

**AIR EMISSION PERMIT NO. 16300017- 001**

**IS ISSUED TO**

**3M COTTAGE GROVE ABRASIVE SYSTEMS DIVISION**

10746 Innovation Road, Building 112  
Cottage Grove, Washington County, MN 55016

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 | April 17, 1995; updated May 21, 2002 |

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

**Permit Type:** Federal; Part 70

**Issue Date:** October 31, 2003

**Expiration:** October 31, 2008

All Title I Conditions do not expire.

---

Ann M. Foss  
Major Facilities Section Manager  
Majors and Remediation Division

for Sheryl A. Corrigan  
Commissioner  
Minnesota Pollution Control Agency

## **TABLE OF CONTENTS**

**Notice to the Permittee**

**Permit Shield**

**Facility Description**

**Table A: Limits and Other Requirements**

**Table B: Submittals**

**Appendices: Attached and Referenced in Table A**

**NOTICE TO THE PERMITTEE:**

Your stationary source may also 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. Subject to the limitations of Minn. R. 7007.1800 and 7017.0100, subp. 2, notwithstanding the conditions of this permit specifying compliance practices for applicable requirements, any person (including the Permittee) may also use other credible evidence to establish compliance or noncompliance with applicable requirements.

**FACILITY DESCRIPTION:**

This facility processes mineral materials into powders of various sizes for application onto abrasive products manufactured at other facilities.

Building 112 (Abrasives Systems) together with Building 19 (Sintered Abrasives) and Buildings 74, 101, 110 (Specialty Additives) constitutes a single stationary source for federal New Source Review regulations (all in SIC 32xx). Separate Part 70 permits are issued for Building 112 (this permit) and for Buildings 74, 101, 110 and Building 19.

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

10/31/03

Facility Name: 3M - Cottage Grove Abrasive Systems Div  
 Permit Number: 16300017 - 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   |
|--|--|
| EMISSION CAP LIMITS, PROVISIONS, AND REQUIREMENTS  | hdr  |
| <p>Total Particulate Matter: less than 100 tons/year using 12-month Rolling Sum to be calculated by the 15th day of each month for the previous 12-month period as described later in this permit.</p> <p>All Total Particulate Matter (TPM)-emitting equipment is subject to this limit. If the Permittee replaces any TPM-emitting equipment, adds new TPM-emitting equipment, or modifies the existing equipment, such equipment is subject to this permit limit and all of the requirements under EMISSION CAP LIMITS listed as Total Facility requirements. Prior to making the change, the Permittee shall apply for and obtain the appropriate permit amendment. The Permittee is not required to repeat the calculations described in Minn. R. 7007.1200, subp. 2.</p> <p>A permit amendment is needed regardless of the emissions change if the change will be subject to new applicable requirements or requires revisions to the limits or monitoring and recordkeeping in this permit. Changes to existing monitoring, recordkeeping or reporting requirements require a major amendment.</p>                            | <p>Title I Condition: limit to avoid classification as a major source under 40 CFR Section 52.21</p> |
| <p>Particulate Matter &lt; 10 micron: less than 100 tons/year using 12-month Rolling Sum to be calculated by the 15th day of each month for the previous 12-month period as described later in this permit.</p> <p>All Particulate Matter less than 10 microns (PM10)-emitting equipment is subject to this limit. If the Permittee replaces any PM10-emitting equipment, adds new PM10-emitting equipment, or modifies the existing equipment, such equipment is subject to this permit limit and all of the requirements under EMISSION CAP LIMITS listed as Total Facility requirements. Prior to making the change, the Permittee shall apply for and obtain the appropriate permit amendment. The Permittee is not required to repeat the calculations described in Minn. R. 7007.1200, subp. 2.</p> <p>A permit amendment is needed regardless of the emissions change if the change will be subject to new applicable requirements or requires revisions to the limits or monitoring and recordkeeping in this permit. Changes to existing monitoring, recordkeeping or reporting requirements require a major amendment.</p> | <p>Title I Condition: limit to avoid classification as a major source under 40 CFR Section 52.21</p> |
| <p>Sulfur Dioxide: less than 90 tons/year using 12-month Rolling Sum to be calculated by the 15th day of each month for the previous 12-month period as described later in this permit.</p> <p>All sulfur dioxide (SO2)-emitting equipment is subject to this limit. If the Permittee replaces any SO2-emitting equipment, adds new SO2-emitting equipment, or modifies the existing equipment, such equipment is subject to this permit limit and all of the requirements under EMISSION CAP REQUIREMENTS listed as Total Facility requirements. Prior to making the change, the Permittee shall apply for and obtain the appropriate permit amendment. The Permittee is not required to repeat the calculations described in Minn. R. 7007.1200, subp. 2.</p> <p>A permit amendment is needed regardless of the emissions change if the change will be subject to a new applicable requirements or requires revisions to the limits or monitoring and recordkeeping in this permit. Changes to existing monitoring, recordkeeping or reporting requirements require a major amendment.</p>   | <p>Title I Condition: limit to avoid classification as a major source under 40 CFR Section 52.21</p> |

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

10/31/03

Facility Name: 3M - Cottage Grove Abrasive Systems Div

Permit Number: 16300017 - 001

|   |  |
|---|--|
| <p>Nitrogen Oxides: less than 110 tons/year using 12-month Rolling Sum to be calculated by the 15th day of each month for the previous 12-month period as described later in this permit.</p> <p>All NOx-emitting equipment is subject to this limit. If the Permittee replaces any NOx-emitting equipment, adds new NOx-emitting equipment, or modifies the existing equipment, such equipment is subject to this permit limit and all of the requirements UNDER EMISSION CAP LIMITS listed as Total Facility requirements. Prior to making the change, the Permittee shall apply for and obtain the appropriate permit amendment. The Permittee is not required to repeat the calculations described in Minn. R. 7007.1200, subp. 2.</p> <p>A permit amendment is needed regardless of the emissions change if the change will be subject to a new applicable requirements or requires revisions to the limits or monitoring and recordkeeping in this permit. Changes to existing monitoring, recordkeeping or reporting requirements require a major amendment.</p>           | <p>Title I Condition: limit to avoid classification as a major source under 40 CFR Section 52.21</p>                   |
| <p>Volatile Organic Compounds: less than 90 tons/year using 12-month Rolling Sum to be calculated by the 15th day of each month for the previous 12-month period as described later in this permit.</p> <p>All VOC-emitting equipment is subject to this limit. If the Permittee replaces any VOC-emitting equipment, adds new VOC-emitting equipment, or modifies the existing equipment, such equipment is subject to this permit limit and all of the requirements UNDER EMISSION CAP LIMITS listed as Total Facility requirements. Prior to making the change, the Permittee shall apply for and obtain the appropriate permit amendment. The Permittee is not required to repeat the calculations described in Minn. R. 7007.1200, subp. 2.</p> <p>A permit amendment is needed regardless of the emissions change if the change will be subject to a new applicable requirements or requires revisions to the limits or monitoring and recordkeeping in this permit. Changes to existing monitoring, recordkeeping or reporting requirements require a major amendment.</p> | <p>Title I Condition: limit to avoid classification as a major source under 40 CFR Section 52.21</p>                   |
| <p>Daily Recordkeeping, NOx: On each day of operation, the Permittee shall calculate, record, and maintain records of the total quantity of all materials processed or used at the facility which result in emission of NOx, or hours of operation of NOx emitting units. For units using a CEM to measure NOx emissions, CEM data satisfies this requirement. This shall be based on usage logs.</p>   | <p>Title I Condition: recordkeeping for limit to avoid classification as a major source under 40 CFR Section 52.21</p> |
| <p>Monthly Recordkeeping -- NOx Emissions.<br/>By the 15th of each month, the Permittee shall calculate and record the following:<br/>1) The total materials used or processed which result in NOx emissions, or the hours of operation for NOx emitting equipment, for the previous calendar month using the daily records.<br/>2) The total NOx emissions for the previous month.<br/>3) The 12 month rolling sum NOx emissions for the previous 12 month period by summing the monthly NOx emissions data for the previous 12 months.</p>  | <p>Minn. R. 7007.0800, subp. 4 and 5</p>   |
| <p>Recordkeeping for PM, PM10, SO2 and VOC: When the facility-wide actual emissions (12-month rolling sum) equal 50 tons/year or more for PM, PM10, SO2, or VOC, the Permittee shall submit a major amendment application with proposed daily recordkeeping requirements for the actual emission of these pollutants.</p>   | <p>Title I Condition: recordkeeping for limit to avoid classification as a major source under 40 CFR Section 52.21</p> |
| <p>Insignificant Activities: The Permittee shall include the emissions from Insignificant Activities as listed in Minn. R. 7007.1300 in the monthly calculation of emissions.</p>   | <p>Title I Condition: limit to avoid classification as a major source under 40 CFR Section 52.21</p>                   |
| <p><b>OPERATIONAL REQUIREMENTS</b></p>  | <p>hdr</p>   |
| <p>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.</p>  | <p>Minn. R. 7011.0020; 40 CFR Section 52.1222</p>  |
| <p>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.</p>  | <p>Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, subp. 16(J)</p>  |
| <p>Operation and Maintenance Plan: Retain at the stationary source an operation and maintenance plan for all air pollution control equipment. At a minimum, the O &amp; M plan shall identify all air pollution control equipment and shall include a preventative maintenance program for that equipment, a description of (the minimum but not necessarily the only) corrective actions to be taken to restore the equipment to proper operation to meet applicable permit conditions, a description of the employee training program for proper operation and maintenance of the control equipment, and the records kept to demonstrate plan implementation.</p>   | <p>Minn. R. 7007.0800, subp. 14 and Minn. R. 7007.0800, subp. 16(J)</p>  |
| <p>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.</p>  | <p>Minn. R. 7011.0150; 40 CFR Section 52.1222</p>  |

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

10/31/03

Facility Name: 3M - Cottage Grove Abrasive Systems Div

Permit Number: 16300017 - 001

|   |  |
|---|--|
| Noise: The Permittee shall comply with the noise standards set forth in Minn. R. 7030.0010 to 7030.0080 at all times during the operation of any emission units. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.  | Minn. R. 7030.0010 - 7030.0080   |
| Inspections: The Permittee shall comply with the inspection procedures and requirements as found in Minn. R. 7007.0800, subp. 9(A).   | Minn. R. 7007.0800, subp. 9(A);<br>40 CFR Section 70.6(c)(2)             |
| The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16.  | Minn. R. 7007.0800, subp. 16;<br>40 CFR Section 70.6(a)(4), (5), and (6) |
| <b>MONITORING REQUIREMENTS</b>  | hdr  |
| Monitoring Equipment Calibration: Annually calibrate all required monitoring equipment (any requirements applying to continuous emission monitors are listed separately in this permit).  | Minn. R. 7007.0800, subp. 4(D);<br>40 CFR Section 70.6(a)(3)(i)(C)       |
| Operation of Monitoring Equipment: Unless otherwise noted in Tables A or B, monitoring a process or control equipment connected to that process is not necessary during periods when the process is shutdown, or during checks of the monitoring systems, such as calibration checks and zero and span adjustments. If monitoring records are required, they should reflect any such periods of process shutdown or checks of the monitoring system.  | Minn. R. 7007.0800, subp. 4(D);<br>40 CFR Section 70.6(a)(3)(i)(C)       |
| <b>RECORDKEEPING</b>  | hdr  |
| Recordkeeping: Retain all records at the stationary source for a period of five (5) years from the date of monitoring, sample, measurement, or report. Records which must be retained at this location include all calibration and maintenance records, all original recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. Records must conform to the requirements listed in Minn. R. 7007.0800, subp. 5(A).   | Minn. R. 7007.0800, subp. 5(C);<br>40 CFR Section 70.6(a)(3)(ii)(B)      |
| Recordkeeping: Maintain records describing any insignificant modifications (as required by Minn. R. 7007. 1250, subp. 3), including records of the emissions resulting from those changes.  | Minn. R. 7007. 0800, subp. 5(B)  |
| Recordkeeping: Maintain records describing any changes contravening permit terms (as required by Minn. R. 7007.1350 subp. 2), including records of the emissions resulting from those changes.  | Minn. R. 7007. 0800, subp. 5(B);<br>40 CFR Section 70.4(b)(12)           |
| <b>REPORTING/SUBMITTALS</b>   | 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.<br><br>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;<br>40 CFR Section 52.1222                   |
| 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.<br><br>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;<br>40 CFR Section 52.1222                   |
| 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;<br>40 CFR Section 52.1222                   |

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

10/31/03

Facility Name: 3M - Cottage Grove Abrasive Systems Div

Permit Number: 16300017 - 001

|  |  |
|--|--|
| <p>Notification of Deviations Endangering Human Health or the Environment Report: Within 2 working days of discovery, notify the Commissioner in writing of any deviation from permit conditions which could endanger human health or the environment. Include the following information in this written description:</p> <ol style="list-style-type: none"> <li>1. the cause of the deviation;</li> <li>2. the exact dates of the period of the deviation, if the deviation has been corrected.</li> <li>3. whether or not the deviation has been corrected;</li> <li>4. the anticipated time by which the deviation is expected to be corrected, if not yet corrected; and</li> <li>5. steps taken or planned to reduce, eliminate, and prevent reoccurrence of the deviation.</li> </ol>  | <p>Minn. R. 7019.1000, subp. 1;<br/>40 CFR Section 52.1222</p>                               |
| <p>Application for Permit Amendment: If a permit amendment is needed, submit an application in accordance with the requirements of Minn. R. 7007.1150 through Minn. R. 7007.1500. Submittal dates vary, depending on the type of amendment needed.</p>   | <p>Minn. R. 7007.1150 through Minn. R. 7007.1500;<br/>40 CFR Section 70.7(d) and 70.7(e)</p> |
| <p>Extension Requests: The Permittee may apply for an Administrative Amendment to extend a deadline in a permit by no more than 120 days, provided the proposed deadline extension meets the requirements of Minn. R. 7007.1400, subp. 1(H). This provision does not apply to applications for permit reissuance.</p>  | <p>Minn. R. 7007.1400, subp. 1(H);<br/>40 CFR Section 70.7(d)(1)(vi)</p>                     |
| <p>Emission 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.</p>   | <p>Minn. R. 7019.3000 through Minn. R. 7019.3010; 40 CFR Section 52.1222</p>                 |
| <p>Emission Fees: due 60 days after receipt of an MPCA bill.</p>   | <p>Minn. R. 7002.0005 through Minn. R. 7002.0095</p>   |
| <p>The Permittee is required to submit a Risk Management Plan (RMP) under the federal rule, 40 CFR pt. 68. Each owner or operator of a stationary source, at which a regulated substance is present above a threshold quantity in a process, shall design and implement an accidental release prevention program. A complete RMP must be submitted to the RMP Reporting Center, PO Box 3346, Merrifield, VA 22116. RMP submittal information may be obtained at <a href="http://www.epa.gov/swercepp">http://www.epa.gov/swercepp</a> or by calling 1-800-424-9346. These requirements must be complied with no later than the latest of the following dates: (1) June 21, 1999; (2) Three years after the date on which a regulated substance is first listed under 40 CFR Section 68.130; or (3) The date on which a regulated substance is first present above a threshold quantity in a process.</p> | <p>40 CFR pt. 68</p>   |

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

10/31/03

Facility Name: 3M - Cottage Grove Abrasive Systems Div

Permit Number: 16300017 - 001

**Subject Item:** EU 001 Batch Oven 1**Associated Items:** SV 001 Oven 1

| <b>What to do</b>   | <b>Why to do it</b>   |
|---|---|
| Total Particulate Matter: less than or equal to 0.24 lbs/hour     | Title I Condition: limit to avoid classification as a major source or modification under 40 CFR Section 52.21; most stringent, meets limit set by Minn. R. 7011.0610, subp. 1(A)(1) |
| Opacity: less than or equal to 20 percent opacity                 | Minn. R. 7011.0610, subp. 1(A)(2)   |
| Nitrogen Oxides: less than or equal to 4.4 lbs/hour               | Title I Condition: limit to avoid classification as a major source or modification under 40 CFR Section 52.21   |
| Fuels Allowed: Natural gas or liquified petroleum gases (propane) | Minn. R. 7007.0800, subp. 4   |



**TABLE A: LIMITS AND OTHER REQUIREMENTS**

10/31/03

Facility Name: 3M - Cottage Grove Abrasive Systems Div

Permit Number: 16300017 - 001

**Subject Item:** EU 002 Batch Oven 2**Associated Items:** SV 002 Oven 2

| <b>What to do</b>   | <b>Why to do it</b>   |
|---|---|
| Total Particulate Matter: less than or equal to 0.24 lbs/hour     | Title I Condition: limit to avoid classification as a major source or modification under 40 CFR Section 52.21; most stringent, meets limit set by Minn. R. 7011.0610, subp. 1(A)(1) |
| Nitrogen Oxides: less than or equal to 4.4 lbs/hour               | Title I Condition: limit to avoid classification as a major source or modification under 40 CFR Section 52.21   |
| Opacity: less than or equal to 20 percent opacity                 | Minn. R. 7011.0610, subp. 1(A)(2)   |
| Fuels Allowed: Natural gas or liquified petroleum gases (propane) | Minn. R. 7007.0800, subp. 4   |

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

10/31/03

Facility Name: 3M - Cottage Grove Abrasive Systems Div

Permit Number: 16300017 - 001

**Subject Item:** EU 003 **Crushing, Screening & Material Transfer**

**Associated Items:** CE 001 Cartridge filter

SV 003 Small Cartridge Filter

| What to do   | Why to do it   |
|--|--|
| EMISSION LIMITS  | hdr  |
| Total Particulate Matter: less than or equal to 2.6 lbs/hour   | Title I Condition: limit to avoid classification as a major source or modification under 40 CFR Section 52.21; most stringent, meets limit set by Minn. R. 7011.0715, subp. 1(A) |
| Opacity: less than or equal to 20 percent opacity  | Minn. R. 7011.0715, subp. 1(B)   |
| OPERATIONAL AND MONITORING REQUIREMENTS  | hdr  |
| The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for Total Particulate Matter: greater than or equal to 99 percent control efficiency  | Title I Condition: control efficiency related to Title I limit   |
| The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for Particulate Matter < 10 micron: greater than or equal to 99 percent control efficiency  | Title I Condition: control efficiency related to Title I limit   |
| Pressure Drop: greater than or equal to 0.5 inches of water column and less than or equal to 8 inches of water column across CE001, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3, based on the values recorded during the most recent MPCA approved performance test where compliance was demonstrated.   | Title I Condition: operational limit for Title I emission limit; Minn. R. 7007.0800, subp. 4(B)  |
| Recordkeeping of Pressure Drop: The Permittee shall record the pressure drop once every 24 hours when in operation. The Permittee shall record the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit.  | Title I Condition: recordkeeping for Title I limit; Minn. R. 7007.0800, subp. 5  |
| Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur:<br>- visible emissions are observed;<br>- the recorded pressure drop is outside the required operating range; or<br>- CE001 or any of its components are found during the inspections to need repair. Corrective actions shall return the pressure drop to within the permitted range and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for CE001. The Permittee shall keep a record of the type and date of any corrective action taken. | Minn. R. 7007.0800, subp. 4, 5, and 14   |
| Monitoring Equipment: The Permittee shall install and maintain the necessary monitoring equipment for measuring and recording pressure drop as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when CE001 is in operation.  | Minn. R. 7007.0800, subp. 4  |
| Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections.  | Minn. R. 7007.0800, subp. 4, 5 and 14  |
| The Permittee shall operate and maintain CE001 in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.  | Minn. R. 7007.0800, subp. 14   |

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

10/31/03

Facility Name: 3M - Cottage Grove Abrasive Systems Div

Permit Number: 16300017 - 001

**Subject Item:** EU 004 Crushing, Screening & Material Transfer

**Associated Items:** CE 002 Cartridge filter

SV 004 Large Cartridge Filter

| What to do   | Why to do it   |
|--|--|
| EMISSION LIMITS  | hdr  |
| Total Particulate Matter: less than or equal to 1.0 lbs/hour   | Title I Condition: limit to avoid classification as a major source or modification under 40 CFR Section 52.21; most stringent, meets limit set by Minn. R. 7011.0715, subp. 1(A) |
| Opacity: less than or equal to 20 percent opacity  | Minn. R. 7011.0715, subp. 1(B)   |
| OPERATIONAL AND MONITORING REQUIREMENTS  | hdr  |
| The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for Total Particulate Matter: greater than or equal to 99 percent control efficiency  | Title I Condition: control efficiency related to the Title I limit   |
| The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for Particulate Matter < 10 micron: greater than or equal to 99 percent control efficiency  | Title I Condition: control efficiency related to Title I limit   |
| Pressure Drop: greater than or equal to 0.5 inches of water column and less than or equal to 8 inches of water column across CE002, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3, based on the values recorded during the most recent MPCA approved performance test where compliance was demonstrated.   | Title I Condition: operational limit for Title I Condition; Minn. R. 7007.0800, subp. 4(B)   |
| Recordkeeping of Pressure Drop: The Permittee shall record the pressure drop once every 24 hours when in operation. The Permittee shall record the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit.  | Title I Condition: recordkeeping for Title I limit; Minn. R. 7007.0800, subp. 5  |
| Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur:<br>- visible emissions are observed;<br>- the recorded pressure drop is outside the required operating range; or<br>- CE002 or any of its components are found during the inspections to need repair. Corrective actions shall return the pressure drop to within the permitted range and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for CE002. The Permittee shall keep a record of the type and date of any corrective action taken. | Minn. R. 7007.0800, subp. 4, 5, and 14   |
| Monitoring Equipment: The Permittee shall install and maintain the necessary monitoring equipment for measuring and recording pressure drop as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when CE002 is in operation.  | Minn. R. 7007.0800, subp. 4  |
| Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections.  | Minn. R. 7007.0800, subp. 4, 5 and 14  |
| The Permittee shall operate and maintain CE002 in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.  | Minn. R. 7007.0800, subp. 14   |

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

10/31/03

Facility Name: 3M - Cottage Grove Abrasive Systems Div

Permit Number: 16300017 - 001

**Subject Item:** EU 005 Prefire Kiln

**Associated Items:** CE 003 Wet Scrubber - High Efficiency

CE 004 Gas Scrubber (General, Not Classified)

SV 005 2-Stage Scrubber

| What to do  | Why to do it  |
|---|---|
| EMISSION LIMITS   | hdr   |
| Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011. 0735.  | Minn. R. 7011.0610, subp. 1(A)(1)   |
| Nitrogen Oxides: less than or equal to 7.2 lbs/hour   | Title I Condition: limit to avoid classification as a major source or modification under 40 CFR Section 52.21 |
| Opacity: less than or equal to 20 percent opacity   | Minn. R. 7011.0610, subp. 1(A)(2)   |
| OPERATIONAL AND MONITORING REQUIREMENTS   | hdr   |
| Fuels Allowed: Natural gas or liquified petroleum gases (propane)   | Minn. R. 7007.0800, subp. 4   |
| The Permittee shall operate and maintain CE003 such that it achieves an overall control efficiency for Total Particulate Matter: greater than or equal to 90 percent control efficiency   | Title I Condition: control efficiency related to Title I limit  |
| The Permittee shall operate and maintain CE004 such that it achieves an overall control efficiency for Nitrogen Oxides: greater than or equal to 95 percent control efficiency  | Title I Condition: control efficiency related to Title I limit  |
| Pressure Drop: greater than or equal to 1 inches of water column and less than or equal to 8 inches of water column for CE003 unless a new minimum value is set pursuant to Minn. R. 7017.2025, subp. 3, based on the values recorded during the most recent MPCA approved performance test where compliance was demonstrated.  | Title I Condition: Operational limit for Title I limit  |
| Liquid Flow Rate: greater than or equal to 3 gallons/minute for CE004, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3, based on the values recorded during the most recent MPCA approved performance test where compliance was demonstrated.   | Title I Condition: Operational limit for Title I limit  |
| Recordkeeping of Scrubber Operating Parameters: The Permittee shall record the pressure drop for CE003 and the liquid flow rate for CE004 once each operating day, including the time and date of each reading and whether or not the recorded parameter was within the range specified in this permit.   | Title I Condition: Recordkeeping for Title I limit  |
| pH of scrubbing liquid: greater than or equal to 9 when the inlet gas contain nitrates for CE004  | Title I Condition: Operational limit for Title I limit  |
| Recordkeeping of pH for CE004: The Permittee shall record the liquid pH to CE004 once each operating day, including the time and date of each reading and whether or not the recorded pH was within the range specified in this permit.   | Title I Condition: Operational limit for Title I limit  |
| Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur:<br>- visible emissions are observed;<br>- the pH for CE004 is outside the required range;<br>- the recorded flow rate is outside the required operating range; or<br>- CE003 and/or CE004 or any of their components are found during the inspections to need repair.<br>Corrective actions shall return the flow rate to within the permitted range and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for CE003 and CE004. The Permittee shall keep a record of the type and date of any corrective action taken. | Minn. R. 7007.0800, subp. 4, 5, and 14  |
| Monitoring Equipment: The Permittee shall install and maintain the necessary monitoring equipment for measuring and recording pressure, flow rate, and pH as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when CE003 and CE004 is in operation.   | Minn. R. 7007.0800, subp. 4   |
| Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections.   | Minn. R. 7007.0800, subp. 4, 5 and 14   |

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

10/31/03

Facility Name: 3M - Cottage Grove Abrasive Systems Div

Permit Number: 16300017 - 001

**Subject Item:** EU 006 Old Kiln**Associated Items:** CE 012 Centrifugal Collector - High Efficiency

SV 006 Old Kiln

| <b>What to do</b>   | <b>Why to do it</b>   |
|---|---|
| Total Particulate Matter: less than or equal to 0.4 lbs/hour      | Title I Condition: limit to avoid classification as a major source or modification under 40 CFR Section 52.21; most stringent, meets limit set by Minn. R. 7011.0610, subp. 1(A)(1) |
| Nitrogen Oxides: less than or equal to 0.23 lbs/hour              | Title I Condition: limit to avoid classification as a major source or modification under 40 CFR Section 52.21   |
| Opacity: less than or equal to 20 percent opacity                 | Minn. R. 7011.0610, subp. 1(A)(2)   |
| Fuels Allowed: Natural gas or liquified petroleum gases (propane) | Minn. R. 7007.0800, subp. 4   |

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

10/31/03

Facility Name: 3M - Cottage Grove Abrasive Systems Div

Permit Number: 16300017 - 001

**Subject Item:** EU 007 New Kiln #3

**Associated Items:** CE 005 Centrifugal Collector - High Efficiency

CE 006 Centrifugal Collector - High Efficiency

CE 007 Gravity Collector - High Efficiency

SV 007 New Kiln 3

| What to do  | Why to do it  |
|---|---|
| EMISSION LIMITS   | hdr   |
| Total Particulate Matter: less than or equal to 4.02 lbs/hour   | Title I Condition: limit to avoid classification as a major source or modification under 40 CFR Section 52.21; most stringent, meets limit set by Minn. R. 7011.0610, subp. 1(A)(1) |
| Nitrogen Oxides: less than or equal to 1.5 lbs/hour   | Title I Condition: limit to avoid classification as a major source or modification under 40 CFR Section 52.21   |
| Opacity: less than or equal to 20 percent opacity   | Minn. R. 7011.0610, subp. 1(A)(2)   |
| Fuels Allowed: Natural gas or liquified petroleum gases (propane)   | Minn. R. 7007.0800, subp. 4   |
| OPERATIONAL REQUIREMENTS  | hdr   |
| Pressure Drop: greater than or equal to 1 inches of water column and less than or equal to 10 inches of water column for each cyclone collector. When process air flows are reduced such that the pressure drop cannot be maintained above 1 inch water column with both CE005 and CE006 in operation, the total air flow shall be routed through one cyclone and the pressure drop through that cyclone maintained between 1 and 10 inches water column. | Title I Condition: operational limit related to Title I limit   |
| Recordkeeping for Title I Limit: Record the pressure drop across each cyclone once each operating day. If only CE005 or CE006 is in operation, only the pressure drop across that cyclone must be recorded. The log shall indicate time periods when either cyclone is not in use.  | Title I Condition: recordkeeping for Title I limit  |

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

10/31/03

Facility Name: 3M - Cottage Grove Abrasive Systems Div

Permit Number: 16300017 - 001

**Subject Item:** EU 008 Kiln 1 Burner**Associated Items:** SV 008 Kiln 1

| <b>What to do</b>   | <b>Why to do it</b>   |
|---|---|
| Total Particulate Matter: less than or equal to 0.03 lbs/hour     | Title I Condition: limit to avoid classification as a major source or modification under 40 CFR Section 52.21; most stringent, meets limit set by Minn. R. 7011.0610, subp. 1(A)(1) |
| Opacity: less than or equal to 20 percent opacity                 | Minn. R. 7011.0610, subp. 1(A)(2)   |
| Fuels Allowed: Natural gas or liquified petroleum gases (propane) | Minn. R. 7007.0800, subp. 4   |

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

10/31/03

Facility Name: 3M - Cottage Grove Abrasive Systems Div

Permit Number: 16300017 - 001

**Subject Item:** EU 009 Kiln 2 Burner**Associated Items:** SV 009 Kiln 2

| <b>What to do</b>   | <b>Why to do it</b>   |
|---|---|
| Total Particulate Matter: less than or equal to 0.03 lbs/hour     | Title I Condition: limit to avoid classification as a major source or modification under 40 CFR Section 52.21; most stringent, meets limit set by Minn. R. 7011.0610, subp. 1(A)(1) |
| Opacity: less than or equal to 20 percent opacity                 | Minn. R. 7011.0610, subp. 1(A)(2)   |
| Fuels Allowed: Natural gas or liquified petroleum gases (propane) | Minn. R. 7007.0800, subp. 4   |



**TABLE A: LIMITS AND OTHER REQUIREMENTS**

10/31/03

Facility Name: 3M - Cottage Grove Abrasive Systems Div

Permit Number: 16300017 - 001

**Subject Item:** EU 010 Kilns 1 & 2

**Associated Items:** CE 008 Gas Scrubber (General, Not Classified)

SV 010 8-Stage Scrubber

| What to do   | Why to do it  |
|--|---|
| EMISSION LIMITS  | hdr   |
| Total Particulate Matter: less than or equal to 0.040 grains/dry standard cubic foot   | 40 CFR Section 60.732a  |
| Nitrogen Oxides: less than or equal to 6.4 lbs/hour  | Title I Condition: limit to avoid classification as a major source or modification under 40 CFR Section 52.21 |
| OPERATIONAL REQUIREMENTS   | hdr   |
| The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for Total Particulate Matter: greater than or equal to 90 percent control efficiency  | Title I Condition: control efficiency related to Title I limit  |
| At all times, including periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions, in accordance with 40 CFR 60.11(d).   | 40 CFR Section 60.11(d)   |
| Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections.  | Minn. R. 7007.0800, subp. 4, 5 and 14   |
| CONTINUOUS EMISSION MONITOR REQUIREMENTS   | hdr   |
| Emissions Monitoring: The owner or operator shall use a CEMS to measure NOx emissions from EU010.  | Title I Condition: monitoring for Title I limit; Minn. R. 7017.1006   |
| Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.<br><br>Acceptable monitor downtime includes reasonable periods as listed in Items A, B, C and D of Minn. R. 7017.1090, subp. 2. | Minn. R. 7017.1090, subp. 1   |
| CEMS Daily Calibration Drift (CD) Test: The CD shall be quantified and recorded at zero (low-level) and upscale (high-level) gas concentrations at least once daily. The CEMS shall be adjusted whenever the CD exceeds twice the specification of 40 CFR pt. 60, Appendix B. 40 CFR pt. 60, Appendix F, shall be used to determine out-of-control periods for CEMS. Follow the procedures in 40 CFR pt. 60, Appendix F.   | Minn. R. 7017.1170, subp. 3   |
| Cylinder Gas Audit (CGA): due before end of each calendar half-year following Permit Issuance. Conduct CGA at least 3 months apart and not greater than 8 months apart. Follow the procedures in 40 CFR pt. 60, Appendix F.  | Minn. R. 7017.1170, subp. 4   |
| Cylinder Gas Audit (CGA) Results Summary: due 30 days after end of each calendar half-year following Cylinder Gas Audit (CGA)  | Minn. R. 7017.1180, subp. 1   |
| CEMS Relative Accuracy Test Audit (RATA): due before end of each calendar year following Permit Issuance. If the relative accuracy is 15% or less the next CEMS RATA is not due for 24 months. Follow the procedures in 40 CFR pt. 60, Appendix B and Appendix F.  | Minn. R. 7017.1170, subp. 5   |
| Relative Accuracy Test Audit Notification: due 30 days before CEMS RATA.   | Minn. R. 7017.1180, subp. 2   |
| Relative Accuracy Test Audit Results Summary: due 30 days after end of each calendar quarter in which the CEMS RATA was conducted.   | Minn. R. 7017.1180, subp. 3   |
| Quality Assurance (QA) Plan: Develop and implement a written QA plan that covers each CEMS. The plan shall be on site and available for inspection within 30 days after monitor certification. The plan shall contain all of the information required by 40CFR 60, App. F, section 3.  | Minn. R. 7017.1170, subp. 2   |
| Submit all information required to be submitted to EPA under 40 CFR 60.4(a) to the MPCA address shown in the introduction to Table B of this permit.   | 40 CFR Section 60.4(a)  |

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

10/31/03

Facility Name: 3M - Cottage Grove Abrasive Systems Div

Permit Number: 16300017 - 001

**Subject Item:** EU 018 Diesel Powered Emergency Generator**Associated Items:** SV 018 New Area Emergency

| <b>What to do</b>  | <b>Why to do it</b>         |
|--|-----------------------------|
| Opacity: less than or equal to 20 percent opacity once operating temperatures have been attained | Minn. R. 7011.2300, subp. 1 |
| Sulfur Dioxide: less than or equal to 0.5 lbs/million Btu heat input                             | Minn. R. 7011.2300, subp. 2 |

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

10/31/03

Facility Name: 3M - Cottage Grove Abrasive Systems Div

Permit Number: 16300017 - 001

**Subject Item:** EU 019 Diesel Powered Emergency Generator**Associated Items:** SV 019 Old Area Emergency

| <b>What to do</b>  | <b>Why to do it</b>         |
|--|-----------------------------|
| Opacity: less than or equal to 20 percent opacity once operating temperatures have been attained | Minn. R. 7011.2300, subp. 1 |
| Sulfur Dioxide: less than or equal to 0.5 lbs/million Btu heat input                             | Minn. R. 7011.2300, subp. 2 |

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

10/31/03

Facility Name: 3M - Cottage Grove Abrasive Systems Div

Permit Number: 16300017 - 001

**Subject Item:** EU 026 Oven 3**Associated Items:** SV 024 Oven 3

| <b>What to do</b>   | <b>Why to do it</b>   |
|---|---|
| Total Particulate Matter: less than or equal to 0.09 grains/dry standard cubic foot | Title I Condition: limit to avoid classification as a major source or modification under 40 CFR Section 52.21; most stringent, meets limit set by Minn. R. 7011.0610, subp. 1(A)(1) |
| Opacity: less than or equal to 20 percent opacity                                   | Minn. R. 7011.0610, subp. 1(A)(2)   |
| Fuels Allowed: Natural gas or liquified petroleum gases (propane)                   | Minn. R. 7007.0800, subp. 4   |

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

10/31/03

Facility Name: 3M - Cottage Grove Abrasive Systems Div

Permit Number: 16300017 - 001

**Subject Item:** EU 033 Oven 4**Associated Items:** SV 037 Oven 4

| <b>What to do</b>   | <b>Why to do it</b>   |
|---|---|
| Total Particulate Matter: less than or equal to 0.09 grains/dry standard cubic foot | Title I Condition: limit to avoid classification as a major source or modification under 40 CFR Section 52.21; most stringent, meets limit set by Minn. R. 7011.0610, subp. 1(A)(1) |
| Opacity: less than or equal to 20 percent opacity                                   | Minn. R. 7011.0610, subp. 1(A)(2)   |
| Fuels Allowed: Natural gas or liquified petroleum gases (propane)                   | Minn. R. 7007.0800, subp. 4   |

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

10/31/03

Facility Name: 3M - Cottage Grove Abrasive Systems Div

Permit Number: 16300017 - 001

**Subject Item:** EU 043 **Crushing, grinding circuit****Associated Items:** CE 010 Centrifugal Collector - High Efficiency

CE 011 Cartridge Filter

SV 036 Dust Collector

| <b>What to do</b>   | <b>Why to do it</b>   |
|---|---|
| EMISSION LIMITS   | hdr   |
| Total Particulate Matter: less than or equal to 0.08 grains/dry standard cubic foot | Title I Condition: limit to avoid classification as a major source or modification under 40 CFR Section 52.21; most stringent, meets limit set by Minn. R. 7011.0610, subp. 1(A)(1) |
| Opacity: less than or equal to 20 percent opacity                                   | Minn. R. 7011.0715  |

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

10/31/03

Facility Name: 3M - Cottage Grove Abrasive Systems Div

Permit Number: 16300017 - 001

**Subject Item: CE 009 Cartridge Filter**

- Associated Items:** EU 029 New Hammermill  
 EU 030 New Roll Crusher #1  
 EU 031 New Roll Crusher #2  
 EU 038 Size Separator  
 EU 039 Size Separator  
 EU 040 Size Separator  
 EU 041 Size Separator  
 EU 042 Size Separator

| What to do  | Why to do it   |
|---|--|
| Total Particulate Matter: less than or equal to 2.11 lbs/hour   | Title I Condition: limit to avoid classification as a major source or modification under 40 CFR Section 52.21; most stringent, meets limit set by Minn. R. 7011.0715, subp. 1(A) |
| Opacity: less than or equal to 20 percent opacity   | Minn. R. 7011.0715, subp. 1(B)   |
| OPERATIONAL AND MONITORING REQUIREMENTS   | hdr  |
| The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for Total Particulate Matter: greater than or equal to 99 percent control efficiency   | Title I Condition: control efficiency related to Title I limit   |
| The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for Particulate Matter < 10 micron: greater than or equal to 99 percent control efficiency   | Title I Condition: control efficiency related to Title I limit   |
| Pressure Drop: greater than or equal to 0.5 inches of water column and less than or equal to 8 inches of water column across CE012, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3, based on the values recorded during the most recent MPCA approved performance test where compliance was demonstrated.  | Title I Condition: operational limit for Title I limit; Minn. R. 7007.0800, subp. 4(B)   |
| Recordkeeping of Pressure Drop. The Permittee shall record the pressure drop once every 24 hours when in operation. The Permittee shall record the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit.   | Title I Condition: recordkeeping for Title I limit; Minn. R. 7007.0800, subp. 5  |
| Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur:<br>- visible emissions are observed;<br>- the recorded pressure drop is outside the required operating range; or<br>- the cartridge filter or any of its components are found during the inspections to need repair.<br>Corrective actions shall return the pressure drop to within the permitted range and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the cartridge filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter. | Minn. R. 7007.0800, subp. 4, 5, and 14   |
| Monitoring Equipment: The Permittee shall install and maintain the necessary monitoring equipment for measuring and recording pressure drop as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored cartridge filter is in operation.  | Minn. R. 7007.0800, subp. 4  |
| Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections.   | Minn. R. 7007.0800, subp. 4, 5 and 14  |
| The Permittee shall operate and maintain the cartridge filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.  | Minn. R. 7007.0800, subp. 14   |

**TABLE B: SUBMITTALS**

10/31/03

Facility Name: 3M - Cottage Grove Abrasive Systems Div  
Permit Number: 16300017 - 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**

10/31/03

Facility Name: 3M - Cottage Grove Abrasive Systems Div

Permit Number: 16300017 - 001

| <b>What to send</b>                      | <b>When to send</b>   | <b>Portion of Facility Affected</b> |
|--|---|-------------------------------------|
| Application for Permit Reissuance        | due 180 days before expiration of Existing Permit   | Total Facility                      |
| Computer Dispersion Modeling Information | due 1,096 days after Permit Issuance. Submit modeling data for all Cottage Grove facilities as specified in MPCA guidance for Modeling Information Requests (for PM10, SO2, and NOx). This modeling information is for data collection purposes, no modeling analysis is required at this time. This is a state-only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act. | Total Facility                      |

**TABLE B: RECURRENT SUBMITTALS**

10/31/03

Facility Name: 3M - Cottage Grove Abrasive Systems Div

Permit Number: 16300017 - 001

| What to send                              | When to send  | Portion of Facility Affected |
|---|---|------------------------------|
| Excess Emissions/Downtime Reports (EER's) | due 30 days after end of each calendar quarter following Initial Startup of the Monitor Submit Deviations Reporting Form DRF-1 as amended. The EER shall indicate all periods of monitor bypass and all periods of exceedances of the limit including exceedances allowed by an applicable standard, i.e. during startup, shutdown, and malfunctions.   | EU010                        |
| Semiannual Deviations Report              | due 30 days after end of each calendar half-year following Permit Issuance. The first semiannual report submitted by the Permittee shall cover the calendar half-year in which the permit is issued. The first report of each calendar year covers January 1 - June 30. The second report of each calendar year covers July 1 - December 31. If no deviations have occurred, the Permittee shall submit the report stating no deviations. | Total Facility               |
| Compliance Certification                  | due 30 days after end of each calendar year following Permit Issuance (for the previous calendar year). To be submitted on a form approved by the Commissioner, both to the Commissioner and to the US EPA regional office in Chicago. This report covers all deviations experienced during the calendar year.  | Total Facility               |

APPENDIX MATERIAL

Facility Name: 3M - Cottage Grove Abrasive Systems Div

Permit Number: 16300017-001

Appendix I Insignificant Activities

## Insignificant Activities

EU011 Aluminum hopper  
EU012 Dryer  
EU013 Dryer  
EU014 Barrel pump  
EU015 Mixer  
EU016 Neutralization tank  
EU017 Process tank  
EU020 Kiln feed  
EU021 2<sup>nd</sup> prefire kiln feed  
EU022 Screener  
EU023 Screener  
EU024 Screener  
EU025 Screener  
EU027 Process tank  
EU028 Dryer

These activities must be listed more specifically in the permit application (and the permit), if any of the following are true:

- 1) the emissions units are subject to additional requirements under Section 114(a)(3) of the Clean Air Act (CAM);
- 2) the emissions units are subject to Hazardous Air Pollutant requirements under Section 112 of the Clean Air Act (part 63 NESHAPs);
- 3) the emissions units are part of a Title I modification (NSR, pt 61 or 63 NESHAP mods, or NSPS mod);
- 4) if accounted for, the emissions units make the stationary source subject to a part 70 permit; or
- 5) the unit is required to do periodic monitoring.

If none of the above are true, the activity can be listed in a general way in the permit with its applicable requirements (per White Paper Number 2). Make sure the TSD addresses why no periodic monitoring is necessary per September 1998 guidance on periodic monitoring.

## Insignificant Activities and Applicable Requirements

| Minn. R. 7007.1300, subpart | Rule Description of the Activity  | Applicable Requirement  |
|-----------------------------|---|---|
| 3(A)                        | Fuel use: space heaters fueled by, kerosene, natural gas, or propane.   | Minn. R. 7011.0510/0515   |
| 3(B)                        | Furnaces, boilers, and incinerators:  |   |
|                             | infrared electric ovens; and  | Minn. R. 7011.0105/0110   |
|                             | fuel burning equipment with a capacity less than 500,000 Btu/hour but only if the total combined capacity of all fuel burning equipment at the stationary source with a capacity less than 500,000 Btu per hour is less than or equal to 2,000,000 Btu/hour.                  | Minn. R. 7011.0510/0515 OR<br>Minn. R. 7011.0610 +<br>Minn. R. 7011.1215, subp. 3   |
| 3(C)                        | Fabrication operations: equipment used exclusively for forging, pressing, drawing, spinning, or extruding hot metals.   | Minn. R. 7011.0710/0715   |
| 3(D)                        | Processing operations:  |   |
|                             | 1. open tumblers with a batch capacity of 1,000 pounds or less; and   | Minn. R. 7011.0710/0715   |
|                             | 2. Equipment venting particulate matter (PM) or particulate matter less than 10 microns (PM-10) inside a building, provided that emissions from the equipment are:<br>a). filtered through an air cleaning system; and<br>b). vented inside of the building 100% of the time. | Minn. R. 7011.0710/0715   |
| 3(E)                        | Storage tanks:  |   |
|                             | 1. gasoline storage tanks with a combined total tankage capacity of not more than 10,000 gallons; and   | Minn. R. 7011.0710/0715 OR<br>Minn. R. 7011.1505, subp. 2(B)/1505,<br>subp. 3(B) OR |

| Minn. R. 7007.1300, subpart | Rule Description of the Activity   | Applicable Requirement  |
|-----------------------------|--|---|
|                             |  | Minn. R. 7011.0105/0110 <i>(if not associated with industrial process equipment)</i>  |
|                             | 2. non-hazardous air pollutant VOC storage tanks with a combined total tankage capacity of not more than 10,000 gallons of non-hazardous air pollutant VOCs and with a vapor pressure of not more than 1.0 psia at 60 degrees Fahrenheit.  | Minn. R. 7011.0710/0715 OR<br>Minn. R. 7011.1505, subp. 2(B)/1505, subp. 3 (B)<br>OR Minn. R. 7011.0105/0110 <i>(if not associated with industrial process equipment)</i> |
| 3(F)                        | Cleaning operations: commercial laundries, not including dry cleaners and industrial launderers.   | Minn. R. 7011.0105/0110   |
| 3(G)                        | Emissions from a laboratory, as defined in the subpart.  | Minn. R. 7011.0510/0515 +<br>Minn. R. 7011.0610 + Minn. R. 7011.0710/0715   |
| 3(H)                        | Miscellaneous:   |   |
|                             | 1. total usage of less than 200 gallons of VOC (including hazardous air pollutant-containing VOC) combined in any consecutive 12 months period at a stationary source;   | Minn. R. 7011.0710/0715 OR<br>Minn. R. 7011.0105/0110   |
|                             | 2. equipment used exclusively for packaging lubricants or grease;  | Minn. R. 7011.0710/0715 OR Minn. R. 7011.0105/0110  |
|                             | 3. equipment used for hydraulic or hydrostatic testing;  | Minn. R. 7011.0710/0715   |
|                             | 4. brazing, soldering or welding equipment;  | Minn. R. 7011.0510/.0515 +<br>Minn. R. 7011.0610 + Minn. R. 7011.0710/0715  |
|                             | 5. blueprint copiers and photographic processes;   | Minn. R. 7011.0105/0110   |
|                             | 6. equipment used exclusively for melting or application of wax;   | Minn. R. 7011.0510/.0515 +<br>Minn. R. 7011.0610 + Minn. R. 7011.0710/0715  |
|                             | 7. nonasbestos equipment used exclusively for bonding lining to brake shoes; and   | Minn. R. 7011.0710/0715   |
|                             | 8. cleaning operations: alkaline/phosphate cleaners and associated cleaners and associated burners.  | Minn. R. 7011.0510/.0515 +<br>Minn. R. 7011.0610 + Minn. R. 7011.0710/0715  |
| 3(I)                        | Individual emissions units at a stationary source, each of which have a potential to emit the following pollutants in amounts less than:<br><br>1. 4,000 lbs/year of carbon monoxide; and<br><br>2. 2,000 lbs/year each of nitrogen oxide, sulfur dioxide, particulate matter, particulate matter less than ten microns, volatile organic compounds (including hazardous air | Varies with type of emission unit.  |

| Minn. R.<br>7007.1300,<br>subpart | Rule Description of the Activity   | Applicable Requirement  |
|-----------------------------------|--|-------------------------|
|                                   | pollutant-containing VOC), and ozone.  |                         |
| 3(J)                              | Fugitive Emissions from roads and parking lots.  | Minn. R. 7011.0150      |
| 3(K)                              | Infrequent use of spray paint equipment for routine housekeeping or plant upkeep activities not associated with primary production processes at the stationary source, such as spray painting of buildings, machinery, vehicles, and other supporting equipment. | Minn. R. 7011.0710/0715 |

**TECHNICAL SUPPORT DOCUMENT**  
**For**  
**DRAFT AIR EMISSION PERMIT NO. 16300017-001**

This technical support document 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   | Facility Address<br>(SIC Code: 3291)                                  |
|--|---|
| 3M Company<br>I-94 and McKnight Road<br>P.O. Box 33331<br>St. Paul, Minnesota 55133-3331 | 10746 Innovation Road, Bldg 112<br>Cottage Grove<br>Washington County |

**1.2. Description of the facility**

This permit is for the Cottage Grove Abrasives facility in Building 112. This facility produces abrasive powders for use by other facilities in the production of abrasive grinding products.

**Major Source Status**

There are several definitions of “major source” to consider under federal regulations. These are the definitions for the Hazardous Air Pollutants (HAPs) regulations under Section 112 of the Clean Air Act (implemented through the regulations at 40 CFR pt. 63), the definitions for federal New Source Review found at 40 CFR § 51.165 and § 52.21, and the definition of major source for the Title V permit program implemented through 40 CFR pt. 70.

**Hazardous Air Pollutants, Section 112 of the Clean Air Act and 40 CFR Part 63**

For this program, all emission units under common ownership or control and on contiguous or adjacent properties must be grouped together and considered a single stationary source. This single source is considered a major source if it has the potential-to-emit (PTE) 10 tons per year or more of any HAP, or 25 tons per year or more of all HAP added together. The entire Cottage Grove center constitutes a



contiguous area under the ownership and control of 3M and exceeds the thresholds, so it is a major source of HAP. The Abrasives facility is considered a part of a major source for HAPs.

**Title V/Part 70 Operating Permits Program, 40 CFR Part 70**

A major source for this program is one which has the PTE 100 tons per year or more of any air pollutant, or which is a major source under the HAP program. The entire Cottage Grove facility is a major source under Part 63 and therefore is a major source for purposes of Part 70.

**New Source Review - Prevention of Significant Deterioration, 40 CFR Section 52.21**

Prevention of Significant Deterioration (PSD) uses two different thresholds for major source status, 100 or 250 tons per year, depending on the type of industry. The underlying definition of stationary source for PSD requires grouping all facilities under common ownership or control, which are on contiguous or adjacent property, **and which also have the same first two-digit SIC Code**. Facilities with different SIC Codes may sometimes be aggregated into a single source if one is considered a support facility to the other(s). At Cottage Grove, Abrasives Systems Division (Building 112) is classified in SIC Code 32 as is the Specialty Additives Division (Buildings 74, 101, 110) and Sintered Abrasives (Building 19). None of the other facilities at Cottage Grove qualifies as a support facility, since no facility provides 50 % or more of its products or services to any other facility at this location. The Corporate Incinerator incinerates wastes from 3M facilities nationwide. The utilities plant is a wastewater treatment plant that receives some wastewater from all facilities at this location.

SIC Codes currently assigned to the Cottage Grove operations are:

| Building No.                                   | MPCA File No. | Delta ID        | SIC         |
|--|---------------|-----------------|-------------|
| <b>112, Abrasives</b>                          | <b>23AX</b>   | <b>16300017</b> | <b>3291</b> |
| 17 - Auto                                      | 23AH          | 16300065        | 2297        |
| 17 - Film                                      | 23AF          | 16300023        | 3081        |
| 133 - TCM                                      | 23AT          | 16300059        | 3993        |
| Utilities (wastewater)                         | 23AB          | 16300015        | 4952        |
| Corporate Incinerator                          | 23AI          | 16300025        | 4953        |
| 74, 101, & 110                                 | 23AS          | 16300002        | 3229        |
| 3, 4, 6, 7, 11, 15, 16, 25, 70, 73 - SMD chem. | 23AC          | 16300022        | 2891        |
| 102 – Tape/TPTC                                | 23AE          | 16300080        | 2672        |

The Abrasives Systems Division (Building 112) together with Buildings 74+101+110 and Sintered Abrasives (Building 19) is considered a single stationary source for PSD , subject to the 250 ton/year threshold.

**Flexibility Provisions for future modifications**

3M has requested limits on the potential-to-emit for each of these facilities so that the total PTE is less than 250 tons/year. Each permit will include a provision that allows new emission units to be installed, or existing units to be modified, usually under the Minor or Moderate Amendment process (depending on hourly emissions). Modifications may also qualify as Insignificant based on hourly emissions. The federal PSD regulation does not apply as long as total facility emissions are less than the facility-wide limits.

A Major Amendment is required if a modification requires changes to existing monitoring, recordkeeping or reporting requirements, or existing Title I limits.

|                 | Abrasive Systems       |                  | Industrial Specialties |                  | Sintered Abrasives     |                  |
|-----------------|------------------------|------------------|------------------------|------------------|------------------------|------------------|
| Pollutant       | Proposed FlexCap Limit | Actual Emissions | Proposed FlexCap Limit | Actual Emissions | Proposed FlexCap Limit | Actual Emissions |
| PM              | 100 tons/yr            | 10               | 110                    | 12               | 30                     | 1                |
| SO <sub>2</sub> | 90                     | 1                | 120                    | 30               | NA                     | 0                |
| NO <sub>x</sub> | 110                    | 32               | 135                    | 55               | NA                     | 0                |
| VOC             | 90                     | 1                | 110                    | 20               | 45                     | 1                |

**New Source Review - Nonattainment New Source Review, 40 CFR 51 Appendix S**

New Source Review for Nonattainment Areas uses a threshold of 100 tons per year, but this applies only to pollutants for which the area is classified as nonattainment. At this time, the area is classified attainment for all criteria pollutants.

**Summary of Major Source Status and Approach to Permitting**

The Minnesota Pollution Control Agency (MPCA) and 3M have agreed that separate permits will be issued for each of the different operations at Cottage Grove, but each permit will be a Part 70 permit, and the entire Cottage Grove facility is considered a single major source for HAP.

**1.3 Description of any changes allowed with this permit issuance**

This permit authorizes the use of liquefied petroleum gas (propane) in addition to natural gas as fuel in the ovens and kilns.

**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:**

| <b>Permit Number and Issuance Date</b>          | <b>Action Authorized</b>   |
|---|--|
| 23AX-91-OT-1<br>November 8, 1991                | Total facility operating permit, also authorized installation of three kilns and kiln feed preparation |
| Amendment 1 to 23AX-91-OT-1<br>March 30, 1993   | Change stack diameters   |
| Amendment 2<br>16300017-004<br>June 9, 1995     | Install cyclone dust collectors, change NOx emission limit   |
| 16300017-005<br>October 2, 1995                 | Installation of size reduction equipment, dryer, material handling and size separators                 |
| Amendment 3<br>16300017-006<br>October 31, 1997 | Change recordkeeping for limit on hours of operation   |
| 16300017-007<br>March 18, 1998                  | Install new crushing and screening circuit   |
| 16300017-008<br>June 26, 1998                   | Installation of tape casting machine   |

**1.5. Facility Emissions:**

Table 1. Total Facility Potential to Emit Summary:

| EU # | SV # | Emission Unit Description              | PM tpy | PM10 tpy | SO2 tpy | NOx tpy | CO tpy | VOC tpy |
|------|------|--|--------|----------|---------|---------|--------|---------|
| 1    |      | Oven 1                                 | 1.05   | 1.05     | 0.01    | 19.27   | 0.28   | 0.07    |
| 2    |      | Oven 2                                 | 1.05   | 1.05     | 0.01    | 19.27   | 0.28   | 0.07    |
| 3    |      | Crushing, screening, material transfer | 11.39  | 11.39    |         |         |        |         |
| 4    |      | Crushing, screening, material transfer | 4.38   | 4.38     |         |         |        |         |

| EU #    | SV # | Emission Unit Description | PM tpy | PM10 Tpy | SO2 tpy | NOx tpy | CO tpy | VOC Tpy |
|---------|------|---------------------------|--------|----------|---------|---------|--------|---------|
| 5       |      | Prefire kiln              | 4.38   | 4.38     | 0.01    | 31.54   | 0.16   | 0.04    |
| 6       |      | Old kiln                  | 1.75   | 1.75     | 0.01    | 0.99    | 0.16   | 0.04    |
| 7       |      | Kiln 3                    | 17.61  | 17.61    | 0.01    | 6.57    | 0.44   | 0.11    |
| 8       |      | Kiln 1 burner             | 0.13   | 0.13     | 0.02    | 2.50    | 0.53   | 0.13    |
| 9       |      | Kiln 2 burner             | 0.13   | 0.13     | 0.02    | 2.50    | 0.53   | 0.13    |
| 10      |      | Kilns 1 and 2             | 1.71   | 1.71     |         | 28.03   |        |         |
| 18      |      | Diesel generator          | 0.11   | 0.11     | 0.11    | 1.59    | 0.35   | 0.11    |
| 19      |      | Diesel generator          | 0.12   | 0.12     | 0.11    | 1.66    | 0.36   | 0.11    |
| 26      |      | Oven 3                    | 9.11   | 9.11     | 0.01    | 17.52   | 1.12   | 0.07    |
| 29      |      | Hammermill                | 9.24   | 9.24     |         |         |        |         |
| 30      |      | Roll crusher              | *      |          |         |         |        |         |
| 31      |      | Roll crusher              | *      |          |         |         |        |         |
| 33      |      | Oven 4                    | 9.11   | 9.11     | 0.01    | 17.52   | 1.12   | 0.07    |
| 38      |      | Size separator            | *      |          |         |         |        |         |
| 39      |      | Size separator            | *      |          |         |         |        |         |
| 40      |      | Size separator            | *      |          |         |         |        |         |
| 41      |      | Size separator            | *      |          |         |         |        |         |
| 42      |      | Size separator            | *      |          |         |         |        |         |
| 43      |      | Crushing, grinding        | 14.10  | 14.10    |         |         |        |         |
| IA<br>s |      | PTE from IAs              | 7.09   | 7.09     |         | 1.20    |        | 15.4    |

\*included in EU029

|   |     |     |      |     |     |      |
|---|-----|-----|------|-----|-----|------|
| Facility-wide limited Potential-to-Emit | 100 | 100 | 90.0 | 110 | 5.3 | 90.0 |
| Total Facility Actual Emissions         | 22  | 21  | 0.1  | 87  | 3.3 | 0.4  |

Table 2. Facility(TF) and Permit Classification:

| Classification (put x in appropriate box) | Major/Affected Source         | Synthetic Minor | Minor        |
|---|-------------------------------|-----------------|--------------|
| PSD (list pollutant)                      |                               | PM, PM10, NOx   | SO2, CO, VOC |
| NAAR (list pollutant)                     | NA                            | NA              | NA           |
| Part 70 Permit Program (list pollutant)   | See discussion in Section 1.2 |                 |              |

## 2. Regulatory and/or Statutory Basis

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

### 2.1 Continuous and Periodic Monitors – missing data and acceptable monitor downtime

Minn. R. 7017.1090, subp. 2, “Acceptable Monitor Downtime,” lists and describes circumstances under which an emission unit may be operating and data normally recorded by a continuous or periodic monitor is not recorded. This Minnesota rule is written primarily for continuous emission monitors (CEMS) and continuous opacity monitors (COMS) which directly measure emissions or opacity.

Minn. R. 7017.1090, subp. 2 is paraphrased and adapted below to address parameter monitoring specified in Section 2.3 of this Technical Support Document and associated permit. Examples of parameter monitoring would include combustion chamber temperature in a thermal oxidizer, baghouse pressure drop, or scrubber water flowrate and pressure drop.

Acceptable Monitor Downtime. Monitor downtime is a violation (of the requirement to monitor during all times that the emission unit operates), **except for reasonable periods of monitor downtime due to the following causes:**

- A. damage to the monitoring system due to acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative;
- B. sudden and not reasonably preventable monitor breakdowns;
- C. scheduled monitor maintenance based on equipment manufacturer’s recommended maintenance schedule or schedule specified in the Operation and Maintenance Plan which cannot reasonably be conducted when the emission unit is not operating; or
- D. unavoidable monitor downtime in order to conduct (required calibrations, audits and accuracy checks) which are required by a compliance document, applicable requirement, or by request of the commissioner.

“Compliance document” includes the permit. “Acceptable Monitor Downtime” is reported as “Monitor Downtime” on the semiannual deviations report. Monitor downtime due to other circumstances such as failure to complete described maintenance or failure to operate the monitor as described in the Operation and Maintenance Plan (for the air pollution control equipment) is reported as a deviation on the semiannual deviation report.

### 2.2 Visible Emissions Issues

Visible emissions and deviations: The observation of visible emissions is not itself a reportable deviation, but instead may trigger some corrective action.

Visible emissions during inclement weather: Visible emission observations can only be made during daytime. Even during bad weather, more than one effort should be made during the day. If bad weather conditions persist throughout all daylight hours, this must be noted in the log of visible emissions observations.

Visible emissions observations for Emission Units for which some visibles are expected: The Operation and Maintenance Plan will include a description of the normal range and occurrence of visible emissions, noting especially when higher visibles may occur, such as startup and shutdown.

### 2.3 Regulatory Overview of Facility

|       |                                   |   |
|-------|-----------------------------------|---|
| EU001 | Title I Condition                 | Limits emission of PM so that the entire source is not a major source under 40 CFR 52.21.<br><b>Periodic Monitoring:</b> none since this EU combusts only natural gas and cannot exceed the limit   |
|       | Minn. R. 7011.0610, subp. 1(A)(2) | Opacity limit<br><b>Periodic Monitoring:</b> none since this EU combusts only natural gas and cannot exceed the limit   |
|       | Title I Condition                 | Limits emission of NOx that the entire source is not a major source under 40 CFR 52.21.<br><b>Periodic Monitoring:</b> None since NOx emissions are predictable from the amount of material heated in the oven and the amount of natural gas burned |

|       |                                   |   |
|-------|-----------------------------------|---|
| EU002 | Title I Condition                 | Limits emission of PM so that the entire source is not a major source under 40 CFR 52.21.<br><b>Periodic Monitoring:</b> none since this EU combusts only natural gas and cannot exceed the limit   |
|       | Minn. R. 7011.0610, subp. 1(A)(2) | Opacity limit<br><b>Periodic Monitoring:</b> none since this EU combusts only natural gas and cannot exceed the limit   |
|       | Title I Condition                 | Limits emission of NOx that the entire source is not a major source under 40 CFR 52.21.<br><b>Periodic Monitoring:</b> None since NOx emissions are predictable from the amount of material heated in the oven and the amount of natural gas burned |

|       |                                |   |
|-------|--------------------------------|---|
| EU003 | Title I Condition              | Limits emission of PM so that the entire source is not a major source under 40 CFR 52.21.<br><b>Periodic Monitoring:</b> monitoring of control equipment operating parameters |
|       | Minn. R. 7011.0715, subp. 1(B) | Opacity limit<br><b>Periodic Monitoring:</b> monitoring of control equipment operating parameters   |

|       |                                |   |
|-------|--------------------------------|---|
| EU004 | Title I Condition              | Limits emission of PM so that the entire source is not a major source under 40 CFR 52.21.<br><b>Periodic Monitoring:</b> monitoring of control equipment operating parameters |
|       | Minn. R. 7011.0715, subp. 1(B) | Opacity limit<br><b>Periodic Monitoring:</b> monitoring of control equipment operating parameters   |

|       |                                   |   |
|-------|-----------------------------------|---|
| EU005 | Minn. R. 7011.0610, subp. 1(A)(1) | Limits emission of PM<br><b>Periodic Monitoring:</b> monitoring of control equipment operating parameters   |
|       | Title I Condition                 | Limits emission of NOx that the entire source is not a major source under 40 CFR 52.21.<br><b>Periodic Monitoring:</b> monitoring of control equipment operating parameters |
|       | Minn. R. 7011.0610, subp. 1(A)(2) | Opacity limit<br><b>Periodic Monitoring:</b> monitoring of control equipment operating parameters   |

|       |                                   |  |
|-------|-----------------------------------|--|
| EU006 | Title I Condition                 | Limits emission of PM so that the entire source is not a major source under 40 CFR 52.21.<br><b>Periodic Monitoring:</b> none since this EU combusts only natural gas and cannot exceed the limit  |
|       | Minn. R. 7011.0610, subp. 1(A)(2) | Opacity limit<br><b>Periodic Monitoring:</b> none since this EU combusts only natural gas and cannot exceed the limit  |
|       | Title I Condition                 | Limits emission of NOx so that the entire source is not a major source under 40 CFR 52.21.<br><b>Periodic Monitoring:</b> None since NOx emissions are predictable from the amount of material heated in the oven and the amount of natural gas burned |

|       |                                   |  |
|-------|-----------------------------------|--|
| EU007 | Title I Condition                 | Limits emission of PM so that the entire source is not a major source under 40 CFR 52.21.<br><b>Periodic Monitoring:</b> monitoring of control equipment operating parameters  |
|       | Title I Condition                 | Limits emission of NOx so that the entire source is not a major source under 40 CFR 52.21.<br><b>Periodic Monitoring:</b> None since NOx emissions are predictable from the amount of material heated in the oven and the amount of natural gas burned |
|       | Minn. R. 7011.0610, subp. 1(A)(2) | Opacity limit<br><b>Periodic Monitoring:</b> monitoring of control equipment operating parameters  |

|       |                                   |   |
|-------|-----------------------------------|---|
| EU008 | Title I Condition                 | Limits emission of PM so that the entire source is not a major source under 40 CFR 52.21.<br><b>Periodic Monitoring:</b> none since this EU combusts only natural gas and cannot exceed the limit |
|       | Minn. R. 7011.0610, subp. 1(A)(2) | Opacity limit<br><b>Periodic Monitoring:</b> none since this EU combusts only natural gas and cannot exceed the limit   |

|       |                                   |   |
|-------|-----------------------------------|---|
| EU009 | Title I Condition                 | Limits emission of PM so that the entire source is not a major source under 40 CFR 52.21.<br><b>Periodic Monitoring:</b> none since this EU combusts only natural gas and cannot exceed the limit |
|       | Minn. R. 7011.0610, subp. 1(A)(2) | Opacity limit<br><b>Periodic Monitoring:</b> none since this EU combusts only natural gas and cannot exceed the limit   |

|       |                   |   |
|-------|-------------------|---|
| EU010 | Title I Condition | Limits emission of PM so that the entire source is not a major source under 40 CFR 52.21; meets limit required by 40 CFR Part 60<br><b>Periodic Monitoring:</b> NOx emissions are monitored by CEM. Operating parameters which assure compliance with the NOx limit also assure compliance with the PM limit. |
|       | Title I Condition | Limits emission of NOx so that the entire source is not a major source under 40 CFR 52.21.<br><b>Periodic Monitoring:</b> CEM   |

|       |                     |                       |
|-------|---------------------|-----------------------|
| EU026 | Minn. R. 7011.0610, | Limits emission of PM |
|-------|---------------------|-----------------------|



|  |                                   |   |
|--|-----------------------------------|---|
|  | subp. 1(A)(1)                     | <b>Periodic Monitoring:</b> none since this EU combusts only natural gas and cannot exceed the limit                  |
|  | Minn. R. 7011.0610, subp. 1(A)(2) | Opacity limit<br><b>Periodic Monitoring:</b> none since this EU combusts only natural gas and cannot exceed the limit |

|       |                                |   |
|-------|--------------------------------|---|
| EU029 | Title I Condition              | Limits emission of PM so that the entire source is not a major source under 40 CFR 52.21.<br><b>Periodic Monitoring:</b> monitoring of control equipment operating parameters |
|       | Minn. R. 7011.0715, subp. 1(B) | Opacity limit<br><b>Periodic Monitoring:</b> monitoring of control equipment operating parameters   |

|       |                                |   |
|-------|--------------------------------|---|
| EU030 | Title I Condition              | Limits emission of PM so that the entire source is not a major source under 40 CFR 52.21.<br><b>Periodic Monitoring:</b> monitoring of control equipment operating parameters |
|       | Minn. R. 7011.0715, subp. 1(B) | Opacity limit<br><b>Periodic Monitoring:</b> monitoring of control equipment operating parameters   |

|       |                                |   |
|-------|--------------------------------|---|
| EU031 | Title I Condition              | Limits emission of PM so that the entire source is not a major source under 40 CFR 52.21.<br><b>Periodic Monitoring:</b> monitoring of control equipment operating parameters |
|       | Minn. R. 7011.0715, subp. 1(B) | Opacity limit<br><b>Periodic Monitoring:</b> monitoring of control equipment operating parameters   |

|       |                                   |   |
|-------|-----------------------------------|---|
| EU033 | Minn. R. 7011.0610, subp. 1(A)(1) | Limits emission of PM<br><b>Periodic Monitoring:</b> none since this EU combusts only natural gas and cannot exceed the limit |
|       | Minn. R. 7011.0610, subp. 1(A)(2) | Opacity limit<br><b>Periodic Monitoring:</b> none since this EU combusts only natural gas and cannot exceed the limit         |

|       |                           |   |
|-------|---------------------------|---|
| EU043 | Minn. R. 7011.0715, subp. | Limits emission of PM<br><b>Periodic Monitoring:</b> monitoring of control equipment operating parameters |
|       | Minn. R. 7011.0715, subp. | Opacity limit<br><b>Periodic Monitoring:</b> monitoring of control equipment operating parameters         |

### **3. Conclusion**

Based on the information provided by the 3M Company, the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission Permit No. 16300017-001 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: David Beil, Robert C. Berg