filter systems generally are used to minimize fines in product streams throughout the facility. Air flows for these systems vary greatly from as low as 1,500 cubic feet per minute (cfm), to as high as 16,000 cfm. Due to the heat balance issues, there may be the need to vent externally a fabric filter system that previously vented internally and therefore was not covered by the permit. Heat and air balance issues are common at the plant and a source of frequent changes.

The plant operates 7 days per week, 24 hours per day. However, every three weeks, each line has a complete shutdown for 24 hours. In addition, there is line down time. Hence, the facility estimated 5,500 hours of actual operation in 1997.

I. FACILITY DESCRIPTION

In general, Malt-O-Meal makes three types of products:

- 1) Extruded/puffed products;
- 2) Flaked products; and,
- 3) Baked products.

Variations on the process flow are used to achieve different product characteristics. However, the basic processes are very similar from line to line. In addition, the resultant cereal will be either a wheat, rice, corn, oat, or some combination, thereof, product.

a. Basic Process Flows for the Three Product Types

The basic process flows for each of these three products are:

1) Extruded/Puffed Products:

Cooking/Extrusion -> Half Product Dryer -> Gun Puffing ->
(optional) (optional)

Sugar Coat -> Vitamin Application & Drying -> Packaging
(optional) (optional)

Extruded/Puffed Product Lines are Nos. 1, 2, 4, 6, 7, 8, 11, & 12.

2) Flaked Products:

Cooking -> Mill Room Dryers -> Milling ->

Retro Dryer System -> Puffer/Toaster or Gun Puffing-> Sugar Coat (optional)->

Vitamin Application & Drying (optional)-> Packaging

Flake Product Lines are Nos. 3, 5, 9, & 10.

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3) Baked Products:

Cooking -> Drying -> Forming -> Baking -> Sugar Coating

The Baked Product Line is No. 13.

It is noted that rated unit process capacities may vary in a line. The capacity is adapted to a unit, in a line, by the weight of water in a product and various storage bins.

b. Overview Description of the Three Product Lines

The following provides a brief overview of the three product lines.

1. Extruded/Puffed Product Lines

Extruded/puffed products are prepared by mixing and cooking the ingredients. This results in a dough-like material. The product ingredients are cooked in the extruders. When extruded through a die, the product ingredients are then formed into the desired shape. In other words, the extrusion takes the dough and forms it into the product shape (O's for example). A drying step (half product dryer) removes some of the moisture from the product before further processing. This dries and tempers the dough product. At this point, the dough is actually formed. Extruded products are generally puffed in a gun (except bran flakes which are processed in a puffer toaster). The gun puffing process subjects the product to a large pressure differential. As steam under pressure in the interior of the grain seeks to equilibrate with the surrounding lower-pressure atmosphere, it forces the grains to expand quickly or puff. During the gun puffing step, the product has most of the moisture removed. Sugar and/or vitamins may be added to the product before packaging. Examples of extruded/puffed products are Toasty-O's and Fruity-O's.

2. Flaked Product Lines

To produce flaked products, the grain is first cooked. Cooking is complete when each kernel or kernel part has been changed to golden brown. The cooked products pass through delumping equipment to break and size the loosely held-together grits into mostly single grit. Next, prior to milling, some of the moisture is removed in a mill room dryer. After tempering, the grits pass between pairs of very large metal rolls that press them into very thin flakes (i.e., milling). A retro dryer system may be used to remove additional moisture before puffing. The product is then run through a puffer toaster (an exception is for gun puffing the sugar puffed corn). Flakes are toasted by suspending them in a hot air stream. The toasted flakes are cooled. The product may then have a sugar coating and/or vitamins applied. The flakes are then sent to packaging. An example of a flaked product is corn flakes.

3. Baked Product Line

In the baked product line, cooked grain is dried slightly to remove surface moisture. The grain is formed and baked in a large oven. A sugar icing is applied before packaging. An example of a baked product line is mini-wheats. In addition, the three product lines may utilize some other optional unit processes. For example, sugar kettles and concentrators are used to prepare the sugar coatings. Vitamins may also be applied.

c. Overview Description of the Individual Process Units

The following provides a brief description of the individual process units.

Raw Material Receiving

Bulk raw materials (grains, flours, and sugar) are received by truck or rail cars to either of two receiving pads. The older receiving pad (FS 001) is inside a 3-sided covered building. One side is open at all times. 90% of the commodities are pneumatically unloaded through sealed pipes which connect the truck or rail car to a bin which is internally filter vented. The bins have tops. The tops have filters to receive the separated air being used to deliver the product. The filters are physically located inside the room. Hence, there are no external emissions associated with the pneumatic unloading. A small number of commodities (less than 10% of the total) are received by pit

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unloading in which the grain is dropped to a pit in the floor of the building from which it is pneumatically conveyed to bins. An estimate of 50% control is made for this enclosure.

The new receiving pad (FS 004) is 100% sealed/pneumatic unload. The air vents through the bin filters and vent internally. The building is 2-sided with doors on each end. There is no pit/drop type unload. It is assumed that there are no emissions.

Feed Byproduct Loadout

Cereal fines collected throughout the process are accumulated in storage bins for shipment as animal feed. There are two feed loadouts. Both are aspirated. The older unit (FS 002) is a sealed truck bay where the tractor is loaded. But one end is open during the loadout. The loadout chute is aspirated with an internally venting filter. The new unit (FS 003) loads the byproduct into trucks in a 3-sided covered building. One end is open during loading. The point where the byproduct is dropped into the truck is aspirated to a filter that vents internally. For both units, control is estimated at 75%.

Product Recovery Systems

Fabric byproduct collection filters are used to remove fines from various points in a particular process for quality control reasons and/or to collect and convey byproduct material to bin storage. All of the filters are standard baghouses with either cartridge or standard bag type filters. The byproduct collection filters have been recognized in past permits as process equipment. This is because they have been recognized as being an inherent part of the process and recovering a valuable byproduct. Because of the value of the byproduct, it is in the Permittee's financial interest to ensure that the fabric filters operate to collect as much byproduct as feasible. The majority of the baghouses have a magnehelic gauge to measure the pressure drop. The baghouses are monitored by the line personnel. For illustration, general aspiration filters are used to collect product fines from various hoods located along a conveyor belt system. A hood is located at each point along the conveyor belt where the belt drops to a lower level. The air flows from the hoods are all ducted to a common fabric filter baghouse. The seventeen fabric filters vent externally.

The differences in the baghouses are threefold. First of all, there are two types of filters. One is a bag-type filter and the other is a cartridge-type filter. The second difference is in the point of pickup. A typical product collection filter diagram is attached. The third difference pertains to the point of emission. 15 fabric filters vent externally. 3 fabric filters vent into a penthouse. The penthouse is a room with 4 walls and a ceiling, but has a wall vent that opens to the atmosphere. An estimate of 50% control is applied to the penthouse. All of the fines collected in the filter system are sold as an ingredient in the manufacture of animal feed.

Half (1/2) Product Dryers/Coolers (Extrusion)

After the dough ingredients have been mixed together and formed, this unit is used to remove some of the water from the product. The formed product is dried slightly prior to further processing. This unit is located before the puffing equipment.

Gun System - Single Cyclone

These guns are only for the extruded/puffed product lines. The half (1/2) product is taken and puffed to achieve its final shape. This process unit consists of a preheater, puffing gun, and product collection cyclone. The preheater basically increases the product temperature. All of these gun systems include preheaters rated at 1.5 MMBtu/hr. The puffing gun is basically a differential pressure/steam chamber that expands the product. After the product is released from the gun, it goes through a product collection cyclone. The product collection cyclone exhaust also contains the exhaust from the natural gas preheater. In other words, each unit's preheater and puffing gun vent through the product collection cyclone in a single exhaust point (stack). An upset condition can occur if problems develop which cause the product in the cyclone to back up. If this occurs, a flow indicator on a discharge line down stream of the cyclone will sound an alarm and/or a pressure sensor on the gun discharge will alarm. If these alarm conditions exist, the operator will investigate and either make adjustments or shut down the equipment.

Guns/2 Cyclones (includes fuel burning from preheater)

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This is the same system as the gun/single cyclone system however, rather than one cyclone, this unit has two cyclones in series.

Superheater

The superheater is used to superheat the steam used in the puffing gun. The superheaters burn only natural gas. The superheaters have their own exhaust stream. Using emission estimates based on AP-42 factors, it has been determined that the superheaters are an insignificant activity. Superheaters are present on each line containing a puffing gun (puffing guns #2, #3, #4, #5, #7, #8, #10, #11, and #12).

Puffer/Toaster (Jetzone) Dryers/Coolers (includes fuel burning)

This unit is used only in the flaked product stream. The puffer toaster takes the flake from the mill and puffs it into the final shape. Currently, all puffer/toaster dryers exhaust out of two stacks. On most units, another stack is present for the cooler. The cooler venting is as follows: #1 has no external vent, #2 vents through a byproduct collection filter (which exhausts inside a penthouse), #9 vents through a product collection cyclone, and #10 vents through a byproduct collection filter.

Sugar Coat Dryer/Cooler

This unit consists of a rotating drum, dryer zone, and cooler zone. Prior to entering the dryer/cooler, the product enters a rotating drum. Sugar is sprayed into the product in the rotating drum.

The dryer/cooler is a single unit with two zones. From the drum, the product then goes into the dryer zone. The dryer zone removes moisture from the sugar coating which is applied to the product. In the dryer, the sugar on the product is still wet and sticky. There are relatively low air flows going through the dryers. The dryers exhaust out of their own stacks. Emissions testing of the dryers determined that they are insignificant activities.

Finally, the cooler is the last zone of this unit. In the cooler, the sugar crystallizes and high volumes of ambient (cool) air flow across the product. For this unit (the Sugar Coat Dryer/Cooler), the majority of the particulate emissions are expected to be generated in the cooler. The coolers exhaust out of their own stacks.

Retro Dryers and Retro Coolers

The retro dryers and retro coolers are single units consisting of two zones (first the dryer and then the cooler). Each zone has its own separate stack. This unit is located after milling. The unit takes out additional moisture prior to further processing such as gun puffing or puffer toaster. For the extruded puff line, this unit takes out moisture immediately after the half (1/2) product dryer/cooler and before it enters the puffing unit. The retro dryer and retro cooler each have their own exhaust. There are two such units in lines 5 and 10.

Vitamin Dryers

For some of the products, a liquid vitamin slurry is sprayed onto the product in a rotating drum. The vitamin dryers remove the moisture from the vitamin slurry after it is applied to the product. This is the final step for this coating.

Sugar Coat Kettles and Cook Room Kettles

Sugar coat kettles and cook room kettles function identically. They are both configured in the same fashion with a kettle, product collection cyclone, and product collection scrubber. Sugar coat kettles use only sugar as an ingredient. The cook room kettles use sugar and other ingredients (such as salt) for flavoring. The commodity (sugar or salt) is delivered to the kettle through a cyclone. The cyclone exhaust passes through a scrubber which becomes the exhaust point for the entire system. The scrubber water contains any of the commodity that is remaining in the cyclone exhaust and becomes part of next sugar batch. In past permits, the product collection cyclones and scrubbers have been recognized as process equipment.

Sugar Concentrator

The sugar concentrator takes the sugar slurry from the kettle and concentrates the sugar by removing the water. It is a steam heated vessel.

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VOC Emissions

VOC emissions may potentially occur at almost any stage in the production of breakfast cereal.

For purposes of this permit, VOC emissions are treated as coming from four sources. These sources are:

- 1) VOCs for the natural gas fuel burning units, as based on AP-42 factors.
- 2) Additives. These VOCs are emitted from vanilla, two fruit flavorings, chocolate flavoring, and marshmallow flavoring. These additives are introduced at the very tail end of a particular process line. In other words, the additives include everything added after the units have been performance tested. These emissions are not associated with a particular stack. Actual VOC emissions shall be determined based on actual additive quantity used multiplied by the percent VOC content in the additive. (116 tpy out of the 137.4 tpy PTE)
- 3) All other process VOCs. These VOCs are found in the various processes. VOC emissions are based on performance tests. (see Permit Appendix B) These VOC emissions are associated with a particular stack. These VOC emissions are associated with the thermal processing steps, such as drying, steaming, heat treatment, cooking, toasting, extruding, and puffing.
- 4) VOCs from packaging inks and cleaning chemicals (insignificant activities)

Hot melt adhesives used during packaging of the final product were reviewed and found to not contain VOC emissions.

Compliance with the VOC cap is based on the above items 1) and 3) (PTE) as well as item 2) (actuals), on a monthly basis.

III. ESTABLISHING EMISSION FACTORS

A. Background

Development of PM and PM10 emission factors is at the core of the proposed permit. The testing has been conducted in accordance with all current testing requirements.

Sources were divided into thirteen classes of similar equipment/unit processes. Similar units are defined as follows. (All of the items listed are intended to address aspects of the process related to PM/PM10.)

- to be of a like process or equipment type;
- to be at the same or earlier point in the process²;
- to have a similar method for movement of material and/or method of agitation; and,
- to have similar coatings at that point in the process line (sugar frosted, vitamin coatings, etc.).

² The same or earlier point in the process addresses the moisture content of the product. Moisture content is related to emissions as dryer outputs have more potential for PM/PM10 emissions than wetter outputs.

As a note, there are three additional Delta groups. One is the natural gas boilers composed of 3 existing boilers ranging in size from 24 to 52 MMBtu/hr. The second group consists of 2 Dc natural gas boilers. This permit will allow for installation of a fifth natural gas boiler. Emission factors for the boilers are taken from AP-42.

Moreover, the AP-42 emission factors for the natural gas boilers changed during the course of the permit preparation.

The AP-42 factors are summarized below:

	Old Factors (>10 and <100)	Old Factors (>0.3 and <10)	New Factors
PM	0.0000137	0.000012	0.0000076
PM10	0.0000137	0.000012	0.0000076
SOx	0.0000006	0.0000006	0.0000006

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NOx	0.00014	0.00010	0.00010
VOC	0.0000028	0.0000053	0.0000055
CO	0.000035	0.000021	0.0000084

The emission changes due solely to the new natural gas emission factors are shown below:

Pollutant	Limited PTE (TPY) old AP-42 factors	Limited PTE (TPY) new AP-42 factors
NOx	190.15	154.48
CO	44.87	129.79

* PM/PM10 emissions decrease slightly; VOC emissions increase slightly (the majority of emissions are from additives which are not associated with AP-42 factors); SOx emissions do not change.

The overall permit application is based on the previous AP-42 factors. New facility calculations were performed using the new AP-42 factors. These updated calculations are attached. As reflected in Delta, unit emissions are based on the new AP-42 factors. Any modifications will be based on the new AP-42 factors.

In addition, there is the Delta grain handling group. These units include the receiving pads and feed loadouts.

Emission factors for these units are taken from AP-42 Section 9.9.1, Grain Elevators and Processes.

Testing was voluntarily performed to establish emission factors for the thirteen classes. Together with past data, the testing program resulted in 40+ data points for PM, PM10, and VOCs. 1991 data was reviewed. Given the age of the 1991 test and the unknown maintenance history of the equipment, it was uncertain whether the process as tested remained accurately reflective of the current process. Therefore, the 1991 data was considered in the development of emission factors, but was not weighted with the more recent tests.

B. Rationale for Emission Testing (i.e., the basis of the test plan) and Test Results

As part of the application process for the flexible permit, a 1997 test plan was established to supplement pre-1997 stack test data. The goals of the test plan were to: fill in gaps in past stack test data; to provide testing of each class of process unit; and to establish the relationship between PM and PM10 to ensure that the assumption that PM = PM10 was safe (see additional discussion on results of EPA Methods 5/202 versus 201/202 results). In general, units were selected for testing which were considered to be representative of process units within their class based on process rates, air flow, and knowledge of the process. For example, if a given product was suspected as having a higher potential for emissions, it was selected for testing to represent worst case. In some cases, the decision of which unit to test was also influenced by physical access for testing. A discussion of the testing for each category of process equipment follows. In this section, it is noted that the values presented are the results of performance tests only. There is no discussion of emission factors.

Product Recovery Systems

There are 18 product recovery systems currently in operation.

An emission limit of 0.01 grains/dry standard cubic foot for product recovery fabric filters has been proposed. This is an achievable and therefore acceptable emission limit for fabric filters. The two 1998 as well as the 1991 performance tests have all easily achieved this limit. In 1998, the Phase #7 cartridge-type filter was tested. In 1998, the Phase #1-3 bag-type filter was also tested. The Phase # 1-3 unit is also large, at 10,000 cfm. It was selected as a good representative of the bag-type filters at Malt-O-Meal.

Because of the physical enclosure, the penthouse fabric filter emission has a 50% lower emission rate.

The PM test results are:

Unit	PM Emissions (gr/dscf)
#7	0.0031

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#1-3

0.0032

Assumptions:

PM = PM10

VOC = 0.017 lb/hr, as based on one test result

Half (1/2) Product Dryers/Coolers (Extrusion)

There are seven half product dryer/cooler units currently in operation. The seven half product dryer/coolers range in maximum design capacity from 1.8 to 2.6 tons per hour. The PM test results are shown below. The testing occurred on 3 different units making two separate products. One of the products tested is oat based which, in the opinion of the dryer manufacturer, should be the dustiest product being made. Air flows and process rates were at or above other non-tested units. Therefore, testing was devised to address for product variability.

Unit	Design Capacity (tons/hr)	Tested Flow (tons/hr)	PM Emissions (lb/ton)
Phase 2	2	1.83	0.203 (0.164*)
Phase 8	2	1.98	0.242
Phase 11	2.6	2.22	0.222 (0.196*)

* 1998 test results based as filterable particulate and organic condensibles.

Assumptions:

PM10 = 0.114 lb/ton, as based on the Method 201A/202 results

VOC = 0.0071 lb/ton, as based on one test result

Testing for Particulate Matter (PM) is done by Method 5 with the addition of condensible organic matter. This will be referred to as Method 5/OC. Testing for particulate matter less than or equal to 10 microns (PM10) is done by Method 201A combined with Method 202 (Method 201A/202). Method 201A provides non-condensable results. Method 202 provides data for organic and aqueous (inorganic) condensible matter. Aqueous condensible matter is not considered PM. It is considered PM10.

The addition of aqueous condensible matter can mean that PM10 is higher than PM. PM10 can also be higher than PM due to other test method differences (201A versus Method 5).

In some cases Method 201A cannot be conducted on some stacks. In these cases, Method 5/202 is used as a surrogate for PM10.

The Permittee has only recently conducted PM10 testing (201A/202) and only for ½ product dryers, puffer/toasters, sugar coat coolers, and vitamin dryers. From prior years, test results were conducted by Methods 5/OC.

In determining emission factors, as proposed in this permit, the Permittee used the following approach.

1. For PM: Use highest test result from all testing for that unit (not including 1991 data). In all cases PM factors represent Method 5/organic condensibles (OC) only.
2. If a PM10 test (method 201A/202) was run for any unit in the group, use that test for PM10 as the emission factor for that emission unit group.
3. If no PM10 test was run for any unit in a group, or Method 201A cannot be run, use PM results. If the highest PM result represented Method 5/OC only, use this data. If the highest PM test included a Method 202 test (i.e., was run in 1999) use Method 5/202 for PM10. Therefore, for units using 1999 test results for the PM factor, the PM10 results will be higher due to the addition of inorganic (aqueous) condensibles from Method 202. This applies to retro dryers, and retro coolers. The Permittee has suggested that this is an acceptable way to determine PM10 emission factors since that when 5/OC and 201A/202 are run for the same unit, PM10 has always been less than PM.

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Gun Systems - Single Cyclone

There are currently 7 gun systems (single cyclone) in operation. Stack testing has been performed on 3 different gun systems making 3 separate products. Air flows from tested units are typical of all guns and products. Throughput for tested units cover the range of throughput typical of remaining units which have not been tested. The 1991 results are included on the attached Test Summary. The April 23, 1998 test result for Gun #7 is excluded. The test was composed of only two runs because the cyclone plugged. The plugging was likely due to the unit being run, at a high rate, for testing purposes. Due to the high 1994 results, Gun #7 was retested. In addition, wheat puffing is often dustier than puffing of other grains.

The PM test results are:

Unit	Design Capacity (tons/hr)	Tested Flow (tons/hr)	PM Emissions (lb/ton)
#7 ('94)	1.8	1.80	0.727
#3 ('94)	1.8	1.12	0.0893
#7 ('98)	1.8	1.56	0.0975
#8 ('98)	2.0	1.90	0.177

Assumptions:

PM = PM10, because PM-10 testing cannot be done on gun stacks due to the moisture content
VOCs = 0.0086 lb/ton, as based on one test result

*** Same comment on Method 5 or 201A test results as noted under Half Product Dryer/Coolers.

Guns Systems - Double Cyclones

There is only one such unit in operation (Phase 12). The PM test result is:

Unit	Design Capacity (tons/hr)	Tested Flow (tons/hr)	PM Emissions (lb/ton)
Phase 12	2	1.83	0.093

Assumptions:

PM = PM10

VOCs = same as Gun System - Single Cyclone

Superheater

There are 9 superheaters. The superheaters burn only natural gas. The superheaters have their own exhaust stream. Using emission estimates based on AP-42 factors, it has been determined that the superheaters are an insignificant activity.

Puffer/Toaster (Jetzone) Dryers/Coolers

There are currently four puffer/toaster dryer/coolers in operation. 2 units have a maximum design capacity of 1.8 tons per hour. 2 other units have a maximum design capacity of 2 tons per hour. 2 puffer/toaster units were tested. Both have 2 ton per hour maximum design capacity.

The tested unit were selected, by the Permittee, based on the fact that their capacity was as high as any similar unit in the plant and access for testing was good (access for installing test ports was severely limited in the two units which were not tested). Currently, all puffer/toaster dryers exhaust out of two separate stacks. In the past, some exhausted from one stack only. This was true in 1994 for the #9 stack test.

The PM test results are:

Unit	Design Capacity	Tested Flow	PM Emissions
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	(tons/hr)	(tons/hr)	(lb/ton)
#9	2.0	1.25	0.352 ³
#10 (1)	2.0	1.57	0.116
#10 (2)	2.0	1.59	0.081

³ This 1994 test was run when the unit consisted of one stack as opposed to the #10 test runs with the unit consisting of two separate stacks. To make the test results between the #9 and #10 Phases comparable, the #9 results should be reduced by half or the two 1998 stack tests should be combined.

PM10 was tested, once, at 0.061 lb/ton.

The VOC emissions are assumed to equal those from the gun system - single cyclone. This is because the processing temperatures are similar and the effect of the process on the product (puffing) is similar.

*** Same comment on Method 5 or 201A test results as noted under Half Product Dryer/Coolers.

Sugar Coat Dryer/Cooler

The sugar coat dryers are deemed to be insignificant activities (less than 1 ton per year). There are 8 such sugar coat dryers currently in operation. The 8 sugar coat dryers range in maximum design capacity from 1.6 to 3 tons per hour. Two dryers were tested making two separate products (including one at the highest design capacity). Emissions were shown to be quite low. This is consistent with the nature of this part of the process (moisture removal from sticky sugar coating), which would suggest that significant particulate emissions should not be expected. The PM test results are:

Unit	Design Capacity (tons/hr)	Tested Flow (tons/hr)	PM Emissions (lb/ton)
Phase 7	2.3	1.6	0.031
Phase 11	3	2.6	0.020

VOCs = 0.031 lb/ton, as based on one test result

There are 8 sugar coat coolers currently in operation. The sugar coat dryer/coolers range in capacity from 1.6 to 3 tons/hour. The #7 cooler has a process rate capacity of 2.3 tons/hour. The #7 cooler has been tested in 1991, 1992, and 1994. The #11 cooler was tested in 1998. The 1991 test is reviewed (due to its 0.407 lbs/ton emission rate), but not weighted with the more recent tests. It is uncertain whether the 1991 test is reflective of the current operating practices. In 1998, cooler #11 was selected for testing due to: its capacity (highest capacity of any cooler), the fact that it was making a different product than the previously tested #7 cooler, and its good access for testing. The PM test results are:

Year Tested	Design Capacity (tons/hr)	Tested Flow (tons/hr)	PM Emissions (lb/ton)
1994	2.3	1.65	0.151
1998	2.3	2.80	0.0257

PM10 = 0.0093 lb/ton, as based on one test result

VOC = 0.163 lb/ton, as based on one test result

Retro Dryers

The Retro Dryers are deemed to be insignificant activities (less than 1 ton per year). There are 2 retro dryers currently in operation. The 2 retro dryers have a maximum design capacity of 2.4 tons per hour.

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Number 10 retro dryer/cooler was selected for testing based on the fact that it had the same rated capacity as other similar units and had good access for testing. The retro dryer/cooler was tested with the intention of developing a factor for retro dryers and coolers and all other miscellaneous dryers earlier in the production process - i.e. wetter. The assumption is that the wetter the material the lower the emissions. A wetter process will tend to limit emissions because fines are not as easily separated and exhausted.

The dryer factor was applied to three mill room dryers. The mill room dryers are earlier in the process than retro dryers and have wetter inlets and outlets. The factor was also applied to a second retro dryer.

The PM test result is:

Unit	Design Capacity (tons/hr)	Tested Flow (tons/hr)	PM Emissions (lb/ton)
Phase 10	2.4	2.32	0.026

Assumptions: PM = PM10
VOC = same as the extruders

Retro Coolers

The Retro Coolers are deemed to be insignificant activities (less than 1 ton per year). There are 2 retro coolers currently in operation. The testing rationale is the same as for the retro dryers discussed above. The 2 retro dryers have a maximum design capacity of 2.4 tons per hour. The test result is:

Unit	Design Capacity (tons/hr)	Tested Flow (tons/hr)	PM Emissions (lb/ton)
Phase 10	2.4	2.32	0.0327

Assumptions: PM = PM10
VOC = same as the extruders

Vitamin Dryers

The vitamin dryer is deemed to be an insignificant activity (less than 1 ton per hour). There are two vitamin dryers in operation, but one vents through a product collection filter. One is a Toasty O vitamin dryer. Testing was performed on a puffed wheat vitamin dryer which has since been removed from the plant. This unit was selected for testing because it was thought to represent a worst case, in terms of particulate emissions (wheat chaff is thought to be more easily broken free and emitted as a particulate than extruded dough products). The PM test result is:

Emission Unit	Design Capacity (tons/hr)	Tested Flow (tons/hr)	PM Emissions (lb/ton)
151	1.25	1.08	0.030

Assumptions:
VOC emissions are assumed to equal those from the sugar cooler dryer.
PM10 = 0.005 lb/ton, as based on one test result

Sugar Coat Kettles & Cook Room Kettles

Both types of kettles were assumed to have the same emission factor. Sugar kettles are deemed to be insignificant activities (less than 1 ton per year). There are 8 sugar coat kettles and 8 cook room kettles currently in operation. The 8 sugar coat kettles and 8 cook room kettles have a maximum design capacity of 1.2 tons per hour. The #8 sugar kettle was tested in 1994. It is considered representative of all of the kettle systems since it has the same capacity as other kettles and is virtually identical in design. The PM test result is:

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Unit	Design Capacity (tons/hr)	Tested Flow (tons/hr)	PM Emissions (lb/ton)
Phase 8	1.2	1.25	0.073

Assumptions:

PM is assumed to equal PM10.

VOC = 0.041 lb/ton, as based on one test result

Sugar Coat Concentrators

Sugar coat concentrators are deemed to be insignificant activities. (less than 1 ton per year). There are 8 sugar coat concentrators currently in operation. The 8 sugar coat concentrators have a maximum design capacity of 1.2 tons per hour. The #8 sugar concentrator was tested in 1994. It is considered representative of all of the concentrators since it has the same capacity as other kettles and is virtually identical in design. The test result is:

Unit	Design Capacity (tons/hr)	Tested Flow (tons/hr)	PM Emissions (lb/ton)
Phase 8	1.2	1.25	0.016

Assumptions:

PM is assumed to equal PM10.

VOC = 0.016 lb/ton, as based on one test result

Insignificant Activities

There are three categories of insignificant activities that each include a number of units. These are:

1. Process Related Units - Process Related Emissions
2. Process Related Units - Combustion Emissions
3. Non-Process Related Units - Combustion Emissions

The first category includes sugar kettles and concentrators, and miscellaneous dryers. Emissions calculations are based on test results for that or similar units. There are 36 units in this group altogether. Emissions include particulates and VOCs. Total potential emissions are calculated to be approximately 10 tons per year of particulates and 7 tons per year of VOCs. These emissions are included in the total PTE calculation summary. All units in this group qualify as insignificant activities under MPCA rules 7007.1300, subpart 3, Item I with total potential emissions of less than 1 ton per year for all criteria pollutants.

The second category includes superheaters, sugar coat #13 heaters, and #13 cooked wheat dryer. The only fuel is natural gas. Combustion emissions are calculated using AP-42 emission factors. Total heat input for all these units combined is 7.83 million Btu/hr. Total potential emissions are calculated and included in total potential to emit calculations. All units in this group qualify as insignificant activities under MPCA rules 7007.1300, subpart 3, Item I with total potential emissions of less than 1 ton per year for all criteria pollutants.

The third category includes small boilers, air makeup-units, etc. The only emissions are combustion related. The only fuel is natural gas. Total heat input for all these units combined is 95.5 million Btu/hr. The largest individual unit has a rating of 7.14 million Btu/hr. Total potential emissions are calculated and included in total potential to emit calculations. These units qualify as insignificant under either MPCA rules 7007.1300, subpart 3, Item I with total potential emissions of less than 1 ton per year for all criteria pollutants; or subpart 4 with potential emissions less than 2.28 pounds per hour for all criteria pollutants.

In addition, there are VOCs from packaging inks and cleaning chemicals. The Permittee estimated the 1998 actual VOCs to be 1.22 tons from packaging inks and 0.72 tons from cleaning chemicals. These are deemed insignificant activities under Minn. R. 7007.1300, subp. 4(B). These VOC emissions are not included in the overall VOC cap.

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There are also HAP emissions from printing inks and cleaning chemicals. The Permittee estimated 1998 actual HAPs from the cleaning chemicals and packaging inks to be 1.1 tons (glycol ethers and methanol).

C. Emission Factors

The emission factors were developed by review of the test data and related process data (airflow, product type, process rate, etc.). These emission factors will be allowed for installation of like or similar units. The emission factors are found in the Permit Appendix B.

IV. TYPES OF CHANGES THAT WOULD BE SOUGHT UNDER THIS PERMIT

The potential types of changes which would be sought under the flexible permit would be:

- The addition of vent stacks to existing process equipment (example: dryer which currently vents through one exhaust would be modified to have two exhausts)
- Switching product recovery filter systems which currently vent internally to externally venting units and or expanding/installing new externally venting product recovery systems. These are all systems that use fabric filters and therefore have relatively low air emissions. Such changes are sometimes necessitated by ventilation requirements.
- Changing operating parameters on existing equipment such as air flow and process rate.
- Upgrading existing units - i.e., replacing existing process equipment emission units with new units of similar type.
- Adding process equipment which is similar to equipment that is already in operation.

V. BACKGROUND TO PERMIT TERMS AND CONDITIONS

a. Rationale for Establishing Emission Factors

At the core of this permit is the need to establish PM/PM10 emission factors for each class. The emission factors will then be used to demonstrate compliance with the overall total facility emission caps. To determine compliance for the overall plant's actual emissions, the following equation will be used:

$$\text{Sum of: [Individual unit's equipment emission rate (lb/ton) X} \\ \text{individual unit's design capacity (tons) X} \\ \text{8760 hours conversion]}$$

The Permittee has conducted numerous performance tests on the various equipment units. For a number of classes, more than one test was conducted per class. If more than one performance test was conducted per class, the highest measured emission result (in lb/ton) was selected as the emission factor. This should provide a conservative value for the whole range of operations. Given that not all of the units were tested in a particular group, it is not demonstrated how many untested units would exceed an average value of all the tests. Using the highest emission test result should address this situation. In other cases, only one performance test was conducted per group.

In general, safety factors were not applied to the emission factors. The rationale for not using safety factors follow:

- The need to demonstrate that the facility is non-major for PSD. In this case, non-major means that the overall facility emissions per criteria pollutant being less than 250 tons per year. The use of actual values, as opposed to values with safety factors, will more readily establish this demonstration.
- If for some unanticipated reason, the facility were to become a major PSD source, netting would need to follow the future potential minus past actual calculations. Establishing emission factors with safety factors would confuse the true past actuals.
- At some point, a group pattern of consistent performance test results should reduce the need for subsequent testing to establish emission factors. This would reduce the need for safety factors.
- Providing a mechanism to address the reduction or removal of a safety factor would add an additional level of complexity in this permit.

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One exception to the use of safety factors is for the use of 0.01 gr/dscf for the fabric filter. This done because 0.01 gr/dscf is a fairly common fabric filter limit.

The permit will allow for revision of the emission factors. If subsequent testing, within a particular group, produces a higher and valid test result than the current emission factor, the higher performance test result will automatically become the new emission factor. In contrast, one lower test result would not reduce an emission factor. During the 5 year permit reissuance, a pattern of consistent group performance test results may be considered for the reduction of the current emission factors. Again, all of the revisions would be subject upon approval of the test methodology and results by the MPCA.

b. Rationale for Additional Performance Testing

It is recognized that the Permittee has voluntarily conducted a considerable amount of performance testing in preparation of this Title V permit application. It is also recognized that to compile sufficient data to do a true statistical analysis, per individual class, would provide an unreasonable cost to the Permittee. To the extent possible, it is the intent to utilize the data, thus far, compiled. It is recognized that this data, thus far, collected is better information than no data or AP-42 grain handling emission factors being applied to the plant processes.

Where uncertainty appears, conservative emission factors have been selected. In addition, the permit will place additional performance testing requirements to address the areas of uncertainty. Uncertainty can arise from variability in the existing data, per class, or from the use of only one test result, per class. It is the overall intent that a pattern of consistent test results, per class, will lead to the establishment of an acceptable emission factor. Once an emission factor is established that will either reduce or eliminate the need for subsequent testing to establish the emission factor (as opposed to periodic monitoring to demonstrate compliance). At this point, the MPCA does not appear to have established a policy as to what establishes a consistent pattern of test results. Preliminary MPCA discussions have provided that it is likely that consistent results would have to be within 10% of each other and perhaps no greater than 20% over a five year period.

Factors that were considered in developing the need for additional emission factor testing are as follows:

- Percentage of individual group PM/PM10 emission contribution in relation to the facility total PM/PM10 emission;
- Variability in equipment/process;
- Number of test results per number of units in a group;
- Margin between PTE and emission limit;
- Other rule requirements for testing (NSPS, etc.);
- Age of test results. The Permittee included performance test results from 1991. In this permit action, all the past performance data was reviewed. Pre-1994 data was reviewed, however, but not weighted.
- Variability in test results;
- Unit design capacity to unit performance test process rate (i.e., how close to full capacity was the tested unit being operated at);
- Comparison of test results to the Minnesota Industrial Process Equipment Rule allowable; and,
- The type of product produced as it relates to worst-case or maximum emissions.

Even though this is not a permit requirement, it is the preference for the testing requirements, of once in five years, that the testing be, reasonably, moved to the front end of the five year time period. This is to address any necessary modifications, which might need to be made to the permit, thus, avoiding any potential enforcement issues at a later date.

c. Factors to Establish Periodic Monitoring

The Federal periodic monitoring guidance provides, in part:

- Each permit shall contain . . .
- periodic monitoring . . .
- sufficient to yield reliable data . . .

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from the relevant time period . . .
representative of the source's compliance.

EPA has provided the following factors for determining the periodic monitoring requirements:

- Margin between the PTE and the emission limit. In other words, the likelihood of violating the applicable requirement (i.e., margin of compliance with the applicable requirement);
- Whether add-on controls are necessary for the unit to meet the emission limit;
- The variability of emissions from the unit over time;
- The type of monitoring, processes, maintenance, or control equipment data already available for the emission unit;
- The technical and economic considerations associated with the range of possible monitoring methods; and
- The kind of monitoring found on similar emission units.

VI. CLASS SPECIFIC PERMIT TERMS AND CONDITIONS

Requirements for the Minnesota Industrial Process Equipment Rule (IPER), Minnesota Direct Heating Equipment Rule, daily particulate matter monitoring, and testing schedule are referenced in the following classes discussion. The detailed terms for each of these requirements are found at the end of this section.

As an additional note, the Minnesota Industrial Process Equipment Rule rate is based on the design capacity of the unit. The measured emission rate (lb/ton) was converted to lb/hour for comparison to the IPER. For the comparisons that follow, generally, only the process weight was considered. The intent of the following comparisons was to ensure that the IPER was not being violated.

Periodic monitoring for the small units (without control equipment) is addressed through two means. These means are through 1) daily emission monitoring for the presence of excess particulate matter beyond what could be expected under normal operating conditions and 2) of rooftop areas, for significant dust accumulation which could reasonably be expected to become airborne and pose a nuisance condition. This is to be followed through with taking action, if problems are observed. These particulate matter sources do not have emission control equipment. For such smaller units with PM/PM10 emissions, the likelihood of violation is remote given test results, process conditions, and allowable emission rates.

Boilers

5 Natural gas boilers:

3 boilers (pre subpart Dc): 24, 24, 52 (all in MMBtu/hr)

2 boilers (subject to Dc): 49, 49 (both in MMBtu/hr; the second unit to be added at a future date)

PM emissions for 5 boilers = 11.9 tons per year (based on AP-42 emission factors)

NOx emissions for 5 boilers = 86.7 tons per year (based on AP-42 emission factors)

Emission Factors: AP-42

Recommended emission factor testing requirements = no future testing required to establish emission factors

Considerations: NSPS Subpart Dc testing requirements

Requirements:

Boilers 1 - 3 (pre Dc - built 1979) [Group 001]

Existing Indirect Heating:

Particulate Matter shall not exceed 0.6 lbs/MMBtu. Minn. R. 7011.0510, subp. 1

Opacity: shall not exceed 20%. Minn. R. 7011.0510, subp. 2

Boilers 4 & 5 (Dc applicable) [Group 002]

40 CFR Part 60, subpart Dc:

Fuel Usage is limited to natural gas only,

Record keeping of fuel usage for each boiler on a monthly basis

Periodic Monitoring = Require natural gas only,

Recordkeeping of natural gas usage,

No testing beyond Subpart Dc testing requirements

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Grain Handling [Group 003]

3 units (with emissions)

PM emissions = 6.28 tons per year (based on AP-42 factors)

PM10 emission = 4.67 tons per year (based on AP-42 factors)

Emission Factors: AP-42

Recommended emission factor testing requirements: no future testing required to establish emission factors

Requirements:

Bulk Agricultural Commodity Facilities:

Clean up of spilled commodities as required to minimize fugitive emissions to a level consistent with RACT. Minn. R. 7011.1005, subp. 1(A)

Maintain air pollution control equipment in proper operating condition and utilize the air pollution control equipment. Minn. R. 7011.1005, subp. 1(B)

Opacity: no greater than 5% for fugitive emissions from grain unloading. Minn. R. 7011.1005, subp. 3(A)

Opacity: no greater than 10% for fugitive emissions from grain loading. Minn. R. 7011.1005, subp. 3(B)

Periodic Monitoring = Sweeping (i.e., cleanup) as necessary

Product Recovery Systems [Group 004]

18 fabric filter units

PM = PM10 (assumption)

PM/PM10 emissions = 50.77 tons per year (based on 0.01 gr/dscf for all units)

throw out 1991 test data

2 test results are consistent (0.0031, 0.0032) and 1/3 of proposed 0.01 gr/dscf limit (i.e., built in safety factor of 3)

PM/PM10 Emission factor = 0.01 gr/dscf

Recommended emission factor testing requirements = no future testing required to establish emission factors.

Considerations: 2 post-1994 test results. All the data is consistent (including 1991). Margin of 3 between test results and permitted emission factor. Limited variability in process. Lack of variability in control equipment process. Fabric filter/baghouse equipment has been consistently considered reliable pollution control technology. Large overall facility PM contributor.

Requirements:

Same as periodic monitoring requirements. (It is noted that the filters are considered to be an inherent part of the process, as opposed to pollution control equipment.)

Periodic Monitoring = Daily visible emission checks,

Standard O & M of fabric filters.

Considerations: Margin of 3 between test results and permitted emission factor. No variability in tested emission rates. 2 performance tests already available for the emission group.

Half (1/2) Product Dryers/Coolers [Group 006]

7 units

PM = PM10 (assumption)

highest PM measured emission rate was 0.242 lb/ton, with test condition of a 1.98 ton/hr process flow for a 2.0 ton/hr unit design capacity.

PM measured emission rate results (0.242, 0.203, 0.222) [*see previous discussion of test results]

Sum of unit's PM emissions (based on 8760 hours) = 15.06 tons per year

PM/PM10 Emission Factor: 0.242 lb/ton

IPER allowable emission rate = 5.52 lb/hr versus 0.48 lb/hr performance test rate

Recommended emission factor testing requirements = 2 tests every 5 years

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Considerations: 3 existing test results. 2 very consistent, existing, test results. Medium overall facility PM contributor.

Requirements: Minnesota Industrial Process Equipment Rule

Periodic Monitoring = Daily monitor SV for excess emissions and roof top accumulations

Considerations: 2 of 3 very consistent existing performance test results. No add on emission controls.

Gun System - Single Cyclone [Group 007]

8 units

PM = PM10 (assumption)

highest PM measured emission rate was 0.727 lb/ton, with test condition of a 1.8 ton/hr process flow for a 1.8 ton/hr unit design capacity.

variability in test results (0.727, 0.0893, 0.0975, 0.177)

Sum of unit's PM emissions (based on 8760 hours) = 47.74 tons per year

PM/PM10 Emission factor = 0.727 lb/hr for all guns

Direct Heating allowable emission rate = 5.17 lb/hr versus 1.31 lb/hr performance test rate

Recommended emission factor testing requirements = 5 tests within 5 years.

Considerations: Cyclones are subject to variability in operation. Guns 3 and 8 have tested at 0.0893 and 0.177. Gun 7 test results have varied from 0.0975 to 0.727. At this time, it is uncertain whether Gun 7 alone is inconsistent or if all the untested guns are high. The Permittee has also suggested that the likely cause of the high test in 1994 was cyclone plugging from running at a high process rate for testing purposes, and that this condition would cause an alarm which would prompt action by the process operator. The annual testing is based on resolving this uncertainty, the guns inherent variability, and the guns overall high percent contribution of overall facility PM emissions.

Requirements:

Minnesota Direct Heating Equipment Rule

Periodic Monitoring = Daily monitor SV for excess emissions and roof top accumulations

Considerations: Variability in equipment (cyclone) operations and test results. Cyclone emission controls. 4 valid post-1994 performance tests.

Gun System - Double Cyclone [Group 008]

1 unit

PM = PM10 (assumption)

measured PM emission rate was 0.093 lb/ton, with test condition of a 1.83 ton/hr process flow for a 2.0 ton/hr unit design capacity.

Unit's PM emissions (based on 8760 hours) = 0.81 tons per year

PM/PM10 Emission factor: 0.093 lb/ton

Direct Heating allowable emission rate = 5.52 lb/hr versus 0.17 lb/hr performance test rate

Recommended emission factor testing requirements = 1 in 5 years

Considerations: Cyclones are inherently variable in their performance. However, the PM emissions from this unit is less than 1 ton per year. There has been 1 test for the 1 unit.

Requirements:

Minnesota Direct Heating Equipment Rule

Periodic Monitoring = Daily monitor SV for excess emissions and roof top accumulations

Considerations: Variability in equipment (cyclone) operation. Cyclone emission controls. 1 performance test for the one unit.

Puffer/Toaster Dryers/Coolers [Group 009]

5 units (2 units have 2 stacks, 1 unit has 1 stack)

PM = PM10 (assumption)

highest PM measured emission rate was 0.176 lb/ton (1/2 of combined stack 1994 result), with test condition of a 1.25 ton/hr process flow for a 2.0 ton/hr unit design capacity.

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test results (0.176, 0.116, 0.081)

Sum of unit's PM emissions (based on 8760 hours) = 13.26 tons per year

PM/PM10 Emission factor = 0.176 lb/ton (per stack)

Direct Heating allowable emission rate = 5.52 lb/hr versus 0.22 lb/hr performance test rate

Recommended emission factor testing requirements = 2 in 5 years

Considerations: 3 performance tests have been performed. One test was for a combined unit stack, which does not exist anymore. Existing test results are fairly consistent. Medium overall facility PM contribution.

Requirements:

Minnesota Direct Heating Equipment Rule

Periodic Monitoring = Daily monitor SV for excess emissions and roof top accumulations

Considerations: No add on emission controls. Existing test results are fairly consistent. 3 tests have been performed.

Sugar Coat Dryer/Cooler

8 Sugar Coat Dryers Units [Insignificant Activity]

PM measured emission rates (0.031, 0.0197)

PM = PM10 (assumption)

Sum of unit's PM emissions (based on 8760 hours) = 2.57 tons per year

highest measured emission rate = 0.031 lb/ton, with test condition of a 1.62 ton/hr process flow for a 1.6 ton/hr unit design capacity.

IPER allowable emission rate = 6.02 lb/hr versus 0.05 lb/hr performance test rate

Recommended emission factor testing requirements = no additional testing

Considerations: 2 performance tests have been performed. Both existing tests were fairly consistent. The process is consistent in that the sugar is still as a wet product at this time. Low overall facility PM contribution.

Requirements:

Minnesota Industrial Process Equipment Rule

Periodic Monitoring = Daily monitor SV for excess emissions and roof top accumulations

Considerations: No add on emission controls. 2 of 8 units already tested. Existing test results are fairly consistent. the likelihood of violation is remote given test results, process conditions, and allowable emission rates.

8 Sugar Coat Cooler Units [Group 010]

throw out 1991 and 1992 test results of 0.407 and 0.075 lb/ton, due to age of tests

1994 and 1998 measured PM emission rates (0.151, 0.0257)

Sum of unit's PM emissions (based on 8760 hours) = 12.48 tons per year

Highest measured emission rate (PM) = 0.151 lb/ton, with test condition of a 1.65 ton/hr process flow for a 2.3 ton/hr unit design capacity.

IPER allowable emission rate = 6.02 lb/hr versus 0.151 lb/hr performance test rate

Measured PM10 rate = 0.0093 lb/ton

Recommended emission factor testing requirements = 2 in 5 years

Considerations: 4 tests have been performed (2 pre-1994, 2 post-1994). There was variability in the existing test results. Since 1991, a total of 4 tests have been performed on the 8 units. Medium overall facility PM contribution.

Requirements:

Minnesota Industrial Process Equipment Rule

Periodic Monitoring = Daily monitor SV for excess emissions and roof top accumulations

Considerations: No add on emission controls. Since 1994, 2 of 8 units performance tested.

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Retro Dryers [Insignificant Activity]

2 retro dryers, #3, #9, & #10 mill room dryers (assumption is that the point of retro dryer in process, for moisture, is representative of pellet dryer and mill room dryers)

PM = PM10 (assumption)

measured PM emission rate = 0.026 lb/ton, with test condition of a 2.32 ton/hr process flow for a 2.4 ton/hr unit design capacity.

Sum of unit's PM emissions (based on 8760 hours) = 3.0 tons per year

PM/PM10 Emission factor = 0.026 lb/ton

IPER allowable emission rate = 6.18 lb/hr versus 0.06 lb/hr performance test rate Recommended
emission factor testing requirements = 1 in 5 years (to verify that the mill room dryer is valid for the retro dryer)

Considerations: 1 tests have been performed for the 5 units. One additional test to confirm the 0.026 for the retro dryer and one additional test for a mill room dryer to confirm the moisture assumption. Very low PM overall facility contribution.

Requirements:

Minnesota Industrial Process Equipment Rule

Periodic Monitoring = Daily monitor SV for excess emissions and roof top accumulations

Considerations: No add on emission controls. 1 of 5 units already performance tested. the likelihood of violation is remote given test results, process conditions, and allowable emission rates.

Retro Coolers [Insignificant Activity]

emission factor applies to 2 retro coolers and the #13 baked oven product oven
sole test results (0.076 lb/hr)

PM = PM10 (assumption)

Sum of unit's PM emissions (based on 8760 hours) = 2.2 tons per year

Measured PM emission rate = 0.0327 lb/hr, with test condition of a 2.32 ton/hr process flow for a 2.4 ton/hr unit design capacity.

IPER allowable emission rate = 6.02 lb/hr versus 0.076 lb/hr performance test rate

Recommended emission factor testing requirements = 1 in 5 years (test to verify #13 baked oven product factor being valid for retro cooler)

Considerations: 1 test has been performed for the 3 units. Very low PM overall facility contribution.

Requirements:

Minnesota Industrial Process Equipment Rule

Periodic Monitoring = Daily monitor SV for excess emissions and roof top accumulations

Considerations: No add on emission controls. 1 of 3 units already performance tested. the likelihood of violation is remote given test results, process conditions, and allowable emission rates.

Vitamin Dryers [Insignificant Activity]

1 unit

PM measured emission rate = 0.030 lb/ton

PM10 measured emission rate = 0.005 lb/ton

3.5 tons/hr x 0.030 lb/ton x 4.38 x 1 unit = 0.5 tons per year (PM)

PM Emission factor = 0.030 lb/ton, with test condition of a 1.08 ton/hr process flow for a 1.25 ton/hr unit design capacity.

PM10 Emission factor = 0.005 lb/ton

IPER allowable emission rate = 4.12 lb/hr versus 0.033 lb/hr performance test rate Recommended
emission factor testing requirements = no additional testing

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Considerations: 1 test has been performed on a similar unit. Minimal overall facility PM contribution.

Requirements:

Minnesota Industrial Process Equipment Rule

Periodic Monitoring = Daily monitor SV for excess emissions and roof top accumulations

Considerations: No add on emission controls. A similar unit has already been performance tested. The likelihood of violation is remote given test results, process conditions, and allowable emission rates.

Sugar Coat Kettles/Cook Room Kettles [Insignificant Activity]

8 sugar coat kettles & 8 cook room kettles (16 total units for this group)

PM = PM10 (assumption)

PM measured emission rate = 0.073 lb/ton, with test condition of a 1.23 ton/hr process flow for a 1.2 ton/hr unit design capacity.

Sum of unit's PM emissions (based on 8760 hours) = 6.1 tons per year

PM/PM10 Emission factor = 0.073 lb/hr

IPER allowable emission rate = 4.02 lb/hr versus 0.09 lb/hr performance test rate

Recommended emission factor testing requirements = 1 in 5 years (test whichever kettle, sugar coat or cook room, has the higher mass input)

Considerations: 1 test has been performed for the 16 units. One additional test to confirm the 0.073 for the sugar coat kettles and one additional test for a cook room kettle. Low overall facility PM contribution.

Requirements:

Minnesota Industrial Process Equipment Rule

Periodic Monitoring = Daily monitor SV for excess emissions and roof top accumulations

Considerations: No add on emission controls. 1 of 16 units already performance tested. the likelihood of violation is remote given test results, process conditions, and allowable emission rates.

Sugar Concentrator [Insignificant Activity]

8 units

PM = PM10 (assumption)

PM measured emission rate = 0.016 lb/ton, with test condition of a 1.25 ton/hr process flow for a 1.2 ton/hr unit design capacity.

Sum of unit's PM emissions (based on 8760 hours) = 0.7 tons per year

PM/PM10 Emission factor = 0.016 lb/hr

IPER allowable emission rate = 4.02 lb/hr versus 0.02 lb/hr performance test rate Recommended emission factor testing requirements = no additional testing

Considerations: 1 test has been performed for the 8 units. Very low overall facility PM contribution.

Requirements:

Minnesota Industrial Process Equipment Rule

Periodic Monitoring = Daily monitor SV for excess missions and roof top accumulations

Considerations: No add on emission controls. 1 of 8 units already performance tested. the likelihood of violation is remote given test results, process conditions, and allowable emission rates.

Additional Detail on above Minnesota Industrial Process Equipment Rule, Minnesota Direct Heating Equipment Rule, daily monitoring, and testing notification schedule requirements follow.

Industrial Process Equipment Rule:

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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. 7011.035. Minn. R. 7011.0715, subp. 1(A)

Opacity: less than or equal to 20% opacity. Minn. R. 7011.0715, subp. 1(B)

Direct Heating Equipment Rule:

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. 7011.035. Minn. R. 7011.0610, subp. 1(A)

Opacity: less than or equal to 20% opacity except for one six-minute period per hour of not more than 60 percent opacity. Minn. R. 7011.0610, subp. 1(A)

Daily Monitoring:

Once daily during daylight hours while in operation, monitor rooftop and individual stack/vents (SV) within each Appendix C class as follows:

1. All SV's for each Appendix C class except GP004 and GP005 (Product Recovery System filters) shall be monitored for the presence of excess particulate matter emissions beyond what would be expected under normal operating conditions.
2. All SV's for Product Recovery System filters identified as GP004 and GP005 shall be monitored for any visible emissions.
3. All rooftop areas shall be monitored for significant dust accumulation which could reasonably be expected to become airborne and pose a nuisance condition.

Upon observation of any of the above three conditions, the Permittee shall investigate the process and implement corrective action, within 24 hours, to eliminate the visible emissions, excess particulate emissions, or significant roof dust accumulation.

Testing Notification Schedule:

- Submit test plan at least 30 days prior to performance test date.
- Notification of test date at least 30 days prior to performance test date.
- Pretest meeting 7 days prior to performance test date.
- Submit test results report within 45 days of performance test date.
- Submit microfiche report within 105 days of performance test date.

VII. FLEX CAP PERMIT TERMS AND CONDITIONS

PM/PM10 Cap Limits

Each individual PM/PM10 source will be subject to the Minnesota Industrial Process Equipment Rule (except for the boilers and grain handling units). In addition, the facility will receive a PM/PM10 facility-wide cap of 230/200 tons per year, as a 12-month rolling sum.

Note: This means that the short term limits on the facility are based on the IPER. Within 4 years of issuance of this permit, the facility must be modeled for PM10. MPCA will need to approve the proposed modeling protocol. The modeling either passes or fails. With the additional performance test results and 4-5 years of operation history under the flex cap, decisions can then be made as to adding class emission factors as permit requirements per class in the permit itself.

NOx/VOC Limits

A number of the class units burn natural gas. In order to address the changes that would result in NOx or VOC emission increases, NOx and VOC caps were added to the permit. Otherwise, an increase in VOCs associated with the PM/PM10 would not be under a similar cap. That would have meant that a state threshold VOC increase would remain subject to the usual MPCA permitting requirements. The added NOx and VOC caps will allow the Permittee greater ease and flexibility in making changes. The facility will receive a NOx facility-wide cap of 230

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tons per year, as a 12-month rolling sum. The facility also will receive a VOC facility-wide cap of 150 tons per year, as a 12-month rolling sum.

As based on conservation with the Permittee, is noted that CO and SO_x were not capped. Based on the potential increases from the class units, anticipated modifications to or new class units will not trip MPCA permitting requirements for these pollutants. For example, an insignificant modification for CO, when added to the current PTE (hypothetically) would not make it major for NSR. The addition of a new class unit, will not trip the state minor amendment thresholds. If changes to the facility would trip a CO or SO_x state amendment threshold, however, a permit amendment would be required.

Other Limits

The facility shall not add equipment that would subject it to the major source definition under 40 CFR 52.21(b)(1)(i)(a). In particular, the facility shall not have more than 249 MMBtu/hr of combined rated heat input capacity into fossil fuel-fired boilers.

Applicability of the Cap

The PM/PM₁₀/VOC/NO_x emissions caps are applicable to the entire facility. In other words, the cap includes emissions from each individual PM/PM₁₀/VOC/NO_x source. This includes all the insignificant activities from Minn. R. 7007.1300, subps. 3 and 4. This also includes insignificant modifications under Minn. R. 7007.1250, subps. 1 & 2. This does not include those insignificant activities identified in Minn. R. 7007.1300, subp. 2, (a list that is consistent with EPA's list of trivial activities from White Paper 1).

Cap Compliance Demonstration

a. PM/PM₁₀

As a practical manner, the overall PM/PM₁₀ facility cap needs to be federally enforceable. To demonstrate compliance with the cap, the following equation shall be used:

$$\begin{aligned} \text{Sum of: } & [\text{Individual unit's equipment emission rate (lb/ton)} \times \\ & \text{individual unit's design capacity (tons)} \times \\ & 8760 \text{ hours conversion}] \\ & = \text{emissions.} \end{aligned}$$

It is noted that the unit emission rate's were selected in lb/ton. This emission rate when multiplied times the unit's design capacity would account for the range of design capacities in a particular group. The use of an emission factor in lb/hr would not allow for such.

By a significant factor, the measured unit emission factors have not violated the Minnesota Industrial Process Equipment Rule. Subsequent testing for emission factors, as previously discussed, will also be used to verify the unit's compliance with the IPER.

Some of the individual emission units will be tested to both verify the applicable emission factor, and to verify compliance with the IPER.

In addition, recordkeeping of the units hours of operation will not be required. This requirement is being waived, because it can be demonstrated that the overall emission limit caps can be met using 8760 hours of operation for all units per year. Hence, the compliance demonstration for these units is based on potential emissions.

It is also noted that the June 13, 1989 EPA "Guidance Memorandum on Limiting Potential to Emit" was reviewed for its application to this permit. The memorandum provides, in part:

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“To appropriately limit potential to emit consistent with the opinion in Louisiana-Pacific all permits . . . must contain a production or operational limitation in addition to the emission limitation in cases where the emission limitation does not reflect the maximum emissions of the source operating at full capacity without pollution control equipment. Restrictions on production or operation will limit potential to emit include limitations on raw materials consumed, fuel combusted, hours of operation, or conditions which specify that the source must install and maintain controls that reduce emissions to a specified emission rate or to a specified efficiency level. . . .

An emission limitation alone would limit potential to emit only when it reflects the absolute maximum that the source could emit without controls or other operational restrictions. When a permit contains no limits on capacity utilization or hours of operation, the potential to emit calculation should assume operation at maximum design or achievable capacity (whichever is higher) and continuous operation (8760 hours per year).” (page B-5)

In applying this memorandum to this permit, the following is provided. In this permit, all of the product recovery fabric filter equipment is made federally enforceable. This is done with a 0.01 gr/dscf limit. All the remaining PM/PM10 emissions are not controlled. Emission determination for the uncontrolled sources is based on the use of performance factors. The remaining PM/PM10 emission classes compliance demonstration reflects the use of performance tests conducted at maximum achievable capacity. The sum of the fabric filter emissions and remaining PM/PM10 emissions, all at continuous operation (8760 hours per year), results in a total facility emissions of 190.4 tons per year. This is less than 250 tons per year. Accordingly, the total facility cap of 230 tons per year does not need to limit its potential to emit with production or operational limits.

It is also noted that many of the group’s individual emission limits are the IPER. Moreover, the sum of the group’s allowable emissions would exceed 250 tons per year. However, this level of emissions is not feasible as demonstrated by the use of performance test results and 8760 hours per year.

b. VOCs

To demonstrate compliance with the VOC cap, the following is to be performed. VOC emissions resulting from natural gas burning are calculated. VOCs contained in food additives are to be summed. And process VOCs (with emission factors) are to be calculated. The sum of these three items results in the total VOCs.

c. NOx

To demonstrate compliance with NOx, AP-42 factors are to be multiplied times the monthly amount of natural gas purchased.

Emission factor testing and revision

Emission factor testing will be conducted as discussed above. The initial emission factors will be included in the Delta permit, as an appendix. Additional testing may have the following outcome:

If the subsequent test result is higher than the current emission factor, the highest test result becomes the new emission factor.

All the testing must be done in conformance with MPCA procedures and approval. All test results must be approved by the MPCA

An approval letter must be provided by the MPCA. The approval letter will contain the new emission factor. The MPCA approval letter will be stored in Delta. The issuance of a new Title V permit will then incorporate the most recently approved emission factor. If the permit is amended for some other reason, the appendix could be updated at that time. The factor(s) will then be entered into the permit appendix.

The use of the updated emission factor(s) shall commence upon receipt of written notification from the MPCA that the performance testing result(s) were valid.

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Emission Factor Testing for New Units that Already Have a Specified Class

Some new units are subject to performance testing within 180 days after installation or modification. The following new or modified units included in a particular class will be subject to an initial performance test:

- 1) A new unit has a higher capacity than any unit already tested in its class; or
- 2) A new unit is outside of a class and is not an insignificant activity.

It is noted that the minimum and maximum capacities in the Permit Appendix D have been decreased and increased by 25% each, respectively. The emission factors are based on the highest performance test result. The emission factor is taken in lb/ton. It is assumed that a smaller unit's emissions in lb/ton will not exceed a larger unit's emissions. A deviation of plus or minus 25% should result in the same emissions. This will allow the Permittee to not have to conduct a performance test for a slightly smaller or bigger equipment piece.

The performance test result will be included in the review of the class emission factor.

Pre-authorized equipment installation, within the life of the permit

a. Defining what is pre-authorized:

This permit preauthorizes changes at the facility. This permit allows emission units to be added, deleted, and modified. The units to be added or modified must belong to an existing class or be an insignificant activity. The permit will require the facility to keep records of the changes they make under their cap. In other words, the Permittee will need to document new, modified and deleted units. The permit language provides:

“The Permittee may add or modify emission units to the stationary source. The addition of any new or modification of any existing emission unit must either:

- 1) qualify as an insignificant activity listed in Minn. R. 7007.1300, subp. 2; subp. 3; or subp. 4 (natural gas fuel burning units);
- 2) qualify as an insignificant modification under Minn. R. 7007.1250, subps. 1 and 2;
- 3) be within a class categorically described in Appendix C and able to calculate emission changes according to the procedure specifically provided in this permit. This includes the fuel burning emission units from the Appendix C classes.
- 4) Make changes in VOC additives that are to be accounted for in the VOC 12-month rolling sum.

If the addition of or modification of existing emission units do not fit into the above two categories, the Permittee must follow the permit amendment requirements provided in Minn. R. 7007.1150 through 7007.1500.” Title I Condition: to avoid classification as a major source under 40 CFR 52.21; Minn. R. 7007.0800, subp.2; Minn. R. 7007.1150 through Minn. R. 7007.1500.

An example of an insignificant modification could include a trial run of an equipment piece for a pilot test.

b. Compliance tracking:

The compliance plan will specify how the Permittee will include new units or processes in the calculations to show compliance with the Flex cap. Permit language will provide:

“Maintain records describing any:

- 1) addition of new units;
- 2) modifications of existing units; and,
- 3) deletion of any existing units.

Records do not have to be maintained for the addition, modification, or deletion of any insignificant activities listed in Minn. R. 7007.1300, subp. 2. Include in the records the emission increases or decreases resulting from each of the changes.” Minn. R. 7007.0800, subp. 5(B)

Deletion of Emission Units: The Permittee may delete emission units to the stationary source.

c. Citation for emission cap limits:

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The permit contains emission caps to keep the facility PSD NSR non-major. All emissions are to be included or accounted for - significant and insignificant (except insignificant activities listed in Minn. R. 7007.1300, subp. 2), existing and new. The citation for the limit will be:

“Title I Condition: Limit to avoid classification as major source or modification under 40 CFR 52.21”

d. Updating the MPCA records on the facility for inspections

Permit language will provide that the Permittee notify the MPCA, annually, of any changes made and to include it as part of the compliance certification. This provides the MPCA with a way to track what changes have been made since the permit issuance. The permit language will provide:

“Equipment Inventory List: the Permittee shall maintain a written list that identifies all emission units on site except those insignificant activities listed as insignificant activities in Minn. R. 7007.1300, subp. 2. The list shall include the type of equipment; identifying number; dates of installation; modification and/or reconstruction; and reference to applicable Standards of Performance for New Stationary Sources (40 CFR pt. 60).”

Title I Condition: to avoid classification as a major source under 40 CFR 52.21; Minn. R. 7007.0800, subp. 5

“Updating the Equipment Inventory List: the list shall be updated to include any new, modified, or relocated equipment before making a change.” Title I Condition: to avoid classification as a major source under 40 CFR 52.21; Minn. R. 7007.0800, subp. 5

“Equipment Inventory List: due 30 days after end of each calendar year following Permit issuance to be submitted with the Compliance Certification. This report shall describe changes made to the stationary source without applying for an amendment.” Title I Condition: to avoid classification as a major source under 40 CFR 52.21

e. Insignificant activities

All insignificant activities (other than Minn. R. 7007.1300, subp. 2; packaging inks; and cleaning chemicals) will be tracked in this permit and included in the cap calculations.

Calculations

By the 30th day of each month, the Permittee shall calculate emissions for the previous month as follows:

- a. For each individual Appendix C class emission unit, calculate PM, PM10, and VOC emissions:
Emissions = Emission factor X unit design capacity X 8760/12)

Where emission factor = taken from Appendix B or a subsequently MPCA approved factor

Unit design capacity = rated design capacity of each unit

- b. For each VOC containing food additive (not already accounted for in Appendix B emission factors), multiply the percent VOC content times the quantity of each food additive used.
c. Sum the total class monthly emissions of each pollutant and VOC monthly emissions.
d. For natural gas, calculate PM, PM10, NOx, and VOC emissions:

Emissions = natural gas emissions factor X monthly natural gas usage

Where monthly natural gas usage = total natural gas quantity purchased by the facility for the previous month.

- e. For insignificant modifications not already included in previous calculations a – d, emissions = (the appropriate AP-42 factors or calculation method used for that modification) X the unit design capacity X (8760/12)

Calculate the total facility monthly emissions of each pollutant by summing the monthly emissions for the above individual classes and additives (c); natural gas (d); insignificant activities listed in Minn. R. 7007.1300, subp. 3 or 4 that have not already been included in (c) or (d), and the insignificant modifications that have not already been included in (c) or (d).

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Calculate the 12-month rolling sum emissions for each pollutant by summing the total facility monthly emissions and add it to the total from the previous 11 months.

“If a particular unit that has been removed was previously included in the calculations as required in this permit, emissions from that particular unit shall not be included in the calculations in the subsequent month to its removal and henceforth.”

Title I Condition: to avoid classification as a major source under 40 CFR Section 52.21

Conditions in the permit for new units triggering NSPS, NESHAP

The Permittee wishes to add an additional natural gas boiler sometime during the life of the permit. The new boiler will be subject to the conditions provided in the permit for the existing natural gas boiler, which is subject to subpart Dc.

Any other unit that would trigger NSPS or NESHAP will require a major amendment.

Conditions in the permit for EAW

The Permittee will not be allowed to increase the overall emissions by 99 tons per year, with the use of this permit. This restriction will provide that an EAW review will not be triggered during the life of this permit.

“Environmental Review: the Permittee shall not begin construction of any single project or projects that are connected or phased, which will cause a total increase in actual emissions of greater than 99 tons per year for any criteria pollutant, without first getting a permit amendment to authorize the project.

Connected and phased have meanings defined in Minn. R. 4410.0200 subps. 9b and 60. The Permittee shall not begin construction of any projects which is listed in Minn. R. 4410.4300 or Minn. R. 4410.4400 without first obtaining a permit amendment to authorize the project. Such project(s) may require the completion of an Environmental Assessment Worksheet or an Environmental Impact Statement prior to issuance of the amendment.” Minn. R. 4410.400 and Minn. R. 4410.4400

As based on factors approved for use in this permit, the Permittee has provided actual 1998 emissions:

PM = 93.5 tons;
PM10 = 78.6 tons;
VOC = 46.9 tons;
NOx = 30.0 tons; and,
CO = 25.2 tons.

When an Amendment is Needed

Any anticipated, proposed changes, from class units, will not be covered by Minn. R. 7007.1150 - 7007.1500 for amendments. For an equipment piece not covered by a class, an appropriate permit amendment evaluation would be required.

The Permittee may use the procedures of Minn. R. 7007.1150 - 7007.1500, at its discretion, for a permit amendment. This is provided that the new emissions are accounted for in the existing cap and the changes will not cause any conditions in this permit to be violated.

Any change to an applicability limit, compliance determination method, or reporting requirements requires a major amendment and a public notice period.

Term of the Permit

The term of this permit is for 5 years.

Other Conditions

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New or modified equipment is subject to semi-annual deviation reporting requirements and annual compliance certification requirements.

Labeling Requirements: the Permittee shall label all emission units at the stationary source that are in groups with their respective EU and GP numbers within 180 days after permit issuance. The EU and GP number labels on each emission unit shall be permanent and readily visible from a distance. This labeling shall be updated to reflect any new, modified, or changed equipment within 180 days from the equipment change.” Minn. R. 7007.0800, subp. 2

Fuel Type (for entire facility): natural gas only. Title I Condition: to avoid classification as a major source under 40 CFR 52.21.

Test Method Selection

The performance test methodology will be addressed during the test plan review. However, for PM/PM10, in general, testing methods, the following is provided:

For PM10: use EPA test methods 201A/202 as the preferred test method. If it is not feasible to use method 201A, due to considerations such as excessive moisture content or duct size, then use EPA test methods 5/202.

For PM: use EPA test methods 5/202

VIII. Attachments

1. Emission test summary results
2. New GI-07 forms (reflecting values from revised AP-42 natural gas emission factors) vs. original GI-07 form (with previous AP-42 factors as basis for calculations).

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