

DRAFT

AIR EMISSION PERMIT NO. 16300017-004

Major Amendment

IS ISSUED TO

3M Co

3M - COTTAGE GROVE ABRASIVE SYSTEMS DIVISION

10746 Innovation Road Building 112

Cottage Grove, Washington County, Minnesota 55016

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. 16300017-004, 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; Pt 70/Limits to Avoid NSR;

Operating Permit Issue Date: < >

Major Amendment Issue Date: <issue date>

Expiration Date: 10/31/2008*

Title I Conditions do not expire.

* The Permittee may continue to operate this facility after the expiration date of the permit, per the provision under Minn. R. 7007.0450, subp. 3. (Title V Reissuance Application was received 05/06/2008).

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

for John Linc Stine
Commissioner
Minnesota Pollution Control Agency

Permit Applications Table

Permit Type	Application Date	Permit Action
Total Facility Operating Permit	04/17/1955	001
Major Amendment	06/06/2005	002
Administrative Amendment	application withdrawn	003
Major Amendment; Major Amendment	04/23/2012; 08/6/2012	004

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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:

The 3M Cottage Grove Abrasives Systems Division facility processes mineral materials into powders of various sizes for application onto abrasive products manufactured at other facilities. The operations covered by this permit (building 112) together with the operations covered by permits for 3M Cottage Grove – Specialty Additives

Building 112 (Abrasives Systems) together with Building 19 (Sintered Abrasives) and Buildings 74, 101, 110 (Specialty Additives) constitutes a single stationary source for federal New Source Review regulations (all in SIC 32xx). Separate Part 70 permits are issued for Building 112 (this permit) and for Buildings 74, 101, 110 and Building 19.

AMENDMENT DESCRIPTION:

No total facility emission increase is authorized by this permit action. The permit action encompasses two major amendments. The first is for construction of a new line and control equipment (one wet scrubber and one baghouse) as well as an emergency generator. This permit action authorizes an alternative monitoring plan for two units subject to NSPS UUU. This permit amendment increased Title I limits of existing Nitrogen Oxides emission rates for EU 007, decreased Title I limits for EU 010 to allow for more flexibility in operations. The second major amendment incorporates revisions to Particulate Matter Title I emission rates for EU 001 and EU 002.

TABLE A: LIMITS AND OTHER REQUIREMENTS

A-1 12/24/12

Facility Name: 3M - Cottage Grove Abrasive Systems Div
 Permit Number: 16300017 - 004

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
This facility, along with 3M Cottage Grove Specialty Additives (ID 16300002) and 3M Cottage Grove Building 19 and 111 (ID 16300133) constitute a single source under PSD regulations.	hdr
EMISSION CAP LIMITS, PROVISIONS, AND REQUIREMENTS	hdr
<p>Total Particulate Matter: less than 100 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 Total Particulate Matter (TPM)-emitting equipment is subject to this limit. If the Permittee replaces any TPM-emitting equipment, adds new TPM-emitting equipment, or modifies the existing equipment, such equipment is subject to this permit limit and all of the requirements under EMISSION CAP LIMITS listed as Total Facility requirements. Prior to making the change, the Permittee shall apply for and obtain the appropriate permit amendment. The Permittee is not required to repeat the calculations described in Minn. R. 7007.1200, subp. 2.</p> <p>A permit amendment is needed regardless of the emissions change if the change will be subject to new applicable requirements or requires revisions to the limits or monitoring and recordkeeping in this permit. Changes to existing monitoring, recordkeeping or reporting requirements require a major amendment.</p>	Title I Condition: limit to avoid classification as a major source under 40 CFR Section 52.21; Minn. R. 7007.3000
<p>PM < 10 micron: less than 100 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 Particulate Matter less than 10 microns (PM10)-emitting equipment is subject to this limit. If the Permittee replaces any PM10-emitting equipment, adds new PM10-emitting equipment, or modifies the existing equipment, such equipment is subject to this permit limit and all of the requirements under EMISSION CAP LIMITS listed as Total Facility requirements. Prior to making the change, the Permittee shall apply for and obtain the appropriate permit amendment. The Permittee is not required to repeat the calculations described in Minn. R. 7007.1200, subp. 2.</p> <p>A permit amendment is needed regardless of the emissions change if the change will be subject to new applicable requirements or requires revisions to the limits or monitoring and recordkeeping in this permit. Changes to existing monitoring, recordkeeping or reporting requirements require a major amendment.</p>	Title I Condition: limit to avoid classification as a major source under 40 CFR Section 52.21; Minn. R. 7007.3000
<p>PM < 2.5 micron: less than or equal to 100 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 Particulate Matter less than 2.5 microns (PM2.5)-emitting equipment is subject to this limit. If the Permittee replaces and PM2.5-emitting equipment, adds new PM2.5 equipment, or modifies the existing equipment, such equipment is subject to this permit limit and all of the requirements under EMISSION CAP LIMITS listed as Total Facility requirements. Prior to making the change, the Permittee shall apply for and obtain the appropriate permit amendment. The Permittee is not required to repeat the calculations described in Minn. R. 7007.1200, subp. 2.</p> <p>A permit amendment is needed regardless of the emissions change if the change will be subject to new applicable requirements or requires revisions to the limits or monitoring and recordkeeping in this permit. Changes to existing monitoring, recordkeeping or reporting requirements require a major amendment.</p>	Title I Condition: limit to avoid classification as a major source under 40 CFR Section 52.21; Minn. Rule. 7007.3000

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

12/24/12

Facility Name: 3M - Cottage Grove Abrasive Systems Div

Permit Number: 16300017 - 004

<p>Sulfur Dioxide: less than 90 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 sulfur dioxide (SO₂)-emitting equipment is subject to this limit. If the Permittee replaces any SO₂-emitting equipment, adds new SO₂-emitting equipment, or modifies the existing equipment, such equipment is subject to this permit limit and all of the requirements under EMISSION CAP REQUIREMENTS listed as Total Facility requirements. Prior to making the change, the Permittee shall apply for and obtain the appropriate permit amendment. The Permittee is not required to repeat the calculations described in Minn. R. 7007.1200, subp. 2.</p> <p>A permit amendment is needed regardless of the emissions change if the change will be subject to a new applicable requirements or requires revisions to the limits or monitoring and recordkeeping in this permit. Changes to existing monitoring, recordkeeping or reporting requirements require a major amendment.</p>	<p>Title I Condition: limit to avoid classification as a major source under 40 CFR Section 52.21; Minn. R. 7007.3000</p>
<p>Nitrogen Oxides: less than 110 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 NO_x-emitting equipment is subject to this limit. If the Permittee replaces any NO_x-emitting equipment, adds new NO_x-emitting equipment, or modifies the existing equipment, such equipment is subject to this permit limit and all of the requirements under EMISSION CAP LIMITS listed as Total Facility requirements. Prior to making the change, the Permittee shall apply for and obtain the appropriate permit amendment. The Permittee is not required to repeat the calculations described in Minn. R. 7007.1200, subp. 2.</p> <p>A permit amendment is needed regardless of the emissions change if the change will be subject to a new applicable requirements or requires revisions to the limits or monitoring and recordkeeping in this permit. Changes to existing monitoring, recordkeeping or reporting requirements require a major amendment.</p>	<p>Title I Condition: limit to avoid classification as a major source under 40 CFR Section 52.21; Minn. R. 7007.3000</p>
<p>Volatile Organic Compounds: less than 90 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 VOC-emitting equipment is subject to this limit. If the Permittee replaces any VOC-emitting equipment, adds new VOC-emitting equipment, or modifies the existing equipment, such equipment is subject to this permit limit and all of the requirements under EMISSION CAP LIMITS listed as Total Facility requirements. Prior to making the change, the Permittee shall apply for and obtain the appropriate permit amendment. The Permittee is not required to repeat the calculations described in Minn. R. 7007.1200, subp. 2.</p> <p>A permit amendment is needed regardless of the emissions change if the change will be subject to a new applicable requirements or requires revisions to the limits or monitoring and recordkeeping in this permit. Changes to existing monitoring, recordkeeping or reporting requirements require a major amendment.</p>	<p>Title I Condition: limit to avoid classification as a major source under 40 CFR Section 52.21; Minn. R. 7007.3000</p>
<p>Daily Recordkeeping, NO_x: On each day of operation, the Permittee shall calculate, record, and maintain records of the total quantity of all materials processed or used at the facility which result in emission of NO_x, or hours of operation of NO_x emitting units. For units using a CEM to measure NO_x emissions, CEM data satisfies this requirement. This shall be based on usage logs.</p>	<p>Title I Condition: recordkeeping for limit to avoid classification as a major source under 40 CFR Section 52.21; Minn. R. 7007.3000</p>
<p>Monthly Recordkeeping, NO_x Emissions.</p> <p>By the 15th of each month, the Permittee shall calculate and record the following:</p> <ol style="list-style-type: none"> 1) The total materials used or processed which result in NO_x emissions, or the hours of operation for NO_x emitting equipment, for the previous calendar month using the daily records. 2) The total NO_x emissions for the previous month. 3) The 12 month rolling sum NO_x emissions for the previous 12 month period by summing the monthly NO_x emissions data for the previous 12 months. 	<p>Minn. R. 7007.0800, subp. 4 and 5</p>
<p>Monthly Recordkeeping: By the 15th day of each month, the Permittee shall calculate and record the PM, PM₁₀, PM_{2.5}, SO₂, and VOC emissions for the previous month and the 12-month rolling sum emissions for the previous 12 month period by summing the monthly emissions data for the previous 12 months.</p>	<p>Title I Condition: To avoid classification as major source and modification under 40 CFR Section 52.21 & Minn. R. 7007.3000</p>
<p>Recordkeeping for PM, PM₁₀, PM_{2.5}, SO₂ and VOC: When the facility-wide actual emissions (12-month rolling sum) equal 50 tons/year or more for PM, PM₁₀, PM_{2.5}, SO₂, or VOC, the Permittee shall submit a major amendment application with proposed daily recordkeeping requirements for the actual emission of these pollutants.</p>	<p>Title I Condition: recordkeeping for limit to avoid classification as a major source under 40 CFR Section 52.21; Minn. R. 7007.3000</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-3** 12/24/12

Facility Name: 3M - Cottage Grove Abrasive Systems Div

Permit Number: 16300017 - 004

Insignificant Activities: The Permittee shall include the emissions from Insignificant Activities as listed in Minn. R. 7007.1300 in the monthly calculation of emissions.	Title I Condition: limit to avoid classification as a major source 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, subp. 7(A), 7(L), & 7(M); 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.	40 CFR Section 52.1222; 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 shall include a preventative maintenance program for that equipment, a description of (the minimum but not necessarily the only) corrective actions to be taken to restore the equipment 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 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; 40 CFR Section 52.1222
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
MONITORING REQUIREMENTS	hdr
Monitoring Equipment Calibration: Annually calibrate all required monitoring equipment (any requirements applying to continuous emission monitors are listed separately in this permit).	Minn. R. 7007.0800, subp. 4(D)
Operation of Monitoring Equipment: Unless otherwise noted in Tables A or B, monitoring a process or control equipment connected to that process is not necessary during periods when the process is shutdown, or during checks of the monitoring systems, such as calibration checks and zero and span adjustments. If monitoring records are required, they should reflect any such periods of process shutdown or checks of the monitoring system.	Minn. R. 7007.0800, subp. 4(D)
RECORDKEEPING	hdr
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).	Minn. R. 7007.0800, subp. 5(C)
Recordkeeping: Maintain records describing any insignificant modifications (as required by Minn. R. 7007. 1250, subp. 3), including records of the emissions resulting from those changes.	Minn. R. 7007. 0800, subp. 5(B)
Recordkeeping: Maintain records describing any changes contravening permit terms (as required by Minn. R. 7007.1350 subp. 2), including records of the emissions resulting from those changes.	Minn. R. 7007. 0800, subp. 5(B)

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-4**

12/24/12

Facility Name: 3M - Cottage Grove Abrasive Systems Div

Permit Number: 16300017 - 004

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.	Minn. R. 7007.1200, subp. 4
REPORTING/SUBMITTALS	hdr
<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>	Minn. R. 7019.1000, subp. 3
<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>	Minn. R. 7019.1000, subp. 2
Notification of Deviations Endangering Human Health or the Environment: As soon as possible after discovery, notify the Commissioner or the state duty officer, either orally or by facsimile, of any deviation from permit conditions which could endanger human health or the environment.	Minn. R. 7019.1000, subp. 1
<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. 	Minn. R. 7019.1000, subp. 1
Application for Permit Amendment: If a permit amendment is needed, submit an application in accordance with the requirements of Minn. R. 7007.1150 through Minn. R. 7007.1500. Submittal dates vary, depending on the type of amendment needed.	Minn. R. 7007.1150 through Minn. R. 7007.1500; 40 CFR Section 70.7(d) and 70.7(e)
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). This provision does not apply to applications for permit reissuance.	Minn. R. 7007.1400, subp. 1(H)
Emission Inventory Report: due 91 days after end of each calendar year following permit issuance (April 1). To be submitted on a form approved by the Commissioner.	Minn. R. 7019.3000 through Minn. R. 7019.3100
Emission Fees: due 60 days after receipt of an MPCA bill.	Minn. R. 7002.0005 through Minn. R. 7002.0095

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-5**

12/24/12

Facility Name: 3M - Cottage Grove Abrasive Systems Div

Permit Number: 16300017 - 004

The Permittee is required to submit a Risk Management Plan (RMP) under the federal rule, 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. A complete RMP must be submitted to the RMP Reporting Center, PO Box 3346, Merrifield, VA 22116. RMP submittal information may be obtained at <http://www.epa.gov/swercepp> or by calling 1-800-424-9346. These requirements must be complied with 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.

40 CFR pt. 68

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

12/24/12

Facility Name: 3M - Cottage Grove Abrasive Systems Div

Permit Number: 16300017 - 004

Subject Item: GP 001 Tunnel Dryers

Associated Items: EU 050 Tunnel Dryer 7
 EU 051 Tunnel Dryer 8
 EU 052 Tunnel Dryer 9
 EU 053 Tunnel Dryer 10
 EU 054 Tunnel Dryer 11
 EU 055 Tunnel Dryer 12
 SV 039 Tunnel Dryer 7
 SV 040 Tunnel Dryer 7
 SV 041 Tunnel Dryer 7
 SV 042 Tunnel Dryer 8
 SV 043 Tunnel Dryer 8
 SV 044 Tunnel Dryer 8
 SV 045 Tunnel Dryer 9
 SV 046 Tunnel Dryer 9
 SV 047 Tunnel Dryer 9
 SV 048 Tunnel Dryer 10
 SV 049 Tunnel Dryer 10
 SV 050 Tunnel Dryer 10
 SV 051 Tunnel Dryer 11
 SV 052 Tunnel Dryer 11
 SV 053 Tunnel Dryer 11
 SV 054 Tunnel Dryer 12
 SV 055 Tunnel Dryer 12
 SV 056 Tunnel Dryer 12

What to do	Why to do it
THE LIMITS IN GP 001 APPLY INDIVIDUALLY TO EACH UNIT IN GP 001	hdr
EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 0.9 lbs/hour 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), subp. 2
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-7**

12/24/12

Facility Name: 3M - Cottage Grove Abrasive Systems Div

Permit Number: 16300017 - 004

Subject Item: GP 002 Burners for Kilns 11 and 12**Associated Items:** EU 057 Indirect Fired Kilns 11 Burner

EU 058 Indirect Fired Kiln 12 Burner

SV 059 Indirect Fired Kiln 11 Burner

SV 060 Indirect Fired Kiln 12 Burner

What to do	Why to do it
THE LIMITS IN GP 002 APPLY INDIVIDUALLY TO EACH UNIT IN GP 002	hdr
EMISSION LIMITS	hdr
Fuels Allowed: Natural gas only.	Minn. R. 7005.0100, subp. 35a; Minn. R. 7007.0800, subp.2
Total Particulate Matter: less than or equal to 0.40 lbs/million Btu heat input .	Minn. R. 7011.0515, subp. 1
Opacity: less than or equal to 20 percent except for one six-minute period per hour of not more than 27 percent opacity.	Minn. R. 7011.0515, subp. 2
FOR PERIODS OF START-UP	hdr
The Permittee shall at all times operate and maintain the emission unit subject to the NESHAP and its associated air pollution control equipment in a manner consistent with good air pollution control practices for minimizing emissions at least to the levels required by all relevant standards, as described at 40 CFR Section 63.6(e)(1)(i).	40 CFR Section 63.6(e)(1)(i); 40 CFR Section 63.7505(b)
The Permittee shall develop, implement, and maintain a written startup, shutdown, and malfunction plan (SSMP) according to all of the provisions in 40 CFR Section 63.6(e)(3). The plan must be available for inspection and copying by the Administrator upon request.	40 CFR Section 63.7505(e); 40 CFR Section 63.6(e)(3)(i), (v), (vi), (vii), and (viii)
During periods of startup, shutdown, and malfunction, the Permittee must operate and maintain EU 057 and EU 058 (including associated air pollution control and monitoring equipment) in accordance with the procedures specified in the SSMP developed under 40 CFR Section 63.6(e)(3)(i).	40 CFR Section 63.7540(c); 40 CFR Section 63.6(e)(1) and (3)(ii)
When actions taken by the Permittee during a startup, shutdown, or malfunction (including actions taken to correct a malfunction) are consistent with the procedures specified in the SSMP, the Permittee must keep records for that event which demonstrate that the procedures specified in the plan were followed. These records may take the form of a checklist, or other effective form of recordkeeping that confirms conformance with the startup, shutdown, and malfunction plan for that event. In addition, the Permittee must keep records of these events as specified in 40 CFR Section 63.10(b). Furthermore, the Permittee shall confirm that actions taken during the relevant reporting period during periods of startup, shutdown, and malfunction were consistent with the SSMP in the Semi-Annual startup, shutdown, and malfunction report required in 40 CFR Section 63.10(d)(5).	40 CFR Section 63.6(e)(3)(iii)
If an action taken by the Permittee during a startup, shutdown, or malfunction (including an action taken to correct a malfunction) is not consistent with the procedures specified in the SSMP, and the boiler/process heater exceeds any applicable emission limitation in the relevant emission standard, then the Permittee must record the actions taken for that event and must report such actions within 2 working days after commencing actions inconsistent with the plan, followed by a letter within 7 working days after the end of the event, in accordance with 40 CFR Section 63.10(d)(5).	40 CFR Section 63.6(e)(3)(iv)

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

12/24/12

Facility Name: 3M - Cottage Grove Abrasive Systems Div

Permit Number: 16300017 - 004

Subject Item: EU 001 Batch Oven 1**Associated Items:** SV 001 Oven 1

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.84 lbs/hour	Title I Condition: limit to avoid classification as a major source or modification under 40 CFR Section 52.21; most stringent, meets limit set by Minn. R. 7011.0610, subp. 1(A)(1)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0610, subp. 1(A)(2)
Nitrogen Oxides: less than or equal to 4.4 lbs/hour	Title I Condition: limit to avoid classification as a major source or modification under 40 CFR Section 52.21; Minn. R. 7007.3000
Fuels Allowed: Natural gas or liquified petroleum gases (propane)	Minn. R. 7005.0100, subp. 35a

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

12/24/12

Facility Name: 3M - Cottage Grove Abrasive Systems Div

Permit Number: 16300017 - 004

Subject Item: EU 002 Batch Oven 2**Associated Items:** SV 002 Oven 2

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.84 lbs/hour	Title I Condition: limit to avoid classification as a major source or modification under 40 CFR Section 52.21; most stringent, meets limit set by Minn. R. 7011.0610, subp. 1(A)(1)
Nitrogen Oxides: less than or equal to 4.4 lbs/hour	Title I Condition: limit to avoid classification as a major source or modification under 40 CFR Section 52.21; Minn. R. 7007.3000
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0610, subp. 1(A)(2)
Fuels Allowed: Natural gas or liquified petroleum gases (propane)	Minn. R. 7005.0100, subp. 35a

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

12/24/12

Facility Name: 3M - Cottage Grove Abrasive Systems Div

Permit Number: 16300017 - 004

Subject Item: EU 004 Crushing, Screening & Material Transfer**Associated Items:** CE 002 Cartridge filter

SV 004 Large Cartridge Filter

What to do	Why to do it
EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 1.0 lbs/hour	Title I Condition: limit to avoid classification as a major source or modification under 40 CFR Section 52.21; most stringent, meets limit set by Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
OPERATIONAL AND MONITORING REQUIREMENTS	hdr
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for Total Particulate Matter: greater than or equal to 99 percent control efficiency	Title I Condition: limit to avoid classification as a major source under 40 CFR Section 52.21
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for Particulate Matter < 10 micron: greater than or equal to 99 percent control efficiency	Title I Condition: limit to avoid classification as a major source under 40 CFR Section 52.21
Pressure Drop: greater than or equal to 0.5 inches of water column and less than or equal to 8 inches of water column across CE002, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3, based on the values recorded during the most recent MPCA approved performance test where compliance was demonstrated.	Title I Condition: limit to avoid classification as a major source under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 4(B)
Recordkeeping of Pressure Drop: The Permittee shall record the pressure drop once every 24 hours when in operation. The Permittee shall record the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit.	Title I Condition: to avoid classification as a major source under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 5
Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - visible emissions are observed; - the recorded pressure drop is outside the required operating range; or - CE002 or any of its components are found during the inspections to need repair. Corrective actions shall return the pressure drop to within the permitted range 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 CE002. The Permittee shall keep a record of the type and date of any corrective action taken.	Minn. R. 7007.0800, subp. 4, 5, and 14
Monitoring Equipment: The Permittee shall install and maintain the necessary monitoring equipment for measuring and recording pressure drop as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when CE002 is in operation.	Minn. R. 7007.0800, subp. 4
Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections.	Minn. R. 7007.0800, subp. 4, 5 and 14
The Permittee shall operate and maintain CE002 in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.	Minn. R. 7007.0800, subp. 14

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-11** 12/24/12

Facility Name: 3M - Cottage Grove Abrasive Systems Div

Permit Number: 16300017 - 004

Subject Item: EU 005 Prefire Kiln**Associated Items:** CE 003 Wet Scrubber - High Efficiency

CE 004 Gas Scrubber (General, Not Classified)

SV 005 2-Stage Scrubber

What to do	Why to do it
EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 1.0 lbs/hour	Minn. R. 7007.0800, subp. 2; Minn. R. 7007.3000; most stringent, meets limit set by Minn. R. 7011.0610, subp. 1(A)(1)
Nitrogen Oxides: less than or equal to 7.2 lbs/hour	Title I Condition: limit to avoid classification as a major source or modification under 40 CFR Section 52.21; Minn. R. 7007.3000
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0610, subp. 1(A)(2)
OPERATIONAL AND MONITORING REQUIREMENTS	hdr
Fuels Allowed: Natural gas or liquified petroleum gases (propane)	Minn. R. 7005.0100, subp. 35a
The Permittee shall operate and maintain CE003 such that it achieves an overall control efficiency for Total Particulate Matter: greater than or equal to 90 percent control efficiency	Title I Condition: limit to avoid classification as a major source under 40 CFR Section 52.21
The Permittee shall operate and maintain CE004 such that it achieves an overall control efficiency for Nitrogen Oxides: greater than or equal to 95 percent control efficiency	Title I Condition: limit to avoid classification as a major source under 40 CFR Section 52.21
Pressure Drop: greater than or equal to 1.0 inches of water column and less than or equal to 8.0 inches of water column for CE003 unless a new minimum value is set pursuant to Minn. R. 7017.2025, subp. 3, based on the values recorded during the most recent MPCA approved performance test where compliance was demonstrated.	Title I Condition: limit to avoid classification as a major source under 40 CFR Section 52.21
Liquid Flow Rate: greater than or equal to 3.0 gallons/minute for CE004, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3, based on the values recorded during the most recent MPCA approved performance test where compliance was demonstrated.	Title I Condition: limit to avoid classification as a major source under 40 CFR Section 52.21
Recordkeeping of Scrubber Operating Parameters: The Permittee shall record the pressure drop for CE003 and the liquid flow rate for CE004 once each operating day, including the time and date of each reading and whether or not the recorded parameter was within the range specified in this permit.	Title I Condition: to avoid classification as a major source under 40 CFR Section 52.21
pH of scrubbing liquid: greater than or equal to 9.0 when the inlet gas contain nitrates for CE004	Title I Condition: to avoid classification as a major source under 40 CFR Section 52.21
Recordkeeping of pH for CE004: The Permittee shall record the liquid pH to CE004 once each operating day, including the time and date of each reading and whether or not the recorded pH was within the range specified in this permit.	Title I Condition: to avoid classification as a major source under 40 CFR Section 52.21
Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - visible emissions are observed; - the pH for CE004 is outside the required range; - the recorded flow rate is outside the required operating range; or - CE003 and/or CE004 or any of their components are found during the inspections to need repair. Corrective actions shall return the flow rate to within the permitted range 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 CE003 and CE004. The Permittee shall keep a record of the type and date of any corrective action taken.	Minn. R. 7007.0800, subp. 4, 5, and 14
Monitoring Equipment: The Permittee shall install and maintain the necessary monitoring equipment for measuring and recording pressure, flow rate, and pH as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when CE003 and CE004 is in operation.	Minn. R. 7007.0800, subp. 4
Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections.	Minn. R. 7007.0800, subp. 4, 5 and 14

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

12/24/12

Facility Name: 3M - Cottage Grove Abrasive Systems Div

Permit Number: 16300017 - 004

Subject Item: EU 006 Old Kiln**Associated Items:** CE 012 Centrifugal Collector - High Efficiency

SV 006 Old Kiln

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.4 lbs/hour	Title I Condition: limit to avoid classification as a major source or modification under 40 CFR Section 52.21; most stringent, meets limit set by Minn. R. 7011.0610, subp. 1(A)(1)
Nitrogen Oxides: less than or equal to 0.23 lbs/hour	Title I Condition: limit to avoid classification as a major source or modification under 40 CFR Section 52.21
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0610, subp. 1(A)(2)
Fuels Allowed: Natural gas or liquified petroleum gases (propane)	Minn. R. 7007.0800, subp. 4

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

12/24/12

Facility Name: 3M - Cottage Grove Abrasive Systems Div

Permit Number: 16300017 - 004

Subject Item: EU 007 New Kiln #3**Associated Items:** CE 005 Centrifugal Collector - High Efficiency

CE 006 Centrifugal Collector - High Efficiency

CE 007 Gravity Collector - High Efficiency

SV 007 New Kiln 3

What to do	Why to do it
EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 3.2 lbs/hour	Title I Condition: limit to avoid classification as a major source or modification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 2
Nitrogen Oxides: less than or equal to 2.9 lbs/hour	Title I Condition: limit to avoid classification as a major source or modification under 40 CFR Section 52.21
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0610, subp. 1(A)(2)
Fuels Allowed: Natural gas or liquefied petroleum gases (propane)	Minn. R. 7005.0100, subp. 35a
OPERATIONAL REQUIREMENTS	hdr
Pressure Drop: greater than or equal to 1.0 inches of water column and less than or equal to 10.0 inches of water column for each cyclone collector. When process air flows are reduced such that the pressure drop cannot be maintained above 1 inch water column with both CE005 and CE006 in operation, the total air flow shall be routed through one cyclone and the pressure drop through that cyclone maintained between 1 and 10 inches water column.	Title I Condition: limit to avoid classification as a major source under 40 CFR Section 52.21
Recordkeeping for Title I Limit: Record the pressure drop across each cyclone once each operating day. If only CE005 or CE006 is in operation, only the pressure drop across that cyclone must be recorded. The log shall indicate time periods when either cyclone is not in use.	Title I Condition: to avoid classification as a major source under 40 CFR Section 52.21

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

12/24/12

Facility Name: 3M - Cottage Grove Abrasive Systems Div

Permit Number: 16300017 - 004

Subject Item: EU 008 Kiln 1 Burner**Associated Items:** SV 008 Kiln 1

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.03 lbs/hour	Title I Condition: limit to avoid classification as a major source or modification under 40 CFR Section 52.21; most stringent, meets limit set by Minn. R. 7011.0610, subp. 1(A)(1)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0610, subp. 1(A)(2)
Fuels Allowed: Natural gas or liquified petroleum gases (propane)	Minn. R. 7007.0800, subp. 4

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-15**

12/24/12

Facility Name: 3M - Cottage Grove Abrasive Systems Div

Permit Number: 16300017 - 004

Subject Item: EU 009 Kiln 2 Burner**Associated Items:** SV 009 Kiln 2

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.03 lbs/hour	Title I Condition: limit to avoid classification as a major source or modification under 40 CFR Section 52.21; most stringent, meets limit set by Minn. R. 7011.0610, subp. 1(A)(1)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0610, subp. 1(A)(2)
Fuels Allowed: Natural gas or liquified petroleum gases (propane)	Minn. R. 7007.0800, subp. 4

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

12/24/12

Facility Name: 3M - Cottage Grove Abrasive Systems Div

Permit Number: 16300017 - 004

Subject Item: EU 010 Kilns 1 & 2**Associated Items:** CE 008 Gas Scrubber (General, Not Classified)

SV 010 8-Stage Scrubber

What to do	Why to do it
EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 0.040 grains/dry standard cubic foot	40 CFR Section 60.732a
Nitrogen Oxides: less than or equal to 5.0 lbs/hour	Title I Condition: limit to avoid classification as a major source or modification under 40 CFR Section 52.21
OPERATIONAL REQUIREMENTS	hdr
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for Total Particulate Matter: greater than or equal to 90 percent control efficiency	Title I Condition: limit to avoid classification as a major source under 40 CFR Section 52.21
At all times, including periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions, in accordance with 40 CFR 60.11(d).	40 CFR Section 60.11(d)
Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections.	Minn. R. 7007.0800, subp. 4, 5 and 14
Alternative Monitoring Method: Continuously monitor the scrubbing system liquid pressure and scrubbing system liquid flow rate. The pressure monitoring device must be certified by the manufacturer to be accurate within 5 percent of water column gauge pressure at the level of operation. The liquid flow rate monitoring device must be certified by the manufacturer to be accurate within 5 percent of design scrubbing liquid flow rate.	40 CFR Section 60.734(d)
Determine and record once each day, an arithmetic average over a 2-hour period of both the scrubbing system liquid pressure and the flowrate of the scrubbing liquid.	40 CFR Section 60.735(b)
CONTINUOUS EMISSION MONITOR REQUIREMENTS	hdr
Emissions Monitoring: The owner or operator shall use a CEMS to measure NOx emissions from EU010.	Title I Condition: to avoid classification as a major source under 40 CFR Section 52.21; Minn. R. 7017.1006
Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment. Acceptable monitor downtime includes reasonable periods as listed in Items A, B, C and D of Minn. R. 7017.1090, subp. 2.	Minn. R. 7017.1090, subp. 1
CEMS Daily Calibration Drift (CD) Test: The CD shall be quantified and recorded at zero (low-level) and upscale (high-level) gas concentrations at least once daily. The CEMS shall be adjusted whenever the CD exceeds twice the specification of 40 CFR pt. 60, Appendix B. 40 CFR pt. 60, Appendix F, shall be used to determine out-of-control periods for CEMS. Follow the procedures in 40 CFR pt. 60, Appendix F.	Minn. R. 7017.1170, subp. 3
Cylinder Gas Audit (CGA): due before end of the calendar year following Permit Issuance. Follow the procedures in 40 CFR pt. 60, Appendix F.	Minn. R. 7017.1170, subp. 1(a)
Cylinder Gas Audit (CGA) Results Summary: due 30 days after end of each calendar year following Cylinder Gas Audit (CGA)	Minn. R. 7017.1180, subp. 4
CEMS Relative Accuracy Test Audit (RATA): due before end calendar year of each five-year period following permit issuance. Follow the procedures in 40 CFR pt. 60, Appendix B and Appendix F.	Minn. R. 7017.1170, subp. 1(b)
Relative Accuracy Test Audit Notification: due 30 days before CEMS RATA.	Minn. R. 7017.1180, subp. 2
Relative Accuracy Test Audit Results Summary: due 30 days after end of each calendar quarter in which the CEMS RATA was conducted.	Minn. R. 7017.1180, subp. 3

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

12/24/12

Facility Name: 3M - Cottage Grove Abrasive Systems Div

Permit Number: 16300017 - 004

Quality Assurance (QA) Plan: Develop and implement a written QA plan that covers each CEMS. The plan shall be on site and available for inspection within 30 days after monitor certification. The plan shall contain all of the information required by 40CFR 60, App. F, section 3.	Minn. R. 7017.1170, subp. 2
Submit all information required to be submitted to EPA under 40 CFR 60.4(a) to the MPCA address shown in the introduction to Table B of this permit.	40 CFR Section 60.4(a)
REPORTING/SUBMITTALS	hdr
Submit written reports semiannually of exceedances of the control device operating parameters, defined as follows: *Any daily 2-hour average of the scrubbing system liquid pressure that is less than 90 percent of the average value recorded during the most recent performance test that demonstrated compliance with the 0.040 grains/dry standard cubic foot particulate matter standard. *Each daily 2-hour average wet scrubber liquid flow rate that is less than 80 percent or greater than 120 percent of the average value recorded during the most recent performance test that demonstrated compliance with the 0.040 grains/dry standard cubic foot particulate matter standard.	40 CFR Section 60.735(c)(2) & (3)

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

12/24/12

Facility Name: 3M - Cottage Grove Abrasive Systems Div

Permit Number: 16300017 - 004

Subject Item: EU 018 Diesel Powered Emergency Generator**Associated Items:** SV 018 New Area Emergency

What to do	Why to do it
Opacity: less than or equal to 20 percent opacity once operating temperatures have been attained	Minn. R. 7011.2300, subp. 1
Sulfur Dioxide: less than or equal to 0.5 lbs/million Btu heat input	Minn. R. 7011.2300, subp. 2

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

12/24/12

Facility Name: 3M - Cottage Grove Abrasive Systems Div

Permit Number: 16300017 - 004

Subject Item: EU 019 Diesel Powered Emergency Generator**Associated Items:** SV 019 Old Area Emergency

What to do	Why to do it
Opacity: less than or equal to 20 percent opacity once operating temperatures have been attained	Minn. R. 7011.2300, subp. 1
Sulfur Dioxide: less than or equal to 0.5 lbs/million Btu heat input	Minn. R. 7011.2300, subp. 2

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

12/24/12

Facility Name: 3M - Cottage Grove Abrasive Systems Div

Permit Number: 16300017 - 004

Subject Item: EU 026 Oven 3**Associated Items:** SV 024 Oven 3

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.09 grains/dry standard cubic foot	Title I Condition: limit to avoid classification as a major source or modification under 40 CFR Section 52.21; most stringent, meets limit set by Minn. R. 7011.0610, subp. 1(A)(1)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0610, subp. 1(A)(2)
Fuels Allowed: Natural gas or liquified petroleum gases (propane)	Minn. R. 7007.0800, subp. 4

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

12/24/12

Facility Name: 3M - Cottage Grove Abrasive Systems Div

Permit Number: 16300017 - 004

Subject Item: EU 033 Oven 4**Associated Items:** SV 037 Oven 4

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.09 grains/dry standard cubic foot	Title I Condition: limit to avoid classification as a major source or modification under 40 CFR Section 52.21; most stringent, meets limit set by Minn. R. 7011.0610, subp. 1(A)(1)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0610, subp. 1(A)(2)
Fuels Allowed: Natural gas or liquified petroleum gases (propane)	Minn. R. 7007.0800, subp. 4

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: 3M - Cottage Grove Abrasive Systems Div
Permit Number: 16300017 - 004

Subject Item: EU 043 Crushing, grinding circuit
Associated Items: CE 010 Centrifugal Collector - High Efficiency
CE 011 Cartridge Filter
SV 036 Dust Collector

What to do	Why to do it
EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 0.08 grains/dry standard cubic foot	Title I Condition: limit to avoid classification as a major source or modification under 40 CFR Section 52.21; most stringent, meets limit set by Minn. R. 7011.0610, subp. 1(A)(1)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715

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

12/24/12

Facility Name: 3M - Cottage Grove Abrasive Systems Div

Permit Number: 16300017 - 004

Subject Item: EU 056 Indirect Fired Kilns 11 & 12**Associated Items:** CE 016 Gas Scrubber (General, Not Classified)

MR 004 NOx Monitor

SV 057 Indirect Fired Kilns 11 & 12 (Main)

SV 058 Indirect Fired Kilns 11 & 12 (Emergency Bypass)

What to do	Why to do it
See CE 016 for scrubber control, monitoring, recordkeeping, reporting and other requirements.	hdr
The Permittee shall operate and maintain the gas scrubber (CE 016) at all times that any emission unit controlled by the gas scrubber (EU 056) is in operation. The Permittee shall document periods of non-operation of the control equipment.	[stage 1] Title 1 Condition: To avoid classification as a major source and modification under 40 CFR Section 52.21 and Minn. R. 7007.3000
EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 0.040 grains/dry standard cubic foot	[stage 1] 40 CFR Section 60.732(a)
CONTINUOUS EMISSION MONITOR REQUIREMENTS	hdr
Emissions Monitoring: The owner or operator shall use a CEMS to measure NOx emissions from EU056.	[stage 1] Title 1 Condition: to avoid classification as a major source under 40 CFR Section 52.21; Minn. R. 7017.1006
Installation Notification: due 60 days before CEMS installation. The notification shall include plans and drawings of the system.	[stage 1] Minn. R. 7017.1040, subp. 1
Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	Minn. R. 7017.1090, subp. 1
Acceptable monitor downtime includes reasonable periods as listed in Items A, B, C and D of Minn. R. 7017.1090, subp. 2.	
CEMS Daily Calibration Drift (CD) Test: The CD shall be quantified and recorded at zero (low-level) and upscale (high-level) gas concentrations at least once daily. The CEMS shall be adjusted whenever the CD exceeds twice the specification of 40 CFR pt. 60, Appendix B. 40 CFR pt. 60, Appendix F, shall be used to determine out-of-control periods for CEMS. Follow the procedures in 40 CFR pt. 60, Appendix F.	Minn. R. 7017.1170, subp. 3
Submit written reports semiannually of exceedances of the control device operating parameters, defined as follows: *Any daily 2-hr average of the scrubbing system liquid pressure that is less than 90 percent of the average value recorded during the most recent performance test that demonstrated compliance with the 0.040 grains/dry standard cubic foot particulate matter standard. *Each daily 2-hour average wet scrubber liquid flow rate that is less than 80 percent or greater than 120 percent of the average value recorded during the most recent performance test that demonstrated compliance with the 0.040 grains/dry standard cubic foot particulate matter standard.	40 CFR Section 60.735(c)(2) & (3)
Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	Minn. R. 7017.1090

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

12/24/12

Facility Name: 3M - Cottage Grove Abrasive Systems Div

Permit Number: 16300017 - 004

Monitoring Data: All data points collected by a CEMS shall be used to calculate individual hourly emission averages unless another applicable requirement requires more frequent averaging. In order for an hour of data to be considered, it must contain the following minimum number of data points: A. four data points, equally spaced, if the emission unit operated during the entire hour; B. two data points, at least 15 minutes apart, during periods of monitor calibration or routine maintenance; C. one data point if the emission unit operated for 15 minutes or less during the hour.	Minn. R. 7017.1160, subp. 1 and 2
QA Plan: Develop and implement a written quality assurance plan that covers each CEMS. The plan shall be on site and available for inspection within 30 days after monitor certification. The plan shall contain all of the information required by 40 CFR pt. 60, Appendix F, Section 3. The plan shall include the manufacturer's spare parts list for each CEMS and require that those parts be kept at the facility unless the Commissioner gives written approval to exclude specific spare parts from the list.	Minn. R. 7017.1170, subp. 2
Requirement: CEMS Daily Calibration Drift (CD) Test: The CD shall be quantified and recorded at zero (low-level) and upscale (high-level) gas concentrations at least once daily according to the procedures listed in Minn. R. 7017.1170, subp. 3(A) and (B) and 40 CFR Section 60.13(d)(1) for each pollutant concentration, each diluent monitor, and for each monitor range. The CEMS shall be adjusted whenever the CD exceeds twice the specification of 40 CFR pt. 60, Appendix B. If no span value is specified in the applicable requirement or in a compliance document, the Permittee shall use a span value equivalent to 1.5 times the emission limit. 40 CFR pt. 60, Appendix F, shall be used to determine out-of-control periods for CEMS. Follow the procedures in 40 CFR pt. 60, Appendix F.	Minn. R. 7017.1170, subp. 3
Cylinder Gas Audit (CGA): due before end of the calendar year following Permit Issuance. Follow the procedures in 40 CFR pt. 60, Appendix F.	Minn. R. 7017.1170, subp. 1(a)
CEMS Relative Accuracy Test Audit (RATA): due before end calendar year of each five-year following permit issuance. Follow the procedures in 40 CFR pt. 60, Appendix B and Appendix F.	Minn. R. 7017.1170, subp. 1(b)
Relative Accuracy Test Audit Notification: due 30 days before CEMS RATA.	Minn. R. 7017.1180, subp. 2
Relative Accuracy Test Audit Results Summary: due 30 days after end of each calendar year in which the CEMS RATA was conducted.	Minn. R. 7017.1180, subp. 3
Cylinder Gas Audit (CGA) Results Summary: due 30 days after end of each calendar year following Cylinder Gas Audit (CGA)	Minn. R. 7017.1180, subp. 4
Recordkeeping: The owner or operator must retain records of all CEMS monitoring data and support information for a period of five years from the date of the monitoring sample, measurement or report. Records shall be kept at the source.	Minn. R. 7017.1130
REPORTING/SUBMITTALS	hdr
Alternative Monitoring Plan: Submit written reports semiannually of exceedances of the control device operating parameters, defined as follows: *Any daily 2-hour average of the initial particulate removal system liquid pressure that is less than 90 percent of the average value recorded during the most recent performance test that demonstrated compliance with the 0.040 grains/dry standard cubic foot particulate matter standard. *Each daily 2-hour average wet scrubber liquid flow rate that is less than 80 percent or greater than 120 percent of the average value recorded during the most recent performance test that demonstrated compliance with the 0.04 grains/dry standard cubic foot particulate matter standard.	40 CFR Section 60.735(c)(2) & (3)
Submit all information required to be submitted to EPA under 40 CFR 60.4(a) to the MPCA address shown in the introduction to Table B of this permit.	40 CFR Section 60.4(a)

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-25**

12/24/12

Facility Name: 3M - Cottage Grove Abrasive Systems Div

Permit Number: 16300017 - 004

Subject Item: EU 059 Direct Fired Kiln 13**Associated Items:** CE 017 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

SV 061 Direct Fired Kiln 13

What to do	Why to do it
The Permittee shall operate and maintain the fabric filter (CE 017) at all times that any emission unit controlled by the fabric filter (EU 059) is in operation. The Permittee shall document periods of non-operation of the control equipment.	[stage 1] Title I Condition: to avoid classification as a major source and modification under 40 CFR Section 52.21 and Minn. R. 7007.3000
EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 0.3 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.	[stage 1] Minn. R. 7011.0610, subp. 1(A)(1)
Opacity: less than 20 percent 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.	[stage 1] Minn. R. 7011.0610, subp. 1(A)(2)

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

12/24/12

Facility Name: 3M - Cottage Grove Abrasive Systems Div

Permit Number: 16300017 - 004

Subject Item: EU 066 Building 112 Emergency Engine

What to do	Why to do it
EMISSION LIMITS	hdr
Opacity: less than or equal to 20 percent opacity once operating temperatures have been attained.	[stage 1] Minn. R. 7011.2300, subp. 1
Sulfur Dioxide: less than or equal to 0.50 lbs/million Btu heat input	[stage 1] Minn. R. 7011.2300, subp. 2
OPERATING CONDITIONS	hdr
Fuel type: Diesel only by design.	[stage 1] Minn. R. 7005.0100, subp. 35a
Hours of Operation: The Permittee shall maintain documentation on site that the unit is an emergency generator by design that qualifies under the U.S. EPA memorandum entitled "Calculating Potential to Emit (PTE) for Emergency Generators" dated September 6, 1995, limiting operation to 500 hours per year.	[stage 1] Minn. R. 7007.0800, subp. 4 & 5
RECORDKEEPING REQUIREMENTS	hdr
Fuel Supplier Certification: The Permittee shall obtain and maintain a fuel supplier certification for each shipment of Diesel, certifying that the sulfur content does not exceed 0.50% by weight.	Minn. R. 7007.0800, subps. 4 & 5
Recordkeeping: Maintain a file of all measurements, maintenance, reports and records for at least five years. 40 CFR Section 60.7(f) specifies two years.	Minn. R. 7997.0800, subp. 5(C); meets requirements of 40 CFR Section 60.7(f); Minn. R. 7019.0100, subp. 1
The Permittee shall keep records of fuel type and usage on a monthly basis.	[stage 1] Minn. R. 7007.0800, subp. 5
Notification of any physical or operational change which increases emission rate: due 60 days (or as soon as practical) before the change is commenced.	40 CFR Section 60.7(a)(4); Minn. R. 7019.0100, subp. 1
Recordkeeping: Maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of the facility including; any malfunction of the air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative.	40 CFR Section 60.7(b), Minn. R. 7019.0100, subp. 1

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-27**

12/24/12

Facility Name: 3M - Cottage Grove Abrasive Systems Div

Permit Number: 16300017 - 004

Subject Item: CE 009 Cartridge Filter**Associated Items:** EU 029 New Hammermill

EU 030 New Roll Crusher #1

EU 031 New Roll Crusher #2

EU 038 Size Separator

EU 039 Size Separator

EU 040 Size Separator

EU 041 Size Separator

EU 042 Size Separator

EU 044 New Roll Crusher No. 3

EU 045 Size Separator

EU 046 Size Separator

What to do	Why to do it
Total Particulate Matter: less than or equal to 2.11 lbs/hour	Title I Condition: limit to avoid classification as a major source or modification under 40 CFR Section 52.21; most stringent, meets limit set by Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
OPERATIONAL AND MONITORING REQUIREMENTS	hdr
The Permittee shall operate and maintain the control equipment such that it achieves control efficiency for Total Particulate Matter: greater than or equal to 99 percent collection efficiency	Title I Condition: limit to avoid classification as a major source under 40 CFR Section 52.21
The Permittee shall operate and maintain the control equipment such that it achieves control efficiency for Particulate Matter < 10 micron: greater than or equal to 99 percent collection efficiency	Title I Condition: limit to avoid classification as a major source under 40 CFR Section 52.21
Pressure Drop: greater than or equal to 0.5 inches of water column and less than or equal to 8 inches of water column across CE012, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3, based on the values recorded during the most recent MPCA approved performance test where compliance was demonstrated.	Title I Condition: limit to avoid classification as a major source under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 4(B)
Recordkeeping of Pressure Drop. The Permittee shall record the pressure drop once every 24 hours when in operation. The Permittee shall record the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit.	Title I Condition: limit to avoid classification as a major source under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 5
Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - visible emissions are observed; - the recorded pressure drop is outside the required operating range; or - the cartridge filter or any of its components are found during the inspections to need repair. Corrective actions shall return the pressure drop to within the permitted range 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 cartridge filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter.	Minn. R. 7007.0800, subp. 4, 5, and 14
Monitoring Equipment: The Permittee shall install and maintain the necessary monitoring equipment for measuring and recording pressure drop as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored cartridge filter is in operation.	Minn. R. 7007.0800, subp. 4
Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections.	Minn. R. 7007.0800, subp. 4, 5 and 14
The Permittee shall operate and maintain the cartridge filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.	Minn. R. 7007.0800, subp. 14

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

12/24/12

Facility Name: 3M - Cottage Grove Abrasive Systems Div

Permit Number: 16300017 - 004

Subject Item: CE 016 Gas Scrubber (General, Not Classified)**Associated Items: EU 056 Indirect Fired Kilns 11 & 12**

What to do	Why to do it
The Permittee shall operate and maintain the gas scrubber (CE 016) at all times that any emission unit controlled by the gas scrubber (EU 056) is in operation. The Permittee shall document periods of non-operation of the control equipment.	[stage 1] Title I Condition: To avoid classification of changes as major modifications under 40 CFR Section 52.21 & Minn. R. 7007.3000
OPERATIONAL AND MONITORING REQUIREMENTS	hdr
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for Total Particulate Matter: less than or equal to 80 percent control efficiency	[stage 1] Title I Condition: recordkeeping for limit to avoid classification as a major source under 40 CFR Section 52.21
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for PM < 10 micron: less than or equal to 80 percent control efficiency	[stage 1] Title I Condition: recordkeeping for limit to avoid classification as a major source under 40 CFR Section 52.21
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for PM < 2.5 micron: less than or equal to 80 percent control efficiency	[stage 1] Title I Condition: recordkeeping for limit to avoid classification as a major source under 40 CFR Section 52.21
At all times, including periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions, in accordance with 40 CFR 60.11 (d).	[stage 1] 40 CFR Section 60.11 (d)
Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections.	Minn. R. 7007.0800, subp. 4, 5, and 14
Alternative Monotiroing Method: Continuously monitor the initial particulate removal system liquid pressure and initial particulate removal system liquid flow rate. The pressure monitoring device must be certified by the manufacturer to be accurate within 5 percent of water column gauge pressure at the level of operation. The liquid flow rate monitoring device must be certified by the manufacturer to be accurate within 5 percent of design scrubbing liquid flow rate.	Title I Condition: recordkeeping for limit to avoid classification as a major source under 40 CFR Section 52.21; 40 CFR Section 60.734 (d)
Alternative Monitoring Method: Determine and record once each day, an arithmetic average over a 2-hour period of both the initial particulate removal system liquid pressure and the flowrate of the scrubbing liquid.	Title I Condition: recordkeeping for limit to avoid classification as a major source under 40 CFR Section 52.21; 40 CFR Section 60.735(b)
REPORTING/SUBMITTALS	hdr
Alternative Monitoring Plan: Submit written reports semiannually of exceedances of the control device operating parameters, defined as follows: *Any daily 2-hour average of the initial particulate removal system liquid pressure that is less than 90 percent of the average value recorded during the most recent performance test that demonstrated compliance with the 0.040 grains/dry standard cubic foot particulate matter standard. *Each daily 2-hour average wet scrubber liquid flow rate that is less than 80 percent or greater than 120 percent of the average value recorded during the most recent performance test that demonstrated compliance with the 0.04 grains/dry standard cubic foot particulate matter standard.	40 CFR Section 60.735(c)(2) & (3)
Submit all information required to be submitted to EPA under 40 CFR 60.4(a) to the MPCA address shown in the introduction to Table B of this permit.	40 CFR Section 60.4(a)

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-29**

12/24/12

Facility Name: 3M - Cottage Grove Abrasive Systems Div

Permit Number: 16300017 - 004

Submit written reports semiannually of exceedances of the control device operating parameters, defined as follows: *Any daily 2-hr average of the scrubbing system liquid pressure that is less than 90 percent of the average value recorded during the most recent performance test that demonstrated compliance with the 0.040 grains/dry standard cubic foot particulate matter standard. *Each daily 2-hour average wet scrubber liquid flow rate that is less than 80 percent or greater than 120 percent of the average value recorded during the most recent performance test that demonstrated compliance with the 0.040 grains/dry standard cubic foot particulate matter standard.	40 CFR Section 60.735(c)(2) & (3)
PERFORMANCE TESTING	hdr
Initial Performance Test: due 180 days after Initial Startup to measure PM emission rate and determine the average scrubbing system liquid pressure and the average flowrate of the scrubber liquid. The arithmetic averages of the three runs will be used for determining exceedances.	40 CFR Section 60.8(a); 40 CFR Section 63.7; 40 CFR Section 60.736; Minn. R. 7017.2020, subp. 1
Initial Performance Test: due 180 days after Initial Startup to measure PM10 emission rate and determine the average scrubbing system liquid pressure and the average flowrate of the scrubber liquid. The arithmetic averages of the three runs will be used for determining exceedances.	40 CFR Section 60.8(a); 40 CFR Section 63.7; 40 CFR Section 60.736; Minn. R. 7017.2020, subp. 1
Initial Performance Test: due 180 days after Initial Startup to measure PM2.5 emission rate and determine the average scrubbing system liquid pressure and the average flowrate of the scrubber liquid. The arithmetic averages of the three runs will be used for determining exceedances.	40 CFR Section 60.8(a); 40 CFR Section 63.7; 40 CFR Section 60.736; Minn. R. 7017.2020, subp. 1

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

12/24/12

Facility Name: 3M - Cottage Grove Abrasive Systems Div

Permit Number: 16300017 - 004

Subject Item: CE 017 Fabric Filter - Low Temperature, i.e., T<180 Degrees F**Associated Items:** EU 059 Direct Fired Kiln 13

What to do	Why to do it
The Permittee shall operate, and maintain the fabric filter (CE 017) at all times that any emission unit controlled by the fabric filter (EU 059) is in operation. The Permittee shall document periods of non-operation of the control equipment.	[stage 1] Title I Condition: To avoid classification as a major source and modification under 40 CFR Section 52.21; Minn. R. 7007.3000
EMISSION AND OPERATIONAL LIMITS	hdr
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for Total Particulate Matter: less than or equal to 99 percent control efficiency	Title I Condition: To avoid classification as a major source and modification under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7011.0070, subp. 1(A)
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for PM < 10 micron: less than or equal to 93 percent control efficiency	Title I Condition: To avoid classification as a major source and modification under 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid classification as a major source under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7011.0070, subp. 1(A)
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for PM < 2.5 micron: less than or equal to 93 percent control efficiency	Title I Condition: To avoid classification as a major source and modification under 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid classification as a major source under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7011.0070, subp. 1(A)
Pressure Drop: greater than or equal to 1.0 inches of water column and less than or equal to 15.0 inches of water column, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours.	[stage 1] Title I Condition: To avoid classification as a major source and modification under 40 CFR Section 52.21; Minn. R.7007.3000
Pressure drop less than the minimum above, when due to replacement of filter bags is not a deviation and should not be reported on the semiannual deviation reports. After bag replacement, the pressure drop must return to at least the minimum within 21 working days, or corrective action must be taken.	
MONITORING AND RECORDKEEPING	hdr
Pressure Drop Recordkeepig: The Permittee shall, once every 24 hours, read and record the pressure drop across the fabric filter. The Permittee shall record the time and date of each pressure drop reading, and whether or not the observed pressure drop was within the range specified in this permit. Recorded values outside the range specified in this permit are considered Deviations as defined by Minn. R. 7077.0100, subp. 8a.	[stage 1] Title I Condition: to avoid classification as a major source and modification under 40 CFR Section 52.21 and Minn. R. 7007.3000; 40 CFR Section 64.3; Minn. R. 7017.0200
The Permittee shall also record and maintain the date of each bag replacement for all fabric filters.	
Recordkeeping of Pressure Drop. The Permittee shall record the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit.	Title I Condition: To avoid classification as a major source and modification under 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid classification as a major source under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7011.0080
Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - visible emissions are observed; - the recorded pressure drop is outside the required operating range; or - the fabric filter or any of its components are found during the inspections to need repair. Corrective actions shall return the pressure drop to within the permitted range, eliminate visible emissions, 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 fabric filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter.	Minn. R. 7007.0800, subps. 4, 5, and 14
The Permittee shall maintain each piece of control equipment according to the manufacturer's specification, shall conduct inspections, and maintain documentation of those actions as required by Minn. R. 7011.0075, subp. 2(A) to 2(I).	Minn. R. 7011.0075, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: 3M - Cottage Grove Abrasive Systems Div
Permit Number: 16300017 - 004

PERFORMANCE TESTING	hdr
Initial Performance Test: due 180 days after Initial Startup to measure PM emissions.	Minn. R. 7017.2020, subp. 1
Initial Performance Test: due 180 days after Initial Startup to measure PM10 emissions.	Minn. R. 7017.2020, subp. 1
Initial Performance Test: due 180 days after Initial Startup to measure PM2.5 emissions.	Minn. R. 7017.2020, subp. 1

TABLE B: SUBMITTALS

B-1 12/24/12

Facility Name: 3M - Cottage Grove Abrasive Systems Div
Permit Number: 16300017 - 004

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

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

Send 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

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

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.

TABLE B: ONE TIME SUBMITTALS OR NOTIFICATIONS**B-2** 12/24/12

Facility Name: 3M - Cottage Grove Abrasive Systems Div

Permit Number: 16300017 - 004

What to send	When to send	Portion of Facility Affected
Application for Permit Reissuance	due 180 days before expiration of Existing Permit	Total Facility
Computer Dispersion Modeling Information	due 1,096 days after 10/31/2003. Submit modeling data for all Cottage Grove facilities as specified in MPCA guidance for Modeling Information Requests (for SO ₂ and NO _x). This modeling information is for data collection purposes, no modeling analysis is required at this time. This is a state-only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.	Total Facility
Testing Frequency Plan	due 60 days after Initial Performance Test for PM emissions. The plan shall specify a testing frequency based on the test data and MPCA guidance. Future performance tests based on 12-month, 36-month, or 60-month intervals, or as applicable, shall be required upon written approval of the MPCA	CE016
Testing Frequency Plan	due 60 days after Initial Performance Test for PM emissions. The plan shall specify a testing frequency based on the test data and MPCA guidance. Future performance tests based on 12-month, 36-month, or 60-month intervals, or as applicable, shall be required upon written approval of the MPCA.	CE017
Testing Frequency Plan	due 60 days after Initial Performance Test for PM ₁₀ emissions. The plan shall specify a testing frequency based on the test data and MPCA guidance. Future performance tests based on 12-month, 36-month, or 60-month intervals, or as applicable, shall be required upon written approval of the MPCA	CE016
Testing Frequency Plan	due 60 days after Initial Performance Test for PM _{2.5} emissions. The plan shall specify a testing frequency based on the test data and MPCA guidance. Future performance tests based on 12-month, 36-month, or 60-month intervals, or as applicable, shall be required upon written approval of the MPCA	CE016
Testing Frequency Plan	due 60 days after Initial Performance Test or PM ₁₀ emissions. The plan shall specify a testing frequency based on the test data and MPCA guidance. Future performance tests based on 12-month, 36-month, or 60-month intervals, or as applicable, shall be required upon written approval of the MPCA.	CE017
Testing Frequency Plan	due 60 days after Initial Performance Test or PM _{2.5} emissions. The plan shall specify a testing frequency based on the test data and MPCA guidance. Future performance tests based on 12-month, 36-month, or 60-month intervals, or as applicable, shall be required upon written approval of the MPCA.	CE017

TABLE B: RECURRENT SUBMITTALS**B-3** 12/24/12

Facility Name: 3M - Cottage Grove Abrasive Systems Div

Permit Number: 16300017 - 004

What to send	When to send	Portion of Facility Affected
Excess Emissions/Downtime Reports (EER's)	due 30 days after end of each calendar quarter following Initial Startup of the Monitor Submit Deviations Reporting Form DRF-1 as amended. The EER shall indicate all periods of monitor bypass and all periods of exceedances of the limit including exceedances allowed by an applicable standard, i.e. during startup, shutdown, and malfunctions.	EU010
Semiannual Deviations Report	due 30 days after end of each calendar half-year starting 10/31/2003 . The first semiannual report submitted by the Permittee shall cover the calendar half-year in which the permit is issued. The first report of each calendar year covers January 1 - June 30. The second report of each calendar year covers July 1 - December 31. If no deviations have occurred, the Permittee shall submit the report stating no deviations.	Total Facility
Compliance Certification	due 30 days after end of each calendar year starting 10/31/2003 (for the previous calendar year). To be submitted on a form approved by the Commissioner, both to the Commissioner and to the US EPA regional office in Chicago. This report covers all deviations experienced during the calendar year.	Total Facility

APPENDIX MATERIAL

Facility Name: 3M - Cottage Grove Abrasive Systems Div

Permit Number: 16300017-004

AERMOD View - Source Parameters

MS Excel - Lakes Format: version 1.0

Supported Source Types: Point, Rectangular Area, Circular Area, Polygon Area, Volume, Open Pit

Parameters	Units	Description
Type =		POINT, AREA, AREA_CIRC, AREA_POLY, VOLUME, OPEN_PIT
ID =		Source ID up to 8 characters
Desc =		Optional description
Base_Elev =	[m]	Source base elevation above mean sea level
Height =	[m]	Release height above ground
Diam =	[m]	Stack/Area diameter (POINT and AREA_CIRC only)
Exit_Vel =	[m/s]	Exit velocity (POINT only)
Exit_Temp =	[K]	Exit temperature (POINT only)
Release Type =		VERTICAL, HORIZONTAL, CAPPED (POINT only) - HORIZONTAL and CAPPED are non-default beta options
SigmaY =	[m]	Initial sigma Y (VOLUME only)
SigmaZ =	[m]	Initial sigma Z (all AREA and VOLUME only, optional for all AREA)
Length_X =	[m]	X side length (OPEN PIT, AREA and VOLUME only, optional for VOLUME, will be used to calculate SigmaY)
Length_Y =	[m]	Y side length (OPEN PIT and AREA only)
Rotation_Angle =	[degrees]	Clockwise rotation from North of Y side (AREA and OPEN PIT only)
Pit_Volume =	[m^3]	Volume of the open pit (OPEN PIT only)
Emission_Rate =	[g/s or g/s/m2]	Emission rate (g/s for POINT and VOLUME, g/s/m2 for all AREA and OPENPIT)
Num_Coords =		Number of coordinate pairs (POINT = 1, VOLUME = 1, OPENPIT = 1, AREA = 1, AREA_CIRC = 1, AREA_POLY >= 3)
X1 =	[m]	X coordinate of source location [m]
Y1 =	[m]	Y coordinate of source location [m]
X2 =	[m]	Secondary X coordinate of source location [m] (AREA_POLY only)
Y2 =	[m]	Secondary Y coordinate of source location [m] (AREA_POLY only)
X3 =	[m]	Additional X coordinate of source location [m] (AREA_POLY only)
Y3 =	[m]	Additional Y coordinate of source location [m] (AREA_POLY only)
X4 =	[m]	Additional X coordinate of source location [m] (AREA_POLY only)
Y4 =	[m]	Additional Y coordinate of source location [m] (AREA_POLY only)

NOTE: you may keep adding additional coordinate pairs for an AREA_POLY source, be sure to add the headers as well (eg. X5, Y5, etc)

AERMOD View - Source Parameters**MS Excel - Lakes Format: version 1.0****Supported Source Types: Point, Rectangular Area, Circular Area, Polygon Area, Volume, Open Pit**

Parameters	Units	Description
Type =		POINT, AREA, AREA_CIRC, AREA_POLY, VOLUME, OPEN_PIT
ID =		Source ID up to 8 characters
Desc =		Optional description
Base_Elev =	[m]	Source base elevation above mean sea level
Height =	[m]	Release height above ground
Diam =	[m]	Stack/Area diameter (POINT and AREA_CIRC only)
Exit_Vel =	[m/s]	Exit velocity (POINT only)
Exit_Temp =	[K]	Exit temperature (POINT only)
Release Type =		VERTICAL, HORIZONTAL, CAPPED (POINT only) - HORIZONTAL and CAPPED are non-default beta options
SigmaY =	[m]	Initial sigma Y (VOLUME only)
SigmaZ =	[m]	Initial sigma Z (all AREA and VOLUME only, optional for all AREA)
Length_X =	[m]	X side length (OPEN PIT, AREA and VOLUME only, optional for VOLUME, will be used to calculate SigmaY)
Length_Y =	[m]	Y side length (OPEN PIT and AREA only)
Rotation_Angle =	[degrees]	Clockwise rotation from North of Y side (AREA and OPEN PIT only)
Pit_Volume =	[m^3]	Volume of the open pit (OPEN PIT only)
Emission_Rate =	[g/s or g/s/m2]	Emission rate (g/s for POINT and VOLUME, g/s/m2 for all AREA and OPENPIT)
Num_Coords =		Number of coordinate pairs (POINT = 1, VOLUME = 1, OPENPIT = 1, AREA = 1, AREA_CIRC = 1, AREA_POLY >= 3)
X1 =	[m]	X coordinate of source location [m]
Y1 =	[m]	Y coordinate of source location [m]
X2 =	[m]	Secondary X coordinate of source location [m] (AREA_POLY only)
Y2 =	[m]	Secondary Y coordinate of source location [m] (AREA_POLY only)
X3 =	[m]	Additional X coordinate of source location [m] (AREA_POLY only)
Y3 =	[m]	Additional Y coordinate of source location [m] (AREA_POLY only)
X4 =	[m]	Additional X coordinate of source location [m] (AREA_POLY only)
Y4 =	[m]	Additional Y coordinate of source location [m] (AREA_POLY only)

NOTE: you may keep adding additional coordinate pairs for an AREA_POLY source, be sure to add the headers as well (eg. X5, Y5, etc)

Type	ID	Base_Elev	Height	Diam	Exit_Vel	Exit_Temp	Release_Ty	Emission_Rate	X1	Y1
		[m]	[m]	[m]	[m/s]	[K]			[m]	[m]
POINT	CGTAP009	245.23	18.1	0.915	54.266	672.039	VERTICAL	0.066	506934.26	4959562
POINT	CGTAP010	245.23	18.3	0.915	54.266	672.039	VERTICAL	0.066	506934.26	4959556
POINT	CGTAP012	245.53	12.3	0.534	17.952	366.483	VERTICAL	0.012	506889.18	4959575
POINT	CGTAP013	245.62	12.6	0.534	27.456	366.483	VERTICAL	0.012	506875.84	4959575
POINT	CGTAP014	245.81	12.6	0.534	33.792	366.483	VERTICAL	0.012	506850.54	4959577
POINT	CGTAP015	245.71	13.5	0.357	70.875	366.483	VERTICAL	0.012	506862.5	4959577
POINT	CGTAP016	245.77	12.4	0.357	23.625	366.483	VERTICAL	0.012	506858.82	4959573
POINT	CGTAP018	245.6	14.9	0.457	35.071	366.483	VERTICAL	0.006	506881.82	4959564
POINT	CGTAP019	245.73	14.9	0.457	35.071	366.483	VERTICAL	0.006	506864.34	4959564
POINT	CGTAP020	245.8	14.9	0.457	54.619	366.483	VERTICAL	0.006	506852.84	4959561
POINT	CGTAP021	245.78	14.4	0.344	48.26	366.483	VERTICAL	0.006	506845.02	4959564
POINT	CGTAPGEN	245.49	0.4	0.102	37.95	857.59	VERTICAL	0.03	506777.89	4959491
POINT	CGBUB052	245.21	12.8	1.22	22.638	366.483	VERTICAL	0.19	506995.57	4959677
POINT	CGBUB074	244.95	18.3	1.22	28.298	377.594	VERTICAL	0.894	506962.02	4959785
POINT	CGBUB055	245.14	18.3	1.22	22.638	366.483	VERTICAL	0.894	507005.94	4959677
POINT	CGBUB056	245.16	13.6	0.305	48.51	293.15	VERTICAL	0	506991.91	4959715
POINT	CGBUB065	244.34	13.2	0.446	18.521	408.15	VERTICAL	0.048	507007.77	4959829
POINT	CGBUB066	244.5	12.2	2.219	1.832	588.706	VERTICAL	0.000126	506999.54	4959821
POINT	CGBUB067	244.51	13.1	0.286	51.536	380.372	VERTICAL	0.082	507004.72	4959812
POINT	CGBUB068	244.67	25.3	0.61	29.915	322.039	VERTICAL	0.291	506983.98	4959809
POINT	CGBUB069	244.64	18.8	0.357	18.9	388.706	VERTICAL	0.095	506988.86	4959811
POINT	CGBUB073	244.6	9.1	0.204	43.226	294.261	VERTICAL	0	507012.65	4959795
POINT	CGBUBIA1	244.86	11.2	0.152	2.665	316.483	VERTICAL	0.044	507018.3	4959756
POINT	CGBUBIA2	244.92	8.2	0.152	64.37	294.261	VERTICAL	0	507005.81	4959759
POINT	CGBUBIA3	244.84	18	0.204	0.001	294.261	VERTICAL	0.009	507024.71	4959752
POINT	CGBUB062	244.59	20.3	0.204	0.001	294.261	VERTICAL	0.027	507024.71	4959778
POINT	CGBUB063	244.52	31.4	0.204	12.608	294.261	VERTICAL	0.167	507002.88	4959814
POINT	CGBUB064	244.59	13.5	0.253	0.001	294.261	VERTICAL	0	506997.02	4959813
POINT	CGBUBIA4	245.27	13.7	0.356	0.001	294.261	VERTICAL	0.034	506970.8	4959688
POINT	CGBUBIA5	245.34	13.7	0.356	0.001	294.261	VERTICAL	0.034	506957.1	4959692
POINT	CGBUBIA6	244.92	8.2	0.152	64.37	294.261	VERTICAL	0.095	507005.19	4959759
POINT	CGINC010	233.87	50.1	1.601	14.503	349.539	VERTICAL	0.226	506335.6	4959884
POINT	CGAUT001	243.94	3.7	0.344	6.234	283.706	VERTICAL	0.001	507054.86	4959835
POINT	CGAUT002	243.34	3.7	0.305	0.001	303.15	VERTICAL	0.001	507078.23	4959835
POINT	CGAUT003	244.24	10.3	0.233	22.174	322.039	VERTICAL	0.001	507042.36	4959808

POINT	CGAUT004	244.26	13.7	0.344	6.975	307.039 VERTICAL	0.019	507039.54	4959808
POINT	CGAUT005	244.9	9.3	0.152	0.001	290.928 VERTICAL	0	507039.54	4959729
POINT	CGAUT006	244.89	11.4	0.525	0.001	294.261 VERTICAL	0.006	507039.54	4959731
POINT	CGAUT007	244.87	11.4	0.525	0.001	287.594 VERTICAL	0	507042.77	4959731
POINT	CGAUT008	244.7	10.8	0.788	0.001	280.372 VERTICAL	0	507055.66	4959745
POINT	CGAUT009	244.88	11	0.23	0.001	297.594 VERTICAL	0.006	507042.77	4959729
POINT	CGAUT010	244	8.3	0.91	14.535	294.261 VERTICAL	0.001	507105.23	4959781
POINT	CGAUT011	244.03	9.9	0.736	10.516	326.483 VERTICAL	0	507063.8	4959808
POINT	CGAUT012	243.98	10.6	0.474	16.34	328.15 VERTICAL	0	507075.41	4959808
POINT	CGAUT014	243.95	9.9	0.873	1.419	322.039 VERTICAL	0	507080.65	4959799
POINT	CGAUT015	244.05	14.6	0.381	7.451	322.039 VERTICAL	0	507062.51	4959806
POINT	CGAUT016	243.95	10.7	0.267	9.318	1144.26 VERTICAL	0.005	507080.65	4959800
POINT	CGAUT017	244.06	8.3	0.909	14.535	294.261 VERTICAL	0	507096.9	4959781
POINT	CGAUT018	244.21	9.6	0.736	2.199	326.483 VERTICAL	0	507055.2	4959791
POINT	CGAUT019	244.19	9.6	0.736	2.199	326.483 VERTICAL	0	507057.2	4959791
POINT	CGAUT020	244.18	9.6	0.736	2.199	326.483 VERTICAL	0	507059.2	4959791
POINT	CGAUT021	244.17	9.6	0.736	2.199	326.483 VERTICAL	0	507061.2	4959791
POINT	CGAUT022	244.16	9.6	0.736	2.199	326.483 VERTICAL	0	507063.2	4959791
POINT	CGAUT023	244.14	9.6	0.736	2.199	326.483 VERTICAL	0	507065.2	4959791
POINT	AB112001	246.64	13.1	0.457	10.061	435.928 VERTICAL	0.03	506694.99	4959678
POINT	AB112002	246.6	13.1	0.915	2.875	435.928 VERTICAL	0.03	506702.75	4959669
POINT	AB112003	246.36	6.6	0.305	12.936	293.15 VERTICAL	0.008	506735.1	4959646
POINT	AB112004	246.39	6.6	0.457	17.823	293.15 VERTICAL	0.126	506735.1	4959649
POINT	AB112005	246.22	14.6	0.254	13.982	305.372 VERTICAL	0.003	506754.51	4959644
POINT	AB112006	246.27	12.8	0.305	2.264	755.372 VERTICAL	0.05	506740.28	4959640
POINT	AB112007	246.18	19.8	0.343	20.442	560.928 VERTICAL	0.405	506745.45	4959748
POINT	AB112008	246.28	19.8	1.067	0.001	866.483 VERTICAL	0.004	506723.45	4959740
POINT	AB112009	246.25	19.8	1.067	0.001	866.483 VERTICAL	0.004	506723.45	4959747
POINT	AB112010	246.22	19.8	0.61	2.07	330.372 VERTICAL	0.001	506738.98	4959748
POINT	AB112018	246.51	3	0.152	37.903	880.372 VERTICAL	0.057	506676.87	4959753
POINT	AB112024	246.6	13.1	0.915	2.875	435.928 VERTICAL	0.076	506687.22	4959704
POINT	AB112026	246.68	22.8	0.843	11.853	293.15 VERTICAL	0.266	506658.75	4959748
POINT	AB112036	246.6	11.9	0.393	18.268	293.15 VERTICAL	0.004	506672.99	4959747
POINT	AB112037	246.79	13.1	0.915	7.187	435.928 VERTICAL	0.076	506645.81	4959747
POINT	AB112038	246.24	2.4	0.098	27.729	749.261 VERTICAL	0.002	506749.33	4959640
POINT	CGABIA1	246.46	10.1	0.254	14.53	319.261 VERTICAL	0.01	506717.95	4959700
POINT	CGABIA2	246.46	17.2	0.254	14.53	305.372 VERTICAL	0.033	506717.95	4959700

POINT	CGABIA3	246.46	5.5	0.102	0.001	293.15 VERTICAL	0.021	506717.95	4959700
POINT	CGABIA4	246.46	9.1	0.203	0.001	293.15 VERTICAL	0.076	506717.95	4959700
POINT	CGTSS01	246.34	10.2	0.649	12.575	305.372 VERTICAL	0	506644.72	4959989
POINT	CGTSS05	246.17	14.3	1.015	12.282	1033.15 VERTICAL	0.021	506659.88	4959962
POINT	CGTSS06	246.17	12.8	0.102	14.553	422.039 VERTICAL	0.0000126	506659.88	4959953
POINT	CGTSS07	246.34	11.1	0.102	14.553	422.039 VERTICAL	0.0000126	506644.51	4959982
POINT	CGTSS08	246.04	15.2	0.447	7.515	533.15 VERTICAL	0.064	506690.43	4959953
POINT	CGTSS09	246.04	15.2	0.256	16.592	378.706 VERTICAL	0.001	506690.43	4959949
POINT	CGTSSIA1	246.4	9.91	1.264	3.123	294.261 VERTICAL	0.126	506627.3	4959950
POINT	CGTSSIA2	246.4	9.91	1.264	3.123	294.261 VERTICAL	0.126	506627.3	4959950
POINT	CGTSSIA3	246.17	14.3	1.02	12.28	1033.15 VERTICAL	0.025	506659.88	4959962
POINT	CGTSSIA4	246.17	14.3	1.02	12.28	1033.15 VERTICAL	0.025	506659.88	4959962
POINT	CGCHM182	244.77	15.6	0.152	6.468	533.15 VERTICAL	0.004	507080.77	4959605
POINT	CGCHM117	244.77	14.2	0.152	6.468	533.15 VERTICAL	0.003	507085.49	4959605
POINT	CGCHM097	244.72	2.2	0.12	0.001	533.15 VERTICAL	0.005	507057.88	4959452
POINT	CGCHM236	243	2.56	0.152	0.001	533.15 VERTICAL	0.003	507291.9	4959658
POINT	CGCMGEN	245.49	1.6	0.102	0.001	857.59 VERTICAL	0.03	506777.89	4959491
POINT	CGOPT001	244.56	8.99	0.31	6.254	293.15 VERTICAL	0.000125998	507145.36	4959712
POINT	CGOPT003	245.14	14.2	0.526	0.001	293.15 VERTICAL	0.0000576	506897.62	4959446
POINT	CG19IA1	244.54	9.6	0.199	11.12	293.15 VERTICAL	0.011	507156	4959710
POINT	CG19IA2	244.29	10.7	0.445	5.019	293.15 VERTICAL	0.003	507168	4959732
POINT	CG19IA3	244.08	5.8	0.344	0.001	293.15 VERTICAL	0.006	507168	4959747
POINT	CG19IA4	244.51	10.1	0.339	15.677	293.15 VERTICAL	0.002	507148	4959719
POINT	CG19IA5	244.08	11.3	0.396	15.5	293.15 VERTICAL	0.093	507168	4959747
POINT	CG111IA1	231.9	10.4	0.426	8.278	293.15 VERTICAL	0.144	506628	4959430
POINT	CG111IA2	245.31	13.4	0.542	0.001	293.15 VERTICAL	0.003	506889	4959408
POINT	CG111IA3	245	13.3	0.409	5.01	293.15 VERTICAL	0.014	506903	4959386
POINT	CG111IA4	245.52	9.9	0.305	3.667	293.15 VERTICAL	0.002	506843	4959426
POINT	CGSS003	240.21	1.1	0.089	0.001	394.26 VERTICAL	0.001	507334.2	4959240
POINT	CGSS005	244.86	3.048	0.152	0.001	394.261 VERTICAL	0.06665289	506936.18	4959431
POINT	CGSSIA01	244.81	4.6	0.152	55.625	648.706 VERTICAL	0.08454457	506967.52	4959480
POINT	CGSSIA02	246.74	3.4	0.127	56.108	730.372 VERTICAL	0.08038665	506613.19	4959838
POINT	CGSSIA03	244.03	2.896	0.051	0.001	394.261 VERTICAL	0.001007983	506826.86	4960107
POINT	CGSSIA04	245.82	1.676	0.063	0.001	394.261 VERTICAL	0.003401943	506864.95	4959678
POINT	CGSSIA05	245.13	4.977	0.038	0.001	394.261 VERTICAL	0.000881985	507005.88	4959656
POINT	CGSSIA07	245.47	2.438	0.051	0.001	394.261 VERTICAL	0.002897952	506899.81	4959641

Type	ID	Base_Elev	Height	SigmaY	SigmaZ	Length_X	Length	Emission_Rate	X1	Y1
		[m]	[m]	[m]	[m]	[m]	[m]	[m]	[m]	[m]
VOLUME	CGTAPIA	245.2	6.4	34.34	2.98	147.662		0.02	506987.3	4959715
VOLUME	CGINCIA1	238.14	11	11.05	5.12	47.515		0.000282	506363.17	4959957
VOLUME	CGINCIA2	237.83	18.4	14.65	8.56	62.995		0.4	506387.47	4959913
VOLUME	CGCHEMB4	244.74	15.2	7.33	7.08	31.519		0.163	507083.09	4959589
VOLUME	CGCHEMB6	244.74	12.1	5.84	5.61	25.112		0.023	507080.18	4959527
VOLUME	CGCHEMB7	244.83	14.9	6.84	6.91	29.412		0.016	507077.36	4959495
VOLUME	CGPA_1	243.93	2.59	4.65	2.4	19.995		0.00017	506808	4960150
VOLUME	CGPA_2	243.98	2.59	4.65	2.4	19.995		0.00034	506808	4960140
VOLUME	CGPA_3	244.03	2.59	4.65	2.4	19.995		0.00051	506808	4960130
VOLUME	CGPA_4	244.13	2.59	4.65	2.4	19.995		0.000679	506808	4960120
VOLUME	CGPA_5	244.19	2.59	4.65	2.4	19.995		0.00051	506808	4960110
VOLUME	CGPA_6	244.23	2.59	4.65	2.4	19.995		0.00034	506808	4960100
VOLUME	CGPA_7	244.33	2.59	4.65	2.4	19.995		0.00017	506808	4960090
VOLUME	CGPA_8	244.39	2.59	4.65	2.4	19.995		0.00034	506808	4960080
VOLUME	CGPA_9	244.39	2.59	4.65	2.4	19.995		0.00051	506808	4960070
VOLUME	CGPA_10	244.39	2.59	4.65	2.4	19.995		0.000679	506808	4960060
VOLUME	CGPA_11	244.41	2.59	4.65	2.4	19.995		0.000849	506808	4960050
VOLUME	CGPA_12	244.46	2.59	4.65	2.4	19.995		0.000849	506808	4960040
VOLUME	CGPA_13	244.53	2.59	4.65	2.4	19.995		0.000849	506808	4960030
VOLUME	CGPA_14	244.61	2.59	4.65	2.4	19.995		0.000849	506808	4960020
VOLUME	CGPA_15	244.59	2.59	4.65	2.4	19.995		0.000849	506808	4960010
VOLUME	CGPA_16	244.59	2.59	4.65	2.4	19.995		0.000849	506808	4960000
VOLUME	CGPA_17	244.62	2.59	4.65	2.4	19.995		0.000849	506808	4959990
VOLUME	CGPA_18	244.7	2.59	4.65	2.4	19.995		0.000849	506808	4959980
VOLUME	CGPA_19	244.69	2.59	4.65	2.4	19.995		0.000849	506808	4959970
VOLUME	CGPA_20	244.73	2.59	4.65	2.4	19.995		0.000849	506808	4959960
VOLUME	CGPA_21	244.87	2.59	4.65	2.4	19.995		0.000849	506808	4959950
VOLUME	CGPA_22	244.89	2.59	4.65	2.4	19.995		0.000849	506808	4959940
VOLUME	CGPA_23	244.93	2.59	4.65	2.4	19.995		0.000849	506808	4959930
VOLUME	CGPA_24	245	2.59	4.65	2.4	19.995		0.000849	506808	4959920
VOLUME	CGPA_25	244.99	2.59	4.65	2.4	19.995		0.000849	506808	4959910
VOLUME	CGPB_1	245.09	2.59	4.65	2.4	19.995		0.000442	506798	4959910
VOLUME	CGPB_2	245.19	2.59	4.65	2.4	19.995		0.000442	506788	4959910
VOLUME	CGPB_3	245.29	2.59	4.65	2.4	19.995		0.000442	506778	4959910
VOLUME	CGPB_4	245.36	2.59	4.65	2.4	19.995		0.000442	506768	4959910
VOLUME	CGPB_5	245.46	2.59	4.65	2.4	19.995		0.000442	506758	4959910
VOLUME	CGPB_6	245.59	2.59	4.65	2.4	19.995		0.000442	506748	4959910
VOLUME	CGPB_7	245.69	2.59	4.65	2.4	19.995		0.000442	506738	4959910

VOLUME CGPB_8	245.8	2.59	4.65	2.4	19.995	0.000442	506728	4959910
VOLUME CGPB_9	245.84	2.59	4.65	2.4	19.995	0.000442	506718	4959910
VOLUME CGPC_1	245.84	2.59	4.65	2.4	19.995	0.00012	506718	4959920
VOLUME CGPC_2	245.84	2.59	4.65	2.4	19.995	0.00012	506718	4959930
VOLUME CGPC_3	245.88	2.59	4.65	2.4	19.995	0.00012	506718	4959940
VOLUME CGPC_4	245.89	2.59	4.65	2.4	19.995	0.00012	506718	4959950
VOLUME CGPC_5	245.9	2.59	4.65	2.4	19.995	0.00012	506718	4959960
VOLUME CGPC_6	245.9	2.59	4.65	2.4	19.995	0.00012	506718	4959970
VOLUME CGPC_7	245.98	2.59	4.65	2.4	19.995	0.00012	506708	4959970
VOLUME CGPC_8	246.03	2.59	4.65	2.4	19.995	0.00012	506698	4959970
VOLUME CGPC_9	246.04	2.59	4.65	2.4	19.995	0.00012	506688	4959970
VOLUME CGPD_1	245.02	2.59	4.65	2.4	19.995	0.00237	506808	4959900
VOLUME CGPD_2	245.13	2.59	4.65	2.4	19.995	0.00237	506808	4959890
VOLUME CGPD_3	245.21	2.59	4.65	2.4	19.995	0.00237	506808	4959880
VOLUME CGPD_4	245.26	2.59	4.65	2.4	19.995	0.00237	506808	4959870
VOLUME CGPD_5	245.28	2.59	4.65	2.4	19.995	0.00237	506808	4959860
VOLUME CGPD_6	245.34	2.59	4.65	2.4	19.995	0.00237	506808	4959850
VOLUME CGPD_7	245.39	2.59	4.65	2.4	19.995	0.00237	506808	4959840
VOLUME CGPD_8	245.4	2.59	4.65	2.4	19.995	0.00237	506808	4959830
VOLUME CGPD_9	245.47	2.59	4.65	2.4	19.995	0.00237	506808	4959820
VOLUME CGPD_10	245.57	2.59	4.65	2.4	19.995	0.00237	506808	4959810
VOLUME CGPD_11	245.67	2.59	4.65	2.4	19.995	0.00237	506808	4959800
VOLUME CGPD_12	245.75	2.59	4.65	2.4	19.995	0.00237	506808	4959790
VOLUME CGPD_13	245.83	2.59	4.65	2.4	19.995	0.00237	506808	4959780
VOLUME CGPD_14	245.91	2.59	4.65	2.4	19.995	0.00237	506808	4959770
VOLUME CGPD_15	245.94	2.59	4.65	2.4	19.995	0.00237	506808	4959760
VOLUME CGPD_16	245.94	2.59	4.65	2.4	19.995	0.00237	506808	4959750
VOLUME CGPD_17	245.96	2.59	4.65	2.4	19.995	0.00237	506808	4959740
VOLUME CGPD_18	246.01	2.59	4.65	2.4	19.995	0.00237	506808	4959730
VOLUME CGPD_19	246.04	2.59	4.65	2.4	19.995	0.00237	506808	4959720
VOLUME CGPD_20	246.04	2.59	4.65	2.4	19.995	0.00237	506808	4959710
VOLUME CGPD_21	246.04	2.59	4.65	2.4	19.995	0.00237	506808	4959700
VOLUME CGPD_22	246.04	2.59	4.65	2.4	19.995	0.00237	506808	4959690
VOLUME CGPD_23	246.04	2.59	4.65	2.4	19.995	0.00237	506808	4959680
VOLUME CGPD_24	246.05	2.59	4.65	2.4	19.995	0.00189	506808	4959670
VOLUME CGPD_25	246.09	2.59	4.65	2.4	19.995	0.00142	506808	4959660
VOLUME CGPD_26	246.06	2.59	4.65	2.4	19.995	0.000947	506808	4959650
VOLUME CGPD_27	245.99	2.59	4.65	2.4	19.995	0.000473	506808	4959640
VOLUME CGPD_28	245.99	2.59	4.65	2.4	19.995	0.000947	506808	4959630
VOLUME CGPD_29	246.01	2.59	4.65	2.4	19.995	0.000473	506808	4959620

VOLUME CGPE_1	246.06	2.59	4.65	2.4	19.995	0.000525	506798	4959620
VOLUME CGPE_2	246.11	2.59	4.65	2.4	19.995	0.000525	506788	4959620
VOLUME CGPE_3	246.14	2.59	4.65	2.4	19.995	0.000525	506778	4959620
VOLUME CGPE_4	246.14	2.59	4.65	2.4	19.995	0.000525	506768	4959620
VOLUME CGPE_5	246.19	2.59	4.65	2.4	19.995	0.000525	506758	4959620
VOLUME CGPF_1	246.28	2.59	4.65	2.4	19.995	0.000364	506748	4959620
VOLUME CGPF_2	246.32	2.59	4.65	2.4	19.995	0.000364	506738	4959620
VOLUME CGPF_3	246.31	2.59	4.65	2.4	19.995	0.000364	506728	4959620
VOLUME CGPF_4	246.31	2.59	4.65	2.4	19.995	0.000364	506718	4959620
VOLUME CGPF_5	246.31	2.59	4.65	2.4	19.995	0.000364	506708	4959620
VOLUME CGPF_6	246.28	2.59	4.65	2.4	19.995	0.000364	506698	4959620
VOLUME CGPF_7	246.31	2.59	4.65	2.4	19.995	0.000364	506688	4959620
VOLUME CGPG_1	246.17	2.59	4.65	2.4	19.995	0.000161	506758	4959610
VOLUME CGPG_2	246.07	2.59	4.65	2.4	19.995	0.000161	506758	4959600
VOLUME CGPG_3	246	2.59	4.65	2.4	19.995	0.000161	506758	4959590
VOLUME CGPG_4	245.83	2.59	4.65	2.4	19.995	0.000161	506758	4959580
VOLUME CGPG_5	245.71	2.59	4.65	2.4	19.995	0.000161	506758	4959570
VOLUME CGPG_6	245.65	2.59	4.65	2.4	19.995	0.000161	506758	4959560
VOLUME CGPG_7	245.55	2.59	4.65	2.4	19.995	0.000161	506758	4959550
VOLUME CGPG_8	245.48	2.59	4.65	2.4	19.995	0.000161	506758	4959540
VOLUME CGPG_9	245.37	2.59	4.65	2.4	19.995	0.000161	506758	4959530
VOLUME CGPG_10	245.19	2.59	4.65	2.4	19.995	0.000161	506758	4959520
VOLUME CGPG_11	245.08	2.59	4.65	2.4	19.995	0.000161	506758	4959510
VOLUME CGPG_12	245.03	2.59	4.65	2.4	19.995	0.000161	506758	4959500
VOLUME CGPG_13	245.08	2.59	4.65	2.4	19.995	0.000161	506758	4959490
VOLUME CGPG_14	245.13	2.59	4.65	2.4	19.995	0.000161	506758	4959480
VOLUME CGPG_15	245.13	2.59	4.65	2.4	19.995	0.000161	506758	4959470
VOLUME CGPG_16	245.03	2.59	4.65	2.4	19.995	0.000161	506758	4959460
VOLUME CGPG_17	244.93	2.59	4.65	2.4	19.995	0.000161	506758	4959450
VOLUME CGPG_18	244.87	2.59	4.65	2.4	19.995	0.000161	506758	4959440
VOLUME CGPG_19	244.82	2.59	4.65	2.4	19.995	0.000161	506758	4959430
VOLUME CGPG_20	244.78	2.59	4.65	2.4	19.995	0.000161	506760.6	4959422
VOLUME CGPG_21	244.73	2.59	4.65	2.4	19.995	0.000161	506764.9	4959413
VOLUME CGPG_22	244.72	2.59	4.65	2.4	19.995	0.000161	506771.4	4959404
VOLUME CGPG_23	244.63	2.59	4.65	2.4	19.995	0.000161	506777.8	4959397
VOLUME CGPG_24	244.53	2.59	4.65	2.4	19.995	0.000161	506784.7	4959390
VOLUME CGPG_25	244.42	2.59	4.65	2.4	19.995	0.000161	506792.5	4959383
VOLUME CGPG_26	244.32	2.59	4.65	2.4	19.995	0.000161	506800.6	4959378
VOLUME CGPG_27	244.24	2.59	4.65	2.4	19.995	0.000161	506809.7	4959374
VOLUME CGPG_28	244.27	2.59	4.65	2.4	19.995	0.000161	506819.1	4959371

VOLUME CGPG_29	244.28	2.59	4.65	2.4	19.995	0.000161	506828.2	4959368
VOLUME CGPG_30	244.29	2.59	4.65	2.4	19.995	0.000161	506836.8	4959364
VOLUME CGPG_31	244.34	2.59	4.65	2.4	19.995	0.000161	506845.8	4959361
VOLUME CGPG_32	244.58	2.59	4.65	2.4	19.995	0.000161	506854.5	4959357
VOLUME CGPG_33	244.61	2.59	4.65	2.4	19.995	0.0000805	506863.1	4959353
VOLUME CGPG_34	244.34	2.59	4.65	2.4	19.995	0.000161	506871.2	4959348
VOLUME CGPG_35	244.12	2.59	4.65	2.4	19.995	0.000161	506863.9	4959342
VOLUME CGPG_36	243.96	2.59	4.65	2.4	19.995	0.000161	506855.3	4959337
VOLUME CGPG_37	243.89	2.59	4.65	2.4	19.995	0.000161	506848.4	4959333
VOLUME CGPG_38	242.69	2.59	4.65	2.4	19.995	0.000161	506840.2	4959329
VOLUME CGPG_39	241.18	2.59	4.65	2.4	19.995	0.000161	506833.4	4959325
VOLUME CGPG_40	239.37	2.59	4.65	2.4	19.995	0.000161	506826.5	4959319
VOLUME CGPG_41	238.07	2.59	4.65	2.4	19.995	0.000161	506819.1	4959315
VOLUME CGPG_42	237.39	2.59	4.65	2.4	19.995	0.000161	506812.7	4959310
VOLUME CGPG_43	237.21	2.59	4.65	2.4	19.995	0.000161	506804.9	4959306
VOLUME CGPG_44	236.84	2.59	4.65	2.4	19.995	0.000161	506796.3	4959303
VOLUME CGPG_45	236.23	2.59	4.65	2.4	19.995	0.000161	506787.3	4959300
VOLUME CGPH_1	245.96	2.59	4.65	2.4	19.995	0.00161	506818	4959620
VOLUME CGPH_2	245.89	2.59	4.65	2.4	19.995	0.00161	506828	4959620
VOLUME CGPH_3	245.83	2.59	4.65	2.4	19.995	0.00161	506838	4959620
VOLUME CGPH_4	245.78	2.59	4.65	2.4	19.995	0.00161	506848	4959620
VOLUME CGPH_5	245.73	2.59	4.65	2.4	19.995	0.00161	506858	4959620
VOLUME CGPH_6	245.67	2.59	4.65	2.4	19.995	0.00161	506868	4959620
VOLUME CGPH_7	245.56	2.59	4.65	2.4	19.995	0.00161	506878	4959620
VOLUME CGPH_8	245.53	2.59	4.65	2.4	19.995	0.00161	506888	4959620
VOLUME CGPH_9	245.48	2.59	4.65	2.4	19.995	0.00161	506898	4959620
VOLUME CGPH_10	245.38	2.59	4.65	2.4	19.995	0.00161	506908	4959620
VOLUME CGPH_11	245.34	2.59	4.65	2.4	19.995	0.00161	506918	4959620
VOLUME CGPH_12	245.29	2.59	4.65	2.4	19.995	0.00161	506928	4959620
VOLUME CGPH_13	245.24	2.59	4.65	2.4	19.995	0.00161	506938	4959620
VOLUME CGPH_14	245.2	2.59	4.65	2.4	19.995	0.000807	506948	4959620
VOLUME CGPI_1	245.17	2.59	4.65	2.4	19.995	0.00184	506948	4959610
VOLUME CGPI_2	245.08	2.59	4.65	2.4	19.995	0.00184	506948	4959600
VOLUME CGPI_3	245.11	2.59	4.65	2.4	19.995	0.00184	506948	4959590
VOLUME CGPI_4	245.11	2.59	4.65	2.4	19.995	0.00184	506948	4959580
VOLUME CGPI_5	245.04	2.59	4.65	2.4	19.995	0.00184	506948	4959570
VOLUME CGPI_6	245.09	2.59	4.65	2.4	19.995	0.00184	506948	4959560
VOLUME CGPI_7	245.09	2.59	4.65	2.4	19.995	0.00184	506948	4959550
VOLUME CGPI_8	245.09	2.59	4.65	2.4	19.995	0.00184	506948	4959540
VOLUME CGPJ_1	245.09	2.59	4.65	2.4	19.995	0.00179	506948	4959530

VOLUME CGPJ_2	245.1	2.59	4.65	2.4	19.995	0.00179	506948	4959520
VOLUME CGPJ_3	245.08	2.59	4.65	2.4	19.995	0.00179	506948	4959510
VOLUME CGPJ_4	245.03	2.59	4.65	2.4	19.995	0.00179	506948	4959500
VOLUME CGPJ_5	244.95	2.59	4.65	2.4	19.995	0.00179	506948	4959490
VOLUME CGPJ_6	244.9	2.59	4.65	2.4	19.995	0.00179	506948	4959480
VOLUME CGPJ_7	244.9	2.59	4.65	2.4	19.995	0.00179	506948	4959470
VOLUME CGPJ_8	244.88	2.59	4.65	2.4	19.995	0.00179	506948	4959460
VOLUME CGPJ_9	244.82	2.59	4.65	2.4	19.995	0.00179	506948	4959450
VOLUME CGPJ_10	244.8	2.59	4.65	2.4	19.995	0.00179	506948	4959440
VOLUME CGPJ_11	244.77	2.59	4.65	2.4	19.995	0.00179	506948	4959430
VOLUME CGPJ_12	244.75	2.59	4.65	2.4	19.995	0.00179	506948	4959420
VOLUME CGPJ_13	244.7	2.59	4.65	2.4	19.995	0.00179	506948	4959410
VOLUME CGPJ_14	244.67	2.59	4.65	2.4	19.995	0.00179	506948	4959400
VOLUME CGPJ_15	244.67	2.59	4.65	2.4	19.995	0.00179	506948	4959390
VOLUME CGPJ_16	244.62	2.59	4.65	2.4	19.995	0.000895	506948	4959380
VOLUME CGPK_1	245.14	2.59	4.65	2.4	19.995	0.000451	506948	4959630
VOLUME CGPK_2	245.21	2.59	4.65	2.4	19.995	0.000451	506948	4959640
VOLUME CGPK_3	245.31	2.59	4.65	2.4	19.995	0.000451	506948	4959650
VOLUME CGPK_4	245.34	2.59	4.65	2.4	19.995	0.000451	506948	4959660
VOLUME CGPK_5	245.34	2.59	4.65	2.4	19.995	0.000451	506948	4959670
VOLUME CGPK_6	245.34	2.59	4.65	2.4	19.995	0.000451	506948	4959680
VOLUME CGPK_7	245.34	2.59	4.65	2.4	19.995	0.000451	506948	4959690
VOLUME CGPK_8	245.34	2.59	4.65	2.4	19.995	0.000451	506948	4959700
VOLUME CGPK_9	245.34	2.59	4.65	2.4	19.995	0.000451	506948	4959710
VOLUME CGPK_10	245.34	2.59	4.65	2.4	19.995	0.000225	506948	4959720
VOLUME CGPK_11	245.34	2.59	4.65	2.4	19.995	0.000451	506948	4959730
VOLUME CGPK_12	245.34	2.59	4.65	2.4	19.995	0.000451	506948	4959740
VOLUME CGPK_13	245.31	2.59	4.65	2.4	19.995	0.000451	506948	4959750
VOLUME CGPK_14	245.26	2.59	4.65	2.4	19.995	0.000451	506948	4959760
VOLUME CGPK_15	245.2	2.59	4.65	2.4	19.995	0.000451	506948	4959770
VOLUME CGPK_16	245.11	2.59	4.65	2.4	19.995	0.000451	506948	4959780
VOLUME CGPK_17	245.05	2.59	4.65	2.4	19.995	0.000225	506948	4959790
VOLUME CGPK_18	245.01	2.59	4.65	2.4	19.995	0.000451	506948	4959800
VOLUME CGPK_19	244.9	2.59	4.65	2.4	19.995	0.000451	506948	4959810
VOLUME CGPL_1	244.57	2.59	4.65	2.4	19.995	0.00179	506958	4959380
VOLUME CGPL_2	244.53	2.59	4.65	2.4	19.995	0.00179	506968	4959380
VOLUME CGPL_3	244.43	2.59	4.65	2.4	19.995	0.00179	506978	4959380
VOLUME CGPL_4	244.34	2.59	4.65	2.4	19.995	0.00179	506988	4959380
VOLUME CGPL_5	244.3	2.59	4.65	2.4	19.995	0.00179	506998	4959380
VOLUME CGPL_6	244.22	2.59	4.65	2.4	19.995	0.00179	507008	4959380

VOLUME CGPL_7	244.25	2.59	4.65	2.4	19.995	0.00179	507018	4959380
VOLUME CGPL_8	244.37	2.59	4.65	2.4	19.995	0.00179	507028	4959380
VOLUME CGPL_9	244.5	2.59	4.65	2.4	19.995	0.00179	507038	4959380
VOLUME CGPL_10	244.53	2.59	4.65	2.4	19.995	0.00179	507048	4959380
VOLUME CGPL_11	244.53	2.59	4.65	2.4	19.995	0.00179	507058	4959380
VOLUME CGPL_12	244.66	2.59	4.65	2.4	19.995	0.00179	507068	4959380
VOLUME CGPL_13	244.72	2.59	4.65	2.4	19.995	0.00179	507078	4959380
VOLUME CGPL_14	244.55	2.59	4.65	2.4	19.995	0.00179	507088	4959380
VOLUME CGPL_15	244.45	2.59	4.65	2.4	19.995	0.00179	507098	4959380
VOLUME CGPL_16	244.41	2.59	4.65	2.4	19.995	0.00179	507108	4959380
VOLUME CGPM_1	244.51	2.59	4.65	2.4	19.995	0.000601	507108	4959390
VOLUME CGPM_2	244.58	2.59	4.65	2.4	19.995	0.0012	507108	4959400
VOLUME CGPM_3	244.57	2.59	4.65	2.4	19.995	0.0012	507108	4959410
VOLUME CGPM_4	244.6	2.59	4.65	2.4	19.995	0.0012	507108	4959420
VOLUME CGPM_5	244.68	2.59	4.65	2.4	19.995	0.0012	507108	4959430
VOLUME CGPM_6	244.72	2.59	4.65	2.4	19.995	0.0012	507108	4959440
VOLUME CGPM_7	244.71	2.59	4.65	2.4	19.995	0.0012	507108	4959450
VOLUME CGPM_8	244.66	2.59	4.65	2.4	19.995	0.0012	507108	4959460
VOLUME CGPM_9	244.61	2.59	4.65	2.4	19.995	0.0012	507108	4959470
VOLUME CGPM_10	244.59	2.59	4.65	2.4	19.995	0.000601	507108	4959480
VOLUME CGPM_11	244.65	2.59	4.65	2.4	19.995	0.0012	507108	4959490
VOLUME CGPM_12	244.7	2.59	4.65	2.4	19.995	0.0012	507108	4959500
VOLUME CGPM_13	244.69	2.59	4.65	2.4	19.995	0.0012	507108	4959510
VOLUME CGPM_14	244.66	2.59	4.65	2.4	19.995	0.0012	507108	4959520
VOLUME CGPM_15	244.64	2.59	4.65	2.4	19.995	0.0012	507108	4959530
VOLUME CGPM_16	244.64	2.59	4.65	2.4	19.995	0.0012	507108	4959540
VOLUME CGPM_17	244.64	2.59	4.65	2.4	19.995	0.000601	507108	4959550
VOLUME CGPM_18	244.64	2.59	4.65	2.4	19.995	0.0012	507108	4959560
VOLUME CGPM_19	244.64	2.59	4.65	2.4	19.995	0.0012	507108	4959570
VOLUME CGPM_20	244.68	2.59	4.65	2.4	19.995	0.0012	507108	4959580
VOLUME CGPM_21	244.69	2.59	4.65	2.4	19.995	0.0012	507108	4959590
VOLUME CGPM_22	244.69	2.59	4.65	2.4	19.995	0.000601	507108	4959600
VOLUME CGPM_23	244.72	2.59	4.65	2.4	19.995	0.0012	507108	4959610
VOLUME CGPM_24	244.77	2.59	4.65	2.4	19.995	0.0012	507108	4959620
VOLUME CGPM_25	244.83	2.59	4.65	2.4	19.995	0.0012	507108	4959630
VOLUME CGPN_1	244.84	2.59	4.65	2.4	19.995	0.00108	507108	4959640
VOLUME CGPN_2	244.88	2.59	4.65	2.4	19.995	0.00108	507108	4959650
VOLUME CGPN_3	244.89	2.59	4.65	2.4	19.995	0.00108	507108	4959660
VOLUME CGPN_4	244.89	2.59	4.65	2.4	19.995	0.00108	507108	4959670
VOLUME CGPN_5	244.89	2.59	4.65	2.4	19.995	0.00108	507108	4959680

VOLUME CGPN_6	244.86	2.59	4.65	2.4	19.995	0.00108	507108	4959690
VOLUME CGPN_7	244.81	2.59	4.65	2.4	19.995	0.00108	507108	4959700
VOLUME CGPN_8	244.73	2.59	4.65	2.4	19.995	0.00108	507108	4959710
VOLUME CGPN_9	244.66	2.59	4.65	2.4	19.995	0.00108	507108	4959720
VOLUME CGPO_1	244.78	2.59	4.65	2.4	19.995	0.000117	507118	4959630
VOLUME CGPO_2	244.69	2.59	4.65	2.4	19.995	0.000117	507128	4959630
VOLUME CGPO_3	244.64	2.59	4.65	2.4	19.995	0.000117	507138	4959630
VOLUME CGPO_4	244.64	2.59	4.65	2.4	19.995	0.000117	507148	4959630
VOLUME CGPO_5	244.64	2.59	4.65	2.4	19.995	0.000117	507158	4959630
VOLUME CGPO_6	244.67	2.59	4.65	2.4	19.995	0.000117	507168	4959630
VOLUME CGPP_1	244.34	2.59	4.65	2.4	19.995	0.00225	507118	4959380
VOLUME CGPP_2	244.33	2.59	4.65	2.4	19.995	0.00225	507128	4959380
VOLUME CGPP_3	244.38	2.59	4.65	2.4	19.995	0.00225	507138	4959380
VOLUME CGPP_4	244.38	2.59	4.65	2.4	19.995	0.00225	507148	4959380
VOLUME CGPP_5	244.34	2.59	4.65	2.4	19.995	0.00225	507158	4959380
VOLUME CGPP_6	244.27	2.59	4.65	2.4	19.995	0.00225	507168	4959380
VOLUME CGPP_7	244.24	2.59	4.65	2.4	19.995	0.00225	507178	4959380
VOLUME CGPP_8	244.22	2.59	4.65	2.4	19.995	0.00225	507188	4959380
VOLUME CGPP_9	244.17	2.59	4.65	2.4	19.995	0.00225	507198	4959380
VOLUME CGPP_10	244.09	2.59	4.65	2.4	19.995	0.00225	507208	4959380
VOLUME CGPP_11	244	2.59	4.65	2.4	19.995	0.00225	507218	4959380
VOLUME CGPP_12	243.85	2.59	4.65	2.4	19.995	0.00225	507228	4959380
VOLUME CGPQ_1	243.85	2.59	4.65	2.4	19.995	0.000277	507228	4959390
VOLUME CGPQ_2	243.85	2.59	4.65	2.4	19.995	0.000553	507228	4959400
VOLUME CGPQ_3	243.85	2.59	4.65	2.4	19.995	0.000553	507228	4959410
VOLUME CGPQ_4	243.85	2.59	4.65	2.4	19.995	0.000553	507228	4959420
VOLUME CGPQ_5	243.85	2.59	4.65	2.4	19.995	0.000553	507228	4959430
VOLUME CGPQ_6	243.86	2.59	4.65	2.4	19.995	0.000553	507228	4959440
VOLUME CGPQ_7	243.88	2.59	4.65	2.4	19.995	0.000553	507228	4959450
VOLUME CGPR_1	243.6	2.59	4.65	2.4	19.995	0.00169	507238	4959380
VOLUME CGPR_2	243.33	2.59	4.65	2.4	19.995	0.00169	507248	4959380
VOLUME CGPR_3	243.08	2.59	4.65	2.4	19.995	0.00169	507258	4959380
VOLUME CGPR_4	242.85	2.59	4.65	2.4	19.995	0.00169	507268	4959380
VOLUME CGPR_5	242.67	2.59	4.65	2.4	19.995	0.00169	507278	4959380
VOLUME CGPR_6	242.5	2.59	4.65	2.4	19.995	0.00169	507288	4959380
VOLUME CGPR_7	242.22	2.59	4.65	2.4	19.995	0.00169	507298	4959380
VOLUME CGPR_8	241.88	2.59	4.65	2.4	19.995	0.00169	507308	4959380
VOLUME CGPR_9	241.54	2.59	4.65	2.4	19.995	0.00169	507318	4959380
VOLUME CGPR_10	241.12	2.59	4.65	2.4	19.995	0.00169	507328	4959380
VOLUME CGPS_1	245.89	2.59	4.65	2.4	19.995	0.000322	506708	4959910

VOLUME CGPS_2	245.94	2.59	4.65	2.4	19.995	0.000322	506698	4959910
VOLUME CGPS_3	245.99	2.59	4.65	2.4	19.995	0.000322	506688	4959910
VOLUME CGPS_4	246.1	2.59	4.65	2.4	19.995	0.000322	506678	4959910
VOLUME CGPS_5	246.14	2.59	4.65	2.4	19.995	0.000322	506668	4959910
VOLUME CGPS_6	246.19	2.59	4.65	2.4	19.995	0.000322	506658	4959910
VOLUME CGPS_7	246.3	2.59	4.65	2.4	19.995	0.000322	506648	4959910
VOLUME CGPS_8	246.36	2.59	4.65	2.4	19.995	0.000322	506638	4959910
VOLUME CGPS_9	246.41	2.59	4.65	2.4	19.995	0.000322	506628	4959910
VOLUME CGPS_10	246.49	2.59	4.65	2.4	19.995	0.000322	506618	4959910
VOLUME CGPS_11	246.59	2.59	4.65	2.4	19.995	0.000322	506608	4959910
VOLUME CGPS_12	246.69	2.59	4.65	2.4	19.995	0.000322	506598	4959910
VOLUME CGPS_13	246.76	2.59	4.65	2.4	19.995	0.000322	506588	4959910
VOLUME CGPS_14	246.83	2.59	4.65	2.4	19.995	0.000322	506578	4959910
VOLUME CGPS_15	246.91	2.59	4.65	2.4	19.995	0.000322	506568	4959910
VOLUME CGPS_16	246.99	2.59	4.65	2.4	19.995	0.000322	506558	4959910
VOLUME CGPS_17	247.04	2.59	4.65	2.4	19.995	0.000322	506548	4959910
VOLUME CGPS_18	247.09	2.59	4.65	2.4	19.995	0.000322	506538	4959910
VOLUME CGPS_19	247.14	2.59	4.65	2.4	19.995	0.000258	506528	4959910
VOLUME CGPS_20	247.14	2.59	4.65	2.4	19.995	0.000193	506518	4959910
VOLUME CGPS_21	247.16	2.59	4.65	2.4	19.995	0.000129	506508	4959910
VOLUME CGPS_22	247.2	2.59	4.65	2.4	19.995	0.0000644	506498	4959910
VOLUME CGPS_23	246.83	2.59	4.65	2.4	19.995	0.000129	506488	4959910
VOLUME CGPS_24	245.98	2.59	4.65	2.4	19.995	0.000193	506478.1	4959913
VOLUME CGPS_25	244.72	2.59	4.65	2.4	19.995	0.000258	506467.5	4959918
VOLUME CGPS_26	243.92	2.59	4.65	2.4	19.995	0.000322	506459.1	4959923
VOLUME CGPS_27	243.33	2.59	4.65	2.4	19.995	0.000322	506450.1	4959930
VOLUME CGPS_28	243.07	2.59	4.65	2.4	19.995	0.000322	506442.9	4959937
VOLUME CGPS_29	242.89	2.59	4.65	2.4	19.995	0.000322	506436.1	4959946
VOLUME CGPS_30	242.53	2.59	4.65	2.4	19.995	0.000322	506430	4959955
VOLUME CGPS_31	242.03	2.59	4.65	2.4	19.995	0.000322	506424.4	4959963
VOLUME CGPS_32	241.63	2.59	4.65	2.4	19.995	0.000322	506418.2	4959972
VOLUME CGPS_33	241.58	2.59	4.65	2.4	19.995	0.000322	506411.5	4959981
VOLUME CGPS_34	241.81	2.59	4.65	2.4	19.995	0.000322	506405.9	4959989
VOLUME CGPT_1	241.89	2.59	4.65	2.4	19.995	0.000877	506399.7	4959997
VOLUME CGPT_2	241.88	2.59	4.65	2.4	19.995	0.000877	506393	4960006
VOLUME CGPT_3	241.86	2.59	4.65	2.4	19.995	0.000877	506386.3	4960015
VOLUME CGPT_4	241.82	2.59	4.65	2.4	19.995	0.000877	506379.6	4960024
VOLUME CGPT_5	241.71	2.59	4.65	2.4	19.995	0.000877	506373.4	4960032
VOLUME CGPT_6	241.49	2.59	4.65	2.4	19.995	0.000877	506366.1	4960039
VOLUME CGPT_7	241	2.59	4.65	2.4	19.995	0.000877	506355.5	4960044

VOLUME CGPT_8	240.32	2.59	4.65	2.4	19.995	0.000877	506343.7	4960043
VOLUME CGPT_9	239.48	2.59	4.65	2.4	19.995	0.000877	506333.1	4960039
VOLUME CGPT_10	238.43	2.59	4.65	2.4	19.995	0.000877	506323.5	4960034
VOLUME CGPT_11	237.61	2.59	4.65	2.4	19.995	0.000877	506314.6	4960027
VOLUME CGPT_12	237.12	2.59	4.65	2.4	19.995	0.000877	506307.3	4960021
VOLUME CGPT_13	236.57	2.59	4.65	2.4	19.995	0.000877	506298.9	4960015
VOLUME CGPT_14	235.93	2.59	4.65	2.4	19.995	0.000877	506291	4960010
VOLUME CGPT_15	235.23	2.59	4.65	2.4	19.995	0.000877	506283.2	4960004
VOLUME CGPT_16	234.71	2.59	4.65	2.4	19.995	0.000877	506276.5	4959997
VOLUME CGPT_17	234.41	2.59	4.65	2.4	19.995	0.000877	506268.6	4959991
VOLUME CGPT_18	234.18	2.59	4.65	2.4	19.995	0.000877	506260.8	4959984
VOLUME CGPT_19	233.97	2.59	4.65	2.4	19.995	0.000877	506255.2	4959975
VOLUME CGPT_20	233.8	2.59	4.65	2.4	19.995	0.000877	506253.5	4959965
VOLUME CGPU_1	233.69	2.59	4.65	2.4	19.995	0.000877	506254.6	4959956
VOLUME CGPU_2	233.66	2.59	4.65	2.4	19.995	0.000877	506260.2	4959949
VOLUME CGPU_3	233.62	2.59	4.65	2.4	19.995	0.000877	506265.3	4959940
VOLUME CGPU_4	233.6	2.59	4.65	2.4	19.995	0.000877	506270.3	4959931
VOLUME CGPU_5	233.55	2.59	4.65	2.4	19.995	0.000877	506275.9	4959923
VOLUME CGPU_6	233.53	2.59	4.65	2.4	19.995	0.000877	506282.1	4959915
VOLUME CGPU_7	233.54	2.59	4.65	2.4	19.995	0.000877	506288.2	4959908
VOLUME CGPU_8	233.53	2.59	4.65	2.4	19.995	0.000877	506293.8	4959900
VOLUME CGPU_9	233.49	2.59	4.65	2.4	19.995	0.000877	506298.9	4959892
VOLUME CGPU_10	233.47	2.59	4.65	2.4	19.995	0.000877	506304.3	4959884
VOLUME CGPU_11	233.45	2.59	4.65	2.4	19.995	0.000877	506310	4959877
VOLUME CGPU_12	233.39	2.59	4.65	2.4	19.995	0.000877	506315.3	4959870
VOLUME CGPU_13	233.36	2.59	4.65	2.4	19.995	0.000877	506321.1	4959864
VOLUME CGPU_14	233.34	2.59	4.65	2.4	19.995	0.000877	506326.4	4959857
VOLUME CGPU_15	233.34	2.59	4.65	2.4	19.995	0.000877	506331.7	4959850
VOLUME CGPU_16	233.33	2.59	4.65	2.4	19.995	0.000877	506336.2	4959844
VOLUME CGPU_17	233.3	2.59	4.65	2.4	19.995	0.000877	506341.5	4959838
VOLUME CGPU_18	233.3	2.59	4.65	2.4	19.995	0.000877	506346.5	4959831
VOLUME CGPU_19	233.32	2.59	4.65	2.4	19.995	0.000877	506351.4	4959825
VOLUME CGPU_20	233.23	2.59	4.65	2.4	19.995	0.000877	506355.5	4959819
VOLUME CGUV_1	241.34	2.59	4.65	2.4	19.995	0.0036	507328	4959370
VOLUME CGUV_2	241.69	2.59	4.65	2.4	19.995	0.0036	507328	4959360
VOLUME CGUV_3	241.78	2.59	4.65	2.4	19.995	0.0036	507328	4959350
VOLUME CGUV_4	241.66	2.59	4.65	2.4	19.995	0.0036	507328	4959340
VOLUME CGUV_5	241.59	2.59	4.65	2.4	19.995	0.0036	507328	4959330
VOLUME CGUV_6	241.61	2.59	4.65	2.4	19.995	0.0036	507328	4959320
VOLUME CGUV_7	241.63	2.59	4.65	2.4	19.995	0.0036	507328	4959310

VOLUME CGUV_8	241.55	2.59	4.65	2.4	19.995	0.0036	507328	4959300
VOLUME CGUV_9	241.44	2.59	4.65	2.4	19.995	0.0036	507328	4959290
VOLUME CGUV_10	241.28	2.59	4.65	2.4	19.995	0.0036	507328	4959280
VOLUME CGUV_11	241.07	2.59	4.65	2.4	19.995	0.0036	507328	4959270
VOLUME CGUV_12	240.83	2.59	4.65	2.4	19.995	0.0036	507328	4959260
VOLUME CGUV_13	240.85	2.59	4.65	2.4	19.995	0.0036	507338	4959260
VOLUME CGUV_14	240.89	2.59	4.65	2.4	19.995	0.0036	507348	4959260
VOLUME CGUV_15	240.99	2.59	4.65	2.4	19.995	0.0036	507358	4959260
VOLUME CGUV_16	241.04	2.59	4.65	2.4	19.995	0.0036	507368	4959260
VOLUME CGUV_17	241.04	2.59	4.65	2.4	19.995	0.0036	507378	4959260
VOLUME CGUG_1	244.94	2.59	4.65	2.4	19.995	0.000674	506749.5	4959464
VOLUME CGUG_2	244.66	2.59	4.65	2.4	19.995	0.000674	506740.9	4959463
VOLUME CGUG_3	244.3	2.59	4.65	2.4	19.995	0.000337	506730.5	4959464
VOLUME CGUG_4	244.03	2.59	4.65	2.4	19.995	0.000674	506720.1	4959465
VOLUME CGUG_5	243.52	2.59	4.65	2.4	19.995	0.000674	506710.5	4959466
VOLUME CGUG_6	242.56	2.59	4.65	2.4	19.995	0.000674	506701.1	4959468
VOLUME CGUG_7	241.46	2.59	4.65	2.4	19.995	0.000674	506692.6	4959469
VOLUME CGUG_8	240.48	2.59	4.65	2.4	19.995	0.000674	506684.1	4959472
VOLUME CGUG_9	239.63	2.59	4.65	2.4	19.995	0.000674	506676.6	4959476
VOLUME CGUG_10	238.24	2.59	4.65	2.4	19.995	0.000674	506667.6	4959477
VOLUME CGUG_11	236.85	2.59	4.65	2.4	19.995	0.000674	506657.7	4959478
VOLUME CGUG_12	235.78	2.59	4.65	2.4	19.995	0.000674	506649.2	4959478
VOLUME CGUG_13	234.64	2.59	4.65	2.4	19.995	0.000674	506640.8	4959475
VOLUME CGUG_14	233.82	2.59	4.65	2.4	19.995	0.000674	506634.2	4959470
VOLUME CGUG_15	232.96	2.59	4.65	2.4	19.995	0.000674	506628.1	4959464
VOLUME CGUG_16	233	2.59	4.65	2.4	19.995	0.000674	506631.3	4959457
VOLUME CGUG_17	233.11	2.59	4.65	2.4	19.995	0.000674	506635.1	4959450
VOLUME CGUG_18	233.17	2.59	4.65	2.4	19.995	0.000674	506638.4	4959444
VOLUME CGUG_19	233.33	2.59	4.65	2.4	19.995	0.000674	506643.6	4959437
VOLUME CGUG_20	233.48	2.59	4.65	2.4	19.995	0.000674	506647.8	4959430
VOLUME CGUG_21	233.81	2.59	4.65	2.4	19.995	0.000674	506653.5	4959424
VOLUME CGUG_22	234.09	2.59	4.65	2.4	19.995	0.000674	506658.7	4959419
VOLUME CGUG_23	234.36	2.59	4.65	2.4	19.995	0.000674	506663.4	4959412
VOLUME CGUG_24	234.76	2.59	4.65	2.4	19.995	0.000674	506669	4959405
VOLUME CGUG_25	235.01	2.59	4.65	2.4	19.995	0.000674	506673.7	4959399
VOLUME CGUG_26	235.24	2.59	4.65	2.4	19.995	0.000674	506678.9	4959392
VOLUME CGUG_27	235.4	2.59	4.65	2.4	19.995	0.000674	506684.1	4959385
VOLUME CGUG_28	235.43	2.59	4.65	2.4	19.995	0.000674	506689.3	4959379
VOLUME CGUG_29	235.47	2.59	4.65	2.4	19.995	0.000674	506694.9	4959373
VOLUME CGUG_30	235.4	2.59	4.65	2.4	19.995	0.000674	506699.6	4959367

VOLUME CGUG_31	235.27	2.59	4.65	2.4	19.995	0.000674	506704.8	4959360
VOLUME CGUG_32	235.17	2.59	4.65	2.4	19.995	0.000674	506709.1	4959355
VOLUME CGUG_33	235.03	2.59	4.65	2.4	19.995	0.000674	506714.7	4959348
VOLUME CGUG_34	234.83	2.59	4.65	2.4	19.995	0.000674	506719.4	4959341
VOLUME CGUG_35	234.77	2.59	4.65	2.4	19.995	0.000674	506724.6	4959335
VOLUME CGUG_36	234.83	2.59	4.65	2.4	19.995	0.000674	506729.3	4959329
VOLUME CGUG_37	234.95	2.59	4.65	2.4	19.995	0.000674	506734	4959322
VOLUME CGUG_38	235.18	2.59	4.65	2.4	19.995	0.000674	506739.7	4959317
VOLUME CGUG_39	235.39	2.59	4.65	2.4	19.995	0.000674	506745.5	4959312
VOLUME CGUG_40	235.46	2.59	4.65	2.4	19.995	0.000674	506751.7	4959306
VOLUME CGUG_41	235.49	2.59	4.65	2.4	19.995	0.000674	506758.4	4959301
VOLUME CGUG_42	235.54	2.59	4.65	2.4	19.995	0.000674	506766.4	4959297
VOLUME CGUG_43	235.74	2.59	4.65	2.4	19.995	0.000674	506774.8	4959296
VOLUME CGUG_44	235.81	2.59	4.65	2.4	19.995	0.000674	506782.8	4959293
VOLUME CGUG_45	234.64	2.59	4.65	2.4	19.995	0.000674	506790.4	4959284
VOLUME CGUG_46	233.71	2.59	4.65	2.4	19.995	0.000674	506789.9	4959277
VOLUME CGUG_47	232.63	2.59	4.65	2.4	19.995	0.000674	506789	4959269
VOLUME CGUG_48	231.43	2.59	4.65	2.4	19.995	0.000674	506788.1	4959262
VOLUME CGUG_49	229.92	2.59	4.65	2.4	19.995	0.000674	506787.7	4959254
VOLUME CGUG_50	228.23	2.59	4.65	2.4	19.995	0.000674	506785.9	4959246
VOLUME CGUG_51	225.46	2.59	4.65	2.4	19.995	0.000674	506784.1	4959238
VOLUME CGUG_52	221.98	2.59	4.65	2.4	19.995	0.000674	506782.4	4959231
VOLUME CGUG_53	218.68	2.59	4.65	2.4	19.995	0.000674	506780.6	4959222
VOLUME CGUG_54	216.49	2.59	4.65	2.4	19.995	0.000674	506778.4	4959215
VOLUME CGUG_55	214.89	2.59	4.65	2.4	19.995	0.000674	506774.8	4959207
VOLUME CGUG_56	213.79	2.59	4.65	2.4	19.995	0.000674	506771.2	4959200
VOLUME CGUG_57	212.95	2.59	4.65	2.4	19.995	0.000674	506768.1	4959193
VOLUME CGUG_58	211.94	2.59	4.65	2.4	19.995	0.000674	506765	4959186
VOLUME CGUG_59	211.05	2.59	4.65	2.4	19.995	0.000674	506760.6	4959180