

**AIR EMISSION PERMIT NO. 16300059- 001  
IS ISSUED TO**

**3M COMPANY**

**for**

**3M Cottage Grove Center – Traffic Control Materials Division**  
10746 Innovation Road Building 133  
Cottage Grove, Washington County, MN 550164600

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 12, 1995
Updated Total Facility Operating Permit	June 02, 2000

This permit authorizes the permittee to operate and modify the stationary source at the address listed above unless otherwise noted in Table A. The permittee must comply with all the conditions of the permit. Any changes or modifications to the stationary source must be performed in compliance with Minn. R. 7007.1150 to 7007.1500 or Flex Cap conditions defined in the permit. 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:** Part 70; Limits to avoid NSR

**Issue Date:** January 15, 2002

**Expiration:** January 15, 2007

All Title I Conditions do not expire.

Ann Foss for

Michael J. Tibbetts, Program Manager  
Major Facilities Section  
Water, Land & Compliance Lead

for Karen A. Studders, Commissioner  
Minnesota Pollution Control Agency

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**NOTICE TO THE PERMITTEE:**

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

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

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

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

**PERMIT SHIELD:**

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

**FACILITY DESCRIPTION:**

3M owns and operates the Traffic Control Materials (TCM) Division Process Research Facility at Cottage Grove, Building 133. This facility supports the research and development for an array of retroreflective products for the global transportation safety industry and commercial graphics industry. These products include a variety of sheeting for traffic and commercial signing, vehicle registration, pavement marking, vehicle marking and personal safety applications.

Operations in Building 133 result in emissions of Volatile Organic Compounds (VOC), Hazardous Air Pollutants (HAP), Carbon Monoxides (CO), Nitrous Oxides (NO<sub>x</sub>), Particulate Matter (PM) and Particulate Matter less than 10 microns in size (PM<sub>10</sub>).

3M has requested a flexible emission cap (FlexCap) with a cap on VOC, PM and PM<sub>10</sub> emissions. Under a FlexCap permit, the Permittee may install new emission units and modify

existing emission units without applying for an amendment as long as the applicable requirements for the new and modified units are already included in the permit, and total facility emissions including emissions from the new and modified units, remain below the cap. Any modification made under this FlexCap permit are thus not Major under federal Prevention of Significant Deterioration (PSD), New Source Review Regulations.

If the facility proposed to make a change that triggers requirements not listed in the permit (e.g. 112(g)) then that change is not preauthorized and would need to go through traditional permitting process.

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/15/02

Facility Name: 3M - Cottage Grove TCM Div

Permit Number: 16300059 - 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
TOTAL FACILITY CAP	hdr
This permit establishes limits on the facility to keep it a minor source under New Source Review, this includes changes that might otherwise qualify as insignificant modifications and minor or moderate amendments for future modifications. The Permittee cannot make any change at the source that would make the source a major source under New Source Review until a major permit amendment has been issued.	Title I Condition: Limit for modifications made after the issuance date of this permit to avoid classification as a major modification under 40 CFR Section 52.21; Minn. R. 7007.3000 and Minn. R. 4410.1000.
Volatile Organic Compounds: less than or equal to 95 tons/year using 12-month Rolling Sum to be calculated by the 15th day of each month for the previous 12-months period as described later in this permit. All emission units added to TCM, building 133, as allowed in this permit shall be included in this calculation. VOC contents for each VOC containing material shall be determined as described under Material Content requirement below.	Title I Condition: Limit for modifications made after the issuance date of this permit to avoid classification as a major modification under 40 CFR Section 52.21; Minn. R. 7007.3000 and Minn. R. 4410.1000.
Particulate Matter < 10 micron: less than or equal to 95 tons/year using 12-month Rolling Sum to be calculated by the 15th day of each month for the previous 12-months period as described later in this permit. All emission units added to TCM, building 133, as allowed in this permit shall be included in this calculation. Solids contents for each material shall be determined as described under Material Content requirement below.	Title I Condition: Limit for modifications made to avoid classification as a major modification under 40 CFR Section 52.21 and Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 95 tons/year using 12-month Rolling Sum to be calculated by the 15th day of each month for the previous 12-months period as described later in this permit. All emission units added to TCM, building 133, as allowed in this permit shall be included in this calculation. Solids contents for each material shall be determined as described under Material Content requirement below.	Title I Condition: Limit for modifications made after the issuance date of this permit to avoid classification as a major modification under 40 CFR Section 52.21; Minn. R. 7007.3000 and Minn. R. 4410.1000
Pre-Authorized Changes: The Permittee may make the changes described below without applying for or obtaining an amendment under Minn. R. 7007.1150 to 7007.1500 and without providing notifications required for Insignificant Activities, installation or replacement of air pollution control equipment, and replacement of emission units.	Title I Condition: Changes authorized to be made without applying for a permit amendment. To avoid classification as major modification under 40 CFR 52.21; Minn. R. 7007.3000 and Minn. R. 4410.1000
The Permittee may replace, modify or move existing emission units; or add new emission units at the facility. They may also add new units that might be considered insignificant under Minn. R. 7007.1300 or changes made under Minn. R. 7007.1250.	Title I Condition: Changes authorized to be made without applying for a permit amendment. To avoid classification as major modification under 40 CFR 52.21; Minn. R. 7007.3000 and Minn. R. 4410.1000
All replaced, modified or new emission units must meet the requirements for one of the Subject Items in this permit, as applicable.  Changes are pre-authorized by this permit as long as all the applicable requirements are included in this permit. If a proposed change triggers an applicable requirement that is not contained in this permit, the change must go through the appropriate procedure in Minn. R. ch. 7007.	Title I Condition: Changes authorized to be made
TOTAL FACILITY MONITORING AND RECORDKEEPING FOR FLEX CAPS	hdr
Daily recordkeeping: On each day of operation, the Permittee shall record and maintain records of the total quantity of all materials used containing VOC at the facility.	Title I Condition: Monitoring for limit taken to avoid classification as a major modification under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subp 4 and 5

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/15/02

Facility Name: 3M - Cottage Grove TCM Div

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<p>Monthly Recordkeeping - VOC Emissions By the 15th day of the month, the Permittee shall calculate and record the following:</p> <ol style="list-style-type: none"> <li>1. The total usage of VOC containing material for the previous calendar month using the daily usage records. This record shall also include the VOC and solids contents of each material as determined by the Material Content requirement of this permit.</li> <li>2. The VOC emissions for the previous month using the formulas specified in this permit, or any MPCA approved method.</li> <li>3. The 12 month rolling sum VOC emissions for the previous 12 month period by summing the monthly VOC emissions data for the previous 12 months. This number shall be less than or equal to the specified VOC limit of 95 tons per year listed above.</li> <li>4. VOC emissions shall be recorded and maintained in a written or electronic form at the facility for the period of five years.</li> </ol>	<p>Minn. R. 7007.0800, subp. 4 and 5 40 CFR Section 70.6(a)(3)(i)(B)</p>
<p>Monthly Calculation: VOC Emission The Permittee shall calculate VOC emissions using the following equations: VOC(tons/month) = V - W V = (A1xB1) + (A2xB2) + (A3xB3) + ... + (AnxBn) W = (C1xD1) + (C2xD2) + (C3xD3) + ... + (CnxDn)</p>	<p>Minn. R. 7007.0800, subp. 4 and 5 40 CFR Section 70.6(a)(3)(i)(B)</p>
<p>Monthly VOC emissions calculations continued: where: V = total VOC used in tons/month A# = amount of each VOC containing material used, in tons/month B# = weight percent VOC in A#, as a fraction; W = the amount of VOC shipped in waste, in tons/month; C# = amount, in tons/month, of each VOC containing waste material shipped. If the Permittee chooses not to take credit for waste shipments, this parameter will be zero; and D# = weight percent of VOC in C#, as a fraction.</p>	<p>Minn. R. 7007.0800 subp. 4 and 5 40 CFR Section 70.6(a)(3)(i)(B)</p>
<p>PM Emission Calculation Method: By the 15th day of each month, the Permittee shall do the following to determine PM emissions from the facility:</p> <ol style="list-style-type: none"> <li>1. Calculate, record and maintain a written or electronic monthly log of PM emissions for the preceeding month.</li> <li>2. Calculate the cumulative 12-month rolling sum of the PM emissions for the previous 12 months using the monthly PM emissions log. This number shall be less than or equal to the specified PM limit of 95 tons per year listed above.</li> <li>3. All PM calculations shall be recorded and maintained in a written or electronic form at the facility for a period of five years.</li> </ol>	<p>Minn. R. 7007.0800, subp. 4 and 5 40 CFR Section 70.6(a)(3)(i)(B)</p>
<p>PM10 Emission Calculation Method: By the 15th day of each month, the Permittee shall do the following to determine PM10 emissions from the facility.</p> <ol style="list-style-type: none"> <li>1. Calculate, record and maintain a monthly log of PM10 emissions for the preceeding month.</li> <li>2. Calculate the cumulative 12-month rolling sum of the PM10 emissions for the previous 12 months using the monthly PM10 emissions log. This number shall be less than or equal to the specified PM10 limit of 95 tons per year listed above.</li> <li>3. All PM10 calculations shall be recorded and maintained in a written or electronic form the facility for a period of five years.</li> </ol>	<p>Minn. R. 7007.0800, subp. 4 and 5 40 CFR Section 70.6(a)(3)(i)(B)</p>

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/15/02

Facility Name: 3M - Cottage Grove TCM Div

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<p>Material Content: VOC, HAPs and Solids (PM and PM10) contents in all materials shall be determined by a 1) Material Safety Data Sheet (MSDS), 2) Certified Product Data Sheet (CPDS), or 3) 3M ADSD laboratory formulation sheet or 3M product specification information, whichever is most representative for each material used. If a material content range is given, the highest number in the range shall be used in all permits calculations. When using the above resources as the basis of calculating particulate emissions, the conservative assumption is made that PM consists entirely of PM less than 10 microns. Other alternative methods approved by the MPCA may be used to determine the VOC, HAPs and Solids content. The Commissioner reserves the right to require the Permittee to determine the VOC, HAP and solids contents of any material according to EPA reference methods.</p>	<p>Minn. R. 7007.0800, subp. 4 and 5 40 CFR Section 70.6(a)(3)(i)(B)</p>
<p>Waste Credit: If the Permittee elects to obtain credit for HAPs or VOC shipped in waste materials, the Permittee shall either use item 1 or 2 to determine the VOC and total and individual HAP content for each credited shipment.</p> <p>1. The Permittee shall analyze a sample of each container of waste, to determine weight content of VOC for each individual HAP.</p> <p>2. The Permittee may use 1) Material Safety Data Sheet (MSDS), 2) Certified Product Data Sheet (CPDS), or 3) 3M ADSD laboratory formulation sheet or 3M product specification information for raw materials (using the same content data used to determine the content of raw material) or a 3M Waste Stream Profile (WSP) to determine the VOC and HAP contents of each waste shipment.</p>	<p>Minn. R. 7007.0800, subp. 4 and 5 40 CFR Section 70.6(a)(3)(i)(B)</p>
<p>continuation</p> <p>The Permittee may also determine the VOC and HAP content of any waste material according to EPA reference methods or any MPCA approved method. If the waste contains several materials, the content of mixed waste shall be assumed to be the lowest VOC and individual HAP content of any of the materials.</p>	<p>Minn. R. 7007.0800, subp. 4 and 5 40 CFR Section 70.6(a)(3)(i)(B)</p>
<p>Recordkeeping of Equipment and Formulation Changes:</p> <p>The Permittee shall keep records of any emission unit that is replaced or installed. This record shall be updated any time equipment is replaced or installed. The record shall include the date the equipment was replaced (startup or new, shutdown of existing) or installed, the corresponding EU number, the manufacturer and model numbers of the new equipment.</p> <p>The Permittee shall keep a log of all coating formulations as determined by the Material Content requirement in this permit.</p>	<p>Title I Condition: Recordkeeping for limit to avoid classification as major modification under 40 CFR Section 52.21 and Minn. R. 7007.3000</p>
<p>Emissions Inventory Report: due 91 days after end of each calendar year (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><b>OTHER REQUIREMENTS</b></p>	<p>hdr</p>
<p>Operation and Maintenance Plan: Retain at the stationary source an operation and maintenance plan for all air pollution control equipment. The plan must include specific corrective actions to be implemented when monitoring of air pollution control equipment operating parameters are outside the range specified in this permit, or outside the manufacturer's recommended range or 3M specifications.</p> <p>At a minimum, this O and M Plan shall include a list of the operating parameter ranges for each type of air pollution control equipment on site, recommended spare parts, a schedule of inspections and maintenance, description of an operator training program, and a schedule for instrument calibration.</p>	<p>Minn. R. 7007.0800, subp. 14 and Minn. R. 7007.0800, subp. 16(J)</p>
<p>Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017 unless otherwise noted in Table A and or B.</p>	<p>Minn. R. ch. 7017; 40 CFR Section 52.1222</p>
<p>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. The Permittee has installed the monitoring equipment required by or referenced in this permit.</p>	<p>Minn. R. 7007.0800, subp. 4(D) 40 CFR Section 70.6(a)(3)(i)(C)</p>
<p>Monitoring Equipment Calibration: Annually calibrate all required monitoring equipment (any requirements applying to continuous emission monitors are listed separately in this permit).</p>	<p>Minn. R. 7007.0800, subp. 4(D) 40 CFR Section 70.6(a)(3)(i)(C)</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) 40 CFR Section 70.6(a)(3)(i)(C)</p>

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/15/02

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<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>Shutdown Notifications: Notify the Commissioner at least 24 hours in advance of a planned shutdown of any control equipment or process equipment if the shutdown would cause any increase in the emissions of any regulated air pollutant. If the owner or operator does not have advance knowledge of the shutdown, notification shall be made to the Commissioner as soon as possible after the shutdown. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 3.</p> <p>At the time of notification, the owner or operator shall inform the Commissioner of the cause of the shutdown and the estimated duration. The owner or operator shall notify the Commissioner when the shutdown is over.</p>	<p>Minn. R. 7019.1000, subp. 3; 40 CFR Section 52.1222</p>
<p>Breakdown Notifications: Notify the Commissioner within 24 hours of a breakdown of more than one hour duration of any control equipment or process equipment if the breakdown causes any increase in the emissions of any regulated air pollutant. The 24-hour time period starts when the breakdown was discovered or reasonably should have been discovered by the owner or operator. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 2.</p> <p>At the time of notification or as soon as possible thereafter, the owner or operator shall inform the Commissioner of the cause of the breakdown and the estimated duration. The owner or operator shall notify the Commissioner when the breakdown is over.</p>	<p>Minn. R. 7019.1000, subp. 2; 40 CFR Section 52.1222</p>
<p>Notification of Deviations Endangering Human Health or the Environment: As soon as possible after discovery, notify the Commissioner or the state duty officer, either orally or by facsimile, of any deviation from permit conditions which could endanger human health or the environment.</p>	<p>Minn. R. 7019.1000, subp. 1; 40 CFR Section 52.1222</p>
<p>Notification of Deviations Endangering Human Health or the Environment Report: Within 2 working days of discovery, notify the Commissioner in writing of any deviation from permit conditions which could endanger human health or the environment. Include the following information in this written description:</p> <ol style="list-style-type: none"> <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; 40 CFR Section 52.1222</p>
<p>Operation Changes: In any shutdown, breakdown, or deviation that could endanger human health or the environment, 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.</p>	<p>Minn. R. 7019.1000, subp. 4; 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>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>
<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 40 CFR Section 70.7(d) and 70.7(e); 40 CFR Section 52.21(i)</p>
<p>Extension Requests: The Permittee may apply for an Administrative Amendment to extend a deadline in a permit by no more than 120 days, provided the proposed deadline extension meets the requirements of Minn. R. 7007.1400, subp. 1(H).</p>	<p>Minn. R. 7007.1400, subp. 1(H) 40 CFR Section 70.7(d)(1)(vi)</p>
<p>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.</p>	<p>Minn. R. 7007.0800, subp. 5(B)</p>
<p>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.</p>	<p>Minn. R. 7007.0800, subp. 5(B) 40 CFR Section 70.4(b)(12)</p>

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

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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, specified in this permit, 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) 40 CFR Section 70.6(a)(3)(ii)(B)
Noise: The Permittee shall comply with the noise standards set forth in Minn. R. 7030.0010 to 7030.0080 at all times during the operation of any emission units. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.	Minn. R. 7030.0010 - 7030.0080
The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16.	Minn. R. 7007.0800, subp. 16 40 CFR Section 70.6(a)(4), (5), (6)
Emission Fees: due 60 days after receipt of an MPCA bill.	Minn. R. 7002.0005 through Minn. R. 7002.0095 40 CFR Section 70.6(a)(7)
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) 40 CFR Section 70.6(c)(2)

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/15/02

Facility Name: 3M - Cottage Grove TCM Div

Permit Number: 16300059 - 001

**Subject Item:** GP 001 SAE line**Associated Items:** EU 002 SAE Line

EU 025 Particle Applicator

EU 026 Particle Applicator

SV 001 HMC/SAE Line

What to do	Why to do it
Total Particulate Matter: less than 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with less stringent of Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1(A) 40 CFR Section 52.1222
Opacity: less than or equal to 20 percent opacity .	Minn. R. 7011.0715, subp. 1(B) 40 CFR Section 52.1222

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/15/02

Facility Name: 3M - Cottage Grove TCM Div

Permit Number: 16300059 - 001

**Subject Item: GP 002 HMC line and Compounding**

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

EU 001 HMC Line

EU 022 Compounding

SV 001 HMC/SAE Line

SV 002 Compounding

What to do	Why to do it
Total Particulate Matter: less than 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with less stringent of Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1(A) 40 CFR Section 52.1222
Opacity: less than or equal to 20 percent opacity .	Minn. R. 7011.0715, subp. 1(B) 40 CFR Section 52.1222
Monitoring: Once each day that emission unit EU 022 in this group is operated and vented through CE004, the Permittee shall record the pressure drop across the air pollution control equipment. If the pressure drop is outside of the range specified for CE004, implement the corrective actions in the Operation and Maintenance Plan.	Minn. R. 7007.0800, subp. 4(B) 40 CFR Section 70.6(a)(3)(i)(B)
The Permittee shall vent emissions from emission unit EU 022 in this group while operating and venting through SV 002, to control equipment meeting the requirements of CE 004 in this permit.	Title I Condition: Operational Requirement for limit to avoid classification as major modification under 40 CFR Section 52.21 and Minn. R. 7007.3000

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/15/02

Facility Name: 3M - Cottage Grove TCM Div

Permit Number: 16300059 - 001

**Subject Item:** GP 003 Mixing Area**Associated Items:** EU 003 Mixer

EU 004 Portable Mixers

SV 003 Mixing Area

What to do	Why to do it
Total Particulate Matter: less than 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with less stringent of Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1(A) 40 CFR Section 52.1222
Opacity: less than or equal to 20 percent opacity .	Minn. R. 7011.0715, subp. 1(B) 40 CFR Section 52.1222

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/15/02

Facility Name: 3M - Cottage Grove TCM Div

Permit Number: 16300059 - 001

**Subject Item:** GP 004 Flexible Sign Coater/Oven**Associated Items:** EU 020 Flexible Sign Coater

EU 021 Oven

SV 004 Flexible Sign Coater/Oven

What to do	Why to do it
Total Particulate Matter: less than 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with less stringent of Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1(A) 40 CFR Section 52.1222
Opacity: less than or equal to 20 percent opacity .	Minn. R. 7011.0715, subp. 1(B) 40 CFR Section 52.1222

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/15/02

Facility Name: 3M - Cottage Grove TCM Div

Permit Number: 16300059 - 001

**Subject Item: GP 005 Pilot Coating Line**

- Associated Items:** CE 001 Direct Flame Afterburner  
 EU 007 Primary Coating Head  
 EU 008 Tandem Coating Head  
 EU 009 Manual Coating Head  
 EU 011 Oven  
 EU 012 Particle Applicator  
 EU 013 Particle Applicator  
 EU 014 Mezzanine Particle Applicator  
 EU 024 Mezzanine Particle Applicator  
 SV 005 Pilot Coater/Oven/TO

What to do	Why to do it
Total Particulate Matter: less than 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with less stringent of Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1(A) 40 CFR Section 52.1222
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B) 40 CFR Section 52.1222
NEW SOURCE PERFORMANCE STANDARDS, SUBPART RR, PRESSURE SENSITIVE TAPE AND LABEL OPERATIONS	hdr
This emission unit (group) is an affected facility under 40 CFR pt. 60, subp. RR, and must meet the applicable requirements listed below.	40 CFR Section 60.440(a) and (c); Minn. R. 7011.2560
If the facility inputs to the coating process 45 Mg of VOC or less per 12-month period, the Permittee shall maintain a rolling 12-month record of the amount of solvent applied in the coating at the facility. The Permittee is not subject to the emission limits listed below or the requirements listed in CE 001 when meeting this requirement.	40 CFR Section 60.445(d); 40 CFR Section 60.440(b)
The Permittee shall demonstrate at least a 90 percent overall VOC emission reduction as calculated over a calendar month.	40 CFR 60.442 (a)(2)(i)
<p>The Permittee shall keep, at the facility, a record of VOC use by weight for each calendar month. VOC use by weight shall be calculated by the 15th day of each month, for the previous month, using the following method:</p> <p>VOC = SUM (Woi x Mci)</p> <p>Where:</p> <p>Woi = The weight fraction of volatile organics of each coating (i) applied during the calendar month.</p> <p>Mci = The total mass of each coating (i) applied during the calendar month.</p> <p>The value of Woi will be obtained from either EPA Reference Method 24 test or manufacturer's formulation data.</p>	40 CFR Section 60.445(a); 40 CFR Section 60.446(a); Minn. R. 7007.0800, subp. 5
The Permittee shall maintain, on site, a calendar month record of all coatings used and the results of the reference test method specified in 40 CFR Section 60.446(a) or the manufacturer's formulation data used for determining the VOC content of those coatings.	40 CFR Section 60.445(a) and Minn. R. 7007.0800, subp 5

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/15/02

Facility Name: 3M - Cottage Grove TCM Div

Permit Number: 16300059 - 001

**Subject Item:** GP 006 Emergency Generators**Associated Items:** EU 005 Emergency Generator

EU 006 Emergency Generator

SV 006 Emergency Generator

SV 007 Emergency Generator

What to do	Why to do it
Fuel Type: The Permittee shall use only natural gas in these emission units.	Minn. R. 7007.0800, subp. 4 and 5 40 CFR Section 70.6(a)(3)(i)(B)
Opacity: less than or equal to 20 percent opacity .	Minn. R. 7011.2300, subp. 1; 40 CFR Section 52.1222

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/15/02

Facility Name: 3M - Cottage Grove TCM Div

Permit Number: 16300059 - 001

**Subject Item: GP 007 RDL Process**

**Associated Items:** CE 002 Wet Scrubber - High Efficiency w/Lime Slurry

CE 003 Direct Flame Afterburner

EU 018 RDL Process

EU 019 Thermal Oxidizer-same as CE003

EU 023 RDL Process Wet Area

SV 009 TCP Unit

SV 010 RDL Process/TO

What to do	Why to do it
Total Particulate Matter: less than 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with less stringent of Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1(A) 40 CFR Section 52.1222
Opacity: less than or equal to 20 percent opacity .	Minn. R. 7011.0715, subp. 1(B) 40 CFR Section 52.1222
The Permittee shall vent emission from this group to control equipment meeting the requirements of CE 002 and CE 003.	Title I Condition: Operational requirement for limit taken to avoid classification as major modification under 40 CFR Section 52.21 and Minn. R. 7007.3000

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/15/02

Facility Name: 3M - Cottage Grove TCM Div

Permit Number: 16300059 - 001

**Subject Item:** EU 015 Glass Maker**Associated Items:** SV 008 Glass Maker

<b>What to do</b>	<b>Why to do it</b>
Total Particulate Matter: less than 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with less stringent of Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1(A) 40 CFR Section 52.1222
Opacity: less than or equal to 20 percent opacity .	Minn. R. 7011.0715, subp. 1(B) 40 CFR Section 52.1222
Monitoring: Once each day that this emission unit operates, the Permittee shall record the absence or presence of visible emissions from the exhaust stack. If visible emissions are observed, investigate and determine the cause of the emissions and implement corrective actions to eliminate the visible emissions.  Keep a record on site of all such corrective actions.	Minn. R. 7007.0800, subp. 4(B) 40 CFR Section 70.6(a)(3)(i)(B)

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/15/02

Facility Name: 3M - Cottage Grove TCM Div

Permit Number: 16300059 - 001

**Subject Item:** EU 016 TCP Unit**Associated Items:** CE 002 Wet Scrubber - High Efficiency w/Lime Slurry

SV 009 TCP Unit

<b>What to do</b>	<b>Why to do it</b>
Total Particulate Matter: less than 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with less stringent of Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1(A) 40 CFR Section 52.1222
Opacity: less than or equal to 20 percent opacity .	Minn. R. 7011.0715, subp. 1(B) 40 CFR Section 52.1222
The Permittee shall vent emissions from this unit to control equipment meeting the requirements of CE 002.	Title I Condition: Operational requirement for limit taken to avoid classification as a major source modification under 40 CFR 52.21 and Minn. R. 7007.3000

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/15/02

Facility Name: 3M - Cottage Grove TCM Div

Permit Number: 16300059 - 001

**Subject Item: CE 001 Direct Flame Afterburner**

**Associated Items:** EU 007 Primary Coating Head

EU 008 Tandem Coating Head

EU 009 Manual Coating Head

EU 011 Oven

GP 005 Pilot Coating Line

What to do	Why to do it
Fuel type: the Permittee shall use only natural gas for fuel in this subject item.	Minn. R.7007.0800, subp. 4(B) 40 CFR Section 70.6(a)(3)(i)(B)
The Permittee is required to operate the control equipment at all times when the process equipment is in operation and processing raw materials.	Title I Condition: Operational requirement for limit taken to avoid classification as a major source or modification under 40 CFR 52.21; and Minn.7007.3000
Volatile Organic Compounds: greater than or equal to 90 percent control efficiency	Minn. R. 7007.0800, subp. 14 and 16(J) 40 CFR Section 60.442(a)(2)(i)
Temperature: greater than or equal to 1400 degrees F using 3-hour Rolling Average in the combustion chamber, or as documented during the most recent performance test which demonstrated compliance with the required VOC destruction efficiency. The Permittee shall comply with a reasonable alternate temperature imposed pursuant to Minn. R. 7017.2025, subp. 3.  This temperature limit does not apply during startup and shutdown.	Minn. R. 7007.0800, subp. 16(J)
The Permittee shall calibrate, maintain and operate a temperature monitoring device that continuously (as defined below) indicates and records the Combustion Chamber temperature of the Thermal Oxidizer. The monitoring device shall have a margin of error less than or equal to the greater of +/- 0.75 percent of the temperature measurement or +/- 2.5 degrees C.  "Continuous" or "continuously" means to measure and record at least one data point in every 15-minute block time interval starting on the hour.	Minn. R. 7007.0800, subp. 4 and subp. 5 40 CFR 60.445(e)
The Permittee shall maintain on site a record of the temperature in the combustion chamber when the thermal oxidizer is in operation. The record may be in the form of electronic computer files or in the form of an ink chart recording and shall include the computed 3-hour rolling average temperature. The record must include an explanation of missing data.  The Permittee shall also maintain on site a record of the average temperature of the device during the most recent performance test where compliance was demonstrated.	Minn. R. 7007.0800, subp. 5 40 CFR 60.443(e)
The Permittee shall maintain on site a record of each three-hour average temperature that is 50 degrees F or more below the average temperature recorded during the most recent performance test which demonstrated compliance.	40 CFR Section 60.443(e)
Calibration or replacement of the temperature monitoring device shall be done at least once a year.	Minn. R. 7007.0800, subp. 16(J)
When a performance test is required by the Commissioner, the test shall be conducted in accordance with Minn. R. 7017.2001 to 7017.2060; 40 CFR 60.8; 40 CFR 60.444(c); 40 CFR 60.446(b) and as follows: 1. The thermal oxidizer performance shall be determined by averaging the results of three test runs as specified in 40 CFR 60.8(f). 2. Determine the weighted average mass of VOC per mass of coating solids applied being used during the test. The weighted average shall be determined as specified in 40 CFR 60.443(a). In this application the quantities of Woi, Wsi and Mci shall be determined for the time period of each test run and not a calendar month. 3. Determined the actual percent overall VOC emission reduction Rt of the thermal oxidizer by the following equation and procedures:  $Rt = \left( \frac{\text{Sum}(Q_{bi} \times C_{bi}) - \text{Sum}(Q_{aj} \times C_{aj})}{\text{Sum}(Q_{bi} \times C_{bi}) + \text{Sum}(Q_{fk} \times C_{fk})} \right) \times 100$ where:	Minn. R. 7007.0800, subp. 4(A) 40 CFR 60.8(a); 40 CFR 60.444(c); 40 CFR 60.446(b)

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/15/02

Facility Name: 3M - Cottage Grove TCM Div

Permit Number: 16300059 - 001

<p>continue ..</p> <p>Q = the volumetric flow rate of each effluent gas stream in dry standard cubic meter per hour.</p> <p>C = concentration of VOC (carbon equivalent) in each gas stream</p> <p>a = exiting the thermal oxidizer</p> <p>b = entering the thermal oxidizer</p> <p>f = emitted directly to the atmosphere</p>	<p>Minn. R. 7007.0800, subp. 4(A) 40 CFR 60.8(a); 40 CFR 60.444(c); 40 CFR 60.446(b)</p>
<p>For the affected facility where the value of <math>R_t</math> is greater than or equal to the value of <math>R_q</math> calculated in 40 CFR 60.443(b), compliance with 40 CFR 60.442(a)(2) is demonstrated.</p>	<p>40 CFR 60444(c)(4)(iii)</p>
<p>Corrective Actions: If the combustion temperature is not in the range specified in this permit, or within the most recent MPCA-approved range, the Permittee shall take corrective action as described in the Operation and Maintenance plan as soon as practicable to return the temperature to within the required range. The Permittee shall keep a written record of the type and date of any corrective action taken.</p>	<p>Minn. R. 7007.0800, subp. 16(J)</p>

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/15/02

Facility Name: 3M - Cottage Grove TCM Div

Permit Number: 16300059 - 001

**Subject Item:** CE 002 Wet Scrubber - High Efficiency w/Lime Slurry

**Associated Items:** EU 016 TCP Unit

EU 023 RDL Process Wet Area

GP 007 RDL Process

What to do	Why to do it
Operation and Maintenance of Scrubber: The Permittee shall operate and maintain the scrubber according to the Operation and Maintenance Plan.	Title I Condition: Operational Requirement for limit taken to restrict modification from being a major modification as defined in 40 CFR Section 52.21 and Minn. R. 7007.3000
Total Particulate Matter: greater than or equal to 90 percent control efficiency	Minn. R. 7007.0800, subp. 16(J)
Particulate Matter < 10 micron: greater than 90 percent control efficiency	Minn. R. 7007.0800, subp. 16(J)
Volatile Organic Compounds: greater than or equal to 90 percent control efficiency	Minn. R. 7007.0800, subp. 16(J)
Monitoring: Once each day that any emission unit controlled by CE002 operates, the Permittee shall record the pressure drop and water flow into the scrubber.	Minn. R. 7007.0800, subp. 4 and 5 40 CFR Section 70.6(a)(3)(i)(B)
Corrective Actions: If the pressure drop is outside the specified range listed in the Operation and Maintenance Plan and/or water flow rate is not equal to or greater than the minimum value listed in the Operation and Maintenance Plan, the Permittee shall take corrective action as soon as possible to achieve the required operating values. The Permittee shall keep a record of the type and date of all corrective actions taken.	Minn. R. 7007.0800, subp. 14 and 16(J)
Inspect as specified in the Operation and Maintenance Plan, all components that are subject to wear or plugging, including structural components, housing, ducts, and hoods. Maintain a written record of the inspection and any corrective action resulting from the inspection.	Minn. R. 7007.0800 subp. 5 and 16(J)
Calibrate the pressure drop and water flow meter annually, or as often as required by the manufacturer's or 3M specifications. Maintain a written records of the calibrations and any corrective action resulting from the calibrations.	Minn. R. 7007.0800 subp. 5 and 16(J)

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/15/02

Facility Name: 3M - Cottage Grove TCM Div

Permit Number: 16300059 - 001

**Subject Item:** CE 003 Direct Flame Afterburner

**Associated Items:** EU 018 RDL Process

GP 007 RDL Process

What to do	Why to do it
<p>The Thermal Oxidizer (CE 003) is a voluntarily installed piece of control equipment used to control odors from the RDL process (EU 018). The following conditions are state only requirements and are not enforceable by the Administrator or citizens under the Clean Air Act.</p>	<p>hdr</p>
<p>Temperature: greater than or equal to 1400 degrees F using 3-hour Rolling Average whenever VOC is being combusted in CE 001.</p>	<p>Minn. R. 7007.0800, subp. 16(J)</p>
<p>Fuel type: the Permittee shall use only natural gas for fuel in this subject item.</p>	<p>Minn. R.7007.0800, subp. 4(B)</p>
<p>Calibration or replacement of the temperature monitoring device shall be done at least once a year.</p>	<p>Minn. R. 7007.0800, subp. 4</p>
<p>The Permittee shall calibrate, maintain and operate a temperature monitoring device that continuously (as defined below) indicates and records the Combustion Chamber temperature of the Thermal Oxidizer. The monitoring device shall have a margin of error less than or equal to the greater of +/- 0.75 percent of the temperature measurement or +/- 2.5 degrees C.</p> <p>"Continuous" or "continuously" means to measure and record at least one data point in every 15-minute block time interval starting on the hour.</p>	<p>Minn. R. 7007.0800, subp. 4 and subp. 5</p>
<p>The Permittee shall maintain on site a record of the temperature in the combustion chamber when the thermal oxidizer is in operation. The record may be in the form of electronic computer files or in the form of an ink chart recording and shall include the computed 3-hour rolling average temperature. The record must include an explanation of missing data.</p> <p>The Permittee shall also maintain on site a record of the average temperature of the device during the most recent performance test where compliance was demonstrated.</p>	<p>Minn. R. 7007.0800, subp. 4(D)</p>

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

01/15/02

Facility Name: 3M - Cottage Grove TCM Div

Permit Number: 16300059 - 001

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

**Associated Items:** EU 022 Compounding

GP 002 HMC line and Compounding

What to do	Why to do it
Operate and maintain CE004 to achieve a control efficiency for Total Particulate Matter: greater than or equal to 99 percent control efficiency while operating and processing raw materials.	Title I Condition: Limit taken to avoid classification as a major source or modification under 40 CFR 52.21 and Minn. R. 7007.3000; Minn. T. 7011.0065, subp. 1(A)
Operate and maintain control equipment to achieve a control efficiency for Particulate Matter <10 microns: greater than or equal to 99 percent control efficiency while operating and processing raw materials.	Title I Conditon: Limit taken to avoid classification as a major source or modification under 40 CFR Section 52.21 and Minn. 7007.3000; Minn. R. 7011.0065, subp. 1(A)
Pressure Drop: greater than or equal to 0.8 inches of water column and less than or equal to 6 inches of water column	Title I Condition: Limit taken to avoid classification as major modification under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7011.0080
Pressure Drop Recordkeeping: Once each day that any emission unit controlled by CE004 operates, the Permittee shall record the pressure drop across the fabric filter.	Title I Condition:Recordkeeping for limit to avoid classification as major modification under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7011.0080
Alternative Pressure Drop Range: If the Permittee wishes to propose an alternative pressure drop range to the one specified in this permit without conducting a performance test, the Permittee shall submit the proposal to MPCA for review. The proposal shall contain control equipment vendor data, actual operating data, or other information as necessary, in order to justify an alternative range. Upon written approval by MPCA, the alternative range shall become an enforceable part of this permit.	Minn. R. 7007.0800, subp. 16(J)
Corrective Actions: If the pressure drop is not in the range specified in this permit, or within the most recent MPCA-approved range, the Permittee shall take corrective action as described in the Operation and Maintenance plan as soon as practicable to return the pressure drop to within the required range. The Permittee shall keep a written record of the type and date of any corrective action taken.	Minn. R. 7007.0800, subp. 14 and 16(J)
Maintenance of Control Equipment: The Permittee shall maintain the control equipment as specified in Minn. R. 7011.0075, subp. 2(A)-(G) and maintain records of maintenance activities and corrective actions as specified in Minn. R. 7011.0075, subp. 2(H) and (I).	Minn. R. 7007.0800, subp. 14; Minn. R. 7011.0075, subp. 2

**TABLE B: SUBMITTALS**

01/15/02

Facility Name: 3M - Cottage Grove TCM Div  
Permit Number: 16300059 - 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**

01/15/02

Facility Name: 3M - Cottage Grove TCM Div

Permit Number: 16300059 - 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

**TABLE B: RECURRENT SUBMITTALS**

01/15/02

Facility Name: 3M - Cottage Grove TCM Div

Permit Number: 16300059 - 001

What to send	When to send	Portion of Facility Affected
Semiannual Deviations Report	due 30 days after end of each calendar half-year following Permit Issuance. The first semiannual report submitted by the Permittee shall cover the calendar half-year in which the permit is issued. The first report of each calendar year covers January 1 - June 30. The second report of each calendar year covers July 1 - December 31. If no deviations have occurred, the Permittee shall submit the report stating no deviations.	Total Facility
Annual Report	due 91 days after end of each calendar year following Permit Issuance (April 1). The Permittee shall submit an annual report that describes the changes made at the facility during the previous calendar year. The report shall document the 12-month rolling sum calculations for the previous calendar year and any New Source performance Standards that were triggered in the last calendar year.	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.	Total Facility

APPENDIX MATERIAL

Facility Name: 3M - Cottage Grove TCM Div

Permit Number: 16300059-001

I – List of Insignificant Activities as of date of Permit Action 001

II – Applicable requirements commonly applicable to Insignificant Activities

I - Insignificant Activities as of date of Permit Action 001

Three (3) Surface Treaters  
Twenty one (21) Oil Heaters  
One (1) Co-extruder  
Nine (9) extruders  
Two (2) Cure Ovens  
One (1) Thermal Parts Cleaner  
One (1) Jet Mill / Classifiers  
One (1) Screen Washer  
One (1) Embossed Roll-Coat

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 (EPA White Paper Number 2).

The following table lists likely applicable requirements for subpart 3 insignificant activities (IAs). It is assumed that subpart 2 IAs are consistent with EPA's "trivial" activity list and "may be presumptively omitted from part 70 applications" per White Paper Number 1. Subpart 4 IAs would need to be included in the permit as well, but can not easily be addressed generically.

## 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:	
	1. infrared electric ovens; and	Minn. R. 7011.0105/0110
	2. 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 Minn. R. 7011.0610 + 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: <ul style="list-style-type: none"> <li>a). filtered through an air cleaning system; and</li> <li>b). vented inside of the building 100% of the time.</li> </ul>	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 Minn. R. 7011.1505, subp. 2(B)/1505, subp. 3(B) OR 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 Minn. R. 7011.1505, subp. 2(B)/1505, subp. 3 (B) 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 + 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 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 + 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 + 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 + Minn. R. 7011.0610 + Minn. R. 7011.0710/0715

3(I)	<p>Individual emissions units at a stationary source, each of which have a potential to emit the following pollutants in amounts less than:</p> <ol style="list-style-type: none"> <li>1. 4,000 lbs/year of carbon monoxide; and</li> <li>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 pollutant-containing VOC), and ozone.</li> </ol>	Varies with type of emission unit.
3(J)	Fugitive Emissions from roads and parking lots.	Minn. R. 7011.0150
3(K)	<p>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.</p>	Minn. R. 7011.0710/0715

**TECHNICAL SUPPORT DOCUMENT**  
**For**  
**AIR EMISSION PERMIT NO. 16300059 - 001**

This technical support document is for all 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: 3993)
3M Company P.O. Box 33331 St. Paul, Minnesota 55133	3M Cottage Grove Center TCM Division 10746 Innovation Road Building 133 Cottage Grove, Washington County, MN 55016-4600

**1.2. Description of the Facility**

3M owns and operates the Traffic Control Materials (TCM) Division Process Research Facility at Cottage Grove, Building 133. This facility supports the research and development for an array of reflective products for the transportation safety and commercial graphics industries. These products include a variety of sheeting for traffic and commercial signs, vehicle registration, pavement marking, vehicle marking and personal safety applications.

3M Cottage Grove TCM Division Process Research has submitted an application for a Total Facility air emission permit as required by Minnesota Rules chapter (Minn. R. ch.) 7007. Minn. R. ch. 7007 implements the Title V operating permit program of the federal Clean Air Act as amended 1990. The Title V operating permit application was originally received on April 12, 1995. Further information was requested and received on June 2, 2000.

Operations in Building 133 result in emissions of Volatile Organic Compounds (VOC), Particulate Matter (PM) and Particulate Matter less than 10 microns (PM<sub>10</sub>). There are also small amounts of Nitrogen Oxides (NO<sub>x</sub>), Sulfur Dioxide (SO<sub>2</sub>) and Carbon Monoxide (CO) generated as a result of natural gas combustion at the facility in thermal curing ovens, thermal oxidizers and process equipment.

The pilot coating line (GP005) consists of coating heads, particle applicators and a thermal oven controlled by a thermal oxidizer. These components will generate air emissions of VOC, some of which are hazardous air pollutants (HAPs). The pilot coating line is subject to New Source Performance Standards (NSPS), subp. RR for Pressure Sensitive Tape and Label Operations according to 40 CFR pt. 60.

3M has requested a flexible emission cap (FlexCap) with a cap on VOC, PM, and PM<sub>10</sub> emissions. Under a FlexCap permit, the Permittee may install new emission units and modify existing emission units without applying for an amendment as long as the applicable requirements for the new and modified units are already included in the permit, and total facility emissions, including emissions from the new and modified units, remain below the cap. Any modifications made under a FlexCap permit are thus not Major under federal Prevention of Significant Deterioration (PSD), New Source Review Regulations.

### **Major Source Status**

There are several definitions of “major source” to consider under federal regulations. These are the definitions for the HAPs program under Section 112 of the Clean Air Act (and implemented through 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 facilities 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 3M Cottage Grove complex as a whole exceeds these thresholds, so the TCM Division 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 complex is considered a major source under Part 70 due to its major source status under Part 63.

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

Prevention of Significant Deterioration 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 Prevention of Significant Deterioration 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).

SIC Codes currently assigned to the Cottage Grove operations are:

Name	MPCA File No.	Delta ID	SIC
Abrasive Systems Division	23AX	16300017	3291
Automotive - Building 17	23AH	16300065	2297
Corporate Incinerator	23AI	16300025	4953
Film - Building 17	23AF	16300023	3081
Industrial Specialty		16300002	3229
Sensitizer Bldg 111	23AK	16300071	3861
SMD Chemicals	23AC	16300022	2891
Tape Manufacturing	23AE	16300080	2672
<b>TCM Division</b>	<b>23AT</b>	<b>16300059</b>	<b>3993</b>
Utilities (wastewater treatment)	23AB	16300015	4952

The TCM Division is considered a separate stationary source for PSD purposes.

### **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 pollutants.

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

The Minnesota Pollution Control Agency (MPCA) and 3M staff 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 Changes Authorized by this Permit Issuance**

This permit authorizes the following total facility emission FlexCaps:

VOC:	95 tons per year
PM:	95 tons per year
PM <sub>10</sub> :	95 tons per year

The changes allowed under the CAP authorized by this Total Facility operating permit are not subject to the federal NSR regulations, because this permit establishes limits on groups of emission units which make the facility as a whole a minor source for NSR purposes.

#### 1.4. Description of Previous Permits and Amendments Issued to this Facility

Permit Number and Issuance Date	Action Authorized
23AT-91-OT January 2, 1995	Installation of mixing area, pilot coating line and Thermal Oxidizer
23AT-91-OT Amendment #1 September 27, 1991	Increased pilot coating line web width
23AT-91-OT Amendment #2 October 14, 1991	Installation of insignificant activities
23AT-91-OT Amendment #3 January 29, 1993	Revised material usage limits for pilot coating line
23AT-91-OT Amendment #4 May 14, 1993	Installation of TCP, RDL and Glass Maker
23AT-91-OT Amendment #5 October 28, 1994	Remove material usage limits for pilot coating line
23AT-94-IO June 4, 1994	Installation of Insignificant activities
23AT-95-IO February 14, 1996	Installation of HMC Line, Flexible Sign Coater and Emergency Generators
23AT-95-IO Amendment #1 August 8, 1998	Changes to Flexible Sign Coater operating limits

## 1.5. Facility Emissions:

**Table 1. Total Facility Potential to Emit Summary:**

ID #	SV#	Emission Unit Description	PM Tpy	PM <sub>10</sub> tpy	SO <sub>2</sub> tpy	NO <sub>x</sub> tpy	CO tpy	VOC tpy	All HAPs tpy
GP001	001	SAE line EU002, 025, 026	11.56	11.56	0	0	0	0	0
GP002	001 002	HMC line and Compounding EU001, 022	2.10	2.10	0	0	0	8.25	0
GP003	003	Mixing Area EU003, 004	0	0	0	0	0	113.4	113.4
GP004	004	Flexible Sign Coater/Oven EU020, 021	0.01	0.01	0	0.17	0.14	5.91	0
GP005	005	Pilot Coating Line EU007, 008, 009, 011, 012, 013, 014, 024	26.79	26.79	0.06	9.64	8.10	102.6	102.1
GP006	006 007	Emergency Generators EU005, 006	0	0	0	1.22	0.16	0.02	0
GP007	009 010	RDL Process EU018, 019, 023	0.05	0.05	0	0.63	0.53	14.25	0
EU015	008	Glass Maker	1.89	1.89	0	0.16	0.13	0.01	0
EU016	009	TCP Unit	0.28	0.28	0	0.21	0.18	0.01	0
		Insignificant Activities	0.7	0.7	0	0	0	17.4	0
Total Facility Limited Potential Emissions			95.0	95.0	0.06	12.0	9.24	95.0	95.0
Total Facility Actual Emissions			0.37	0.37	0.00	0.62	0.52	0.88	0.05

The Total Facility PTE above is based on the total allowed by this FlexCap permit and thus is not the sum of the individual emission unit PTE's.

**Table 2. Facility (TF) and Permit Classification**

Classification	Major/Affected Source	*Synthetic Minor	*Minor
Prevention of Significant Deterioration	NA	VOC, PM <sub>10</sub>	SO <sub>2</sub> , NO <sub>x</sub> , CO
Nonattainment area new source review	NA	NA	NA
Part 70 Permit Program (list pollutant)	HAPs	VOC	PM <sub>10</sub> , SO <sub>2</sub> , NO <sub>x</sub> , CO

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

**1.6 Calculation of a 12-month Rolling Sum:**

3M has proposed the following for Monitoring and Recordkeeping of VOC emissions:

3M will maintain monthly records of usage of all VOC-containing materials, using records of the amount used from inventory. VOC emissions will be calculated using a 12-month rolling sum based on quantities used from inventory and quantities in recovered materials.

The quantity of VOC in recovered materials will be calculated by multiplying the amount of recovered material sent off site for recycling each month by the VOC content of the waste stream(s). The VOC content of recovered materials will be based on a waste analysis of each waste stream provided monthly by the recycling facility.

**2. Regulatory and/or Statutory Basis**

**2.1. Summary Regulatory and/or Statutory Basis of the Emission or Operational Limit**

**Regulatory Overview of Facility**

EU, GRP, or SV #	Applicable Regulations	Comments:
Total Facility Flex Cap limits	Title I Condition to avoid classification as a major modification under NSR	Group-wide limits on PM, PM <sub>10</sub> , and VOC in tons/year. 3M has requested a total facility synthetic minor limit of 95 tons per year for VOC emissions.
	Periodic Monitoring  Periodic Monitoring, continued	Recordkeeping of amount and VOC-content of materials used and of VOC-containing materials sent off site for recycling; emissions from Insignificant Activities must be included; calculation methods specified for VOC and PM.  All emissions that are vented through the thermal oxidizer, scrubber and/or filters are covered by Control Equipment CE 001, CE 002, CE 003 and CE 004.

EU, GRP, or SV #	Applicable Regulations	Comments:
GP001	Minn. R. 7011.0715	Limits PM and opacity
	Periodic Monitoring	There is no control equipment for these emission units and they are not expected to be able to exceed the limit imposed by this Minn. R., so there is no specific periodic monitoring.
GP002	Minn. R. 7011.0715	Limits PM and opacity
	Periodic Monitoring	For EU022, monitoring of the pressure drop across CE 004. EU001 is uncontrolled and is not expected to be able to exceed the limit imposed by this Minn. R., so there is no specific periodic monitoring for EU001.
GP003	Minn. R. 7011.0715	Limits PM and opacity
	Periodic Monitoring	There is no control equipment for these emission units and they are not expected to be able to exceed the limit imposed by this Minn. R., so there is no specific periodic monitoring.
GP004	Minn. R. 7011.0715	Limits PM and opacity
	Periodic Monitoring	There is no control equipment for these emission units and they are not expected to be able to exceed the limit imposed by this Minn. R., so there is no specific periodic monitoring.
GP 005	Minn. R. 7011.0610	Limits PM and opacity
	Periodic Monitoring	For EU007, 008, 009, and 011, monitoring of the combustion temperature of CE001. For EU012, 013, 014, and 024, there is no control equipment and they are not expected to be able to exceed the limit imposed by this Minn. R., so there is no specific periodic monitoring.
	40 CFR § 60.440 (a), and (c); Minn. R. 7011.2560 40 CFR § 60.442 (a)(2)(i); 40 CFR § 60.445 (a); 40 CFR § 60.446 (a); 40 CFR § 60.445 (d); Minn. R. 7007.0800, subp. 5	New Source Performance Standards (NSPS), Subpart RR, Pressure Sensitive Tape and Label Operations.
	Periodic Monitoring	Recordkeeping of VOC use by month.  For EU007, 008, 009, and 011, monitoring of the combustion temperature of CE001.

EU, GRP, or SV #	Applicable Regulations	Comments:
GP 006	Minn. R. 7007.0800	Limits fuel use to natural gas
	Minn. R. 7011.0715	Limits PM and opacity
	Periodic Monitoring	None specified since the fuels used do not allow this emission unit to exceed the emission limits.
GP 007	Minn. R. 7011.0715	Limits PM and opacity
	Periodic Monitoring	For EU018, monitoring of the combustion temperature of CE003. For EU023, monitoring the pressure drop and water flowrate to the scrubber, CE002.
EU 015	Minn. R. 7011.0715	Limits PM and opacity
	Periodic Monitoring	Observe visible emissions daily/weekly.
EU 016	Minn. R. 7011.0715	Limits PM and opacity
	Periodic Monitoring	Monitoring the pressure drop and water flowrate to the scrubber.
CE 001	Minn. R. 7007.0800	Limits fuel use to natural gas
	40 CFR § 60.442 (a)(2)(i); 40 CFR § 60.445 (e); 40 CFR § 60.444 (c); 40 CFR § 60.446 (b); 40 CFR 60.8(a) Minn. R. 7007.0800, subp. 5	Combustion Chamber temperature limit Calibration and Maintenance of the temperature monitoring device.
	Periodic Monitoring	Combustion Chamber temperature records Calibration and Maintenance of the temperature monitoring device.
CE 002	Title I Condition to avoid classification as a major source under NSR	Operate and Maintenance and Pressure drop range and water flow meter.
	Periodic Monitoring	Recordkeeping of pressure drop and water flow. Corrective actions.
CE 003	Minn. R. 7007.0800	Limits fuel use to natural gas
	Minn. R. 7007.0800	Combustion Chamber temperature limit Calibration and Maintenance of the temperature monitoring device.
	Periodic Monitoring	Combustion Chamber temperature records Calibration and Maintenance of the temperature monitoring device.
CE 004	Title I Condition to avoid classification as a major source under NSR	Operate and Maintenance and pressure drop range
	Periodic Monitoring	Recordkeeping of pressure drop

## 2.2. 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 2.1 of the 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.

## 2.3. 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: These observations can only be made during daytime. 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.

## 2.4. Deviations from Delta Guidance

In general, the permit meets the MPCA Guidance for ordering and grouping of requirements. In general, limits that apply to individual pieces of equipment should be tracked at unit level. The Total Facility FlexCap limits are listed under Total Facility. Monitoring and Recordkeeping requirements needed to meet these limits are listed under each group and/or control equipment associated with the group.

## 2.5. Insignificant Activities – Periodic Monitoring

The Permittee listed several current insignificant activities in the permit application and supplemental submittals. The permit is required to include periodic monitoring for all emissions units, including insignificant activities, per the U.S. Environmental Protection Agency (EPA) guidance. The insignificant activities at this Facility are only subject to general applicable requirements. The following table documents the justification why no additional periodic monitoring is necessary for the current insignificant activities, and likely future ones, that might be located at this site.

**Table 3. Insignificant Activities**

<b>Insignificant Activity</b>	<b>General Applicable Emission limit</b>	<b>Discussion</b>
Space heaters fueled by kerosene, natural gas or propane	PM, variable depending on airflow Opacity $\leq$ 20% with exceptions (Minn. R. 7011.0610)	For these units based on the fuels used and published emissions factors, it is highly unlikely that they could violate the applicable requirement. These units are often vented inside a building, in which case testing is not feasible.
Fuel use in furnaces or boilers with a capacity of less than 500,000 Btu/hr.	PM $\leq$ 0.4 lb/MMBtu Opacity $\leq$ 20 % (Minn. R. 7011.0610)	For these units based on the fuels used and EPA published emissions factors, it is highly unlikely that they could violate the applicable requirement. In addition, these units are often operated and vented inside a building, so testing for PM or opacity is not feasible.

<b>Insignificant Activity</b>	<b>General Applicable Emission limit</b>	<b>Discussion</b>
Infrared electric ovens	Opacity $\leq$ 20% (Minn. R. 7011.0110)	While no emissions estimation method exists for these units, based on general knowledge of how they operate, it is highly unlikely that they could generate visible emissions. In addition, these units are often operated and vented directly into the building, so monitoring or testing is not feasible.
Emissions from laboratory operations, as defined in Minn. R. 7007.1300, subp. 3(G)	PM, variable depending on airflow Opacity $\leq$ 20% (Minn. R. 7011.0715)	These are very small, intermittent, bench-top operations that typically do not even have any emissions. It is highly unlikely that they could violate the applicable requirement.
Brazing, soldering or welding equipment	PM, variable depending on airflow Opacity $\leq$ 20% (Minn. R. 7011.0715)	For these units, based on EPA published emissions factors, it is highly unlikely that they could violate the applicable requirement. In addition, these units are often operated and vented inside a building, so testing for PM or opacity is not feasible.
Blueprint copiers and photographic processes	Opacity $\leq$ 20% (Minn. R. 7011.0110)	While no emissions estimation method exists for these units, based on general knowledge of how they operate, it is highly unlikely that they could generate visible emissions. In addition, these units are often operated and vented directly into the building, so monitoring or testing is not feasible.
Cleaning operations: alkaline/phosphate cleaners and associated cleaners and associated burners	PM, variable depending on airflow Opacity $\leq$ 20% (Minn. R. 7011.0610 plus Minn. R. 7011.0715)	For these units, there are some factors available for the burners, but very little information regarding the cleaning operation itself. However, based on general knowledge of how they operate, it is highly unlikely that they could violate the applicable requirement or that testing would be feasible.

<b>Insignificant Activity</b>	<b>General Applicable Emission limit</b>	<b>Discussion</b>
Infrequent use of spray paint equipment for routine housekeeping or plant upkeep activities	PM, variable depending on airflow or process weight rate Opacity $\leq$ 20% (Minn. R. 7011.0715)	While spray equipment will have the PTE particulate matter, these particular activities are those not associated with production, so they would be infrequent and usually occur outdoors. Testing or monitoring is not feasible.
Individual units that have potential emissions of less than 2.28 lb/hr of various criteria pollutants and less than certain thresholds of HAPs	PM $\leq$ 0.4 lb/MMBtu Opacity $\leq$ 20 % (Minn. R. 7011.0515) or PM, variable depending on airflow Opacity $\leq$ 20% (Minn. R. 7011.0715)	The emissions estimation method varies according to the type of units. Based on general knowledge, it is highly unlikely that they could generate enough particulate matter or visible emissions to violate the rule limits. In addition, these units are often operated and vented directly into the building, so monitoring or testing is not feasible.

### 3. Technical Information

#### 3.1. Pre-authorized Changes

The Permit pre-authorizes certain changes that might otherwise be considered modification under state and federal rules. The permit allows the Permittee to replace units with similar or like-kind units as long as no new applicable requirements are triggered and as long as emissions are tracked and calculated as specified in the permit.

### 4. Conclusion

Based on the information provided by the 3M Corporation, the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission Permit No. 16300059-001, 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: Dave Beil, Bob Berg

**ATTACHMENT A**

**EMISSION CALCULATIONS**