

**DRAFT  
TECHNICAL SUPPORT DOCUMENT**

**For**

**DRAFT/PROPOSED AIR EMISSION PERMIT NO. 12300015-010**

This technical support document (TSD) is intended for all parties interested in the draft/proposed permit and to meet the requirements that have been set forth by the federal and state regulations (40 CFR § 70.7(a)(5) and Minn. R. 7007.0850, subp. 1). The purpose of this document is to provide the legal and factual justification for each applicable requirement or policy decision considered in the preliminary determination to issue the draft/proposed permit.

**1. General Information**

**1.1 Applicant and Stationary Source Location:**

**Table 1. Applicant and Source Address**

<b>Applicant/Address</b>	<b>Stationary Source/Address (SIC Code: 8731/2672)</b>
3M Company I-94 & McKnight Rd Maplewood Ramsey County	3M – R&D Facility - Maplewood I-94 & McKnight Rd Maplewood Ramsey County
Contact: <b>Ms. Tina Mumm</b> Phone: <b>651-737-3606</b>	

**1.2 Facility Description**

The 3M Company Facility in Maplewood, Minnesota is one stationary source under NSR and the Part 70 Operating Permit Program, but is covered by 2 separate permits: the Research and Development (R&D facility) activities which are covered by this permit, and the 3M - Administrative Offices activities which are covered by current Permit Number 12300694-003; these are geographically overlapping areas. In addition, the site is considered one stationary source under the National Emissions Standards for Hazardous Air Pollutants for Source Categories (NESHAPs) in 40 CFR pt. 63.

The activities covered by this permit consist of research and development laboratories, pilot plants, production operations, and maintenance operations. The Center occupies approximately 425 acres in Maplewood, MN. Activities that are strictly R&D include laboratories, bench-scale, off the bench units, spray booths, and pilot plants. There are 12 buildings housing R&D facility activities.

These operations result in emissions of volatile organic compounds (VOCs), hazardous air pollutants (HAPs), carbon monoxide (CO), nitrogen oxides (NO<sub>x</sub>), sulfur dioxide (SO<sub>2</sub>), and particulate matter

(PM/PM<sub>10</sub>/PM<sub>2.5</sub>). The permit requires particulate controls on all spray booths and carpentry shops. The permit has operating restrictions on all spray booths, natural gas combustion sources, and several other emissions units. Some of these limits were relied on as PTE in the BACT analysis, while some were previous limits taken to avoid the NSR major modification requirements.

Due to the R&D nature of many emissions units at the facility, there are a wide variety of input materials with a wide variety of processes and technologies. The facility has BACT limits for VOCs which includes all R&D equipment at the facility.

### **1.3 Description of the Activities Allowed by this Permit Action**

This permit action is a major amendment which incorporates three permit applications received on March 18, 2008, June 11, 2008, and August 17, 2012.

#### **March 18, 2008 – Major Amendment Permit Application (DQ1972)**

This permit action authorizes changes in operating limits for spray booth EU133. This is a major amendment since the limits are Title I conditions to avoid classification as a major modification under 40 CFR § 52.21, a source specific limit. The new spray gun limit is increased to 125 pounds per hour (lb/hr). The Permittee may add the use of a pressurized vessel spray gun in addition to the compressor driven spray gun. The hours of operation limit for the spray booth, to include the total hours of the compressor driven spray gun and the pressurized vessel spray gun, will remain at 100 hours per year. Emissions are vented through control equipment meeting the requirements of CE016, which includes a hood enclosure with a 2-panel filter configuration. The updated emissions based on this modification were included in the recent PM<sub>10</sub> modeling.

#### **June 11, 2008 – Major Amendment Permit Application (DQ2096)**

This permit action authorizes the construction and operation of a new spray booth, EU134, in building 251. The new spray booth will have a maximum spray gun limit of 250 lb/hr and an operational limit of 475 hours per year. Emissions from EU134 will be vented to control equipment meeting the requirements of CE016, which is a hood enclosure with a 2-panel filter configuration. The emissions from EU134 were included in the recent PM<sub>10</sub> modeling.

#### **August 17, 2012 – Major Amendment Permit Application (DQ4109)**

The May 15, 2012, Major Amendment required the Permittee to submit a major permit amendment to incorporate operational limits that were assumed through the most recent MPCA-approved PM<sub>10</sub> modeling (MPCA approval date March 6, 2012). These limits had been included in Appendix VI to permit number 12300015-009 and are now being fully incorporated into Table A of this permit in accordance with MPCA policy. This is a major amendment since the modeling parameters are site specific limits. Table 2 provides an overview of changes made to the permit to incorporate the operating parameters assumed in modeling.

**Table 2. Incorporating Operating Limits Assumed in PM<sub>10</sub> Modeling and Other Related Changes**

<b>EU or CE</b>	<b>Changes and other comments</b>
EU014	<ul style="list-style-type: none"><li>• Added limit on daily operating hours.</li><li>• Added monitoring and recordkeeping for daily operating hours.</li><li>• Revised control equipment requirement to require venting to control meeting requirements of CE014 (total enclosure, double panel filter, 98% overall control).</li><li>• Added requirement documenting 'worst-case' assumptions used in calculating emissions.</li></ul>
EU015	<ul style="list-style-type: none"><li>• Added limit on daily operating hours.</li><li>• Added monitoring and recordkeeping for daily operating hours.</li><li>• Revised control equipment requirement to require venting to control meeting requirements of CE014 (total enclosure, double panel filter, 98% overall control).</li><li>• Added requirement documenting 'worst-case' assumptions used in calculating emissions.</li></ul>
EU018	<ul style="list-style-type: none"><li>• Added limit on daily operating hours.</li><li>• Added monitoring and recordkeeping for daily operating hours.</li><li>• Revised control equipment requirement to require venting to control meeting requirements of CE014 (total enclosure, double panel filter, 98% overall control).</li><li>• Added requirement documenting 'worst-case' assumptions used in calculating emissions.</li></ul>
EU020	<ul style="list-style-type: none"><li>• Added limit on daily operating hours.</li><li>• Added monitoring and recordkeeping for daily operating hours.</li><li>• Revised control equipment requirement to require venting to control equipment meeting the requirements of CE013 (hood, double panel filter, 80% overall control).</li><li>• Added requirement documenting 'worst-case' assumptions used in calculating emissions.</li></ul>
EU022	<ul style="list-style-type: none"><li>• EU022 control requirements were moved to CE015 in order to retain the applicable Title I conditions to avoid major modification under 52.21 and add the more stringent control requirements that were assumed in the Title V modeling.</li><li>• Added limit on daily operating hours.</li><li>• Added monitoring and recordkeeping for daily operating hours.</li><li>• Added requirement documenting 'worst-case' assumptions used in calculating emissions.</li></ul>
EU023	<ul style="list-style-type: none"><li>• Added new maximum spray gun capacity.</li><li>• Added limit on daily operating hours.</li><li>• Added monitoring and recordkeeping for daily operating hours.</li><li>• Revised control equipment requirement to require venting to control meeting requirements of CE014 (total enclosure, double panel filter, 98% overall control).</li><li>• Added requirement documenting 'worst-case' assumptions used in calculating emissions.</li></ul>
EU025	<ul style="list-style-type: none"><li>• Added limit on daily operating hours.</li><li>• Added monitoring and recordkeeping for daily operating hours.</li><li>• Revised control equipment requirement to require venting to CE015.</li><li>• Added requirement documenting 'worst-case' assumptions used in calculating emissions.</li></ul>
EU026	The Permittee states this is a spray can only booth. The Title I conditions related to compressor use and spray gun limits will be re-evaluated at the next Title V permit reissuance.
EU027	This unit has been removed from the facility; all requirements have been deleted.

EU or CE	Changes and other comments
EU028	<ul style="list-style-type: none"> <li>Added limit on daily operating hours.</li> <li>Added monitoring and recordkeeping for daily operating hours.</li> <li>Added requirement documenting 'worst-case' assumptions used in calculating emissions.</li> </ul>
EU029	<ul style="list-style-type: none"> <li>Added limit on daily operating hours.</li> <li>Added monitoring and recordkeeping for daily operating hours.</li> <li>EU029 control requirements were moved to CE015 in order to retain the applicable Title I conditions to avoid major modification under 52.21 and add the more stringent control requirements that were assumed in the Title V modeling.</li> <li>Added requirement documenting 'worst-case' assumptions used in calculating emissions.</li> </ul>
EU031	<ul style="list-style-type: none"> <li>Added annual hours of operation limit based on modeling. This is more stringent than the BACT limit, which also applies.</li> <li>Added limit on daily operating hours.</li> <li>Added monitoring and recordkeeping for daily operating hours limit.</li> <li>Revised control equipment requirement to require venting to control equipment meeting the requirements of CE013 (hood, double panel filter, 80% overall control).</li> <li>Added requirement documenting 'worst-case' assumptions used in calculating emissions.</li> </ul>
EU032	<ul style="list-style-type: none"> <li>Added annual hours of operation limit based on modeling. This is more stringent than the BACT limit, which also applies.</li> <li>Added daily operating limit.</li> <li>Added recordkeeping for daily operating hours limit.</li> <li>Revised control equipment requirement to require venting to control equipment meeting the requirements of CE013 (hood, double panel filter, 80% overall control).</li> <li>Added requirement documenting 'worst-case' assumptions used in calculating emissions.</li> </ul>
EU033	<ul style="list-style-type: none"> <li>Added daily operating limit.</li> <li>Revised control equipment requirement to require venting to control equipment meeting the requirements of CE013 (hood, double panel filter, 80% overall control).</li> <li>Added recordkeeping for daily operating hours limit.</li> <li>Added requirement documenting 'worst-case' assumptions used in calculating emissions.</li> </ul>
EU034	<ul style="list-style-type: none"> <li>Included the control equipment requirements (new CE017) at the EU level, since CE008 conditions were revised to accommodate new requirements for modeling.</li> </ul>
EU133	<ul style="list-style-type: none"> <li>Made changes in operating limits which were requested through the March 18, 2008, application (DQ1972) and was used as an assumption in the PM<sub>10</sub> modeling.</li> <li>Added limit on maximum spray gun rate, based on permit amendment and model.</li> <li>Added limit on daily operating hours.</li> <li>Added monitoring and recordkeeping for daily operating hours.</li> <li>Added requirement documenting 'worst-case' assumptions used in calculating emissions.</li> <li>Added PM/PM<sub>10</sub>/ PM<sub>2.5</sub> control efficiencies.</li> <li>Added requirement for operation as hood.</li> <li>Added requirement for 2-panel configuration of CE012.</li> </ul>
CE003	There are no changes to the requirements under CE003, but some emission units are no longer associated with this control.
CE005	There are no changes to the requirements under CE005, but some emission units are no longer associated with this control.

EU or CE	Changes and other comments
CE008	There are no changes to the requirements under CE008, but some emission units are no longer associated with this control.
CE009	<ul style="list-style-type: none"> <li>Existing PM<sub>10</sub> control efficiency (Limit to avoid major modification under 40 CFR 52.21) remains the same since it is more stringent than the control efficiency used in PM<sub>10</sub> modeling.</li> <li>Existing PM control efficiency was not changed.</li> <li>Added PM<sub>2.5</sub> control efficiency.</li> <li>Added requirement for operation as a total enclosure</li> </ul>
CE013	<p>This is a new control grouping that accommodates existing spray booths with new control requirements based on limits assumed in the Title V modeling. Requirements for CE013 include:</p> <ul style="list-style-type: none"> <li>Revised PM, PM<sub>10</sub> control efficiency to reflect the modeling assumptions.</li> <li>Added PM<sub>2.5</sub> control efficiency.</li> <li>Requirement for operation as hood.</li> <li>Requirement for 2-panel configuration of panel filters.</li> <li>Included monitoring and recordkeeping per current MPCA policy.</li> </ul>
CE014	<p>This is a new control grouping that accommodates existing spray booths with new control requirements based on limits assumed in the Title V modeling. Requirements for CE014 controls include:</p> <ul style="list-style-type: none"> <li>Revised PM/PM<sub>10</sub> control efficiencies for the subject emissions units.</li> <li>Included PM<sub>2.5</sub> control efficiency.</li> <li>Requirements for operation as total enclosure.</li> <li>Requirements for 2-panel configuration of panel filters.</li> </ul>
CE015	<p>This is a new control grouping that accommodates existing spray booths with new control requirements based on limits assumed in the Title V modeling. Requirements for CE013 include:</p> <ul style="list-style-type: none"> <li>Revised PM, PM<sub>10</sub> control efficiency</li> <li>Added PM<sub>2.5</sub> control efficiency.</li> <li>Requirement for operation as hood.</li> <li>Requirement for 2-panel configuration of panel filters.</li> <li>Included monitoring and recordkeeping per current MPCA policy.</li> </ul>
CE017	<p>CE017 includes the existing Title I conditions (from CE008) and the new requirements that came out of modeling.</p> <ul style="list-style-type: none"> <li>Added control efficiency to reflect the modeling assumptions.</li> <li>Added PM<sub>2.5</sub> control efficiency.</li> <li>Requirement for operation as hood.</li> <li>Requirement for 2-panel configuration of panel filters.</li> <li>Included monitoring and recordkeeping</li> </ul>

EU or CE	Changes and other comments
Appendix VI	The following parameters assumed in modeling have been removed from Appendix VI and incorporated into Table A of the permit: maximum spray rates, annual operating limits, daily operating limits, control efficiency, capture type (hood or total enclosure), filter configuration (double panel). Other modeling parameters assumed in modeling have been included in Appendix VII. The operating limits associated with the 3M-Administrative Offices-Maplewood permit (#12300015-003) will remain here until that permit is amended to include these limits.
Appendix VII	Appendix VII has been added to document the Maximum Contents of Materials and Minimum Transfer Efficiencies assumed in 'worst-case' emissions calculations.

### 1.3 Description of Other Changes to the Permit

The following changes were made since the requirements or Appendix information, have been completed.

- Deleted the requirement to submit a permit application to incorporate operational limits based on modeling listed in Appendix VI into this (12300015) permit. This requirement has been met.
- Deleted requirement to submit a permit application to incorporate operational limits listed in Appendix VI into the 3M – Administrative Offices – Maplewood permit (current permit number 12300694-003). This requirement has been met.
- The operating limits related to emission units in the 3M – Administrative Offices – Maplewood permit (current permit number 12300694-003) are retained in Appendix VI until these requirements are incorporated into the 12300694 permit.
- Deleted requirement to submit Modeling Study Results for PM10, since this requirement was met.
- Deleted 'place-holder' modeling language, and replaced it with the applicable Tier 1 modeling language at the Total Facility Level, under the Source Specific Requirements header.
- EU027 has been removed from the Delta facility description since it is no longer in use.
- Under GP003, Facility Wide Firm Natural Gas Cap, removed language related to calculating the natural gas usage for the first 11 months after permit issuance. This time frame has passed and the requirement is no longer needed.
- Citations have been updated to reflect current MPCA policy.

### 1.4 Pending Amendments Not Addressed within this Permit Action

#### November 29, 2006 – Major Amendment application received (DQ 1310)

A major amendment application was received by MPCA on November 29, 2006, for a change in operation for pilot plant 16 (EU116), which exceeded the R&D threshold as defined in the R&D BACT and no longer qualifies under the VOC BACT requirements. In addition, certain emission units within EU116 are subject to 40 CFR Pt. 63, subp. JJJ and/or 40 CFR Pt. 63, subp. JJJ. Due to the scope of changes involved in revising this permit application, the modification will be addressed in a future permitting

action. Specific compliance options and demonstration methods being used to meet 40 CFR Pt. 63, subp. JJJJ and 40 CFR Pt. 63, subp. JJJ will be incorporated at that time.

#### 1.4. Facility Emissions:

Table 3 summarizes the Title I emissions increases associated with the modification of operating limits for spray booth EU133. Table 4 summarizes the Title I emissions increases associated with the addition of spray booth EU134.

**Table 3. Title I Emissions Increase Summary Spray Booth EU133**

<b>Pollutant</b>	<b>Potential Emissions Increase from the Modification (tpy)</b>	<b>Limited Emissions Increase from the Modification (tpy)</b>	<b>NSR/112(g) Significant Thresholds for major sources (tpy)</b>	<b>NSR/ 112(g) Review Required? (Yes/No)</b>
PM	99	0.38	25	No
PM <sub>10</sub>	99	0.38	15	No
PM <sub>2.5</sub>	99	0.38	10	No
NO <sub>x</sub>	0	0	40	No
SO <sub>2</sub>	0	0	40	No
CO	0	0	100	No
Ozone (VOC)	328	6.2	40	No
Lead	0	0	0.6	No
CO <sub>2</sub> e*	0	0	75,000	No

\*Carbon dioxide equivalents as defined in Minn. R. 7007.0100.

**Table 4. Title I Emissions Increase Summary Spray Booth EU134**

<b>Pollutant</b>	<b>Potential Emissions Increase from the Modification (tpy)</b>	<b>Limited Emissions Increase from the Modification (tpy)</b>	<b>NSR/112(g) Significant Thresholds for major sources (tpy)</b>	<b>NSR/ 112(g) Review Required? (Yes/No)</b>
PM	109	0.91	25	No
PM <sub>10</sub>	109	0.91	15	No
PM <sub>2.5</sub>	109	0.91	10	No
NO <sub>x</sub>	0	0	40	No

<b>Pollutant</b>	<b>Potential Emissions Increase from the Modification (tpy)</b>	<b>Limited Emissions Increase from the Modification (tpy)</b>	<b>NSR/112(g) Significant Thresholds for major sources (tpy)</b>	<b>NSR/112(g) Review Required? (Yes/No)</b>
SO <sub>2</sub>	0	0	40	No
CO	0	0	100	No
Ozone (VOC)	285	11.9	40	No
Lead	0	0	0.6	No
CO <sub>2</sub> e*	0	0	75,000	No

\*Carbon dioxide equivalents as defined in Minn. R. 7007.0100.

**Table 5. Facility Classification**

<b>Classification</b>	<b>Major/Affected Source</b>	<b>Synthetic Minor/Area</b>	<b>Minor/Area</b>
PSD	X		
Part 70 Permit Program	X		
Part 63 NESHAP	X		

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

### New Source Review

The facility is an existing major source under New Source Review regulations. As shown in Table 3 and Table 4 above, the potential emission increases from the modifications, even when both modifications are considered together, do not exceed NSR significant thresholds for major sources; therefore, this permit action is not subject to NSR.

The VOC BACT at the 3M R&D Facility allows the Permittee to make changes that are consistent with the R&D process defined in the VOC BACT. This includes changing existing emissions units and adding new emissions units. Any VOC emissions increases due to modifications at emissions units EU133 and EU134 are accommodated in the existing VOC R&D BACT. Additionally, any VOC changes that may occur due to the changes to spray booth operating parameters under the modeling permit amendment application are also accommodated under the VOC BACT. The need to apply for major amendments for the changes authorized in this permit action are due to increases in different regulated pollutants (other than VOC) and the addition of site-specific requirements based on modeling.



#### Part 70 Permit Program

The facility is a major source under the Part 70 permit program.

#### New Source Performance Standards (NSPS)

EU019 is an existing unit subject to 40 CFR pt. 60, subp. RR.

There are no New Source Performance Standards applicable due to the modifications involved in this permit action.

#### National Emission Standards for Hazardous Air Pollutants (NESHAP)

The facility is an existing major source for NESHAPs.

#### Compliance Assurance Monitoring (CAM)

CAM does not apply to the modification allowed in this permit amendment, since the modified spray booth EU133 and the new emission unit EU134 both qualify as other pollutant specific emission units (PSEU), meaning each emission unit is controlled to less than 100 tpy for PM/PM<sub>10</sub>/PM<sub>2.5</sub>, rather than large PSEU.

#### Environmental Review & AERA

The emissions increases authorized by this permit action do not trigger any requirements for environmental review, i.e. an Environmental Assessment Worksheet, or an Air Emissions Risk Analysis (AERA).

#### Minnesota State Rules

Portions of the facility are subject to the following Minnesota Standards of Performance:

- Minn. R. 7011.0510 Standards of Performance for Existing Indirect Heating Equipment
- Minn. R. 7011.0515 Standards of Performance for New Indirect Heating Equipment
- Minn. R. 7011.0610 Standards of Performance for Fossil-Fuel-Burning Direct Heating Equipment
- Minn. R. 7011.0710 Standards of Performance for Pre-1969 Industrial Process Equipment
- Minn. R. 7011.0715 Standards of Performance for Post-1969 Industrial Process Equipment

**Table 6. Regulatory Overview of Units Affected by the Modification/Permit Amendment**

Level*	Applicable Regulations	Comments:
FC	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	PM <sub>10</sub> Modeling. Modeling parameters have been included in Appendix V. The purpose of listing the parameters in the appendix is to provide a benchmark for future changes. MPCA Tier I modeling language has been incorporated in the permit through this permit action.
EU014, EU015,	Minn. Stat. Section	PM <sub>10</sub> Modeling. Operating limits based on assumptions used in

Level*	Applicable Regulations	Comments:
EU018, EU020, EU022, EU023, EU025, EU026, EU028, EU029, EU031, EU032, EU033, EU133, EU134	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	modeling are included for these emissions units, limits include pound per hour process limits, annual hours of operation limits, daily hours of operation limits, and requirements to use control equipment. For EU023, there is also an existing process throughput BACT limit which is less stringent, but also applies. For EU031 and EU032, there are existing hours of operation BACT limits which are less stringent, but also apply.
EU026 (CE017)	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	PM <sub>10</sub> Modeling. Requirements based on assumptions used in modeling are included for these controls, including control efficiency limits, requirements for hood or total enclosure operation, and 2-panel filter configuration. For CE017, there are existing Title I conditions to avoid classification as a major modification on PM/PM <sub>10</sub> control efficiencies which are less stringent, but also apply.
EU133 (CE012)	Title I limit to avoid classification as a major modification under 40 CFR § 52.21	Prevention of Significant Deterioration. The existing R&D VOC BACT allows modifications to the facility for VOC-emitting equipment. Operational limits on spray rate, annual hours of operation, and use of control equipment have been taken to avoid classification as a major modification under 40 CFR § 52.21 for PM/PM <sub>10</sub> /PM <sub>2.5</sub> .
EU134 (CE016)	Title I limit to avoid classification as a major modification under 40 CFR § 52.21  Minn. R. 7011.0515	Prevention of Significant Deterioration. The existing R&D BACT for VOC equipment allows modifications to the facility for VOC-emitting equipment. Operational limits on spray rate, annual hours of operation, and use of control equipment have been taken to avoid classification as a major modification under 40 CFR § 52.21 for PM/PM <sub>10</sub> /PM <sub>2.5</sub> .  Standards of Performance for Post 1969 Industrial Process Equipment.
CE013, CE014, CE015	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	PM <sub>10</sub> Modeling. Requirements based on assumptions used in modeling are included for these controls, including control efficiency limits, requirements for hood or total enclosure operation, and 2-panel filter configuration.

\*Where the requirement appears in the permit (e.g., EU, SV, GP, etc.).

### 3. Technical Information

#### 3.1 Calculations of Potential to Emit and Emissions Increase Analysis

Attachment 1 to this TSD contains detailed calculations for the PM<sub>10</sub> Title V modeling. Attachment 1 also provides the calculations used for the Title I emissions increase analysis summarized in Table 3 and Table 4 of this TSD. Spray booth emissions calculations are based on a mass balance approach. Title I emissions increase analyses were based on future potential emissions.

### **3.2 Control Equipment - PM<sub>2.5</sub> control efficiencies**

PM<sub>2.5</sub> control efficiencies for panel-type filters have been included in the permit for CE009, CE012, CE013, CE014, CE015, CE016 and CE017. The PM and PM<sub>10</sub> control efficiencies for the panel-type filters is based on the control equipment rule at 85 % for both PM and PM<sub>10</sub>. The same 85% efficiency is assumed for PM<sub>2.5</sub>. It should be noted there may be some uncertainty in this PM<sub>2.5</sub> control efficiency, however, this is moderated through the conservative assumption that all PM/PM<sub>10</sub> is PM<sub>2.5</sub>. For spray coating equipment, PM<sub>2.5</sub> may be on the order of 30% to 80% of PM, which is a significant variation, possibly due to wide variation in specific qualities of coatings and type of application (solids content/makeup, viscosity, spray gun type, etc.). The filter configuration for CE012, CE013, CE014, CE015, CE016 and CE017 is two panel filters in series. For total enclosures, this leads to an overall control efficiency for PM, PM<sub>10</sub>, PM<sub>2.5</sub> of 98%. For controls operated with hoods, as defined in Minn. R. 7011.0060, subp. 3e, this leads to an overall control efficiency of 80%.

### **3.3 EU026**

The permit contains Title I conditions for Spray Booth EU026 (Building Location 250-E-126A) regarding use of compressor spray application equipment. At this time, there is no compressor equipment associated with spray booth EU026 (i.e. compressor, ports, etc.). It is unclear whether there has ever been compressor spray application capability at this spray booth. Changes to these Title I conditions will be considered during the Title V reissuance process. Spray booth EU026 is used with spray cans, which is allowed in the permit within the limits used in modeling.

### **3.4 Dispersion Modeling**

Per MPCA policy, as permitted in the original Part 70 permit, the facility triggered the requirement to complete air dispersion modeling to show modeled compliance with the PM<sub>10</sub> national ambient air quality standards (NAAQS). Several operating restrictions were assumed when the modeling was conducted, so these have been incorporated as permit limits (e.g., hours of operation, solids content, gun rates, etc.) in the draft/proposed permit. In addition, per MPCA practice, a table of the modeled parameters has been added to the permit as an appendix. Other than the specific operating restrictions mentioned above, the parameters listed in Appendix II of the permit describe the operation of the facility at maximum capacity. In other words, the flow rates and temperatures listed in Appendix II represent the minimum parameters at the maximum emission rates. The MPCA does not require any specific compliance demonstration with these parameters because they are worse-case conditions. The purpose of listing the parameters in the permit appendix is to provide a benchmark for determining if and when additional modeling is required.

### **3.5 Periodic Monitoring**

In accordance with the Clean Air Act, it is the responsibility of the owner or operator of a facility to have sufficient knowledge of the facility to certify that the facility is in compliance with all applicable requirements.

In evaluating the monitoring included in the permit, the MPCA considered the following:

- The likelihood of the facility violating the applicable requirements;
- Whether add-on controls are necessary to meet the emission limits;
- The variability of emissions over time;
- The type of monitoring, process, maintenance, or control equipment data already available for the emission unit;
- The technical and economic feasibility of possible periodic monitoring methods; and
- The kind of monitoring found on similar units elsewhere.

The table below summarizes the periodic monitoring requirements for the emission units and control equipment which have been changed through this permit action.

Table 7 describes periodic monitoring requirements for emission units involved in this permit action.

**Table 7. Periodic Monitoring**

<b>Level*</b>	<b>Requirement (rule basis)</b>	<b>Additional Monitoring</b>	<b>Discussion</b>
EU014 (Spray Booth)	Spray rate $\leq$ 150 lb/hr (40 CFR § 52.21)  Annual operating hours $\leq$ 500 hours/year (BACT limit)  Daily hours of operation $\leq$ 12 hours/day (modeling)	Recordkeeping: Documentation of spray gun capacity, daily records of spray booth usage.  Cumulative hour meter on compressor.	The Spray booth compressor is equipped with an hour meter with an automatic lockout device which disables the compressor when the annual hours limit is reached. Daily operating hours will be tracked in a log each time the compressor is used, with a cumulative sum for each day of operation.
EU015 (Spray Booth)	Spray rate $\leq$ 150 lb/hr (40 CFR § 52.21)  Annual operating hours $\leq$ 500 hours/year (BACT limit)  Daily hours of operation $\leq$ 12 hours/day (modeling)	Recordkeeping: Documentation of spray gun capacity, daily records of spray booth usage.  Cumulative hour meter on compressor.	The Spray booth compressor is equipped with an hour meter with an automatic lockout device which disables the compressor when the annual hours limit is reached. Daily operating hours will be tracked in a log each time the compressor is used, with a cumulative sum for each day of operation.

Level*	Requirement (rule basis)	Additional Monitoring	Discussion
EU018 (Spray Booth)	<p>Spray rate <math>\leq</math> 100 lb/hr (limit used in 40 CFR § 52.21 analysis)</p> <p>Annual operating hours <math>\leq</math> 1500 hours/year (BACT limit)</p> <p>Daily hours of operation <math>\leq</math> 12 hours/day (modeling)</p>	<p>Recordkeeping: Documentation of spray gun capacity, daily records of spray booth usage.</p> <p>Cumulative hour meter on compressor.</p>	The Spray booth compressor is equipped with an hour meter with an automatic lockout device which disables the compressor when the annual hours limit is reached. Daily operating hours will be tracked in a log each time the compressor is used, with a cumulative sum for each day of operation.
EU020 (Spray Booth)	<p>Spray rate <math>\leq</math> 100 lb/hr (40 CFR § 52.21)</p> <p>Annual operating hours <math>\leq</math> 600 hours/year (BACT limit)</p> <p>Daily hours of operation <math>\leq</math> 12 hours/day (modeling)</p>	<p>Recordkeeping: Documentation of spray gun capacity, daily records of spray booth usage.</p> <p>Cumulative hour meter on compressor.</p>	The Spray booth compressor is equipped with an hour meter with an automatic lockout device which disables the compressor when the annual hours limit is reached. Daily operating hours will be tracked in a log each time the compressor is used, with a cumulative sum for each day of operation.
EU022 (Spray Booth)	<p>Spray rate <math>\leq</math> 30 lb/hr (40 CFR § 52.21)</p> <p>Annual operating hours <math>\leq</math> 500 hours/year (BACT limit)</p> <p>Daily hours of operation <math>\leq</math> 12 hours/day (modeling)</p>	<p>Recordkeeping: Documentation of spray gun capacity, daily records of spray booth usage.</p> <p>Cumulative hour meter on compressor.</p>	The Spray booth compressor is equipped with an hour meter with an automatic lockout device which disables the compressor when the annual hours limit is reached. Daily operating hours will be tracked in a log each time the compressor is used, with a cumulative sum for each day of operation.
EU023 (Spray Booth)	<p>Spray rate <math>\leq</math> 130 lb/hr (modeling)</p> <p>Annual operating hours <math>\leq</math> 440 hours/year (BACT and modeling)</p> <p>Daily hours of operation <math>\leq</math> 12 hours/day (limits based on modeling)</p>	<p>Recordkeeping: Documentation of spray gun capacity, daily records of spray booth usage.</p> <p>Cumulative hour meter on compressor.</p>	The Spray booth compressor is equipped with an hour meter with an automatic lockout device which disables the compressor when the annual hours limit is reached. Daily operating hours will be tracked in a log each time the compressor is used, with a cumulative sum for each day of operation.

Level*	Requirement (rule basis)	Additional Monitoring	Discussion
EU025 (Spray Booth)	<p>Spray rate <math>\leq</math> 100 lb/hr (40 CFR § 52.21 analysis)</p> <p>Annual operating hours <math>\leq</math> 440 hours/year (BACT and modeling)</p> <p>Daily hours of operation <math>\leq</math> 12 hours/day (modeling)</p>	<p>Recordkeeping: Documentation of spray gun capacity, daily records of spray booth usage.</p> <p>Cumulative hour meter on compressor.</p>	The Spray booth compressor is equipped with an hour meter with an automatic lockout device which disables the compressor when the annual hours limit is reached. Daily operating hours will be tracked in a log each time the compressor is used, with a cumulative sum for each day of operation.
EU026 (Spray Booth)	<p>Spray rate <math>\leq</math> 3.7 lb/hr (40 CFR § 52.21 analysis)</p> <p>Annual operating hours <math>\leq</math> 200 hours/year (BACT and modeling)</p> <p>Daily hours of operation <math>\leq</math> 12 hours/day (modeling)</p>	<p>Recordkeeping: Documentation of spray gun capacity, daily records of spray booth usage.</p> <p>Cumulative hour meter on compressor.</p>	The Spray booth compressor is equipped with an hour meter with an automatic lockout device which disables the compressor when the annual hours limit is reached. Daily operating hours will be tracked in a log each time the compressor is used, with a cumulative sum for each day of operation.
EU026 (CE017) (Spray Booth)	<p><math>PM/PM_{10}/PM_{2.5} \geq 80.0\%</math> overall control (modeling)</p>	<p>Daily and periodic inspections, O&amp;M, initial hood certification and evaluation and annual hood evaluation</p>	Monitoring based on the Minnesota Performance Standard for Control Equipment is adequate to have a reasonable assurance of compliance
EU028 (Spray Booth)	<p>Spray rate <math>\leq</math> 150 lb/hr (40 CFR § 52.21 analysis and modeling)</p> <p>Annual operating hours <math>\leq</math> 300 hours/year (BACT and modeling)</p> <p>Daily hours of operation <math>\leq</math> 1 hours/day (modeling)</p>	<p>Recordkeeping: Documentation of spray gun capacity, daily records of spray booth usage.</p> <p>Cumulative hour meter on compressor.</p>	The Spray booth compressor is equipped with an hour meter with an automatic lockout device which disables the compressor when the annual hours limit is reached. Daily operating hours will be tracked in a log each time the compressor is used, with a cumulative sum for each day of operation.

Level*	Requirement (rule basis)	Additional Monitoring	Discussion
EU029 (Spray Booth)	<p>Spray rate <math>\leq</math> 150 lb/hr (40 CFR § 52.21 and modeling)</p> <p>Annual operating hours <math>\leq</math> 300 hours/year (BACT and modeling)</p> <p>Daily hours of operation <math>\leq</math> 1 hours/day (modeling)</p>	<p>Recordkeeping: Documentation of spray gun capacity, daily records of spray booth usage.</p> <p>Cumulative hour meter on compressor.</p>	The Spray booth compressor is equipped with an hour meter with an automatic lockout device which disables the compressor when the annual hours limit is reached. Daily operating hours will be tracked in a log each time the compressor is used, with a cumulative sum for each day of operation.
EU031 (Spray Booth)	<p>Spray rate <math>\leq</math> 70 lb/hr (40 CFR § 52.21 and modeling)</p> <p>Annual operating hours <math>\leq</math> 365 hours/year (modeling)</p> <p>Daily hours of operation <math>\leq</math> 1 hours/day (modeling)</p>	<p>Recordkeeping: Documentation of spray gun capacity, daily records of spray booth usage.</p> <p>Cumulative hour meter on compressor.</p>	The Spray booth compressor is equipped with an hour meter with an automatic lockout device which disables the compressor when the annual hours limit is reached. Daily operating hours will be tracked in a log each time the compressor is used, with a cumulative sum for each day of operation.
EU032 (Spray Booth)	<p>Spray rate <math>\leq</math> 70 lb/hr (40 CFR § 52.21 and modeling)</p> <p>Annual operating hours <math>\leq</math> 365 hours/year (modeling)</p> <p>Daily hours of operation <math>\leq</math> 1 hours/day (modeling)</p>	<p>Recordkeeping: Documentation of spray gun capacity, daily records of spray booth usage.</p> <p>Cumulative hour meter on compressor.</p>	The Spray booth compressor is equipped with an hour meter with an automatic lockout device which disables the compressor when the annual hours limit is reached. Daily operating hours will be tracked in a log each time the compressor is used, with a cumulative sum for each day of operation.
EU033 (Spray Booth)	<p>Spray rate <math>\leq</math> 225 lb/hr (40 CFR § 52.21 and modeling)</p> <p>Annual operating hours <math>\leq</math> 100 hours/year (modeling)</p> <p>Daily hours of operation <math>\leq</math> 1 hours/day (modeling)</p>	<p>Recordkeeping: Documentation of spray gun capacity, daily records of spray booth usage.</p> <p>Cumulative hour meter on compressor.</p>	The Spray booth compressor is equipped with an hour meter with an automatic lockout device which disables the compressor when the annual hours limit is reached. Daily operating hours will be tracked in a log each time the compressor is used, with a cumulative sum for each day of operation.

Level*	Requirement (rule basis)	Additional Monitoring	Discussion
EU133 (Spray Booth)	<p>Spray rate <math>\leq 125</math> lb/hr (40 CFR 52.21 and modeling)</p> <p>Annual operating hours <math>\leq 100</math> hours/year (modeling)</p> <p>Daily hours of operation <math>\leq 6</math> hours/day (modeling)</p>	<p>Recordkeeping: Documentation of spray gun capacity, daily records of spray booth usage.</p> <p>Cumulative hour meter on compressor.</p>	The Spray booth compressor is equipped with an hour meter with an automatic lockout device which disables the compressor when the annual hours limit is reached. Daily operating hours will be tracked in a log each time the compressor is used, with a cumulative sum for each day of operation.
EU133/ CE012 (Spray Booth)	PM/PM <sub>10</sub> /PM <sub>2.5</sub> $\geq 80.0\%$ overall control (Limit to avoid NSR, modeling)	Daily and periodic inspections, O&M, initial hood certification and evaluation and annual hood evaluation	Monitoring based on the Minnesota Performance Standard for Control Equipment is adequate to have a reasonable assurance of compliance
EU134 (Spray Booth)	<p>Spray rate <math>\leq 100</math> lb/hr (40 CFR 52.21, modeling)</p> <p>Annual operating hours <math>\leq 365</math> hours/year (40 CFR 52.21, modeling)</p> <p>Daily hours of operation <math>\leq 1</math> hours/day (40 CFR 52.21, modeling)</p>	<p>Recordkeeping: Documentation of spray gun capacity, daily records of spray booth usage.</p> <p>Cumulative hour meter on compressor.</p>	The Spray booth compressor is equipped with an hour meter with an automatic lockout device which disables the compressor when the annual hours limit is reached. Daily operating hours will be tracked in a log each time the compressor is used, with a cumulative sum for each day of operation.
EU134/ CE016 (Spray Booth)	PM/PM <sub>10</sub> /PM <sub>2.5</sub> $\geq 80.0\%$ overall control (Limit to avoid NSR and/or modeling)	Daily and periodic inspections, O&M, initial hood certification and evaluation and annual hood evaluation	Monitoring based on the Minnesota Performance Standard for Control Equipment is adequate to have a reasonable assurance of compliance
CE013	PM/PM <sub>10</sub> /PM <sub>2.5</sub> $\geq 80.0\%$ overall control (modeling or Minn. R. 7007.0800)	Daily and periodic inspections, O&M, initial hood certification and evaluation and annual hood evaluation	Monitoring based on the Minnesota Performance Standard for Control Equipment is adequate to have a reasonable assurance of compliance
CE014	PM/PM <sub>10</sub> /PM <sub>2.5</sub> $\geq 98.0\%$ overall control (modeling or Minn. R. 7007.0800)	Daily and periodic inspections, corrective actions, O&M	Monitoring based on the Minnesota Performance Standard for Control Equipment is adequate to have a reasonable assurance of compliance
CE015	PM/PM <sub>10</sub> /PM <sub>2.5</sub> $\geq 98.0\%$ overall control (modeling or Minn. R. 7007.0800)	Daily and periodic inspections, corrective actions, O&M	Monitoring based on the Minnesota Performance Standard for Control Equipment is adequate to have a reasonable assurance of compliance



\*Where the requirement appears in the permit (e.g., EU, SV, GP, etc.).

### **3.6 Insignificant Activities**

There are no changes in insignificant activities associated with this permit action.

### **3.7 Permit Organization**

This permit amendment carries forward the organization of the previous permit for the grouping of emission units and use of appendices. EU134 has been added to GP001, GP003 and GP004. No new groups have been created.

In general, the permit meets the MPCA Delta Guidance for ordering and grouping of requirements. One area where this permit deviates slightly from Delta guidance is in the use of appendices. While appendices are fully enforceable parts of the permit, in general, any requirement that the MPCA thinks should be tracked (e.g., limits, submittals, etc.), should be in Table A, B or C. The main reason is that the appendices are word processing sections and are not part of the tracking system. Violation of the appendices can be enforced, but the computer system will not automatically generate the necessary enforcement notices or documents. Staff must generate these.

### **3.8 Comments Received**

This section will be completed after the public comment period and EPA review period have ended.

## **4. Permit Fee Assessment**

Attachment 3 to this TSD contains the MPCA's assessment of Application and Additional Points used to determine the permit application fee for this permit action as required by Minn. R. 7002.0019. The permit action includes three permit applications. One major amendment (DQ4109), which was received after the effective date of the rule (July 1, 2009), involves incorporating Title V modeling operating limits into the permit and no additional points apply because it is not related to a modification in this permit action. Two major amendment applications (DQ2096 and DQ1972) were received and processed (but not issued) before the effective date of the rule, so no additional points apply to these permit applications.

## **5. Conclusion**

Based on the information provided by 3M Company, the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission Permit No. 12300015-010 and this TSD, will not cause or contribute to a violation of applicable federal regulations and Minnesota Rules.

Staff Members on Permit Team:	Sarah Sevcik (permit writer/engineer)
	Sarah Kilgriff (enforcement)
	Bonnie Nelson (peer reviewer)

AQ File No. 23E; DQ 2096, with DQ 1972 and DQ 4109 rolled in

- Attachments:
1. Emissions Calculations
  2. Facility Description and CD-01 Forms
  3. Points Calculator

3M – Company  
3M – R&D Facility - Maplewood  
Technical Support Document  
Permit Number 12300015-010

## **Attachment 1**

### **Emissions Calculations**

**Attachment 1: Emissions Calculations - Spray Guns**

**3M Center R & D Facility**

**Air Emission Permit No. 12300015-007**

MPCA Emission Unit ID No.	Location Description	Maximum Coating Application Rate (lb/hr)	Annual Hours of Operation Limitation (hr/yr)	Total Enclosure? (Y/N)	Double Filter?	Overall Control Efficiency (%)	Spray Gun Type	Transfer Efficiency <sup>2</sup> (%)	(wt. %)	(hrs)	Uncontrolled, unlimited PM/PM10/ PM2.5	Controlled		Controlled, Limited PM/PM10/ PM2.5 (tpy)	Potential Emissions Increase (tpy)*	
											Uncontrolled Unlimited PM/PM <sub>10</sub> /PM <sub>2.5</sub> tpy	Controlled unlimited PM/PM10/ PM2.5 (lb/hr)	Controlled Unlimited PM/PM10/PM 2.5 tpy			
EU014	209-C163A	150	500	Y	Y	98%	HVLP	75%	20%	12	7.50	32.85	0.15	0.66	0.04	
EU015	209-C163A	150	500	Y	Y	98%	HVLP	75%	20%	12	7.50	32.85	0.15	0.66	0.04	
EU018	216-2S	100	1500	Y	Y	98%	HVLP <sup>3</sup>	75%	72%	12	18.00	78.84	0.36	1.58	0.27	
EU020	230-G43B	100	600	N	Y	80%	HVLP <sup>3</sup>	75%	100%	12	25.00	109.50	5.00	21.90	1.50	
EU022	235-WN116	30	500	Y	Y	98%	HVLP <sup>3</sup>	75%	40%	12	3.00	13.14	0.06	0.26	0.02	
EU023	235-A-353	130	440	Y	Y	98%	Air Assist	45%	100%	12	71.50	313.17	1.43	6.26	0.31	
EU025	240-SE Wall	100	100	Y	Y	98%	HVLP <sup>3</sup>	75%	100%	12	25.00	109.50	0.50	2.19	0.03	
EU026	250-W-126A	3.7	200	N	Y	80%	Spray Can	70%	50%	12	0.56	2.43	0.11	0.49	0.01	
EU028	250-E118	150	300	Y	N	85%	HVLP <sup>3</sup>	75%	50%	1	18.75	82.13	2.81	12.32	0.42	
EU029	250-E123A	150	300	Y	Y	98%	HVLP <sup>3</sup>	75%	75%	1	28.13	123.19	0.56	2.46	0.08	
EU031	251-B230	70	365	N	Y	80%	HVLP <sup>3</sup>	75%	75%	1	13.13	57.49	2.63	11.50	0.48	
EU032	251-B230	70	365	N	Y	80%	HVLP <sup>3</sup>	75%	80%	1	14.00	61.32	2.80	12.26	0.51	
EU033	251-B330	225	100	N	Y	80%	HVLP <sup>3</sup>	75%	80%	1	45.00	197.10	9.00	39.42	0.45	
EU133	230-S118	125	100	N	Y	80%	Air Assist	45%	55%	6	37.81	165.62	7.56	33.12	0.38	99.37
EU134	251-B354	100	365	N	Y	80%	HVLP	75%	100%	1	25.00	109.50	5.00	21.90	0.91	109.50
Total											339.87		38.12		5.45	

1. Emissions for proposed EU134 are based on gun specific transfer efficiency.

2. Emission calculations are based on worst case gun type. Transfer efficiencies were obtained from MPCA Form EC-07.

3. Gun types changed from conventional to HVLP.

\*for EU133, this is the potential emissions increase due to increase in permitted spray gun rate from 50 lb/hr to 125 lb/hr =increase = (125 hr - 50 hr)\*125 lb coating/hr\* (Pollutant Content by weight)\*(1-T.E.)\*(1-O.C.E)\*8760/2000

\*for EU134, this is the uncontrolled, unlimited tpy

**PM/PM10/PM2.5 Control Based on the following (12/27/11):**

	Capture Efficiency %	1st Panel Filter of Control %		2nd Panel Filter of Control %		Overall Control Efficiency** %
		85%	85%	85%	85%	
<b>Total Enclosure</b>	100%					97.75%
<b>Hood Enclosure</b>	80%					78.20%

\*\* Overall Control = (Capture Efficiency) \* (1 - 1st Panel Filter Efficiency) \* (1 - 2nd panel Filter Efficiency)

For example, Total Enclosure Overall Control = 1.00 \* (1 - 0.85) \* (1 - 0.85) = 0.9775

Calculations for EU133

VOC and HAPS - EU133&134

Pollutant	Solids			Transfer Efficiency (lb emitted/lb sprayed)	Uncontrolled Max emission rate (lb/hr)	Uncontrolled maximum emission rate (tpy)			Controlled emission rate (lb/hr)			Controlled emission (tpy)	Annual Hourly Limit	Permitted emission rate (tpy)	Potential Emissions increase** (tpy)
	Max Spray Rate (lb/hour)	Content (Lb Solids/lb solids)	VOC Content (% by wt)			Uncontrolled maximum emission rate (tpy)	Control Efficiency	Controlled emission rate (lb/hr)							
VOC	125	NA	1.00	0.00	124.88	546.95	0	124.88	546.95	100	6.24	328.17			
Single HAP	125	NA	0.70	0.00	87.50	383.25	0	87.50	383.25	100	4.38	229.95			
Total HAP	125	NA	0.70	0.00	87.50	383.25	0	87.50	383.25	100	4.38	229.95			

EU133 HAPs	Max Spray Rate (lb/hour)		HAP Content (% by wt)	Uncontrolled Max emission rate (lb/hr)	Uncontrolled maximum emission rate (tpy)	Controlled emission rate (lb/hr)		Controlled emission (tpy)		Annual Hourly Limit	Permitted emission rate (tpy)
	Methylene Chloride	125									
		125	0.70	87.50	383.25	0	87.50	383.25	100	4.38	
	Hexane	125	0.40	50.00	219.00	0	50.00	219.00	100	2.50	
	Zinc oxide	125	0.01	1.25	5.48	0.68	0.40	1.75	100	0.02	

HAPs values represent worst case coatings. Total HAPs is based on one product containing only methylene chloride as a HAP.

\*Emissions increase is change from 50 hr/yr limit to 125 hr/yr limit. Increase = (125 hr - 50 hr)\*125 lb coating/hr\*(Pollutant Content by weight)\*8760/2000

Calculations for EU134

Pollutant	Max Spray Rate (lb/hour)	Solids Content (Lb Solids/lb solids)		VOC Content (% by wt)	Transfer Efficiency	Uncontrolled Max emission rate (lb/hr)	Uncontrolled maximum emission rate (tpy)	Controlled			Annual Hourly Limit	Permitted emission rate (tpy)
								Control Efficiency	emission rate (lb/hr)	emission (tpy)		
VOC	100		NA	0.65	0.00	65.00	284.70	0	65.00	284.70	365	11.86
Single HAP	100		NA	0.01	0.00	1.00	4.38	0	1.00	4.38	365	0.18
Total HAP	100		NA	0.02	0.00	2.00	8.76	0	2.00	8.76	365	0.37

EU134 HAPs	Max Spray Rate (lb/hour)		HAP Content (% by wt)	Uncontrolled Max emission rate (lb/hr)	Uncontrolled maximum emission rate (tpy)	Annual Hourly Limit		Permitted emission rate (tpy)
	Phenol	100						
		100	0.01	1.00	4.38	365	0.18	
	Formaldehyde	100	0.01	1.00	4.38	365	0.18	
Total		100	0.02	2.00	8.76	365	0.37	

HAPs values represent worst case coatings.

3M – Company  
3M – R&D Facility - Maplewood  
Technical Support Document  
Permit Number 12300015-010

## **Attachment 2**

### **Facility Description and CD-01 Forms**



## FACILITY DESCRIPTION: EMISSION UNIT (EU)

Show: Active and Pending Records

Action: PER 010

AQD Facility ID: 12300015

Facility Name: 3M - R\_D Facility - Maplewood Bldg 201

ID No.	Emission Unit Status	Added By (Action)	Retired By (Action)	Insignificant Activity	Operator ID for Item	Stack/Vent ID No(s).	Control Equip. ID No(s).	Operator Description	Manufacturer	Model Number	SIC	Max. Design Capacity	Maximum Design Capacity		Max Fuel Input (mil Btu)
													Materials	Units n Units d	
1 EU 001	Active	PER 001		<input type="checkbox"/>				Miscellaneous Pilot Plant VOC Equipment (not subject to 40 CFR pt. 60)	various	various	8731				
2 EU 002	Active	PER 003		<input type="checkbox"/>				PST Coating Equipment that uses solvent (subject to 40 CFR pt. 60, subp. RR)	various	various	8731				
3 EU 003	Active	PER 003		<input type="checkbox"/>				Mag. Coating Equipment that uses solvent (subject to 40 CFR pt. 60, subp. SSS)	various	various	8731				
4 EU 004	Active	PER 002		<input type="checkbox"/>				Ozone Generating Units	various	various	8731				
5 EU 005	Active	PER 001		<input type="checkbox"/>				Direct Heating Equipment (e.g., ovens, furnaces)	various	various	8731				
6 EU 006	Active	PER 001		<input type="checkbox"/>				Indirect Heating Equipment (e.g., boilers; not subject to 40 CFR pt. 60)	various	various	8731				9.9
7 EU 007	Active	PER 001		<input type="checkbox"/>				Indirect Heating Equipment (subject to 40 CFR pt. 60, subp. Dc)	various	various	8731				99.9
8 EU 008	Active	PER 001		<input type="checkbox"/>				Miscellaneous Laboratory Sources	various	various	8731				
9 EU 009	Active	PER 001		<input type="checkbox"/>				Machine Shops	various	various	8731				
10 EU 010	Active	PER 001		<input type="checkbox"/>			CE 006 CE 007	Carpentry Shops	various	various	8731				
11 EU 011	Active	PER 009		<input type="checkbox"/>				Dry Cleaning Equipment	various	various	8731				
12 EU 012	Active	PER 001		<input type="checkbox"/>				Pilot Plant Particulate Sources (non-combustion)	various	various	8731				
13 EU 013	Active	PER 009		<input type="checkbox"/>			CE 003 CE 005	Booths Without Spray Application Equipment	various	various	8731	0		Lb Hr	
14 EU 014	Active	PER 001		<input type="checkbox"/>			CE 003	Spray Booth 209- C163A - 1	NA	NA	8731	150		Lb Hr	
15 EU 014	Active	PER 010		<input type="checkbox"/>			CE 014	Spray Booth 209- C163A - 1	NA	NA	8731	150		Lb Hr	
16 EU 015	Active	PER 001		<input type="checkbox"/>			CE 003	Spray Booth 209-C163A-2	NA	NA	8731	150		Lb Hr	
17 EU 015	Active	PER 010		<input type="checkbox"/>			CE 014	Spray Booth 209-C163A-2	NA	NA	8731	150		Lb Hr	
18 EU 016	Removed	EIS 007		<input type="checkbox"/>				Spray Booth 209-N-132	NA	NA	8731	50		Lb Hr	
19 EU 017	Active	PER 002		<input type="checkbox"/>				Ethylene Oxide Sterilizers -- Bldg 201, Nurse; Bldg 270, NB352 and NB358	various	various	8731				

FACILITY DESCRIPTION: EMISSION UNIT (EU)

	ID No.	Emission Unit Status	Added By (Action)	Commence Const. Date	Initial Startup Date	Removal Date	Firing Method	Pct. Fuel/ Space Heat	Bottleneck	Elevator Type
1	EU 001	Active	PER 001							
2	EU 002	Active	PER 003							
3	EU 003	Active	PER 003							
4	EU 004	Active	PER 002							
5	EU 005	Active	PER 001							
6	EU 006	Active	PER 001							
7	EU 007	Active	PER 001							
8	EU 008	Active	PER 001							
9	EU 009	Active	PER 001							
10	EU 010	Active	PER 001							
11	EU 011	Active	PER 009							
12	EU 012	Active	PER 001							
13	EU 013	Active	PER 009							
14	EU 014	Active	PER 001	01/01/1959	01/01/1959					
15	EU 014	Active	PER 010	01/01/1959	01/01/1959					
16	EU 015	Active	PER 001	01/01/1959	01/01/1959					
17	EU 015	Active	PER 010	01/01/1959	01/01/1959					
18	EU 016	Removed	EIS 007	01/01/1985	12/31/2004					
19	EU 017	Active	PER 002							





## FACILITY DESCRIPTION: EMISSION UNIT (EU)

Show: Active and Pending Records

Action: PER 010

AQD Facility ID: 12300015

Facility Name: 3M - R\_D Facility - Maplewood Bldg 201

ID No.	Emission Unit Status	Added By (Action)	Retired By (Action)	Insignif-icant Activity	Operator ID for Item	Stack/Vent ID No(s).	Control Equip. ID No(s).	Operator Description	Manufacturer	Model Number	SIC	Max. Design Capacity	Maximum Design Capacity		Max Fuel Input (mil Btu)
													Materials	Units n	Units d
20 EU 018	Active	PER 001		<input type="checkbox"/>			CE 003	Spray Booth 216-2S		NA	8731	100		Lb	Hr
21 EU 018	Active	PER 010		<input type="checkbox"/>			CE 014	Spray Booth 216-2S		NA	8731	100		Lb	Hr
22 EU 019	Active	PER 002		<input type="checkbox"/>		SV 024 (M)		270-636448, 270-000112 Coater/Oven			8731	9.04		Lb	Hr
23 EU 020	Active	PER 001		<input type="checkbox"/>			CE 005	Spray Booth 230-G43B			8731	100		Lb	Hr
24 EU 020	Active	PER 010		<input type="checkbox"/>			CE 013	Spray Booth 230-G43B			8731	100		Lb	Hr
25 EU 022	Active	PER 001		<input type="checkbox"/>			CE 003 CE 008	Spray Booth 235-WN-116			8731	30		Lb	Hr
26 EU 022	Active	PER 010		<input type="checkbox"/>			CE 015	Spray Booth 235-WN-116			8731	30		Lb	Hr
27 EU 023	Active	PER 001		<input type="checkbox"/>			CE 005	Spray Booth 235-A-353		NA	8731	1200		Lb	Hr
28 EU 023	Active	PER 010		<input type="checkbox"/>			CE 014	Spray Booth 235-A-353		NA	8731	1200		Lb	Hr
29 EU 024	Active	PER 002		<input type="checkbox"/>		SV 024 (M) SV 025 (P)		270-583991, 270-583990 Coater/Oven			8731			Lb	Hr
30 EU 025	Active	PER 001		<input type="checkbox"/>			CE 003 CE 008	Spray Booth 240-SE Wall			8731	100		Lb	Hr
31 EU 025	Active	PER 010		<input type="checkbox"/>			CE 015	Spray Booth 240-SE Wall			8731	100		Lb	Hr
32 EU 026	Active	PER 001		<input type="checkbox"/>			CE 003 CE 008	Spray Booth 250-E-126A		NA	8731	3.7		Lb	Hr
33 EU 026	Active	PER 010		<input type="checkbox"/>			CE 017	Spray Booth 250-E-126A		NA	8731	3.7		Lb	Hr
34 EU 027	Active	PER 001		<input type="checkbox"/>			CE 005 CE 009	Spray Booth 250-E-127			8731	150		Lb	Hr
35 EU 027	Removed	PER 010		<input type="checkbox"/>				Spray Booth 250-E-127			8731	150		Lb	Hr
36 EU 028	Active	PER 009		<input type="checkbox"/>			CE 005 CE 009	Spray Booth 250-E-118			8731	150		Lb	Hr
37 EU 028	Active	PER 010		<input type="checkbox"/>			CE 009	Spray Booth 250-E-118			8731	150		Lb	Hr
38 EU 029	Active	PER 009		<input type="checkbox"/>			CE 003 CE 008	Spray Booth 250-E-123A			8731	150		Lb	Hr
39 EU 029	Active	PER 010		<input type="checkbox"/>			CE 015	Spray Booth 250-E-123A			8731	150		Lb	Hr
40 EU 030	Active	PER 002		<input type="checkbox"/>				LPB Pilot Plant	various	various	8731				
41 EU 031	Active	PER 001		<input type="checkbox"/>			CE 003	Spray Booth 251-B-230		NA	8731	70		Lb	Hr
42 EU 031	Active	PER 010		<input type="checkbox"/>			CE 013	Spray Booth 251-B-230		NA	8731	70		Lb	Hr

FACILITY DESCRIPTION: EMISSION UNIT (EU)

	ID No.	Emission Unit Status	Added By (Action)	Commence Const. Date	Initial Startup Date	Removal Date	Firing Method	Pct. Fuel/ Space Heat	Bottleneck	Elevator Type
20	EU 018	Active	PER 001	01/01/1970	01/01/1970					
21	EU 018	Active	PER 010	01/01/1970	01/01/1970					
22	EU 019	Active	PER 002	01/01/1987	01/01/1988					
23	EU 020	Active	PER 001	01/01/1973	01/01/1973					
24	EU 020	Active	PER 010	01/01/1973	01/01/1973					
25	EU 022	Active	PER 001	01/01/1994	01/01/1994					
26	EU 022	Active	PER 010	01/01/1994	01/01/1994					
27	EU 023	Active	PER 001	01/01/1996	01/01/1996					
28	EU 023	Active	PER 010	01/01/1996	01/01/1996					
29	EU 024	Active	PER 002	01/01/1987	01/01/1987					
30	EU 025	Active	PER 001	01/01/1992	01/01/1993					
31	EU 025	Active	PER 010	01/01/1992	01/01/1993					
32	EU 026	Active	PER 001	01/01/1992	01/01/1992					
33	EU 026	Active	PER 010	01/01/1992	01/01/1992					
34	EU 027	Active	PER 001	01/01/1992	01/01/1992					
35	EU 027	Removed	PER 010	01/01/1992	01/01/1992					
36	EU 028	Active	PER 009	01/01/1992	01/01/1992					
37	EU 028	Active	PER 010	01/01/1992	01/01/1992					
38	EU 029	Active	PER 009	01/01/1992	01/01/1992					
39	EU 029	Active	PER 010	01/01/1992	01/01/1992					
40	EU 030	Active	PER 002							
41	EU 031	Active	PER 001	01/01/1974	01/01/1975					
42	EU 031	Active	PER 010	01/01/1974	01/01/1975					



## FACILITY DESCRIPTION: EMISSION UNIT (EU)

Show: Active and Pending Records

Action: PER 010

AQD Facility ID: 12300015

Facility Name: 3M - R\_D Facility - Maplewood Bldg 201

ID No.	Emission Unit Status	Added By (Action)	Retired By (Action)	Insignificant Activity	Operator ID for Item	Stack/Vent ID No(s).	Control Equip. ID No(s).	Operator Description	Manufacturer	Model Number	SIC	Max. Design Capacity	Maximum Design Capacity		Max Fuel Input (mil Btu)
													Materials	Units n	Units d
43 EU 032	Active	PER 001		<input type="checkbox"/>			CE 003	Spray Booth 251-B-242		NA	8731	70		Lb	Hr
44 EU 032	Active	PER 010		<input type="checkbox"/>			CE 013	Spray Booth 251-B-242		NA	8731	70		Lb	Hr
45 EU 033	Active	PER 001		<input type="checkbox"/>			CE 003	Spray Booth 251-B-330		NA	8731	225		Lb	Hr
46 EU 033	Active	PER 010		<input type="checkbox"/>			CE 013	Spray Booth 251-B-330		NA	8731	225		Lb	Hr
47 EU 034	Active	PER 002		<input type="checkbox"/>			CE 003 CE 005 CE 008	Can Spray Booth 250-23E-91-I/O-8, # 11; 250-E-313			8731				
48 EU 040	Active	PER 002		<input type="checkbox"/>			CE 010	250 Automotive Room Vacuum System	NA	NA	8731	1600		Fl3	Min
49 EU 101	Removed	EIS 007		<input type="checkbox"/>				Pilot Plant 1	various	various	8731				
50 EU 102	Active	PER 001		<input type="checkbox"/>				Pilot Plant 2	various	various	8731				
51 EU 103	Active	PER 001		<input type="checkbox"/>				Pilot Plant 3	various	various	8731				
52 EU 104	Active	PER 001		<input type="checkbox"/>				Pilot Plant 4	various	various	8731				
53 EU 105	Active	PER 001		<input type="checkbox"/>				Pilot Plant 5	various	various	8731				
54 EU 106	Retired	EIS 007		<input type="checkbox"/>				Pilot Plant 6	various	various	8731				
55 EU 107	Active	PER 001		<input type="checkbox"/>				Pilot Plant 7	various	various	8731				
56 EU 108	Active	PER 001		<input type="checkbox"/>				Pilot Plant 8	various	various	8731				
57 EU 109	Retired	EIS 007		<input type="checkbox"/>				Pilot Plant 9	various	various	8731				
58 EU 110	Retired	EIS 007		<input type="checkbox"/>				Pilot Plant 10	various	various	8731				
59 EU 111	Active	PER 001		<input type="checkbox"/>				Pilot Plant 11	various	various	8731				
60 EU 112	Retired	EIS 007		<input type="checkbox"/>				Pilot Plant 12	various	various	8731				
61 EU 113	Retired	EIS 007		<input type="checkbox"/>				Pilot Plant 13	various	various	8731				
62 EU 114	Retired	EIS 007		<input type="checkbox"/>				Pilot Plant 14	various	various	8731				
63 EU 115	Retired	EIS 007		<input type="checkbox"/>				Pilot Plant 15	various	various	8731				
64 EU 116	Active	PER 001		<input type="checkbox"/>				Pilot Plant 16	various	various	8731				
65 EU 117	Active	PER 001		<input type="checkbox"/>				Pilot Plant 17	various	various	8731				
66 EU 118	Retired	EIS 007		<input type="checkbox"/>				Pilot Plant 18	various	various	8731				
67 EU 119	Active	PER 001		<input type="checkbox"/>				Pilot Plant 19	various	various	8731				

FACILITY DESCRIPTION: EMISSION UNIT (EU)

	ID No.	Emission Unit Status	Added By (Action)	Commence Const. Date	Initial Startup Date	Removal Date	Firing Method	Pct. Fuel/Space Heat	Bottleneck	Elevator Type
43	EU 032	Active	PER 001	01/01/1974	01/01/1975					
44	EU 032	Active	PER 010	01/01/1974	01/01/1975					
45	EU 033	Active	PER 001	01/01/1975	01/01/1975					
46	EU 033	Active	PER 010	01/01/1975	01/01/1975					
47	EU 034	Active	PER 002	01/01/1992	01/01/1992					
48	EU 040	Active	PER 002	01/01/1991	01/01/1991					
49	EU 101	Removed	EIS 007			07/01/2005				
50	EU 102	Active	PER 001							
51	EU 103	Active	PER 001							
52	EU 104	Active	PER 001							
53	EU 105	Active	PER 001							
54	EU 106	Retired	EIS 007			07/01/2005				
55	EU 107	Active	PER 001							
56	EU 108	Active	PER 001							
57	EU 109	Retired	EIS 007			12/31/1998				
58	EU 110	Retired	EIS 007			12/31/2002				
59	EU 111	Active	PER 001							
60	EU 112	Retired	EIS 007			12/31/1998				
61	EU 113	Retired	EIS 007			12/31/1998				
62	EU 114	Retired	EIS 007			12/31/1998				
63	EU 115	Retired	EIS 007			12/31/2004				
64	EU 116	Active	PER 001							
65	EU 117	Active	PER 001							
66	EU 118	Retired	EIS 007			12/31/1998				
67	EU 119	Active	PER 001							



## FACILITY DESCRIPTION: EMISSION UNIT (EU)

Show: Active and Pending Records

Action: PER 010

AQD Facility ID: 12300015

Facility Name: 3M - R\_D Facility - Maplewood Bldg 201

ID No.	Emission Unit Status	Added By (Action)	Retired By (Action)	Insignif-icant Activity	Operator ID for Item	Stack/Vent ID No(s).	Control Equip. ID No(s).	Operator Description	Manufacturer	Model Number	SIC	Max. Design Capacity	Maximum Design Capacity		Max Fuel Input (mil Btu)
													Materials	Units n	
68 EU 120	Active	PER 001		<input type="checkbox"/>				Pilot Plant 20	various	various	8731				
69 EU 121	Retired	EIS 007		<input type="checkbox"/>				Pilot Plant 21	various	various	8731				
70 EU 122	Active	PER 001		<input type="checkbox"/>				Pilot Plant 22	various	various	8731				
71 EU 123	Active	PER 001		<input type="checkbox"/>				Natural Gas Units	various	various	8731				
72 EU 124	Active	PER 003		<input type="checkbox"/>				Coater 230000015			8731b				Hr
73 EU 125	Active	PER 003		<input type="checkbox"/>				Coater 230549184			8731b				Hr
74 EU 126	Active	PER 003		<input type="checkbox"/>				Coater 230635265			8731			lb	Hr
75 EU 127	Active	PER 003		<input type="checkbox"/>				Coater 230652536			8731				Hr
76 EU 128	Active	PER 003		<input type="checkbox"/>				Coater 230652791			87				Min
77 EU 129	Active	PER 003		<input type="checkbox"/>		SV 024		Coater 270700602			8731			Lb	Hr
78 EU 130	Active	PER 003		<input type="checkbox"/>				New Solventless PST Coating Equipment	various	various	8731				
79 EU 131	Active	PER 003		<input type="checkbox"/>				Solventless Mag. Coating Equipment	various	various	8731				
80 EU 132	Active	PER 006		<input type="checkbox"/>	041	SV 030 (M)	CE 011	Kodiak Spray Dryer	Spray Dryer/Condense		873a				Hr
81 EU 133	Active	PER 007		<input type="checkbox"/>			CE 012	Spray Booth 230-S-118	Global Finishing Solutio		8731	8.3		Gal	Hr
82 EU 133	Active	PER 010		<input type="checkbox"/>			CE 012	Spray Booth 230-S-118	Global Finishing Solutio		8731	125		Lb	Hr
83 EU 134	Active	PER 010		<input type="checkbox"/>			CE 016	Spray Booth 251-B354			8731	100		Lb	Hr

FACILITY DESCRIPTION: EMISSION UNIT (EU)

	ID No.	Emission Unit Status	Added By (Action)	Commence Const. Date	Initial Startup Date	Removal Date	Firing Method	Pct. Fuel/ Space Heat	Bottleneck	Elevator Type
68	EU 120	Active	PER 001							
69	EU 121	Retired	EIS 007		12/31/1999					
70	EU 122	Active	PER 001							
71	EU 123	Active	PER 001							
72	EU 124	Active	PER 003		07/01/1993					
73	EU 125	Active	PER 003		08/01/1985					
74	EU 126	Active	PER 003		01/01/1988					
75	EU 127	Active	PER 003		09/01/1991					
76	EU 128	Active	PER 003		03/01/1991					
77	EU 129	Active	PER 003		01/01/1985					
78	EU 130	Active	PER 003							
79	EU 131	Active	PER 003							
80	EU 132	Active	PER 006							
81	EU 133	Active	PER 007							
82	EU 133	Active	PER 010							
83	EU 134	Active	PER 010							



## FACILITY DESCRIPTION: CONTROL EQUIPMENT (CE)

Show: Active and Pending Records

Action: PER 010

AQD Facility ID: 12300015

Facility Name: 3M - R\_D Facility - Maplewood Bldg 201

ID No.	Control Equip. Status	Added By (Action)	Retired By (Action)	Operator ID for Item	Control Equip. Type	Control Equipment Description	Manufacturer	Model	Pollutants Controlled	Capture Efficiency (%)	Destruction/Collection Efficiency (%)	Afterburner Combustion Parameters
1	CE 001	Active	PER 001		019	Catalytic Afterburner	Various	Various	VOC	60	95	800 F/1 sec
2	CE 002	Active	PER 001		021	Direct Flame Afterburner	Various	Various	VOC	60	95	1400 F/1 sec
3	CE 003	Active	PER 001		058	Mat or Panel Filter	Various	Various	PM10 PM	80 80	92 92	
4	CE 004	Active	PER 001		099	Solvent Recovery Unit	Various	Various	VOC	0	0	
5	CE 005	Active	PER 001		058	Mat or Panel Filter	Various	Various	PM10 PM	100 100	92 92	
6	CE 006	Active	PER 001		008	Centrifugal Collector - Medium Efficiency	various	various	PM10 PM	80 80	50 50	
7	CE 007	Active	PER 001		018	Fabric Filter - Low Temperature, i.e., T<180 Degrees F	various	various	PM10 PM	100 100	99 99	
8	CE 008	Active	PER 002		058	Mat or Panel Filter	various	various	PM10 PM	80 80	92 92	
9	CE 008	Active	PER 010		058	Mat or Panel Filter	various	various	PM2.5 PM10 PM10 PM	80 80 80 80	85 92 98 92	
10	CE 009	Active	PER 002		058	Mat or Panel Filter	various	various	PM10 PM	100 100	92 92	
11	CE 009	Active	PER 010		058	Mat or Panel Filter	various	various	PM2.5 PM10 PM	100 100 100	85 92 92	
12	CE 010	Active	PER 002		018	Fabric Filter - Low Temperature, i.e., T<180 Degrees F	Ross Cook Inc	RC53DCFB	PM10 PM	80 80	99 99	
13	CE 011	Active	PER 006		073	Refrigerated Condenser	Spray Drying Systems, Inc.		VOC	100	99%	
14	CE 012	Active	PER 009		058	Mat or Panel Filter			PM10 PM	80 80	85 85	
15	CE 012	Active	PER 010		058	Mat or Panel Filter			PM2.5 PM10 PM10 PM	80 80 80 80	98 85 98 85	
16	CE 013	Active	PER 010		058	Mat or Panel Filter	Various	Various	PM2.5 PM10 PM	80 80 80	98 98 98	
17	CE 014	Active	PER 010		058	Mat or Panel Filter	Various	Various	PM2.5 PM10 PM	100 100 100	98 98 98	

FACILITY DESCRIPTION: CONTROL EQUIPMENT (CE)

Show: Active and Pending Records

Action: PER 010

AQD Facility ID: 12300015

Facility Name: 3M - R\_D Facility - Maplewood Bldg 201

ID No.	Control Equip. Status	Added By (Action)	Retired By (Action)	Operator ID for Item	Control Equip. Type	Control Equipment Description	Manufacturer	Model	Pollutants Controlled	Capture Efficiency (%)	Destruction/ Collection Efficiency (%)	Afterburner Combustion Parameters
18	CE 015	Active	PER 010		058	Mat or Panel Filter	Various	Various	PM2.5 PM10 PM	100 100 100	98 98 98	
19	CE 016	Active	PER 010		058	Mat or Panel Filter	Various	Various	PM2.5 PM10 PM	80 80 80	98 98 98	
20	CE 017	Active	PER 010		058	Mat or Panel Filter	Various	Various	PM2.5 PM10 PM	80 80 80	98 98 98	



**FACILITY DESCRIPTION: STACK/VENTS (SV)**

Show: Active and Pending Records

Action: PER 010

AQD Facility ID: 12300015

Facility Name: 3M - R\_D Facility - Maplewood Bldg 201

ID No.	Stack/ Vent Status	Added By (Action)	Retired By (Action)	Operator ID for Item	Operator's Description	Height of Opening From Ground (feet)	Inside Dimensions		Design Flow Rate at Top (ACFM)	Exit Gas Temperature at Top (°F)	Flow Rate/ Temperature Information Source	Discharge Direction
							Diameter or Length (feet)	Width (feet)				
1	SV 001	Active	PER 001			40.6	1.5	2.7	5000	68	Manufacturer	Up, No Cap
2	SV 002	Active	PER 001			45	1.3	2.3	4278	68	Test	Down
3	SV 003	Active	PER 001			37.6	1.25	.8	696	68	Test	Up, No Cap
4	SV 004	Active	PER 001									
5	SV 005	Active	PER 001			55.6	2		18000	68	Estimate	Up, No Cap
6	SV 006	Active	PER 001			58.8	2		10000	68	Estimate	Up, No Cap
7	SV 007	Active	PER 001			58.7	2		8000	68	Estimate	Up, No Cap
8	SV 008	Active	PER 001									
9	SV 009	Active	PER 001									
10	SV 010	Active	PER 001									
11	SV 011	Active	PER 001			45.7	1.25		2000	170	Manufacturer	Up, No Cap
12	SV 012	Active	PER 001			44.5	.7	.9	500	68	Manufacturer	Up, No Cap
13	SV 013	Active	PER 001			44.6	1.2	1	1500	68	Manufacturer	Up, No Cap
14	SV 014	Active	PER 001			45.3	1.67		2450	68	Test	Up, No Cap
15	SV 015	Active	PER 001			46.6	1		9845	109	Test	Up, No Cap
16	SV 016	Active	PER 001			44.3	1		1900	68	Manufacturer	Up, No Cap
17	SV 017	Active	PER 001			21.8	1		511	68	Estimate	Up, With Cap
18	SV 018	Active	PER 001			44.9	1.5		6000	68	Manufacturer	Up, No Cap
19	SV 019	Active	PER 001			44.4	1.33		5500	68	Manufacturer	Up, No Cap
20	SV 020	Active	PER 001			29.7	.7	1	1500	274	Manufacturer	Up, No Cap
21	SV 021	Active	PER 001			29.7	.7	1	800	274	Manufacturer	Up, No Cap
22	SV 022	Active	PER 001			44.7	3		5000	289	Manufacturer	Up, No Cap
23	SV 023	Active	PER 001			44.8	2		5000	274	Manufacturer	Up, No Cap
24	SV 024	Active	PER 001			117.6	4.5		6030	68	Estimate	Up, No Cap
25	SV 025	Active	PER 001			119.1	2		887	161	Test	Up, No Cap
26	SV 026	Active	PER 001			40.9	.7	.9	3010	68	Manufacturer	Up, No Cap
27	SV 027	Active	PER 001			40.4	.7	.9	500	68	Manufacturer	Up, No Cap

FACILITY DESCRIPTION: STACK/VENTS (SV)

Show: Active and Pending Records

Action: PER 010

AQD Facility ID: 12300015

Facility Name: 3M - R\_D Facility - Maplewood Bldg 201

ID No.	Stack/ Vent Status	Added By (Action)	Retired By (Action)	Operator ID for Item	Operator's Description	Height of Opening From Ground (feet)	Inside Dimensions		Design Flow Rate at Top (ACFM)	Exit Gas Temperature at Top (°F)	Flow Rate/ Temperature Information Source	Discharge Direction
							Diameter or Length (feet)	Width (feet)				
28	SV 028	Active	PER 001			46.4	1.3	1.8	15000	68	Manufacturer	Up, No Cap
29	SV 029	Active	PER 001			37.8	.83		1100	300	Manufacturer	Up, With Cap
30	SV 030	Active	PER 006		Exhaust Fan for Kodiak Spray Dryer	37.75	1.25	0.875	2700	75	Estimate	Up, No Cap

## FACILITY DESCRIPTION: GROUPS (GP)

Show: Active and Pending Records

Action: PER 010

AQD Facility ID: 12300015

Facility Name: 3M - R\_D Facility - Maplewood Bldg 201

ID No.	Group Status	Added By (Action)	Retired By (Action)	Include in EI	Operator ID for Item	Group Description	Group Items
1 GP 001	Active	PER 009		<input type="checkbox"/>		All Pilot Plant VOC/HAP	CE 001, CE 002, CE 003, CE 004, CE 005, EU 001, EU 002, EU 003, EU 008, EU 009, EU 010, EU 011, EU 012, EU 013, EU 014, EU 015, EU 016, EU 018, EU 020, EU 022, EU 023, EU 025, EU 026, EU 027, EU 029, EU 031, EU 032, EU 033, EU 034, EU 101, EU 102, EU 103, EU 104, EU 105, EU 106, EU 107, EU 108, EU 109, EU 110, EU 111, EU 112, EU 113, EU 114, EU 115, EU 116, EU 117, EU 118, EU 119, EU 120, EU 121, EU 122, EU 133
2 GP 001	Active	PER 010		<input type="checkbox"/>		All Pilot Plant VOC/HAP	CE 001, CE 002, CE 003, CE 004, CE 005, EU 001, EU 002, EU 003, EU 008, EU 009, EU 010, EU 011, EU 012, EU 013, EU 014, EU 015, EU 016, EU 018, EU 020, EU 022, EU 023, EU 025, EU 026, EU 027, EU 029, EU 031, EU 032, EU 033, EU 034, EU 101, EU 102, EU 103, EU 104, EU 105, EU 106, EU 107, EU 108, EU 109, EU 110, EU 111, EU 112, EU 113, EU 114, EU 115, EU 116, EU 117, EU 118, EU 119, EU 120, EU 121, EU 122, EU 133, EU 134
3 GP 002	Removed	PER 002		<input type="checkbox"/>		VOC Emissions Cap	CE 001, CE 002, CE 003, CE 004, CE 005, EU 001, EU 002, EU 003, EU 008, EU 009, EU 010, EU 011, EU 013, EU 014, EU 015, EU 016, EU 018, EU 020, EU 022, EU 023, EU 025, EU 026, EU 027, EU 028, EU 029, EU 031, EU 032, EU 033, EU 034
4 GP 003	Active	PER 007		<input type="checkbox"/>		Facility Wide Firm Natural Gas Cap	CE 001, CE 002, CE 003, CE 004, CE 005, EU 001, EU 002, EU 003, EU 004, EU 005, EU 006, EU 007, EU 008, EU 009, EU 010, EU 011, EU 012, EU 013, EU 014, EU 015, EU 016, EU 017, EU 018, EU 019, EU 020, EU 022, EU 023, EU 024, EU 025, EU 026, EU 027, EU 028, EU 029, EU 030, EU 031, EU 032, EU 033, EU 034, EU 124, EU 125, EU 126, EU 127, EU 128, EU 129, EU 130, EU 131, EU 133
5 GP 003	Active	PER 010		<input type="checkbox"/>		Facility Wide Firm Natural Gas Cap	CE 001, CE 002, CE 003, CE 004, CE 005, EU 001, EU 002, EU 003, EU 004, EU 005, EU 006, EU 007, EU 008, EU 009, EU 010, EU 011, EU 012, EU 013, EU 014, EU 015, EU 016, EU 017, EU 018, EU 019, EU 020, EU 022, EU 023, EU 024, EU 025, EU 026, EU 027, EU 028, EU 029, EU 030, EU 031, EU 032, EU 033, EU 034, EU 124, EU 125, EU 126, EU 127, EU 128, EU 129, EU 130, EU 131, EU 133, EU 134
6 GP 004	Active	PER 007		<input type="checkbox"/>		Existing and New Spray Application Booths	EU 014, EU 015, EU 016, EU 018, EU 020, EU 022, EU 023, EU 025, EU 026, EU 027, EU 028, EU 029, EU 031, EU 032, EU 033, EU 133
7 GP 004	Active	PER 010		<input type="checkbox"/>		Existing and New Spray Application Booths	EU 014, EU 015, EU 016, EU 018, EU 020, EU 022, EU 023, EU 025, EU 026, EU 027, EU 028, EU 029, EU 031, EU 032, EU 033, EU 133, EU 134
8 GP 005	Active	PER 003		<input type="checkbox"/>		Solventless PST Coating Equipment (subject to 40 CFR pt. 60, subp. RR)	EU 124, EU 125, EU 126, EU 127, EU 128, EU 129, EU 130

## FACILITY DESCRIPTION: Potential-to-emit (by pollutant)

Show: Active and Pending Records

AQD Facility ID: 12300015

Facility Name: 3M - R\_D Facility - Maplewood Bldg 201

Pollutant	Item	Added By (Action)	Retired By (Action)	Hourly Potential (lbs per hr)	Unrestricted Potential (tons per yr)	Limited Potential (tons per yr)	Actual Emissions (tons per yr)
<b>Carbon Monoxide</b>							
	EU 012	PER 002			2.432E+01	2.432E+01	
	GP 003	PER 002			2.288E+01	2.288E+01	
Totals					4.719E+01	4.719E+01	0.000E+00
<b>Hexane</b>							
	EU 133	PER 010		5.000E+01	2.190E+02	2.500E+00	
Totals					0.000E+00	0.000E+00	0.000E+00
<b>HAPs - Total</b>							
	EU 133	PER 010		8.750E+01	3.830E+02	4.380E+00	
Totals					0.000E+00	0.000E+00	0.000E+00
<b>Methylene chloride (dichlorome</b>							
	EU 133	PER 010		8.750E+01	3.830E+02	4.380E+00	
Totals					3.830E+02	4.380E+00	0.000E+00
<b>Nitrogen Oxides</b>							
	EU 012	PER 002			4.615E+00	4.615E+00	
	GP 003	PER 001			3.750E+01	3.750E+01	
Totals					4.212E+01	4.212E+01	0.000E+00
<b>PM &lt; 2.5 micron</b>							
	EU 014	PER 010		1.500E-01	3.285E+01	4.000E-02	
	EU 015	PER 010		1.500E-01	3.285E+01	4.000E-02	
	EU 018	PER 010		3.600E-01	7.884E+01	2.700E-01	
	EU 020	PER 010		5.000E+00	1.095E+02	1.500E+00	
	EU 022	PER 010		6.000E-02	1.314E+01	2.000E-02	
	EU 023	PER 010		1.430E+00	3.132E+02	3.100E-01	
	EU 025	PER 010		5.000E-01	1.095E+02	3.000E-02	
	EU 026	PER 010		1.100E-01	2.430E+00	1.000E-02	
	EU 028	PER 010		2.810E+00	8.213E+01	4.200E-01	
	EU 029	PER 010		5.600E-01	1.232E+02	8.000E-02	
	EU 031	PER 010		2.630E+00	5.749E+01	4.800E-01	
	EU 032	PER 010		2.800E+00	6.132E+01	5.100E-01	
	EU 033	PER 010		9.000E+00	1.971E+02	4.500E-01	
	EU 133	PER 010		7.560E+00	1.656E+02	3.800E-01	
	EU 134	PER 010		5.000E+00	1.095E+02	9.100E-01	
Totals					1.489E+03	5.450E+00	0.000E+00
<b>PM &lt; 10 micron</b>							
	EU 008	PER 001			3.320E-01	3.320E-01	
	EU 009	PER 002			3.060E-01	3.060E-01	

## FACILITY DESCRIPTION: Potential-to-emit (by pollutant)

Show: Active and Pending Records

AQD Facility ID: 12300015

Facility Name: 3M - R\_D Facility - Maplewood Bldg 201

Pollutant	Item	Added By (Action)	Retired By (Action)	Hourly Potential (lbs per hr)	Unrestricted Potential (tons per yr)	Limited Potential (tons per yr)	Actual Emissions (tons per yr)
PM < 10 micron	EU 010	PER 002			5.780E-01	5.780E-01	
	EU 012	PER 002			7.560E+00	7.560E+00	
	EU 013	PER 001				0.000E+00	
	EU 014	PER 001			1.840E+01	4.780E+00	
	EU 014	PER 010		1.500E-01	3.285E+01	4.000E-02	
	EU 015	PER 001			1.840E+01	4.780E+00	
	EU 015	PER 010		1.500E-01	3.285E+01	4.000E-02	
	EU 016	PER 009			0.000E+00	0.000E+00	
	EU 018	PER 001			3.675E+01	9.555E+00	
	EU 018	PER 010		3.600E-01	7.884E+01	2.700E-01	
	EU 020	PER 002			1.470E+01	1.176E+00	
	EU 020	PER 010		5.000E+00	1.095E+02	1.500E+00	
	EU 022	PER 001			3.675E+00	9.555E-01	
	EU 022	PER 010		6.000E-02	1.314E+01	2.000E-02	
	EU 023	PER 002			1.848E+02	1.478E+01	
	EU 023	PER 010		1.430E+00	3.132E+02	3.100E-01	
	EU 025	PER 002			3.500E+00	9.100E-01	
	EU 025	PER 010		5.000E-01	1.095E+02	3.000E-02	
	EU 026	PER 001			1.800E-01	4.700E-02	
	EU 026	PER 010		1.100E-01	2.430E+00	1.000E-02	
	EU 027	PER 001			1.103E+01	8.820E-01	
	EU 027	PER 010			0.000E+00	0.000E+00	
	EU 028	PER 001			1.103E+01	2.867E+00	
	EU 028	PER 010		2.810E+00	8.213E+01	4.200E-01	
	EU 029	PER 001			1.103E+01	8.820E-01	
	EU 029	PER 010		5.600E-01	1.232E+02	8.000E-02	
	EU 031	PER 001			8.575E+00	2.230E+00	
	EU 031	PER 010		2.630E+00	5.749E+01	4.800E-01	
	EU 032	PER 002			9.800E+00	2.548E+00	
	EU 032	PER 010		2.800E+00	6.132E+01	5.100E-01	
	EU 033	PER 002			6.300E+00	1.638E+00	
	EU 033	PER 010		9.000E+00	1.971E+02	4.500E-01	
	EU 034	PER 002			9.010E+00	2.347E+00	
	EU 040	PER 002			6.000E+00	5.000E-01	
	EU 133	PER 007			1.230E+01	3.190E+00	

## FACILITY DESCRIPTION: Potential-to-emit (by pollutant)

Show: Active and Pending Records

AQD Facility ID: 12300015

Facility Name: 3M - R\_D Facility - Maplewood Bldg 201

Pollutant	Item	Added By (Action)	Retired By (Action)	Hourly Potential (lbs per hr)	Unrestricted Potential (tons per yr)	Limited Potential (tons per yr)	Actual Emissions (tons per yr)
<b>PM &lt; 10 micron</b>							
	EU 133	PER 010		7.560E+00	1.656E+02	3.800E-01	
	EU 134	PER 010		5.000E+00	1.095E+02	9.100E-01	
	GP 003	PER 002			5.250E+00	5.250E+00	
Totals					1.518E+03	2.232E+01	0.000E+00
<b>Total Particulate Matter</b>							
	EU 008	PER 001			3.320E-01	3.320E-01	
	EU 009	PER 002			3.060E-01	3.060E-01	
	EU 010	PER 002			5.780E-01	5.780E-01	
	EU 012	PER 002			7.560E+00	7.560E+00	
	EU 013	PER 001				0.000E+00	
	EU 014	PER 001			1.840E+01	4.780E+00	
	EU 014	PER 010		1.500E-01	3.285E+01	4.000E-02	
	EU 015	PER 001			1.840E+01	4.780E+00	
	EU 015	PER 010		1.500E-01	3.285E+01	4.000E-02	
	EU 016	PER 009			0.000E+00	0.000E+00	
	EU 018	PER 001			3.675E+01	9.555E+00	
	EU 018	PER 010		3.600E-01	7.884E+01	2.700E-01	
	EU 020	PER 002			1.470E+01	1.176E+00	
	EU 020	PER 010		5.000E+00	1.095E+02	1.500E+00	
	EU 022	PER 001			3.675E+00	9.555E-01	
	EU 022	PER 010		6.000E-02	1.314E+01	2.000E-02	
	EU 023	PER 002			1.848E+02	1.478E+01	
	EU 023	PER 010		1.430E+00	3.132E+02	3.100E-01	
	EU 025	PER 002			3.500E+01	9.100E-01	
	EU 025	PER 010		5.000E-01	1.095E+02	3.000E-02	
	EU 026	PER 001			1.800E-01	4.700E-02	
	EU 026	PER 010		1.100E-01	2.430E+00	1.000E-02	
	EU 027	PER 001			1.103E+01	8.820E-01	
	EU 027	PER 010			0.000E+00	0.000E+00	
	EU 028	PER 001			1.103E+01	2.867E+00	
	EU 028	PER 010		2.810E+00	8.213E+01	4.200E-01	
	EU 029	PER 001			1.103E+01	8.820E-01	
	EU 029	PER 010		5.600E-01	1.232E+02	8.000E-02	
	EU 031	PER 001			8.575E+00	2.230E+00	
	EU 031	PER 010		2.630E+00	5.749E+01	4.800E-01	

## FACILITY DESCRIPTION: Potential-to-emit (by pollutant)

Show: Active and Pending Records

AQD Facility ID: 12300015

Facility Name: 3M - R \_D Facility - Maplewood Bldg 201

Pollutant	Item	Added By (Action)	Retired By (Action)	Hourly Potential (lbs per hr)	Unrestricted Potential (tons per yr)	Limited Potential (tons per yr)	Actual Emissions (tons per yr)
<b>Total Particulate Matter</b>							
	EU 032	PER 002			9.800E+00	2.548E+00	
	EU 032	PER 010		2.800E+00	6.132E+01	5.100E-01	
	EU 033	PER 002			6.300E+00	1.638E+00	
	EU 033	PER 010		9.000E+00	1.971E+02	4.500E-01	
	EU 034	PER 002			9.010E+00	2.347E+00	
	EU 040	PER 002			6.000E+00	5.000E-01	
	EU 133	PER 007			1.230E+01	3.190E+00	
	EU 133	PER 010		7.560E+00	1.656E+02	3.800E-01	
	EU 134	PER 010		5.000E+00	1.095E+02	9.100E-01	
	GP 003	PER 002			5.250E+00	5.250E+00	
Totals					1.518E+03	2.232E+01	0.000E+00
<b>Sulfur Dioxide</b>							
	EU 012	PER 002			3.330E-01	3.330E-01	
	GP 003	PER 001			2.250E-01	2.250E-01	
Totals					5.580E-01	5.580E-01	0.000E+00
<b>Volatile Organic Compounds</b>							
	EU 008	PER 002			2.700E+02	2.700E+02	
	EU 008	PER 010			2.700E+02	2.700E+02	
	EU 133	PER 010		1.250E+02	5.470E+02	6.240E+00	
	EU 134	PER 010		6.500E+01	2.850E+02	1.186E+01	
	GP 001	PER 009			1.439E+03	1.439E+03	
	GP 001	PER 010			1.439E+03	1.439E+03	
	GP 002	PER 002			0.000E+00	0.000E+00	
	GP 003	PER 002			1.044E+00	1.044E+00	
	GP 003	PER 010			1.044E+00	1.044E+00	
Totals					2.542E+03	1.728E+03	0.000E+00
<b>Zinc</b>							
	EU 133	PER 010		1.250E+00	5.480E+00	2.000E-02	
Totals					5.480E+00	2.000E-02	0.000E+00



# COMPLIANCE PLAN **CD-01**

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

Permit Number: 12300015 - 010

**Subject Item: Total Facility**

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	SOURCE-SPECIFIC REQUIREMENTS
2.0		CD	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 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.
3.0		CD	Minn. R. 7007.0800, subp. 2	<p>Permit Appendices: This permit contains appendices as listed in the permit Table of Contents.</p> <p>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.</p> <p>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.</p>
4.0		CD	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 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.
5.0		CD	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	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.
6.0		CD	Minn. R. 4410.4300 and Minn. R. 4410.4400	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.
7.0		CD	hdr	A. BACT LIMITS AND AUTHORIZATIONS
8.0		CD	Title I Condition: 40 CFR Section 52.21(j) (changes covered by BACT Limit)	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.
9.0		CD	Title I Condition: 40 CFR 52.21(j) (BACT Limit)	<p>The Permittee shall conduct surveys of each R&amp;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&amp;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&amp;D after permit issuance, they shall be added to the survey program.</p>





## COMPLIANCE PLAN **CD-01**

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

Permit Number: 12300015 - 010

10.0		CD	Title I Condition: Monitoring for BACT limit under 40 CFR Section 52.21(j); Minn. R. 7007.3000	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.
11.0		S/A	Minn. R. 7007.0800, subp. 2	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.
12.0		CD	hdr	B. VOC PURCHASES RECORDKEEPING
13.0		CD	Minn. R. 7007.0800, subp. 5	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).  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:  a) Calculate the VOC purchased, in tons, for the previous month using the tracked VOC purchase data, VOC material content data.  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).
14.0		CD	Minn. R. 7007.0800, subp. 5	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.  Top 20 Chemical Purchases at 3M Center: 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
15.0		CD	Minn. R. 7007.0800, subp. 5	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.
16.0		CD	Minn. R. 7007.0800, subp. 5	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.



## COMPLIANCE PLAN **CD-01**

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

Permit Number: 12300015 - 010

17.0		CD	hdr	C. VOC EMISSIONS RECORDKEEPING
18.0		CD	Minn. R. 7007.0800, subp. 5	<p>VOC Emission Calculation Method: By the 20th day of each month, the Permittee shall do the following calculation for all R&amp;D facility non-combustion VOC emissions:</p> <p>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.</p> <p>--- 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.</p> <p>--- The mass balance calculation can account for recovered/recycled VOCs as described under the Recovery/Recycling requirement.</p>
19.0		CD	Minn. R. 7007.0800, subp. 5	<p>VOC Emission Calculation Method cont.:</p> <p>a) cont.</p> <p>--- 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.</p> <p>b) Calculate the cumulative 12 month VOC emissions for the previous 12 months (or for the number of months since permit issuance).</p>
20.0		CD	Minn. R. 7007.0800, subp. 5	<p>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.</p> <p>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).</p>
21.0		CD	Minn. R. 7007.0800, subp. 5	<p>Recovery/Recycling: For each waste material accounted for in a mass balance equation the Permittee shall:</p> <ol style="list-style-type: none"> <li>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.).</li> <li>2). Keep records of the weight of the recovered waste material.</li> <li>3). Calculate the weight of the recovered VOC using the weight percent VOC and weight of the recovered waste material.</li> </ol>
22.0		CD	hdr	D. EQUIPMENT RECORDKEEPING
23.0		CD	Minn. R. 7007.0800, subp. 5	<p>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.</p>
24.0		CD	Minn. R. 7007.0800, subp. 5	<p>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.</p>
25.0		CD	hdr	F. DETERMINING IF A PROJECT/MODIFICATION IS SUBJECT TO NEW SOURCE REVIEW
26.0		CD	Title I Condition: 40 CFR Section 52.21(r)(6); Minn. R. 7007.3000	<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>



## COMPLIANCE PLAN **CD-01**

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

Permit Number: 12300015 - 010

27.0		CD	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>Preconstruction Documentation -- Before beginning actual construction on a project, the Permittee shall document the following:</p> <ol style="list-style-type: none"> <li>1. Project description</li> <li>2. Identification of any emission unit (EU) whose emissions of an NSR pollutant could be affected</li> <li>3. Pre-change potential emissions of any affected existing EU, and the projected post-change potential emissions of any affected existing or new EU.</li> <li>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.</li> </ol> <p>The Permittee shall maintain records of this documentation.</p>
28.0		CD	Title I Condition: 40 CFR Section 52.21(r)(6) and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4 & 5	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.
29.0		CD	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"> <li>a. The name, address, and telephone number of the facility</li> <li>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.</li> <li>c. Any other information, such as an explanation as to why the summed emissions differ from the preconstruction projection</li> </ol>
30.0		CD	hdr	OPERATIONAL REQUIREMENTS
31.0		CD	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	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.
32.0		CD	Minn. R. 7011.0020	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.
33.0		CD	Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, subp. 16(J)	Air Pollution Control Equipment: Operate all pollution control equipment whenever the corresponding process equipment and emission units are operated.
34.0		CD	Minn. R. 7007.0800, subp. 14 and Minn. R. 7007.0800, subp. 16(J)	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.
35.0		CD	Minn. R. 7019.1000, subp. 4	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.



## COMPLIANCE PLAN **CD-01**

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

Permit Number: 12300015 - 010

36.0		CD	Minn. R. 7011.0150	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.
37.0		CD	Minn. R. 7030.0010 - 7030.0080	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.
38.0		CD	Minn. R. 7007.0800, subp. 9(A)	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.
39.0		CD	Minn. R. 7007.0800, subp. 16	General Conditions: The Permittee shall comply with the General Conditions in Minn. R. 7007.0800, subp. 16.
40.0		CD	hdr	PERFORMANCE TESTING
41.0		CD	Minn. R. ch. 7017	Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017 unless otherwise noted in Tables A and/or B.
42.0		CD	Minn. R. 7017.2018; Minn. R. 7017.2030, subps. 1-4, Minn. R. 7017.2035, subps. 1-2	<p>Performance Test Notifications and Submittals:</p> <p>Performance Tests are due as outlined in Table A of the permit. See Table B for additional testing requirements.</p> <p>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</p> <p>The Notification, Test Plan, and Test Report may be submitted in an alternative format as allowed by Minn. R. 7017.2018.</p>
43.0		CD	Minn. R. 7017.2025, subp. 3	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.
44.0		CD	hdr	MONITORING REQUIREMENTS
45.0		CD	Minn. R. 7007.0800, subp. 4(D)	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.
46.0		CD	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.
47.0		CD	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).
48.0		CD	hdr	RECORDKEEPING
49.0		CD	Minn. R. 7007.0800, subp. 5(B)	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.
50.0		CD	Minn. R. 7007.0800, subp. 5(C)	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).



## COMPLIANCE PLAN **CD-01**

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

Permit Number: 12300015 - 010

51.0		CD	Minn. R. 7007.1250; Minn. R. 7007.1300	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.
52.0		CD	Minn. R. 7007.1200, subp. 4	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.
53.0		CD	hdr	REPORTING/SUBMITTALS
54.0		CD	Minn. R. 7019.1000, subp. 3	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.
55.0		CD	Minn. R. 7019.1000, subp. 2	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.
56.0		CD	Minn. R. 7019.1000, subp. 1	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.
57.0		CD	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.
58.0		S/A	Minn. R. 7007.0800, subp. 6(A)(2)	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.
59.0		CD	Minn. R. 7007.1150 through Minn. R. 7007.1500	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.



## COMPLIANCE PLAN **CD-01**

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

Permit Number: 12300015 - 010

60.0		CD	40 CFR Section 63.52(b)(1) and 63.52(e)(1)	<p>For changes that do not require a permit amendment:</p> <ul style="list-style-type: none"><li>- 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).</li><li>- 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).</li></ul> <p>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.</p>
61.0		S/A	Minn. R. 7007.0400, subp. 2	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.
62.0		CD	Minn. R. 7007.1400, subp. 1(H)	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).
63.0		S/A	Minn. R. 7007.0800, subp. 6 (C)(1)	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.
64.0		CD	Minn. R. 7019.3000 through Minn. R. 7019.3010	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.
65.0		CD	Minn. R. 7002.0005 through Minn. R. 7002.0095	Emission Fees: due 60 days after receipt of an MPCA bill.





## COMPLIANCE PLAN **CD-01**

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



## COMPLIANCE PLAN **CD-01**

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

Permit Number: 12300015 - 010

	NC/ CA	Type	Citation	Requirement
1.0		CD	40 CFR Pt. 63, Subp. JJJ	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.
2.0		CD	40 CFR Pt. 63, Subp. JJJJ	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.
3.0		CD	Minn. R. 7007.0800, subp. 2, 40 CFR Section 63.1310(d)(1); 40 CFR Section 3300(g); 40 CFR Section 63.3310	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.





## COMPLIANCE PLAN **CD-01**

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



## COMPLIANCE PLAN **CD-01**

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

Permit Number: 12300015 - 010

**Associated Items:** EU 131 Solventless Mag. Coating Equipment

EU 133 Spray Booth 230-S-118

EU 134 Spray Booth 251-B354

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	A. LIMITS AND AUTHORIZATIONS
2.0		CD	Title I Condition: Limit taken to avoid major modification classification under 40 CFR Section 52.21	Fuel Limit. The Permittee shall burn only natural gas at the R&D facility covered by this permit.
3.0		LIMIT	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
4.0		CD	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.
5.0		CD	hdr	B. MONITORING REQUIREMENTS
6.0		CD	Minn. R. 7007.0800, subp 5	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.
7.0		CD	Minn. R. 7007.0800, subp. 4	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.



## COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	A. LIMITS AND AUTHORIZATIONS
2.0		CD	40 CFR Section 60.440(b); Minn. R. 7011.2560	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).
3.0		CD	Minn. R. 7007.0750, subp. 6	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.
4.0		CD	hdr	B. RECORDKEEPING
5.0		CD	40 CFR Section 60.13(i) to comply with 40 CFR Section 60.445(a) and 40 CFR Section 50.445(d)	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.



## COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		LIMIT	Minn. R. 7011.0710, subp. 1(A)	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).
2.0		LIMIT	Minn. R. 7011.0710, subp. 1(B)	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).
3.0		LIMIT	Minn. R. 7011.0715, subp. 1	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).
4.0		LIMIT	Minn. R. 7011.0715, subp. 2	Opacity: less than or equal to 20 percent opacity (for units which were not in operation before July 9, 1969).



## COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	A. LIMITS AND AUTHORIZATIONS
2.0		CD	40 CFR Section 60.440(b); Minn. R. 7011.2560	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.
3.0		CD	Minn. R. 7007.0750, subp. 6	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.
4.0		CD	hdr	B. RECORDKEEPING
5.0		CD	40 CFR Section 60.445(a); Minn. R. 7011.2560	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.
6.0		CD	40 CFR Section 60.445(d); 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.
7.0		S/A	40 CFR Section 60.7(a)(1); Minn. R. 7019.0100, subp. 1	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.
8.0		S/A	40 CFR Section 60.7(a)(2); Minn. R. 7019.0100, subp. 1	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.
9.0		S/A	40 CFR Section 60.7(a)(3); Minn. R. 7019.0100, subp. 1	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.
10.0		CD	40 CFR Section 60.7(a)(4); Minn. R. 7019.0100, subp. 1	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).



# COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	A. LIMITS AND AUTHORIZATIONS
2.0		CD	40 CFR Section 60.710(b); Minn. R. 7011.3450	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.
3.0		CD	Minn. R. 7007.0750, subp. 6	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.
4.0		CD	hdr	B. RECORDKEEPING
5.0		CD	40 CFR Section 60.714(a)(1); Minn. R. 7011.3450	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.
6.0		CD	40 CFR Section 60.714(a)(2); Minn. R. 7011.3450	Solvent Usage Recordkeeping: The Permittee shall maintain records of the actual annual use at each affected facility.
7.0		CD	hdr	C. REPORTING
8.0		CD	40 CFR Section 60.717(c); Minn. R. 7011.3450	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.
9.0		S/A	40 CFR Section 60.7(a)(1); Minn. R. 7019.0100, subp. 1	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.
10.0		S/A	40 CFR Section 60.7(a)(3); Minn. R. 7019.0100, subp. 1	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.
11.0		CD	40 CFR Section 60.7(a)(4); Minn. R. 7019.0100, subp. 1	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).



## COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		LIMIT	Minn. R. 7011.0710, subp. 1(A)	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).
2.0		LIMIT	Minn. R. 7011.0710, subp. 1(B)	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).
3.0		LIMIT	Minn. R. 7011.0715, subp. 1	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).
4.0		LIMIT	Minn. R. 7011.0715, subp. 2	Opacity: less than or equal to 20 percent opacity (for units which were not in operation before July 9, 1969).



## COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		CD	Minn. R. 7007.0800, subp. 2	Fuel Usage: natural gas only.
2.0		LIMIT	Minn. R. 7011.0610, subp. 1(A)(1)	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.
3.0		LIMIT	Minn. R. 7011.0610, subp. 1(A)(2)	Opacity: less than or equal to 20 percent opacity , except for one six-minute period per hour of not more than 60 percent opacity.





## COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		CD	Minn. R. 7007.0800, subp. 2	Fuel Usage: natural gas only.
2.0		CD	Minn. R. 7007.0800, subp. 2	Each individual unit shall have a heat input capacity less than 10 MMBtu/hr.
3.0		LIMIT	Minn. R. 7011.0510, subp. 1	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)
4.0		LIMIT	Minn. R. 7011.0510, subp. 2	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).
5.0		LIMIT	Minn. R. 7011.0515, subp. 1	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)
6.0		LIMIT	Minn. R. 7011.0515, subp. 2	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).



## COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	A. LIMITS AND AUTHORIZATIONS
2.0		CD	Minn. R. 7007.0800, subp. 2	Fuel Usage: natural gas only.
3.0		CD	Minn. R. 7007.0800, subp. 2	Burner Type: All boilers subject to 40 CFR pt. 60, subp. Dc shall have low NOx burners.
4.0		CD	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).
5.0		CD	Minn. R. 7007.0750, subp. 6	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.
6.0		CD	hdr	B. RECORDKEEPING AND REPORTING
7.0		CD	40 CFR Section 60.13(i) to comply with 40 CFR Section 60.48c(g)	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.
8.0		CD	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.
9.0		S/A	40 CFR Section 60.7(a)(1); Minn. R. 7019.0100, subp. 1	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.
10.0		S/A	40 CFR Section 60.7(a)(2); Minn. R. 7019.0100, subp. 1	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.
11.0		S/A	40 CFR Section 60.7(a)(3); Minn. R. 7019.0100, subp. 1; Minn. R. 7019.0100, subp. 2(A)	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.



## COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		CD	Minn. R. 7007.1800, subp. (A)(2)	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.
2.0		CD	Minn. R. 7007.0800, subp. 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.
3.0		CD	Minn. R. 7007.0800, subp. 4	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.
4.0		LIMIT	Minn. R. 7011.0710, subp. 1(A)	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).
5.0		LIMIT	Minn. R. 7011.0710, subp. 1(B)	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).
6.0		LIMIT	Minn. R. 7011.0715, subp. 1	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).
7.0		LIMIT	Minn. R. 7011.0715, subp. 2	Opacity: less than or equal to 20 percent opacity (for units which were not in operation before July 9, 1969).



## COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		CD	Minn. R. 7007.0800, subp. 2	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.
2.0		CD	Minn. R. 7007.0800, subp. 5	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.
3.0		CD	Minn. R. 7007.0800, subp. 4	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.
4.0		LIMIT	Minn. R. 7011.0710, subp. 1(A)	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).
5.0		LIMIT	Minn. R. 7011.0710, subp. 1(B)	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).
6.0		LIMIT	Minn. R. 7011.0715, subp. 1	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).
7.0		LIMIT	Minn. R. 7011.0715, subp. 2	Opacity: less than or equal to 20 percent opacity (for units which were not in operation before July 9, 1969).



## COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		CD	Minn. R. 7007.0800, subp. 2	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.
2.0		CD	Minn. R. 7007.0800, subp. 5	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.
3.0		CD	Minn. Stat. 116.07, subd. 4a; Equipment used under Minn. R. 7019.3020(F) & Minn. R. 7019.3050	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.
4.0		LIMIT	Minn. R. 7011.0710, subp. 1(A)	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).
5.0		LIMIT	Minn. R. 7011.0710, subp. 1(B)	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).
6.0		LIMIT	Minn. R. 7011.0715, subp. 1	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).
7.0		LIMIT	Minn. R. 7011.0715, subp. 2	Opacity: less than or equal to 20 percent opacity (for units which were not in operation before July 9, 1969).



## COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		CD	40 CFR Section 63.322(c)	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.
2.0		CD	40 CFR Section 63.322(d)	The Permittee shall operate and maintain each dry cleaning system according to the manufacturer's specifications and recommendations.
3.0		CD	40 CFR Section 63.322(i)	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.
4.0		CD	40 CFR Section 63.322(j)	The Permittee shall store all perchloroethylene and wastes that contain perchloroethylene in solvent tanks or solvent containers with no perceptible leaks.
5.0		CD	40 CFR Section 63.322(k), (l)	<p>The Permittee shall inspect the following components weekly for perceptible leaks while the dry cleaning system is operating:</p> <ul style="list-style-type: none"> <li>(1) Hose and pipe connections, fittings, couplings, and valves.</li> <li>(2) Door gaskets and seatings.</li> <li>(3) Filter gaskets and seatings.</li> <li>(4) Pumps.</li> <li>(5) Solvent tanks and containers.</li> <li>(6) Water separators.</li> <li>(7) Muck cookers</li> <li>(8) Stills.</li> <li>(9) Exhaust dampers</li> <li>(10) Diverter valves.</li> <li>(11) Cartridge filter housings.</li> </ul> <p>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.</p>
6.0		CD	40 CFR Section 63.322(m)	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.
7.0		CD	40 CFR Section 63.323(a)(1)	The Permittee shall measure the temperature of the air-perchloroethylene gas-vapor stream on the outlet side of the refrigerated condensor 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.
8.0		CD	40 CFR Section 63.323(d)	<p>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:</p> <ul style="list-style-type: none"> <li>(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).</li> <li>(2) If no perchloroethylene purchases were made in a given month, then the perchloroethylene consumption for that month is zero gallons.</li> <li>(3) The total sum calculated in paragraph (d) of this section is the yearly perchloroethylene consumption of the facility.</li> </ul>



## COMPLIANCE PLAN **CD-01**

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

Permit Number: 12300015 - 010

9.0		CD	40 CFR Section 63.324(d)(1-4)	<p>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:</p> <p>(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.</p> <p>(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)</p> <p>(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.</p> <p>(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).</p>
10.0		CD	40 CFR Section 63.324(e)	<p>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.</p>



## COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		CD	Minn. R. 7007.0800, subp. 5	PM Calculations: By the 20th of the month, the Permittee shall do the following:  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).  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.
2.0		CD	Minn. R. 7007.0800, subp. 5	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.  As part of this update, the Permittee will evaluate the emission calculation methods to determine if new better data or emission factors are available.
3.0		CD	Minn. R. 7007.0800, subp. 5	The Permittee shall maintain the necessary records in order to do the emission calculations listed above.
4.0		LIMIT	Minn. R. 7011.0710, subp. 1(A)	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).
5.0		LIMIT	Minn. R. 7011.0710, subp. 1(B)	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).
6.0		LIMIT	Minn. R. 7011.0715, subp. 1	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).
7.0		LIMIT	Minn. R. 7011.0715, subp. 2	Opacity: less than or equal to 20 percent opacity (for units which were not in operation before July 9, 1969).





## COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		CD	Minn. R. 7007.0800, subp. 2	<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>
2.0		CD	Minn. R. 7007.0800, subp. 5	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).
3.0		CD	Minn. R. 7007.0800, subp. 2	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.
4.0		LIMIT	Minn. R. 7011.0710, subp. 1(A)	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).
5.0		LIMIT	Minn. R. 7011.0710, subp. 1(B)	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).
6.0		LIMIT	Minn. R. 7011.0715, subp. 1	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).
7.0		LIMIT	Minn. R. 7011.0715, subp. 2	Opacity: less than or equal to 20 percent opacity (for units which were not in operation before July 9, 1969).



# COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	A. OPERATING LIMITS
2.0		LIMIT	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 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).
3.0		LIMIT	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 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
4.0		LIMIT	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
5.0		CD	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.
6.0		CD	hdr	B. MONITORING AND RECORDKEEPING
7.0		CD	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	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).
8.0		CD	Minn. R. 7007.0800, subps. 4 and 5	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.
9.0		CD	Minn. R. 7007.0800, subp. 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.



## COMPLIANCE PLAN **CD-01**

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

Permit Number: 12300015 - 010

10.0		CD	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.
11.0		CD	Minn. R. 7005.0100, subp. 35a	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.
12.0		CD	hdr	C. MINNESOTA RULE EMISSION LIMITS
13.0		LIMIT	Minn. R. 7011.0710, subp. 1(A)	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.
14.0		LIMIT	Minn. R. 7011.0710, subp. 1(B)	Opacity: less than or equal to 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity.



## COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	A. OPERATING LIMITS
2.0		LIMIT	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 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).
3.0		LIMIT	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 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
4.0		LIMIT	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
5.0		CD	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	Control Equipment: The Permittee shall vent emissions from this spray booth (EU015) to control equipment meeting the requirements of CE014 of this permit.
6.0		CD	hdr	B. MONITORING AND RECORDKEEPING
7.0		CD	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	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).
8.0		CD	Minn. R. 7007.0800, subp. 5	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.
9.0		CD	Minn. R. 7007.0800, subp. 4 and 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.



## COMPLIANCE PLAN **CD-01**

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

Permit Number: 12300015 - 010

10.0		CD	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.
11.0		CD	Minn. R. 7005.0100, subp. 35a	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.
12.0		CD	hdr	C. MINNESOTA RULE EMISSION LIMITS
13.0		LIMIT	Minn. R. 7011.0710, subp. 1(A)	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.
14.0		LIMIT	Minn. R. 7011.0710, subp. 1(B)	Opacity: less than or equal to 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity.



## COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		LIMIT	Minn. R. 7011.0710, subp. 1(A)	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).
2.0		LIMIT	Minn. R. 7011.0710, subp. 1(B)	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).
3.0		LIMIT	Minn. R. 7011.0715, subp. 1	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).
4.0		LIMIT	Minn. R. 7011.0715, subp. 2	Opacity: less than or equal to 20 percent opacity (for units which were not in operation before July 9, 1969).



# COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	A. OPERATING LIMITS
2.0		LIMIT	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	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).
3.0		LIMIT	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 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
4.0		LIMIT	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
5.0		CD	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	Control Equipment: The Permittee shall vent emissions from this spray booth (EU018) to control equipment meeting the requirements of CE014 of this permit.
6.0		CD	hdr	B. MONITORING AND RECORDKEEPING
7.0		CD	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	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).
8.0		CD	Minn. R. 7007.0800, subp. 5	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.
9.0		CD	Minn. R. 7007.0800, subp. 4 and 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.



## COMPLIANCE PLAN **CD-01**

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

Permit Number: 12300015 - 010

10.0		CD	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.
11.0		CD	Minn. R. 7005.0100, subp. 35a	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.
12.0		CD	hdr	C. MINNESOTA RULE EMISSION LIMITS
13.0		LIMIT	Minn. R. 7011.0715, subp. 1	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.
14.0		LIMIT	Minn. R. 7011.0715, subp. 2	Opacity: less than or equal to 20 percent opacity





## COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		LIMIT	Title I Condition: 40 CFR Section 52.21(j) (BACT Limit); Minn. R. 7007.3000	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.
2.0		CD	Title I Condition: Monitoring for BACT limit under 40 CFR Section 52.21(j); 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.
3.0		CD	40 CFR Section 60.440(b); Minn. R. 7011.2560	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.



## COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	A. OPERATING LIMITS
2.0		LIMIT	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	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).
3.0		LIMIT	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 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
4.0		LIMIT	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
5.0		CD	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	Control Equipment: The Permittee shall vent emissions from this spray booth (EU020) to control equipment meeting the requirements of CE013 of this permit.
6.0		CD	hdr	B. MONITORING AND RECORDKEEPING
7.0		CD	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	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).
8.0		CD	Minn. R. 7007.0800, subp. 5	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.
9.0		CD	Minn. R. 7007.0800, subp. 4 and 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.



## COMPLIANCE PLAN **CD-01**

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

Permit Number: 12300015 - 010

10.0		CD	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.
11.0		CD	Minn. R. 7005.0100, subp. 35a	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.
12.0		CD	hdr	C. MINNESOTA RULE EMISSION LIMITS
13.0		LIMIT	Minn. R. 7011.0715, subp. 1	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.
14.0		LIMIT	Minn. R. 7011.0715, subp. 2	Opacity: less than or equal to 20 percent opacity .



# COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	A. OPERATING LIMITS
2.0		LIMIT	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	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).
3.0		LIMIT	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 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
4.0		LIMIT	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
5.0		CD	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	Control Equipment: The Permittee shall vent emissions from this spray booth (EU022) to control equipment meeting the requirements of CE015 of this permit.
6.0		CD	hdr	B. MONITORING AND RECORDKEEPING
7.0		CD	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	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).
8.0		CD	Minn. R. 7007.0800, subp. 5	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.



## COMPLIANCE PLAN **CD-01**

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

Permit Number: 12300015 - 010

9.0		CD	Minn. R. 7007.0800, subp. 4 and 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.
10.0		CD	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.
11.0		CD	Minn. R. 7005.0100, subp. 35a	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.
12.0		CD	hdr	C. MINNESOTA RULE EMISSION LIMITS
13.0		LIMIT	Minn. R. 7011.0715, subp. 1	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.
14.0		LIMIT	Minn. R. 7011.0715, subp. 2	Opacity: less than or equal to 20 percent opacity



## COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	A. OPERATING LIMITS
2.0		LIMIT	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 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).  This is more stringent than the BACT limit, which also applies.
3.0		LIMIT	Title I Condition: Limit used in analysis under 40 CFR Section 52.21(j); Minn. R. 7007.3000	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).
4.0		LIMIT	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 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
5.0		LIMIT	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
6.0		CD	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	Control Equipment: The Permittee shall vent emissions from this spray booth (EU023) to control equipment meeting the requirements of CE014 of this permit.
7.0		CD	hdr	B. MONITORING AND RECORDKEEPING
8.0		CD	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	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).
9.0		CD	Minn. R. 7007.0800, subp. 5	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).  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.



## COMPLIANCE PLAN **CD-01**

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

Permit Number: 12300015 - 010

10.0		CD	Minn. R. 7007.0800, subp. 4 and 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.
11.0		CD	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.
12.0		CD	Minn. R. 7005.0100, subp. 35a	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.
13.0		CD	hdr	C. MINNESOTA RULE EMISSION LIMITS
14.0		LIMIT	Minn. R. 7011.0715, subp. 1	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.
15.0		LIMIT	Minn. R. 7011.0715, subp. 2	Opacity: less than or equal to 20 percent opacity



## COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	A. OPERATING LIMITS
2.0		LIMIT	Title I Condition: 40 CFR Section 52.21(j) (BACT Limit); Minn. R. 7007.3000	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: Month 1 -- 9 tons Month 2 -- 12 tons Month 3 -- 15 tons Months 4-11 -- 18 tons VOC usage shall be tracked and calculated as explained below.
3.0		CD	Title I Condition: Monitoring for BACT limit under 40 CFR Section 52.21(j); 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 20 of the month, and add this to the previous 11 months usage.
4.0		CD	hdr	B. MINNESOTA RULE EMISSION LIMITS
5.0		LIMIT	Minn. R. 7011.0715, subp. 1	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.
6.0		LIMIT	Minn. R. 7011.0715, subp. 2	Opacity: less than or equal to 20 percent opacity





# COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	A. OPERATING LIMITS
2.0		LIMIT	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	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).
3.0		LIMIT	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 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
4.0		LIMIT	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
5.0		CD	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	Control Equipment: The Permittee shall vent emissions from this spray booth (EU025) to control equipment meeting the requirements of CE015 of this permit.
6.0		CD	hdr	B. MONITORING AND RECORDKEEPING
7.0		CD	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	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).
8.0		CD	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.
9.0		CD	Minn. R. 7007.0800, subp. 4 and 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.



## COMPLIANCE PLAN **CD-01**

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

Permit Number: 12300015 - 010

10.0		CD	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.
11.0		CD	Minn. R. 7005.0100, subp. 35a	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.
12.0		CD	hdr	C. MINNESOTA RULE EMISSION LIMITS
13.0		LIMIT	Minn. R. 7011.0715, subp. 1	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.
14.0		LIMIT	Minn. R. 7011.0715, subp. 2	Opacity: less than or equal to 20 percent opacity



# COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	A. OPERATING LIMITS
2.0		LIMIT	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 3.70 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).
3.0		LIMIT	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.
4.0		LIMIT	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 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
5.0		LIMIT	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
6.0		CD	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	Control Equipment: The Permittee shall vent emissions from this spray booth to control equipment meeting the requirements of CE017 of this permit.
7.0		CD	hdr	B. MONITORING AND RECORDKEEPING
8.0		CD	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	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).
9.0		CD	Minn. R. 7007.0800, subp. 5	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.



## COMPLIANCE PLAN **CD-01**

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

Permit Number: 12300015 - 010

10.0		CD	Minn. R. 7007.0800, subp. 4 and 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.
11.0		CD	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.
12.0		CD	Minn. R. 7007.0800, subp. 4 and 5	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.
13.0		CD	Minn. R. 7005.0100, subp. 35a	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.
14.0		CD	hdr	C. MINNESOTA RULE EMISSION LIMITS
15.0		LIMIT	Minn. R. 7011.0715, subp. 1	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.
16.0		LIMIT	Minn. R. 7011.0715, subp. 2	Opacity: less than or equal to 20 percent opacity



## COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	A. OPERATING LIMITS
2.0		LIMIT	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	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).
3.0		LIMIT	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 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
4.0		LIMIT	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
5.0		CD	Title I Condition: Limit taken 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 spray booth to control equipment meeting the requirements of CE009 of this permit.
6.0		CD	hdr	B. MONITORING AND RECORDKEEPING
7.0		CD	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	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).
8.0		CD	Minn. R. 7007.0800, subp. 5	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.



## COMPLIANCE PLAN **CD-01**

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

Permit Number: 12300015 - 010

9.0		CD	Minn. R. 7007.0800, subp. 4 and 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.
10.0		CD	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.
11.0		CD	Minn. R. 7005.0100, subp. 35a	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.
12.0		CD	hdr	C. MINNESOTA RULE EMISSION LIMITS
13.0		LIMIT	Minn. R. 7011.0715, subp. 1	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.
14.0		LIMIT	Minn. R. 7011.0715, subp. 2	Opacity: less than or equal to 20 percent opacity



# COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	A. OPERATING LIMITS
2.0		LIMIT	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	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).
3.0		LIMIT	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 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
4.0		LIMIT	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
5.0		CD	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	Control Equipment: The Permittee shall vent emissions from this spray booth (EU029) to control equipment meeting the requirements of CE015 of this permit.
6.0		CD	hdr	B. MONITORING AND RECORDKEEPING
7.0		CD	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	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).
8.0		CD	Minn. R. 7007.0800, subp. 5	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.



## COMPLIANCE PLAN **CD-01**

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

Permit Number: 12300015 - 010

9.0		CD	Minn. R. 7007.0800, subps. 4 and 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.
10.0		CD	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.
11.0		CD	Minn. R. 7005.0100, subp. 35a	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.
12.0		CD	hdr	C. MINNESOTA RULE EMISSION LIMITS
13.0		LIMIT	Minn. R. 7011.0715, subp. 1	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.
14.0		LIMIT	Minn. R. 7011.0715, subp. 2	Opacity: less than or equal to 20 percent opacity





## COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		CD	Minn. R. 7007.0800, subp. 2	This emission unit includes the LPB coater and all its supporting equipment in the pilot plant.
2.0		CD	hdr	A. MONITORING AND RECORDKEEPING
3.0		CD	Minn. R. 7007.0800, subp. 4 and 5	<p>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.</p> <p>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.</p>
4.0		CD	hdr	C. MINNESOTA RULE EMISSION LIMITS
5.0		LIMIT	Minn. R. 7011.0715, subp. 1	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.
6.0		LIMIT	Minn. R. 7011.0715, subp. 2	Opacity: less than or equal to 20 percent opacity



# COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	OPERATING LIMITS
2.0		LIMIT	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 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).
3.0		LIMIT	Title I Condition: 40 CFR Section 52.21(j) (BACT Limit); Minn. R. 7007.3000	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
4.0		LIMIT	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 Hours: less than or equal to 365 hours/year  This limit is more stringent than the BACT limit, which also applies.
5.0		LIMIT	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
6.0		CD	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	Control Equipment: The Permittee shall vent emissions from this spray booth (EU031) to control equipment meeting the requirements of CE013 of this permit.
7.0		CD	hdr	MINNESOTA RULE EMISSION LIMITS
8.0		LIMIT	Minn. R. 7011.0715, subp. 1	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.
9.0		LIMIT	Minn. R. 7011.0715, subp. 2	Opacity: less than or equal to 20 percent opacity
10.0		CD	hdr	MONITORING AND RECORDKEEPING
11.0		CD	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	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).
12.0		CD	Minn. R. 7007.0800, subp. 5	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.



## COMPLIANCE PLAN **CD-01**

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

Permit Number: 12300015 - 010

13.0		CD	Minn. R. 7007.0800, subp. 4 and 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.
14.0		CD	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.
15.0		CD	Minn. R. 7005.0100, subp. 35a	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.



# COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	OPERATING LIMITS
2.0		LIMIT	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	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).
3.0		LIMIT	Title I Condition: 40 CFR Section 52.21(j) (BACT Limit); Minn. R. 7007.3000	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
4.0		LIMIT	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 Hours: less than or equal to 365 hours/year  This limit is more stringent than the BACT limit, which also applies.
5.0		LIMIT	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
6.0		CD	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	Control Equipment: The Permittee shall vent emissions from this spray booth (EU032) to control equipment meeting the requirements of CE013 of this permit.
7.0		CD	hdr	MINNESOTA RULE EMISSION LIMITS
8.0		LIMIT	Minn. R. 7011.0715, subp. 1	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.
9.0		LIMIT	Minn. R. 7011.0715, subp. 2	Opacity: less than or equal to 20 percent opacity
10.0		CD	hdr	MONITORING AND RECORDKEEPING
11.0		CD	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	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).
12.0		CD	Minn. R. 7007.0800, subp. 5	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.



## COMPLIANCE PLAN **CD-01**

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

Permit Number: 12300015 - 010

13.0		CD	Minn. R. 7007.0800, subp. 4 and 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.
14.0		CD	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.
15.0		CD	Minn. R. 7005.0100, subp. 35a	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.



## COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	OPERATING LIMITS
2.0		LIMIT	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	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).
3.0		LIMIT	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 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
4.0		LIMIT	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
5.0		CD	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	Control Equipment: The Permittee shall vent emissions from this spray booth (EU033) to control equipment meeting the requirements of CE013 of this permit.
6.0		CD	hdr	MINNESOTA RULE EMISSION LIMITS
7.0		LIMIT	Minn. R. 7011.0715, subp. 1	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.
8.0		LIMIT	Minn. R. 7011.0715, subp. 2	Opacity: less than or equal to 20 percent opacity
9.0		CD	hdr	MONITORING AND RECORDKEEPING
10.0		CD	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	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).
11.0		CD	Minn. R. 7007.0800, subp. 5	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.



## COMPLIANCE PLAN **CD-01**

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

Permit Number: 12300015 - 010

12.0		CD	Minn. R. 7007.0800, subp. 4 and 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.
13.0		CD	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.
14.0		CD	Minn. R. 7005.0100, subp. 35a	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.



## COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		CD	Title I Condition: Limit taken 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 spray booth to control equipment meeting the requirements of CE008 of this permit.
2.0		CD	Minn. R. 7007.0800, subp. 2	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.
3.0		LIMIT	Minn. R. 7011.0715, subp. 1	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).
4.0		LIMIT	Minn. R. 7011.0715, subp. 2	Opacity: less than or equal to 20 percent opacity (for units which were not in operation before July 9, 1969).
5.0		CD	hdr	CONTROL EQUIPMENT REQUIREMENTS
6.0		LIMIT	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 Particulate Matter < 10 micron: greater than or equal to 74 percent control efficiency
7.0		LIMIT	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
8.0		CD	hdr	B. MONITORING AND RECORDKEEPING
9.0		CD	Minn. R. 7007.0800, subp. 2	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.
10.0		CD	Minn. R. 7007.0800, subp. 4	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.
11.0		CD	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.





## COMPLIANCE PLAN **CD-01**

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

Permit Number: 12300015 - 010

12.0		CD	Minn. R. 7007.0800, subp. 14	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.
13.0		CD	Minn. R. 7007.0800, subp. 4	The Permittee shall operate the control equipment monitoring equipment at all times the control equipment is required to operate.



## COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	A. OPERATING LIMITS
2.0		LIMIT	Title I Condition: Limit to avoid major modification classification under 40 CFR Section 52.21(permit 23E-91-I/O-8)	PM < 10 micron: less than or equal to 0.020 grains/dry standard cubic foot
3.0		LIMIT	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.).
4.0		LIMIT	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
5.0		CD	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.
6.0		CD	hdr	B. MONITORING AND RECORDKEEPING
7.0		CD	Title I Condition: Limit to avoid major modification classification under 40 CFR Section 52.21(permit 23E-91-I/O-8)	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).
8.0		CD	Minn. R. 7007.0800, subp. 5	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.
9.0		CD	hdr	C. MINNESOTA RULE EMISSION LIMITS
10.0		LIMIT	Minn. R. 7011.0715, subp. 2	Opacity: less than or equal to 20 percent opacity .



## COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		CD	Title I Condition: 40 CFR Section 52.21(j) (changes covered by BACT limit) and Minn. R. 7007.3000	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.
2.0		CD	hdr	NESHAP REQUIREMENTS
3.0		CD	40 CFR Part 63, Subp. JJJJ	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.
4.0		S/A	40 CFR Section 63.3400(c)(1); Minn. R. 7011.7385	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
5.0		CD	40 CFR Section 63.3400(c)(2); Minn. R. 7011.7385	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)



## COMPLIANCE PLAN **CD-01**

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)

	NC/ CA	Type	Citation	Requirement
1.0		S/A	40 CFR Section 60.7(a)(1); Minn. R. 7019.0100, subp. 1	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.
2.0		S/A	40 CFR Section 60.7(a)(3); Minn. R. 7019.0100, subp. 1	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.
3.0		CD	40 CFR Section 60.7(a)(4); Minn. R. 7019.0100, subp. 1	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).



## COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	A. LIMITS AND AUTHORIZATIONS
2.0		CD	40 CFR Section 60.710(b); Minn. R. 7011.3450	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).
3.0		CD	Minn. R. 7007.0750, subp. 6	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.
4.0		CD	hdr	B. RECORDKEEPING
5.0		CD	40 CFR Section 60.13(i) to comply with 40 CFR Section 60.714(a)(1) and (a)(2); Minn. R. 7011.3450	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.
6.0		CD	hdr	C. REPORTING
7.0		CD	40 CFR Section 60.717(b); Minn. R. 7011.3450	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.
8.0		CD	40 CFR 60.13(i) to comply with 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.
9.0		S/A	40 CFR Section 60.7(a)(1); Minn. R. 7019.0100, subp. 1	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.
10.0		S/A	40 CFR Section 60.7(a)(3); Minn. R. 7019.0100, subp. 1	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.
11.0		CD	40 CFR Section 60.7(a)(4); Minn. R. 7019.0100, subp. 1	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).



## COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		LIMIT	Minn. R. 7011.0715, subp. 1(A)	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.
2.0		LIMIT	Minn. R. 7011.0715, subp. 1(B)	Opacity: less than or equal to 20 percent opacity



## COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	LIMITS
2.0		LIMIT	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	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).
3.0		LIMIT	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
4.0		LIMIT	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
5.0		CD	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	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.
6.0		LIMIT	Minn. R. 7011.0715, subp. 1(A)	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.
7.0		LIMIT	Minn. R. 7011.0715, subp. 1(B)	Opacity: less than or equal to 20 percent opacity .
8.0		CD	hdr	MONITORING AND RECORDKEEPING
9.0		CD	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	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).



## COMPLIANCE PLAN **CD-01**

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

Permit Number: 12300015 - 010

10.0		CD	Minn. R. 7007.0800, subp. 5	<p>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).</p> <p>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.</p>
11.0		CD	Minn. R. 7007.0800, subps. 4 and 5	<p>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:</p> <ol style="list-style-type: none"><li>1) Date</li><li>2) Hour meter reading at start of compressor use</li><li>3) Hour meter reading at end of compressor use</li><li>4) Amount of time compressor is used (Meter reading at end - Meter reading at start)</li><li>5) Total hours compressor used for the day, as a running total adding each previous compressor use for the day.</li></ol>
12.0		CD	Minn. R. 7007.0800, subp. 4 and 5	<p>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.</p>
13.0		CD	Minn. R. 7005.0100, subp. 35a	<p>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.</p>





## COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	LIMITS
2.0		LIMIT	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	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).
3.0		LIMIT	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
4.0		LIMIT	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
5.0		CD	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	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.
6.0		LIMIT	Minn. R. 7011.0715, subp. 1(A)	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.
7.0		LIMIT	Minn. R. 7011.0715, subp. 1(B)	Opacity: less than or equal to 20 percent opacity .
8.0		CD	hdr	MONITORING AND RECORDKEEPING
9.0		CD	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	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).



## COMPLIANCE PLAN **CD-01**

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

Permit Number: 12300015 - 010

10.0		CD	Minn. R. 7007.0800, subp. 5	<p>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).</p> <p>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.</p>
11.0		CD	Minn. R. 7007.0800, subp. 4 and 5	<p>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:</p> <ol style="list-style-type: none"><li>1) Date</li><li>2) Hour meter reading at start of compressor use</li><li>3) Hour meter reading at end of compressor use</li><li>4) Amount of time compressor is used (Meter reading at end - Meter reading at start)</li><li>5) Total hours compressor used for the day, as a running total adding each previous compressor use for the day.</li></ol>
12.0		CD	Minn. R. 7007.0800, subps. 4 and 5	<p>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.</p>
13.0		CD	Minn. R. 7005.0100, subp. 35a	<p>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.</p>



## COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	A. EMISSIONS AND OPERATING LIMITS
2.0		CD	Minn. Stat. 116.07, subd. 4a; Equipment used under Minn. R. 7019.3020 (F)	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.
3.0		LIMIT	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.
4.0		LIMIT	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.
5.0		CD	hdr	B. MONITORING AND RECORDKEEPING
6.0		CD	Minn. R. 7007.0800, subp. 5	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.
7.0		CD	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.
8.0		CD	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.
9.0		CD	Minn. R. 7007.0800, subp. 4	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.
10.0		CD	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.
11.0		CD	Minn. R. 7007.0800, subp. 14	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.
12.0		S/A	Minn. Stat. 116.07, subd. 4a; Equipment used under Minn. R. 7019.3020 (F)	When the permittee installs this piece of control equipment, they shall send to the MPCA a Notification: due 30 days after Equipment Installation



## COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	A. EMISSIONS AND OPERATING LIMITS
2.0		CD	Minn. Stat. 116.07, subd. 4a; Equipment used under Minn. R. 7019.3020 (F)	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.
3.0		LIMIT	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.
4.0		LIMIT	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.
5.0		CD	hdr	B. MONITORING AND RECORDKEEPING
6.0		CD	Minn. R. 7007.0800, subp. 5	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.
7.0		CD	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.
8.0		CD	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.
9.0		CD	Minn. R. 7007.0800, subp. 4	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.
10.0		CD	Minn. R. 7007.0800, subp. 14	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.
11.0		S/A	Minn. Stat. 116.07, subd. 4a; Equipment used under Minn. R. 7019.3020 (F)	When the permittee installs this piece of control equipment, they shall send to the MPCA a Notification: due 30 days after Equipment Installation



## COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	A. EMISSIONS AND OPERATING LIMITS
2.0		LIMIT	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 Particulate Matter < 10 micron: greater than or equal to 74 percent control efficiency
3.0		LIMIT	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
4.0		CD	hdr	B. MONITORING AND RECORDKEEPING
5.0		CD	Minn. R. 7007.0800, subp. 2	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.
6.0		CD	Minn. R. 7007.0800, subp. 4	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.
7.0		CD	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.
8.0		CD	Minn. R. 7007.0800, subp. 14	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.
9.0		CD	Minn. R. 7007.0800, subp. 4	The Permittee shall operate the control equipment monitoring equipment at all times the control equipment is required to operate.



## COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	A. OPERATING LIMITS
2.0		CD	Minn. Stat. 116.07, subd. 4a; Equipment used under Minn. R. 7019.3020 (F)	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.
3.0		CD	hdr	B. MONITORING AND RECORDKEEPING
4.0		CD	Minn. R. 7007.0800, subp. 5	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.
5.0		CD	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.
6.0		CD	Minn. R. 7007.0800, subp. 4	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.
7.0		CD	Minn. R. 7007.0800, subp. 14	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.
8.0		S/A	Minn. Stat. 116.07, subd. 4a; Equipment used under Minn. R. 7019.3020 (F)	When the permittee installs this piece of control equipment, they shall send to the MPCA a Notification: due 30 days after Equipment Installation



## COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	A. EMISSIONS AND OPERATING LIMITS
2.0		LIMIT	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 Particulate Matter < 10 micron: greater than or equal to 92 percent control efficiency
3.0		LIMIT	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
4.0		CD	hdr	B. MONITORING AND RECORDKEEPING
5.0		CD	Minn. R. 7007.0800, subp. 4	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.
6.0		CD	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.
7.0		CD	Minn. R. 7007.0800, subp. 14	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.
8.0		CD	Minn. R. 7007.0800, subp. 4	The Permittee shall operate the control equipment monitoring equipment at all times the control equipment is required to operate.



## COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		CD	Minn. Stat. 116.07, subd. 4a; Equipment used under Minn. R. 7019.3020 (F) & Minn. R. 7019.3050	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.
2.0		CD	Minn. R. 7007.0800, subp. 14	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.





## COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		CD	Minn. Stat. 116.07, subd. 4a; Equipment used under Minn. R. 7019.3020 (F) & Minn. R. 7019.3050	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.
2.0		CD	Minn. R. 7007.0800, subp. 14	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.



## COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	A. EMISSIONS AND OPERATING LIMITS
2.0		LIMIT	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 Particulate Matter < 10 micron: greater than or equal to 74 percent control efficiency
3.0		LIMIT	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
4.0		CD	hdr	B. MONITORING AND RECORDKEEPING
5.0		CD	Minn. R. 7007.0800, subp. 2	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.
6.0		CD	Minn. R. 7007.0800, subp. 4	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.
7.0		CD	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.
8.0		CD	Minn. R. 7007.0800, subp. 14	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.
9.0		CD	Minn. R. 7007.0800, subp. 4	The Permittee shall operate the control equipment monitoring equipment at all times the control equipment is required to operate.



## COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	A. EMISSIONS AND OPERATING LIMITS
2.0		LIMIT	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 Total Particulate Matter: greater than or equal to 92 percent control efficiency
3.0		LIMIT	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 < 10 micron: greater than or equal to 92 percent control efficiency
4.0		LIMIT	Minn. R. 7007.0800, subp. 2	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
5.0		CD	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.
6.0		CD	Minn. R. 7007.0800, subp. 2; Minn. R. 7011.0060, subp.5	The Permittee shall operate each panel filter meeting the requirements of CE009 as total enclosures as defined in Minn. R. 7011.0060, subp.5.
7.0		CD	Minn. R. 7007.0800, subps. 2, 14 and 16(J)	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.
8.0		CD	hdr	B. MONITORING AND RECORDKEEPING
9.0		CD	Minn. R. 7007.0800, subp. 4	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.
10.0		CD	Minn. R. 7007.0800, subps. 4, 5, and 14	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.
11.0		CD	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.
12.0		CD	Minn. R. 7007.0800, subp. 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.



## COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	A. EMISSIONS AND OPERATING LIMITS
2.0		CD	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 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.
3.0		CD	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.
4.0		CD	Minn. R. 7007.0800, subp. 14	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.



## COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	A. OPERATING LIMITS
2.0		CD	Minn. Stat. 116.07, subd. 4a; Equipment used under Minn. R. 7019.3020 (F)	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.
3.0		CD	hdr	B. MONITORING AND RECORDKEEPING
4.0		CD	Minn. R. 7007.0800, subp. 5	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.
5.0		CD	Minn. R. 7007.0800, subp. 4	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.
6.0		CD	Minn. R. 7007.0800, subp. 14	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.
7.0		S/A	Minn. Stat. 116.07, subd. 4a; Equipment used under Minn. R. 7019.3020 (F)	When the permittee installs this piece of control equipment, they shall send to the MPCA a Notification: due 90 days after Equipment Installation



## COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	CE012 CONTROL EQUIPMENT REQUIREMENTS
2.0		CD	Minn. R. 7007.0800, subp. 2; Minn. R. 7011.0060, subp.5	The Permittee shall operate CE012 control equipment with hoods as defined in Minn. R. 7011.0060, subp.3e.
3.0		CD	Minn. R. 7007.0800, subps. 2 and 14	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.
4.0		LIMIT	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 Total Particulate Matter: greater than or equal to 80.0 percent control efficiency
5.0		LIMIT	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 < 10 micron: greater than or equal to 80.0 percent control efficiency
6.0		LIMIT	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 < 2.5 micron: greater than or equal to 80.0 percent control efficiency
7.0		CD	Minn. R. 7007.0800, subps. 4 and 5	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.
8.0		CD	Minn. R. 7007.0800, subps. 4, 5, and 14	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.
9.0		CD	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.
10.0		CD	Minn. R. 7007.0800, subps. 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.
11.0		CD	Minn. R. 7007.0800, subps. 4, 5, and 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.
12.0		CD	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.



## COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	A. EMISSIONS AND OPERATIONAL LIMITS
2.0		CD	Minn. R. 7007.0800, subp. 2	All CE013 filters required for controlling emissions from spray booths, including existing, modified, or new filters are subject to the requirements of CE013.
3.0		CD	Minn. R. 7007.0800, subp. 2; Minn. R. 7011.0060, subp.5	The Permittee shall operate filters meeting the requirements of CE013 with hoods as defined in Minn. R. 7011.0060, subp.3e.
4.0		CD	Minn. R. 7007.0800, subps. 2 and 14	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.
5.0		LIMIT	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 Total Particulate Matter: greater than or equal to 80.0 percent control efficiency
6.0		LIMIT	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 < 10 micron: greater than or equal to 80 percent control efficiency
7.0		LIMIT	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 < 2.5 micron: greater than or equal to 80 percent control efficiency
8.0		CD	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.
9.0		CD	hdr	B. MONITORING AND RECORDKEEPING
10.0		CD	Minn. R. 7007.0800, subp. 4 and 5	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.
11.0		CD	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 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.
12.0		CD	Minn. R. 7007.0800, subp. 14	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.
13.0		CD	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.
14.0		CD	Minn. R. 7007.0800, subp. 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.



## COMPLIANCE PLAN **CD-01**

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

Permit Number: 12300015 - 010

15.0		CD	Minn. R. 7007.0800, subp. 2	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.
16.0		CD	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.





## COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	A. EMISSIONS AND OPERATING LIMITS
2.0		CD	Minn. R. 7007.0800, subp. 2	All CE014 filters required for controlling emissions from spray booths, including existing, modified, or new filters are subject to the requirements of CE014.
3.0		CD	Minn. R. 7007.0800, subp. 2; Minn. R. 7011.0060, subp.5	The Permittee shall operate filters meeting the requirements of CE014 as total enclosures as defined in Minn. R. 7011.0060, subp.5.
4.0		CD	Minn. R. 7007.0800, subps. 2 and 14	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.
5.0		LIMIT	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 Total Particulate Matter: greater than or equal to 98.0 percent control efficiency
6.0		LIMIT	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 < 10 micron: greater than or equal to 98.0 percent control efficiency
7.0		LIMIT	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 < 2.5 micron: greater than or equal to 98.0 percent control efficiency
8.0		CD	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.
9.0		CD	hdr	B. MONITORING AND RECORDKEEPING
10.0		CD	Minn. R. 7007.0800, subp. 4	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.
11.0		CD	Minn. R. 7007.0800, subps. 4, 5, and 14	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.
12.0		CD	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.
13.0		CD	Minn. R. 7007.0800, subp. 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.



## COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	A. EMISSIONS AND OPERATING LIMITS
2.0		CD	Minn. R. 7007.0800, subp. 2	All CE015 filters required for controlling emissions from spray booths, including existing, modified, or new filters are subject to the requirements of CE015.
3.0		CD	Minn. R. 7007.0800, subp. 2; Minn. R. 7011.0060, subp.5	The Permittee shall operate filters meeting the requirements of CE015 as total enclosures as defined in Minn. R. 7011.0060, subp.5.
4.0		CD	Minn. R. 7007.0800, subps. 2 and 14	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.
5.0		LIMIT	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 Total Particulate Matter: greater than or equal to 98.0 percent control efficiency
6.0		LIMIT	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 < 10 micron: greater than or equal to 98.0 percent control efficiency
7.0		LIMIT	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 < 2.5 micron: greater than or equal to 98.0 percent control efficiency
8.0		CD	Title I Condition: Limit taken to avoid major modification classification under 40 CFR Section 52.21	Operate and maintain control equipment to limit Total Particulate Matter < 10 micron: greater than or equal to 74 percent control efficiency.
9.0		CD	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.
10.0		CD	Minn. R. 7007.0800, subps. 2, 14 and 16(J)	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.
11.0		CD	hdr	B. MONITORING AND RECORDKEEPING
12.0		CD	Minn. R. 7007.0800, subp. 4	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.
13.0		CD	Minn. R. 7007.0800, subps. 4, 5, and 14	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.
14.0		CD	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.
15.0		CD	Minn. R. 7007.0800, subp. 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.



## COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	CE016 CONTROL EQUIPMENT REQUIREMENTS
2.0		CD	Minn. R. 7007.0800, subp. 2; Minn. R. 7011.0060, subp.3e	The Permittee shall operate CE016 control equipment with a hood as defined in Minn. R. 7011.0060, subp.3e.
3.0		CD	Minn. R. 7007.0800, subps. 2 and 14	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.
4.0		LIMIT	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 Total Particulate Matter: greater than or equal to 80.0 percent control efficiency
5.0		LIMIT	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 < 10 micron: greater than or equal to 80.0 percent control efficiency
6.0		LIMIT	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 < 2.5 micron: greater than or equal to 80.0 percent control efficiency
7.0		CD	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	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.
8.0		CD	Minn. R. 7007.0800, subps. 4, 5, and 14	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.
9.0		CD	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.
10.0		CD	Minn. R. 7007.0800, subps. 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.
11.0		CD	Minn. R. 7007.0800, subps. 4, 5, and 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.



## COMPLIANCE PLAN **CD-01**

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

Permit Number: 12300015 - 010

12.0		CD	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.
------	--	----	---	---



## COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		CD	Minn. R. 7007.0800, subp. 2	All CE017 filters required for controlling emissions from spray booths, including existing, modified, or new filters are subject to the requirements of CE017.
2.0		CD	Minn. R. 7007.0800, subp. 2; Minn. R. 7011.0060, subp.5	The Permittee shall operate panel filters meeting the requirements of CE017 with hoods as defined in Minn. R. 7011.0060, subp.3e.
3.0		CD	Minn. R. 7007.0800, subps. 2 and 14	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.
4.0		LIMIT	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 < 10 micron: greater than or equal to 80 percent control efficiency
5.0		LIMIT	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
6.0		LIMIT	Minn. R. 7007.0800, subps. 2	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
7.0		CD	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.  This is less stringent than the limit based on modeling, but also applies.
8.0		CD	Title I Condition: Limit taken to avoid major modification classification under 40 CFR Section 52.21	Operate and maintain control equipment to limit Total Particulate Matter: greater than or equal to 74 percent control  This is less stringent than the limit based on modeling, but also applies.
9.0		CD	Minn. R. 7007.0800, subp. 4 and 5	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.
10.0		CD	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.
11.0		CD	Minn. R. 7007.0800, subp. 14	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.
12.0		CD	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.
13.0		CD	Minn. R. 7007.0800, subp. 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.



## COMPLIANCE PLAN **CD-01**

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

Permit Number: 12300015 - 010

14.0		CD	Minn. R. 7007.0800, subp. 2	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.
15.0		CD	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.

3M Company  
3M – R&D Facility - Maplewood  
Permit No. 12300015-010  
Technical Support Document

## **Attachment 3**

### **Points Calculator/Additional Fees**

1) AQ Facility ID No.: 12300015  
 2) Facility Name: 3M - R&D Facility - Maplewood  
 3) Small business? y/n? n  
 4) DQ Numbers (including all rolled) : 2096, with 1972 and 4109 rolled in  
 5) Date of each Application Received: June 11, 2008, March 18, 2008 and August 17, 2012  
 6) Final Permit No. 12300015-010  
 7) Permit Staff Sevcik  
 8) "Work completed" in which .xls file (i.e. unit 2b, unit 1a, biofuels)?

**Total Points**

<u>Application Type</u>	<u>DQ No.</u>	<u>Qty.</u>	<u>Points</u>	<u>Total Points</u>	<u>Details</u>
Administrative Amendment			1	0	
Minor Amendment			4	0	
Applicability Request			10	0	
Moderate Amendment			15	0	
Major Amendment			25	0	
Individual State Permit (not reissuance)			50	0	
Individual Part 70 Permit (not reissuance)			75	0	

**Additional Points**

Modeling Review			15	0	
BACT Review			15	0	
LAER Review			15	0	
CAIR/Part 75 CEM analysis			10	0	
NSPS Review			10	0	
NESHAP Review			10	0	
Case-by-case MACT Review			20	0	
Netting			10	0	
Limits to remain below threshold			10	0	
Plantwide Applicability Limit (PAL)			20	0	
AERA review			15	0	
Variance request under 7000.7000			35	0	
Confidentiality request under 7000.1300			2	0	
<u>EAW review</u>					
Part 4410.4300, subparts 18, item A; and 29			15	0	
Part 4410.4300, subparts 8, items A & B; 10, items A to C; 16, items A & D; 17, items A to C & E to G; and 18, items B & C			35	0	
Part 4410.4300, subparts 4; 5 items A & B; 13; 15; 16, items B & C; and 17 item D			70	0	
			<b>Add'l Points</b>	<b>0</b>	

**NOTES:**

The permit review for Limits to remain Below Threshold associated with DQ2096 and DQ1972 were completed prior to effective date of the fee rule, therefore no additional points are assessed for limits to remain below threshold. The PM10 Modeling was part of the Title V program and not required for the modifications authorized in this permit; therefore no additional points are assessed for modeling.