

**AIR EMISSION PERMIT NO. 16300023- 001
IS ISSUED TO**

3M COMPANY

for

3M COTTAGE GROVE CENTER– BUILDING 17
Highway 61 & County Road 19
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	February 15, 1996
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 except as allowed by the conditions in this permit identified as FlexCap conditions. 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: June 28, 2002

Expiration: June 28, 2007
All Title I Conditions do not expire.

for Michael (Mike) J. Tibbetts
Major Facilities Section Manager
Majors and Remediation Division
Karen A. Studders, 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 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 a Film Division located at Cottage Grove. This Division manufactures a variety of film products. 3M also owns and operates an Automotive Division which manufactures products for the automotive industry. Both Divisions are located in Building 17 at 3M Cottage Grove Center. At this site there are also pilot lines that produce products for the Film and Automotive divisions in small quantities.

Film and Automotive Divisions operations result in emissions of Volatile Organic Compounds (VOC), Hazardous Air Pollutants (HAP), Carbon Monoxide (CO), Nitrogen Oxides (NO_x), Particulate Matter (PM) and Particulate Matter less than 10 microns in size (PM₁₀).

3M has requested a flexible emission cap (FlexCap) with a cap on VOC, PM and PM₁₀ 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 this FlexCap permit are thus not Major under federal Prevention of Significant Deterioration (PSD), New Source Review Regulations.

If the facility proposes to make a change subject to requirements not listed in the permit (e.g. 112 [g]) then that change is not preauthorized and would need to comply with the permitting process required by Minn. R. 7007.1150 through 7007.1500.

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/28/02

Facility Name: 3M - Cottage Grove - Bldg 17
 Permit Number: 16300023 - 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 - FLEXCAP REQUIREMENTS	hdr
This permit establishes limits on the facility to keep a minor source under New Source Review. This includes changes that might otherwise qualify as insignificant modification 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 and Minn. R. 7007.3000
Volatile Organic Compounds: less than 100 tons/year using 12-month Rolling Sum to be calculated by the 30th day of each month for the previous 12-months period as described later in this permit. All significant emission units added to Building 17, as allowed in this permit shall be included in this calculation. VOC contents for each VOC containing material shall be determined as described under Certified Material Content described 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 52.21 and Minn. R. 7007.3000
Particulate Matter < 10 micron: less than 100 tons/year using 12-month Rolling Sum to be calculated by the 30th day of each month for the previous 12-months period as described later in this permit. All significant emission units added to Building 17, as allowed in this permit shall be included in this calculation. Solids contents for each material shall be determined as described under Certified Material Content described 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 52.21 and Minn. R. 7007.3000
Total Particulate Matter: less than 100 tons/year using 12-month Rolling Sum to be calculated by the 30th day of each month for the previous 12-months period as described later in this permit. All significant emission units added to Building 17, as allowed in this permit shall be included in this calculation. Solids contents for each material shall be determined as described under Certified Material Content described 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 52.21 and Minn. R. 7007.3000
Preauthorized changes: The Permittee may make the changes described below without applying for or obtaining an amendment under Minn. R. 7007.1150 through 7007.1500 and without providing the notifications required for Insignificant Activities, replacement or installation of air pollution control equipment, and replacement of emission units (See cover page to Table B following page A-12).	Title I Condition: Limit for modifications made after the issuance date of this permit to avoid classification as a major modification under 40 CFR 52.21 and Minn. R. 7007.3000
Pre-Authorized Changes: 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. 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 the applicable requirements are included in this permit. If a proposed change triggers an applicable requirement that is not included in this permit, the change must go through the appropriate procedure in Minn. R. ch. 7007.	Title I Condition: Limit for modifications made after the issuance date of this permit to avoid classification as a major modification under 40 CFR 52.21 and Minn. R. 7007.3000
The Permittee may replace air pollution control equipment with equipment listed in Minn. R. 7011.0070 provided the Permittee complies with the maintenance requirements specified in Minn. R. 7011.0075, subp. 2 and with the monitoring requirements specified in Minn. R. 7011.0080 applicable to the replacement equipment.	Title I Condition: Limit for modifications made after the issuance date of this permit to avoid classification as a major modification under 40 CFR 52.21 and Minn. R. 7007.3000
FLEXCAP REQUIREMENTS - TOTAL FACILITY MONITORING AND RECORDKEEPING	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 for those emission units for which emissions are calculated based on VOC content and usage, and records of total hours of operation for those emission units for which emissions are calculated based on emission rate and hours of operation.	Title I Condition: Monitoring for limit 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

06/28/02

Facility Name: 3M - Cottage Grove - Bldg 17

Permit Number: 16300023 - 001

<p>Monthly Recordkeeping - VOC Emissions By the 30th day of the month, the Permittee shall calculate and record the following:</p> <ol style="list-style-type: none"> 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, or the lb/hr emission factor and basis for such factor for each appropriate emission unit. 2. The VOC emissions for the previous month using the formulas specified in this permit, or any MPCA approved method. 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 100 tons per year listed above. 4. These records shall be recorded and maintained in a written or electronic form at the facility for a period of five years. 	<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) = C = A X B A = quantity of fuel used/month, raw material used/month, or hours of operation per month B = emission factor</p>	<p>Minn. R. 7007.0800, subp. 4 and 5 40 CFR Section 70.6(a)(3)(i)(B)</p>
<p>Monthly PM Recordkeeping: By the 30th day of each month, the Permittee shall do the following to determine PM emissions from the facility:</p> <ol style="list-style-type: none"> 1. Calculate, record and maintain a written or electronic monthly log of PM emissions for the preceding month, using the equation following. 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 the specified PM limit of 100 tons per year listed above. 3. All PM calculations shall be recorded and maintained in a written or electronic form at the facility for a period of five years. 	<p>Minn. R. 7007.0800, subp. 4 and 5 40 CFR Section 70.6(a)(3)(i)(B)</p>
<p>Monthly Calculation -- PM Emissions. The Permittee shall calculate PM emissions using the following equations: PM (tons/month) = (D x E)(1 - CE) where D = quantity of raw materials used per month or hours of operation per month E = emission factor or emission rate, uncontrolled CE = control efficiency (99% or result of latest stack test not more than 5 years old)</p>	<p>Minn. R. 7007.0800, subp. 4 and 5 40 CFR Section 70.6(a)(3)(i)(B)</p>
<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 permit 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>

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/28/02

Facility Name: 3M - Cottage Grove - Bldg 17

Permit Number: 16300023 - 001

<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 and 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 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 average 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 of new, shutdown of existing) or installed the corresponding EU number, the manufacturer and model numbers of the new equipment.</p>	<p>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 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>Methods of calculating emissions for the Emission Inventory Report must comply with Minn. R. 7019.3000 to 7019.3100 and applicable federal regulations and policies and will not necessarily be the same as calculation methods specified in this permit for other purposes.</p>	<p>Minn. R. 7019.3000 through Minn. R. 7019.3010 40 CFR Section 52.1222</p>
<p>OTHER REQUIREMENTS</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, 3M specifications or outside the manufacturer's recommended range.</p> <p>At a minimum, this O and M Plan shall include a list of 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 Tables A, B, and/or C.</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>
<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>

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/28/02

Facility Name: 3M - Cottage Grove - Bldg 17

Permit Number: 16300023 - 001

<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"> 1. the cause of the deviation; 2. the exact dates of the period of the deviation, if the deviation has been corrected; 3. whether or not the deviation has been corrected; 4. the anticipated time by which the deviation is expected to be corrected, if not yet corrected; and 5. steps taken or planned to reduce, eliminate, and prevent reoccurrence of the deviation. 	<p>Minn. R. 7019.1000, subp. 1 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)</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>
<p>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).</p>	<p>Minn. R. 7007.0800, subp. 5(C) 40 CFR Section 70.6(a)(3)(ii)(B)</p>
<p>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.</p>	<p>Minn. R. 7030.0010 - 7030.0080</p>
<p>The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16.</p>	<p>Minn. R. 7007.0800, subp. 16 40 CFR Section 70.6(a)(4), (5) and (6)</p>
<p>Emission Fees: due 60 days after receipt of an MPCA bill.</p>	<p>Minn. R. 7002.0005 through Minn. R. 7002.0095; 40 CFR 70.6(a)(7)</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/28/02

Facility Name: 3M - Cottage Grove - Bldg 17

Permit Number: 16300023 - 001

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)
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TABLE A: LIMITS AND OTHER REQUIREMENTS

06/28/02

Facility Name: 3M - Cottage Grove - Bldg 17

Permit Number: 16300023 - 001

Subject Item: GP 001 Automotive Lines

Associated Items: CE 003 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

- EU 010 Mixing Equipment
- EU 011 Web Conditioning Equipment
- EU 012 Mixing Equipment
- EU 013 Raw Material Handling Equipment
- EU 014 Cutting Equipment
- EU 015 Raw Material Handling Equipment
- EU 016 Mixing Equipment
- EU 017 Web Conditioning Equipment
- EU 018 Mixing Equipment
- EU 019 Raw Material Handling Equipment
- EU 024 Web Conditioning Equipment
- EU 025 Material Transportation Equipment
- EU 026 Raw Material Handling Equipment
- EU 027 Solids Collection
- SV 010 Dust Collector Emissions

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.04 grains/dry standard cubic foot of exhaust gas	Title I Condition: Limit to avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000 (most stringent, meets limit set by Minn. R. 7011.0700 to 7011.0735)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B) 40 CFR Section 52.1222
Operate and maintain control equipment to achieve a control efficiency for Total Particulate Matter: greater than or equal to 99 percent control efficiency	Title I Condition: Limit for modifications made after the issuance date of this permit to avoid classification as a major source or modification under 40 CFR Section 52.21; Minn. R. 7007.3000; Minn. R. 7007.0065 subp. 1(A) and subp. 1(B)
Operate and maintain control equipment to achieve a control efficiency for Particulate Matter < 10 micron: greater than or equal to 99 percent control efficiency	Title I Condition: Limit for modifications made after the issuance date of this permit to avoid classification as a major source or modification under 40 CFR Section 52.21; Minn. R. 7007.3000; Minn. R. 7011.0065, subp. 1(A) and subp. 1(B)
Pressure Drop: greater than 0.0 inches of water column and less than or equal to 4.5 inches of water column or as established during the most recent performance test demonstrating compliance. This pressure drop range is applicable to CE 003.	Title I Condition: Limit for modifications made after the issuance date of this permit to avoid classification as a major source or modification under 40 CFR Section 52.21; Minn. R. 7007.3000; Minn. R. 7011.0065, subp. 1(A) and subp. 1(B)
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)
Monitoring: Once each day that any emission unit in this group is operated, the Permittee shall record the pressure drop across the air pollution control equipment.	Title I Condition: Monitoring for limit to avoid classification as a major source or modification under 40 CFR Section 52.21; Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4(B) 40 CFR Section 70.6(a)(3)(i)(B)
Monitoring: Once each week that any emission unit included in this Group operates, observe and record the absence or presence of visible emissions from the exhaust stack.	Title I Condition: Monitoring for limit to avoid classification as a major source or modification under 40 CFR Section 52.21; Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4(B) 40 CFR Section 70.6(a)(3)(i)(B)
Corrective Actions: If the pressure drop is outside the specified range or visible emissions are observed, implement the corrective actions in the Operation and Maintenance Plan.	Minn. R. 7007.0800, subp. 14 and 16(J)

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/28/02

Facility Name: 3M - Cottage Grove - Bldg 17

Permit Number: 16300023 - 001

The Permittee shall vent emissions from all emission units in this Group to control equipment CE 003, when in operation.	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 and Minn. R. 7007.3000
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TABLE A: LIMITS AND OTHER REQUIREMENTS

06/28/02

Facility Name: 3M - Cottage Grove - Bldg 17

Permit Number: 16300023 - 001

Subject Item: GP 002 Automotive Lines Heating Equipment

- Associated Items:**
- EU 020 Heating Equipment
 - EU 021 Heating Equipment
 - EU 022 Heating Equipment
 - EU 023 Heating Equipment
 - EU 028 Dryer
 - EU 029 Dryer
 - EU 030 Heater
 - SV 011 Heating Equipment Emissions
 - SV 012 Heating Equipment Emissions
 - SV 013 Heating Equipment Emissions
 - SV 014 Dryer Emissions
 - SV 015 Dryer Emissions
 - SV 016 Roof Heater Emissions

What to do	Why to do it
<p>Fuel Use: The Permittee shall use only natural gas or liquified petroleum gas (LPG) for fuel in the emission units in this Group.</p> <p>LPG consists of propane, butane or mixtures of these with small amounts of other hydrocarbons.</p>	<p>Minn. R. 7007.0800, subp. 4 (meets limit required by Minn. R. 7007.0700 to 7007.0735)</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/28/02

Facility Name: 3M - Cottage Grove - Bldg 17

Permit Number: 16300023 - 001

Subject Item: GP 003 North Film Maker Line

Associated Items: CE 001 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 002 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

EU 001 Feeder System

EU 002 Extruder

EU 003 Casting Die

EU 004 Grinder

SV 001 Baghouse Emissions

SV 002 Baghouse Emissions

SV 003 Extruder Emissions

SV 004 Extruder/Casting Die Emissions

What to do	Why to do it
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 emission units EU001 and EU004 to control equipment CE 001 or CE 002, when in operation.	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 and Minn. R. 7007.3000
Operate and maintain control equipment to achieve a control efficiency for Particulate Matter < 10 micron: greater than or equal to 99 percent control efficiency	Title I Condition: Limit for modifications made after the issuance date of this permit to avoid classification as a major source or modification under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7011.0065, subp. 1(A)
Operate and maintain control equipment to achieve a control efficiency for Total Particulate Matter: greater than or equal to 99 percent control efficiency	Title I Condition: Limit for modifications made after the issuance date of this permit to avoid classification as a major source or modification under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7011.0710, subp. 2
Pressure Drop: greater than 0.0 inches of water column and less than or equal to 10 inches of water column or as established during the most recent performance test demonstrating compliance for CE001	Title I Condition: Operational requirement for limit taken to avoid classification as a major source or modification under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7011.0080
Pressure Drop: greater than 0.0 inches of water column and less than or equal to 2.0 inches of water column or as established during the most recent performance test demonstrating compliance for CE002	Title I Condition: Operational requirement for limit taken to avoid classification as a major source or 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. 14 and 16(J)
Monitoring: Once each day that any emission unit in this group is operated, the Permittee shall record the pressure drop across the air pollution control equipment.	Title I Condition: Monitoring for limit to avoid classification as a major source or modification under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4(B) 40 CFR Section 70.6(a)(3)(i)(B)
Monitoring: Once each week that any emission unit included in this Group operates, observe and record the absence or presence of visible emissions from the exhaust stack.	Title I Condition: Monitoring for limit to avoid classification as a major source or modification under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4(B) 40 CFR Section 70.6(a)(3)(i)(B)
Corrective Actions: If the pressure drop is outside the specified range or visible emissions are observed, implement the corrective actions in the Operation and Maintenance Plan.	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). The Permittee shall keep records of maintenance activities and corrective actions as specified in Minn. R. 7011.0075, subp. 2(H) and (I).	Minn. R. 7007.0800, subp. 2 and subp. 14; Minn R. 7011.0075, subp. 2. 40 CFR Section 52.1222

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/28/02

Facility Name: 3M - Cottage Grove - Bldg 17

Permit Number: 16300023 - 001

Subject Item: GP 004 Film Maker Line

- Associated Items:**
- EU 005 Corona Treater
 - EU 006 Laminator Casting Die
 - EU 007 Oven
 - EU 008 Corona Treater
 - EU 009 Duster
 - SV 005 Corona Treater Emissions
 - SV 006 Extruder Emissions
 - SV 007 Oven Emissions
 - SV 008 Oven Emissions
 - SV 009 Corona Treater Emissions

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.04 grains/dry standard cubic foot of exhaust	Title I Condition: Limit to avoid classification as a major source or modification under 40 CFR Section 52.21 and Minn. R. 7007.3000 (most stringent, meets limit set by Minn. R. 7011.0700 to 7011.0735)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B) 40 CFR Section 52.1222

TABLE B: SUBMITTALS

06/28/02

Facility Name: 3M - Cottage Grove - Bldg 17
Permit Number: 16300023 - 001

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

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

Send any application for a permit or permit amendment to:

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

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

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

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

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

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

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

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

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

TABLE B: ONE TIME SUBMITTALS OR NOTIFICATIONS

06/28/02

Facility Name: 3M - Cottage Grove - Bldg 17

Permit Number: 16300023 - 001

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

TABLE B: RECURRENT SUBMITTALS

06/28/02

Facility Name: 3M - Cottage Grove - Bldg 17

Permit Number: 16300023 - 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. 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 each month during the previous calendar year and any New Source Performance Standards (40 CFR Pt. 60) that were triggered by changes made during the previous 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 - Bldg 17

Permit Number: 16300023-001

Appendix I Insignificant Activities and Applicable Requirements

Appendix I Insignificant Activities

Insignificant Activities as of date of issuance of permit action 001

1. Beringer Oven
2. Maintenance shops
3. Quality Control Labs
4. A1 Line
5. A5 Line
6. PM1 Line
7. C10 Test Oven
8. Torret Baghouse
9. Residual Solids Handling Air Blower
10. C10 Line
11. PM 2 & 4 Vermiculite Silo and Baghouse
12. PM 2 & 4 Possible Construction of an Additional Silo and Baghouse

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 <i>OR</i> 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: a). filtered through an air cleaning system; and 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 <i>OR</i> Minn. R. 7011.1505, subp. 2(B)/1505, subp. 3(B) <i>OR</i> 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	Minn. R. 7011.0710/0715 <i>OR</i> Minn. R. 7011.1505, subp. 2(B)/1505, subp. 3 (B)

Minn. R. 7007.1300, subpart	Rule Description of the Activity	Applicable Requirement
	60 degrees Fahrenheit.	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)	Individual emissions units at a stationary source, each of which have a potential to emit the following pollutants in amounts less than: 1. 4,000 lbs/year of carbon monoxide; and 2. 2,000 lbs/year each of nitrogen oxide, sulfur dioxide, particulate matter, particulate matter less than ten	Varies with type of emission unit.

Minn. R. 7007.1300, subpart	Rule Description of the Activity	Applicable Requirement
	microns, volatile organic compounds (including hazardous air 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
AIR EMISSION PERMIT NO. 16300023-001

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

1. General Information

1.1. Applicant and Stationary Source Location

Owner and Operator Address and Phone Number (list both if different)	Facility Address SIC Code: 3081, 2297
3M I-94 and McKnight Road St. Paul	Highway 61 & County Rd 19, Bldg 17 Cottage Grove Washington County

1.2. Description of the Facility

Building 17 includes two separate and unrelated operations, a film production facility, and an automotive products facility. Since these two operations are housed in what is essentially one building, 3M has chosen to submit a single application for a permit to cover both operations.

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 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 entire Cottage Grove facility constitutes a contiguous area under the ownership and control of 3M and exceeds the thresholds, so it is a major source of HAP. Building 17 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 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 (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, Automotive - Building 17 is classified in SIC Code 2297; Film - Building 17 is classified in SIC Code 3081. None of the individual facilities 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:

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
TCM Division	23AT	16300059	3993
Utilities (wastewater)	23AB	16300015	4952

“Automotive - Building 17” and “Film – Building 17” are considered two separate stationary sources 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 criteria 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 Any Changes Allowed With This Permit Issuance

This permit is a FlexCap permit which allows emission units to be replaced or moved and new units to be installed provided the applicable requirements are already in the permit and total facility emissions remain less than the Cap.

1.4. Description of Previous Permits Issued to This Facility

Permit Number and Issuance Date	Action Authorized
23AF-91-OT-1 September 18, 1991	Automate raw materials handling, add baghouses
23AF-92-P-1 June 4, 1992	Test biofilter
Amendment 2 to 23AF-91-OT-1 March 15, 1993	Change pressure drop range, clarify emission unit descriptions
Amendment 3 to 23AF-91-OT-1 May 5, 1993	Replace grinders
16300023-005 (Amendment 4 to 23AF-91-OT-1) August 3, 1995	Change baghouse pressure drop range, revise Operational requirements, revise Monitoring requirements, revise Reissuance, Amendment, Modification and other requirements, add reporting requirements

1.5. Facility Emissions

Table 1. Total Facility Potential to Emit Summary

ID #	SV #	Subject Item Description	PM tpy	PM10 tpy	SO2 tpy	NOx tpy	CO tpy	VOC tpy	Single HAP tpy	All HAPs tpy
GP										
001	010	CE 003, 14 EU's	30.03	30.03						
002	011 012 013 014 015 016	EU020, 021, 022, 023, 028, 029, 030				2.21	1.86	8.24		
003	001 002 003 004	CE001, CE002 EU 001, 002, 003, 004	2.30	2.30				1.98		
004	005 006 007 008 009	EU 005, 006, 007, 008, 009	7.90	7.90				3.88		

	PM tpy	PM10 tpy	SO2 tpy	NOx tpy	CO tpy	VOC tpy	Single HAP tpy	All HAPs tpy
Total Limited Potential Emissions for this permit	99.9	99.9	Neg.	2.21	1.86	99.9	7.97	8.24
Total Actual Emissions for this permit	5.3	5.3	Neg.	1.0*	1.0*	3.5	0.05	0.06

Actual Emissions for PM, PM10, SO2 and VOC are from the year 2000 Emission Inventory
 Neg. = negligible, less than 0.1 ton/year

*amount estimated from anticipated use of heating equipment

Table 2. Facility (TF) and Permit Classification

Classification (put x in appropriate box)	Major/Affected Source	*Synthetic Minor	*Minor
PSD (list pollutant)		PM, PM10, VOC	SO2, NOx, CO
NAAR (list pollutant)	NA	NA	NA
Part 70 Permit Program (list pollutant)	HAP		

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

2. Regulatory and/or Statutory Basis

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

Regulatory Overview of Facility

Subject Item	Applicable Regulations	Comments:
FC	Title I Condition	Limits source-wide emissions of volatile organic compounds (VOC), PM, and PM ₁₀ to less than 100 tons/year each
	Periodic Monitoring	Calculation procedures for VOC are different than for most facilities with a FlexCap permit since the raw materials used contain virtually no VOC. Small amounts of VOC are generated and emitted from heating of the materials. Thus the calculation of actual emissions uses test data and/or published emission factors rather than VOC content.

GP 001	Title I Condition	Limits emission of PM to 0.04 grain/dscf
	Minn. R. 7011.0715, subp. 1(B)	Limits opacity to 20 %
	Title I Condition	99 % control efficiency for PM and PM10
	Periodic Monitoring	Pressure drop across the dust collector is specified and must be recorded each operating day. Presence or absence of visible emissions must also be recorded periodically. An Operations and Maintenance (O&M) Plan must be kept on site and implemented when pressure drop or visible emissions indicate a need.

Subject Item	Applicable Regulations	**Comments:
GP 002	Minn. R. 7007.0800, subp. 4	Fuel use is limited by design to natural gas and bottled gas such as lpg and propane. Only VOC is emitted by the process equipment, so PM and other pollutants can be calculated from the fuel burned and emission factors. The amounts emitted cannot exceed any applicable Minn. R.
	Periodic Monitoring	There is no control equipment and emissions are not expected to be able to exceed the limits in the applicable requirement. Only natural gas and similar fuels are used.

GP 003	Minn. R. 7011.0700 – 7011.0735	Industrial Process Equipment Rule – limits emission of PM or as an alternative, requires 99 % control efficiency
	Periodic Monitoring	Pressure drop across each dust collector is specified and must be recorded each operating day. Presence or absence of visible emissions must also be recorded periodically. An O&M Plan must be kept on site and implemented when pressure drop or visible emissions indicate a need.

GP 004	Title I Condition	Limits emission of PM to 0.04 grain/dscf
	Periodic Monitoring	There is no control equipment and emissions are not expected to be able to exceed the limits in the applicable requirement. Only natural gas is allowed as fuel.

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 are paraphrased and adapted below to address parameter monitoring specified in Section 2.1 of the TSD and associated permit. Examples of parameter monitoring would include combustion chamber temperature in a thermal oxidizer, baghouse pressure drop, or scrubber water flow rate 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 O&M 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 O&M Plan (for the air pollution control equipment) is reported as a deviation on the semiannual deviations report.

2.3. Insignificant Activities

The Permittee listed several insignificant activities in the permit application and supplemental submittals, as noted in Table 6. The permit is required to include periodic monitoring for all emissions units, including insignificant activities, per U.S. Environmental Protection Agency (EPA) guidance. Using the criteria outlined earlier in this TSD, 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. See Attachment 3 of this TSD for PTE information for the insignificant activities.

Table 3. Insignificant Activities

Insignificant Activity	General Applicable Emission limit	Discussion
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 usually vented inside a building, so 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.
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 would be 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 produce any emissions. It is highly unlikely that they could violate the applicable requirement.

Insignificant Activity	General Applicable Emission limit	Discussion
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.

Insignificant Activity	General Applicable Emission limit	Discussion
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 + 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.
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 potential to emit 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)	

4. 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. 16300023-001 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 L. Beil, Robert Berg

3M Cottage Grove Building 17 Calculations of PTE for particulate matter

Group 001 – 14 EUs venting through one baghouse and stack, PM only

IPER using stack flowrate of 20,000 cfm

$$20,000 \text{ CFM} \times 0.071 \text{ gr/dscf} \times \frac{1}{7000} \text{ lb/gr} \times 60 \text{ min/hr} = 12.17 \text{ lb/hr or } 53.31 \text{ tpy}$$

IPER using process rate of X tons/hr from EC forms

Allowable PM < 12 lb/hr

Permit limit, 0.04 gr/dscf and stack flowrate of 20,000 cfm

$$20,000 \text{ CFM} \times 0.04 \text{ gr/dscf} \times \frac{1}{7000} \text{ lb/gr} \times 60 \text{ min/hr} = 6.86 \text{ lb/hr or } 30.03 \text{ tpy}$$

Group 002 – 7 EUs venting through 6 stacks, no control

These units use natural gas as fuel which is the only source of PM. Otherwise, they emit only VOC. For comparison, what would be allowed by IPER is documented below.

IPER using stack flowrate (NOTE: 3M says these are VOC emitters only)

EU	SV	SCFM	gr/cf	lb/hr	tons/year
020	011	8505	0.094	6.85	30.01
021	012	5446	0.1	4.67	20.44
022	013	20046	0.071	12.20	53.43
023	013				
028	014	1639	0.1	1.40	6.25
029	015	1639	0.1	1.40	6.25
030	016				

Group 003	P	Allow	CFM	Allow
EU001 vents through CE001 (baghouse) to SV001	X	X	1270	1.09 lb/hr
EU002 vents through SV003 and SV004 uncontrolled	X	X	1821/1311	2.69
EU003 vents through SV004 uncontrolled	X	X	1311	1.12
EU004 vents through CE002 (baghouse) to SV002	X	X	3848	3.30

Process weight rates (unit design capacities) are confidential. The emissions allowed by Table 1 are similar to Table 2. The permit limit is based on the IPER Subp. 2 provision which allows a source to comply with 99 % control instead of Table 1 or 2, for the units vented through a baghouse. For units not vented through a baghouse, the EC forms in the application show that uncontrolled PTE is below the amount allowed by IPER:

EU001 at 99 % control	0.00522 lb/hr	0.023 ton/year
EU002 uncontrolled	0.006 lb/hr	0.0242 ton/year
EU003 uncontrolled	0.55 lb/hr	2.22 ton/year
EU004 at 99 % control	0.00696 lb/hr	0.0305 ton/year

Group 004	P	Allow	CFM	Allow
EU005 vents through SV005	X	X	723 scfm	0.62 lb/hr
EU006 vents through SV006	X	X	445 scfm	0.38
EU007 vents through SV007 and 008	X	X	1560 scfm	1.34
EU008 vents through SV009	X	X	1152 scfm	0.99
EU009 vents through SV009	X	X	1382 scfm	1.19
Total			5262 scfm	4.52

$$5262 \times 0.04 \times 60 \times 1/7000 = 1.80 \text{ lb/hr or } 7.90 \text{ tons/yr}$$

Attachments to file copy: Stack data, Control Equipment data, and Emission Unit data from Delta Facility Description; EC Forms from application