



AIR EMISSION PERMIT NO. 04100003-005

Major Amendment

IS ISSUED TO

3M Company

3M - ALEXANDRIA

2115 Broadway Street South
Alexandria, Douglas County, MN 56308

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

This permit amendment supersedes Air Emission Permit No. 04100003-004 and authorizes the Permittee to operate and construct the stationary source at the address listed above unless otherwise noted in Table A. The Permittee must comply with all the conditions of the permit. Any changes or modifications to the stationary source must be performed in compliance with Minn. R. 7007.1150 to 7007.1500. Terms used in the permit are as defined in the state air pollution control rules unless the term is explicitly defined in the permit.


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

Permit Type: Federal Permit; Part 70/Limits to Avoid NSR; Limits to Avoid NSR

Operating Permit Issue Date: July 15, 2008

Major Amendment Issue Date: February 26, 2013

Expiration Date: July 15, 2013 – Title I Conditions do not expire.


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

for John Linc Stine
Commissioner
Minnesota Pollution Control Agency

Permit Type	Application Date	Permit Action
Total Facility Operating Permit -Reissuance	November 7, 2007	004
Major Amendment	August 23, 2012; December 18, 2012 (supplemental information)	005
Minor Amendment	June 11, 2009; December 18, 2012 (supplemental information)	005

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NOTICE TO THE PERMITTEE:

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

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

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

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

PERMIT SHIELD:

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

FACILITY DESCRIPTION:

3M Alexandria manufactures abrasive products such as sanding belts and sanding discs. In addition, the facility converts intermediate materials from other 3M plants into saleable abrasive products and provides intermediate products to other 3M Abrasive Plants.

The main sources of emissions from the facility are Volatile Organic Compound (VOC) emissions from coatings and belt splice adhesive. The facility also emits particulate matter from coaters and combustion emissions from natural gas ovens and boilers.

A total facility limit of 240 tons per year (tpy) of VOCs was added to the permit through permit action 003 in order to make the facility a non-major source under federal New Source Review regulations (40 CFR § 52.21)

AMENDMENT DESCRIPTION:

This amendment is a major amendment that authorizes construction and operation of a new coating line no. 3. The line includes five new mix tanks, a coater, and a coater oven. The emission units from the line are subject to National Emission Standards for Hazardous Air Pollutant (NESHAP) subpart JJJJ as well as Minnesota Standards of Performance. The VOC emissions from the new line will be incorporated under the facility's 240 tpy VOC limit.

This permit action also incorporates a minor amendment that was submitted in 2009. The amendment is for the addition of a laser cutter. This unit emits particulate matter and is subject to the Industrial Process Equipment Rule.

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: 3M - Alexandria
 Permit Number: 04100003 - 005

Table A contains limits and other requirements with which your facility must comply. The limits are located in the first column of the table (What To do). The limits can be emission limits or operational limits. This column also contains the actions that you must take and the records you must keep to show that you are complying with the limits. The second column of Table A (Why to do it) lists the regulatory basis for these limits. Appendices included as conditions of your permit are listed in Table A under total facility requirements.

Subject Item:	Total Facility
What to do	Why to do it
SOURCE-SPECIFIC REQUIREMENTS	hdr
This permit establishes limits on the facility to keep it a minor source under New Source Review, this includes changes that might otherwise qualify as insignificant modifications and minor or moderate amendments for future modifications. The Permittee cannot make any change at the source area that would make the source a major source under New Source Review until a major permit amendment has been issued.	Title I Condition: To avoid classification as major source and modification under 40 CFR Section 52.21 & Minn. R. 7007.3000
OPERATIONAL REQUIREMENTS	hdr
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.	40 CFR pt. 50; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subps. 7A, 7L & 7M; Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080.
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.	Minn. R. 7011.0020
Air Pollution Control Equipment: Operate all pollution control equipment whenever the corresponding process equipment and emission units are operated, unless otherwise noted in Table A.	Minn. R. 7007.0800, subp. 2; 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.	Minn. R. 7007.0800, subp. 14 and Minn. R. 7007.0800, subp. 16(J)
Operation Changes: In any shutdown, breakdown, or deviation the Permittee shall immediately take all practical steps to modify operations to reduce the emission of any regulated air pollutant. The Commissioner may require feasible and practical modifications in the operation to reduce emissions of air pollutants. No emissions units that have an unreasonable shutdown or breakdown frequency of process or control equipment shall be permitted to operate.	Minn. R. 7019.1000, subp. 4
Fugitive Emissions: Do not cause or permit the handling, use, transporting, or storage of any material in a manner which may allow avoidable amounts of particulate matter to become airborne. Comply with all other requirements listed in Minn. R. 7011.0150.	Minn. R. 7011.0150
Noise: The Permittee shall comply with the noise standards set forth in Minn. R. 7030.0010 to 7030.0080 at all times during the operation of any emission units. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.	Minn. R. 7030.0010 - 7030.0080
Inspections: The Permittee shall comply with the inspection procedures and requirements as found in Minn. R. 7007.0800, subp. 9(A).	Minn. R. 7007.0800, subp. 9(A)
The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16.	Minn. R. 7007.0800, subp. 16
PERFORMANCE TESTING	hdr
Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017 unless otherwise noted in Tables A, B, and/or C.	Minn. R. ch. 7017

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: 3M - Alexandria
 Permit Number: 04100003 - 005

<p>Performance Test Notifications and Submittals:</p> <p>Performance Tests are due as outlined in Tables A and B 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 alternative format as allowed by Minn. R. 7017.2018.</p>	<p>Minn. Rs. 7017.2030, subp. 1-4, 7017.2018 and Minn. R. 7017.2035, subp. 1-2</p>
<p>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.</p>	<p>Minn. R. 7017.2025, subp. 3</p>
<p>MONITORING REQUIREMENTS</p>	<p>hdr</p>
<p>Monitoring Equipment Calibration: Annually calibrate all required monitoring equipment (any requirements applying to continuous emission monitors are listed separately in this permit).</p>	<p>Minn. R. 7007.0800, subp. 4(D)</p>
<p>Operation of Monitoring Equipment: Unless otherwise noted in Tables A, B, and/or C, monitoring a process or control equipment connected to that process is not necessary during periods when the process is shutdown, or during checks of the monitoring systems, such as calibration checks and zero and span adjustments. If monitoring records are required, they should reflect any such periods of process shutdown or checks of the monitoring system.</p>	<p>Minn. R. 7007.0800, subp. 4(D)</p>
<p>RECORDKEEPING</p>	<p>hdr</p>
<p>Recordkeeping: Retain all records at the stationary source for a period of five (5) years from the date of monitoring, sample, measurement, or report. Records which must be retained at this location include all calibration and maintenance records, all original recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. Records must conform to the requirements listed in Minn. R. 7007.0800, subp. 5(A).</p>	<p>Minn. R. 7007.0800, subp. 5(C)</p>
<p>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.</p>	<p>Minn. R. 7007.0800, subp. 5(B)</p>
<p>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. For expiring permits, 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.</p>	<p>Minn. R. 7007.1200, subp. 4</p>
<p>REPORTING/SUBMITTALS</p>	<p>hdr</p>
<p>Shutdown Notifications: Notify the Commissioner at least 24 hours in advance of a planned shutdown of any control equipment or process equipment if the shutdown would cause any increase in the emissions of any regulated air pollutant. If the owner or operator does not have advance knowledge of the shutdown, notification shall be made to the Commissioner as soon as possible after the shutdown. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 3.</p> <p>At the time of notification, the owner or operator shall inform the Commissioner of the cause of the shutdown and the estimated duration. The owner or operator shall notify the Commissioner when the shutdown is over.</p>	<p>Minn. R. 7019.1000, subp. 3</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: 3M - Alexandria
 Permit Number: 04100003 - 005

<p>Breakdown Notifications: Notify the Commissioner within 24 hours of a breakdown of more than one hour duration of any control equipment or process equipment if the breakdown causes any increase in the emissions of any regulated air pollutant. The 24-hour time period starts when the breakdown was discovered or reasonably should have been discovered by the owner or operator. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 2.</p> <p>At the time of notification or as soon as possible thereafter, the owner or operator shall inform the Commissioner of the cause of the breakdown and the estimated duration. The owner or operator shall notify the Commissioner when the breakdown is over.</p>	<p>Minn. R. 7019.1000, subp. 2</p>
<p>Notification of Deviations Endangering Human Health or the Environment: As soon as possible after discovery, notify the Commissioner or the state duty officer, either orally or by facsimile, of any deviation from permit conditions which could endanger human health or the environment.</p>	<p>Minn. R. 7019.1000, subp. 1</p>
<p>Notification of Deviations Endangering Human Health or the Environment Report: Within 2 working days of discovery, notify the Commissioner in writing of any deviation from permit conditions which could endanger human health or the environment. Include the following information in this written description:</p> <ol style="list-style-type: none"> 1. the cause of the deviation; 2. the exact dates of the period of the deviation, if the deviation has been corrected; 3. whether or not the deviation has been corrected; 4. the anticipated time by which the deviation is expected to be corrected, if not yet corrected; and 5. steps taken or planned to reduce, eliminate, and prevent reoccurrence of the deviation. 	<p>Minn. R. 7019.1000, subp. 1</p>
<p>Application for Permit Amendment: If a permit amendment is needed, submit an application in accordance with the requirements of Minn. R. 7007.1150 through Minn. R. 7007.1500. Submittal dates vary, depending on the type of amendment needed.</p>	<p>Minn. R. 7007.1150 through Minn. R. 7007.1500</p>
<p>Extension Requests: The Permittee may apply for an Administrative Amendment to extend a deadline in a permit by no more than 120 days, provided the proposed deadline extension meets the requirements of Minn. R. 7007.1400, subp. 1(H).</p>	<p>Minn. R. 7007.1400, subp. 1(H)</p>
<p>Emission Inventory Report: due on or before April 1 of each calendar year following permit issuance. The Permittee shall submit this on a form approved by the Commissioner.</p>	<p>Minn. R. 7019.3000 through Minn. R. 7019.3100</p>
<p>Emission Fees: due 60 days after receipt of an MPCA bill.</p>	<p>Minn. R. 7002.0005 through Minn. R. 7002.0095</p>
<p>The Permittee must submit a Risk Management Plan (RMP) under 40 CFR pt. 68. Each owner or operator of a stationary source, at which a regulated substance is present above a threshold quantity in a process, shall design and implement an accidental release prevention program. An initial RMP must be submitted no later than the latest of the following dates: 1) June 21, 1999; 2) Three years after the date on which a regulated substance is first listed under 40 CFR Section 68.130; or 3) The date on which a regulated substance is first present above a threshold quantity in a process. A full update and resubmission of the RMP is required at least once every five years. The five-year anniversary date is reset whenever your facility fully updates and resubmits their RMP. Submit RMPs to the Risk Management Plan Reporting Center, P.O. Box 1515, Lanham-Seabrook, Maryland 20703-1515. RMP information may be obtained at http://www.epa.gov/swercepp or by calling 1-800-424-9346.</p>	<p>40 CFR pt. 68</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS

A-4

02/26/13

Facility Name: 3M - Alexandria

Permit Number: 04100003 - 005

Subject Item: GP 001 Boilers**Associated Items:** EU 056 #5 Boiler

EU 057 #6 Boiler

What to do	Why to do it
Comply with 40 CFR Part 63, Subpart DDDDD, National Emissions Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters, as promulgated and amended.	40 CFR Part 63, Subpart DDDDD
LIMITS	hdr
Allowable fuels: natural gas only.	Minn. R. 7005.0100, subp. 35a
MONITORING AND RECORDKEEPING	hdr
Recordkeeping: By the last day of each calendar month, the Permittee shall record the amount of natural gas combusted in the boilers during the previous calendar month. These records shall consist of purchase records, receipts, or fuel meter readings.	40 CFR Section 60.48c(g); Minn. R. 7011.0570
REPORTS AND NOTIFICATIONS (See Table B)	hdr
Submittals and notifications under subpart DDDDD shall be sent to both the MPCA and EPA contacts listed on Page B-1 of this permit, unless otherwise noted.	Minn. R. 7007.0800, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: 3M - Alexandria
 Permit Number: 04100003 - 005

Subject Item: GP 002 Direct Heating Equipment

- Associated Items:** EU 008 Wide Maker Oven
 EU 022 Cloth Coater Treater Oven
 EU 029 Coater Cure Oven 2
 EU 044 Sierra 1 Make Oven
 EU 045 Sierra 1 Size Oven
 EU 053 Backrack Oven
 EU 055 Mainline Oven
 EU 062 M9 Coater Reactive Thermal Oxidizer
 EU 070 Coating Line No. 3 Oven

What to do	Why to do it
LIMITS (Limits apply individually to each unit). See GP 007 for additional requirements associated with these units.	hdr
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011. 0735.	Minn. R. 7011.0610, subp. 1(A)(1)
Sulfur Dioxide: less than or equal to 2.0 lbs/million Btu heat input . The potential to emit from the unit is 0.0006 lb/MMBtu due to equipment design and allowable fuels.	Minn. R. 7011.0610, subp. 2(A)(2)
Opacity: less than or equal to 20.0 percent opacity except for one six-minute period per hour of not more than 60 percent opacity.	Minn. R. 7011.0610, subp. 1(A)(2)
The Permittee shall burn only natural gas in the Group 002 emission units.	Minn. R. 7005.0100, subp. 35a

TABLE A: LIMITS AND OTHER REQUIREMENTS

A-6

02/26/13

Facility Name: 3M - Alexandria

Permit Number: 04100003 - 005

Subject Item: GP 003 Pre-1969 Industrial Process Equipment**Associated Items:** EU 013 Medium Belt Making

EU 014 Wide Belt Making

EU 016 Mix Tank D, 1092

EU 017 Mix Tank C, 1093

EU 018 Mix Tank B, 1904

EU 019 Mix Tank A, 1095

EU 020 Mix Tank E

EU 021 Cloth Coater Treater

What to do	Why to do it
LIMITS (Limits apply individually to each emission unit)	hdr
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011. 0735.	Minn. R. 7011.0710, subp. 1(A)
Opacity: less than or equal to 20.0 percent opacity except for one six-minute period per hour of not more than 60 percent opacity.	Minn. R. 7011.0710, subp. 1(B)
The Permittee shall properly maintain the process equipment so as to prevent excessive amounts of particulate matter from being emitted from the emission units listed above under Associated Items.	Minn. R. 7007.0800, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: 3M - Alexandria

Permit Number: 04100003 - 005

Subject Item: GP 005 Post-1969 Industrial Process Equipment

- Associated Items:**
- EU 001 Large Mixer A
 - EU 002 Large Mixer B
 - EU 003 Large Mixer C
 - EU 004 Large Mixer D
 - EU 005 Large Mixer E
 - EU 006 Coater Room
 - EU 007 Counter Coater
 - EU 012 Belt Adhesive Mix Room
 - EU 015 Butt Splice Coater
 - EU 034 Prism Beltmaking Line
 - EU 041 Sierra Maker Coater
 - EU 042 Mixstation
 - EU 043 Sierra 1 Size Coater
 - EU 051 Sierra 1 in-line size cure oven
 - EU 052 Make Coater
 - EU 054 Size Coater
 - EU 058 200 Gallon Mix Tank
 - EU 059 200 Gallon Mix Tank
 - EU 060 200 Gallon Mix Tank
 - EU 061 200 Gallon Mix Tank
 - EU 063 Laser Cutter
 - EU 064 Coating Line No. 3 Mix Tank A
 - EU 065 Coating Line No. 3 Mix Tank B
 - EU 066 Coating Line No. 3 Mix Tank C
 - EU 067 Coating Line No. 3 Mix Tank D
 - EU 068 Coating Line No. 3 Mix Tank E
 - EU 069 Coating Line No. 3 Coater

What to do	Why to do it
LIMITS (Limits apply individually to each emission unit)	hdr
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011. 0735.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20.0 percent opacity	Minn. R. 7011.0715, subp. 1(B)
The Permittee shall properly maintain the process equipment so as to prevent excessive amounts of particulate matter from being emitted from the emission units listed above under Associated Items.	Minn. R. 7007.0800, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS

A-8

02/26/13

Facility Name: 3M - Alexandria

Permit Number: 04100003 - 005

Subject Item: GP 006 Subpart JJJJ NESHAP Units

Associated Items: EU 001 Large Mixer A
EU 002 Large Mixer B
EU 003 Large Mixer C
EU 004 Large Mixer D
EU 005 Large Mixer E
EU 006 Coater Room
EU 007 Counter Coater
EU 008 Wide Maker Oven
EU 016 Mix Tank D, 1092
EU 017 Mix Tank C, 1093
EU 018 Mix Tank B, 1904
EU 019 Mix Tank A, 1095
EU 020 Mix Tank E
EU 021 Cloth Coater Treater
EU 022 Cloth Coater Treater Oven
EU 029 Coater Cure Oven 2
EU 041 Sierra Maker Coater
EU 042 Mixstation
EU 043 Sierra 1 Size Coater
EU 051 Sierra 1 in-line size cure oven
EU 052 Make Coater
EU 053 Backrack Oven
EU 054 Size Coater
EU 055 Mainline Oven
EU 056 #5 Boiler
EU 057 #6 Boiler
EU 058 200 Gallon Mix Tank
EU 059 200 Gallon Mix Tank
EU 060 200 Gallon Mix Tank
EU 061 200 Gallon Mix Tank
EU 064 Coating Line No. 3 Mix Tank A
EU 065 Coating Line No. 3 Mix Tank B
EU 066 Coating Line No. 3 Mix Tank C
EU 067 Coating Line No. 3 Mix Tank D
EU 068 Coating Line No. 3 Mix Tank E
EU 069 Coating Line No. 3 Coater
EU 070 Coating Line No. 3 Oven
SV 001 Wide Maker Mixers and Coating Line No. 3 Mixers
SV 002 Wide Maker Coater Room

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: 3M - Alexandria
 Permit Number: 04100003 - 005

- Associated Items:**
- SV 003 Wide Maker Counter Coater
 - SV 004 Wide Maker Oven
 - SV 005 Wide Maker Oven
 - SV 006 Wide Maker Oven
 - SV 010 Medium Belt Making - IBL
 - SV 012 ACT Mixroom
 - SV 013 Cloth Coater Oven
 - SV 014 ACT Cloth Treater Oven
 - SV 015 ACT Cloth Treater Oven
 - SV 016 ACT Cloth Treater Oven
 - SV 030 Sierra Maker Coater
 - SV 033 Sierra 1 Size Coater
 - SV 041 Make Coater Bypass
 - SV 042 Size Coater Bypass
 - SV 045 Coating Line No. 3 Coater Stack
 - SV 046 Coating Line No. 3 Oven Stack 1
 - SV 047 Coating Line. No. 3 Oven Stack 2

What to do	Why to do it
Based on the current and expected operations of the affected source, this permit only includes the regulations for compliance with 40 CFR pt. 63, subp. JJJJ using option in 40 CFR Section 63.3320(b)(2) and 63.3320(b)(3). If the Permittee later chooses to switch to one of the other compliance options allowed in the standard, the Permittee shall comply with all applicable portions of 40 CFR pt. 63, subp. JJJJ for that option. In addition, the Permittee shall apply for a permit amendment, as appropriate (e.g., to add applicable NESHAP language, installation of an oxidizer, etc.).	Minn. R. 7007.1150; Minn. R. 7007.0800 subp. 2
The Permittee shall maintain records of which emission units in GP 006 are complying with the limit in 40 CFR 63.3320(b)(2) and which emission units are complying with the limit in 40 CFR 63.3320(b)(3).	Minnn. R. 7007.0800, subp. 2 and 4
EMISSION AND OPERATING LIMITS - No Control Option	hdr
HAPs - Organic: less than or equal to 4 percent of the mass of coating materials applied for each month at existing affected sources.	40 CFR Section 63.3320(b)(2); Minn. R. 7011.7385
HAPs - Organic: less than or equal to 20 percent by weight of coating solids applied for each month at existing affected sources.	40 CFR Section 63.3320(b)(3); Minn. R. 7011.7385
MONITORING AND RECORDKEEPING REQUIREMENTS	hdr
Maintain the following records on a monthly basis: (1) Records specified in 40 CFR Section 63.10(b)(2) of all measurements need to demonstrate compliance, including: (iii) organic HAP content data used for demonstrating compliance in accordance with 40 CFR Section 63.3360(c); (iv) volatile matter and coating solids content data for the purpose of demonstrating compliance in accordance with the requirements of 40 CFR Section 63.3360(d) and (vi) material usage, organic HAP usage, volatile matter usage, coating solids usage and compliance demonstrations using these data in accordance with 40CFR Section 63.3370(c) or (d).	40 CFR Section 63.3410(a); 40 CFR Section 63.10(b)(1); Minn. R. 7011.7385
METHODS FOR DETERMINING HAP CONTENT	hdr

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: 3M - Alexandria

Permit Number: 04100003 - 005

<p>If organic HAP is controlled on any individual coating line or group of coating lines by limiting organic HAP or volatile matter content of coatings, the Permittee must determine the organic HAP or volatile matter and coating solids content of the coating materials according to procedures in 40 CFR Section 63.3360(c) and (d). If applicable, determine the mass of volatile matter retained in the coated web or otherwise not emitted to the atmosphere according to 40 CFR Section 63.3360(g).</p>	<p>40 CFR Section 63.3360(a)(1); Minn. R. 7011.7385</p>
<p>Organic HAP Content Method 311 - The Permittee may test the coating material in accordance with Method 311 of Appendix A of Part 63. The Method 311 determination may be performed by the manufacturer of the coating material and the results provided to the Permittee. The organic HAP content must be calculated according to the criteria and procedures in 40 CFR Section 63.3360(c)(1)(i)-(iii).</p>	<p>40 CFR Section 63.3360(c)(1); Minn. R. 7011.7385</p>
<p>Organic HAP Content Method 24 - The Permittee may determine the volatile organic content of coatings as mass fraction of nonaqueous volatile matter and use it as a substitute for organic HAP using Method 24 of Appendix A of Part 63. The Method 24 determination may be performed by the manufacturer of the coating and the results provided to the Permittee.</p>	<p>40 CFR Section 63.3360(c)(2); Minn. R. 7011.7385</p>
<p>Organic HAP Content Formulation Data - The Permittee may use formulation data to determine the organic HAP mass fraction of a coating material. Formulation data may be provided to the Permittee by the manufacturer of the material. In the event of an inconsistency between Method 311 test data and a facility's formulation data, and the Method 311 test value is higher, the Method 311 data will govern. Formulation data may be used provided that the information represents all organic HAP present at a level equal to or greater than 0.1 percent for OSHA-defined carcinogens as specified in 29 CFR Section 1910.1200(d)(4) and equal to or greater than 1.0 percent for other organic HAP compounds in any raw material used.</p>	<p>40 CFR Section 63.3360(c)(3); Minn. R. 7011.7385</p>
<p>Organic HAP Content As-applied organic HAP mass fraction - If the as-purchased coating material is applied to the web without any solvent or other material added, then the as-applied organic HAP mass fraction is equal to the as-purchased organic HAP mass fraction. Otherwise, the as-applied organic HAP mass fraction must be calculated using Equation 1a of 40 CFR section 63.3370 and Appendix II of this permit.</p>	<p>40 CFR Section 63.3360(c)(4); Minn. R. 7011.7385</p>
<p>Volatile Organic and Coating Solids Content Method 24 - The Permittee may determine the volatile organic content and coating solids mass fraction of each coating applied using Method 24 of Appendix A of Part 63. The Method 24 determination may be performed by the manufacturer of the coating and the results provided to the Permittee.</p>	<p>40 CFR Section 63.3360(d)(1); Minn. R. 7011.7385</p>
<p>Volatile Organic and Coating Solids Content Formulation Data - The Permittee may determine the volatile organic content and coating solids content of a coating material based on formulation data and may rely on volatile organic content data provided by the manufacturer of the material. In the event of any inconsistency between the formulation data and the results of Method 24 of 40 CFR part 60, appendix A, and the Method 24 results are higher, the results of Method 24 will govern.</p>	<p>40 CFR Section 63.3360(d)(2); Minn. R. 7011.7385</p>
<p>Volatile Organic and Coating Solids Content As-applied volatile organic content and coating solids content - If the as-purchased coating material is applied to the web without any solvent or other material added, then the as-applied volatile organic content is equal to the as-purchased volatile content and the as-applied coating solids content is equal to the as-purchased coating solids content. Otherwise, the as-applied volatile organic content must be calculated using Equation 1b of 40 CFR Section 63.3370 and the as-applied coating solids content must be calculated using Equation 2 of 40 CFR Section 63.3370.</p>	<p>40 CFR Section 63.3360(d)(3); Minn. R. 7011.7385</p>
<p>Volatile matter retained in the coated web or otherwise not emitted to the atmosphere - If you choose to take this into account when determining compliance with the emission standards, you must develop a testing protocol to determine the mass of volatile matter retained in the coated web or otherwise not emitted to the atmosphere and submit it to the Administrator for approval with your site-specific test plan under 40 CFR Section 63.7(f). If you intend to take into account the mass of volatile matter retained in the coated web after curing or drying or otherwise not emitted to the atmosphere and demonstrate compliance according to 40 CFR Section 63.3370(c)(3), (c)(4), or (d), then the protocol must determine the mass of organic HAP retained in the coated web or otherwise not emitted to the atmosphere. Otherwise, compliance must be shown using the volatile organic matter content as a surrogate for the HAP content of the coatings.</p>	<p>40 CFR Section 63.3360(g); Minn. R. 7011.7385</p>
<p>COMPLIANCE DEMONSTRATION</p>	<p>hdr</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: 3M - Alexandria

Permit Number: 04100003 - 005

<p>Monthly Average "As-applied" Compliant Coating Materials</p> <p>Demonstrate that the monthly average of all coating materials used does not exceed 0.04 kg organic HAP per kg coating material as-applied, using the procedures set out in 40 CFR Section 63.3370(c)(3). Use Equation 4 of 40 CFR Section 63.3370 and Appendix II to this permit to determine compliance with the 0.04 kg organic HAP per kg coating material as applied limit in accordance with 40 CFR Section 63.3370(c)(5)(ii).</p>	<p>40 CFR Section 63.3370(a)(2)(iii); Minn. R. 7011.7385</p>
<p>Monthly Average "As-applied" Compliant Coating Materials</p> <p>Demonstrate that the monthly average of all coating materials used does not exceed 0.2 kg organic HAP per kg coating solids, using the procedures set out in 40 CFR Section 63.3370(c)(4). Use Equation 5 of 40 CFR Section 63.3370 and Appendix II to this permit to determine compliance with the 0.2 kg organic HAP per kg coating solids limit in accordance with 40 CFR Section 63.3370(c)(5)(ii).</p>	<p>40 CFR Section 63.3370(a)(2)(iv); Minn. R. 7011.7385</p>
<p>Total Monthly Organic HAP Applied</p> <p>Demonstrate that the total monthly organic HAP applied does not exceed the calculated limit based on emission limitations. Follow the procedures set out in 40 CFR Section 63.3370(d). Show that the monthly HAP applied (Equation 6 of 40 CFR Section 63.3370 and Appendix II of this permit) is less than the calculated equivalent allowable organic HAP (Equation 13a or 13b of 40 CFR Section 63.3370 and Appendix II of this permit).</p>	<p>40 CFR Section 63.3370(a)(3); Minn. R. 7011.7385</p>
<p>REPORTING REQUIREMENTS (see Table B for additional requirements)</p>	<p>hdr</p>
<p>GENERAL PROVISIONS, 40 CFR pt. 63, subp. A</p>	<p>hdr</p>
<p>Comply with the General Provisions of 40 CFR Part 63 according to Table 2 to Subpart JJJJ of Part 63.</p>	<p>40 CFR Section 63.6(e)(1)(i); Minn. R. 7011.7000</p>
<p>Prior to construction or reconstruction of an "affected source" under the promulgated MACT standards, the Permittee must apply for and obtain an air emission permit.</p>	<p>40 CFR Section 63.5(b)(3); Minn. R. 7011.7000</p>
<p>Recordkeeping: The Permittee shall maintain files of all information required by 40 CFR pt. 63 in a form suitable and readily available for expeditious inspection and review.</p> <p>The files should be retained for at least 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. Only the most recent two years of information must be kept on site.</p>	<p>40 CFR Section 63.10(b)(1); Minn. R. 7019.0100, subp. 2(B)</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: 3M - Alexandria

Permit Number: 04100003 - 005

Subject Item: GP 007 VOC PreCap

What to do	Why to do it
As of permit issuance, GP 007 consists of all VOC-emitting equipment on site: EUs 001-008, 012-022, 029, 034, 041-045, 051, 052, 056-062, 064-070. Note that this list is for the purposes of documenting the units in GP 007 as of permit issuance, and is subject to change as allowed by the requirements of GP 007.	hdr
<p>Volatile Organic Compounds: less than or equal to 240 tons/year using 12-month Rolling Sum to be calculated by the 15th day of each month for the previous 12-month period as described later in this permit.</p> <p>All emission units or stacks added to GP 007 as allowed in this permit shall be included in this calculation. VOC contents for each VOC-containing material shall be determined as described under the Material Content requirement in GP 007. The calculation of VOCs used may take into account recovered/recycled VOCs as described under the Waste Credit requirement in GP 007.</p>	Title I Condition: To avoid classification as major source and modification under 40 CFR Section 52.21 & Minn. R. 7007.3000
All VOC-emitting equipment in GP 007 is subject to this limit. If the Permittee replaces any existing VOC-emitting equipment in GP 007, adds new VOC-emitting equipment, or modifies the existing equipment in GP 007, such equipment is subject to this permit limit as well as all of the requirements of GP 007 and any other applicable requirements contained elsewhere in this permit. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment, as applicable. The Permittee is not required to complete VOC calculations described in Minn. R. 7007.1200, subp. 2. A permit amendment will still be needed regardless of the emissions increase if the change will be subject to a new applicable requirement not otherwise contained in GP 007 or elsewhere in the permit, or requires revisions to the limits or monitoring and recordkeeping in this permit.	Title I Condition: To avoid classification as major source and modification under 40 CFR Section 52.21 & Minn. R. 7007.3000
Daily Recordkeeping: On each day of operation, the Permittee shall calculate, record, and maintain the total quantity of all coatings and other VOC containing materials used at the facility. This shall be based on written or electronic records.	Title I Condition: To avoid classification as major source and modification under 40 CFR Section 52.21 & Minn. R. 7007.3000
<p>Monthly Recordkeeping: The Permittee shall maintain monthly records of the</p> <ol style="list-style-type: none"> 1) Type of fuel used, and 2) The total quantity of each fuel-type used on-site 	Minn. R. 7007.0800, subp. 4 and 5
<p>Monthly Recordkeeping: By the 15th of the month, the Permittee shall calculate and record the following.</p> <ol style="list-style-type: none"> 1) The total usage of VOC containing materials for the previous calendar month using the daily usage records. This record shall also include the VOC contents of each material as determined by the "Material Content" requirement of GP 007. 2) The total fuel usage for the previous calendar month using monthly fuel usage records. 3) The VOC emissions for the previous month using the formulas specified in this permit. 4) The 12-month rolling sum VOC emissions for the previous 12-month period by summing the monthly VOC emissions data for the previous 12 months. 	Minn. R. 7007.0800, subp. 4 and 5
<p>Monthly Calculation -- VOC Emissions. The Permittee shall calculate source-wide VOC emissions using the following equations:</p> $\text{VOC (tons/month)} = (\text{Vusage} + \text{Vcomb} + \text{Vinsig}) - W$ $V = (A1 \times B1) + (A2 \times B2) + (A3 \times B3) + \dots$ $W = (C1 \times D1) + (C2 \times D2) + C3 \times D3 + \dots$ <p>Monthly VOC Emissions Calculation Continued:</p> <p>where: Vusage = total VOC used in tons/month; A# = amount of each VOC containing material used, in tons/month; B# = weight percent VOC in A#, as a fraction; Vcomb = amount of VOC from all combustion sources in tons/month; Vinsig = amount of VOC emitted from all insignificant activities listed in Appendix A in tons/month; W = the amount of VOC shipped in waste, in tons/month; C# = amount, in tons/month, of each VOC containing waste material shipped. If the Permittee chooses to not take credit for waste shipments, this parameter would be zero; and D# = weight percent of VOC in C#, as a fraction.</p>	Minn. R. 7007.0800, subp. 4 and 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

A-13

02/26/13

Facility Name: 3M - Alexandria

Permit Number: 04100003 - 005

<p>Material Content. VOC contents shall be determined by the Material Safety Data Sheet (MSDS) provided by the supplier for each material used. If a material content range is given on the MSDS, the highest number in the range shall be used in all compliance calculations. Other alternative methods approved by the MPCA may be used to determine the VOC content. The Commissioner reserves the right to require the Permittee to determine the VOC content of any material, according to EPA or ASTM reference methods. If an EPA or ASTM reference method is used for material content determination, the data obtained shall supersede the MSDS.</p>	Minn. R. 7007.0800, subps. 4 and 5
<p>Waste Credit: If the Permittee elects to obtain credit for VOC shipped in waste materials, the Permittee shall either use item 1 or 2 to determine the VOC content for each credited shipment.</p> <ol style="list-style-type: none">1) The Permittee shall analyze a composite sample of each waste shipment to determine the weight content of VOC excluding water.2) The Permittee may use supplier data for raw materials to determine the VOC content of each waste shipment, using the same content data used to determine the content of raw materials. If the waste contains several materials, the content of mixed waste shall be assumed to be the lowest VOC content of any of the materials.	Minn. R. 7007.0800, subps. 4 and 5
<p>Maximum Contents of Materials: The Permittee assumed certain worst-case contents of materials when determining the short term potential to emit of units in GP007. 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>	Minn. R. 7005.0100, subp. 35a

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: 3M - Alexandria

Permit Number: 04100003 - 005

Subject Item: CE 009 Direct Flame Afterburner w/Heat Exchanger

Associated Items: EU 052 Make Coater

EU 053 Backrack Oven

EU 054 Size Coater

EU 055 Mainline Oven

What to do	Why to do it
OPERATION AND MAINTENANCE	hdr
The operation of this control equipment is not necessary in order for the process to meet applicable emissions limits. However, the Permittee wishes to take credit for its operation for the purposes of reporting actual emissions for emission inventory. Therefore, in order for the VOC to be considered controlled for the purposes of emissions inventory, the afterburner (thermal oxidizer) must comply with the requirements of this permit during the time credit for control is taken. The VOC used during that time shall be considered controlled, and the control efficiency used is the limit given in this table.	Minn. Stat. 116.07, subd. 4a; Minn. R. 7019.3020 (G); Minn. R. 7019.3050
The Permittee shall operate and maintain the thermal oxidizer in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.	Minn. Stat. 116.07, subd. 4a; Minn. R. 7019.3020 (G); Minn. R. 7019.3050
EMISSION LIMITS	hdr
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for Volatile Organic Compounds: greater than or equal to 95 percent	Minn. Stat. 116.07, subd. 4a; Minn. R. 7019.3020 (G); Minn. R. 7019.3050
Temperature: greater than or equal to 1400 degrees F using 3-hour Rolling Average at the Combustion Chamber unless a new minimum temperature is set pursuant to Minn. R. 7017.2025, subp. 3. If a new minimum temperature is required to be set, it will be based on the average temperature recorded during the most recent MPCA approved performance test where compliance for VOC emissions was demonstrated. If the three-hour rolling average temperature drops below the minimum temperature limit, the VOC used during that time shall be considered uncontrolled until the average minimum temperature limit is once again achieved. This shall be reported as a deviation.	Minn. Stat. 116.07, subd. 4a; Minn. R. 7019.3020 (G); Minn. R. 7019.3050
RECORDKEEPING	hdr
The Permittee shall document periods of operation and non-operation of the control equipment.	Minn. Stat. 116.07, subd. 4a; Minn. R. 7019.3020 (G); Minn. R. 7019.3050
The Permittee shall maintain a continuous hard copy readout or computer disk file of the temperature readings and calculated three-hour average temperatures for the combustion chamber.	Minn. Stat. 116.07, subd. 4a; Minn. R. 7019.3020 (G); Minn. R. 7019.3050
Monitoring Equipment: The Permittee shall install and maintain thermocouples to conduct temperature monitoring required by this permit. The monitoring equipment must be installed, in use, and properly maintained whenever operation of the monitored control equipment is required.	Minn. Stat. 116.07, subd. 4a; Minn. R. 7019.3020 (G); Minn. R. 7019.3050
The Permittee shall maintain and operate a thermocouple monitoring device that continuously measures and records the combustion chamber temperature of the thermal oxidizer. The monitoring device shall have a margin of error less than +/- .75 percent of the temperature being measured or +/- .2.5 degrees Celsius, whichever is greater. The recording device shall also calculate the three-hour rolling average combustion chamber temperature.	Minn. Stat. 116.07, subd. 4a; Minn. R. 7019.3020 (G); Minn. R. 7019.3050
Semiannual Inspections: At least once per calendar halfyear, the Permittee shall inspect the control equipment internal and external system components, including but not limited to the refractory, heat exchanger, and electrical systems. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection.	Minn. Stat. 116.07, subd. 4a; Minn. R. 7019.3020 (G); Minn. R. 7019.3050
Annual Calibration: The Permittee shall calibrate the temperature monitor at least once annually and shall maintain a written record of the inspection and any action resulting from the calibration.	Minn. Stat. 116.07, subd. 4a; Minn. R. 7019.3020 (G); Minn. R. 7019.3050

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: 3M - Alexandria

Permit Number: 04100003 - 005

<p>For periods when the thermal oxidizer is operated above the minimum combustion chamber temperature, the Permittee shall use either one of the following when completing calculations as required elsewhere in this permit:</p> <ul style="list-style-type: none">a. The overall control efficiency limit specified in this permit for this equipment (95%); orb. The overall control efficiency determined during the most recent MPCA approved performance test. If the tested efficiency is less than the efficiency limit in this permit, the Permittee must use the tested value in all calculations until the efficiency is demonstrated to be above the permit limit through a new test.	<p>Minn. Stat. 116.07, subd. 4a; Minn. R. 7019.3020 (G); Minn. R. 7019.3050</p>
<p>Corrective Actions: If the temperature is below the minimum specified by this permit or if the thermal oxidizer or any of its components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall return the temperature to at least the permitted minimum and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the Thermal oxidizer. The Permittee shall keep a written record of the type and date of any corrective action taken.</p>	<p>Minn. Stat. 116.07, subd. 4a; Minn. R. 7019.3020 (G); Minn. R. 7019.3050</p>

TABLE B: SUBMITTALS

B-1 02/26/13

Facility Name: 3M - Alexandria
Permit Number: 04100003 - 005

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

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

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

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

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

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

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

Send any application for a permit or permit amendment to:

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

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

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

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

TABLE B: ONE TIME SUBMITTALS OR NOTIFICATIONS

B-2 02/26/13

Facility Name: 3M - Alexandria

Permit Number: 04100003 - 005

What to send	When to send	Portion of Facility Affected
Application for Permit Reissuance	due 180 days before expiration of Existing Permit	Total Facility
Notification	due 120 days after Permit Issuance. The Permittee shall submit an initial notification containing the information required by 40 CFR Section 63.9(b)(2).	GP001

TABLE B: RECURRENT SUBMITTALS

Facility Name: 3M - Alexandria

Permit Number: 04100003 - 005

What to send	When to send	Portion of Facility Affected
Compliance Status Report	<p>due 30 days after end of each calendar half-year starting 03/21/2014 The first report must cover the period beginning on the compliance date and ending on June 30 or December 31, whichever date is the first date that occurs at least 180 days after the compliance date. As of permit issuance, the due date of the first report is January 1, 2015.</p> <p>The report shall contain:</p> <ul style="list-style-type: none"> - the information required in 40 CFR Section 63.7550(c); - if there are no deviations from any applicable emission limit, operating limit, or work practice standards during the reporting period, a statement that there were no deviations from the emission limitations and work practice standards during the reporting period. - for each deviation from an emission limit or operating limit (including work practice requirements), the information required in 40 CFR Section 63.7550(d) 	GP001
Semiannual Compliance Report	<p>due 31 days after end of each calendar half-year starting 12/05/2005. This may be submitted with the semiannual compliance report required by Part 70 and this permit. The report must contain the information listed in 40 CFR Section 63.3400(c)(2).</p>	GP006
Semiannual Deviations Report	<p>due 30 days after end of each calendar half-year starting 11/15/2007 . 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 by July 30th. The second report of each calendar year covers July 1 - December 31 by January 30th. If no deviations have occurred, the Permittee shall submit the report stating no deviations.</p>	Total Facility
Compliance Certification	<p>due 31 days after end of each calendar year starting 11/15/2007 (January 30th, 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.</p>	Total Facility

APPENDIX MATERIAL

Appendix I: Insignificant Activities and Applicable Requirements

Facility Name: 3M - Alexandria

Permit Number: 04100003-005

Minn. R.	Rule Description of the Activity	Applicable Requirement
7007.1300, subp. 2(A)(3)	Fuel burning equipment with a capacity less than 19,000 Btu/hr, but only if the combined total capacity of fuel burning equipment with a capacity less than 19,000 Btu/hr is less than or equal to 420,000 Btu/hr <ul style="list-style-type: none"> • Coating Line No. 3 Singer (880 Btu/hr) 	Minn. R. 7011.0510/0515
7007.1300, subp. 3(G)	Emissions from a laboratory, as defined in the subpart. <ul style="list-style-type: none"> • Water testing agents used in the laboratory 	Minn. R. 7011.0710/0715
7007.1300, subp. 3(H)(3)	Brazing, soldering, or welding equipment <ul style="list-style-type: none"> • Soldering and welding equipment 	Minn. R. 7011.0710/0715
7007.1300, subp. 3(H)(4)	Blueprint copiers and photographic processes	Minn. R. 7011.0710/0715
7007.1300, subp. 3(I)	Individual emissions units at a stationary source, each of which have a potential to emit the following pollutants in amounts less than: <ol style="list-style-type: none"> 1. 4,000 lbs/year of carbon monoxide; and 2. 2,000 lbs/year each of nitrogen oxide, sulfur dioxide, particulate matter, particulate matter less than ten microns, volatile organic compounds (including hazardous air pollutant-containing VOC), and ozone <ul style="list-style-type: none"> • Make kettles, size kettles, mineral add, make coater, size coater, hot can area, starch cooker • Roll cure oven, space heater • Emergency generator 	Minn. R. 7011.0710/0715 Minn. R. 7011.0510/0515 Minn. R. 7011.2300
7007.1300, subp. 3(J)	Fugitive dust from unpaved entrance roads and parking lots	Minn. R. 7011.0150

Minn. R.	Rule Description of the Activity	Applicable Requirement
7008.4110	<p>Emissions from equipment venting PM or PM10 inside a building that is a.) filtered through an air cleaning system; and b.) vented inside of the building 100% of the time.</p> <ul style="list-style-type: none"><li data-bbox="428 443 786 470">• Brusher and Lint Collector	

Appendix II: Subpart JJJ Compliance Equations
Facility Name: 3M - Alexandria
Permit Number: 04100003-005

COMPLIANCE EQUATIONS UNDER 40 CFR pt. 63, subpart JJJ

The following are the compliance equations from the Paper and Other Web Coating NESHAP that apply to operations at the 3M Alexandria facility.

Equation 1a
Equation 1b
Equation 4
Equation 5
Equation 6
Equation 13a or b

Equation 1a

For determining as-applied organic HAP mass fraction as required by 40 CFR Section 63.3360(c)(4)

40 CFR Section 63.3370(c)(1)(ii): Calculate the as-applied organic HAP content of each coating material using Equation 1a.

Equation 1a:

$$C_{ahi} = \frac{(C_{hi}M_i + \sum_{j=1}^q C_{hij}M_{ij})}{M_i + \sum_{j=1}^q M_{ij}}$$

Where:

C_{ahi} = Monthly average, as-applied, organic HAP content of coating material, i, expressed as a mass fraction, kg/kg

C_{hi} = Organic HAP content of coating material, i, as purchased, expressed as a mass fraction, kg/kg.

M_i = Mass of as-purchased coating material, i, applied in a month, kg.

q = Number of different materials added to the coating material.

C_{hij} = Organic HAP content of material, j, added to as-purchased coating material, i, expressed as a mass-fraction, kg/kg.

M_{ij} = Mass of material, j, added to as-purchased coating material, i, in a month, kg.

Equation 1b

For determining as-applied volatile organic content as required by 40 CFR Section 63.3360(d)(3)

40 CFR Section 63.3370(c)(1)(ii): Calculate the as-applied volatile organic content of each coating material using Equation 1b.

Equation 1b:

$$C_{avi} = \frac{(C_{vi}M_i + \sum_{j=1}^q C_{vij}M_{ij})}{M_i + \sum_{j=1}^q M_{ij}}$$

Where:

C_{avi} = Monthly average, as-applied, volatile organic content of coating material, i , expressed as a mass fraction, kg/kg

C_{vi} = Volatile organic content of coating material, i , expressed as a mass fraction, kg/kg.

M_i = Mass of as-purchased coating material, i , applied in a month, kg.

q = Number of different materials added to the coating material.

C_{vij} = Volatile organic content of material, j , added to as-purchased coating material, i , expressed as a mass-fraction, kg/kg.

M_{ij} = Mass of material, j , added to as-purchased coating material, i , in a month, kg.

Equation 2

For determining as-applied solids content as required by 40 CFR Section 63.3360(d)(3)

40 CFR Section 63.3370(c)(2)(i): Calculate the as-applied coating solids of each coating material using Equation 2.

Equation 2:

$$C_{asi} = \frac{(C_{si}M_i + \sum_{j=1}^q C_{sij}M_{ij})}{M_i + \sum_{j=1}^q M_{ij}}$$

Where:

C_{si} = Coating solids content, of material, i , expressed as a mass fraction, kg/kg.

M_i = Mass of as-purchased coating material, i , applied in a month, kg.

q = Number of different materials added to the coating material.

C_{sij} = Coating solids content of material, j , added to as-purchased coating material, i , expressed as a mass-fraction, kg/kg.

M_{ij} = Mass of material, j , added to as-purchased coating material, i , in a month, kg.

Equation 4

For determining the monthly average of all coating materials used at the affected source as required by 40 CFR Section 63.3370(a)(2)(iii)

40 CFR Section 63.3370(c)(3): Calculate that the monthly average organic HAP content of all coating materials as-applied using Equation 4.

Equation 4:

$$H_L = \frac{\sum_{i=1}^p C_{hi}M_i + \sum_{j=1}^q C_{hij}M_{ij} - M_{vret}}{\sum_{i=1}^p M_i + \sum_{j=1}^q M_{ij}}$$

Where:

HL = Monthly average, as-applied, organic HAP content of all coating materials applied, expressed as kg organic HAP per kg of coating material applied, kg/kg.

p = Number of different coating materials applied in a month.

Chi = Organic HAP content of coating material, i, as-purchased, expressed as a mass fraction, kg/kg.

Mi – Mass of as-purchased coating material, i, applied in a month, kg.

q = Number of different materials added to the coating material.

Chij = Organic HAP content of material, j, added to as-purchased coating material, i, expressed as a mass fraction, kg/kg.

Mij = Mass of material, j, added to as-purchased coating material, i, in a month, kg.

Mvret = Mass of volatile matter retained in the coated web after curing or drying, or otherwise not emitted to the atmosphere, kg. The value of this term will be zero in all cases except where the Permittee chooses to take into account the volatile matter retained in the coated web or otherwise not emitted to the atmosphere for the compliance demonstration procedures in Section 63.3370.

Equation 5

For determining the monthly average of all coating materials used at the affected source as required by 40 CFR Section 63.3370(a)(2)(iv)

40 CFR 63.3370(c)(4): Calculate that the monthly average organic HAP content (HAP to coating solids ratio) of all coating materials as-applied using Equation 5.

Equation 5:

$$H_S = \frac{\sum_{i=1}^p C_{hi}M_i + \sum_{j=1}^q C_{hij}M_{ij} - M_{vret}}{\sum_{i=1}^p C_{Si}M_i + \sum_{j=1}^q C_{Sij}M_{ij}}$$

Where:

HS = Monthly average, as-applied, organic HAP to coating solids ratio, kg organic HAP/kg coating solids applied.

p = Number of different coating materials applied in a month.

Chi = Organic HAP content of coating material, i, as-purchased, expressed as a mass fraction, kg/kg.

Mi – Mass of as-purchased coating material, i, applied in a month, kg.

q = Number of different materials added to the coating material.

Chij = Organic HAP content of material, j, added to as-purchased coating material, i, expressed as a mass fraction, kg/kg.

Mij = Mass of material, j, added to as-purchased coating material, i, in a month, kg.

Mvret = Mass of volatile matter retained in the coated web after curing or drying, or otherwise not emitted to the atmosphere, kg. The value of this term will be zero in all cases except where the Permittee chooses to take into account the volatile matter retained in the coated web or otherwise not emitted to the atmosphere for the compliance demonstration procedures in Section 63.3370.

CSi = Coating solids content of coating material, i, expressed as a mass fraction, kg/kg.

CSij = Coating solids content of material, j, added to as-purchased coating material, i, expressed as a mass-fraction, kg/kg.

Equation 6

For tracking total monthly organic HAP applied as required by 40 CFR Section 63.3370(a)(3)

40 CFR 63.3370(d): Calculate the total monthly organic HAP applied using Equation 6.

Equation 6:

$$H_m = \sum_{i=1}^p C_{hi} M_i + \sum_{j=1}^q C_{hij} M_{ij} - M_{vret}$$

Where:

H_m = Total monthly organic HAP applied, kg.

p = Number of different coating materials applied in a month.

Chi = Organic HAP content of coating material, i, as-purchased, expressed as a mass fraction, kg/kg.

M_i = Mass of as-purchased coating material, i, applied in a month, kg.

q = Number of different materials added to the coating material.

Chij = Organic HAP content of material, j, added to as-purchased coating material, i, expressed as a mass fraction, kg/kg.

M_{ij} = Mass of material, j, added to as-purchased coating material, i, in a month, kg.

M_{vret} = Mass of volatile matter retained in the coated web after curing or drying, or otherwise not emitted to the atmosphere, kg. The value of this term will be zero in all cases except where you choose to take into account the volatile matter retained in the coated web or otherwise not emitted to the atmosphere for the compliance demonstration procedures in 40 CFR 63.3370.

Equation 13a

For calculating the emission limit based on emission limitations as required by 40 CFR Section 63.3370(a)(3)

40 CFR 63.3370(I): Calculate the monthly allowable organic HAP emissions with Equation 13a and the procedures below. (To be used for demonstrating compliance in accordance with 40 CFR Section 63.3370(d).)

- (1) Determine the as-purchased mass of each coating material applied each month.
- (2) Determine the as-purchased coating solids content of each coating material applied each month in accordance with 40 CFR 63.3360(d)(1). (Method 24)
- (3) Determine the as-purchased mass fraction of each coating material which was applied at 20 mass percent or greater coating solids content on an as-applied basis.
- (4) Determine the total mass of each solvent, diluent, thinner, or reducer added to coating materials which were applied at less than 20 mass percent coating solids content on an as-applied basis each month.
- (5) Calculate the monthly allowable organic HAP emissions using **Equation 13a** of this section for an existing affected source:

Equation 13a:

$$H_a = 0.20 \left[\sum_{i=1}^p M_i G_i C_{si} \right] + 0.04 \left[\sum_{i=1}^p M_i (1 - G_i) + \sum_{j=1}^q M_{Lj} \right]$$

Where:

H_a = Monthly allowable organic HAP emissions, kg.

p = Number of different coating materials applied in a month.

M_i = mass of as-purchased coating material, i , applied in a month, kg.

G_i = Mass fraction of each coating material, i , which was applied at 20 mass percent or greater coating solids content, on an as-applied basis, kg/kg.

C_{si} = Coating solids content of coating material, i , expressed as a mass fraction, kg/kg.

q = Number of different materials added to the coating material.

M_{Lj} = Mass of non-coating-solids-containing coating material, j , added to coating-solids-containing coating materials which were applied at less than 20 mass percent coating solids content, on an as-applied basis, in a month, kg.

Attachment 1

PTE Summary and Calculation Spreadsheets

3M Alexandria

PTE Summary from Permit Action 004

	Uncontrolled TPY	Controlled/ Limited TPY
VOC	1629.68	240.00
PM	40.45	8.05
PM10	35.43	3.03
PM2.5	35.43	3.03
CO	19.36	19.36
SO2	23.58	23.58
NOx	75.93	75.93
HAP	1212.83	240.00

PTE Summary from units added through Permit Action 005

	New Coating Line	New Coating Line	New Laser Cutter
	Uncontrolled TPY	Limited TPY	Uncontrolled TPY
VOC	256.20	240	0
PM	0.32	0.32	6.31
PM10	0.32	0.32	6.31
PM2.5	0.32	0.32	6.31
CO	3.53	3.53	0
SO2	0.03	0.03	0
NOx	4.20	4.20	0
HAP	107.82	107.82	0
CO2e	4,920	4,920	0

Total Facility PTE for Permit Action 005

	Uncontrolled TPY	Controlled/ Limited TPY
VOC	1885.88	240
PM	47.08	14.68
PM10	42.06	9.66
PM2.5	42.06	9.66
CO	22.89	22.89
SO2	23.61	23.61
NOx	80.13	80.13
HAP	1320.65	240
CO2e	73,457	73,457

**3M Alexandria Facility
Major Amendment Application
Potential To Emit (PTE)**

Unit ID	Unit Name	Pollutant	Capacity		Emission Factor		Emission Factor Ref.	Uncontrolled PTE (lb/hr)	Uncontrolled PTE (tpy)	Pollution Control Efficiency (%)	Controlled PTE (tpy)
			Value	Units	Value	Units					
EU 064	Coating Line No. 3 Mix Tank, A	VOC	58.44	lb / hr	0.02	lb / lb	1	1.17	5.12	0%	5.12
EU 064	Coating Line No. 3 Mix Tank, A	Formaldehyde	0.73	lb / hr	0.02	lb / lb	1	0.01	0.06	0%	0.06
EU 064	Coating Line No. 3 Mix Tank, A	Phenol	5.51	lb / hr	0.02	lb / lb	1	0.11	0.48	0%	0.48
EU 064	Coating Line No. 3 Mix Tank, A	2-ethoxy-ethanol	1.20E-04	lb / hr	0.02	lb / lb	1	2.40E-06	1.05E-05	0%	1.05E-05
EU 064	Coating Line No. 3 Mix Tank, A	Total HAP	24.60	lb / hr	0.02	lb / lb	1	0.49	2.15	0%	2.15
EU 065	Coating Line No. 3 Mix Tank, B	VOC	58.44	lb / hr	0.02	lb / lb	1	1.17	5.12	0%	5.12
EU 065	Coating Line No. 3 Mix Tank, B	Formaldehyde	0.73	lb / hr	0.02	lb / lb	1	0.01	0.06	0%	0.06
EU 065	Coating Line No. 3 Mix Tank, B	Phenol	5.51	lb / hr	0.02	lb / lb	1	0.11	0.48	0%	0.48
EU 065	Coating Line No. 3 Mix Tank, B	2-ethoxy-ethanol	1.20E-04	lb / hr	0.02	lb / lb	1	2.40E-06	1.05E-05	0%	1.05E-05
EU 065	Coating Line No. 3 Mix Tank, B	Total HAP	24.60	lb / hr	0.02	lb / lb	1	0.49	2.15	0%	2.15
EU 066	Coating Line No. 3 Mix Tank, C	VOC	58.44	lb / hr	0.02	lb / lb	1	1.17	5.12	0%	5.12
EU 066	Coating Line No. 3 Mix Tank, C	Formaldehyde	0.73	lb / hr	0.02	lb / lb	1	0.01	0.06	0%	0.06
EU 066	Coating Line No. 3 Mix Tank, C	Phenol	5.51	lb / hr	0.02	lb / lb	1	0.11	0.48	0%	0.48
EU 066	Coating Line No. 3 Mix Tank, C	2-ethoxy-ethanol	1.20E-04	lb / hr	0.02	lb / lb	1	2.40E-06	1.05E-05	0%	1.05E-05
EU 066	Coating Line No. 3 Mix Tank, C	Total HAP	24.60	lb / hr	0.02	lb / lb	1	0.49	2.15	0%	2.15
EU 067	Coating Line No. 3 Mix Tank, D	VOC	58.44	lb / hr	0.02	lb / lb	1	1.17	5.12	0%	5.12
EU 067	Coating Line No. 3 Mix Tank, D	Formaldehyde	0.73	lb / hr	0.02	lb / lb	1	0.01	0.06	0%	0.06
EU 067	Coating Line No. 3 Mix Tank, D	Phenol	5.51	lb / hr	0.02	lb / lb	1	0.11	0.48	0%	0.48
EU 067	Coating Line No. 3 Mix Tank, D	2-ethoxy-ethanol	1.20E-04	lb / hr	0.02	lb / lb	1	2.40E-06	1.05E-05	0%	1.05E-05
EU 067	Coating Line No. 3 Mix Tank, D	Total HAP	24.60	lb / hr	0.02	lb / lb	1	0.49	2.15	0%	2.15
EU 068	Coating Line No. 3 Mix Tank, E	VOC	58.44	lb / hr	0.02	lb / lb	1	1.17	5.12	0%	5.12
EU 068	Coating Line No. 3 Mix Tank, E	Formaldehyde	0.73	lb / hr	0.02	lb / lb	1	0.01	0.06	0%	0.06
EU 068	Coating Line No. 3 Mix Tank, E	Phenol	5.51	lb / hr	0.02	lb / lb	1	0.11	0.48	0%	0.48
EU 068	Coating Line No. 3 Mix Tank, E	2-ethoxy-ethanol	1.20E-04	lb / hr	0.02	lb / lb	1	2.40E-06	1.05E-05	0%	1.05E-05
EU 068	Coating Line No. 3 Mix Tank, E	Total HAP	24.60	lb / hr	0.02	lb / lb	1	0.49	2.15	0%	2.15
EU 069	Coating Line No. 3 Coater	VOC	58.44	lb / hr	0.09	lb / lb	1	5.26	23.04	0%	23.04
EU 069	Coating Line No. 3 Coater	Formaldehyde	0.73	lb / hr	0.09	lb / lb	1	0.07	0.29	0%	0.29
EU 069	Coating Line No. 3 Coater	Phenol	5.51	lb / hr	0.09	lb / lb	1	0.50	2.17	0%	2.17
EU 069	Coating Line No. 3 Coater	2-ethoxy-ethanol	1.20E-04	lb / hr	0.09	lb / lb	1	1.08E-05	4.73E-05	0%	4.73E-05
EU 069	Coating Line No. 3 Coater	Total HAP	24.60	lb / hr	0.09	lb / lb	1	2.21	9.70	0%	9.70
EU 070	Coating Line No. 3 Oven	CO	9.60E-03	MMscf / hr	84	lb / MMscf	2	0.81	3.53	0%	3.53
EU 070	Coating Line No. 3 Oven	NOx	9.60E-03	MMscf / hr	100	lb / MMscf	2	0.96	4.20	0%	4.20
EU 070	Coating Line No. 3 Oven	PM10	9.60E-03	MMscf / hr	7.6	lb / MMscf	2	0.07	0.32	0%	0.32
EU 070	Coating Line No. 3 Oven	PM2.5	9.60E-03	MMscf / hr	7.6	lb / MMscf	2	0.07	0.32	0%	0.32
EU 070	Coating Line No. 3 Oven	PM	9.60E-03	MMscf / hr	7.6	lb / MMscf	2	0.07	0.32	0%	0.32
EU 070	Coating Line No. 3 Oven	SO2	9.60E-03	MMscf / hr	0.6	lb / MMscf	2	0.006	0.03	0%	0.03
EU 070	Coating Line No. 3 Oven	VOC (combustion)	9.60E-03	MMscf / hr	5.5	lb / MMscf	2	0.05	0.23	0%	0.23
EU 070	Coating Line No. 3 Oven	Lead	9.60E-03	MMscf / hr	5.0E-04	lb / MMscf	2	4.80E-06	2.10E-05	0%	2.10E-05
EU 070	Coating Line No. 3 Oven	Benzene	9.60E-03	MMscf / hr	2.1E-03	lb / MMscf	2	2.02E-05	8.83E-05	0%	8.83E-05
EU 070	Coating Line No. 3 Oven	Dichlorobenzene	9.60E-03	MMscf / hr	1.2E-03	lb / MMscf	2	1.15E-05	5.05E-05	0%	5.05E-05
EU 070	Coating Line No. 3 Oven	Hexane	9.60E-03	MMscf / hr	1.8	lb / MMscf	2	0.02	0.08	0%	0.08
EU 070	Coating Line No. 3 Oven	Cobalt	9.60E-03	MMscf / hr	8.4E-05	lb / MMscf	2	8.06E-07	3.53E-06	0%	3.53E-06
EU 070	Coating Line No. 3 Oven	Total HAP (combustion)	0.02	lb / hr	1	lb / lb	2	0.02	0.08	0%	0.08
EU 070	Coating Line No. 3 Oven	VOC	58.44	lb / hr	0.81	lb / lb	1	47.34	207.33	0%	207.33
EU 070	Coating Line No. 3 Oven	Formaldehyde	0.73	lb / hr	0.81	lb / lb	1	0.59	2.61	0%	2.61
EU 070	Coating Line No. 3 Oven	Phenol	5.51	lb / hr	0.81	lb / lb	1	4.46	19.54	0%	19.54
EU 070	Coating Line No. 3 Oven	2-ethoxy-ethanol	1.20E-04	lb / hr	0.81	lb / lb	1	9.72E-05	4.26E-04	0%	4.26E-04
EU 070	Coating Line No. 3 Oven	Total HAP	24.60	lb / hr	0.81	lb / lb	1	19.93	87.28	0%	87.28

	VOC	256.20
	PM	0.32
	PM10	0.32
	PM2.5	0.32
	CO	3.53
	SO2	0.03
	NOx	4.20
	HAP	107.82
	Pb	2.10E-05
Total Uncontrolled PTE (tpy)		

References:

1. Emission factors are based on an engineering estimate based on process knowledge. It is conservatively assumed that all material used is emitted. The significant emission sources include the coating preparation equipment (i.e., the five mix tanks), the coating application and flashoff area (i.e., the coating line), and the drying oven (i.e., the coating line oven). Of the total uncontrolled emissions from the mixing area and coating operation, approximately 10 percent is emitted from the mixing area and 90 percent is emitted from the coating operation. Within the coating operation, approximately 10 percent occurs in the application / flashoff area, and 90 percent in the drying oven. Therefore, the emission factors are as follows:

Mix Tanks: 10 % / 5 Tanks = 2 % = 0.02 lb / lb

Coating Line: 90 % x 10 % = 9 % = 0.09 lb / lb

Coating Line Oven: 90 % x 90 % = 81 % = 0.81 lb / lb

HAP and VOC concentrations in the coatings are based on actual worst-case weight percentages

2. Emission factor: AP-42 Section 1.4, Natural Gas Combustion (07/98).

Heat content of natural gas: 1000 MMBtu / MMCF

Maximum heat input: 9.6 MMBtu / hr

3M Alexandria Facility
Major Amendment Application
Potential To Emit Calculations Greenhouse Gas Emissions

EU ID	Emission Unit Description	Fuel Type	Capacity (MMBtu/hr)	CO ₂				CH ₄				N ₂ O				CO ₂ e Total Emissions (tpy)
				Emission Factor (lb/MMBtu) ¹	Emissions (tpy)	Warming Potential (CO ₂ e/CO ₂) ²	Emissions as CO ₂ e (tpy)	Emission Factor (lb/MMBtu) ³	Emissions (tpy)	Warming Potential (CO ₂ e/CO ₂) ²	Emissions as CO ₂ e (tpy)	Emission Factor (lb/MMBtu) ³	Emissions (tpy)	Warming Potential (CO ₂ e/CO ₂) ²	Emissions as CO ₂ e (tpy)	
008	Wide Maker Oven	Natural Gas	6.60	116.9	3,379	1	3,379	2.2E-03	6.4E-02	21	1.34	2.2E-04	6.4E-03	310	1.98	3,382
022	Cloth Coater Oven	Natural Gas	7.50	116.9	3,840	1	3,840	2.2E-03	7.2E-02	21	1.52	2.2E-04	7.2E-03	310	2.25	3,844
029	Coater Cure Oven 2	Natural Gas	1	116.9	512	1	512	2.2E-03	9.7E-03	21	0.20	2.2E-04	9.7E-04	310	0.30	512
044	Sierra 1 Make Oven	Natural Gas	0.75	116.9	384	1	384	2.2E-03	7.2E-03	21	0.15	2.2E-04	7.2E-04	310	0.22	384
045	Sierra 1 Size Oven	Natural Gas	0.75	116.9	384	1	384	2.2E-03	7.2E-03	21	0.15	2.2E-04	7.2E-04	310	0.22	384
051	Sierra 1 Inline SizeCure Oven	Natural Gas	1.28	116.9	653	1	653	2.2E-03	1.2E-02	21	0.26	2.2E-04	1.2E-03	310	0.38	653
056	Boiler #5	Natural Gas	46	116.9	23,551	1	23,551	2.2E-03	4.4E-01	21	9.33	2.2E-04	4.4E-02	310	13.77	23,574
057	Boiler #6	Natural Gas	46	116.9	23,551	1	23,551	2.2E-03	4.4E-01	21	9.33	2.2E-04	4.4E-02	310	13.77	23,574
062	M9 Coater RTO	Natural Gas	18	116.9	9,216	1	9,216	2.2E-03	1.7E-01	21	3.65	2.2E-04	1.7E-02	310	5.39	9,225
NA	Roll Cure Oven	Natural Gas	4.6	116.9	2,355	1	2,355	2.2E-03	4.4E-02	21	0.93	2.2E-04	4.4E-03	310	1.38	2,357
NA	Space Heater	Natural Gas	0.5	116.9	256	1	256	2.2E-03	4.8E-03	21	0.10	2.2E-04	4.8E-04	310	0.15	256
NA	Red Label Emergency	Natural Gas	0.05	116.9	26	1	26	2.2E-03	4.9E-04	21	0.01	2.2E-04	4.9E-05	310	0.02	26
NA	M9 Emergency	Natural Gas	0.51	116.9	260	1	260	2.2E-03	4.9E-03	21	0.10	2.2E-04	4.9E-04	310	0.15	261
NA	Fire Pump Engine	Natural Gas	0.20	116.9	104	1	104	2.2E-03	2.0E-03	21	0.04	2.2E-04	2.0E-04	310	0.06	104
Proposed Units																
070	Coating Line No. 3 Oven	Natural Gas	9.60	116.9	4,915	1	4,915	2.2E-03	9.3E-02	21	1.95	2.2E-04	9.3E-03	310	2.87	4,920
Total							73,385				29				43	73,457

¹ Emission factor from Table C-1 to Subpart C of 40 CFR Part 98

² Global Warming Potential from Table A-1 to Subpart A of 40 CFR Part 98

³ Emission factor from Table C-2 to Subpart C of 40 CFR Part 98

3M - Alexandria
Wide Maker Mixers and ACT3 Mixers Stack (SV001)
Form CH-13 Supplement

Allowable total particulate emissions under Minnesota state process equipment rule
Allowable Emissions

		Notes:	
Process Weight	58.44	lbs/hr, total	
	100	% solids (total less water)	See Note 1 below
	58.44	lbs/hr, dry weight	
	0.03	tons/hr, dry weight	
Airflow:	11,250	acfm	
	72	F	Stack temp
	0	% moisture	Stack moisture
	11,165	scfm	
	11,165	dscfm	

Valid for process weights up to 30 tons/hr

NOTE: 1) Process has 0% solids. This calculation is worst case. The proposed mix tanks do not emit particulate matter.

Calculate Allowable Emissions:

By Process Weight	0.40 lbs/hr
Table	0.004 gr/dscf
By Airflow Table	0.086 gr/dscf
	8.23 lbs/hr

Calculated MAX Allowable Emission Rate:

8.23 lbs/hr

36.0 tons/year @ 8760 hrs

Calculated MAX Allowable Emission Rate Per Emission Unit:

0.82 lbs/hr

3.6 tons/year @ 8760 hrs

3M - Alexandria
Proposed ACT3 Coater Stack (SV 045)
Form CH-13 Supplement

Allowable total particulate emissions under Minnesota state process equipment rule
Allowable Emissions

		Notes:	
Process Weight	58.44	lbs/hr, total	
	100	% solids (total less water)	See Note 1 below
Airflow:	58.44	lbs/hr, dry weight	
	0.03	tons/hr, dry weight	
	8,000	acfm	
	125	F	Stack temp
	0	% moisture	Stack moisture
	7,221	scfm	
	7,221	dscfm	

Calculate Allowable Emissions:

By Process Weight	0.40 lbs/hr
Table	0.006 gr/dscf
By Airflow Table	0.099 gr/dscf
	6.13 lbs/hr

Calculated MAX Allowable Emission Rate:

6.13 lbs/hr

26.8 tons/year @ 8760 hrs

Valid for process weights up to 30 tons/hr

NOTE: 1) Process has 0% solids. This calculation is worst case. The proposed cloth treater does not emit particulate matter.

3M - Alexandria
Proposed ACT3 Oven Stacks (SV 046 & SV 047)
Form CH-13 Supplement

Allowable total particulate emissions under Minnesota state process equipment rule
Allowable Emissions

		Notes:	
Process Weight	58.44	lbs/hr, total	
	100	% solids (total less water)	See Note 1 below
Airflow:	58.44	lbs/hr, dry weight	
	0.03	tons/hr, dry weight	
	11,061	acfm	
	350	F	Stack temp
	0	% moisture	Stack moisture
	7,210	scfm	
	7,210	dscfm	

Valid for process weights up to 30 tons/hr

NOTE: 1) Process has 0% solids. This calculation is worst case. The proposed oven only emits particulate from combustion emissions.

Calculate Allowable Emissions:

By Process Weight	0.40 lbs/hr
Table	0.006 gr/dscf
By Airflow Table	0.099 gr/dscf
	6.12 lbs/hr

Calculated MAX Allowable Emission Rate:

6.12 lbs/hr

26.8 tons/year @ 8760 hrs

Calculated MAX Allowable Emission Rate for both stacks combined:

12.24 lbs/hr

53.6 tons/year @ 8760 hrs



1) AQD Facility ID No.: **04100003**
 2) Facility Name: **3M - Alexandria**
 3) Emission Unit Identification No.: **EU 070**
 4) Stack/Vent Designation No.: **SV 046 and 047**
 5) Maximum Rated Boiler Capacity: **9.6 MMBtu/hr**
 6) Control Equipment: **None**

7) Fuel Parameters

7a) Fuel Type	7b) % Sulfur (gr/100scf)	7c) % Ash	7d) Heat Value	Units	7e) Maximum Fuel Consumption Rate	Units	Maximum Fuel Consumption Rate	Units
Natural Gas	0.2	negligible	1,000	Btu/scf	9,600	cf/hr	84.1	MMscf/yr

Natural gas heat value AP-42 Section 1.4.1 (July 1998)

sulfur AP-42 Section 1.4 Table 1.4-2 (July 1998)

Calculations - Fuel : Natural Gas								
Pollutant	Emission Factor ¹ (lb/10 ⁶ scf)	Emission Factor (lb/MMBtu)	Emission Rate (lbs/hr)	Maximum Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Controlled Emission Rate (lbs/hr)	Maximum Controlled Emissions (tons/yr)	Limited Controlled Emissions (tons/yr)
PM	7.60	7.6E-03	0.07	0.32	0.0%	0.07	0.32	0.32
PM ₁₀	7.60	7.6E-03	0.07	0.32	0.0%	0.07	0.32	0.32
PM _{2.5}	7.60	7.6E-03	0.07	0.32	0.0%	0.07	0.32	0.32
NO _x	100	1.0E-01	0.96	4.20	0.0%	0.96	4.20	4.20
SO ₂	0.60	6.0E-04	0.006	0.03	0.0%	0.006	0.03	0.03
CO	84	8.4E-02	0.81	3.53	0.0%	0.81	3.53	3.53
VOC	5.50	5.5E-03	0.05	0.23	0.0%	0.05	0.23	0.23
Lead	0.0005	5.0E-07	4.80E-06	2.10E-05	0.0%	4.80E-06	2.10E-05	2.10E-05
H ₂ SO ₄	---	---	---	---	---	---	---	---
Fluorides	---	---	---	---	---	---	---	---

¹ EF from AP-42 Section 1.4 "Natural Gas Combustion", Table 1.4-1 (NO_x, CO) < 100 MMBtu/hr Natural gas fired boilers (uncontrolled), Table 1.4-2 (PM, PM₁₀, SO₂, VOC, Lead) (July 1998). PM_{2.5} is conservatively assumed to equal PM₁₀.

* SO₂ EF = 0.6 (lb/10⁶ scf) * Sulfur (gr/10⁶ scf) / 2,000 (gr/10⁶ scf)
 EF (lb/MMBtu) = EF (lb/10⁶ scf) / H (MMBtu/10⁶ scf)
 ER (lb/hr) = EF (lb/MMBtu) * C (MMBtu/hr)
 ER (ton/yr) = ER (lb/hr) * 8,760 (hr/yr) / 2,000 (lb/ton) = ER (lb/hr) * 4.38

Worse-Case Potential-to-Emit Summary:			
Pollutant	Uncontrolled Emission Rate (lb/hr)	Maximum Uncontrolled Emissions (ton/yr)	Limited Controlled Emissions (tons/yr)
PM	0.07	0.32	0.32
PM ₁₀	0.07	0.32	0.32
PM _{2.5}	0.07	0.32	0.32
NO _x	0.96	4.20	4.20
SO ₂	0.006	0.03	0.03
CO	0.81	3.53	3.53
VOC	0.05	0.23	0.23
Lead	4.80E-06	2.10E-05	2.10E-05
H ₂ SO ₄	---	---	---
Fluorides	---	---	---



MINNESOTA POLLUTION CONTROL AGENCY
 AIR QUALITY DIVISION
 520 LAFAYETTE ROAD
 ST. PAUL, MN 55155-4194

PERMIT APPLICATION FORM **EC-13C**
HAZARDOUS AIR POLLUTANTS
CALCULATION FORM (FUEL COMBUSTION)
 5/27/1998

#N/A

1) AQD Facility ID No.:	04100003
2) Facility Name:	3M - Alexandria
3) Emission Unit Identification No.:	EU 070
4) Stack/Vent Designation No.:	SV 046 and 047
5) Maximum Rated Boiler Capacity:	9.6 MMBtu/hr
6) Control Equipment:	NA
7) Fuel Parameters	

Fuel Type	% Sulfur	% Ash	Heat Value	Units	Maximum Fuel Consumption Rate	Units	Limited Fuel Consumption Rate	Units
Natural Gas	0.2	Neg.	1,000	Btu/scf	84.1	10 ⁶ scf/yr	84.1	10 ⁶ scf/yr

Primary Fuel : Natural Gas							
HAP Name (CAS)	Uncontrolled Emission Factor ¹ (lbs/10 ⁶ scf)	Emission Rate (lbs/hr)	Maximum Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Controlled Emission Factor (lbs/10 ⁶ scf)	Maximum Controlled Emissions (tons/yr)	Limited Controlled Emissions (tons/yr)
Arsenic [7440-38-2]	2.00E-04	1.92E-06	8.41E-06	0.00%	NA	8.41E-06	8.41E-06
Benzene [71-43-2]	2.10E-03	2.02E-05	8.83E-05	0.00%	NA	8.83E-05	8.83E-05
Beryllium [7440-41-7]	1.20E-05	1.15E-07	5.05E-07	0.00%	NA	5.05E-07	5.05E-07
Cadmium [7440-43-9]	1.10E-03	1.06E-05	4.63E-05	0.00%	NA	4.63E-05	4.63E-05
Chromium [7440-47-3]	1.40E-03	1.34E-05	5.89E-05	0.00%	NA	5.89E-05	5.89E-05
Cobalt [7440-48-4]	8.40E-05	8.06E-07	3.53E-06	0.00%	NA	3.53E-06	3.53E-06
Dichlorobenzene [25321-22-6]	1.20E-03	1.15E-05	5.05E-05	0.00%	NA	5.05E-05	5.05E-05
Ethyl Benzene [100-41-4]	---	---	---	---	---	---	---
Formaldehyde [50-00-0]	7.50E-02	7.20E-04	3.15E-03	0.00%	NA	3.15E-03	3.15E-03
Hexane [110-54-3]	1.80E+00	1.73E-02	7.57E-02	0.00%	NA	7.57E-02	7.57E-02
Manganese [7439-96-5]	3.80E-04	3.65E-06	1.60E-05	0.00%	NA	1.60E-05	1.60E-05
Mercury [7439-97-6]	2.60E-04	2.50E-06	1.09E-05	0.00%	NA	1.09E-05	1.09E-05
Naphthalene [91-20-3]	6.10E-04	5.86E-06	2.56E-05	0.00%	NA	2.56E-05	2.56E-05
Nickel [7440-02-0]	2.10E-03	2.02E-05	8.83E-05	0.00%	NA	8.83E-05	8.83E-05
POM ²	6.98E-04	6.70E-06	2.94E-05	0.00%	NA	2.94E-05	2.94E-05
Selenium [7782-49-2]	2.40E-05	2.30E-07	1.01E-06	0.00%	NA	1.01E-06	1.01E-06
Toluene [108-88-3]	3.40E-03	3.26E-05	1.43E-04	0.00%	NA	1.43E-04	1.43E-04
o-Xylene [95-47-6]	---	---	---	---	---	---	---
Totals		0.02	0.08			0.08	0.08

¹ Emission factors from AP-42, Section 1.4.1 (07/98)

² Total POM emission factor is equal to the sum of the individual POM compounds, includes Naphthalene, as for fuel oil below.



MINNESOTA POLLUTION CONTROL AGENCY
 AIR QUALITY DIVISION
 520 LAFAYETTE ROAD
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PERMIT APPLICATION FORM EC-13C
HAZARDOUS AIR POLLUTANTS
CALCULATION FORM (FUEL COMBUSTION)
 5/27/1998

#N/A

1) AQD Facility ID No.:	04100003
2) Facility Name:	3M - Alexandria
3) Emission Unit Identification No.:	EU 070
4) Stack/Vent Designation No.:	SV 046 and 047
5) Maximum Rated Boiler Capacity:	9.6 MMBtu/hr
6) Control Equipment:	NA
7) Fuel Parameters	

Worse-Case Potential-to-Emit Summary:			
	Uncontrolled Emission Rate (lb/hr)	Maximum Uncontrolled Emissions (ton/yr)	Limited Controlled Emissions (tons/yr)
Arsenic [7440-38-2]	1.92E-06	8.41E-06	8.41E-06
Benzene [71-43-2]	2.02E-05	8.83E-05	8.83E-05
Beryllium [7440-41-7]	1.15E-07	5.05E-07	5.05E-07
Cadmium [7440-43-9]	1.06E-05	4.63E-05	4.63E-05
Chromium [7440-47-3]	1.34E-05	5.89E-05	5.89E-05
Cobalt [7440-48-4]	8.06E-07	3.53E-06	3.53E-06
Dichlorobenzene [25321-22-6]	1.15E-05	5.05E-05	5.05E-05
Ethyl Benzene [100-41-4]	---	---	---
Formaldehyde [50-00-0]	7.20E-04	3.15E-03	3.15E-03
Hexane [110-54-3]	1.73E-02	7.57E-02	7.57E-02
Manganese [7439-96-5]	3.65E-06	1.60E-05	1.60E-05
Mercury [7439-97-6]	2.50E-06	1.09E-05	1.09E-05
Naphthalene [91-20-3]	5.86E-06	2.56E-05	2.56E-05
Nickel [7440-02-0]	2.02E-05	8.83E-05	8.83E-05
POM	6.70E-06	2.94E-05	2.94E-05
Selenium [7782-49-2]	2.30E-07	1.01E-06	1.01E-06
Toluene [108-88-3]	3.26E-05	1.43E-04	1.43E-04
o-Xylene [95-47-6]	---	---	---
Totals	0.02	0.08	0.08

3M Alexandria
Laser Cutter Project

Laser Cutter Test Results (July 24, 2012)

Parameter	Run 1	Run 2	Average
Date	7/24/2012	7/24/2012	
Time	0850-0950	0850-0950	
Volumetric Flow Rate			
ACFM	1500	1530	1520
DSCFM	1370	1390	1380
Particulate Mass Rate (lb/hr)			
Dry Catch	0.35	0.56	0.45
Dry Catch + Organic Wet Catch	0.36	0.57	0.47
Dry Catch + M-202 (PM-10 eq)	0.41	0.68	0.55
EU 063 Proposed Potential Emission Rate (lb/hr)			
Stack Temperature (F)	91.1		
ACFM	1885		
DSCFM	1806		
Particulate Mass Rate (lb/hr)			
Dry Catch	1.18		
Dry Catch + Organic Wet Catch	1.23		
Dry Catch + M-202 (PM-10 eq)	1.44		
		Tpy =	6.31
Emission Calculations			
0.55 lbs PM/hr x 1806 Design DSCFM / 1380 Test DSCFM * safety factor of 2 = 1.44 lbs PM/hr			
Allowable Particulate Mass Rate lb/hr	1.55		
Allowable Particulate Concentration Gr/DSCF	0.1		

Attachment 2

CD-01 Forms



COMPLIANCE PLAN **CD-01**

Facility Name: 3M - Alexandria

Permit Number: 04100003 - 005

Subject Item: Total Facility

	NC/CA	Type	Citation	Requirement
1.0		CD	hdr	SOURCE-SPECIFIC REQUIREMENTS
2.0		CD	Title I Condition: To avoid classification as major source and modification under 40 CFR Section 52.21 & Minn. R. 7007.3000	This permit establishes limits on the facility to keep it a minor source under New Source Review, this includes changes that might otherwise qualify as insignificant modifications and minor or moderate amendments for future modifications. The Permittee cannot make any change at the source area that would make the source a major source under New Source Review until a major permit amendment has been issued.
3.0		CD	hdr	OPERATIONAL REQUIREMENTS
4.0		CD	40 CFR pt. 50; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subps. 7A, 7L & 7M; 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.
5.0		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.
6.0		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, unless otherwise noted in Table A.
7.0		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.
8.0		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.
9.0		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.
10.0		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 enforceable by the EPA Administrator or citizens under the Clean Air Act.
11.0		CD	Minn. R. 7007.0800, subp. 9(A)	Inspections: The Permittee shall comply with the inspection procedures and requirements as found in Minn. R. 7007.0800, subp. 9(A).
12.0		CD	Minn. R. 7007.0800, subp. 16	The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16.
13.0		CD	hdr	PERFORMANCE TESTING
14.0		CD	Minn. R. ch. 7017	Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017 unless otherwise noted in Tables A, B, and/or C.



COMPLIANCE PLAN **CD-01**

Facility Name: 3M - Alexandria

Permit Number: 04100003 - 005

15.0		CD	Minn. Rs. 7017.2030, subp. 1-4, 7017.2018 and Minn. R. 7017.2035, subp. 1-2	<p>Performance Test Notifications and Submittals:</p> <p>Performance Tests are due as outlined in Tables A and B 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 alternative format as allowed by Minn. R. 7017.2018.</p>
16.0		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.
17.0		CD	hdr	MONITORING REQUIREMENTS
18.0		CD	Minn. R. 7007.0800, subp. 4(D)	Monitoring Equipment Calibration: Annually calibrate all required monitoring equipment (any requirements applying to continuous emission monitors are listed separately in this permit).
19.0		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.
20.0		CD	hdr	RECORDKEEPING
21.0		CD	Minn. R. 7007.0800, subp. 5(C)	Recordkeeping: Retain all records at the stationary source for a period of five (5) years from the date of monitoring, sample, measurement, or report. Records which must be retained at this location include all calibration and maintenance records, all original recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. Records must conform to the requirements listed in Minn. R. 7007.0800, subp. 5(A).
22.0		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.
23.0		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. For expiring permits, 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.
24.0		CD	hdr	REPORTING/SUBMITTALS
25.0		CD	Minn. R. 7019.1000, subp. 3	<p>Shutdown Notifications: Notify the Commissioner at least 24 hours in advance of a planned shutdown of any control equipment or process equipment if the shutdown would cause any increase in the emissions of any regulated air pollutant. If the owner or operator does not have advance knowledge of the shutdown, notification shall be made to the Commissioner as soon as possible after the shutdown. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 3.</p> <p>At the time of notification, the owner or operator shall inform the Commissioner of the cause of the shutdown and the estimated duration. The owner or operator shall notify the Commissioner when the shutdown is over.</p>



COMPLIANCE PLAN **CD-01**

Facility Name: 3M - Alexandria

Permit Number: 04100003 - 005

26.0		CD	Minn. R. 7019.1000, subp. 2	<p>Breakdown Notifications: Notify the Commissioner within 24 hours of a breakdown of more than one hour duration of any control equipment or process equipment if the breakdown causes any increase in the emissions of any regulated air pollutant. The 24-hour time period starts when the breakdown was discovered or reasonably should have been discovered by the owner or operator. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 2.</p> <p>At the time of notification or as soon as possible thereafter, the owner or operator shall inform the Commissioner of the cause of the breakdown and the estimated duration. The owner or operator shall notify the Commissioner when the breakdown is over.</p>
27.0		CD	Minn. R. 7019.1000, subp. 1	<p>Notification of Deviations Endangering Human Health or the Environment: As soon as possible after discovery, notify the Commissioner or the state duty officer, either orally or by facsimile, of any deviation from permit conditions which could endanger human health or the environment.</p>
28.0		CD	Minn. R. 7019.1000, subp. 1	<p>Notification of Deviations Endangering Human Health or the Environment Report: Within 2 working days of discovery, notify the Commissioner in writing of any deviation from permit conditions which could endanger human health or the environment. Include the following information in this written description:</p> <ol style="list-style-type: none"> 1. the cause of the deviation; 2. the exact dates of the period of the deviation, if the deviation has been corrected; 3. whether or not the deviation has been corrected; 4. the anticipated time by which the deviation is expected to be corrected, if not yet corrected; and 5. steps taken or planned to reduce, eliminate, and prevent reoccurrence of the deviation.
29.0		S/A	Minn. R. 7007.0800, subp. 6(A)(2)	<p>Semiannual Deviations Report: due 30 days after end of each calendar half-year starting 11/15/2007 . 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 by July 30th. The second report of each calendar year covers July 1 - December 31 by January 30th. If no deviations have occurred, the Permittee shall submit the report stating no deviations.</p>
30.0		CD	Minn. R. 7007.1150 through Minn. R. 7007.1500	<p>Application for Permit Amendment: If a permit amendment is needed, submit an application in accordance with the requirements of Minn. R. 7007.1150 through Minn. R. 7007.1500. Submittal dates vary, depending on the type of amendment needed.</p>
31.0		S/A	Minn. R. 7007.0400, subp. 2	<p>Application for Permit Reissuance: due 180 days before expiration of Existing Permit</p>
32.0		CD	Minn. R. 7007.1400, subp. 1(H)	<p>Extension Requests: The Permittee may apply for an Administrative Amendment to extend a deadline in a permit by no more than 120 days, provided the proposed deadline extension meets the requirements of Minn. R. 7007.1400, subp. 1(H).</p>
33.0		S/A	Minn. R. 7007.0800, subp. 6(C)	<p>Compliance Certification: due 31 days after end of each calendar year starting 11/15/2007 (January 30th, 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.</p>
34.0		CD	Minn. R. 7019.3000 through Minn. R. 7019.3100	<p>Emission Inventory Report: due on or before April 1 of each calendar year following permit issuance. The Permittee shall submit this on a form approved by the Commissioner.</p>
35.0		CD	Minn. R. 7002.0005 through Minn. R. 7002.0095	<p>Emission Fees: due 60 days after receipt of an MPCA bill.</p>
36.0		CD	40 CFR pt. 68	<p>The Permittee must submit a Risk Management Plan (RMP) under 40 CFR pt. 68. Each owner or operator of a stationary source, at which a regulated substance is present above a threshold quantity in a process, shall design and implement an accidental release prevention program. An initial RMP must be submitted no later than the latest of the following dates: 1) June 21, 1999; 2) Three years after the date on which a regulated substance is first listed under 40 CFR Section 68.130; or 3) The date on which a regulated substance is first present above a threshold quantity in a process. A full update and resubmission of the RMP is required at least once every five years. The five-year anniversary date is reset whenever your facility fully updates and resubmits their RMP. Submit RMPs to the Risk Management Plan Reporting Center, P.O. Box 1515, Lanham-Seabrook, Maryland 20703-1515. RMP information may be obtained at http://www.epa.gov/swercepp or by calling 1-800-424-9346.</p>



COMPLIANCE PLAN **CD-01**

Facility Name: 3M - Alexandria

Permit Number: 04100003 - 005

Subject Item: GP 001 Boilers

Associated Items: EU 056 #5 Boiler

EU 057 #6 Boiler

	NC/CA	Type	Citation	Requirement
1.0		CD	40 CFR Part 63, Subpart DDDDD	Comply with 40 CFR Part 63, Subpart DDDDD, National Emissions Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters, as promulgated and amended.
2.0		CD	hdr	LIMITS
3.0		CD	Minn. R. 7005.0100, subp. 35a	Allowable fuels: natural gas only.
4.0		CD	hdr	MONITORING AND RECORDKEEPING
5.0		CD	40 CFR Section 60.48c(g); Minn. R. 7011.0570	Recordkeeping: By the last day of each calendar month, the Permittee shall record the amount of natural gas combusted in the boilers during the previous calendar month. These records shall consist of purchase records, receipts, or fuel meter readings.
6.0		CD	hdr	REPORTS AND NOTIFICATIONS (See Table B)
7.0		CD	Minn. R. 7007.0800, subp. 2	Submittals and notifications under subpart DDDDD shall be sent to both the MPCA and EPA contacts listed on Page B-1 of this permit, unless otherwise noted.
8.0		S/A	40 CFR Section 63.7545(b); 40 CFR Section 63.9(b)	Notification: due 120 days after Permit Issuance. The Permittee shall submit an initial notification containing the information required by 40 CFR Section 63.9(b)(2).
9.0		S/A	40 CFR Section 63.7550	<p>Compliance Status Report: due 30 days after end of each calendar half-year starting 03/21/2014 The first report must cover the period beginning on the compliance date and ending on June 30 or December 31, whichever date is the first date that occurs at least 180 days after the compliance date. As of permit issuance, the due date of the first report is January 1, 2015.</p> <p>The report shall contain:</p> <ul style="list-style-type: none"> - the information required in 40 CFR Section 63.7550(c); - if there are no deviations from any applicable emission limit, operating limit, or work practice standards during the reporting period, a statement that there were no deviations from the emission limitations and work practice standards during the reporting period. - for each deviation from an emission limit or operating limit (including work practice requirements), the information required in 40 CFR Section 63.7550(d)



COMPLIANCE PLAN **CD-01**

Facility Name: 3M - Alexandria

Permit Number: 04100003 - 005

Subject Item: GP 002 Direct Heating Equipment

- Associated Items:**
- EU 008 Wide Maker Oven
 - EU 022 Cloth Coater Treater Oven
 - EU 029 Coater Cure Oven 2
 - EU 044 Sierra 1 Make Oven
 - EU 045 Sierra 1 Size Oven
 - EU 053 Backrack Oven
 - EU 055 Mainline Oven
 - EU 062 M9 Coater Reactive Thermal Oxidizer
 - EU 070 Coating Line No. 3 Oven

	NC/CA	Type	Citation	Requirement
1.0		CD	hdr	LIMITS (Limits apply individually to each unit). See GP 007 for additional requirements associated with these units.
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 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. 2(A)(2)	Sulfur Dioxide: less than or equal to 2.0 lbs/million Btu heat input . The potential to emit from the unit is 0.0006 lb/MMBtu due to equipment design and allowable fuels.
4.0		LIMIT	Minn. R. 7011.0610, subp. 1(A)(2)	Opacity: less than or equal to 20.0 percent opacity except for one six-minute period per hour of not more than 60 percent opacity.
5.0		CD	Minn. R. 7005.0100, subp. 35a	The Permittee shall burn only natural gas in the Group 002 emission units.



COMPLIANCE PLAN **CD-01**

Facility Name: 3M - Alexandria

Permit Number: 04100003 - 005

Subject Item: GP 003 Pre-1969 Industrial Process Equipment

- Associated Items:**
- EU 013 Medium Belt Making
 - EU 014 Wide Belt Making
 - EU 016 Mix Tank D, 1092
 - EU 017 Mix Tank C, 1093
 - EU 018 Mix Tank B, 1904
 - EU 019 Mix Tank A, 1095
 - EU 020 Mix Tank E
 - EU 021 Cloth Coater Treater

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	LIMITS (Limits apply individually to each emission unit)
2.0		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 to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011. 0735.
3.0		LIMIT	Minn. R. 7011.0710, subp. 1(B)	Opacity: less than or equal to 20.0 percent opacity except for one six-minute period per hour of not more than 60 percent opacity.
4.0		CD	Minn. R. 7007.0800, subp. 2	The Permittee shall properly maintain the process equipment so as to prevent excessive amounts of particulate matter from being emitted from the emission units listed above under Associated Items.



COMPLIANCE PLAN **CD-01**

Facility Name: 3M - Alexandria

Permit Number: 04100003 - 005

Subject Item: GP 005 Post-1969 Industrial Process Equipment

- Associated Items:**
- EU 001 Large Mixer A
 - EU 002 Large Mixer B
 - EU 003 Large Mixer C
 - EU 004 Large Mixer D
 - EU 005 Large Mixer E
 - EU 006 Coater Room
 - EU 007 Counter Coater
 - EU 012 Belt Adhesive Mix Room
 - EU 015 Butt Splice Coater
 - EU 034 Prism Beltmaking Line
 - EU 041 Sierra Maker Coater
 - EU 042 Mixstation
 - EU 043 Sierra 1 Size Coater
 - EU 051 Sierra 1 in-line size cure oven
 - EU 052 Make Coater
 - EU 054 Size Coater
 - EU 058 200 Gallon Mix Tank
 - EU 059 200 Gallon Mix Tank
 - EU 060 200 Gallon Mix Tank
 - EU 061 200 Gallon Mix Tank
 - EU 063 Laser Cutter
 - EU 064 Coating Line No. 3 Mix Tank A
 - EU 065 Coating Line No. 3 Mix Tank B
 - EU 066 Coating Line No. 3 Mix Tank C
 - EU 067 Coating Line No. 3 Mix Tank D
 - EU 068 Coating Line No. 3 Mix Tank E
 - EU 069 Coating Line No. 3 Coater

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	LIMITS (Limits apply individually to each emission unit)
2.0		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.
3.0		LIMIT	Minn. R. 7011.0715, subp. 1(B)	Opacity: less than or equal to 20.0 percent opacity
4.0		CD	Minn. R. 7007.0800, subp. 2	The Permittee shall properly maintain the process equipment so as to prevent excessive amounts of particulate matter from being emitted from the emission units listed above under Associated Items.



COMPLIANCE PLAN **CD-01**

Facility Name: 3M - Alexandria

Permit Number: 04100003 - 005

Subject Item: GP 006 Subpart JJJJ NESHAP Units

- Associated Items:**
- EU 001 Large Mixer A
 - EU 002 Large Mixer B
 - EU 003 Large Mixer C
 - EU 004 Large Mixer D
 - EU 005 Large Mixer E
 - EU 006 Coater Room
 - EU 007 Counter Coater
 - EU 008 Wide Maker Oven
 - EU 016 Mix Tank D, 1092
 - EU 017 Mix Tank C, 1093
 - EU 018 Mix Tank B, 1904
 - EU 019 Mix Tank A, 1095
 - EU 020 Mix Tank E
 - EU 021 Cloth Coater Treater
 - EU 022 Cloth Coater Treater Oven
 - EU 029 Coater Cure Oven 2
 - EU 041 Sierra Maker Coater
 - EU 042 Mixstation
 - EU 043 Sierra 1 Size Coater
 - EU 051 Sierra 1 in-line size cure oven
 - EU 052 Make Coater
 - EU 053 Backrack Oven
 - EU 054 Size Coater
 - EU 055 Mainline Oven
 - EU 056 #5 Boiler
 - EU 057 #6 Boiler
 - EU 058 200 Gallon Mix Tank
 - EU 059 200 Gallon Mix Tank
 - EU 060 200 Gallon Mix Tank
 - EU 061 200 Gallon Mix Tank
 - EU 064 Coating Line No. 3 Mix Tank A
 - EU 065 Coating Line No. 3 Mix Tank B
 - EU 066 Coating Line No. 3 Mix Tank C
 - EU 067 Coating Line No. 3 Mix Tank D
 - EU 068 Coating Line No. 3 Mix Tank E
 - EU 069 Coating Line No. 3 Coater
 - EU 070 Coating Line No. 3 Oven
 - SV 001 Wide Maker Mixers and Coating Line No. 3 Mixers
 - SV 002 Wide Maker Coater Room
 - SV 003 Wide Maker Counter Coater
 - SV 004 Wide Maker Oven
 - SV 005 Wide Maker Oven
 - SV 006 Wide Maker Oven



COMPLIANCE PLAN **CD-01**

Facility Name: 3M - Alexandria

Permit Number: 04100003 - 005

- Associated Items:**
- SV 010 Medium Belt Making - IBL
 - SV 012 ACT Mixroom
 - SV 013 Cloth Coater Oven
 - SV 014 ACT Cloth Treater Oven
 - SV 015 ACT Cloth Treater Oven
 - SV 016 ACT Cloth Treater Oven
 - SV 030 Sierra Maker Coater
 - SV 033 Sierra 1 Size Coater
 - SV 041 Make Coater Bypass
 - SV 042 Size Coater Bypass
 - SV 045 Coating Line No. 3 Coater Stack
 - SV 046 Coating Line No. 3 Oven Stack 1
 - SV 047 Coating Line. No. 3 Oven Stack 2

	NC/CA	Type	Citation	Requirement
1.0		CD	Minn. R. 7007.1150; Minn. R. 7007.0800 subp. 2	Based on the current and expected operations of the affected source, this permit only includes the regulations for compliance with 40 CFR pt. 63, subp. JJJJ using option in 40 CFR Section 63.3320(b)(2) and 63.3320(b)(3). If the Permittee later chooses to switch to one of the other compliance options allowed in the standard, the Permittee shall comply with all applicable portions of 40 CFR pt. 63, subp. JJJJ for that option. In addition, the Permittee shall apply for a permit amendment, as appropriate (e.g., to add applicable NESHAP language, installation of an oxidizer, etc.).
2.0		CD	Minn. R. 7007.0800, subp. 2 and 4	The Permittee shall maintain records of which emission units in GP 006 are complying with the limit in 40 CFR 63.3320(b)(2) and which emission units are complying with the limit in 40 CFR 63.3320(b)(3).
3.0		CD	hdr	EMISSION AND OPERATING LIMITS - No Control Option
4.0		LIMIT	40 CFR Section 63.3320(b)(2); Minn. R. 7011.7385	HAPs - Organic: less than or equal to 4 percent of the mass of coating materials applied for each month at existing affected sources.
5.0		LIMIT	40 CFR Section 63.3320(b)(3); Minn. R. 7011.7385	HAPs - Organic: less than or equal to 20 percent by weight of coating solids applied for each month at existing affected sources.
6.0		CD	hdr	MONITORING AND RECORDKEEPING REQUIREMENTS
7.0		CD	40 CFR Section 63.3410(a); 40 CFR Section 63.10(b)(1); Minn. R. 7011.7385	Maintain the following records on a monthly basis: (1) Records specified in 40 CFR Section 63.10(b)(2) of all measurements need to demonstrate compliance, including: (iii) organic HAP content data used for demonstrating compliance in accordance with 40 CFR Section 63.3360(c); (iv) volatile matter and coating solids content data for the purpose of demonstrating compliance in accordance with the requirements of 40 CFR Section 63.3360(d) and (vi) material usage, organic HAP usage, volatile matter usage, coating solids usage and compliance demonstrations using these data in accordance with 40CFR Section 63.3370(c) or (d).
8.0		CD	hdr	METHODS FOR DETERMINING HAP CONTENT
9.0		CD	40 CFR Section 63.3360(a)(1); Minn. R. 7011.7385	If organic HAP is controlled on any individual coating line or group of coating lines by limiting organic HAP or volatile matter content of coatings, the Permittee must determine the organic HAP or volatile matter and coating solids content of the coating materials according to procedures in 40 CFR Section 63.3360(c) and (d). If applicable, determine the mass of volatile matter retained in the coated web or otherwise not emitted to the atmosphere according to 40 CFR Section 63.3360(g).



COMPLIANCE PLAN **CD-01**

Facility Name: 3M - Alexandria

Permit Number: 04100003 - 005

10.0		CD	40 CFR Section 63.3360(c)(1); Minn. R. 7011.7385	Organic HAP Content Method 311 - The Permittee may test the coating material in accordance with Method 311 of Appendix A of Part 63. The Method 311 determination may be performed by the manufacturer of the coating material and the results provided to the Permittee. The organic HAP content must be calculated according to the criteria and procedures in 40 CFR Section 63.3360(c)(1)(i)-(iii).
11.0		CD	40 CFR Section 63.3360(c)(2); Minn. R. 7011.7385	Organic HAP Content Method 24 - The Permittee may determine the volatile organic content of coatings as mass fraction of nonaqueous volatile matter and use it as a substitute for organic HAP using Method 24 of Appendix A of Part 63. The Method 24 determination may be performed by the manufacturer of the coating and the results provided to the Permittee.
12.0		CD	40 CFR Section 63.3360(c)(3); Minn. R. 7011.7385	Organic HAP Content Formulation Data - The Permittee may use formulation data to determine the organic HAP mass fraction of a coating material. Formulation data may be provided to the Permittee by the manufacturer of the material. In the event of an inconsistency between Method 311 test data and a facility's formulation data, and the Method 311 test value is higher, the Method 311 data will govern. Formulation data may be used provided that the information represents all organic HAP present at a level equal to or greater than 0.1 percent for OSHA-defined carcinogens as specified in 29 CFR Section 1910.1200(d)(4) and equal to or greater than 1.0 percent for other organic HAP compounds in any raw material used.
13.0		CD	40 CFR Section 63.3360(c)(4); Minn. R. 7011.7385	Organic HAP Content As-applied organic HAP mass fraction - If the as-purchased coating material is applied to the web without any solvent or other material added, then the as-applied organic HAP mass fraction is equal to the as-purchased organic HAP mass fraction. Otherwise, the as-applied organic HAP mass fraction must be calculated using Equation 1a of 40 CFR section 63.3370 and Appendix II of this permit.
14.0		CD	40 CFR Section 63.3360(d)(1); Minn. R. 7011.7385	Volatile Organic and Coating Solids Content Method 24 - The Permittee may determine the volatile organic content and coating solids mass fraction of each coating applied using Method 24 of Appendix A of Part 63. The Method 24 determination may be performed by the manufacturer of the coating and the results provided to the Permittee.
15.0		CD	40 CFR Section 63.3360(d)(2); Minn. R. 7011.7385	Volatile Organic and Coating Solids Content Formulation Data - The Permittee may determine the volatile organic content and coating solids content of a coating material based on formulation data and may rely on volatile organic content data provided by the manufacturer of the material. In the event of any inconsistency between the formulation data and the results of Method 24 of 40 CFR part 60, Appendix A, and the Method 24 results are higher, the results of Method 24 will govern.
16.0		CD	40 CFR Section 63.3360(d)(3); Minn. R. 7011.7385	Volatile Organic and Coating Solids Content As-applied volatile organic content and coating solids content - If the as-purchased coating material is applied to the web without any solvent or other material added, then the as-applied volatile organic content is equal to the as-purchased volatile organic content and the as-applied coating solids content is equal to the as-purchased coating solids content. Otherwise, the as-applied volatile organic content must be calculated using Equation 1b of 40 CFR Section 63.3370 and the as-applied coating solids content must be calculated using Equation 2 of 40 CFR Section 63.3370.
17.0		CD	40 CFR Section 63.3360(g); Minn. R. 7011.7385	Volatile matter retained in the coated web or otherwise not emitted to the atmosphere - If you choose to take this into account when determining compliance with the emission standards, you must develop a testing protocol to determine the mass of volatile matter retained in the coated web or otherwise not emitted to the atmosphere and submit it to the Administrator for approval with your site-specific test plan under 40 CFR Section 63.7(f). If you intend to take into account the mass of volatile matter retained in the coated web after curing or drying or otherwise not emitted to the atmosphere and demonstrate compliance according to 40 CFR Section 63.3370(c)(3), (c)(4), or (d), then the protocol must determine the mass of organic HAP retained in the coated web or otherwise not emitted to the atmosphere. Otherwise, compliance must be shown using the volatile organic matter content as a surrogate for the HAP content of the coatings.
18.0		CD	hdr	COMPLIANCE DEMONSTRATION



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Facility Name: 3M - Alexandria

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19.0		CD	40 CFR Section 63.3370(a)(2)(iii); Minn. R. 7011.7385	<p>Monthly Average "As-applied" Compliant Coating Materials</p> <p>Demonstrate that the monthly average of all coating materials used does not exceed 0.04 kg organic HAP per kg coating material as-applied, using the procedures set out in 40 CFR Section 63.3370(c)(3). Use Equation 4 of 40 CFR Section 63.3370 and Appendix II to this permit to determine compliance with the 0.04 kg organic HAP per kg coating material as applied limit in accordance with 40 CFR Section 63.3370(c)(5)(ii).</p>
20.0		CD	40 CFR Section 63.3370(a)(2)(iv); Minn. R. 7011.7385	<p>Monthly Average "As-applied" Compliant Coating Materials</p> <p>Demonstrate that the monthly average of all coating materials used does not exceed 0.2 kg organic HAP per kg coating solids, using the procedures set out in 40 CFR Section 63.3370(c)(4). Use Equation 5 of 40 CFR Section 63.3370 and Appendix II to this permit to determine compliance with the 0.2 kg organic HAP per kg coating solids limit in accordance with 40 CFR Section 63.3370(c)(5)(ii).</p>
21.0		CD	40 CFR Section 63.3370(a)(3); Minn. R. 7011.7385	<p>Total Monthly Organic HAP Applied</p> <p>Demonstrate that the total monthly organic HAP applied does not exceed the calculated limit based on emission limitations. Follow the procedures set out in 40 CFR Section 63.3370(d). Show that the monthly HAP applied (Equation 6 of 40 CFR Section 63.3370 and Appendix II of this permit) is less than the calculated equivalent allowable organic HAP (Equation 13a or 13b of 40 CFR Section 63.3370 and Appendix II of this permit).</p>
22.0		CD	hdr	REPORTING REQUIREMENTS (see Table B for additional requirements)
23.0		S/A	40 CFR Section 63.3400(c); Minn. R. 7011.7385	Semiannual Compliance Report: due 31 days after end of each calendar half-year starting 12/05/2005. This may be submitted with the semiannual compliance report required by Part 70 and this permit. The report must contain the information listed in 40 CFR Section 63.3400(c)(2).
24.0		CD	hdr	GENERAL PROVISIONS, 40 CFR pt. 63, subp. A
25.0		CD	40 CFR Section 63.6(e)(1)(i); Minn. R. 7011.7000	Comply with the General Provisions of 40 CFR Part 63 according to Table 2 to Subpart JJJJ of Part 63.
26.0		CD	40 CFR Section 63.5(b)(3); Minn. R. 7011.7000	Prior to construction or reconstruction of an "affected source" under the promulgated MACT standards, the Permittee must apply for and obtain an air emission permit.
27.0		CD	40 CFR Section 63.10(b)(1); Minn. R. 7019.0100, subp. 2(B)	<p>Recordkeeping: The Permittee shall maintain files of all information required by 40 CFR pt. 63 in a form suitable and readily available for expeditious inspection and review.</p> <p>The files should be retained for at least 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. Only the most recent two years of information must be kept on site.</p>



COMPLIANCE PLAN **CD-01**

Facility Name: 3M - Alexandria

Permit Number: 04100003 - 005

Subject Item: GP 007 VOC PreCap

	NC/CA	Type	Citation	Requirement
1.0		CD	hdr	As of permit issuance, GP 007 consists of all VOC-emitting equipment on site: EUs 001-008, 012-022, 029, 034, 041-045, 051, 052, 056-062, 064-070. Note that this list is for the purposes of documenting the units in GP 007 as of permit issuance, and is subject to change as allowed by the requirements of GP 007.
2.0		LIMIT	Title I Condition: To avoid classification as major source and modification under 40 CFR Section 52.21 & Minn. R. 7007.3000	<p>Volatile Organic Compounds: less than or equal to 240 tons/year using 12-month Rolling Sum to be calculated by the 15th day of each month for the previous 12-month period as described later in this permit.</p> <p>All emission units or stacks added to GP 007 as allowed in this permit shall be included in this calculation. VOC contents for each VOC-containing material shall be determined as described under the Material Content requirement in GP 007. The calculation of VOCs used may take into account recovered/recycled VOCs as described under the Waste Credit requirement in GP 007.</p>
3.0		CD	Title I Condition: To avoid classification as major source and modification under 40 CFR Section 52.21 & Minn. R. 7007.3000	All VOC-emitting equipment in GP 007 is subject to this limit. If the Permittee replaces any existing VOC-emitting equipment in GP 007, adds new VOC-emitting equipment, or modifies the existing equipment in GP 007, such equipment is subject to this permit limit as well as all of the requirements of GP 007 and any other applicable requirements contained elsewhere in this permit. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment, as applicable. The Permittee is not required to complete VOC calculations described in Minn. R. 7007.1200, subp. 2. A permit amendment will still be needed regardless of the emissions increase if the change will be subject to a new applicable requirement not otherwise contained in GP 007 or elsewhere in the permit, or requires revisions to the limits or monitoring and recordkeeping in this permit.
4.0		CD	Title I Condition: To avoid classification as major source and modification under 40 CFR Section 52.21 & Minn. R. 7007.3000	Daily Recordkeeping: On each day of operation, the Permittee shall calculate, record, and maintain the total quantity of all coatings and other VOC containing materials used at the facility. This shall be based on written or electronic records.
5.0		CD	Minn. R. 7007.0800, subp. 4 and 5	<p>Monthly Recordkeeping:</p> <p>The Permittee shall maintain monthly records of the</p> <ol style="list-style-type: none"> 1) Type of fuel used, and 2) The total quantity of each fuel-type used on-site
6.0		CD	Minn. R. 7007.0800, subp. 4 and 5	<p>Monthly Recordkeeping:</p> <p>By the 15th of the month, the Permittee shall calculate and record the following.</p> <ol style="list-style-type: none"> 1) The total usage of VOC containing materials for the previous calendar month using the daily usage records. This record shall also include the VOC contents of each material as determined by the "Material Content" requirement of GP 007. 2) The total fuel usage for the previous calendar month using monthly fuel usage records. 3) The VOC emissions for the previous month using the formulas specified in this permit. 4) The 12-month rolling sum VOC emissions for the previous 12-month period by summing the monthly VOC emissions data for the previous 12 months.



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7.0		CD	Minn. R. 7007.0800, subp. 4 and 5	<p>Monthly Calculation -- VOC Emissions. The Permittee shall calculate source-wide VOC emissions using the following equations:</p> $\text{VOC (tons/month)} = (\text{Vusage} + \text{Vcomb} + \text{Vinsig}) - W$ $V = (A1 \times B1) + (A2 \times B2) + (A3 \times B3) + \dots$ $W = (C1 \times D1) + (C2 \times D2) + C3 \times D3) + \dots$ <p>Monthly VOC Emissions Calculation Continued:</p> <p>where: Vusage = total VOC used in tons/month; A# = amount of each VOC containing material used, in tons/month; B# = weight percent VOC in A#, as a fraction; Vcomb = amount of VOC from all combustion sources in tons/month; Vinsig = amount of VOC emitted from all insignificant activities listed in Appendix A in tons/month; W = the amount of VOC shipped in waste, in tons/month; C# = amount, in tons/month, of each VOC containing waste material shipped. If the Permittee chooses to not take credit for waste shipments, this parameter would be zero; and D# = weight percent of VOC in C#, as a fraction.</p>
8.0		CD	Minn. R. 7007.0800, subps. 4 and 5	<p>Material Content. VOC contents shall be determined by the Material Safety Data Sheet (MSDS) provided by the supplier for each material used. If a material content range is given on the MSDS, the highest number in the range shall be used in all compliance calculations. Other alternative methods approved by the MPCA may be used to determine the VOC content. The Commissioner reserves the right to require the Permittee to determine the VOC content of any material, according to EPA or ASTM reference methods. If an EPA or ASTM reference method is used for material content determination, the data obtained shall supersede the MSDS.</p>
9.0		CD	Minn. R. 7007.0800, subps. 4 and 5	<p>Waste Credit: If the Permittee elects to obtain credit for VOC shipped in waste materials, the Permittee shall either use item 1 or 2 to determine the VOC content for each credited shipment.</p> <ol style="list-style-type: none"> 1) The Permittee shall analyze a composite sample of each waste shipment to determine the weight content of VOC excluding water. 2) The Permittee may use supplier data for raw materials to determine the VOC content of each waste shipment, using the same content data used to determine the content of raw materials. If the waste contains several materials, the content of mixed waste shall be assumed to be the lowest VOC content of any of the materials.
10.0		CD	Minn. R. 7005.0100, subp. 35a	<p>Maximum Contents of Materials: The Permittee assumed certain worst-case contents of materials when determining the short term potential to emit of units in GP007. 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 - Alexandria

Permit Number: 04100003 - 005

Subject Item: CE 009 Direct Flame Afterburner w/Heat Exchanger

- Associated Items:** EU 052 Make Coater
 EU 053 Backrack Oven
 EU 054 Size Coater
 EU 055 Mainline Oven

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	OPERATION AND MAINTENANCE
2.0		CD	Minn. Stat. 116.07, subd. 4a; Minn. R. 7019.3020 (G); Minn. R. 7019.3050	The operation of this 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		CD	Minn. Stat. 116.07, subd. 4a; Minn. R. 7019.3020 (G); Minn. R. 7019.3050	The Permittee shall operate and maintain the thermal oxidizer 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.
4.0		CD	hdr	EMISSION LIMITS
5.0		LIMIT	Minn. Stat. 116.07, subd. 4a; Minn. R. 7019.3020 (G); Minn. R. 7019.3050	The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for Volatile Organic Compounds: greater than or equal to 95 percent
6.0		LIMIT	Minn. Stat. 116.07, subd. 4a; Minn. R. 7019.3020 (G); Minn. R. 7019.3050	Temperature: greater than or equal to 1400 degrees F using 3-hour Rolling Average at the Combustion Chamber unless a new minimum temperature is set pursuant to Minn. R. 7017.2025, subp. 3. If a new minimum temperature is required to be set, it will be based on the average temperature recorded during the most recent MPCA approved performance test where compliance for VOC emissions was demonstrated. If the three-hour rolling average temperature drops below the minimum temperature limit, the VOC used during that time shall be considered uncontrolled until the average minimum temperature limit is once again achieved. This shall be reported as a deviation.
7.0		CD	hdr	RECORDKEEPING
8.0		CD	Minn. Stat. 116.07, subd. 4a; Minn. R. 7019.3020 (G); Minn. R. 7019.3050	The Permittee shall document periods of operation and non-operation of the control equipment.
9.0		CD	Minn. Stat. 116.07, subd. 4a; Minn. R. 7019.3020 (G); Minn. R. 7019.3050	The Permittee shall maintain a continuous hard copy readout or computer disk file of the temperature readings and calculated three-hour average temperatures for the combustion chamber.
10.0		CD	Minn. Stat. 116.07, subd. 4a; Minn. R. 7019.3020 (G); Minn. R. 7019.3050	Monitoring Equipment: The Permittee shall install and maintain thermocouples to conduct temperature monitoring required by this permit. The monitoring equipment must be installed, in use, and properly maintained whenever operation of the monitored control equipment is required.
11.0		CD	Minn. Stat. 116.07, subd. 4a; Minn. R. 7019.3020 (G); Minn. R. 7019.3050	The Permittee shall maintain and operate a thermocouple monitoring device that continuously measures and records the combustion chamber temperature of the thermal oxidizer. The monitoring device shall have a margin of error less than +/- .75 percent of the temperature being measured or +/- .25 degrees Celsius, whichever is greater. The recording device shall also calculate the three-hour rolling average combustion chamber temperature.
12.0		CD	Minn. Stat. 116.07, subd. 4a; Minn. R. 7019.3020 (G); Minn. R. 7019.3050	Semiannual Inspections: At least once per calendar halfyear, the Permittee shall inspect the control equipment internal and external system components, including but not limited to the refractory, heat exchanger, and electrical systems. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection.
13.0		CD	Minn. Stat. 116.07, subd. 4a; Minn. R. 7019.3020 (G); Minn. R. 7019.3050	Annual Calibration: The Permittee shall calibrate the temperature monitor at least once annually and shall maintain a written record of the inspection and any action resulting from the calibration.



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14.0		CD	Minn. Stat. 116.07, subd. 4a; Minn. R. 7019.3020 (G); Minn. R. 7019.3050	For periods when the thermal oxidizer is operated above the minimum combustion chamber temperature, the Permittee shall use either one of the following when completing calculations as required elsewhere in this permit: a. The overall control efficiency limit specified in this permit for this equipment (95%); or b. The overall control efficiency determined during the most recent MPCA approved performance test. If the tested efficiency is less than the efficiency limit in this permit, the Permittee must use the tested value in all calculations until the efficiency is demonstrated to be above the permit limit through a new test.
15.0		CD	Minn. Stat. 116.07, subd. 4a; Minn. R. 7019.3020 (G); Minn. R. 7019.3050	Corrective Actions: If the temperature is below the minimum specified by this permit or if the thermal oxidizer or any of its components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall return the temperature to at least the permitted minimum and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the Thermal oxidizer. The Permittee shall keep a written record of the type and date of any corrective action taken.

Attachment 3

Points Calculator

Points Calculator

1) AQ Facility ID No.: 04100003
 2) Facility Name: 3M - Alexandria
 3) Small business? y/n? N
 4) DQ Numbers (including all rolled) : 4093, 2686
 5) Date of each Application Received: 09/21/2012, 06/12/2009
 6) Final Permit No. 04100003-005
 7) Permit Staff Kelsey Suddard
 8) "Work completed" in which .xls file (i.e. unit 2b, unit 1a, biofuels)? NA

Total Points 31

Application Type	DQ No.	Qty.	Points	Total Points	Details
Administrative Amendment			1	0	
Minor Amendment	2686	1	4	4	
Applicability Request			10	0	
Moderate Amendment			15	0	
Major Amendment	4093	1	25	25	
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	2686	1	2	2	
EAW review					
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	
				Add'l Points	2

NOTES: