

DRAFT

**AIR EMISSION PERMIT NO. 12300015-010
Major Amendment**

IS ISSUED TO

3M Company

3M - R & D FACILITY - MAPLEWOOD BLDG 201
I-94 & McKnight Road
Maplewood, Ramsey County, MN 55144

The emission units, control equipment and emission stacks at the stationary source authorized in this permit amendment are as described in the Permit Applications Table.

This permit amendment supersedes Air Emission Permit No. 12300015-010 and authorizes the Permittee to operate and construct the stationary source at the address listed above unless otherwise noted in Table A. The Permittee must comply with all the conditions of the permit. Any changes or modifications to the stationary source must be performed in compliance with Minn. R. 7007.1150 to 7007.1500. Terms used in the permit are as defined in the state air pollution control rules unless the term is explicitly defined in the permit.

Unless otherwise indicated, all the Minnesota rules cited as the origin of the permit terms are incorporated into the State Implementation Plan (SIP) under 40 CFR § 52.1220 and as such are enforceable by U.S. Environmental Protection Agency (EPA) Administrator or citizens under the Clean Air Act.

Permit Type: Federal; Part 70/Major for NSR; Limits to avoid NSR

Operating Permit Issue Date: May 14, 1998

Major Amendment Issue Date: <issue date>

Expiration Date: 05/14/2003* – Title I Conditions do not expire.

* The Permittee may continue to operate this facility after the expiration date of the permit, per the provision under Minn. R. 7007.0450, subp. 3. (Title V Reissuance Application was received November 15, 2002.)

Don Smith, P.E., Manager
Air Quality Permits Section
Industrial Division

for John Linc Stine
Commissioner
Minnesota Pollution Control Agency

Permit Applications Table

Permit Type	Application Date	Permit Action
Total Facility Operating Permit	July 29, 1997	002
Administrative Amendment	NA	003
Major Amendment	June 30, 1998	004
Major Amendment	August 12, 1999	005
Major Amendment	December 8, 2003	006
Major Amendment	May 18, 2004	007
Major Amendment	March 18, 2008, June 11, 2008	008 permit not issued
Major Amendment	April 6, 2011, November 2011	009
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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 operates a Research and Development complex located at I-94 and McKnight Road in Maplewood, Minnesota. Even though the entire site is considered one stationary source, it is covered by two Part 70 permits for administrative reasons. When determining applicability, the Permittee must consider the entire stationary source, not just the operations covered by one of the permits.

This permit covers the Research and Development (R&D) operations at the stationary source, which includes the pilot plants, the laboratories, and maintenance operations. The administrative portion of the stationary source is covered by a separate permit. The R&D operations result in emissions of Volatile Organic Compounds (VOC), Hazardous Air Pollutants (HAP), Carbon Monoxide (CO), Nitrous Oxides (NO_x), Sulfur Dioxide (SO₂), and Particulate Matter/Particulate Matter less than 10 µm in size (PM/PM₁₀).

The existing permitted potential to emit is greater than the major source thresholds in 40 CFR § 52.21 and 40 CFR pt. 70, so the facility is considered a major source under the New Source Review program, Part 70 permitting program (Minn. R. 7007.0200), and is a major source under the National Emission Standards for Hazardous Air Pollutants for Source Categories (40 CFR pt. 63).

PERMIT ACTION 002 – INITIAL PART 70 PERMIT

This permit action was for the initial part 70 permit for the facility and also authorized a Prevention of Significant Deterioration (PSD) modification for VOC and pre-authorizes certain other changes to take place at the facility as long as the limits and other permit conditions are met. The permit addressed a certain defined set of applicable requirements. If the facility proposes to make a change that triggers a requirement not listed in the permit (e.g., 112(g)), then that change is not pre-authorized and would need to go through traditional permitting. If a change is specifically pre-authorized by this permit, notifications as described under Minn. R. 7007.1150, subp. C, and Minn. R. 7007.1250, subp. 4, are not required for those changes.

Due to the PSD modification, the permit established Best Available Control Technology (BACT) limits for VOC for the R&D operations at the stationary source as defined in Appendix I of the permit. This included work practice and inspection requirements, operational limits, and VOC usage limits. At permit reissuance, the Permittee will re-evaluate the BACT analysis.

The permit also carried forth previous federally enforceable operating limits that limit emissions of both PM₁₀ and PM that were taken in order to avoid classification as major modifications under the New Source Review program (40 CFR § 52.21). The permit also established limits on fuel usage to limit emissions of VOC, both PM₁₀ and PM, NO_x, SO₂, and CO, in order to avoid classification as a major modification under the New Source Review program (40 CFR § 52.21 and 40 CFR pt. 51, Appendix S). The permit also contained requirements to control both PM₁₀ and PM from spray booths and the carpentry shops.

PERMIT ACTION 003 - ADMINISTRATIVE AMENDMENT

This amendment was issued to clarify monitoring requirements for certain emissions units.

PERMIT ACTION 004 - MAJOR AMENDMENT

This permit action was not issued.

PERMIT ACTION 005 - MAJOR AMENDMENT

This major permit amendment established a new method to assure periodic monitoring conditions for a fabric filter CE010

PERMIT ACTION 006 - MAJOR AMENDMENT

This permit amendment allowed the Permittee to change the method in which total VOC purchases are tracked on-site at 3M Center. Due to this change, all references to Scaling Factor were eliminated from the permit; and VOC purchases are tracked using the 3M Center Chemical Tracking Protocol (dated April 2004 - located in the Additional Appendix Material). This permit also amended a Title I Condition, which referred to the number of R&D buildings.

A new emission unit, Kodiak Spray Dryer and a condenser were also added to the permit.

PERMIT ACTION 007 - MAJOR AMENDMENT

This permit amendment allowed the Permittee to replace an existing spray booth with a new spray booth at a different building at the 3M Center. The new spray booth will have the same operational limits and requirements as the spray booth to be replaced. Hence, there were no emissions increase associated with this permit action. New requirements were added under the total facility part of the permit "to determine if a project/modification is subject to New Source Review".

PERMIT ACTION 008 – MAJOR AMENDMENT

This permit action has not been issued.

PERMIT ACTION 009 – MAJOR AMENDMENT

This permit action modifies the annual VOC limit for EU019 from 5 tpy to 15 tpy of VOC emissions. An updated BACT analysis was submitted to support this modification. Added language to GP001 to address Part 63 NESHAPs. Incorporated language to document that EU116 is no longer considered an R&D unit.

The permit action incorporates an administrative amendment to add additional monitoring requirement per 40 CFR Section 63, Subp. M for EU011 and to correct typographical errors (EU028 has a partial enclosure, EU029 has a total enclosure, not the other way around). It also adds NESHAP language relevant to 40 CFR Pt. 63, Subp. JJJ and Subp. JJ for affected sources.

PERMIT ACTION 010 – MAJOR AMENDMENT

This permit action incorporates three major amendment applications:

- This permit action authorizes an increase in process throughput for spray booth EU133.
- This permit action authorizes construction and operation of a new spray booth, EU134, in building 251. This permit action includes a process throughput limit, hours of operation limits, and control equipment requirements.
- Permit Action 009 required the Permittee to submit a major permit amendment to incorporate operational limits that were assumed through the most recent MPCA-approved PM₁₀ modeling (MPCA approval date March 6, 2012). This is a major amendment since the modeling parameters are site specific limits. Changes in the permit due to the modeling include adjustments to various operating limits for spray booths and control equipment at the facility.

TABLE A: LIMITS AND OTHER REQUIREMENTS

A-1 01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

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
SOURCE-SPECIFIC REQUIREMENTS	hdr
Permit Appendices: This permit contains appendices as listed in the permit Table of Contents. The Permittee shall comply with all requirements related to the VOC R&D BACT contained in Appendices I: Process Included in the R&D BACT; II: R&D Survey Information; III: R&D Evaluation Procedure; and IV: 3M Center Chemical Tracking Protocol.	Title I Condition: 40 CFR Section 52.21(j); Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 2
Permit Appendices: This permit contains appendices as listed in the permit Table of Contents. The Permittee shall comply with all requirements contained in Appendices VI: 3M □ Administrative Offices (Permit # 12300694-003) Operating Limitations and VII: Worst□case Solids Contents and Transfer Efficiencies Used for Spray Booth PTE Calculations. Modeling parameters in Appendix V: Stack Parameters Relied Upon to Demonstrate Compliance with the NAAQS for PM10 are included for reference only and compliance with these parameters is achieved through meeting the requirements in Table A.	Minn. R. 7007.0800, subp. 2
The parameters used in PM10 modeling for permit number 12300015-009 are listed in Appendix V of this permit. The parameters describe the operation of the facility at maximum permitted capacity. The purpose of listing the parameters in the appendix is to provide a benchmark for future changes.	Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
Operating limits used in PM10 modeling for permit number 12300694-003 are listed in Appendix VI of this permit. The requirements associated with permit number 12300694-003 (3M - Administrative Offices - Maplewood) may be deleted from this permit once they have been incorporated into permit number 12300694, since the requirement would be duplicative.	Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), 7(M), and 25; Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
The Permittee shall not begin construction of any single project or projects that are connected or phased which will cause a total increase in actual emissions of greater than 249 tons per year for any criteria pollutant without first getting a permit amendment to authorize the project. Connected and phased have meanings as defined in Minn. R. 4410.0200 subps. 9b and 60. The Permittee shall not begin construction of any other project which is listed in Minn. R. 4410.4300 or Minn. R. 4410.4400 without first getting a permit amendment to authorize the project. Such projects may require the completion of an Environmental Assessment Worksheet or an Environmental Impact Statement prior to the amendment being issued. This is a state only requirement and is not federally enforceable.	Minn. R. 4410.4300 and Minn. R. 4410.4400
A. BACT LIMITS AND AUTHORIZATIONS	hdr
VOC Changes Pre-authorized by R&D BACT: The Permittee may make changes that are consistent with the R&D process as defined in the BACT analyses and in Appendix I of this permit, provided the changes are in compliance with all permit requirements. This may include replacing emission units or stacks, moving existing emission units, changing existing emission units or stacks, or adding new emission units or stacks at the facility. If a proposed change triggers an applicable requirement that is not contained in this permit, or could cause an emissions increase of a different regulated pollutant (other than VOC), the change must go through the appropriate procedure in Minn. R. ch. 7007.	Title I Condition: 40 CFR Section 52.21(j) (changes covered by BACT Limit)

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-2**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

<p>The Permittee shall conduct surveys of each R&D building twice per calendar quarter. The survey shall verify that good laboratory practices are being followed as outlined in provisions relating to air emissions in the "3M Guide". An outline of the key air provisions are in Appendix II of this permit.</p> <p>3M will maintain records on-site documenting when and where the surveys were conducted, as well as the observations made, and the status of actions taken as a result of the surveys.</p> <p>The current 12 R&D buildings are as follows: 201, 207, 208/218/219, 209, 212, 230, 235, 236, 240, 250/251/252, 260, and 270. If any additional buildings are used for R&D after permit issuance, they shall be added to the survey program.</p>	Title I Condition: 40 CFR 52.21(j) (BACT Limit)
<p>R&D Evaluation: The Permittee shall conduct an annual evaluation to verify that the operations authorized by the BACT limits in this permit are being operated in an R&D mode and within the scope of the BACT analysis. The details of the evaluation, including deadlines for key items, can be found in Appendix III of this permit.</p>	Title I Condition: Monitoring for BACT limit under 40 CFR Section 52.21(j); Minn. R. 7007.3000
B. VOC PURCHASES RECORDKEEPING	hdr
<p>VOC purchases shall be tracked as described below and in the 3M Center Chemical Tracking Protocol (dated April 2004 - located in the Additional Appendix Material).</p> <p>VOC Purchase Calculation Method: By the 20th day of each month, the Permittee shall do the following calculation for all R&D facility non-combustion VOC purchases:</p> <p>a) Calculate the VOC purchased, in tons, for the previous month using the tracked VOC purchase data, VOC material content data.</p> <p>b) Calculate the cumulative 12-month VOC purchases in tons using data from the previous 12 months of calculations (or from the number of months since permit issuance).</p>	Minn. R. 7007.0800, subp. 5
<p>VOC Purchases Tracking: The Permittee shall track the purchases of VOCs by building on a monthly basis and shall specify whether they were purchased by a pilot plant or not and by which pilot plant. Details are shown in the 3M Center Chemical Tracking Protocol (public copy enclosed, and confidential copy kept at the facility) dated April 2004. These monthly numbers will then be totaled to determine the total VOC purchased each month.</p> <p>Top 20 Chemical Purchases at 3M Center:</p> <ul style="list-style-type: none"> 1-Octene 2-propanol Acetonitrile Chloroform Cyclohexanone Dichloromethane Ethyl acetate Ethyl alcohol Ethylene glycol Ethylene oxide Heptane Hexane Isopropanol Methyl Ethyl Ketone Methyl Alcohol Methyl Isobutyl Ketone Tetrachloroethylene Tetrahydrofuran Toluene Xylenes 	Minn. R. 7007.0800, subp. 5
<p>On an annual basis, by February 20th of each year, the Permittee shall determine the total purchases of all VOCs for the previous calendar year as per the Chemical Tracking Protocol, referenced in this permit.</p>	Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-3**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Material Content: VOC content of materials shall be determined by the Material Safety Data Sheet (MSDS) provided by the supplier, or by the lab or pilot plant formulation datasheets, for each material used. The Permittee can assume 100% VOC if exact VOC contents are not available or are too difficult to obtain. Other alternative methods approved by the MPCA may be used to determine the VOC content for demonstrating compliance with the VOC limits. The Division Manager reserves the right to require the Permittee to take samples of VOC containing materials and to conduct analyses of VOC content per EPA reference methods for the purpose of compliance demonstration. If the EPA reference method is used, it shall supersede the MSDS.	Minn. R. 7007.0800, subp. 5
C. VOC EMISSIONS RECORDKEEPING	hdr
VOC Emission Calculation Method: By the 20th day of each month, the Permittee shall do the following calculation for all R&D facility non-combustion VOC emissions: a) Calculate the VOC emissions for the previous calendar month using purchase data gathered per the 3M Center Chemical Tracking Protocol, referenced in this permit, and material content data. --- Mass balance or emissions factors (as defined in Minn. R. 7005.0100) can be used to calculate VOC emissions from purchase data, or the Permittee can assume all purchases are emitted if mass balance or emissions factors are not feasible. --- The mass balance calculation can account for recovered/recycled VOCs as described under the Recovery/Recycling requirement.	Minn. R. 7007.0800, subp. 5
VOC Emission Calculation Method cont.: a) cont. --- If a VOC control device (that was in compliance with Table A) was used to control VOC emissions during the previous month, the control efficiency given in Table A can be assumed for the amount of VOC that was vented through the control device. For solvent recovery control devices, mass balance shall be used. b) Calculate the cumulative 12 month VOC emissions for the previous 12 months (or for the number of months since permit issuance).	Minn. R. 7007.0800, subp. 5
Recordkeeping: the Permittee shall keep and maintain records of operation and VOC purchases such that it can be determined which VOC emission calculation method applies to the various VOC purchases. Anytime a control device is used for credit in emission calculations, the Permittee shall keep records of the VOC input to the control device (and output for CE004).	Minn. R. 7007.0800, subp. 5
Recovery/Recycling: For each waste material accounted for in a mass balance equation the Permittee shall: 1). Analyze a representative sample of the waste material for weight percent VOC, unless the waste content can reasonably be assumed to be equivalent to the VOC input content (e.g., waste is not mixed with wastes from other processes, VOC does not react to form other materials during the process, etc.). 2). Keep records of the weight of the recovered waste material. 3). Calculate the weight of the recovered VOC using the weight percent VOC and weight of the recovered waste material.	Minn. R. 7007.0800, subp. 5
D. EQUIPMENT RECORDKEEPING	hdr
Recordkeeping: the Permittee shall keep complete descriptions of each piece of equipment described by EU002, EU003, EU007, EU011, EU013, EU130, and EU131 using the latest MPCA forms at either the appropriate pilot plant or the owner's address. The description shall give each unit a unique identification (ID) number. The Permittee shall submit updated versions of these descriptions with the Annual Report or state that there weren't any changes.	Minn. R. 7007.0800, subp. 5
Labeling: The Permittee shall affix a label to each piece of equipment described by EU002, EU003, EU007, EU130, and EU131 labeling it as such and with its unique ID number.	Minn. R. 7007.0800, subp. 5
F. DETERMINING IF A PROJECT/MODIFICATION IS SUBJECT TO NEW SOURCE REVIEW	hdr

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-4** 01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

<p>These requirements apply if a reasonable possibility (RP) as defined in 40 CFR Section 52.21(r)(6)(vi) exists that a proposed project, analyzed using the actual-to-projected-actual (ATPA) test (either by itself or as part of the hybrid test at Section 52.21(a)(2)(iv)(f)) and found to not be part of a major modification, may result in a significant emissions increase (SEI). If the ATPA test is not used for the project, or if there is no RP that the proposed project could result in a SEI, these requirements do not apply to that project. The Permittee is only subject to the Preconstruction Documentation requirement for a project where a RP occurs only within the meaning of Section 52.21(r)(6)(vi)(b).</p> <p>Even though a particular modification is not subject to New Source Review (NSR), or where there isn't a RP that a proposed project could result in a SEI, a permit amendment, recordkeeping, or notification may still be required by Minn. R. 7007.1150 - 7007.1500.</p>	Title I Condition: 40 CFR Section 52.21(r)(6); Minn. R. 7007.3000
<p>Preconstruction Documentation -- Before beginning actual construction on a project, the Permittee shall document the following:</p> <ol style="list-style-type: none"> 1. Project description 2. Identification of any emission unit (EU) whose emissions of an NSR pollutant could be affected 3. Pre-change potential emissions of any affected existing EU, and the projected post-change potential emissions of any affected existing or new EU. 4. A description of the applicability test used to determine that the project is not a major modification for any regulated NSR pollutant, including the baseline actual emissions, the projected actual emissions, the amount of emissions excluded due to increases not associated with the modification and that the EU could have accommodated during the baseline period, an explanation of why the amounts were excluded, and any creditable contemporaneous increases and decreases that were considered in the determination. <p>The Permittee shall maintain records of this documentation.</p>	Title I Condition: 40 CFR Section 52.21(r)(6); Minn. R. 7007.3000; Minn. R. 7007.1200, subp. 4; Minn. R. 7007.0800, subps. 4 & 5
<p>The Permittee shall monitor the actual emissions of any regulated NSR pollutant that could increase as a result of the project and that were analyzed using the ATPA test, and the potential emissions of any regulated NSR pollutant that could increase as a result of the project and that were analyzed using potential emissions. The Permittee shall calculate and maintain a record of the sum of the actual and potential (if used in the analysis) emissions of the regulated pollutant, in tons per year on a calendar year basis, for a period of 5 years following resumption of regular operations after the change, or for a period of 10 years following resumption of regular operations after the change if the project increases the design capacity of or potential to emit of any unit associated with the project.</p>	Title I Condition: 40 CFR Section 52.21(r)(6) and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4 & 5
<p>The Permittee must submit a report to the Agency if the annual summed (actual plus potential, if applicable) emissions differ from the preconstruction projection and exceed the baseline actual emissions by a significant amount as listed at 40 CFR Section 52.21(b)(23). Such report shall be submitted to the Agency within 60 days after the end of the year in which the exceedances occur. The report shall contain:</p> <ol style="list-style-type: none"> a. The name, address, and telephone number of the facility b. The annual emissions (actual plus potential, if any part of the project was analyzed using potential emissions) for each pollutant for which the preconstruction projection and significant emissions increase are exceeded. c. Any other information, such as an explanation as to why the summed emissions differ from the preconstruction projection 	Title I Condition: 40 CFR Section 52.21(r)(6) and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4 & 5
OPERATIONAL REQUIREMENTS	hdr
<p>The Permittee shall comply with National Primary and Secondary Ambient Air Quality Standards, 40 CFR pt. 50, and the Minnesota Ambient Air Quality Standards, Minn. R. 7009.0010 to 7009.0080. Compliance shall be demonstrated upon written request by the MPCA.</p>	40 CFR pt. 50; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
<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>	Minn. R. 7011.0020
<p>Air Pollution Control Equipment: Operate all pollution control equipment whenever the corresponding process equipment and emission units are operated.</p>	Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, subp. 16(J)

TABLE A: LIMITS AND OTHER REQUIREMENTS

A-5 01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Operation and Maintenance Plan: Retain at the stationary source an operation and maintenance plan for all air pollution control equipment. At a minimum, the O & M plan shall identify all air pollution control equipment and control practices and shall include a preventative maintenance program for the equipment and practices, a description of (the minimum but not necessarily the only) corrective actions to be taken to restore the equipment and practices to proper operation to meet applicable permit conditions, a description of the employee training program for proper operation and maintenance of the control equipment and practices, and the records kept to demonstrate plan implementation.	Minn. R. 7007.0800, subp. 14 and Minn. R. 7007.0800, subp. 16(J)
Operation Changes: In any shutdown, breakdown, or deviation the Permittee shall immediately take all practical steps to modify operations to reduce the emission of any regulated air pollutant. The Commissioner may require feasible and practical modifications in the operation to reduce emissions of air pollutants. No emissions units that have an unreasonable shutdown or breakdown frequency of process or control equipment shall be permitted to operate.	Minn. R. 7019.1000, subp. 4
Fugitive Emissions: Do not cause or permit the handling, use, transporting, or storage of any material in a manner which may allow avoidable amounts of particulate matter to become airborne. Comply with all other requirements listed in Minn. R. 7011.0150.	Minn. R. 7011.0150
Noise: The Permittee shall comply with the noise standards set forth in Minn. R. 7030.0010 to 7030.0080 at all times during the operation of any emission units. This is a state only requirement and is not federally enforceable.	Minn. R. 7030.0010 - 7030.0080
Inspections: Upon presentation of credentials and other documents as may be required by law, allow the Agency, or its representative, to enter the Permittee's premises, to have access to and copy any records required by this permit, to inspect at reasonable times (which include any time the source is operating) any facilities, equipment, practices or operations, and to sample or monitor any substances or parameters at any location.	Minn. R. 7007.0800, subp. 9(A)
General Conditions: The Permittee shall comply with the General Conditions in Minn. R. 7007.0800, subp. 16.	Minn. R. 7007.0800, subp. 16
PERFORMANCE TESTING	hdr
Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017 unless otherwise noted in Tables A and/or B.	Minn. R. ch. 7017
Performance Test Notifications and Submittals: Performance Tests are due as outlined in Table A of the permit. See Table B for additional testing requirements. Performance Test Notification (written): due 30 days before each Performance Test Performance Test Plan: due 30 days before each Performance Test Performance Test Pre-test Meeting: due 7 days before each Performance Test Performance Test Report: due 45 days after each Performance Test Performance Test Report - Microfiche Copy: due 105 days after each Performance Test The Notification, Test Plan, and Test Report may be submitted in an alternative format as allowed by Minn. R. 7017.2018.	Minn. R. 7017.2018; Minn. R. 7017.2030, subps. 1-4, Minn. R. 7017.2035, subps. 1-2
Limits set as a result of a performance test (conducted before or after permit issuance) apply until superseded as stated in the MPCA's Notice of Compliance letter granting preliminary approval. Preliminary approval is based on formal review of a subsequent performance test on the same unit as specified by Minn. R. 7017.2025, subp. 3. The limit is final upon issuance of a permit amendment incorporating the change.	Minn. R. 7017.2025, subp. 3
MONITORING REQUIREMENTS	hdr
Monitoring Equipment: Install or make needed repairs to monitoring equipment within 60 days of issuance of the permit if monitoring equipment is not installed and operational on the date the permit is issued.	Minn. R. 7007.0800, subp. 4(D)
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.	Minn. R. 7007.0800, subp. 4(D)
Monitoring Equipment Calibration: The Permittee shall calibrate all required monitoring equipment at least once every 12 months (any requirements applying to continuous emission monitors are listed separately in this permit).	Minn. R. 7007.0800, subp. 4(D)
RECORDKEEPING	hdr

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-6**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Recordkeeping: Maintain records describing any insignificant modifications (as required by Minn. R. 7007.1250, subp. 3) or changes contravening permit terms (as required by Minn. R. 7007.1350, subp. 2), including records of the emissions resulting from those changes.	Minn. R. 7007.0800, subp. 5(B)
Recordkeeping: Retain all records at the stationary source or at the owner's address for a period of five (5) years from the date of monitoring, sample, measurement, or report. Records which must be retained at this location include all calibration and maintenance records, all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. Records must conform to the requirements listed in Minn. R. 7007.0800, subp. 5(A).	Minn. R. 7007.0800, subp. 5(C)
The Permittee can make changes as allowed under Minn. R. 7007.1300 (Insignificant Modifications) and Minn. R. 7007.1250 (Insignificant Activities). Where applicable, these units are also included in the appropriate groups (GPs) or emissions units (EUs) listed in this permit.	Minn. R. 7007.1250; Minn. R. 7007.1300
If the Permittee determines that no permit amendment or notification is required prior to making a change, the Permittee must retain records of all calculations required under Minn. R. 7007.1200. These records shall be kept for a period of five years from the date the change was made or until permit reissuance, whichever is longer. The records shall be kept at the stationary source for the current calendar year of operation and may be kept at the stationary source or office of the stationary source for all other years. The records may be maintained in either electronic or paper format.	Minn. R. 7007.1200, subp. 4
REPORTING/SUBMITTALS	hdr
Shutdowns: Notify the Commissioner at least 24 hours in advance of shutdown of any process or control equipment if the shutdown would cause any increase in the emissions of a regulated air pollutant. This does not apply to the following non-required control equipment listed in this permit: CE001, CE002, CE004, and CE006. At the time of notification, inform the Commissioner of the cause of the shutdown and the estimated duration. Notify the Commissioner again when the shutdown is over.	Minn. R. 7019.1000, subp. 3
Breakdown Notifications: Notify the Commissioner within 24 hours of a breakdown of more than one hour duration of any control equipment or process equipment if the breakdown causes any increase in the emissions of any regulated air pollutant. The 24-hour time period starts when the breakdown was discovered or reasonably should have been discovered by the owner or operator. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 2. At the time of notification or as soon as possible thereafter, the owner or operator shall inform the Commissioner of the cause of the breakdown and the estimated duration. The owner or operator shall notify the Commissioner when the breakdown is over.	Minn. R. 7019.1000, subp. 2
Notification of Deviations Endangering Human Health or the Environment: As soon as possible after discovery, notify the Commissioner or the state duty officer, either orally or by facsimile, of any deviation from permit conditions which could endanger human health or the environment.	Minn. R. 7019.1000, subp. 1
Notification of Deviations Endangering Human Health or the Environment Report: Within 2 working days of discovery, notify the Commissioner in writing of any deviation from permit conditions which could endanger human health or the environment. Include the following information in this written description: 1. the cause of the deviation; 2. the exact dates of the period of the deviation, if the deviation has been corrected; 3. whether or not the deviation has been corrected; 4. the anticipated time by which the deviation is expected to be corrected, if not yet corrected; and 5. steps taken or planned to reduce, eliminate, and prevent reoccurrence of the deviation.	Minn. R. 7019.1000, subp. 1
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.	Minn. R. 7007.1150 through Minn. R. 7007.1500

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-7** 01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

For changes that do not require a permit amendment: - The Permittee shall submit a Part 1 MACT application within 30 days of startup of any 112(j) affected source. The application shall meet the requirements of 40 CFR Section 63.53(a). - The Permittee shall submit a Part 2 MACT application within 90 days of startup of any 112(j) affected source. The application shall meet the requirements of 40 CFR Section 63.53(b). 112(j) affected source is defined in 40 CFR Section 63.51. As of permit issuance, 112(j) affected sources include industrial, commercial, and institutional boilers and process heaters; brick and structural clay products manufacturing; clay ceramics manufacturing.	40 CFR Section 63.52(b)(1) and 63.52(e)(1)
Extension Requests: The Permittee may apply for an Administrative Amendment to extend a deadline in a permit by no more than 120 days, provided the proposed deadline extension meets the requirements of Minn. R. 7007.1400, subp. 1(H). Performance testing deadlines from the General Provisions of 40 CFR pt. 60 and pt. 63 are examples of deadlines for which the MPCA does not have authority to grant extensions and therefore do not meet the requirements of Minn. R. 7007.1400, subp. 1(H).	Minn. R. 7007.1400, subp. 1(H)
Emission Inventory Report: due on or before April 1 of each calendar year following permit issuance, to be submitted on a form approved by the Commissioner.	Minn. R. 7019.3000 through Minn. R. 7019.3010
Emission Fees: due 60 days after receipt of an MPCA bill.	Minn. R. 7002.0005 through Minn. R. 7002.0095

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-8**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: GP 001 All Pilot Plant VOC/HAP

Associated Items:

- CE 001 Catalytic Afterburner
- CE 002 Direct Flame Afterburner
- CE 003 Mat or Panel Filter
- CE 004 Solvent Recovery Unit
- CE 005 Mat or Panel Filter
- EU 001 Miscellaneous Pilot Plant VOC Equipment (not subject to 40 CFR pt. 60)
- EU 002 PST Coating Equipment that uses solvent (subject to 40 CFR pt. 60, subp. RR)
- EU 003 Mag. Coating Equipment that uses solvent (subject to 40 CFR pt. 60, subp. SSS)
- EU 008 Miscellaneous Laboratory Sources
- EU 009 Machine Shops
- EU 010 Carpentry Shops
- EU 011 Dry Cleaning Equipment
- EU 012 Pilot Plant Particulate Sources (non-combustion)
- EU 013 Booths Without Spray Application Equipment
- EU 014 Spray Booth 209- C163A - 1
- EU 015 Spray Booth 209-C163A-2
- EU 018 Spray Booth 216-2S
- EU 020 Spray Booth 230-G43B
- EU 022 Spray Booth 235-WN-116
- EU 023 Spray Booth 235-A-353
- EU 025 Spray Booth 240-SE Wall
- EU 026 Spray Booth 250-E-126A
- EU 028 Spray Booth 250-E-118
- EU 029 Spray Booth 250-E-123A
- EU 031 Spray Booth 251-B-230
- EU 032 Spray Booth 251-B-242
- EU 033 Spray Booth 251-B-330
- EU 034 Can Spray Booth 250-23E-91-I/O-8, # 11; 250-E-313
- EU 102 Pilot Plant 2
- EU 103 Pilot Plant 3
- EU 104 Pilot Plant 4
- EU 105 Pilot Plant 5
- EU 107 Pilot Plant 7
- EU 108 Pilot Plant 8
- EU 111 Pilot Plant 11
- EU 116 Pilot Plant 16
- EU 117 Pilot Plant 17
- EU 119 Pilot Plant 19
- EU 120 Pilot Plant 20
- EU 122 Pilot Plant 22
- EU 133 Spray Booth 230-S-118
- EU 134 Spray Booth 251-B354

What to do**Why to do it**

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-9**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

The Permittee shall comply with 40 CFR Part 63, Subpart JJJ - National Emission Standards for Hazardous Air Pollutants: Group IV Polymers and Resins for applicable equipment contained within this Group.	40 CFR Pt. 63, Subp. JJJ
The Permittee shall comply with 40 CFR Part 63, Subpart JJJJ - National Emission Standards for Hazardous Air Pollutants: Paper and Other Web Coating for applicable equipment contained within this Group.	40 CFR Pt. 63, Subp. JJJJ
Commerical Sale Recordkeeping For each affected source within GP001 that is claiming an exemption under 40 CFR Pt. 63, Subps. JJJ or JJJJ; maintain records at the facility of the percentage of hours that the affected source was engaged in the manufacture of products for commercial sale in commerce.	Minn. R. 7007.0800, subp. 2, 40 CFR Section 63.1310(d)(1); 40 CFR Section 3300(g); 40 CFR Section 63.3310

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-10**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: GP 003 Facility Wide Firm Natural Gas Cap

Associated Items:

- CE 001 Catalytic Afterburner
- CE 002 Direct Flame Afterburner
- CE 003 Mat or Panel Filter
- CE 004 Solvent Recovery Unit
- CE 005 Mat or Panel Filter
- EU 001 Miscellaneous Pilot Plant VOC Equipment (not subject to 40 CFR pt. 60)
- EU 002 PST Coating Equipment that uses solvent (subject to 40 CFR pt. 60, subp. RR)
- EU 003 Mag. Coating Equipment that uses solvent (subject to 40 CFR pt. 60, subp. SSS)
- EU 004 Ozone Generating Units
- EU 005 Direct Heating Equipment (e.g., ovens, furnaces)
- EU 006 Indirect Heating Equipment (e.g., boilers; not subject to 40 CFR pt. 60)
- EU 007 Indirect Heating Equipment (subject to 40 CFR pt. 60, subp. Dc)
- EU 008 Miscellaneous Laboratory Sources
- EU 009 Machine Shops
- EU 010 Carpentry Shops
- EU 011 Dry Cleaning Equipment
- EU 012 Pilot Plant Particulate Sources (non-combustion)
- EU 013 Booths Without Spray Application Equipment
- EU 014 Spray Booth 209- C163A - 1
- EU 015 Spray Booth 209-C163A-2
- EU 017 Ethylene Oxide Sterilizers -- Bldg 201, Nurse; Bldg 270, NB352 and NB358
- EU 018 Spray Booth 216-2S
- EU 019 270-636448, 270-000112 Coater/Oven
- EU 020 Spray Booth 230-G43B
- EU 022 Spray Booth 235-WN-116
- EU 023 Spray Booth 235-A-353
- EU 024 270-583991, 270-583990 Coater/Oven
- EU 025 Spray Booth 240-SE Wall
- EU 026 Spray Booth 250-E-126A
- EU 028 Spray Booth 250-E-118
- EU 029 Spray Booth 250-E-123A
- EU 030 LPB Pilot Plant
- EU 031 Spray Booth 251-B-230
- EU 032 Spray Booth 251-B-242
- EU 033 Spray Booth 251-B-330
- EU 034 Can Spray Booth 250-23E-91-I/O-8, # 11; 250-E-313
- EU 124 Coater 230000015
- EU 125 Coater 230549184
- EU 126 Coater 230635265
- EU 127 Coater 230652536
- EU 128 Coater 230652791
- EU 129 Coater 270700602
- EU 130 New Solventless PST Coating Equipment
- EU 131 Solventless Mag. Coating Equipment
- EU 133 Spray Booth 230-S-118

TABLE A: LIMITS AND OTHER REQUIREMENTS

A-11 01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Associated Items: EU 134 Spray Booth 251-B354

What to do	Why to do it
A. LIMITS AND AUTHORIZATIONS	hdr
Fuel Limit. The Permittee shall burn only natural gas at the R&D facility covered by this permit.	Title I Condition: Limit taken to avoid major modification classification under 40 CFR Section 52.21
Firm Natural Gas Limit. Calculations shall be completed by the 20th of the month for the previous 12 month period as described below. All firm natural gas combustion at the R&D facility is included in this group and this limit. Limit on Natural Gas Fuel Usage: less than or equal to 750.0 million cubic feet/year using 12-month Rolling Sum	Title I Condition: Limit taken to avoid major modification classification under 40 CFR Section 52.21
Pre-authorized changes: The Permittee may replace emission units or stacks, change or move existing emission units or stacks, or add new emission units or stacks to GP003, provided the replaced, changed, or new emission units meet the requirements for GP003 and qualify as either EU005, EU006, EU007, CE001, CE002, or CE004. This includes equipment that might otherwise be classified as insignificant under Minn. R. 7007.1300 or changes made under Minn. R. 7007.1250. 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: Limit taken to avoid major modification classification under 40 CFR Section 52.21
B. MONITORING REQUIREMENTS	hdr
Monitoring and Recordkeeping. By the 20th of each month the Permittee shall do the following: 1). Read the fuel meters or purchase records and calculate the amount of natural gas used at the R&D facility for the last month. 2). Calculate the fuel used for the previous 12 month period (or since permit issuance). This number must be less than the limit given above.	Minn. R. 7007.0800, subp 5
Monitoring Equipment. The Permittee shall install and maintain fuel meters to measure natural gas usage at the R&D facility. Meters may be owned and maintained by the natural gas supplier, but they must meet all permit requirements. All meters must be calibrated at least annually and a written record shall be kept of the results of the calibration.	Minn. R. 7007.0800, subp. 4

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-12**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: GP 005 Solventless PST Coating Equipment (subject to 40 CFR pt. 60, subp. RR)**Associated Items:** EU 124 Coater 230000015

EU 125 Coater 230549184

EU 126 Coater 230635265

EU 127 Coater 230652536

EU 128 Coater 230652791

EU 129 Coater 270700602

EU 130 New Solventless PST Coating Equipment

What to do	Why to do it
A. LIMITS AND AUTHORIZATIONS	hdr
The requirements of this group (GP005) apply to the units listed above and any new pressure sensitive tape or label coating equipment (EU130) that uses solventless coatings and that begins operation on or after May 14, 1998. These affected facilities shall use less VOC than the applicable thresholds listed in 40 CFR Section 60.440(b).	40 CFR Section 60.440(b); Minn. R. 7011.2560
Preauthorized Change: The Permittee may add new affected facilities that use solventless coatings or reconstruct or modify existing facilities such that they become affected facilities that use solventless coatings without getting a permit amendment as long as the proposed change complies with all permit conditions and meets the requirements of GP005 and EU130. If the proposed change could potentially cause an emissions increase of a regulated pollutant other than VOC, or if the proposed change would be subject to different or additional requirements than those given in this permit, the change must go through the appropriate procedure in Minn. R. ch. 7007.	Minn. R. 7007.0750, subp. 6
B. RECORDKEEPING	hdr
The Permittee shall keep records of VOC used at the affected facilities as described in the Total Facility section of Table A of this permit (per EPA letter dated May 26, 1998). This system will track VOC purchases at the pilot plant level instead of at the specific affected facility. The VOC tracking requirements can be found under the following headings: B. VOC Purchases Recordkeeping, and C. VOC Emissions Recordkeeping). In the event that the 12-month rolling sum of VOC purchases in a pilot plant where one of these affected facilities is located exceeds the NSPS thresholds listed in 40 CFR Section 60.440(b), the Permittee shall review the pilot plant records to confirm that the VOCs were not used by one of the affected facilities in amounts exceeding the relevant threshold.	40 CFR Section 60.13(i) to comply with 40 CFR Section 60.445(a) and 40 CFR Section 50.445(d)

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-13**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: EU 001 Miscellaneous Pilot Plant VOC Equipment (not subject to 40 CFR pt. 60)**Associated Items:** GP 001 All Pilot Plant VOC/HAP

GP 003 Facility Wide Firm Natural Gas Cap

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions in order to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735 (for units which were in operation before July 9, 1969).	Minn. R. 7011.0710, subp. 1(A)
Opacity: less than or equal to 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity (for units which were in operation before July 9, 1969).	Minn. R. 7011.0710, subp. 1(B)
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions in order to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735 (for units which were not in operation before July 9, 1969).	Minn. R. 7011.0715, subp. 1
Opacity: less than or equal to 20 percent opacity (for units which were not in operation before July 9, 1969).	Minn. R. 7011.0715, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-14**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: EU 002 PST Coating Equipment that uses solvent (subject to 40 CFR pt. 60, subp. RR)**Associated Items:** GP 001 All Pilot Plant VOC/HAP

GP 003 Facility Wide Firm Natural Gas Cap

What to do	Why to do it
A. LIMITS AND AUTHORIZATIONS	hdr
The requirements of EU002 apply to affected facilities that use coatings containing solvents (affected facilities that use solventless coatings are listed in GP005). These affected facilities use less VOC than the applicable thresholds listed in 40 CFR Section 60.440(b) (45 Mg or approx. 50 tons). If the amount of VOC inputs exceed this level in any 12 month period, the coating line is then subject to additional requirements in 40 CFR pt. 60, subp. RR. The Permittee must get the appropriate permit amendment to add these requirements to this permit.	40 CFR Section 60.440(b); Minn. R. 7011.2560
Preauthorized Change: The Permittee may add new affected facilities or reconstruct or modify existing facilities such that they become affected facilities without getting a permit amendment as long as the proposed change complies with all permit conditions and meets the requirements of EU002. Note: If these affected facilities use solventless coatings, they are described by GP005, not EU002. If the proposed change could potentially cause an emissions increase of a regulated pollutant other than VOC, or if the proposed change would be subject to different or additional requirements than those given in this permit, the change must go through the appropriate procedure in Minn. R. ch. 7007.	Minn. R. 7007.0750, subp. 6
B. RECORDKEEPING	hdr
Monthly Recordkeeping: The Permittee shall maintain a calendar month record of all coatings used and the results of the reference test methods specified in 40 CFR Section 60.446(a) or the manufacturer's formulation data used for determining the VOC content of those coatings, for each coater subject to this standard.	40 CFR Section 60.445(a); Minn. R. 7011.2560
12 Month Recordkeeping: the Permittee shall maintain a 12 month record of the amount of solvent applied in the coating at each coater subject to this standard.	40 CFR Section 60.445(d); Minn. R. 7011.2560
Notification of any physical or operational change to an existing facility which may increase the emission rate of any air pollutant to which a standard applies, unless it is specifically exempted under 40 CFR Section 60.14(e): due postmarked 60 days or as soon as practicable before commencing the change. The notification shall include the information required in 40 CFR Section 60.7(a)(4).	40 CFR Section 60.7(a)(4); Minn. R. 7019.0100, subp. 1

TABLE A: LIMITS AND OTHER REQUIREMENTS

A-15

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: EU 003 Mag. Coating Equipment that uses solvent (subject to 40 CFR pt. 60, subp. SSS)**Associated Items:** GP 001 All Pilot Plant VOC/HAP

GP 003 Facility Wide Firm Natural Gas Cap

What to do	Why to do it
A. LIMITS AND AUTHORIZATIONS	hdr
The requirements of EU003 apply to affected facilities that use coatings containing solvents (affected facilities that use solventless coatings are described by EU131). These affected facilities use less solvent than the applicable thresholds listed in 40 CFR Section 60.710(b). If the amount of solvent utilized at any coating operation exceeds these amounts in any calendar year, the coating operation is then subject to additional requirements in 40 CFR pt. 60, subp. SSS. The Permittee must get the appropriate permit amendment to add these requirements to this permit.	40 CFR Section 60.710(b); Minn. R. 7011.3450
Preauthorized Change: The Permittee may add new affected facilities or reconstruct or modify existing facilities such that they become affected facilities without getting a permit amendment as long as the proposed change complies with all permit conditions and meets the requirements of EU003. (Note: affected facilities that use solventless coatings are described by EU131) If the proposed change could potentially cause an emissions increase of a regulated pollutant other than VOC, or if the proposed change would be subject to different or additional requirements than those given in this permit, the change must go through the appropriate procedure in Minn. R. ch. 7007.	Minn. R. 7007.0750, subp. 6
B. RECORDKEEPING	hdr
Semiannual Recordkeeping: The Permittee shall make semiannual estimates of the projected annual solvent to be utilized for the manufacture of magnetic tape at each affected facility in that calendar year and maintain records of these estimates.	40 CFR Section 60.714(a)(1); Minn. R. 7011.3450
Solvent Usage Recordkeeping: The Permittee shall maintain records of the actual annual use at each affected facility.	40 CFR Section 60.714(a)(2); Minn. R. 7011.3450
C. REPORTING	hdr
For each affected coating operation initially utilizing less than the applicable volume in 40 CFR Section 60.710(b) per calendar year shall: 1). report the first calendar year in which actual annual solvent use exceeds the applicable volume; and 2). report the first semiannual estimate in which annual solvent use would exceed the applicable volume. This permit condition does not satisfy the requirements of Minn. R. 7007.1150 pertaining to permit amendments.	40 CFR Section 60.717(c); Minn. R. 7011.3450
Notification of any physical or operational change to an existing facility which may increase the emission rate of any air pollutant to which a standard applies, unless it is specifically exempted under 40 CFR Section 60.14(e): due postmarked 60 days or as soon as practicable before commencing the change. The notification shall include the information required in 40 CFR Section 60.7(a)(4).	40 CFR Section 60.7(a)(4); Minn. R. 7019.0100, subp. 1

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-16**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: EU 004 Ozone Generating Units**Associated Items:** GP 003 Facility Wide Firm Natural Gas Cap

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions in order to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735 (for units which were in operation before July 9, 1969).	Minn. R. 7011.0710, subp. 1(A)
Opacity: less than or equal to 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity (for units which were in operation before July 9, 1969).	Minn. R. 7011.0710, subp. 1(B)
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions in order to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735 (for units which were not in operation before July 9, 1969).	Minn. R. 7011.0715, subp. 1
Opacity: less than or equal to 20 percent opacity (for units which were not in operation before July 9, 1969).	Minn. R. 7011.0715, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-17**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: EU 005 Direct Heating Equipment (e.g., ovens, furnaces)**Associated Items:** GP 003 Facility Wide Firm Natural Gas Cap

What to do	Why to do it
Fuel Usage: natural gas only.	Minn. R. 7007.0800, subp. 2
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions in order to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0610, subp. 1(A)(1)
Opacity: less than or equal to 20 percent opacity , except for one six-minute period per hour of not more than 60 percent opacity.	Minn. R. 7011.0610, subp. 1(A)(2)

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-18**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: EU 006 Indirect Heating Equipment (e.g., boilers; not subject to 40 CFR pt. 60)**Associated Items:** GP 003 Facility Wide Firm Natural Gas Cap

What to do	Why to do it
Fuel Usage: natural gas only.	Minn. R. 7007.0800, subp. 2
Each individual unit shall have a heat input capacity less than 10 MMBtu/hr.	Minn. R. 7007.0800, subp. 2
Total Particulate Matter: less than or equal to 0.40 lbs/million Btu heat input for units on which construction, modification or reconstruction was commenced prior to February 1, 1977. (potential to emit is limited by burning of natural gas only to 0.011 lb/MMBtu)	Minn. R. 7011.0510, subp. 1
Opacity: less than or equal to 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity. (units which construction, modification or reconstruction was commenced prior to February 1, 1977).	Minn. R. 7011.0510, subp. 2
Total Particulate Matter: less than or equal to 0.40 lbs/million Btu heat input for units which construction, modification or reconstruction was commenced after January 31, 1977. (potential to emit is limited by burning of natural gas only to 0.011 lb/MMBtu)	Minn. R. 7011.0515, subp. 1
Opacity: less than or equal to 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity. (for units on which construction, modification or reconstruction was commenced after January 31, 1977).	Minn. R. 7011.0515, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-19**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: EU 007 Indirect Heating Equipment (subject to 40 CFR pt. 60, subp. Dc)**Associated Items:** GP 003 Facility Wide Firm Natural Gas Cap

What to do	Why to do it
A. LIMITS AND AUTHORIZATIONS	hdr
Fuel Usage: natural gas only.	Minn. R. 7007.0800, subp. 2
Burner Type: All boilers subject to 40 CFR pt. 60, subp. Dc shall have low NOx burners.	Minn. R. 7007.0800, subp. 2
Each individual unit shall have a heat input capacity less than 100 MMBtu/hr (and greater than 10 MMBtu/hr).	Minn. R. 7007.0800, subp. 2
Preauthorized Change: The Permittee may add new affected facilities or reconstruct or modify existing facilities such that they become affected facilities without getting a permit amendment as long as the proposed change complies with all permit conditions and is included in GP003. If the proposed change would be subject to different or additional requirements than those given in this permit, the change must go through the appropriate permit amendment per Minn. R. ch. 7007.	Minn. R. 7007.0750, subp. 6
B. RECORDKEEPING AND REPORTING	hdr
The Permittee shall keep records of the amount of natural gas combusted at each of these units on a monthly basis by the 20th of the month for the previous calendar month. These records can consist of purchase records, receipts, or fuel meter readings.	40 CFR Section 60.13(i) to comply with 40 CFR Section 60.48c(g)
If the Permittee wishes to pursue an alternative method of complying with 40 CFR Section 60.48c(g), the Permittee shall submit an alternative compliance plan to the MPCA: upon approval by U.S. EPA, the Permittee shall then follow that plan in place of the above permit conditions. The plan shall become a fully enforceable part of this permit.	40 CFR Section 60.13(i) to comply with 40 CFR Section 60.48c(g)

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-20**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: EU 008 Miscellaneous Laboratory Sources**Associated Items:** GP 001 All Pilot Plant VOC/HAP

GP 003 Facility Wide Firm Natural Gas Cap

What to do	Why to do it
Laboratory-scale coating equipment used for pressure sensitive tapes or labels or magnetic media tape coating is not subject to the Pressure Sensitive Tape and Label NSPS (40 CFR pt. 60, subp. RR) or the Magnetic Tape NSPS (40 CFR pt 60, subp. SSS), and this equipment is protected by the permit shield provision of Minn. R. 7007.1800 from any expectation to comply with these requirements. Accordingly, the Permittee is not required to make notifications under the NSPS general provisions or keep records or make reports under these rules related to this laboratory-scale coating equipment. This permit shield does not apply to any coating equipment located in a pilot plant at the facility.	Minn. R. 7007.1800, subp. (A)(2)
Particulate Matter: The research and development laboratory and maintenance processes currently consist of many small processes that generate very small amounts of particulate matter emissions. Any VOC emissions from these units are covered by the BACT limits. The particulate generating processes include, but are not limited to grinding, curing, drying, flagging, crushing, sieving, material handling, etching, welding, pouring, classifying, cutting, drilling, sanding, jointing, planing, lathing, sawing, and milling. This is mainly equipment that can be classified as insignificant under Minn. R. 7007.1300 or changes made under Minn. R. 7007.1250.	Minn. R. 7007.0800, subp. 2
Prior to permit reissuance, the Permittee shall survey a representative sample of the laboratory processes to determine if the assumptions used in the original permit application are still valid and accurate. This information shall be included in the application for reissuance.	Minn. R. 7007.0800, subp. 4
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions in order to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735 (for units which were in operation before July 9, 1969).	Minn. R. 7011.0710, subp. 1(A)
Opacity: less than or equal to 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity. (for units which were in operation before July 9, 1969).	Minn. R. 7011.0710, subp. 1(B)
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions in order to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735 (for units which were not in operation before July 9, 1969).	Minn. R. 7011.0715, subp. 1
Opacity: less than or equal to 20 percent opacity (for units which were not in operation before July 9, 1969).	Minn. R. 7011.0715, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-21**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: EU 009 Machine Shops**Associated Items:** GP 001 All Pilot Plant VOC/HAP

GP 003 Facility Wide Firm Natural Gas Cap

What to do	Why to do it
Particulate Matter: The Permittee currently has 9 machine shops at the stationary source. A machine shop, in general, is an area where metal is processed and handled. Any VOC emissions from these units are covered by the BACT limits. Processes include, but are not limited to grinding, milling, lathing, sawing, welding, crushing, etching, pouring, screening, and sieving. This is mainly equipment that can be classified as insignificant under Minn. R. 7007.1300 or changes made under Minn. R. 7007.1250.	Minn. R. 7007.0800, subp. 2
The Permittee shall maintain a site diagram of the facility which shows the locations of the machine shops. The Permittee shall update the diagram any time a machine shop is added or moved so that the map is current and available upon request.	Minn. R. 7007.0800, subp. 5
Prior to permit reissuance, the Permittee shall survey a representative sample of the machine shops to determine if the assumptions used in the original permit application are still valid and accurate. This information shall be included in the application for reissuance.	Minn. R. 7007.0800, subp. 4
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions in order to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735 (for units which were in operation before July 9, 1969).	Minn. R. 7011.0710, subp. 1(A)
Opacity: less than or equal to 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity. (for units which were in operation before July 9, 1969).	Minn. R. 7011.0710, subp. 1(B)
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions in order to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735 (for units which were not in operation before July 9, 1969).	Minn. R. 7011.0715, subp. 1
Opacity: less than or equal to 20 percent opacity (for units which were not in operation before July 9, 1969).	Minn. R. 7011.0715, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-22**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: EU 010 Carpentry Shops**Associated Items:** CE 006 Centrifugal Collector - Medium Efficiency

CE 007 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

GP 001 All Pilot Plant VOC/HAP

GP 003 Facility Wide Firm Natural Gas Cap

What to do	Why to do it
Particulate Matter: The Permittee currently has 4 carpentry shops at the stationary source. A carpentry shop, in general, is an area where wood is processed and handled. Any VOC emissions from these units are covered by the BACT limits. Processes include, but are not limited to cutting, drilling, sanding, jointing, planing, lathing, sawing, and milling. This is mainly equipment that can be classified as insignificant under Minn. R. 7007.1300 or changes made under Minn. R. 7007.1250.	Minn. R. 7007.0800, subp. 2
The Permittee shall maintain a site diagram of the facility which shows the locations of the carpentry shops. The Permittee shall update the diagram any time a carpentry shop is added or moved so that the map is current and available upon request.	Minn. R. 7007.0800, subp. 5
Control Equipment: All carpentry shop room air shall be vented to control equipment described by CE007. The Permittee shall properly operate the control equipment according to the manufacturer's specifications at all times the carpentry shops are in use.	Minn. Stat. 116.07, subd. 4a; Equipment used under Minn. R. 7019.3020(F) & Minn. R. 7019.3050
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions in order to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735 (for units which were in operation before July 9, 1969).	Minn. R. 7011.0710, subp. 1(A)
Opacity: less than or equal to 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity. (for units which were in operation before July 9, 1969).	Minn. R. 7011.0710, subp. 1(B)
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions in order to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735 (for units which were not in operation before July 9, 1969).	Minn. R. 7011.0715, subp. 1
Opacity: less than or equal to 20 percent opacity (for units which were not in operation before July 9, 1969).	Minn. R. 7011.0715, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-23**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: EU 011 Dry Cleaning Equipment**Associated Items:** GP 001 All Pilot Plant VOC/HAP

GP 003 Facility Wide Firm Natural Gas Cap

What to do	Why to do it
The Permittee shall close the door of each dry cleaning machine immediately after transferring articles to or from the machine, and shall keep the door closed at all other times.	40 CFR Section 63.322(c)
The Permittee shall operate and maintain each dry cleaning system according to the manufacturer's specifications and recommendations.	40 CFR Section 63.322(d)
The Permittee shall drain all cartridge filters in their housing, or other sealed container, for a minimum of 24 hours, or shall treat such filters in an equivalent manner, before removal from the dry cleaning facility.	40 CFR Section 63.322(i)
The Permittee shall store all perchloroethylene and wastes that contain perchloroethylene in solvent tanks or solvent containers with no perceptible leaks.	40 CFR Section 63.322(j)
The Permittee shall inspect the following components weekly for perceptible leaks while the dry cleaning system is operating: (1) Hose and pipe connections, fittings, couplings, and valves. (2) Door gaskets and seatings. (3) Filter gaskets and seatings. (4) Pumps. (5) Solvent tanks and containers. (6) Water separators. (7) Muck cookers (8) Stills. (9) Exhaust dampers (10) Diverter valves. (11) Cartridge filter housings. If the total facility consumption is below the applicable consumption levels of 40 CFR Section 63.320(d) or (e) [less than 140 gallons perchloroethylene per year], the Permittee shall inspect the components listed above biweekly for perceptible leaks while the dry cleaning system is operating.	40 CFR Section 63.322(k), (l)
The Permittee shall repair all perceptible leaks detected under 40 CFR Section 63.322(k) within 24 hours. If repair parts must be ordered, either a written or verbal order for those parts shall be initiated within two working days of detecting such a leak. Such repair parts shall be installed within five working days after receipt.	40 CFR Section 63.322(m)
The Permittee shall measure the temperature of the air-perchloroethylene gas-vapor stream on the outlet side of the refrigerated condenser of the dry cleaning system with a temperature sensor to determine if it is equal to or less than 7.2 deg. C (45 deg. F). The temperature sensor shall be used according to the manufacturer's instructions and shall be designed to measure a temperature of 7.2 deg. C (45 deg. F) to an accuracy of +/- 1.1 deg. C (+/- 2 deg. F). This monitoring will be conducted weekly when the dry cleaning unit is operating.	40 CFR Section 63.323(a)(1)
When calculating yearly perchloroethylene consumption for the purpose of demonstrating applicability according to 40 CFR Section 63.320, the Permittee shall perform the following calculation on the first day of every month: (1) Sum the volume of all perchloroethylene purchases made in each of the previous 12 months, as recorded in the log described in 40 CFR Section 63.324(d)(1). (2) If no perchloroethylene purchases were made in a given month, then the perchloroethylene consumption for that month is zero gallons. (3) The total sum calculated is paragraph (d) of this section is the yearly perchloroethylene consumption of the facility.	40 CFR Section 63.323(d)
The Permittee shall keep receipts of perchloroethylene purchases in a log with the following information, shall maintain such information on site, and show it upon request for a period of five years: (1) The volume of perchloroethylene purchased each month by the dry cleaning facility as recorded from perchloroethylene purchases; if no perchloroethylene is purchased during a given month, then the Permittee would enter zero gallons into the log. (2) The calculation and result of the yearly perchloroethylene consumption determined on the first day of each month as specified in 40 CFR Section 63.323(d) (3) The dates when the dry cleaning system components are inspected for perceptible leaks, as specified in 40 CFR Section 63.322(k) or (l), and the name or location of dry cleaning system components where perceptible leaks are detected. (4) The dates of repair and records of written or verbal orders for repair parts to demonstrate compliance with 40 CFR Section 63.322(m) and (n).	40 CFR Section 63.324(d)(1-4)

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-24**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

The Permittee shall retain onsite a copy of the design specifications and the operating manuals for each dry cleaning system and each emission control device located at the dry cleaning facility.	40 CFR Section 63.324(e)
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TABLE A: LIMITS AND OTHER REQUIREMENTS**A-25**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: EU 012 Pilot Plant Particulate Sources (non-combustion)**Associated Items:** GP 001 All Pilot Plant VOC/HAP

GP 003 Facility Wide Firm Natural Gas Cap

What to do	Why to do it
<p>PM Calculations: By the 20th of the month, the Permittee shall do the following:</p> <p>a) Spreadsheet 1: For all equipment located in the Pilot Plants at the time of permit issuance, the Permittee shall calculate the actual emissions or worst case actual emissions of PM for the previous 12 months. The Permittee can use a mass balance approach or emission factors (as defined in Minn. R. 7005.0100).</p> <p>b) Spreadsheet 2: For equipment added or modified after permit issuance, the Permittee shall calculate the actual emissions of PM for the previous 12 months. The Permittee can use a mass balance approach or emission factors (as defined in Minn. R. 7005.0100). For the purpose of this permit condition only, modified means that the existing emission unit had an increase in actual emissions of PM compared to the previous 12 month period.</p>	Minn. R. 7007.0800, subp. 5
<p>On an annual basis, by April 1, the Permittee shall update Spreadsheet 1, referenced above, to reflect all equipment as it exists in each Pilot Plant as of January 1 of that year. A new Spreadsheet 2 will be developed each year which will show the changes made that calendar year.</p> <p>As part of this update, the Permittee will evaluate the emission calculation methods to determine if new better data or emission factors are available.</p>	Minn. R. 7007.0800, subp. 5
The Permittee shall maintain the necessary records in order to do the emission calculations listed above.	Minn. R. 7007.0800, subp. 5
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions in order to comply with the limit in Minn. R. 7011.0730 or Minn. R. 7011.0735 (for units which were in operation before July 9, 1969).	Minn. R. 7011.0710, subp. 1(A)
Opacity: less than or equal to 20 percent opacity , except that a maximum of 60 percent opacity shall be permissible for four minutes in any 60 minute period and that a maximum of 40 percent opacity shall be permissible for four additional minutes in any 60 minute period (for units which were in operation before July 9, 1969).	Minn. R. 7011.0710, subp. 1(B)
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions in order to comply with the limit in Minn. R. 7011.0730 or Minn. R. 7011.0735 (for units which were not in operation before July 9, 1969).	Minn. R. 7011.0715, subp. 1
Opacity: less than or equal to 20 percent opacity (for units which were not in operation before July 9, 1969).	Minn. R. 7011.0715, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-26**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: EU 013 Booths Without Spray Application Equipment**Associated Items:** CE 003 Mat or Panel Filter

CE 005 Mat or Panel Filter

GP 001 All Pilot Plant VOC/HAP

GP 003 Facility Wide Firm Natural Gas Cap

What to do	Why to do it
<p>The Permittee currently has 6 spray booths that do not have spray application equipment (e.g., only use small aerosol spray cans). One of these booths is listed as individual EU in this permit with it's own requirements (EU034). The remaining 5 must meet the requirements of EU013.</p> <p>The Permittee may move these existing booths as long as all permit conditions are met and as long as the booths continue to have no spray application equipment. If any of the spray booths that do not have spray application equipment are changed such that application equipment is installed, this shall be treated as a modification and must go through the appropriate procedure per Minn. R. ch. 7007.</p> <p>This emission unit includes equipment that can be classified as insignificant under Minn. R. 7007.1300 or changes made under Minn. R. 7007.1250.</p>	Minn. R. 7007.0800, subp. 2
The Permittee shall maintain a written document which shows the locations of the booths that do not have spray application equipment. The Permittee shall update the document anytime a booth is moved so that the document is current and available upon request. This can be the same record as required under the Total Facility requirements in this permit (Recordkeeping).	Minn. R. 7007.0800, subp. 5
Control Equipment: The Permittee shall vent emissions from all of these spray booths to control equipment meeting the requirements of CE003 or CE005 of this permit.	Minn. R. 7007.0800, subp. 2
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions in order to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735 (for units which were in operation before July 9, 1969).	Minn. R. 7011.0710, subp. 1(A)
Opacity: less than or equal to 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity (for units which were in operation before July 9, 1969).	Minn. R. 7011.0710, subp. 1(B)
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions in order to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735 (for units which were not in operation before July 9, 1969).	Minn. R. 7011.0715, subp. 1
Opacity: less than or equal to 20 percent opacity (for units which were not in operation before July 9, 1969).	Minn. R. 7011.0715, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS

A-27 01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: EU 014 Spray Booth 209- C163A - 1**Associated Items:** CE 014 Mat or Panel Filter

GP 001 All Pilot Plant VOC/HAP

GP 003 Facility Wide Firm Natural Gas Cap

GP 004 Existing and New Spray Application Booths

What to do	Why to do it
A. OPERATING LIMITS	hdr
Process Throughput: less than or equal to 150.0 lbs/hour spray gun capacity for any given spray gun. The Permittee shall operate only one gun at a time in the spray booth. The Permittee shall maintain documentation of spray gun capacity in pounds per hour (e.g., manufacturers specifications).	Title I Condition: Limit used in analysis under 40 CFR Section 52.21(j) and Minn. R. 7007.3000; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
The spray booth shall have only one compressor for use with spray guns. The Permittee shall limit the Compressor Operating Hours: less than or equal to 500 hours/year	Title I Condition: 40 CFR Section 52.21(j) (BACT Limit) and Minn. R. 7007.3000; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
The Permittee shall limit the Compressor Operating Hours: less than or equal to 12 hours/day	Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
Control Equipment: The Permittee shall vent emissions from this spray booth (EU014) to control equipment meeting the requirements of CE014 of this permit.	Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
B. MONITORING AND RECORDKEEPING	hdr
Monitoring for Compressor Operating Hours: The Permittee shall install, operate, and maintain a cumulative hour meter on the compressor. The meter shall have an automatic lock-out device that disables the compressor when the hours limit is reached. Once the cumulative hours on the meter reaches 500 hours for the given calendar year, the compressor shall be removed, locked-out, or rendered inoperable until the next calendar year (January 1).	Title I Condition: 40 CFR Section 52.21(j) (BACT Limit) and Minn. R. 7007.3000; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
Recordkeeping for Annual Compressor Operating Hours: Once the compressor has reached the limit of 500 hours per calendar year, the Permittee shall notify personnel that the spray booth is no longer available for spraying for the remainder of the calendar year (memo or posting by the booth). In addition, the Permittee shall maintain a written or computerized log stating that the booth has reached the limit on which date. The hour meter shall be reset each January and the cumulative hours for the past calendar year shall be recorded.	Minn. R. 7007.0800, subps. 4 and 5
Monitoring and Recordkeeping for Daily Compressor Operating Hours. Each time the spray booth is operated, the Permittee shall maintain a log of the spray booth compressor use, to include: 1) Date 2) Hour meter reading at start of compressor use 3) Hour meter reading at end of compressor use 4) Amount of time compressor is used (Meter reading at end - Meter reading at start) 5) Total hours compressor used for the day, as a running total adding each previous compressor use for the day.	Minn. R. 7007.0800, subp. 4 and 5
Recordkeeping for Daily Compressor Operating Hours: Once the compressor has reached the 12 hour per day limit, the Permittee shall notify personnel that the spray booth is no longer available for spraying for the remainder of the day. The Permittee shall maintain a record of the notification.	Minn. R. 7007.0800, subp. 4 and 5
Maximum Contents of Materials and Minimum Transfer Efficiencies: The Permittee assumed certain worst-case contents of materials and transfer efficiencies when determining the short term potential to emit of EU014. These assumptions are listed in Appendix VII of this permit. Changing to a material that has a higher content of any of the given pollutants is considered a change in method of operation that must be evaluated under Minn. R. 7007.1200, subp. 3 to determine if a permit amendment or notification is required under Minn. R. 7007.1150.	Minn. R. 7005.0100, subp. 35a
C. MINNESOTA RULE EMISSION LIMITS	hdr

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-28**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions in order to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0710, subp. 1(A)
Opacity: less than or equal to 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity.	Minn. R. 7011.0710, subp. 1(B)

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-29** 01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: EU 015 Spray Booth 209-C163A-2**Associated Items:** CE 014 Mat or Panel Filter

GP 001 All Pilot Plant VOC/HAP

GP 003 Facility Wide Firm Natural Gas Cap

GP 004 Existing and New Spray Application Booths

What to do	Why to do it
A. OPERATING LIMITS	hdr
Process Throughput: less than or equal to 150.0 lbs/hour spray gun capacity for any given spray gun. The Permittee shall operate only one gun at a time in the spray booth. The Permittee shall maintain documentation of spray gun capacity in pounds per hour (e.g., manufacturers specifications).	Title I Condition: Limit used in analysis under 40 CFR Section 52.21(j) and Minn. R. 7007.3000; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
The spray booth shall have only one compressor for use with spray guns. The Permittee shall limit the Compressor Operating Hours: less than or equal to 500 hours/year	Title I Condition: 40 CFR Section 52.21(j) (BACT Limit) and Minn. R. 7007.3000; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
The Permittee shall limit the Compressor Operating Hours: less than or equal to 12 hours/day	Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
Control Equipment: The Permittee shall vent emissions from this spray booth (EU015) to control equipment meeting the requirements of CE014 of this permit.	Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080; Minn. R. 7007.0800, subp. 2
B. MONITORING AND RECORDKEEPING	hdr
Monitoring for Compressor Operating Hours: The Permittee shall install, operate, and maintain a cumulative hour meter on the compressor. The meter shall have an automatic lock-out device that disables the compressor when the hours limit is reached. Once the cumulative hours on the meter reaches 500 hours for the given calendar year, the compressor shall be removed, locked-out, or rendered inoperable until the next calendar year (January 1).	Title I Condition: 40 CFR Section 52.21(j) (BACT Limit) and Minn. R. 7007.3000; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
Recordkeeping for Compressor Operating Hours: Once the compressor has reached the limit of 500 hours per calendar year, the Permittee shall notify personnel that the spray booth is no longer available for spraying for the remainder of the calendar year (memo or posting by the booth). In addition, the Permittee shall maintain a written or computerized log stating that the booth has reached the limit on which date. The hour meter shall be reset each January and the cumulative hours for the past calendar year shall be recorded.	Minn. R. 7007.0800, subp. 5
Recordkeeping for Daily Compressor Operating Hours. Each time the spray booth is operated, the Permittee shall maintain a log of the spray booth compressor use, to include: 1) Date 2) Hour meter reading at start of compressor use 3) Hour meter reading at end of compressor use 4) Amount of time compressor is used (Meter reading at end - Meter reading at start) 5) Total hours compressor used for the day, as a running total adding each previous compressor use for the day.	Minn. R. 7007.0800, subp. 4 and 5
Recordkeeping for Daily Compressor Operating Hours: Once the compressor has reached the 12 hours per day limit, the Permittee shall notify personnel that the spray booth is no longer available for spraying for the remainder of the day. The Permittee shall maintain a record of the notification.	Minn. R. 7007.0800, subp. 4 and 5
Maximum Contents of Materials and Minimum Transfer Efficiencies: The Permittee assumed certain worst-case contents of materials and transfer efficiencies when determining the short term potential to emit of EU015. These assumptions are listed in Appendix VII of this permit. Changing to a material that has a higher content of any of the given pollutants is considered a change in method of operation that must be evaluated under Minn. R. 7007.1200, subp. 3 to determine if a permit amendment or notification is required under Minn. R. 7007.1150.	Minn. R. 7005.0100, subp. 35a
C. MINNESOTA RULE EMISSION LIMITS	hdr

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-30**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions in order to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0710, subp. 1(A)
Opacity: less than or equal to 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity.	Minn. R. 7011.0710, subp. 1(B)

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-31**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: EU 017 Ethylene Oxide Sterilizers -- Bldg 201, Nurse; Bldg 270, NB352 and NB358**Associated Items:** GP 003 Facility Wide Firm Natural Gas Cap

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions in order to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735 (for units which were in operation before July 9, 1969).	Minn. R. 7011.0710, subp. 1(A)
Opacity: less than or equal to 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity. (for units which were in operation before July 9, 1969).	Minn. R. 7011.0710, subp. 1(B)
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions in order to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735 (for units which were not in operation before July 9, 1969).	Minn. R. 7011.0715, subp. 1
Opacity: less than or equal to 20 percent opacity (for units which were not in operation before July 9, 1969).	Minn. R. 7011.0715, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS

A-32 01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: EU 018 Spray Booth 216-2S**Associated Items:** CE 014 Mat or Panel Filter

GP 001 All Pilot Plant VOC/HAP

GP 003 Facility Wide Firm Natural Gas Cap

GP 004 Existing and New Spray Application Booths

What to do	Why to do it
A. OPERATING LIMITS	hdr
Process Throughput: less than or equal to 100.0 lbs/hour spray gun capacity for any given spray gun. The Permittee shall operate only one gun at a time in the spray booth. The Permittee shall maintain documentation of spray gun capacity in pounds per hour (e.g., manufacturers specifications).	Title I Condition: Limit used in analysis under 40 CFR Section 52.21(j); Minn. R. 7007.3000; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
The spray booth shall have only one compressor for use with spray guns. The Permittee shall limit the Compressor Operating Hours: less than or equal to 1500 hours/year	Title I Condition: 40 CFR Section 52.21(j) (BACT Limit); Minn. R. 7007.3000; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
The Permittee shall limit the Compressor Operating Hours: less than or equal to 12 hours/day	Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
Control Equipment: The Permittee shall vent emissions from this spray booth (EU018) to control equipment meeting the requirements of CE014 of this permit.	Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080; Minn. R. 7007.0800, subp. 2
B. MONITORING AND RECORDKEEPING	hdr
Monitoring for Compressor Operating Hours: The Permittee shall install, operate, and maintain a cumulative hour meter on the compressor. The meter shall have an automatic lock-out device that disables the compressor when the hours limit is reached. Once the cumulative hours on the meter reaches 1500 hours for the given calendar year, the compressor shall be removed, locked-out, or rendered inoperable until the next calendar year (January 1).	Title I Condition: 40 CFR Section 52.21(j) (BACT Limit); Minn. R. 7007.3000; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
Recordkeeping for Compressor Operating Hours: Once the compressor has reached the limit of 1500 hours per calendar year, the Permittee shall notify personnel that the spray booth is no longer available for spraying for the remainder of the calendar year (memo or posting by the booth). In addition, the Permittee shall maintain a written or computerized log stating that the booth has reached the limit on which date. The hour meter shall be reset each January and the cumulative hours for the past calendar year shall be recorded.	Minn. R. 7007.0800, subp. 5
Recordkeeping for Daily Compressor Operating Hours. Each time the spray booth is operated, the Permittee shall maintain a log of the spray booth compressor use, to include: 1) Date 2) Hour meter reading at start of compressor use 3) Hour meter reading at end of compressor use 4) Amount of time compressor is used (Meter reading at end - Meter reading at start) 5) Total hours compressor used for the day, as a running total adding each previous compressor use for the day.	Minn. R. 7007.0800, subp. 4 and 5
Recordkeeping for Daily Compressor Operating Hours: Once the compressor has reached the 12 hours per day limit, the Permittee shall notify personnel that the spray booth is no longer available for spraying for the remainder of the day. The Permittee shall maintain a record of the notification.	Minn. R. 7007.0800, subp. 4 and 5
Maximum Contents of Materials and Minimum Transfer Efficiencies: The Permittee assumed certain worst-case contents of materials and transfer efficiencies when determining the short term potential to emit of EU018. These assumptions are listed in Appendix VII of this permit. Changing to a material that has a higher content of any of the given pollutants is considered a change in method of operation that must be evaluated under Minn. R. 7007.1200, subp. 3 to determine if a permit amendment or notification is required under Minn. R. 7007.1150.	Minn. R. 7005.0100, subp. 35a
C. MINNESOTA RULE EMISSION LIMITS	hdr

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: 3M - R & D Facility - Maplewood Bldg 201
Permit Number: 12300015 - 010

Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions in order to comply with the limit in Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-34**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: EU 019 270-636448, 270-000112 Coater/Oven**Associated Items:** GP 003 Facility Wide Firm Natural Gas Cap
SV 024

What to do	Why to do it
Volatile Organic Compounds: less than or equal to 15.0 tons/year using 12-month Rolling Sum (usage) to be calculated by the 20th day of the month for the previous 12-month period. VOC usage shall be tracked and calculated as explained below.	Title I Condition: 40 CFR Section 52.21(j) (BACT Limit); Minn. R. 7007.3000
VOC Tracking: The Permittee shall keep complete and detailed records of all VOC usage at the coater and coating use parameters. These records shall include, but are not limited to, the weight of each coating used per batch, the weight percent VOC of each coating used for each batch, the total VOC coated per batch, and hours of operation for that batch. The VOC content of the coating shall be determined as specified under the Material Content condition listed at the Total Facility portion of this permit. Using the above data, the Permittee shall calculate the VOC used at the coater, in tons, for each calendar month by the 20th day of the month, and add this to the previous 11 months usage.	Title I Condition: Monitoring for BACT limit under 40 CFR Section 52.21(j); Minn. R. 7007.3000
This emission unit is an affected facility under 40 CFR pt. 60, subp. RR and must meet the permit requirements listed under EU002 of this permit.	40 CFR Section 60.440(b); Minn. R. 7011.2560

TABLE A: LIMITS AND OTHER REQUIREMENTS

A-35 01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: EU 020 Spray Booth 230-G43B**Associated Items:** CE 013 Mat or Panel Filter

GP 001 All Pilot Plant VOC/HAP

GP 003 Facility Wide Firm Natural Gas Cap

GP 004 Existing and New Spray Application Booths

What to do	Why to do it
A. OPERATING LIMITS	hdr
Process Throughput: less than or equal to 100.0 lbs/hour spray gun capacity for any given spray gun. The Permittee shall operate only one gun at a time in the spray booth. The Permittee shall maintain documentation of spray gun capacity in pounds per hour (e.g., manufacturers specifications).	Title I Condition: Limit used in analysis under 40 CFR Section 52.21(j); Minn. R. 7007.3000; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
The spray booth shall have only one compressor for use with spray guns. The Permittee shall limit the Compressor Operating Hours: less than or equal to 600 hours/year	Title I Condition: 40 CFR Section 52.21(j) (BACT Limit); Minn. R. 7007.3000; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
The Permittee shall limit the Compressor Operating Hours: less than or equal to 12 hours/day	Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
Control Equipment: The Permittee shall vent emissions from this spray booth (EU020) to control equipment meeting the requirements of CE013 of this permit.	Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080; Minn. R. 7007.0800, subp. 2
B. MONITORING AND RECORDKEEPING	hdr
Monitoring for Compressor Operating Hours: The Permittee shall install, operate, and maintain a cumulative hour meter on the compressor. The meter shall have an automatic lock-out device that disables the compressor when the hours limit is reached. Once the cumulative hours on the meter reaches 600 hours for the given calendar year, the compressor shall be removed, locked-out, or rendered inoperable until the next calendar year (January 1).	Title I Condition: 40 CFR Section 52.21(j) (BACT Limit); Minn. R. 7007.3000; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
Recordkeeping for Compressor Operating Hours: Once the compressor has reached the limit of 600.0 hours per calendar year, the Permittee shall notify personnel that the spray booth is no longer available for spraying for the remainder of the calendar year (memo or posting by the booth). In addition, the Permittee shall maintain a written or computerized log stating that the booth has reached the limit on which date. The hour meter shall be reset each January and the cumulative hours for the past calendar year shall be recorded.	Minn. R. 7007.0800, subp. 5
Recordkeeping for Daily Compressor Operating Hours. Each time the spray booth is operated, the Permittee shall maintain a log of the spray booth compressor use, to include: 1) Date 2) Hour meter reading at start of compressor use 3) Hour meter reading at end of compressor use 4) Amount of time compressor is used (Meter reading at end - Meter reading at start) 5) Total hours compressor used for the day, as a running total adding each previous compressor use for the day.	Minn. R. 7007.0800, subp. 4 and 5
Recordkeeping for Daily Compressor Operating Hours: Once the compressor has reached the Compressor Operating hours per day limit, the Permittee shall notify personnel that the spray booth is no longer available for spraying for the remainder of the day. The Permittee shall maintain a record of the notification.	Minn. R. 7007.0800, subp. 4 and 5
Maximum Contents of Materials and Minimum Transfer Efficiencies: The Permittee assumed certain worst-case contents of materials and transfer efficiencies when determining the short term potential to emit of EU020. These assumptions are listed in Appendix VII of this permit. Changing to a material that has a higher content of any of the given pollutants is considered a change in method of operation that must be evaluated under Minn. R. 7007.1200, subp. 3 to determine if a permit amendment or notification is required under Minn. R. 7007.1150.	Minn. R. 7005.0100, subp. 35a
C. MINNESOTA RULE EMISSION LIMITS	hdr

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-36**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions in order to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1
Opacity: less than or equal to 20 percent opacity .	Minn. R. 7011.0715, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS

A-37 01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: EU 022 Spray Booth 235-WN-116**Associated Items:** CE 015 Mat or Panel Filter

GP 001 All Pilot Plant VOC/HAP

GP 003 Facility Wide Firm Natural Gas Cap

GP 004 Existing and New Spray Application Booths

What to do	Why to do it
A. OPERATING LIMITS	hdr
Process Throughput: less than or equal to 30.0 lbs/hour spray gun capacity for any given spray gun. The Permittee shall operate only one gun at a time in the spray booth. The Permittee shall maintain documentation of spray gun capacity in pounds per hour (e.g., manufacturers specifications).	Title I Condition: Limit used in analysis under 40 CFR Section 52.21(j); Minn. R. 7007.3000; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
The spray booth shall have only one compressor for use with spray guns. The Permittee shall limit the Compressor Operating Hours: less than or equal to 500 hours/year	Title I Condition: 40 CFR Section 52.21(j) (BACT Limit); Minn. R. 7007.3000; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
The Permittee shall limit the Compressor Operating Hours: less than or equal to 12 hours/day	Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
Control Equipment: The Permittee shall vent emissions from this spray booth (EU022) to control equipment meeting the requirements of CE015 of this permit.	Title I Condition: Limit taken to avoid major modification classification under 40 CFR Section 52.21 (permit 23E-93-I/O-19); Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
B. MONITORING AND RECORDKEEPING	hdr
Monitoring for Compressor Operating Hours: The Permittee shall install, operate, and maintain a cumulative hour meter on the compressor. The meter shall have an automatic lock-out device that disables the compressor when the hours limit is reached. Once the cumulative hours on the meter reaches 500 hours for the given calendar year, the compressor shall be removed, locked-out, or rendered inoperable until the next calendar year (January 1).	Title I Condition: 40 CFR Section 52.21(j) (BACT Limit); Minn. R. 7007.3000; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
Recordkeeping for Compressor Operating Hours: Once the compressor has reached the limit of 500 hours per calendar year, the Permittee shall notify personnel that the spray booth is no longer available for spraying for the remainder of the calendar year (memo or posting by the booth). In addition, the Permittee shall maintain a written or computerized log stating that the booth has reached the limit on which date. The hour meter shall be reset each January and the cumulative hours for the past calendar year shall be recorded.	Minn. R. 7007.0800, subp. 5
Recordkeeping for Daily Compressor Operating Hours. Each time the spray booth is operated, the Permittee shall maintain a log of the spray booth compressor use, to include: 1) Date 2) Hour meter reading at start of compressor use 3) Hour meter reading at end of compressor use 4) Amount of time compressor is used (Meter reading at end - Meter reading at start) 5) Total hours compressor used for the day, as a running total adding each previous compressor use for the day.	Minn. R. 7007.0800, subp. 4 and 5
Recordkeeping for Daily Compressor Operating Hours: Once the compressor has reached the Compressor Operating hours per day limit, the Permittee shall notify personnel that the spray booth is no longer available for spraying for the remainder of the day. The Permittee shall maintain a record of the notification.	Minn. R. 7007.0800, subp. 4 and 5
Maximum Contents of Materials and Minimum Transfer Efficiencies: The Permittee assumed certain worst-case contents of materials and transfer efficiencies when determining the short term potential to emit of EU022. These assumptions are listed in Appendix VII of this permit. Changing to a material that has a higher content of any of the given pollutants is considered a change in method of operation that must be evaluated under Minn. R. 7007.1200, subp. 3 to determine if a permit amendment or notification is required under Minn. R. 7007.1150.	Minn. R. 7005.0100, subp. 35a
C. MINNESOTA RULE EMISSION LIMITS	hdr

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: 3M - R & D Facility - Maplewood Bldg 201
Permit Number: 12300015 - 010

Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions in order to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-39**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: EU 023 Spray Booth 235-A-353**Associated Items:** CE 014 Mat or Panel Filter

GP 001 All Pilot Plant VOC/HAP

GP 003 Facility Wide Firm Natural Gas Cap

GP 004 Existing and New Spray Application Booths

What to do	Why to do it
A. OPERATING LIMITS	hdr
Process Throughput: less than or equal to 130 lbs/hour spray gun capacity for any given spray gun. The Permittee shall operate only one gun at a time in the spray booth. The Permittee shall maintain documentation of spray gun capacity in pounds per hour (e.g., manufacturers specifications).	Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
This is more stringent than the BACT limit, which also applies.	
Process Throughput: less than or equal to 1200.0 lbs/hour spray gun capacity for any given spray gun. The Permittee shall operate only one gun at a time in the spray booth. The Permittee shall maintain documentation of spray gun capacity in pounds per hour (e.g., manufacturers specifications).	Title I Condition: Limit used in analysis under 40 CFR Section 52.21(j); Minn. R. 7007.3000
The spray booth shall have only one compressor or other product delivery device (e.g., pump) for use with airless spray gun equipment. The Permittee shall limit the Compressor (or other device) Operating Hours: less than or equal to 440 hours/year	Title I Condition: 40 CFR Section 52.21(j) (BACT Limit); Minn. R. 7007.3000; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
The Permittee shall limit the Compressor Operating Hours: less than or equal to 12 hours/day	Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
Control Equipment: The Permittee shall vent emissions from this spray booth (EU023) to control equipment meeting the requirements of CE014 of this permit.	Title I Condition: Limit taken to avoid major modification classification under 40 CFR 52.21 (permit 23E92-I/O-15); Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
B. MONITORING AND RECORDKEEPING	hdr
Monitoring for Compressor or Other Delivery Device Operating Hours: The Permittee shall install, operate, and maintain a cumulative hour meter on the compressor or delivery device. The meter shall have an automatic lock-out device that disables the compressor or delivery device when the hours limit is reached. Once the cumulative hours on the meter reaches 440 hours for the given calendar year, the compressor or delivery device shall be removed, locked-out, or rendered inoperable until the next calendar year (January 1).	Title I Condition: 40 CFR Section 52.21(j) (BACT Limit); Minn. R. 7007.3000; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
Recordkeeping for Compressor or Delivery Device Operating Hours: Once the compressor or delivery device has reached the limit of 440 hours per calendar year, the Permittee shall notify personnel that the spray booth is no longer available for spraying for the remainder of the calendar year (memo or posting by the booth).	Minn. R. 7007.0800, subp. 5
In addition, the Permittee shall maintain a written or computerized log stating that the booth has reached the limit on which date. The hour meter shall be reset each January and the cumulative hours for the past calendar year shall be recorded.	
Recordkeeping for Daily Compressor Operating Hours. Each time the spray booth is operated, the Permittee shall maintain a log of the spray booth compressor use, to include: 1) Date 2) Hour meter reading at start of compressor use 3) Hour meter reading at end of compressor use 4) Amount of time compressor is used (Meter reading at end - Meter reading at start) 5) Total hours compressor used for the day, as a running total adding each previous compressor use for the day.	Minn. R. 7007.0800, subp. 4 and 5
Recordkeeping for Daily Compressor Operating Hours: Once the compressor has reached the 12 hours per day limit, the Permittee shall notify personnel that the spray booth is no longer available for spraying for the remainder of the day. The Permittee shall maintain a record of the notification.	Minn. R. 7007.0800, subp. 4 and 5

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-40**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Maximum Contents of Materials and Minimum Transfer Efficiencies: The Permittee assumed certain worst-case contents of materials and transfer efficiencies when determining the short term potential to emit of EU023. These assumptions are listed in Appendix VII of this permit. Changing to a material that has a higher content of any of the given pollutants is considered a change in method of operation that must be evaluated under Minn. R. 7007.1200, subp. 3 to determine if a permit amendment or notification is required under Minn. R. 7007.1150.	Minn. R. 7005.0100, subp. 35a
C. MINNESOTA RULE EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions in order to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-41**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: EU 024 270-583991, 270-583990 Coater/Oven**Associated Items:** GP 003 Facility Wide Firm Natural Gas Cap

SV 024

SV 025

What to do	Why to do it
A. OPERATING LIMITS	hdr
<p>Volatile Organic Compounds: less than or equal to 18.0 tons/year using 12-month Rolling Sum (usage) calculated by the 20th of the month for the previous 12 months. For the first 11 months of operation after permit issuance, the limit shall be as follows calculated as a sum for the total months since issuance:</p> <p>Month 1 -- 9 tons Month 2 -- 12 tons Month 3 -- 15 tons Months 4-11 -- 18 tons</p> <p>VOC usage shall be tracked and calculated as explained below.</p>	Title I Condition: 40 CFR Section 52.21(j) (BACT Limit); Minn. R. 7007.3000
<p>VOC Tracking: The Permittee shall keep complete and detailed records of all VOC usage at the coater and coating use parameters. These records shall include, but are not limited to, the weight of each coating used per batch, the weight percent VOC of each coating used for each batch, the total VOC coated per batch, and hours of operation for that batch. The VOC content of the coating shall be determined as specified under the Material Content condition listed at the Total Facility portion of this permit.</p> <p>Using the above data, the Permittee shall calculate the VOC used at the coater, in tons, for each calendar month by the 20 of the month, and add this to the previous 11 months usage.</p>	Title I Condition: Monitoring for BACT limit under 40 CFR Section 52.21(j); Minn. R. 7007.3000
B. MINNESOTA RULE EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions in order to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-42**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: EU 025 Spray Booth 240-SE Wall**Associated Items:** CE 015 Mat or Panel Filter

GP 001 All Pilot Plant VOC/HAP

GP 003 Facility Wide Firm Natural Gas Cap

GP 004 Existing and New Spray Application Booths

What to do	Why to do it
A. OPERATING LIMITS	hdr
Process Throughput: less than or equal to 100.0 lbs/hour spray gun capacity for any given spray gun. The Permittee shall operate only one gun at a time in the spray booth. The Permittee shall maintain documentation of spray gun capacity in pounds per hour (e.g., manufacturers specifications).	Title I Condition: Limit used in analysis under 40 CFR Section 52.21(j); Minn. R. 7007.3000; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
The spray booth shall have only one compressor for use with spray guns. The Permittee shall limit the Compressor Operating Hours: less than or equal to 100 hours/year	Title I Condition: 40 CFR Section 52.21(j) (BACT Limit); Minn. R. 7007.3000; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
The Permittee shall limit the Compressor Operating Hours: less than or equal to 12 hours/day	Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
Control Equipment: The Permittee shall vent emissions from this spray booth (EU025) to control equipment meeting the requirements of CE015 of this permit.	Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080; Minn. R. 7007.0800, subp. 2
B. MONITORING AND RECORDKEEPING	hdr
Monitoring for Compressor Operating Hours: The Permittee shall install, operate, and maintain a cumulative hour meter on the compressor. The meter shall have an automatic lock-out device that disables the compressor when the hours limit is reached. Once the cumulative hours on the meter reaches 100 hours for the given calendar year, the compressor shall be removed, locked-out, or rendered inoperable until the next calendar year (January 1).	Title I Condition: 40 CFR Section 52.21(j) (BACT Limit); Minn. R. 7007.3000; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
Recordkeeping for Compressor Operating Hours: Once the compressor has reached the limit of 100 hours per calendar year, the Permittee shall notify personnel that the spray booth is no longer available for spraying for the remainder of the calendar year (memo or posting by the booth). In addition, the Permittee shall maintain a written or computerized log stating that the booth has reached the limit on which date. The hour meter shall be reset each January and the cumulative hours for the past calendar year shall be recorded.	Title I Condition: 40 CFR Section 52.21(j) (BACT Limit); Minn. R. 7007.3000; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
Recordkeeping for Daily Compressor Operating Hours. Each time the spray booth is operated, the Permittee shall maintain a log of the spray booth compressor use, to include: 1) Date 2) Hour meter reading at start of compressor use 3) Hour meter reading at end of compressor use 4) Amount of time compressor is used (Meter reading at end - Meter reading at start) 5) Total hours compressor used for the day, as a running total adding each previous compressor use for the day.	Minn. R. 7007.0800, subp. 4 and 5
Recordkeeping for Daily Compressor Operating Hours: Once the compressor has reached the 12 hours per day limit, the Permittee shall notify personnel that the spray booth is no longer available for spraying for the remainder of the day. The Permittee shall maintain a record of the notification.	Minn. R. 7007.0800, subp. 4 and 5
Maximum Contents of Materials and Minimum Transfer Efficiencies: The Permittee assumed certain worst-case contents of materials and transfer efficiencies when determining the short term potential to emit of EU025. These assumptions are listed in Appendix VII of this permit. Changing to a material that has a higher content of any of the given pollutants is considered a change in method of operation that must be evaluated under Minn. R. 7007.1200, subp. 3 to determine if a permit amendment or notification is required under Minn. R. 7007.1150.	Minn. R. 7005.0100, subp. 35a
C. MINNESOTA RULE EMISSION LIMITS	hdr

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-43**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions in order to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-44**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: EU 026 Spray Booth 250-E-126A**Associated Items:** CE 017 Mat or Panel Filter

GP 001 All Pilot Plant VOC/HAP

GP 003 Facility Wide Firm Natural Gas Cap

GP 004 Existing and New Spray Application Booths

What to do	Why to do it
A. OPERATING LIMITS	hdr
Process Throughput: less than or equal to 3.70 lbs/hour spray gun capacity for any given spray gun. The Permittee shall operate only one gun at a time in the spray booth. The Permittee shall maintain documentation of spray gun capacity in pounds per hour (e.g., manufacturers specifications).	Title I Condition: Limit used in analysis under 40 CFR Section 52.21(j) and Minn. R. 7007.3000; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
Process Throughput: less than or equal to 3.7 lbs/hour of spray coating application. This is a spray can booth. The spray can coating rate is less than the limit assumed in modeling.	Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
The spray booth shall have only one compressor for use with spray guns. The Permittee shall limit the Compressor Operating Hours: less than or equal to 200 hours/year	Title I Condition: 40 CFR Section 52.21(j) (BACT Limit); Minn. R. 7007.3000; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
The Permittee shall limit the Spray Booth Operating Hours: less than or equal to 12 hours/day	Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
Control Equipment: The Permittee shall vent emissions from this spray booth to control equipment meeting the requirements of CE017 of this permit.	Title I Condition: Limit taken to avoid major modification classification under 40 CFR Section 52.21 (permit 23E-91-I/O-8); Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
B. MONITORING AND RECORDKEEPING	hdr
Monitoring for Compressor Operating Hours: The Permittee shall install, operate, and maintain a cumulative hour meter on the compressor. The meter shall have an automatic lock-out device that disables the compressor when the hours limit is reached. Once the cumulative hours on the meter reaches 200 hours for the given calendar year, the compressor shall be removed, locked-out, or rendered inoperable until the next calendar year (January 1).	Title I Condition: 40 CFR Section 52.21(j) (BACT Limit); Minn. R. 7007.3000; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
Recordkeeping for Compressor Operating Hours: Once the compressor has reached the limit of 200 hours per calendar year, the Permittee shall notify personnel that the spray booth is no longer available for spraying for the remainder of the calendar year (memo or posting by the booth). In addition, the Permittee shall maintain a written or computerized log stating that the booth has reached the limit on which date. The hour meter shall be reset each January and the cumulative hours for the past calendar year shall be recorded.	Minn. R. 7007.0800, subp. 5
Recordkeeping for Spray Booth Operating Hours. Each time the spray booth is operated, the Permittee shall maintain a log of the spray booth use, to include: 1) Date 2) Time at start of spray booth EU026 use 3) Time at end of spray booth EU026 use 4) Amount of time spray booth is used (Time at end - Time at start) 5) Total hours spray booth is used for the day, as a running total adding each previous use for the day. 6) Total hours spray booth is used for the calendar year, as a running total, adding the current day to the previous total for the year.	Minn. R. 7007.0800, subp. 4 and 5
Recordkeeping for Annual Spray Booth Operating Hours: Once the spray booth has reached the limit of 200 hours per calendar year, the Permittee shall notify personnel that the spray booth is no longer available for spraying for the remainder of the calendar year (memo or posting by the booth). In addition, the Permittee shall maintain a written or computerized log stating that the booth has reached the limit on which date.	Minn. R. 7007.0800, subp. 4 and 5

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-45**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Recordkeeping for Daily Operating Hours: Once the spray booth has reached the 12 hours per day limit, the Permittee shall notify personnel that the spray booth is no longer available for spraying for the remainder of the day. The Permittee shall maintain a record of the notification.	Minn. R. 7007.0800, subp. 4 and 5
Maximum Contents of Materials and Minimum Transfer Efficiencies: The Permittee assumed certain worst-case contents of materials and transfer efficiencies when determining the short term potential to emit of EU026. These assumptions are listed in Appendix VII of this permit. Changing to a material that has a higher content of any of the given pollutants is considered a change in method of operation that must be evaluated under Minn. R. 7007.1200, subp. 3 to determine if a permit amendment or notification is required under Minn. R. 7007.1150.	Minn. R. 7005.0100, subp. 35a
C. MINNESOTA RULE EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions in order to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-46**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: EU 028 Spray Booth 250-E-118**Associated Items:** CE 009 Mat or Panel Filter

GP 001 All Pilot Plant VOC/HAP

GP 003 Facility Wide Firm Natural Gas Cap

GP 004 Existing and New Spray Application Booths

What to do	Why to do it
A. OPERATING LIMITS	hdr
Process Throughput: less than or equal to 150.0 lbs/hour spray gun capacity for any given spray gun. The Permittee shall operate only one gun at a time in the spray booth. The Permittee shall maintain documentation of spray gun capacity in pounds per hour (e.g., manufacturers specifications).	Title I Condition: Limit used in analysis under 40 CFR Section 52.21(j); Minn. R. 7007.3000; 7007.3000; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
The spray booth shall have only one compressor for use with spray guns. The Permittee shall limit the Compressor Operating Hours: less than or equal to 300 hours/year	Title I Condition: 40 CFR Section 52.21(j) (BACT Limit) and Minn. R. 7007.3000; 7007.3000; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
The Permittee shall limit the Compressor Operating Hours: less than or equal to 1 hours/day	Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
Control Equipment: The Permittee shall vent emissions from this spray booth to control equipment meeting the requirements of CE009 of this permit.	Title I Condition: Limit taken to avoid major modification classification under 40 CFR Section 52.21 (permit 23E-91-I/O-8)
B. MONITORING AND RECORDKEEPING	hdr
Monitoring for Compressor Operating Hours: The Permittee shall install, operate, and maintain a cumulative hour meter on the compressor. The meter shall have an automatic lock-out device that disables the compressor when the hours limit is reached. Once the cumulative hours on the meter reaches 300 hours for the given calendar year, the compressor shall be removed, locked-out, or rendered inoperable until the next calendar year (January 1).	Title I Condition: Monitoring for BACT limit under 40 CFR Section 52.21(j) and Minn. R. 7007.3000; 7007.3000; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
Recordkeeping for Compressor Operating Hours: Once the compressor has reached the limit of 300 hours per calendar year, the Permittee shall notify personnel that the spray booth is no longer available for spraying for the remainder of the calendar year (memo or posting by the booth). In addition, the Permittee shall maintain a written or computerized log stating that the booth has reached the limit on which date. The hour meter shall be reset each January and the cumulative hours for the past calendar year shall be recorded.	Minn. R. 7007.0800, subp. 5
Recordkeeping for Daily Compressor Operating Hours. Each time the spray booth is operated, the Permittee shall maintain a log of the spray booth compressor use, to include: 1) Date 2) Hour meter reading at start of compressor use 3) Hour meter reading at end of compressor use 4) Amount of time compressor is used (Meter reading at end - Meter reading at start) 5) Total hours compressor used for the day, as a running total adding each previous compressor use for the day.	Minn. R. 7007.0800, subp. 4 and 5
Recordkeeping for Daily Compressor Operating Hours: Once the compressor has reached the 1 hour per day limit, the Permittee shall notify personnel that the spray booth is no longer available for spraying for the remainder of the day. The Permittee shall maintain a record of the notification.	Minn. R. 7007.0800, subp. 4 and 5
Maximum Contents of Materials and Minimum Transfer Efficiencies: The Permittee assumed certain worst-case contents of materials and transfer efficiencies when determining the short term potential to emit of EU028. These assumptions are listed in Appendix VII of this permit. Changing to a material that has a higher content of any of the given pollutants is considered a change in method of operation that must be evaluated under Minn. R. 7007.1200, subp. 3 to determine if a permit amendment or notification is required under Minn. R. 7007.1150.	Minn. R. 7005.0100, subp. 35a
C. MINNESOTA RULE EMISSION LIMITS	hdr

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-47**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions in order to comply with the limit in Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-48**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: EU 029 Spray Booth 250-E-123A**Associated Items:** CE 015 Mat or Panel Filter

GP 001 All Pilot Plant VOC/HAP

GP 003 Facility Wide Firm Natural Gas Cap

GP 004 Existing and New Spray Application Booths

What to do	Why to do it
A. OPERATING LIMITS	hdr
Process Throughput: less than or equal to 150.0 lbs/hour spray gun capacity for any given spray gun. The Permittee shall operate only one gun at a time in the spray booth. The Permittee shall maintain documentation of spray gun capacity in pounds per hour (e.g., manufacturers specifications).	Title I Condition: Limit used in analysis under 40 CFR Section 52.21(j); Minn. R. 7007.3000; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
The spray booth shall have only one compressor for use with spray guns. The Permittee shall limit the Compressor Operating Hours: less than or equal to 300 hours/year	Title I Condition: 40 CFR Section 52.21(j) (BACT Limit); Minn. R. 7007.3000; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
The Permittee shall limit the Compressor Operating Hours: less than or equal to 1 hours/day	Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
Control Equipment: The Permittee shall vent emissions from this spray booth (EU029) to control equipment meeting the requirements of CE015 of this permit.	Title I Condition: Limit taken to avoid major modification classification under 40 CFR Section 52.21 (permit 23E-91-I/O-8); Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
B. MONITORING AND RECORDKEEPING	hdr
Monitoring for Compressor Operating Hours: The Permittee shall install, operate, and maintain a cumulative hour meter on the compressor. The meter shall have an automatic lock-out device that disables the compressor when the hours limit is reached. Once the cumulative hours on the meter reaches 300 hours for the given calendar year, the compressor shall be removed, locked-out, or rendered inoperable until the next calendar year (January 1).	Title I Condition: 40 CFR Section 52.21(j) (BACT Limit); Minn. R. 7007.3000; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
Recordkeeping for Compressor Operating Hours: Once the compressor has reached the limit of 300 hours per calendar year, the Permittee shall notify personnel that the spray booth is no longer available for spraying for the remainder of the calendar year (memo or posting by the booth). In addition, the Permittee shall maintain a written or computerized log stating that the booth has reached the limit on which date. The hour meter shall be reset each January and the cumulative hours for the past calendar year shall be recorded.	Minn. R. 7007.0800, subp. 5
Recordkeeping for Daily Compressor Operating Hours. Each time the spray booth is operated, the Permittee shall maintain a log of the spray booth compressor use, to include: 1) Date 2) Hour meter reading at start of compressor use 3) Hour meter reading at end of compressor use 4) Amount of time compressor is used (Meter reading at end - Meter reading at start) 5) Total hours compressor used for the day, as a running total adding each previous compressor use for the day.	Minn. R. 7007.0800, subps. 4 and 5
Recordkeeping for Daily Compressor Operating Hours: Once the compressor has reached the daily compressor operating hours per day limit, the Permittee shall notify personnel that the spray booth is no longer available for spraying for the remainder of the day. The Permittee shall maintain a record of the notification.	Minn. R. 7007.0800, subps. 4 and 5
Maximum Contents of Materials and Minimum Transfer Efficiencies: The Permittee assumed certain worst-case contents of materials and transfer efficiencies when determining the short term potential to emit of EU029. These assumptions are listed in Appendix VII of this permit. Changing to a material that has a higher content of any of the given pollutants is considered a change in method of operation that must be evaluated under Minn. R. 7007.1200, subp. 3 to determine if a permit amendment or notification is required under Minn. R. 7007.1150.	Minn. R. 7005.0100, subp. 35a
C. MINNESOTA RULE EMISSION LIMITS	hdr

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: 3M - R & D Facility - Maplewood Bldg 201
Permit Number: 12300015 - 010

Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions in order to comply with the limit in Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-50**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: EU 030 LPB Pilot Plant**Associated Items:** GP 003 Facility Wide Firm Natural Gas Cap

What to do	Why to do it
This emission unit includes the LPB coater and all its supporting equipment in the pilot plant.	Minn. R. 7007.0800, subp. 2
A. MONITORING AND RECORDKEEPING	hdr
VOC Monitoring and Recordkeeping: The Permittee shall monitor and record in a log book to be maintained on-site, usage parameters for each instance the pilot plant coater is operated and coating solution is applied. These parameters shall include at a minimum, a list of all solutions applied, percent solids, percent VOC, date of operation, start and finish times, and quantity of solution coated. By the 20th day of each month, the Permittee shall calculate the actual emissions from the coater operation for the previous calendar month. The Permittee shall also calculate the cumulative 12 month rolling sum of actual emissions from the coater operation and compare it relative to the pilot plant coater and supporting equipment Potential to Emit of 16.2 tpy of VOC.	Minn. R. 7007.0800, subp. 4 and 5
C. MINNESOTA RULE EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions in order to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-51** 01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: EU 031 Spray Booth 251-B-230**Associated Items:** CE 013 Mat or Panel Filter

GP 001 All Pilot Plant VOC/HAP

GP 003 Facility Wide Firm Natural Gas Cap

GP 004 Existing and New Spray Application Booths

What to do	Why to do it
OPERATING LIMITS	hdr
Process Throughput: less than or equal to 70.0 lbs/hour spray gun capacity for any given spray gun. The Permittee shall operate only one gun at a time in the spray booth. The Permittee shall maintain documentation of spray gun capacity in pounds per hour (e.g., manufacturers specifications).	Title I Condition: Limit used in analysis under 40 CFR Section 52.21(j) and Minn. R. 7007.3000; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
The spray booth shall have only one compressor for use with spray guns. The Permittee shall limit the Compressor Operating Hours: less than or equal to 500 hours/year	Title I Condition: 40 CFR Section 52.21(j) (BACT Limit); Minn. R. 7007.3000
Operating Hours: less than or equal to 365 hours/year This limit is more stringent than the BACT limit, which also applies.	Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
The Permittee shall limit the Compressor Operating Hours: less than or equal to 1 hours/day	Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
Control Equipment: The Permittee shall vent emissions from this spray booth (EU031) to control equipment meeting the requirements of CE013 of this permit.	Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080; Minn. R. 7007.0800, subp. 2
MINNESOTA RULE EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions in order to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 2
MONITORING AND RECORDKEEPING	hdr
Monitoring for Compressor Operating Hours: The Permittee shall install, operate, and maintain a cumulative hour meter on the compressor. The meter shall have an automatic lock-out device that disables the compressor when the hours limit is reached. Once the cumulative hours on the meter reaches 500 hours for the given calendar year, the compressor shall be removed, locked-out, or rendered inoperable until the next calendar year (January 1).	Title I Condition: 40 CFR Section 52.21(j) (BACT Limit); Minn. R. 7007.3000; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
Recordkeeping for Compressor Operating Hours: Once the compressor has reached the limit of 500 hours per calendar year, the Permittee shall notify personnel that the spray booth is no longer available for spraying for the remainder of the calendar year (memo or posting by the booth). In addition, the Permittee shall maintain a written or computerized log stating that the booth has reached the limit on which date. The hour meter shall be reset each January and the cumulative hours for the past calendar year shall be recorded.	Minn. R. 7007.0800, subp. 5
Recordkeeping for Daily Compressor Operating Hours. Each time the spray booth is operated, the Permittee shall maintain a log of the spray booth compressor use, to include: 1) Date 2) Hour meter reading at start of compressor use 3) Hour meter reading at end of compressor use 4) Amount of time compressor is used (Meter reading at end - Meter reading at start) 5) Total hours compressor used for the day, as a running total adding each previous compressor use for the day.	Minn. R. 7007.0800, subp. 4 and 5
Recordkeeping for Daily Compressor Operating Hours: Once the compressor has reached the Compressor Operating hours per day limit, the Permittee shall notify personnel that the spray booth is no longer available for spraying for the remainder of the day. The Permittee shall maintain a record of the notification.	Minn. R. 7007.0800, subp. 4 and 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: 3M - R & D Facility - Maplewood Bldg 201
Permit Number: 12300015 - 010

Maximum Contents of Materials and Minimum Transfer Efficiencies: The Permittee assumed certain worst-case contents of materials and transfer efficiencies when determining the short term potential to emit of EU031. These assumptions are listed in Appendix VII of this permit. Changing to a material that has a higher content of any of the given pollutants is considered a change in method of operation that must be evaluated under Minn. R. 7007.1200, subp. 3 to determine if a permit amendment or notification is required under Minn. R. 7007.1150.	Minn. R. 7005.0100, subp. 35a
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TABLE A: LIMITS AND OTHER REQUIREMENTS**A-53**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: EU 032 Spray Booth 251-B-242**Associated Items:** CE 013 Mat or Panel Filter

GP 001 All Pilot Plant VOC/HAP

GP 003 Facility Wide Firm Natural Gas Cap

GP 004 Existing and New Spray Application Booths

What to do	Why to do it
OPERATING LIMITS	hdr
Process Throughput: less than or equal to 70.0 lbs/hour spray gun capacity for any given spray gun. The Permittee shall operate only one gun at a time in the spray booth. The Permittee shall maintain documentation of spray gun capacity in pounds per hour (e.g., manufacturers specifications).	Title I Condition: Limit used in analysis under 40 CFR Section 52.21(j); Minn. R. 7007.3000; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
The spray booth shall have only one compressor for use with spray guns. The Permittee shall limit the Compressor Operating Hours: less than or equal to 500 hours/year	Title I Condition: 40 CFR Section 52.21(j) (BACT Limit); Minn. R. 7007.3000
Operating Hours: less than or equal to 365 hours/year This limit is more stringent than the BACT limit, which also applies.	Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
The Permittee shall limit the Compressor Operating Hours: less than or equal to 1 hours/day	Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
Control Equipment: The Permittee shall vent emissions from this spray booth (EU032) to control equipment meeting the requirements of CE013 of this permit.	Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080; Minn. R. 7007.0800, subp. 2
MINNESOTA RULE EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions in order to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 2
MONITORING AND RECORDKEEPING	hdr
Monitoring for Compressor Operating Hours: The Permittee shall install, operate, and maintain a cumulative hour meter on the compressor. The meter shall have an automatic lock-out device that disables the compressor when the hours limit is reached. Once the cumulative hours on the meter reaches 365hours for the given calendar year, the compressor shall be removed, locked-out, or rendered inoperable until the next calendar year (January 1).	Title I Condition: Monitoring for BACT limit under 40 CFR Section 52.21(j); Minn. R. 7007.3000; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
Recordkeeping for Compressor Operating Hours: Once the compressor has reached the limit of 365hours per calendar year, the Permittee shall notify personnel that the spray booth is no longer available for spraying for the remainder of the calendar year (memo or posting by the booth). In addition, the Permittee shall maintain a written or computerized log stating that the booth has reached the limit on which date. The hour meter shall be reset each January and the cumulative hours for the past calendar year shall be recorded.	Minn. R. 7007.0800, subp. 5
Recordkeeping for Daily Compressor Operating Hours. Each time the spray booth is operated, the Permittee shall maintain a log of the spray booth compressor use, to include: 1) Date 2) Hour meter reading at start of compressor use 3) Hour meter reading at end of compressor use 4) Amount of time compressor is used (Meter reading at end - Meter reading at start) 5) Total hours compressor used for the day, as a running total adding each previous compressor use for the day.	Minn. R. 7007.0800, subp. 4 and 5
Recordkeeping for Daily Compressor Operating Hours: Once the compressor has reached the compressor operating hours per day limit, the Permittee shall notify personnel that the spray booth is no longer available for spraying for the remainder of the day. The Permittee shall maintain a record of the notification.	Minn. R. 7007.0800, subp. 4 and 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: 3M - R & D Facility - Maplewood Bldg 201
Permit Number: 12300015 - 010

Maximum Contents of Materials and Minimum Transfer Efficiencies: The Permittee assumed certain worst-case contents of materials and transfer efficiencies when determining the short term potential to emit of EU032. These assumptions are listed in Appendix VII of this permit. Changing to a material that has a higher content of any of the given pollutants is considered a change in method of operation that must be evaluated under Minn. R. 7007.1200, subp. 3 to determine if a permit amendment or notification is required under Minn. R. 7007.1150.	Minn. R. 7005.0100, subp. 35a
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TABLE A: LIMITS AND OTHER REQUIREMENTS**A-55**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: EU 033 Spray Booth 251-B-330**Associated Items:** CE 013 Mat or Panel Filter

GP 001 All Pilot Plant VOC/HAP

GP 003 Facility Wide Firm Natural Gas Cap

GP 004 Existing and New Spray Application Booths

What to do	Why to do it
OPERATING LIMITS	hdr
Process Throughput: less than or equal to 225.0 lbs/hour spray gun capacity for any given spray gun. The Permittee shall operate only one gun at a time in the spray booth. The Permittee shall maintain documentation of spray gun capacity in pounds per hour (e.g., manufacturers specifications).	Title I Condition: Limit used in analysis under 40 CFR Section 52.21(j); Minn. R. 7007.3000; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
The spray booth shall have only one compressor for use with spray guns. The Permittee shall limit the Compressor Operating Hours: less than or equal to 100 hours/year	Title I Condition: 40 CFR Section 52.21(j) (BACT Limit); Minn. R. 7007.3000; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
The Permittee shall limit the Compressor Operating Hours: less than or equal to 1 hours/day	Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
Control Equipment: The Permittee shall vent emissions from this spray booth (EU033) to control equipment meeting the requirements of CE013 of this permit.	Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080; Minn. R. 7007.0800, subp. 2
MINNESOTA RULE EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions in order to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 2
MONITORING AND RECORDKEEPING	hdr
Monitoring for Compressor Operating Hours: The Permittee shall install, operate, and maintain a cumulative hour meter on the compressor. The meter shall have an automatic lock-out device that disables the compressor when the hours limit is reached. Once the cumulative hours on the meter reaches 500 hours for the given calendar year, the compressor shall be removed, locked-out, or rendered inoperable until the next calendar year (January 1).	Title I Condition: 40 CFR Section 52.21(j) (BACT Limit); Minn. R. 7007.3000; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
Recordkeeping for Compressor Operating Hours: Once the compressor has reached the limit of 500 hours per calendar year, the Permittee shall notify personnel that the spray booth is no longer available for spraying for the remainder of the calendar year (memo or posting by the booth). In addition, the Permittee shall maintain a written or computerized log stating that the booth has reached the limit on which date. The hour meter shall be reset each January and the cumulative hours for the past calendar year shall be recorded.	Minn. R. 7007.0800, subp. 5
Recordkeeping for Daily Compressor Operating Hours: Each time the spray booth is operated, the Permittee shall maintain a log of the spray booth compressor use, to include: 1) Date 2) Hour meter reading at start of compressor use 3) Hour meter reading at end of compressor use 4) Amount of time compressor is used (Meter reading at end - Meter reading at start) 5) Total hours compressor used for the day, as a running total adding each previous compressor use for the day.	Minn. R. 7007.0800, subp. 4 and 5
Recordkeeping for Daily Compressor Operating Hours: Once the compressor has reached the compressor operating hours per day limit, the Permittee shall notify personnel that the spray booth is no longer available for spraying for the remainder of the day. The Permittee shall maintain a record of the notification.	Minn. R. 7007.0800, subp. 4 and 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: 3M - R & D Facility - Maplewood Bldg 201
Permit Number: 12300015 - 010

Maximum Contents of Materials and Minimum Transfer Efficiencies: The Permittee assumed certain worst-case contents of materials and transfer efficiencies when determining the short term potential to emit of EU033. These assumptions are listed in Appendix VII of this permit. Changing to a material that has a higher content of any of the given pollutants is considered a change in method of operation that must be evaluated under Minn. R. 7007.1200, subp. 3 to determine if a permit amendment or notification is required under Minn. R. 7007.1150.	Minn. R. 7005.0100, subp. 35a
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TABLE A: LIMITS AND OTHER REQUIREMENTS**A-57**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: EU 034 Can Spray Booth 250-23E-91-I/O-8, # 11; 250-E-313**Associated Items:** CE 003 Mat or Panel Filter

CE 005 Mat or Panel Filter

CE 008 Mat or Panel Filter

GP 001 All Pilot Plant VOC/HAP

GP 003 Facility Wide Firm Natural Gas Cap

What to do	Why to do it
Control Equipment: The Permittee shall vent emissions from this spray booth to control equipment meeting the requirements of CE008 of this permit.	Title I Condition: Limit taken to avoid major modification classification under 40 CFR Section 52.21 (permit 23E-91-I/O-8)
This spray booth does not have spray application equipment (e.g., only uses small aerosol spray cans). The Permittee may move this existing booth as long as all permit conditions are met and as long as the booth continues to have no spray application equipment. Installation of spray application equipment would be treated as a modification and must go through the appropriate procedure per Minn. R. ch. 7007. This emission unit includes equipment that could otherwise be classified as insignificant under Minn. R. 7007.1300.	Minn. R. 7007.0800, subp. 2
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions in order to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735 (for units which were not in operation before July 9, 1969).	Minn. R. 7011.0715, subp. 1
Opacity: less than or equal to 20 percent opacity (for units which were not in operation before July 9, 1969).	Minn. R. 7011.0715, subp. 2
CONTROL EQUIPMENT REQUIREMENTS	hdr
For Booths that are not total enclosures as defined in Minn. R. 7011.0060, subp.5: Operate and maintain control equipment to limit Particulate Matter < 10 micron: greater than or equal to 74 percent control efficiency	Title I Condition: Limit taken to avoid major modification classification under 40 CFR Section 52.21
For Booths that are not total enclosures as defined in Minn. R. 7011.0060, subp.5: Operate and maintain control equipment to limit Total Particulate Matter: greater than or equal to 74 percent control efficiency	Title I Condition: Limit taken to avoid major modification classification under 40 CFR Section 52.21
B. MONITORING AND RECORDKEEPING	hdr
Hood Certification and Recordkeeping. If the control device does not have a total enclosure as defined in Minn. R. 7011.0060, subp. 5, the Permittee can use the hood control efficiency listed in this permit (74%) if the hood conforms to the rule requirements listed in Minn. R. 7011.0070, subp. 1 and the Permittee certifies this as required in Minn. R. 7011.0070, subp. 3. The Permittee shall maintain a copy of this on site, as well as a monthly record of the fan rotation speed, fan power draw, or face velocity of each hood, or other comparable air flow indication method.	Minn. R. 7007.0800, subp. 2
With each use of the spray booth, the Permittee shall visually inspect the condition of the wall filters, including but not limited to, alignment, saturation, tears, and holes. If the filters are found to need repair or replacement, the researcher shall make the correction or notify plant maintenance immediately, and the booth shall not be used until the filters are repaired or replaced. The Permittee shall maintain a written record of any action resulting from the inspection.	Minn. R. 7007.0800, subp. 4
Monthly Filter Inspection. The Permittee shall inspect and record the filter condition every calendar month if the booth was operated that month. The Permittee shall visually inspect the condition of the wall filters, including but not limited to, alignment, saturation, tears, and holes. The Permittee shall maintain a written record of the inspection and any action resulting from the inspection.	Minn. R. 7007.0800, subp. 4
Periodic Inspections. The Permittee shall inspect the control equipment components as frequently as required by the manufacturing specification, or as specified in an Operation and Maintenance Plan that follows standard industry practices. The Permittee shall inspect components that are subject to wear or plugging, for example: bearings, belts, hoses, fans, nozzles, orifices, and ducts. The Permittee shall also inspect components that are not subject to wear including structural components, housings, ducts, and hoods. The Permittee shall maintain a written record of the inspection and any action resulting from the inspection. This can be in the form of computer records.	Minn. R. 7007.0800, subp. 14
The Permittee shall operate the control equipment monitoring equipment at all times the control equipment is required to operate.	Minn. R. 7007.0800, subp. 4

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-58**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: EU 040 250 Automotive Room Vacuum System**Associated Items:** CE 010 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

What to do	Why to do it
A. OPERATING LIMITS	hdr
PM < 10 micron: less than or equal to 0.020 grains/dry standard cubic foot	Title I Condition: Limit to avoid major modification classification under 40 CFR Section 52.21(permit 23E-91-I/O-8)
Total Particulate Matter: less than or equal to 0.020 grains/dry standard cubic foot . This is more restrictive than Minn. R. 7011.0715, subp. 1 (0.3 grains/dscf of exhaust gas unless required to further reduce emissions in order to comply with the limit in Minn. R. 7011.0730 or Minn. R. 7011.0735.).	Title I Condition: Limit to avoid major modification classification under 40 CFR Section 52.21(permit 23E-91-I/O-8)
The automotive room shall have only one vacuum system. The Permittee shall limit the Vacuum System Motor Operating Hours: less than or equal to 3640 hours/year	Title I Condition: Limit to avoid major modification classification under 40 CFR Section 52.21(permit 23E-91-I/O-8)
Control Equipment: The Permittee shall vent emissions from this emission unit to CE010 of this permit.	Title I Condition: Limit to avoid major modification classification under 40 CFR Section 52.21(permit 23E-91-I/O-8)
B. MONITORING AND RECORDKEEPING	hdr
Monitoring for Vacuum System Motor Operating Hours: The Permittee shall install, operate, and maintain a cumulative hour meter on the motor. The meter shall have an automatic lock-out device that disables the motor when the hours limit is reached. Once the cumulative hours on the meter reaches 3640 hours for the given calendar year, the motor shall be removed, locked-out, or rendered inoperable until the next calendar year (January 1).	Title I Condition: Limit to avoid major modification classification under 40 CFR Section 52.21(permit 23E-91-I/O-8)
Recordkeeping for Vacuum System Motor Operating Hours: Once the motor has reached the limit of 3640 hours per calendar year, the Permittee shall notify personnel that the vacuum system is no longer available for the remainder of the calendar year (memo or posting). In addition, the Permittee shall maintain a written or computerized log stating that vacuum system has reached the limit on which date. The hour meter shall be reset each January and the cumulative hours for the past calendar year shall be recorded.	Minn. R. 7007.0800, subp. 5
C. MINNESOTA RULE EMISSION LIMITS	hdr
Opacity: less than or equal to 20 percent opacity .	Minn. R. 7011.0715, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-59**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: EU 116 Pilot Plant 16**Associated Items:** GP 001 All Pilot Plant VOC/HAP

What to do	Why to do it
The Permittee is no longer pre-authorized to make changes to EU116 as described in the R&D BACT for VOCs and as outlined in the BACT LIMITS AND AUTHORIZATIONS section of the Total Facility requirements.	Title I Condition: 40 CFR Section 52.21(j) (changes covered by BACT limit) and Minn. R. 7007.3000
NESHAP REQUIREMENTS	hdr
The Permittee shall comply with 40 CFR Part 63, Subp. JJJJ: National Emission Standards for Hazardous Air Pollutants: Paper and Other Web Coating for each existing facility in Pilot Plant 16 (EU116) at which web coating lines are operated. Any web coating line that is defined as research or laboratory equipment in Section 63.3310 is not part of the affected source.	40 CFR Part 63, Subp. JJJJ
Content of Compliance Status Report: At a minimum, the report shall include: (1) Company name and address; (2) A statement by a responsible official with that official's name, title, and signature certifying the accuracy of the content of the report; (3) Date of report and beginning and ending dates of the reporting period; (4) If there are no deviations from any emission limitations (emission limit or operating limit) that apply, the Permittee must submit a statement that there were no deviations from the emission limitations during the reporting period, and; (5) For each deviation from an emission limitation (emission limit or operating limit) that applies, the information listed in 40 CFR Section 63.3400(c)(2)(v)(A)-(C)	40 CFR Section 63.3400(c)(2); Minn. R. 7011.7385

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-60**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: EU 130 New Solventless PST Coating Equipment**Associated Items:** GP 003 Facility Wide Firm Natural Gas Cap

GP 005 Solventless PST Coating Equipment (subject to 40 CFR pt. 60, subp. RR)

What to do	Why to do it
Notification of any physical or operational change to an existing facility which may increase the emission rate of any air pollutant to which a standard applies, unless it is specifically exempted under 40 CFR Section 60.14(e): due postmarked 60 days or as soon as practicable before commencing the change. The notification shall include the information required in 40 CFR Section 60.7(a)(4).	40 CFR Section 60.7(a)(4); Minn. R. 7019.0100, subp. 1

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-61**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: EU 131 Solventless Mag. Coating Equipment**Associated Items:** GP 003 Facility Wide Firm Natural Gas Cap

What to do	Why to do it
A. LIMITS AND AUTHORIZATIONS	hdr
Affected facilities that are solventless are subject to the requirements of this EU and not those of EU003. These affected facilities (EU131) shall use less solvent than the applicable thresholds listed in 40 CFR Section 60.710(b).	40 CFR Section 60.710(b); Minn. R. 7011.3450
Preauthorized Change: The Permittee may add new affected facilities or reconstruct or modify existing facilities such that they become affected facilities without getting a permit amendment as long as the proposed change complies with all permits conditions and meets the requirements of EU131. If the proposed change could potentially cause an emissions increase of a regulated pollutant other than VOC, or if the proposed change would be subject to different or additional requirements than those given in this permit, the change must go through the appropriate procedure in Minn. R. ch. 7007.	Minn. R. 7007.0750, subp. 6
B. RECORDKEEPING	hdr
The Permittee shall keep records of solvent used at the affected facilities as described in the Total Facility section of Table A of this permit (per EPA letter dated May 26, 1998). This system will track VOC purchases at the pilot plant level instead of at the specific affected facility. The VOC tracking requirements can be found under the following headings: B. VOC Purchases Recordkeeping, and C. VOC Emissions Recordkeeping). In the event that the 12-month rolling sum of VOC purchases in a pilot plant where one of these affected facilities is located exceeds the NSPS thresholds listed in 40 CFR Section 60.710(b), the Permittee shall review the pilot plant records to confirm that the VOCs were not used by one of the affected facilities in amounts exceeding the relevant threshold.	40 CFR Section 60.13(i) to comply with 40 CFR Section 60.714(a)(1) and (a)(2); Minn. R. 7011.3450
C. REPORTING	hdr
Projected Solvent Use Notification: for the first calendar year of operation of any affected coating operation, the Permittee shall submit, with the notification of projected startup, a material flow chart indicating projected solvent use. This projection can be based on the VOC tracking system detailed in the Total Facility section of Table A of this permit.	40 CFR Section 60.717(b); Minn. R. 7011.3450
Actual Solvent Use Report: for the first calendar year of operation, at the end of the initial calendar year, the Permittee shall submit a report of VOC purchases for each pilot plant where affected facilities are located. This can be included with the Annual Report listed in Table B of this permit.	40 CFR 60.13(i) to comply with 40 CFR Section 60.717(b); Minn. R. 7011.3450
Notification of any physical or operational change to an existing facility which may increase the emission rate of any air pollutant to which a standard applies, unless it is specifically exempted under 40 CFR Section 60.14(e): due postmarked 60 days or as soon as practicable before commencing the change. The notification shall include the information required in 40 CFR Section 60.7(a)(4).	40 CFR Section 60.7(a)(4); Minn. R. 7019.0100, subp. 1

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-62**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: EU 132 Kodiak Spray Dryer**Associated Items:** CE 011 Refrigerated Condenser

SV 030 Exhaust Fan for Kodiak Spray Dryer

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011. 0735.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-63**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: EU 133 Spray Booth 230-S-118**Associated Items:** CE 012 Mat or Panel Filter

GP 001 All Pilot Plant VOC/HAP

GP 003 Facility Wide Firm Natural Gas Cap

GP 004 Existing and New Spray Application Booths

What to do	Why to do it
LIMITS	hdr
Process Throughput: less than or equal to 125 lbs/hour spray gun capacity for any given spray gun. The Permittee shall operate only one gun at a time in the spray booth. The Permittee shall maintain documentation of spray gun capacity in pounds per hour (e.g., manufacturers specifications).	Title I Condition: 40 CFR Section 52.21(BACT limit for VOC); To avoid classification as a major modification under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
The spray booth shall have only one compressor for use with spray guns. The Permittee shall limit the Compressor Operating Hours: less than or equal to 100 hours/year	Title I Condition: 40 CFR Section 52.21(BACT limit for VOC); To avoid classification as a major modification under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
The Permittee shall limit the Compressor Operating Hours: less than or equal to 6 hours/day	Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
Control Equipment: The Permittee shall vent emissions from this spray booth to control equipment meeting the requirements of CE012. The Permittee shall operate CE012 any time that spray booth EU133 is in operation.	Title I Condition: To avoid classification as a major modification under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions in order to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity .	Minn. R. 7011.0715, subp. 1(B)
MONITORING AND RECORDKEEPING	hdr
Monitoring for Compressor Operating Hours: The Permittee shall install, operate, and maintain a cumulative hour meter on the compressor. The meter shall have an automatic lock-out device that disables the compressor when the hours limit is reached. Once the cumulative hours on the meter reaches 100 hours for the given calendar year, the compressor shall be removed, locked-out, or rendered inoperable until the next calendar year (January 1).	Title I Condition: 40 CFR Section 52.21(BACT limit for VOC); To avoid classification as a major modification for PM10 under 40 CFR Section 52.21 and Minn. R. 7007.3000
Recordkeeping for Compressor Operating Hours: Once the compressor has reached the limit of 100 hours per calendar year, the Permittee shall notify personnel that the spray booth is no longer available for spraying for the remainder of the calendar year (memo or posting by the booth). In addition, the Permittee shall maintain a written or computerized log stating that the booth has reached the limit on which date. The hour meter shall be reset each January and the cumulative hours for the past calendar year shall be recorded.	Minn. R. 7007.0800, subp. 5
Recordkeeping for Daily Compressor Operating Hours. Each time the spray booth is operated, the Permittee shall maintain a log of the spray booth compressor use, to include: 1) Date 2) Hour meter reading at start of compressor use 3) Hour meter reading at end of compressor use 4) Amount of time compressor is used (Meter reading at end - Meter reading at start) 5) Total hours compressor used for the day, as a running total adding each previous compressor use for the day.	Minn. R. 7007.0800, subps. 4 and 5
Recordkeeping for Daily Compressor Operating Hours: Once the compressor has reached the Compressor Operating hours per day limit, the Permittee shall notify personnel that the spray booth is no longer available for spraying for the remainder of the day. The Permittee shall maintain a record of the notification.	Minn. R. 7007.0800, subp. 4 and 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: 3M - R & D Facility - Maplewood Bldg 201
Permit Number: 12300015 - 010

Maximum Contents of Materials and Minimum Transfer Efficiencies: The Permittee assumed certain worst-case contents of materials and transfer efficiencies when determining the short term potential to emit of EU133. These assumptions are listed in Appendix VII of this permit. Changing to a material that has a higher content of any of the given pollutants is considered a change in method of operation that must be evaluated under Minn. R. 7007.1200, subp. 3 to determine if a permit amendment or notification is required under Minn. R. 7007.1150.	Minn. R. 7005.0100, subp. 35a
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TABLE A: LIMITS AND OTHER REQUIREMENTS**A-65**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: EU 134 Spray Booth 251-B354**Associated Items:** CE 016 Mat or Panel Filter

GP 001 All Pilot Plant VOC/HAP

GP 003 Facility Wide Firm Natural Gas Cap

GP 004 Existing and New Spray Application Booths

What to do	Why to do it
LIMITS	hdr
Process Throughput: less than or equal to 100.0 lbs/hour spray gun capacity for any given spray gun. The Permittee shall operate only one gun at a time in the spray booth. The Permittee shall maintain documentation of spray gun capacity in pounds per hour (e.g., manufacturers specifications).	Title I Condition: To avoid classification as a major modification under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
The spray booth shall have only one compressor for use with spray guns. The Permittee shall limit the Compressor Operating Hours: less than or equal to 365 hours/year	Title I Condition: To avoid classification as a major modification under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
The Permittee shall limit the Compressor Operating Hours: less than or equal to 1 hours/day	Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
Control Equipment: The Permittee shall vent emissions from this spray booth to control equipment meeting the requirements of CE016 (see below). The Permittee shall operate the control equipment any time that spray booth EU134 is in operation.	Title I Condition: To avoid classification as a major modification under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions in order to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity .	Minn. R. 7011.0715, subp. 1(B)
MONITORING AND RECORDKEEPING	hdr
Monitoring for Compressor Operating Hours: The Permittee shall install, operate, and maintain a cumulative hour meter on the compressor. The meter shall have an automatic lock-out device that disables the compressor when the hours limit is reached. Once the cumulative hours on the meter reaches 365 hours for the given calendar year, the compressor shall be removed, locked-out, or rendered inoperable until the next calendar year (January 1).	Title I Condition: 40 CFR Section 52.21(BACT limit for VOC); To avoid classification as a major modification under 40 CFR Section 52.21 and Minn. R. 7007.3000
Recordkeeping for Compressor Operating Hours: Once the compressor has reached the limit of 365 hours per calendar year, the Permittee shall notify personnel that the spray booth is no longer available for spraying for the remainder of the calendar year (memo or posting by the booth). In addition, the Permittee shall maintain a written or computerized log stating that the booth has reached the limit on which date. The hour meter shall be reset each January and the cumulative hours for the past calendar year shall be recorded.	Minn. R. 7007.0800, subp. 5
Recordkeeping for Daily Compressor Operating Hours. Each time the spray booth is operated, the Permittee shall maintain a log of the spray booth compressor use, to include: 1) Date 2) Hour meter reading at start of compressor use 3) Hour meter reading at end of compressor use 4) Amount of time compressor is used (Meter reading at end - Meter reading at start) 5) Total hours compressor used for the day, as a running total adding each previous compressor use for the day.	Minn. R. 7007.0800, subp. 4 and 5
Recordkeeping for Daily Compressor Operating Hours: Once the compressor has reached the Compressor Operating hours per day limit, the Permittee shall notify personnel that the spray booth is no longer available for spraying for the remainder of the day. The Permittee shall maintain a record of the notification.	Minn. R. 7007.0800, subps. 4 and 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: 3M - R & D Facility - Maplewood Bldg 201
Permit Number: 12300015 - 010

Maximum Contents of Materials and Minimum Transfer Efficiencies: The Permittee assumed certain worst-case contents of materials and transfer efficiencies when determining the short term potential to emit of EU134. These assumptions are listed in Appendix VII of this permit. Changing to a material that has a higher content of any of the given pollutants is considered a change in method of operation that must be evaluated under Minn. R. 7007.1200, subp. 3 to determine if a permit amendment or notification is required under Minn. R. 7007.1150.	Minn. R. 7005.0100, subp. 35a
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TABLE A: LIMITS AND OTHER REQUIREMENTS

A-67

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: CE 001 Catalytic Afterburner**Associated Items:** GP 001 All Pilot Plant VOC/HAP

GP 003 Facility Wide Firm Natural Gas Cap

What to do	Why to do it
A. EMISSIONS AND OPERATING LIMITS	hdr
The operation of this piece of control equipment is not necessary in order for the process to meet applicable emissions limits. However, the Permittee wishes to take credit for its operation for the purposes of reporting actual emissions for emission inventory. Therefore, in order for the VOC to be considered controlled for the purposes of emissions inventory, the catalytic afterburner must comply with the requirements of this permit during the time credit for control is taken. The VOC used during that time shall be considered controlled, and the control efficiency used is the limit given in this table.	Minn. Stat. 116.07, subd. 4a; Equipment used under Minn. R. 7019.3020 (F)
Volatile Organic Compounds: greater than or equal to 95 percent control efficiency or greater than or equal to 57 percent control efficiency, whichever is applicable based on if the device has a total enclosure or a hood capture system.	Minn. Stat. 116.07, subd. 4a; Equipment used under Minn. R. 7019.3020 (F)
Temperature: greater than or equal to 800 degrees F (absolute minimum) at the inlet, or as specified by the manufacturer, until a new minimum is set pursuant to Minn. R. 7017.2025, subp. 3, based on the average temperature recorded during the most recent performance test where compliance for VOC emissions was demonstrated. If the temperature at any time drops below the minimum temperature, the VOC shall be considered uncontrolled until the minimum temperature is once again achieved.	Minn. Stat. 116.07, subd. 4a; Equipment used under Minn. R. 7019.3020 (F)
B. MONITORING AND RECORDKEEPING	hdr
Recordkeeping: The Permittee shall keep a log that shows when the control equipment was operated and at what emissions unit. The log shall also show the VOC input to the control device during the time that the control equipment was operating.	Minn. R. 7007.0800, subp. 5
Hood Certification and Recordkeeping. If the control device does not have a total enclosure as defined in Minn. R. 7011.0060, subp. 5, the Permittee can use the hood control efficiency listed in Minn. R. 7011.0070, subp. 1 (and given above as 57%) if the hood conforms to the rule requirements listed in Minn. R. 7011.0070, subp. 1 and certifies this as required in Minn. R. 7011.0070, subp. 3. The Permittee shall maintain a copy of this on site, as well as a monthly record of the fan rotation speed, fan power draw, or face velocity of each hood, or other comparable air flow indication method.	Minn. R. 7007.0800, subp. 5
The Permittee shall maintain either a continuous hard copy readout of the inlet and outlet temperatures, or maintain a hard copy of manual readings taken at least every 15 minutes when in operation.	Minn. R. 7007.0800, subp. 5
The Permittee shall install the necessary monitoring equipment for measuring and recording the temperature as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the process is in operation in order for the VOC emissions from the process to be considered controlled.	Minn. R. 7007.0800, subp. 4
The Permittee shall determine the catalyst bed reactivity per the manufacturer's specifications and maintain documentation of the results.	Minn. R. 7007.0800, subp. 4
The Permittee shall maintain each piece of control equipment according to the manufacturer's specifications, shall conduct inspections, and shall maintain documentation of those actions.	Minn. R. 7007.0800, subp. 14

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-68**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: CE 002 Direct Flame Afterburner**Associated Items:** GP 001 All Pilot Plant VOC/HAP

GP 003 Facility Wide Firm Natural Gas Cap

What to do	Why to do it
A. EMISSIONS AND OPERATING LIMITS	hdr
The operation of this piece of control equipment is not necessary in order for the process to meet applicable emissions limits. However, the Permittee wishes to take credit for its operation for the purposes of reporting actual emissions for emission inventory. Therefore, in order for the VOC to be considered controlled for the purposes of emissions inventory, the afterburner (thermal oxidizer) must comply with the requirements of this permit during the time credit for control is taken. The VOC used during that time shall be considered controlled, and the control efficiency used is the limit given in this table.	Minn. Stat. 116.07, subd. 4a; Equipment used under Minn. R. 7019.3020 (F)
Volatile Organic Compounds: greater than or equal to 95 percent control efficiency or greater than or equal to 57 percent control efficiency, whichever is applicable based on if the device has a total enclosure or a hood capture system.	Minn. Stat. 116.07, subd. 4a; Equipment used under Minn. R. 7019.3020 (F)
Temperature: greater than or equal to 1400 degrees F (absolute minimum) at the Combustion Chamber, or as specified by the manufacturer, until a new minimum is set pursuant to Minn. R. 7017.2025, subp. 3, based on the average temperature recorded during the most recent performance test where compliance for VOC emissions was demonstrated. If the temperature at any time drops below the minimum temperature, the VOC shall be considered uncontrolled until the minimum temperature is once again achieved.	Minn. Stat. 116.07, subd. 4a; Equipment used under Minn. R. 7019.3020 (F)
B. MONITORING AND RECORDKEEPING	hdr
Recordkeeping: The Permittee shall keep a log that shows when the control equipment was operated and at what emissions unit. The log shall also show the VOC input to the control device during the time that the control equipment was operating.	Minn. R. 7007.0800, subp. 5
Hood Certification and Recordkeeping. If the control device does not have a total enclosure as defined in Minn. R. 7011.0060, subp. 5, the Permittee can use the hood control efficiency listed in Minn. R. 7011.0070, subp. 1 (and given above as 57%) if the hood conforms to the rule requirements listed in Minn. R. 7011.0070, subp. 1 and certifies this as required in Minn. R. 7011.0070, subp. 3. The Permittee shall maintain a copy of this on site, as well as a monthly record of the fan rotation speed, fan power draw, or face velocity of each hood, or other comparable air flow indication method.	Minn. R. 7007.0800, subp. 5
The Permittee shall maintain either a continuous hard copy readout of the temperature in the combustion chamber, or maintain a hard copy of manual readings taken at least every 15 minutes when in operation.	Minn. R. 7007.0800, subp. 5
The Permittee shall install the necessary monitoring equipment for measuring and recording the temperature as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the process is in operation in order for the VOC emissions from the process to be considered controlled.	Minn. R. 7007.0800, subp. 4
The Permittee shall maintain each piece of control equipment according to the manufacturer's specifications, shall conduct inspections, and shall maintain documentation of those actions.	Minn. R. 7007.0800, subp. 14

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-69**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: CE 003 Mat or Panel Filter**Associated Items:** EU 013 Booths Without Spray Application Equipment

EU 034 Can Spray Booth 250-23E-91-I/O-8, # 11; 250-E-313

GP 001 All Pilot Plant VOC/HAP

GP 003 Facility Wide Firm Natural Gas Cap

What to do	Why to do it
A. EMISSIONS AND OPERATING LIMITS	hdr
For Booths that are not total enclosures as defined in Minn. R. 7011.0060, subp.5: Operate and maintain control equipment to limit Particulate Matter < 10 micron: greater than or equal to 74 percent control efficiency	Minn. R. 7007.0800, subp. 2
For Booths that are not total enclosures as defined in Minn. R. 7011.0060, subp.5: Operate and maintain control equipment to limit Total Particulate Matter: greater than or equal to 74 percent control efficiency	Minn. R. 7007.0800, subp. 2
B. MONITORING AND RECORDKEEPING	hdr
Hood Certification and Recordkeeping. If the control device does not have a total enclosure as defined in Minn. R. 7011.0060, subp. 5, the Permittee can use the hood control efficiency listed in this permit (74%) if the hood conforms to the rule requirements listed in Minn. R. 7011.0070, subp. 1 and the Permittee certifies this as required in Minn. R. 7011.0070, subp. 3. The Permittee shall maintain a copy of this on site, as well as a monthly record of the fan rotation speed, fan power draw, or face velocity of each hood, or other comparable air flow indication method.	Minn. R. 7007.0800, subp. 2
With each use of the spray booth, the Permittee shall visually inspect the condition of the wall filters, including but not limited to, alignment, saturation, tears, and holes. If the filters are found to need repair or replacement, the researcher shall make the correction or notify plant maintenance immediately, and the booth shall not be used until the filters are repaired or replaced. The Permittee shall maintain a written record of any action resulting from the inspection.	Minn. R. 7007.0800, subp. 4
Monthly Filter Inspection. The Permittee shall inspect and record the filter condition every calendar month if the booth was operated that month. The Permittee shall visually inspect the condition of the wall filters, including but not limited to, alignment, saturation, tears, and holes. The Permittee shall maintain a written record of the inspection and any action resulting from the inspection.	Minn. R. 7007.0800, subp. 4
Periodic Inspections. The Permittee shall inspect the control equipment components as frequently as required by the manufacturing specification, or as specified in an Operation and Maintenance Plan that follows standard industry practices. The Permittee shall inspect components that are subject to wear or plugging, for example: bearings, belts, hoses, fans, nozzles, orifices, and ducts. The Permittee shall also inspect components that are not subject to wear including structural components, housings, ducts, and hoods. The Permittee shall maintain a written record of the inspection and any action resulting from the inspection. This can be in the form of computer records.	Minn. R. 7007.0800, subp. 14
The Permittee shall operate the control equipment monitoring equipment at all times the control equipment is required to operate.	Minn. R. 7007.0800, subp. 4

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-70**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: CE 004 Solvent Recovery Unit**Associated Items:** GP 001 All Pilot Plant VOC/HAP

GP 003 Facility Wide Firm Natural Gas Cap

What to do	Why to do it
A. OPERATING LIMITS	hdr
The operation of this piece of control equipment is not necessary in order for the process to meet applicable emissions limits. However, the Permittee wishes to take credit for its operation for the purposes of reporting actual emissions for emission inventory. Therefore, in order for the VOC to be considered controlled for the purposes of emissions inventory, the solvent recovery device must comply with the requirements of this permit during the time credit for control is taken. The VOC used during that time shall be considered controlled, and a mass balance will be used to calculate emissions from the control device.	Minn. Stat. 116.07, subd. 4a; Equipment used under Minn. R. 7019.3020 (F)
B. MONITORING AND RECORDKEEPING	hdr
Recordkeeping: The Permittee shall keep a log that shows when the control equipment was operated and at what emissions unit. The VOC emission reduction will be determined by mass balance over the solvent recovery device. The Permittee shall maintain monthly records of the weight of VOC used and the weight of VOC recovered per the Recovery requirement listed in the Total Facility part of this permit.	Minn. R. 7007.0800, subp. 5
Hood Certification and Recordkeeping. If the control device does not have a total enclosure as defined in Minn. R. 7011.0060, subp. 5, the Permittee can use a hood capture efficiency of 60% if the hood conforms to the rule requirements listed in Minn. R. 7011.0070, subp. 1 and certifies this as required in Minn. R. 7011.0070, subp. 3. The Permittee shall maintain a copy of this on site, as well as a monthly record of the fan rotation speed, fan power draw, or face velocity of each hood, or other comparable air flow indication method.	Minn. R. 7007.0800, subp. 5
Monitoring: The Permittee shall install the necessary monitoring equipment for measuring and recording the cumulative VOC recovered by the device over a calendar month period as required by this permit. If installation of monitoring equipment is not possible, the cumulative amount of VOC recovered shall be manually recorded on a monthly basis for months when the control equipment is in use. The monitoring equipment must be installed, in use, and properly maintained, or the recordkeeping system must be in use, when the process is in operation in order for the VOC emissions from the process to be considered controlled in the calculations in this permit.	Minn. R. 7007.0800, subp. 4
The Permittee shall maintain each piece of control equipment according to the manufacturer's specifications, shall conduct inspections, and shall maintain documentation of those actions.	Minn. R. 7007.0800, subp. 14

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-71**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: CE 005 Mat or Panel Filter**Associated Items:** EU 013 Booths Without Spray Application Equipment

EU 034 Can Spray Booth 250-23E-91-I/O-8, # 11; 250-E-313

GP 001 All Pilot Plant VOC/HAP

GP 003 Facility Wide Firm Natural Gas Cap

What to do	Why to do it
A. EMISSIONS AND OPERATING LIMITS	hdr
For Booths that are total enclosures as defined in Minn. R. 7011.0060, subp. 5: Operate and maintain control equipment to limit Particulate Matter < 10 micron: greater than or equal to 92 percent control efficiency	Minn. R. 7007.0800, subp. 2
For Booths that are total enclosures as defined in Minn. R. 7011.0060, subp. 5: Operate and maintain control equipment to limit Total Particulate Matter: greater than or equal to 92 percent control efficiency	Minn. R. 7007.0800, subp. 2
B. MONITORING AND RECORDKEEPING	hdr
With each use of the spray booth, the Permittee shall visually inspect the condition of the wall filters, including but not limited to, alignment, saturation, tears, and holes. If the filters are found to need repair or replacement, the researcher shall make the correction or notify plant maintenance immediately, and the booth shall not be used until the filters are repaired or replaced. The Permittee shall maintain a written record of any action resulting from the inspection.	Minn. R. 7007.0800, subp. 4
Monthly Filter Inspection. The Permittee shall inspect and record the filter condition every calendar month if the booth was operated that month. The Permittee shall visually inspect the condition of the wall filters, including but not limited to, alignment, saturation, tears, and holes. The Permittee shall maintain a written record of the inspection and any action resulting from the inspection.	Minn. R. 7007.0800, subp. 4
Periodic Inspections. The Permittee shall inspect the control equipment components as frequently as required by the manufacturing specification, or as specified in an Operation and Maintenance Plan that follows standard industry practices. The Permittee shall inspect components that are subject to wear or plugging, for example: bearings, belts, hoses, fans, nozzles, orifices, and ducts. The Permittee shall also inspect components that are not subject to wear including structural components, housings, ducts, and hoods. The Permittee shall maintain a written record of the inspection and any action resulting from the inspection. This can be in the form of computer records.	Minn. R. 7007.0800, subp. 14
The Permittee shall operate the control equipment monitoring equipment at all times the control equipment is required to operate.	Minn. R. 7007.0800, subp. 4

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-72**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: CE 006 Centrifugal Collector - Medium Efficiency**Associated Items:** EU 010 Carpentry Shops

What to do	Why to do it
The operation of this piece of control equipment is not necessary in order for the process to meet applicable emissions limits. However, the Permittee wishes to take credit for its operation, based on an MPCA approved performance test, for the purposes of reporting actual emissions for emission inventory. Therefore, in order for the carpentry shop to be considered controlled for the purposes of emissions inventory, the control device must comply with the requirements of this permit during the time credit for control is taken.	Minn. Stat. 116.07, subd. 4a; Equipment used under Minn. R. 7019.3020 (F) & Minn. R. 7019.3050
The Permittee shall maintain each piece of control equipment according to the manufacturer's specifications, shall conduct inspections, and shall maintain documentation of those actions.	Minn. R. 7007.0800, subp. 14

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-73**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: CE 007 Fabric Filter - Low Temperature, i.e., T<180 Degrees F**Associated Items:** EU 010 Carpentry Shops

What to do	Why to do it
The operation of this piece of control equipment is not necessary in order for the process to meet applicable emissions limits. However, the Permittee wishes to take credit for its operation, based on an MPCA approved performance test, for the purposes of reporting actual emissions for emission inventory. Therefore, in order for the carpentry shop to be considered controlled for the purposes of emissions inventory, the control device must comply with the requirements of this permit during the time credit for control is taken.	Minn. Stat. 116.07, subd. 4a; Equipment used under Minn. R. 7019.3020 (F) & Minn. R. 7019.3050
The Permittee shall maintain each piece of control equipment according to the manufacturer's specifications, shall conduct inspections, and shall maintain documentation of those actions.	Minn. R. 7007.0800, subp. 14

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-74**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: CE 008 Mat or Panel Filter**Associated Items:** EU 034 Can Spray Booth 250-23E-91-I/O-8, # 11; 250-E-313

What to do	Why to do it
A. EMISSIONS AND OPERATING LIMITS	hdr
For Booths that are not total enclosures as defined in Minn. R. 7011.0060, subp.5: Operate and maintain control equipment to limit Particulate Matter < 10 micron: greater than or equal to 74 percent control efficiency	Title I Condition: Limit taken to avoid major modification classification under 40 CFR Section 52.21
For Booths that are not total enclosures as defined in Minn. R. 7011.0060, subp.5: Operate and maintain control equipment to limit Total Particulate Matter: greater than or equal to 74 percent control efficiency	Title I Condition: Limit taken to avoid major modification classification under 40 CFR Section 52.21
B. MONITORING AND RECORDKEEPING	hdr
Hood Certification and Recordkeeping. If the control device does not have a total enclosure as defined in Minn. R. 7011.0060, subp. 5, the Permittee can use the hood control efficiency listed in this permit (74%) if the hood conforms to the rule requirements listed in Minn. R. 7011.0070, subp. 1 and the Permittee certifies this as required in Minn. R. 7011.0070, subp. 3. The Permittee shall maintain a copy of this on site, as well as a monthly record of the fan rotation speed, fan power draw, or face velocity of each hood, or other comparable air flow indication method.	Minn. R. 7007.0800, subp. 2
With each use of the spray booth, the Permittee shall visually inspect the condition of the wall filters, including but not limited to, alignment, saturation, tears, and holes. If the filters are found to need repair or replacement, the researcher shall make the correction or notify plant maintenance immediately, and the booth shall not be used until the filters are repaired or replaced. The Permittee shall maintain a written record of any action resulting from the inspection.	Minn. R. 7007.0800, subp. 4
Monthly Filter Inspection. The Permittee shall inspect and record the filter condition every calendar month if the booth was operated that month. The Permittee shall visually inspect the condition of the wall filters, including but not limited to, alignment, saturation, tears, and holes. The Permittee shall maintain a written record of the inspection and any action resulting from the inspection.	Minn. R. 7007.0800, subp. 4
Periodic Inspections. The Permittee shall inspect the control equipment components as frequently as required by the manufacturing specification, or as specified in an Operation and Maintenance Plan that follows standard industry practices. The Permittee shall inspect components that are subject to wear or plugging, for example: bearings, belts, hoses, fans, nozzles, orifices, and ducts. The Permittee shall also inspect components that are not subject to wear including structural components, housings, ducts, and hoods. The Permittee shall maintain a written record of the inspection and any action resulting from the inspection. This can be in the form of computer records.	Minn. R. 7007.0800, subp. 14
The Permittee shall operate the control equipment monitoring equipment at all times the control equipment is required to operate.	Minn. R. 7007.0800, subp. 4

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-75**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: CE 009 Mat or Panel Filter**Associated Items:** EU 028 Spray Booth 250-E-118

What to do	Why to do it
A. EMISSIONS AND OPERATING LIMITS	hdr
The Permittee shall operate and maintain the control equipment (CE009) such that it achieves an overall control efficiency for Total Particulate Matter: greater than or equal to 92 percent control efficiency	Title I Condition: Limit taken to avoid major modification classification under 40 CFR Section 52.2
The Permittee shall operate and maintain the control equipment (CE009) such that it achieves an overall control efficiency for PM < 10 micron: greater than or equal to 92 percent control efficiency	Title I Condition: Limit taken to avoid major modification classification under 40 CFR Section 52.21
The Permittee shall operate and maintain the control equipment (CE009) such that it achieves an overall control efficiency for PM < 2.5 micron: greater than or equal to 85 percent control efficiency	Minn. R. 7007.0800, subp. 2
All CE009 filters required for controlling emissions from spray booths, including existing, modified, or new filters are subject to the requirements of CE009.	Minn. R. 7007.0800, subp. 2
The Permittee shall operate each panel filter meeting the requirements of CE009 as total enclosures as defined in Minn. R. 7011.0060, subp.5.	Minn. R. 7007.0800, subp. 2; Minn. R. 7011.0060, subp.5
The Permittee shall operate and maintain the CE009 control equipment any time that any process equipment controlled by the filters is(are) in operation. The Permittee shall document periods of non-operation of the control equipment.	Minn. R. 7007.0800, subps. 2, 14 and 16(J)
B. MONITORING AND RECORDKEEPING	hdr
With each use of the spray booth, the Permittee shall visually inspect the condition of the wall filters, including but not limited to, alignment, saturation, tears, and holes. If the filters are found to need repair or replacement, the Permittee shall make the correction or notify plant maintenance immediately, and the booth shall not be used until the filters are repaired or replaced. The Permittee shall maintain a written record filter inspections and of any action resulting from the inspection.	Minn. R. 7007.0800, subp. 4
Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections.	Minn. R. 7007.0800, subps. 4, 5, and 14
Corrective Actions: If the filters or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter.	Minn. R. 7007.0800, subps. 4, 5, and 14
Operation and Maintenance of Filters: The Permittee shall operate and maintain each filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.	Minn. R. 7007.0800, subp. 14

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-76**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: CE 010 Fabric Filter - Low Temperature, i.e., T<180 Degrees F**Associated Items:** EU 040 250 Automotive Room Vacuum System

What to do	Why to do it
A. EMISSIONS AND OPERATING LIMITS	hdr
The Permittee shall conduct a Leak Detection test on the emission unit (CE 010) every six months. The first test shall be performed in June and the second test shall be performed in December of each calendar year. The Permittee shall maintain a written record of each test and any action resulting from each test.	Title I Condition: Limit taken to avoid major modification classification under 40 CFR Section 52.21(permit 23E-91-I/O-8)
The Permittee shall operate the control equipment any time the emission unit (EU040) is operated.	Title I Condition: Limit taken to avoid major modification classification under 40 CFR Section 52.21(permit 23E-91-I/O-8)
The Permittee shall maintain each piece of control equipment according to the manufacturer's specifications, shall conduct inspections, and shall maintain documentation of those actions.	Minn. R. 7007.0800, subp. 14

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-77**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: CE 011 Refrigerated Condenser**Associated Items:** EU 132 Kodiak Spray Dryer

What to do	Why to do it
A. OPERATING LIMITS	hdr
The operation of this piece of control equipment is not necessary in order for the process to meet applicable emissions limits. However, the Permittee wishes to take credit for its operation for the purposes of reporting actual emissions for emission inventory. Therefore, in order for the VOC to be considered controlled for the purposes of emissions inventory, the solvent recovery device must comply with the requirements of this permit during the time credit for control is taken. The VOC used during that time shall be considered controlled, and a mass balance will be used to calculate emissions from the control device.	Minn. Stat. 116.07, subd. 4a; Equipment used under Minn. R. 7019.3020 (F)
B. MONITORING AND RECORDKEEPING	hdr
Recordkeeping: The Permittee shall keep a log that shows when the control equipment was operated and at what emissions unit. The VOC emission reduction will be determined by mass balance over the solvent recovery device. The Permittee shall maintain monthly records of the weight of VOC used and the weight of VOC recovered per the Recovery requirement listed in the Total Facility part of this permit.	Minn. R. 7007.0800, subp. 5
Monitoring: The Permittee shall install the necessary monitoring equipment for measuring and recording the cumulative VOC recovered by the device over a calendar month period as required by this permit. If installation of monitoring equipment is not possible, the cumulative amount of VOC recovered shall be manually recorded on a monthly basis for months when the control equipment is in use. The monitoring equipment must be installed, in use, and properly maintained, or the recordkeeping system must be in use, when the process is in operation in order for the VOC emissions from the process to be considered controlled in the calculations in this permit.	Minn. R. 7007.0800, subp. 4
The Permittee shall maintain each piece of control equipment according to the manufacturer's specifications, shall conduct inspections, and shall maintain documentation of those actions.	Minn. R. 7007.0800, subp. 14

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-78**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: CE 012 Mat or Panel Filter**Associated Items:** EU 133 Spray Booth 230-S-118

What to do	Why to do it
CE012 CONTROL EQUIPMENT REQUIREMENTS	hdr
The Permittee shall operate CE012 control equipment with hoods as defined in Minn. R. 7011.0060, subp.3e.	Minn. R. 7007.0800, subp. 2; Minn. R. 7011.0060, subp.5
The Permittee shall configure CE012 control equipment by placing two panel filters in series. Each panel filter will have an individual control efficiency of 85% for PM, PM10 and PM2.5.	Minn. R. 7007.0800, subps. 2 and 14
The Permittee shall operate and maintain the control equipment (CE012) such that it achieves an overall control efficiency for Total Particulate Matter: greater than or equal to 80.0 percent control efficiency	Title I Condition: To avoid classification as a major modification under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14
The Permittee shall operate and maintain the control equipment (CE012) such that it achieves an overall control efficiency for PM < 10 micron: greater than or equal to 80.0 percent control efficiency	Title I Condition: To avoid classification as a major modification under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), 7(M), and 25; Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
The Permittee shall operate and maintain the control equipment (CE012) such that it achieves an overall control efficiency for PM < 2.5 micron: greater than or equal to 80.0 percent control efficiency	Title I Condition: To avoid classification as a major modification under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14
Daily Inspections: With each use of spray booth, the Permittee shall visually inspect the condition of the filter with respect to alignment, saturation, tears, holes and any other condition that may affect the filter's performance. The Permittee shall maintain a daily written record of filter inspections.	Minn. R. 7007.0800, subps. 4 and 5
Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections.	Minn. R. 7007.0800, subps. 4, 5, and 14
Corrective Actions: If the filters or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter.	Minn. R. 7007.0800, subps. 4, 5, and 14
Operation and Maintenance of Filters: The Permittee shall operate and maintain each filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.	Minn. R. 7007.0800, subps. 14
Initial Hood Certification and Evaluation: The control device hood must conform to the requirements listed in Minn. R. 7011.0070, subp. 1, and the Permittee shall certify this as specified in Minn. R. 7011.0070, subp. 3. The Permittee shall maintain a copy of the evaluation and certification on site.	Minn. R. 7007.0800, subps. 4, 5, and 14
Annual Hood Evaluation: The Permittee shall measure and record at least once every 12 months the fan rotation speed, fan power draw, or face velocity of each hood, or other comparable air flow indication method. The Permittee shall maintain a copy of the annual evaluation on site.	Minn. R. 7007.0800, subps. 4, 5, and 14

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-79**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: CE 013 Mat or Panel Filter**Associated Items:** EU 020 Spray Booth 230-G43B

EU 031 Spray Booth 251-B-230

EU 032 Spray Booth 251-B-242

EU 033 Spray Booth 251-B-330

What to do	Why to do it
A. EMISSIONS AND OPERATIONAL LIMITS	hdr
All CE013 filters required for controlling emissions from spray booths, including existing, modified, or new filters are subject to the requirements of CE013.	Minn. R. 7007.0800, subp. 2
The Permittee shall operate filters meeting the requirements of CE013 with hoods as defined in Minn. R. 7011.0060, subp.3e.	Minn. R. 7007.0800, subp. 2; Minn. R. 7011.0060, subp.5
For each spray booth requiring controls meeting the requirements of CE013, the Permittee shall configure CE013 control equipment by placing two panel filters in series. Each panel filter will have an individual control efficiency of 85% for PM, PM10 and PM2.5.	Minn. R. 7007.0800, subps. 2 and 14
The Permittee shall operate and maintain the control equipment (CE013) such that it achieves an overall control efficiency for Total Particulate Matter: greater than or equal to 80.0 percent control efficiency	Minn. R. 7007.0800, subps. 2, 14 and 16(J)
The Permittee shall operate and maintain the control equipment (CE013) such that it achieves an overall control efficiency for PM < 10 micron: greater than or equal to 80 percent control efficiency	Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), 7(M), and 25; Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
The Permittee shall operate and maintain the control equipment (CE013) such that it achieves an overall control efficiency for PM < 2.5 micron: greater than or equal to 80 percent control efficiency	Minn. R. 7007.0800, subps. 2, 14 and 16(J)
The Permittee shall operate and maintain the CE013 filters any time that any process equipment controlled by the filters is(are) in operation. The Permittee shall document periods of non-operation of the control equipment.	Minn. R. 7007.0800, subps. 2, 14 and 16(J)
B. MONITORING AND RECORDKEEPING	hdr
With each use of the spray booth, the Permittee shall visually inspect the condition of the filters, including but not limited to, alignment, saturation, tears, and holes. If the filters are found to need repair or replacement, the Permittee shall make the correction or notify plant maintenance immediately, and the booth shall not be used until the filters are repaired or replaced. The Permittee shall maintain a written record filter inspections and of any action resulting from the inspection.	Minn. R. 7007.0800, subp. 4 and 5
Monthly Filter Inspection. The Permittee shall inspect and record the filter condition every calendar month if the booth was operated that month. The Permittee shall visually inspect the condition of the filters, including but not limited to, alignment, saturation, tears, and holes. The Permittee shall maintain a written record of the inspection and any action resulting from the inspection.	Minn. R. 7007.0800, subp. 4
Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections.	Minn. R. 7007.0800, subp. 14
Corrective Actions: If the filters or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter.	Minn. R. 7007.0800, subps. 4, 5, and 14
Operation and Maintenance of Filters: The Permittee shall operate and maintain each filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.	Minn. R. 7007.0800, subp. 14
Initial Hood Certification and Evaluation: The control device hood must conform to the requirements listed in Minn. R. 7011.0072, subp. 2(B), and the Permittee shall certify this as specified in Minn. R. 7011.0072, subps. 2 and 3. The Permittee shall maintain a copy of the evaluation and certification on site.	Minn. R. 7007.0800, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: 3M - R & D Facility - Maplewood Bldg 201
Permit Number: 12300015 - 010

Annual Hood Evaluation: The Permittee shall measure and record at least once every 12 months the fan rotation speed, fan power draw, or face velocity of each hood, or other comparable air flow indication method. The Permittee shall maintain a copy of the annual evaluation on site.	Minn. R. 7007.0800, subps. 4, 5 and 14
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TABLE A: LIMITS AND OTHER REQUIREMENTS**A-81**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: CE 014 Mat or Panel Filter**Associated Items:** EU 014 Spray Booth 209- C163A - 1

EU 015 Spray Booth 209-C163A-2

EU 018 Spray Booth 216-2S

EU 023 Spray Booth 235-A-353

What to do	Why to do it
A. EMISSIONS AND OPERATING LIMITS	hdr
All CE014 filters required for controlling emissions from spray booths, including existing, modified, or new filters are subject to the requirements of CE014.	Minn. R. 7007.0800, subp. 2
The Permittee shall operate filters meeting the requirements of CE014 as total enclosures as defined in Minn. R. 7011.0060, subp.5.	Minn. R. 7007.0800, subp. 2; Minn. R. 7011.0060, subp.5
For each spray booth requiring controls meeting the requirements of CE014, the Permittee shall configure the control equipment by placing 2 panel filters in series. Each panel filter will have an individual control efficiency of 85% for PM, PM10 and PM2.5.	Minn. R. 7007.0800, subps. 2 and 14
The Permittee shall operate and maintain the control equipment (CE014) such that it achieves an overall control efficiency for Total Particulate Matter: greater than or equal to 98.0 percent control efficiency	Minn. R. 7007.0800, subps. 2, 14 and 16(J)
The Permittee shall operate and maintain the control equipment (CE014) such that it achieves an overall control efficiency for PM < 10 micron: greater than or equal to 98.0 percent control efficiency	Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), 7(M), and 25; Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
The Permittee shall operate and maintain the control equipment (CE014) such that it achieves an overall control efficiency for PM < 2.5 micron: greater than or equal to 98.0 percent control efficiency	Minn. R. 7007.0800, subps. 2, 14 and 16(J)
The Permittee shall operate and maintain the CE014 control equipment any time that any process equipment controlled by the filters is(are) in operation. The Permittee shall document periods of non-operation of the control equipment.	Minn. R. 7007.0800, subps. 2, 14 and 16(J)
B. MONITORING AND RECORDKEEPING	hdr
With each use of the spray booth, the Permittee shall visually inspect the condition of the filters, including but not limited to, alignment, saturation, tears, and holes. If the filters are found to need repair or replacement, the Permittee shall make the correction or notify plant maintenance immediately, and the booth shall not be used until the filters are repaired or replaced. The Permittee shall maintain a written record filter inspections and of any action resulting from the inspection.	Minn. R. 7007.0800, subp. 4
Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections.	Minn. R. 7007.0800, subps. 4, 5, and 14
Corrective Actions: If the filters or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter.	Minn. R. 7007.0800, subps. 4, 5, and 14
Operation and Maintenance of Filters: The Permittee shall operate and maintain each filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.	Minn. R. 7007.0800, subp. 14

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-82**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: CE 015 Mat or Panel Filter**Associated Items:** EU 022 Spray Booth 235-WN-116

EU 025 Spray Booth 240-SE Wall

EU 029 Spray Booth 250-E-123A

What to do	Why to do it
A. EMISSIONS AND OPERATING LIMITS	hdr
All CE015 filters required for controlling emissions from spray booths, including existing, modified, or new filters are subject to the requirements of CE015.	Minn. R. 7007.0800, subp. 2
The Permittee shall operate filters meeting the requirements of CE015 as total enclosures as defined in Minn. R. 7011.0060, subp.5.	Minn. R. 7007.0800, subp. 2; Minn. R. 7011.0060, subp.5
For each spray booth requiring controls meeting the requirements of CE015, the Permittee shall configure the control equipment by placing 2 panel filters in series. Each panel filter will have an individual control efficiency of 85% for PM, PM10 and PM2.5.	Minn. R. 7007.0800, subps. 2 and 14
The Permittee shall operate and maintain the control equipment (CE015) such that it achieves an overall control efficiency for Total Particulate Matter: greater than or equal to 98.0 percent control efficiency	Minn. R. 7007.0800, subps. 2, 14 and 16(J)
The Permittee shall operate and maintain the control equipment (CE015) such that it achieves an overall control efficiency for PM < 10 micron: greater than or equal to 98.0 percent control efficiency	Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), 7(M), and 25; Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
The Permittee shall operate and maintain the control equipment (CE015) such that it achieves an overall control efficiency for PM < 2.5 micron: greater than or equal to 98.0 percent control efficiency	Minn. R. 7007.0800, subps. 2, 14 and 16(J)
Operate and maintain control equipment to limit Total Particulate Matter < 10 micron: greater than or equal to 74 percent control efficiency.	Title I Condition: Limit taken to avoid major modification classification under 40 CFR Section 52.21
Operate and maintain control equipment to limit Particulate Matter < 10 micron: greater than or equal to 74 percent control efficiency.	Title I Condition: Limit taken to avoid major modification classification under 40 CFR Section 52.21
The Permittee shall operate and maintain the CE015 control equipment any time that any process equipment controlled by the filters is(are) in operation. The Permittee shall document periods of non-operation of the control equipment.	Minn. R. 7007.0800, subps. 2, 14 and 16(J)
B. MONITORING AND RECORDKEEPING	hdr
With each use of the spray booth, the Permittee shall visually inspect the condition of the filters, including but not limited to, alignment, saturation, tears, and holes. If the filters are found to need repair or replacement, the Permittee shall make the correction or notify plant maintenance immediately, and the booth shall not be used until the filters are repaired or replaced. The Permittee shall maintain a written record filter inspections and of any action resulting from the inspection.	Minn. R. 7007.0800, subp. 4
Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections.	Minn. R. 7007.0800, subps. 4, 5, and 14
Corrective Actions: If the filters or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter.	Minn. R. 7007.0800, subps. 4, 5, and 14
Operation and Maintenance of Filters: The Permittee shall operate and maintain each filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.	Minn. R. 7007.0800, subp. 14

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-83** 01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: CE 016 Mat or Panel Filter**Associated Items:** EU 134 Spray Booth 251-B354

What to do	Why to do it
CE016 CONTROL EQUIPMENT REQUIREMENTS	hdr
The Permittee shall operate CE016 control equipment with a hood as defined in Minn. R. 7011.0060, subp.3e.	Minn. R. 7007.0800, subp. 2; Minn. R. 7011.0060, subp.3e
The Permittee shall configure CE016 control equipment by placing two panel filters in series. Each panel filter will have an individual control efficiency of 85% for PM, PM10 and PM2.5.	Minn. R. 7007.0800, subps. 2 and 14
The Permittee shall operate and maintain the control equipment (CE016) such that it achieves an overall control efficiency for Total Particulate Matter: greater than or equal to 80.0 percent control efficiency	Title I Condition: To avoid classification as a major modification under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14
The Permittee shall operate and maintain the control equipment (CE016) such that it achieves an overall control efficiency for PM < 10 micron: greater than or equal to 80.0 percent control efficiency	Title I Condition: To avoid classification as a major modification under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), 7(M), and 25; Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
The Permittee shall operate and maintain the control equipment (CE016) such that it achieves an overall control efficiency for PM < 2.5 micron: greater than or equal to 80.0 percent control efficiency	Title I Condition: To avoid classification as a major modification under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 and 14
Daily Inspections: With each use of spray booth, the Permittee shall visually inspect the condition of the filter with respect to alignment, saturation, tears, holes and any other condition that may affect the filter's performance. The Permittee shall maintain a daily written record of filter inspections.	Title I Condition: To avoid classification as a major modification under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), 7(M), and 25; Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections.	Minn. R. 7007.0800, subps. 4, 5, and 14
Corrective Actions: If the filters or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter.	Minn. R. 7007.0800, subps. 4, 5, and 14
Operation and Maintenance of Filters: The Permittee shall operate and maintain each filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.	Minn. R. 7007.0800, subps. 14
Initial Hood Certification and Evaluation: The control device hood must conform to the requirements listed in Minn. R. 7011.0070, subp. 1, and the Permittee shall certify this as specified in Minn. R. 7011.0070, subp. 3. The Permittee shall maintain a copy of the evaluation and certification on site.	Minn. R. 7007.0800, subps. 4, 5, and 14
Annual Hood Evaluation: The Permittee shall measure and record at least once every 12 months the fan rotation speed, fan power draw, or face velocity of each hood, or other comparable air flow indication method. The Permittee shall maintain a copy of the annual evaluation on site.	Minn. R. 7007.0800, subps. 4, 5, and 14

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-84**

01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

Subject Item: CE 017 Mat or Panel Filter**Associated Items:** EU 026 Spray Booth 250-E-126A

What to do	Why to do it
All CE017 filters required for controlling emissions from spray booths, including existing, modified, or new filters are subject to the requirements of CE017.	Minn. R. 7007.0800, subp. 2
The Permittee shall operate panel filters meeting the requirements of CE017 with hoods as defined in Minn. R. 7011.0060, subp.3e.	Minn. R. 7007.0800, subp. 2; Minn. R. 7011.0060, subp.5
For each spray booth requiring controls meeting the requirements of CE017, the Permittee shall configure CE017 control equipment by placing two panel filters in series. Each panel filter will have an individual control efficiency of 85% for PM, PM10 and PM2.5.	Minn. R. 7007.0800, subps. 2 and 14
The Permittee shall operate and maintain the control equipment (CE017) such that it achieves an overall control efficiency for PM < 10 micron: greater than or equal to 80 percent control efficiency	Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), 7(M), and 25; Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
The Permittee shall operate and maintain the control equipment (CE017) such that it achieves an overall control efficiency for Total Particulate Matter: greater than or equal to 80 percent control efficiency	Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), 7(M), and 25; Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
The Permittee shall operate and maintain the control equipment (CE017) such that it achieves an overall control efficiency for PM < 2.5 micron: greater than or equal to 80 percent control efficiency	Minn. R. 7007.0800, subps. 2
Operate and maintain control equipment to limit Particulate Matter < 10 micron: greater than or equal to 74 percent control efficiency.	Title I Condition: Limit taken to avoid major modification classification under 40 CFR Section 52.21
This is less stringent than the limit based on modeling, but also applies.	
Operate and maintain control equipment to limit Total Particulate Matter: greater than or equal to 74 percent control	Title I Condition: Limit taken to avoid major modification classification under 40 CFR Section 52.21
This is less stringent than the limit based on modeling, but also applies.	
With each use of the spray booth, the Permittee shall visually inspect the condition of the panel filters, including but not limited to, alignment, saturation, tears, and holes. If the filters are found to need repair or replacement, the Permittee shall make the correction or notify plant maintenance immediately, and the booth shall not be used until the filters are repaired or replaced. The Permittee shall maintain a written record filter inspections and of any action resulting from the inspection.	Minn. R. 7007.0800, subp. 4 and 5
Monthly Filter Inspection. The Permittee shall inspect and record the filter condition every calendar month if the booth was operated that month. The Permittee shall visually inspect the condition of the wall filters, including but not limited to, alignment, saturation, tears, and holes. The Permittee shall maintain a written record of the inspection and any action resulting from the inspection.	Minn. R. 7007.0800, subp. 4
Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections.	Minn. R. 7007.0800, subp. 14
Corrective Actions: If the filters or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter.	Minn. R. 7007.0800, subps. 4, 5, and 14
Operation and Maintenance of Filters: The Permittee shall operate and maintain each filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.	Minn. R. 7007.0800, subp. 14
Initial Hood Certification and Evaluation: The control device hood must conform to the requirements listed in Minn. R. 7011.0072, subp. 2(B), and the Permittee shall certify this as specified in Minn. R. 7011.0072, subps. 2 and 3. The Permittee shall maintain a copy of the evaluation and certification on site.	Minn. R. 7007.0800, subp. 2
Annual Hood Evaluation: The Permittee shall measure and record at least once every 12 months the fan rotation speed, fan power draw, or face velocity of each hood, or other comparable air flow indication method. The Permittee shall maintain a copy of the annual evaluation on site.	Minn. R. 7007.0800, subps. 4, 5 and 14

TABLE B: SUBMITTALS

B-1 01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

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

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

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

Chief Air Enforcement
Air and Radiation Branch
EPA Region V
77 West Jackson Boulevard
Chicago, Illinois 60604

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 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 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.

Send any application for a permit or permit amendment to:

Fiscal Services
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

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

AQ Compliance Tracking Coordinator
Industrial Division
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

TABLE B: ONE TIME SUBMITTALS OR NOTIFICATIONS**B-2** 01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

What to send	When to send	Portion of Facility Affected
Application for Permit Reissuance	due 180 days before 05/14/2003. The application shall describe the facility (in terms of emission units, stacks, etc.) as it exists at the time of the application. Updated stack information shall be provided for the pilot plant equipment.	Total Facility
Notification of the Actual Date of Initial Startup	due 15 days after Initial Startup . Submit the name and number of each unit and the actual date of initial startup of each unit. This applies to new or existing units that become affected facilities under 40 CFR Section 60.40c after permit issuance.	EU007
Notification of the Actual Date of Initial Startup	due 15 days after Initial Startup. Submit the name and number of each unit and the actual date of initial startup of each unit. This applies to new, reconstructed, or modified units under 40 CFR Section 60.440.	EU002, EU130
Notification of the Actual Date of Initial Startup	due 15 days after Initial Startup. Submit the name and number of each unit and the actual date of initial startup of each unit. This applies to new, reconstructed, or modified units under 40 CFR Section 60.710.	EU003, EU131
Notification of the Anticipated Date of Initial Startup	due 30 days before Anticipated Date of Initial Startup , but no more than 60 days before. Submit the name and number of each unit and the anticipated date of initial startup for each unit. This applies to new or existing units that become affected facilities under 40 CFR Section 60.40c after permit issuance.	EU007
Notification of the Anticipated Date of Initial Startup	due 30 days before Anticipated Date of Initial Startup, but no more than 60 days before. Submit the name and number of each unit and the anticipated date of initial startup for each unit. This applies to new or reconstructed affected facilities under 40 CFR Section 60.440.	EU002
Notification of the Date Construction Began	due 30 days after Start Of Construction. Submit the name and number of each unit and the date construction of each unit began. This applies to new or existing units that become affected facilities under 40 CFR Section 60.40c after permit issuance.	EU007
Notification of the Date Construction Began	due 30 days after Start Of Construction. Submit the name and number of each unit and the date construction of each unit began. This applies to new or reconstructed affected facilities under 40 CFR Section 60.440.	EU002, EU130
Notification of the Date Construction Began	due 30 days after Start Of Construction. Submit the name and number of each unit and the date construction of each unit began. This applies to new or reconstructed affected facilities under 40 CFR Section 60.710.	EU003, EU131
When the permittee installs this piece of control equipment, they shall send to the MPCA a Notification	due 30 days after Equipment Installation	CE001, CE002, CE004
When the permittee installs this piece of control equipment, they shall send to the MPCA a Notification	due 90 days after Equipment Installation	CE011

TABLE B: RECURRENT SUBMITTALS**B-3** 01/24/13

Facility Name: 3M - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015 - 010

What to send	When to send	Portion of Facility Affected
Compliance Status Report	due 30 days after end of each calendar half-year following permit issuance . The report shall include the information listed for EU116 listed in Table A. Note: Permit Issuance is not the Compliance Date	EU116
Semiannual Deviations Report	due 30 days after end of each calendar half-year starting 05/14/1998 . 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 starting 05/14/1998 (April 1). The Annual Report shall qualitatively describe the changes made at the R&D facility during the previous calendar year. The report shall document the background information and results of the VOC evaluation, including the VOCs. The report shall also include the results of the R&D Evaluation described in Appendix III of this permit. This report may be submitted with the annual emissions inventory, but it shall be a separate document marked as the Annual Report.	Total Facility
Compliance Certification	due 31 days after end of each calendar year starting 05/14/1998 . (for the previous calendar year). The Permittee shall submit this on a form approved by the Commissioner, both to the Commissioner and to the US EPA regional office in Chicago. This report covers all deviations experienced during the calendar year.	Total Facility

APPENDIX I: Processes Included in BACT

Facility Name: 3M - - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015-010

Processes Included in BACT:

The purpose of the BACT analysis is to address all R&D equipment—in laboratories, pilot plants, machine shops, and carpentry shops—with regard to volatile organic compounds (VOC) emissions. If the equipment is similar in purpose, emission quantities, and exhaust stream concentrations to equipment explicitly included in the BACT analysis, then it will be considered to be part of this BACT analysis. This BACT analysis covers the following emission units (EU): EU001 through EU004, EU008 through EU020, EU022 through EU034, and EU101 through EU122. Except for EU116, Pilot Plant 16 is no longer considered an R&D unit.

The following emission units are **not** part of the BACT review:

- Boilers at Bldg. 210
- Emergency generators
- Cooling towers
- Outdoor storage tanks
- Gas station
- Firm natural gas boilers
- Firm natural gas combustion equipment

Equipment that has an existing air permit (other than those listed above) is included within the scope of the analysis.

R&D VOC Process Description:

R&D describes operations using a wide variety of input materials with a wide variety of small, often modular, multipurpose pieces of equipment with the purpose of developing new, innovative products, processes, and/or technologies. The processes encompassed within R&D at 3M Center are many and varied. The 3M Center Emissions Study identified different types of processes that are used. Some emit VOC, PM/PM₁₀, or both, some are non-emitting. A list of the VOC processes is presented below. These processes include: the 39 identified by the 3M Center Emission Study, all previously permitted equipment, all equipment identified in the pilot plants (updated 1997), and the generic equipment list included in the 3M Center R&D permit application.

Although the processes identified appear to be distinct, much of the equipment is used for multiple purposes and uses a wide variety of chemicals. R&D includes bench-, off-the-bench, and pilot-plant-scale processes, as well as machine shop and carpentry shop activities that support them. Pilot-plant-scale processes have by far greater emissions than a similar bench- or off-the-bench scale process.

R&D VOC Processes Included in BACT		
Absorbing/Adsorbing	Foaming	Photo Processing
Analytical Testing	Filtering	Plating
Aqueous Removal	Firing/Baking (Furnace)	Printing
Chilling	Flagging (Cutting)	Pumping
Cleaning	Grinding	Purifying
Coating/Drying	Hand Spreads	Reacting
Combustion	Heating	Sanding
Compressing	Homogenizing	Sawing
Condensing	Hot Melt Application	Screening
Crushing	Humidifying/Moisturizing	Separator
Curing	Imaging	Sieving
Cutting/Drilling	Lathing	Solvent Tempering
Development	Material Handling, Pouring	Specification Testing
Distilling	Milling	Sterilizers (ethylene oxide)
Drying	Miscellaneous Laboratory Activities	Spraying
Electrophotography	Mixing	Storing/Container/Tanks
Etching	Ozone Generating Units	Treating
Extracting	Packaging	Weighing
Extruding	Packaging Aerosols	Welding/Soldering
Fluidized Bath/Bed		Wet Grinding

APPENDIX II: R&D Survey Information

Facility Name: 3M - Research Center - Maplewood

Permit Number: 12300015-010

R&D Survey Information:

3M's approach to safety, health, and environmental issues for R&D is contained in a general set of standard operating procedures called the 3M Guide to Laboratory Practices manual (3M Guide). The 3M Guide is updated annually, available electronically, and is used regularly by R&D employees. This set of good laboratory management practices are highlighted or updated periodically in a newsletter called "3M Laboratory Guidelines" and are typically published monthly in electronic and paper form. 3M's approach incorporates "Four Cardinal Rules" described below:

Four Cardinal Rules of Hazardous Waste Management at 3M Center See Section 16 of 3M Guide

1. Hazardous waste must be packaged and labeled as such immediately
2. Never sewer capturable amounts of hazardous materials
3. Never evaporate for the purpose of disposal - keep containers closed
4. Always follow the compactor/dumpster policy

In addition to these rules, the 3M Guide contains the following key elements that relate to air emissions:

- Procedures for ordering chemicals through central locations. This allows purchases to be reviewed and tracked for the site.
- A chemical hygiene plan with procedures and control measures to protect employees from chemical exposures, per the OSHA Standard 29 CFR Section 1910.1450.
- Processes that prohibit using evaporation for the purpose of solvent disposal.
- Procedures for minimizing lab waste and chemical purchases.
- Procedures for control containment and cleanup of lab spills.
- Procedures for making routine surveys to verify that the lab practices are being followed.

APPENDIX III

Facility Name: 3M - Research Center - Maplewood

Permit Number: 12300015-010

R&D Evaluation Procedure:

By April 1 of each year, the Permittee shall verify that the pilot plant operations that are covered by the R&D BACT analysis meet the definition of R&D and are within the scope of the BACT analysis by following the procedure given below.

Activities will be considered to be R&D for the purposes of this permit and the BACT analysis if all of the following criteria are met:

1. They are operated under the close supervision of technically trained personnel, and they are conducted for the primary purpose of theoretical research and development into new or improved processes or products;
2. For any given pilot plant, the percentage of hours worked with an "Intent-to-distribute for sale in commerce", or ITDFSC, in a calendar year are less than or equal to 15 percent of the total hours worked in the pilot plant in that calendar year; AND
3. For pilot plant emissions units not listed in Table A1 of the BACT, the actual emissions in a calendar year are less than 1 tpy of VOC, and for units listed in Table A1 of the BACT, the actual emissions are less than the Method 5¹ PTE number listed for that unit in Table A1 of the BACT.

The Permittee shall include the results of this analysis in the Annual Report listed in Table B of this permit. This report will include the hours and percentage of ITDFSC activities in each pilot plant and information on any emission unit found to have emitted more than 1 tpy of VOC. If the emission unit actual emissions are greater than 1 tpy of VOC, but are less than Method 5¹ PTE in Table A1 of the BACT, this information shall also be provided.

If any pilot plant is found to have ITDFSC activities at greater than 15 percent, or if any emission unit had actual emissions of VOC greater than the Method 5¹ PTE number in Table A1 of the BACT analysis, or greater than 1 tpy of VOC for those units not included in Table A1 of the BACT, the Permittee shall do the following:

1. Meet with the MPCA within 30 days of the date of submitting the Annual Report. The Permittee shall come to the meeting prepared to explain the results of the analysis. This meeting will be used to discuss the reasons for the results and what possible action is necessary, if any.
2. If a permit is found to be necessary, the Permittee shall submit a schedule for applying for the appropriate permit within 14 days of the meeting.

¹ The Method 4 PTE numbers listed in Table A1 shall be used instead of the Method 5 numbers for the two Building 270 coaters, since these units are limited to their Method 4 PTE.

APPENDIX IV

Facility Name: 3M - Research Center - Maplewood

Permit Number: 12300015-010

3M Center Chemical Tracking Protocol

April 2004

Overview

In order to demonstrate compliance with certain requirements of the Title V Clean Air Act (CAA) Operating Permit for research and development/laboratory/maintenance and pilot plant activities at 3M Center, 3M will track reagent and technical grade (greater than or equal to 95 percent purity) purchases of volatile organic compounds (VOC), as indicated by the MSDS for those products. The tracked chemicals are a list of 1059 different VOCs, prepared based on an evaluation (most recently updated in 2001) of all chemicals used in 3M manufacturing, in light of the following 3M definition of VOC: "VOC means any compound containing at least one atom of carbon. This includes any such organic compound with a vapor pressure of 0.1 mm Hg at 20° C or greater, or, if the vapor pressure is unknown, consists of twelve carbon atoms or less. The U.S. Environmental Protection Agency has exempted as VOC certain non-reactive compounds." This list comprises virtually all VOCs that might be purchased at 3M Center. Because previous tracking of VOC chemicals comprised the majority (94%) of all hazardous air pollutant (HAP) emissions from R&D, including pilot plants, tracking of 1059 chemicals are likely to capture nearly all HAP purchases as well.

3M will record the amounts of the VOC materials purchased, determine a 12-month rolling sum, verify compliance with pressure sensitive tape coating equipment (40 CFR pt. 60, subp. RR) and magnetic coating equipment (40 CFR pt. 60, subp. SSS) record-keeping requirements* as well as any future caps and/or mini-caps, and have records available electronically on site for inspection (**Attachment #1**). The protocol is designed to provide assurances that tracking VOC purchases continue to accurately represent emissions during the term of the permit.

*Note: These records are kept in accordance with NSPS Subparts RR(50 ton/yr usage limit) and SSS(39.5 ton/yr usage limit; 385 ton/yr modified sources usage limit). The estimate of the projected annual amount of solvent used required by NSPS Subpart SSS(40 CFR 60.714(a)) is equal to the current 12-month rolling sum.

Background Information

VOC Purchases Tracking

In the past the VOC Regulatory Records have been restricted to including only the top VOC chemicals purchased by volume. The quantities of these chemicals were then adjusted to determine the total VOC purchased each month by scaling the target VOC purchases with a VOC Scaling Factor. Since the time this procedure was developed and implemented, the capabilities for electronic tracking of VOC purchases have improved. Therefore, 3M is eliminating this scaling factor and instead

tracking and recording the actual quantities of 1059 VOC chemicals purchased, which are nearly all VOCs purchased.

3M will track the reagent and technical grade purchases of VOCs on the attached list and as indicated by MSDSs on a monthly basis and shall specify whether they were purchased by a specific pilot plant or R&D. The Annual VOC Regulatory Record will provide totals for all VOC purchases by pilot plants and R&D laboratories for the previous calendar year. Past monthly and annual records can be accessed at any time by computer.

The monthly records will document whether the VOCs were purchased by a specific pilot plant or R&D location as well as in which dock they were delivered to. It must be noted that there are two building complexes which share a dock. These are complex 208/218/219 with the dock in building 219 and 250/251/252 with the dock in building 252. Any purchases that were made in 208 or 218 were actually delivered to 219 and all purchases made in 250 and 251 will be delivered to 252. In the report "by building", the purchases are tracked according to the "deliver to" column that is filled in by the person placing the order. Therefore orders might show up under 208/218 or 250/251 even though they were actually sent to the appropriate docks. Some purchasers are familiar with the dock situation and enter in the correct dock for delivery, therefore these will fall under 219 or 252 even though they were not necessarily ordered from that building. As noted above, VOCs also will be recorded by pilot plant, which will indicate the specific pilot plant receiving the chemical (which is the relevant information, for purposes of tracking).

It must also be noted that any building or pilot plant that has not ordered a chemical within the 12 months that the rolling sum covers will not be listed on the final report. For instance, there might only be 12 pilot plants out of the 14 that show up on the monthly report, meaning that the two that do not show up have not purchased any VOCs within the last 12 months. As soon as they purchase a VOC, the total will show up for that month, along with zeros in all the previous 11 month columns. This is also the same in respect to the building monthly report. A building that has not ordered any chemicals within the last 12 months will not be listed until they do purchase a chemical.

VOC Purchase Calculation Method

By the 20th of each month, 3M shall do the following calculation for all facility non-combustion VOC Purchases:

- a. Calculate the VOC purchased, in tons, for the previous month using the VOC purchase data, and the VOC material content data.
- b. Calculate the cumulative 12-month VOC purchases in tons using data from the previous 12 months of calculations.

Annual Report

3M shall submit an annual report by April 1 that documents the results of the total VOC purchases for the previous calendar year. The top chemicals purchased will also continue to be listed within the annual report. A representative list of these chemicals from past years can be found in **Attachment #2**.

Attachment #1 - Example Monthly Report

Stockroom Inventory System
PEPS VOC Permit By Building Report
For Transactions From: ??/?/???? To ??/?/????

[illegible]

Stockroom Inventory System
PEPS VOC Permit By Building Report
For Transactions From: ??/?/???? To ??/?/????

[illegible]

Attachment #2

Twenty Most Commonly Purchased Chemicals at 3M Center

1- Octene
2- 2-propanol
Acetonitrile
Chloroform Cyclohexanone
Dichloromethane
Ethyl acetate
Ethyl alcohol
Ethylene glycol
Ethylene oxide
Heptane
Hexane
Isopropanol
Methyl Ethyl Ketone
Methyl Alcohol
Methyl Isobutyl Ketone
Tetrachloroethylene
Tetrahydrofuran
Toluene
Xylenes

APPENDIX V: Stack Parameters Relied Upon to Demonstrate Compliance with the NAAQS for PM10

Facility Name: 3M - - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015-010

Stack Parameters Relied Upon to Demonstrate Compliance with the NAAQS for PM10

AERMOD View - Source Parameters		
MS Excel - Lakes Format: version 1.0		
Parameters	Units	Description
Type =		POINT, VOLUME
ID =		Source ID up to 8 characters
Desc =		Optional description
Base_Elev =	[m]	Source base elevation above mean sea level
Height =	[m]	Release height above ground
Diam =	[m]	Stack/Area diameter (POINT and AREA_CIRC only)
Exit_Vel =	[m/s]	Exit velocity (POINT only)
Exit_Temp =	[K]	Exit temperature (POINT only)
Release Type =		ALL VERTICAL
SigmaY =	[m]	Initial sigma Y (VOLUME only)
SigmaZ =	[m]	Initial sigma Z (all AREA and VOLUME only, optional for all AREA)
Length_X =	[m]	X side length (OPEN PIT, AREA and VOLUME only, optional for VOLUME, will be used to calculate Sigma Y)
Emission_Rate	[g/s or g/s/m2]	Emission rate g/s for POINT and VOLUME, g/s/m2 for all AREA and OPENPIT)
X1 =	[m]	X coordinate of source location [m]
Y1 =	[m]	Y coordinate of source location [m]

Stack ID	Base Elev [m]	Stack Height [m]	Exit Diameter [m]	Exit Velocity [m/s]	Exit Temp. [K]	Sigma Y [m]	Sigma Z [m]	Length X [m]	Emission Rate: 24-hr [g/s]	X1 [m]	Y1 [m]
SV003_A	302.88	32.23	1.33	11.6	432.44				0.23	500124.7	4977965.1
SV004_A	302.92	32.23	1.83	8.09	444.11				0.34	500135.4	4977964.3
SV005_A	302.98	32.23	1.83	8.09	444.11				0.34	500146.4	4977964.3
SV006_A	303.04	32.23	1.83	12.4	457.59				0.4533	500157.1	4977964.4
SV043_A	301.74	30.48	1.83	12.4	457.6				0.4533	499985.6	4977966.5
SV041_A	303.85	16.15	7.32	22.44	310				0.0232	500244.5	4978004.9
SV041_B	303.92	16.15	7.32	22.44	310				0.0232	500233.4	4978004.1
SV041_C	303.82	14.94	6.096	13.74	310				0.0108	500175.1	4978010.4
SV041_D	303.73	14.94	4.88	42.95	310				0.0108	500164.1	4978009.6
SV041_E	303.68	14.94	4.88	42.95	310				0.0108	500153.9	4978008.8
SV041_F	303.68	14.33	6.096	41.23	310				0.0108	500141.3	4978011.2
SV041_G	303.65	14.33	6.096	41.23	310				0.0108	500131	4978010.4
SV041_H	303.65	14.33	6.096	41.23	310				0.0108	500122.4	4978011.2
SV041_I	303.69	14.94	6.096	13.74	310				0.0108	500174.4	4978001.7
SV041_J	303.62	14.94	4.88	42.95	310				0.0108	500163.3	4978002.5
SV041_K	303.57	14.94	4.88	42.95	310				0.0108	500153.9	4978001.7
SV041_L	303.54	14.33	6.096	41.23	310				0.0108	500141.3	4978002.5
SV041_M	303.51	14.33	6.096	41.23	310				0.0108	500131.8	4978001.7
SV041_N	303.47	14.33	6.096	41.23	310				0.0108	500122.4	4978000.9
SV041_O	303.59	16.15	7.315	25.81	310				0.0108	500105.8	4978008.8
SV041_P	303.55	16.15	7.315	25.81	310				0.0062	500094.8	4978007.2
SV041_Q	303.45	16.15	7.315	25.81	310				0.0216	500106.6	4978000.9
SV041_R	303.59	16.15	7.315	25.81	310				0.0062	500106.6	4978008.8
SV041_S	303.44	14.1	7.315	6.34	306.37				0.0185	500062.9	4978008.7
SV014_R	301.89	13.11	0.33	4.97	298.15				0.0106	499716.9	4977994.2
SV015_R	301.36	13.11	0.33	3.59	298.15				0.0106	499731	4977943
SV018_R	304.93	13.11	0.33	1.93	298.15				0.0255	499892.4	4977517
SV133_R	299.24	10.36	0.58	12.25	298.15				0.2329	500428.4	4977877.8
SV020_R	303.76	21.03	0.61	10.91	298.15				0.3079	500017.9	4977577.2

SV022_R	305.15	13.72	0.27	6.6	298.15				0.0043	500728.1	4977920.5
SV023_R	305.22	13.72	0.67	6.7	298.15				0.1013	500717	4977941.7
SV025_R	302.13	7.93	0.67	7.5	298.15				0.0354	500635.3	4977941.5
SV026_R	300.16	10.36	0.46	3.84	298.15				0.0068	500472.8	4978413.4
SV027_R	300.41	10.36	0.86	8.13	298.15				0	500471.1	4978411.7
SV028_R	300.46	10.36	0.86	8.13	298.15				0.0148	500468.5	4978412
SV029_R	300.6	10.36	0.61	6.79	298.15				0.0033	500470.3	4978410.2
SV031_R	304.4	10.36	0.67	10.32	298.15				0.0135	500476.9	4978376
SV032_R	305.66	10.36	0.67	7.9	298.15				0.0144	500476.6	4978360.9
SV033_R	306.71	10.36	0.67	9.19	298.15				0.0462	500454	4978340.2
SV134_R	305.73	18.29	0.04	4.7	298.15				0.0257	500452.8	4978367.4
SV012_A	302.95	21.35	0.13	30.25	478.33				0.025	500089.2	4977972.7
SV022_A	303.13	4.27	0.13	97.24	478.33				0.01	500152.9	4977972.7
SV025_A	298.41	0	0.2	0.001	478.33				0.007	500265.2	4977653
SV027_A	302.16	0	0.2	35.53	478.33				0.008	500478	4977607.4
SV028_A	301.2	10.06	0.3	46.01	744.33				0.095	499854.5	4978125.8
SV029_A	300.89	10.06	0.3	46.01	744.33				0.095	499854.5	4978123.7
SV030_A	300.51	10.06	0.3	46.01	744.33				0.095	499854.5	4978120.4
SV031_A	298.05	32.32	0.23	8.98	478.33				0.082	500375.3	4977708.8
SV032_A	304.24	3.66	0.2	58.13	478.33				0.071	500825.2	4977585.6
SV033_A	304.22	3.66	0.2	58.13	478.33				0	500821.7	4977585.6
SV034_A	304.22	3.66	0.2	58.13	478.33				0	500821.7	4977585.6
SV035_A	304.24	3.66	0.2	58.13	478.33				0.071	500825.2	4977585.6
SV036_A	304.26	3.66	0.2	58.13	478.33				0.071	500828.8	4977585.6
SV037_A	307.06	16.77	0.2	0.001	478.33				0.079	500434	4978309.2
SV038_A	303.35	17.07	0.25	38.56	478.33				0.059	500151.5	4978335.5
SV039_A	304.08	17.07	0.25	38.56	478.33				0.071	500151.5	4978324.4
SV040_A	304.98	17.07	0.24	53.41	478.33				0.089	500151.5	4978310.6
SV047_A	302.52	1.98	0.08	80.83	478.33				0.011	499942.1	4978747.9
SV050_A	305.84	4.27	0.13	34.94	477.94				0.009	500164	4977974.1
SV030_R	303.37	12.15	0.2	11.02	298				0.0101	500471.7	4978184.2
BLDG 201	306.61	2.3				25.5	2.14	109.7	0.008667	499749	4977556
BLDG 207	303.57	2.8				23.2	2.56	99.76	0.01889	499709	4977746

BLDG 209	301.51	4.5				27.2	4.23	117	0.02651	499718	4977935
BLDG 216	300.21	3.2				20.4	2.98	87.72	0.0008	500440	4977930
BLDG 218	302.11	2.3				19.1	2.14	82.13	0.02132	500137	4977897
BLDG 219	302.33	2.3				15.1	2.14	64.93	0.01661	500240	4977881
BLDG 223	297.49	9.65				17.1	8.98	73.53	0.00226	500284	4977593
BLDG 224	298.24	9.7				18.4	9.02	79.12	0.002617	500436	4977550
BLDG 230	304.38	4.25				18.6	3.95	79.98	0.01458	499971	4977542
BLDG 235	305.74	4.2				29.5	3.91	126.9	0.06881	500806	4977949
BLDG 236	304.97	2.3				30	2.14	129	0.097	501106	4977840
BLDG 250	300.64	3.2				12.5	2.98	53.75	0.03643	500451	4978415
BLDG 251	306.85	3.2				18.4	2.98	79.12	0.002383	500452	4978335
BLDG 252	302.77	3.2				19.7	2.98	84.71	0.0304	500507	4978227
BLDG 253	301.31	2.4				5.11	2.27	21.97	0.000517	500545	4978124
BLDG 255	303.55	3.7				9.72	3.4	41.8	0.009287	500638	4978484
BLDG 260	306.64	11.9				16.2	11.1	69.66	0.04112	500213	4978262
BLDG 270	306.05	10.4				26.1	9.63	112.2	0.182	500047	4978239
BLDG 275	306.03	17.5				20	16.3	86	0.005411	500120	4978208
BLDG 210	302.9	6.6				10.6	6.09	45.58	0.06941	500117	4977968.5

APPENDIX VI

Facility Name: 3M - - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015-010

3M – Administrative Offices (Permit # 12300694-003) Operating Limitations

1. Remove emergency generator EU026 from Permit No. 12300694-003
2. Only 3 of the 5 generators at Building 243 (EU032, EU033, EU034, EU035 and EU036 from Permit No. 12300694-003) may be operated at one time.
3. Boilers 3-5 (EU003, EU004, EU005 from Permit No. 12300694-003) limited to #2 fuel oil, #6 fuel oil is no longer allowed.

APPENDIX VII: Worst-case Solids Contents and Transfer Efficiencies Used for Spray Booth PTE Calculations

Facility Name: 3M - - R & D Facility - Maplewood Bldg 201

Permit Number: 12300015-010

Worst-case Solids Contents and Transfer Efficiencies Used for Potential to Emit Calculations

MPCA Emission Unit ID No.	Location Description	Minimum Transfer Efficiency	Maximum Solids Content (weight %)
EU014	209-C163A	75%	20%
EU015	209-C163A	75%	20%
EU018	216-2S	75%	72%
EU020	230-G43B	75%	100%
EU022	235-WN116	75%	40%
EU023	235-A-353	45%	100%
EU025	240-SE Wall	75%	100%
EU026	250-W-126A	70%	50%
EU028	250-E118	75%	50%
EU029	250-E123A	75%	75%
EU031	251-B230	75%	75%
EU032	251-B230	75%	80%
EU033	251-B330	75%	80%
EU133	230-S118	45%	55%
EU134	251-B354	75%	100%