



**AIR EMISSION PERMIT NO. 05300443- 004**  
**Total Facility Oper. Permit - Reissuance**

**IS ISSUED TO**

Minnesota Diversified Products Inc

**MINNESOTA DIVERSIFIED PRODUCTS INC**  
9091 County Road 50  
Rockford, Hennepin County, MN 55373

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

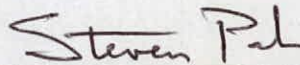
This permit reissuance supersedes Air Emission Permit No. 05300443-003 and authorizes the Permittee to operate and construct the stationary source at the address listed above unless otherwise noted in Table A. The Permittee must comply with all the conditions of the permit. Any changes or modifications to the stationary source must be performed in compliance with Minn. R. 7007.1150 to 7007.1500. Terms used in the permit are as defined in the state air pollution control rules unless the term is explicitly defined in the permit.

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

**Permit Type:** Federal; Pt 70/Limits to Avoid NSR

**Operating Permit Issue Date:** March 20 , 2012

**Expiration Date:** March 20, 2017 – All Title I Conditions do not expire.

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

for Paul W. Aasen  
Commissioner  
Minnesota Pollution Control Agency

**Permit Applications Table**

<b>Permit Type</b>	<b>Application Date</b>	<b>Permit Action</b>
Total Facility Operating Permit -Reissuance	June 29, 2011	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:**

Minnesota Diversified Products, Inc. (MDP) manufactures rigid polystyrene boardstock by both foam extrusion and the Expandable Polystyrene (EPS) bead process. The EPS process results in emissions of Volatile Organic Compounds (VOC) and combustion products from the boilers used to produce steam for the process. The extrusion process results in emissions of methyl formate and HFC-134a, which are used as blowing agents. MDP also fabricates pre-manufactured urethane, fabricates and repairs equipment in a machine shop, and laminates other products onto foam products using water-based adhesives. The facility also has a peaking electric generator.

This Part 70 Reissuance carries forward limits established in the original Part 70 permit that restrict VOCs emissions to less than the major source level under New Source Review (NSR). The facility is a major source for Hazardous Air Pollutant (HAP) emissions.

Emissions units 015 and 016 were not installed and the requirement authorizing installation and operation in the permit has been reduced to 180 days after permit issuance.

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

A-1 03/21/12

Facility Name: Minnesota Diversified Products Inc

Permit Number: 05300443 - 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
<b>SOURCE-SPECIFIC REQUIREMENTS</b>	hdr
Permit Appendices: This permit contains appendices as listed in the permit Table of Contents. The Permittee shall comply with all requirements contained in the appendices.	Minn. R. 7007.0800, subp. 2
This permit establishes limits on the facility to keep it a minor source for VOCs under New Source Review. The Permittee cannot make any change at the source that would make the source a major source under New Source Review until a permit amendment has been issued. This includes changes that might otherwise qualify as insignificant modifications and minor or moderate amendments.	Title I Condition: To avoid classification as major source and modification under 40 CFR Section 52.21 & Minn. R. 7007.3000
Equipment Labeling and Inventory: The Permittee shall permanently affix a unique number to each emissions unit for tracking purposes. The numbers shall correlate the unit to the appropriate EU and GP numbers used in this permit. The number shall be affixed by placard, stencil, or other similar means, and shall be maintained so that they are readable and visible at all times from a safe distance.  The Permittee shall maintain a written list of all emissions units on site. The list shall correlate the units to the numbers used in this permit (EU and GP) and shall include the data from Appendix III of this permit. The Permittee shall update the list to include any new, replaced, or modified equipment prior to making the change.	Minn. R. 7007.0800, subp. 2
<b>OPERATIONAL REQUIREMENTS</b>	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.	Minn. R. 7011.0020
Air Pollution Control Equipment: Operate all pollution control equipment whenever the corresponding process equipment and emission units are operated.	Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, subp. 16(J)
Operation and Maintenance Plan: Retain at the stationary source an operation and maintenance plan for all air pollution control equipment. At a minimum, the O & M plan shall identify all air pollution control equipment and control practices and shall include a preventative maintenance program for the equipment and practices, a description of (the minimum but not necessarily the only) corrective actions to be taken to restore the equipment and practices to proper operation to meet applicable permit conditions, a description of the employee training program for proper operation and maintenance of the control equipment and practices, and the records kept to demonstrate plan implementation.	Minn. R. 7007.0800, subps. 14 and 16(J)
Operation Changes: In any shutdown, breakdown, or deviation the Permittee shall immediately take all practical steps to modify operations to reduce the emission of any regulated air pollutant. The Commissioner may require feasible and practical modifications in the operation to reduce emissions of air pollutants. No emissions units that have an unreasonable shutdown or breakdown frequency of process or control equipment shall be permitted to operate.	Minn. R. 7019.1000, subp. 4
Fugitive Emissions: Do not cause or permit the handling, use, transporting, or storage of any material in a manner which may allow avoidable amounts of particulate matter to become airborne. Comply with all other requirements listed in Minn. R. 7011.0150.	Minn. R. 7011.0150
Noise: The Permittee shall comply with the noise standards set forth in Minn. R. 7030.0010 to 7030.0080 at all times during the operation of any emission units. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.	Minn. R. 7030.0010 - 7030.0080
Inspections: The Permittee shall comply with the inspection procedures and requirements as found in Minn. R. 7007.0800, subp. 9(A).	Minn. R. 7007.0800, subp. 9(A)
The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16.	Minn. R. 7007.0800, subp. 16

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-2** 03/21/12

Facility Name: Minnesota Diversified Products Inc

Permit Number: 05300443 - 004

<b>PERFORMANCE TESTING</b>	hdr
Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017 unless otherwise noted in Tables A, B, and/or C.	Minn. R. ch. 7017
<p>Performance Test Notifications and Submittals:</p> <p>Performance Tests are due as outlined in Table A of the permit. See Table B for additional testing requirements.</p> <p>Performance Test Notification (written): due 30 days before each Performance Test Performance Test Plan: due 30 days before each Performance Test Performance Test Pre-test Meeting: due 7 days before each Performance Test Performance Test Report: due 45 days after each Performance Test Performance Test Report - Microfiche Copy: due 105 days after each Performance Test</p> <p>The Notification, Test Plan, and Test Report may be submitted in an alternative format as allowed by Minn. R. 7017.2018.</p>	Minn. R. 7017.2018; Minn. R. 7017.2030, subps. 1-4, Minn. R. 7017.2035, subps. 1-2
<b>MONITORING REQUIREMENTS</b>	hdr
Monitoring Equipment Calibration: The Permittee shall calibrate all required monitoring equipment at least once every 12 months (any requirements applying to continuous emission monitors are listed separately in this permit).	Minn. R. 7007.0800, subp. 4(D)
Operation of Monitoring Equipment: Unless otherwise noted in Tables A, B, and/or C, monitoring a process or control equipment connected to that process is not necessary during periods when the process is shutdown, or during checks of the monitoring systems, such as calibration checks and zero and span adjustments. If monitoring records are required, they should reflect any such periods of process shutdown or checks of the monitoring system.	Minn. R. 7007.0800, subp. 4(D)
<b>RECORDKEEPING</b>	hdr
Recordkeeping: Retain all records at the stationary source, unless otherwise specified within this permit, 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) or changes contravening permit terms (as required by Minn. R. 7007.1350, subp. 2), including records of the emissions resulting from those changes.	Minn. R. 7007.0800, subp. 5(B)
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
<b>REPORTING/SUBMITTALS</b>	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

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

03/21/12

Facility Name: Minnesota Diversified Products Inc

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Breakdown Notifications: Notify the Commissioner within 24 hours of a breakdown of more than one hour duration of any control equipment or process equipment if the breakdown causes any increase in the emissions of any regulated air pollutant. The 24-hour time period starts when the breakdown was discovered or reasonably should have been discovered by the owner or operator. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 2.  At the time of notification or as soon as possible thereafter, the owner or operator shall inform the Commissioner of the cause of the breakdown and the estimated duration. The owner or operator shall notify the Commissioner when the breakdown is over.	Minn. R. 7019.1000, subp. 2
Notification of Deviations Endangering Human Health or the Environment: As soon as possible after discovery, notify the Commissioner or the state duty officer, either orally or by facsimile, of any deviation from permit conditions which could endanger human health or the environment.	Minn. R. 7019.1000, subp. 1
Notification of Deviations Endangering Human Health or the Environment Report: Within 2 working days of discovery, notify the Commissioner in writing of any deviation from permit conditions which could endanger human health or the environment. Include the following information in this written description: 1. the cause of the deviation; 2. the exact dates of the period of the deviation, if the deviation has been corrected; 3. whether or not the deviation has been corrected; 4. the anticipated time by which the deviation is expected to be corrected, if not yet corrected; and 5. steps taken or planned to reduce, eliminate, and prevent reoccurrence of the deviation.	Minn. R. 7019.1000, subp. 1
Application for Permit Amendment: If a permit amendment is needed, submit an application in accordance with the requirements of Minn. R. 7007.1150 through Minn. R. 7007.1500. Submittal dates vary, depending on the type of amendment needed.	Minn. R. 7007.1150 - 7007.1500
Extension Requests: The Permittee may apply for an Administrative Amendment to extend a deadline in a permit by no more than 120 days, provided the proposed deadline extension meets the requirements of Minn. R. 7007.1400, subp. 1(H). Performance testing deadlines from the General Provisions of 40 CFR pt. 60 and pt. 63 are examples of deadlines for which the MPCA does not have authority to grant extensions and therefore do not meet the requirements of Minn. R. 7007.1400, subp. 1(H).	Minn. R. 7007.1400, subp. 1(H)
Emission Inventory Report: due on or before April 1 of each calendar year following permit issuance, to be submitted on a form approved by the Commissioner.	Minn. R. 7019.3000 - 7019.3100
Emission Fees: due 60 days after receipt of an MPCA bill.	Minn. R. 7002.0005 - 7002.0095

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

03/21/12

Facility Name: Minnesota Diversified Products Inc

Permit Number: 05300443 - 004

**Subject Item: GP 001 Total Facility VOC Limits****Associated Items:** EU 001 Dingeldein Pre-Expander

EU 003 31" Block Mold

EU 005 Custom Shape Mold (205)

EU 006 Custom Shape Mold (206)

EU 007 48" Extruder

EU 008 24" Extruder

EU 011 Pre-Expander

EU 012 Shape Mold Press

EU 015 New Shape Molder 1 (projected)

EU 016 New Shape Molder 2 (projected)

What to do	Why to do it
LIMITS	hdr
<p>Volatile Organic Compounds: less than or equal to 39,150 lbs/month using 12-month Rolling Average 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 non-combustion VOC-emitting equipment at the Facility is subject to this limit, except for the following activities listed in Appendix I of this permit: blueprint copiers and photographic processes and a printing operation. VOC contents for each VOC-containing material shall be determined as described under the Material Content requirement in GP 001.</p>	Title I Condition: To avoid classification as major source and modification under 40 CFR Section 52.21 & Minn. R. 7007.3000
<p>VOC limit continued:</p> <p>If the Permittee replaces any existing VOC-emitting equipment, adds new VOC-emitting equipment, or modifies the existing equipment, such equipment is subject to this permit limit as well as all of the requirements of GP 001. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment, as applicable. For projects that replace any existing VOC-emitting equipment, add new VOC-emitting equipment, or modify existing equipment that do not emit or increase emissions of CO<sub>2</sub>e, the Permittee is not required to repeat VOC calculations described in Minn. R. 7007.1200, subp. 2A. A permit amendment will still be needed regardless of the emissions increase if the change will be subject to a new applicable requirement or requires revisions to the limits or monitoring and recordkeeping in the permit.</p>	Title I Condition: To avoid classification as major source and modification under 40 CFR Section 52.21 & Minn. R. 7007.3000
<p>VOC limit continued:</p> <p>The prior paragraph is void if the Minnesota Diversified Products, Inc. facility is a major stationary source under the Prevention of Significant Deterioration regulation (40 CFR 52.21).</p>	Title I Condition: To avoid classification as major source and modification under 40 CFR Section 52.21 & Minn. R. 7007.300
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. This applies separately to each emissions unit. None of these processes are expected to generate any particulate matter.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity . This applies separately to each emissions unit.	Minn. R. 7011.0715, subp. 1(B)
MONITORING	hdr
<p>Daily Recordkeeping.</p> <p>For VOC used in the EPS bead and extruded foam processes: On each day of operation, the Permittee shall maintain production records showing the amount of each VOC-containing material used. This shall be based on written usage logs and meter readings.</p> <p>For other VOC-containing materials: The Permittee shall calculate, maintain, and record monthly usage showing the quantity of each material used. This shall be based on either written usage logs or purchase/delivery records.</p>	Title I Condition: To avoid classification as major source and modification under 40 CFR Section 52.21 & Minn. R. 7007.3000; Minn. R. 7007.0800. subp. 4 and 5



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

03/21/12

Facility Name: Minnesota Diversified Products Inc

Permit Number: 05300443 - 004

<p>Monthly Recordkeeping -- VOC Emissions.</p> <p>By the 15th day of the month, the Permittee shall calculate and record the following:</p> <p>1) The total usage of VOC-containing materials for the previous calendar month using the daily and monthly usage records. This record shall also include the VOC and contents of each material as determined by the Material Content requirement of this permit.</p> <p>2) The VOC emissions, in pounds, for the previous month using the formula specified in this permit.</p> <p>3) The 12-month rolling average VOC emissions for the previous 12-month period by summing the monthly VOC emissions data for the previous 12 months and dividing by 12.</p>	Minn. R. 7007.0800, subp. 4 and 5
<p>Monthly Calculation -- VOC Emissions. The Permittee shall calculate the Monthly Emissions Rate of VOC (MER) using the following equation:</p> <p>MER (lbs/month) = (A1 x B1) + (A2 x B2) + (A3 + B3) ....</p> <p>where:</p> <p>A# = amount of each VOC-containing material used (e.g., EPS bead, adhesive, etc.), in pounds/month;</p> <p>B# = weight percent VOC in A#, as a fraction.</p>	Minn. R. 7007.0800, subp. 4 and 5
<p>Material Content of EPS Bead: The Permittee shall use the Certificate of Analysis (COA) provided by the supplier to determine the VOC content of each shipment. If a COA is not available, the Permittee shall use 7% for the VOC content. However, if in the preceeding 12 months, EPS bead with a content greater than 7% was used, then the Permittee shall assume that the VOC content is equivalent to the highest VOC content used in the preceeding 12 months.</p> <p>Other alternative methods approved by the MPCA may be used to determine the VOC contents. The Commissioner reserves the right to require the Permittee to determine the VOC contents of any material, according to EPA or ASTM reference methods. If an EPA or ASTM reference method is used for material content determination, the data obtained shall supersede the MSDS.</p>	Minn. R. 7007.0800, subp. 4 and 5
<p>Material Content of Other Materials: VOC contents in other materials shall be determined by the Material Safety Data Sheet (MSDS) provided by the supplier for each material used. If a material content range is given on the MSDS, the highest number in the range shall be used in all compliance calculations. Other alternative methods approved by the MPCA may be used to determine the VOC contents. The Commissioner reserves the right to require the Permittee to determine the VOC contents of any material, according to EPA or ASTM reference methods. If an EPA or ASTM reference method is used for material content determination, the data obtained shall supersede the MSDS.</p>	Minn. R. 7007.0800, subp. 4 and 5
<p>Maximum Contents of Materials: The Permittee assumed certain worst-case contents of materials when determining the short term potential to emit of units in GP001. These assumptions are listed in Appendix II of this permit. Changing to a material that has a higher content of any of the given pollutants is considered a change in method of operation that must be evaluated under Minn. R. 7007.1200, subp. 3 to determine if a permit amendment or notification is required under Minn. R. 7007.1150.</p>	Minn. R. 7005.0100, subp. 35a

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

03/21/12

Facility Name: Minnesota Diversified Products Inc

Permit Number: 05300443 - 004

**Subject Item:** GP 002 New Equipment**Associated Items:** EU 015 New Shape Molder 1 (projected)

EU 016 New Shape Molder 2 (projected)

What to do	Why to do it
REQUIREMENTS	hdr
Construction Authorization: The Permittee is authorized to install and operate EU015 and EU016, as defined by the emissions unit information in Appendix II of the permit. The units shall meet all the requirements of this permit (e.g. GP001).	Title I Condition: To avoid classification of changes as major modifications under 40 CFR Section 52.21 and Minn. R. 7007.3000
Start Of Construction: due 180 days after Permit Issuance. The construction authorization is effective until 180 days after issuance of permit no. 05300443-004 and applies to EU015 and EU016 individually.	Minn. R. 7007.0800, subp. 2

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-7** 03/21/12

Facility Name: Minnesota Diversified Products Inc

Permit Number: 05300443 - 004

**Subject Item:** EU 009 Boiler 1**Associated Items:** SV 008 Boiler 1 Vent (207)

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.4 lbs/million Btu heat input . The potential to emit based on equipment design and allowable fuels is 0.007 lb/MMBtu.	Minn. R. 7011.0515, subp. 1
Opacity: less than or equal to 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity.	Minn. R. 7011.0515, subp. 2
Fuel Type: Natural Gas or Propane only, by design.	Minn. R. 7005.0100, subp. 35a
Fuel Records: The Permittee shall keep records of fuel purchases for the Facility on a monthly basis.	Minn. R. 7007.0800, subp. 5

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

03/21/12

Facility Name: Minnesota Diversified Products Inc

Permit Number: 05300443 - 004

**Subject Item:** EU 010 Boiler 2**Associated Items:** SV 009 Boiler 2 Vent (208)

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.4 lbs/million Btu heat input . The potential to emit based on equipment design and allowable fuels is 0.007 lb/MMBtu.	Minn. R. 7011.0510, subp. 1
Opacity: less than or equal to 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity.	Minn. R. 7011.0510, subp. 2
Fuel Type: Natural Gas or Propane only, by design.	Minn. R. 7005.0100, subp. 35a
Fuel Records: The Permittee shall keep records of fuel purchases for the Facility on a monthly basis.	Minn. R. 7007.0800, subp. 5

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

03/21/12

Facility Name: Minnesota Diversified Products Inc

Permit Number: 05300443 - 004

**Subject Item:** EU 014 Hot Wire Cutting Tables**Associated Items:** SV 012 Hot Wire Cutters

What to do	Why to do it
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.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-10** 03/21/12

Facility Name: Minnesota Diversified Products Inc

Permit Number: 05300443 - 004

**Subject Item:** EU 017 Caterpillar 3412 Diesel Generator 750 KW; 1000 hp**Associated Items:** CE 001 Oxidation Catalyst

SV 015 Peaking Generator

What to do	Why to do it
EU 017 is a new compression ignition reciprocating internal combustion engine subject to 40 CFR pt. 63, subp. ZZZZ (referred to as "subp. ZZZZ" in this permit).  Some of the applicable general provision requirements from title 40 pt. 63, subp. A are included here for reference. The Permittee shall refer to Table 8 in subp. ZZZZ, for a complete list of applicable general requirements in subp. A of 40 CFR pt. 63.	hdr
LIMITS	hdr
Opacity: less than or equal to 20 percent 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
Carbon Monoxide: greater than or equal to 70 percent reduction on a 4-hour rolling average basis. This limit applies at all times except during periods of startup, shutdown, and malfunction.	40 CFR Sections 63.6600(b) and 63.6605(a); 40 CFR part 63, subp. ZZZZ Table 2a
PERFORMANCE TESTING REQUIREMENTS	hdr
Performance Test: due before end of each year starting 10/11/2011. The next subsequent performance test is due after 12 months after the initial performance test (10/11/2011). Subsequent annual testing shall be conducted to determine CO reduction according to the requirements of Tables 3 and 4 in subp. ZZZZ, and 40 CFR Section 63.6620.  If any annual test shows noncompliance, the Permittee shall resume semiannual testing.	40 CFR Sections 63.6615, 63.6620, and 63.6640(a); Minn. R. 7017.2020, subp. 1
Performance Test Notifications and Submittals:  Notification of Intent to Conduct Performance Test (written): due 60 days before each Performance Test as required by 40 CFR Sections 63.6645(e) and 63.7(b)(1) Performance Test Plan: due 30 days before each Performance Test (must also meet requirements of 40 CFR Section 63.7(c)) Performance Test Pre-Test Meeting: due 7 day before each Performance Test Performance Test Report: due 45 days after each Performance Test Performance Test Report - Microfiche Copy or CD: due 105 day after each Performance Test.  The Notification, Test Plan, and Test Report may be submitted in alternative format as allowed by Minn. R. 7017.2018.	40 CFR Sections 63.7(b)(1) and 63.6645(e); Minn. R. 7017.2030, subp. 1-4; Minn. R. 7017.2018 and Minn. R. 7017.2035, subps. 1&2
Performance Test - Change of Catalyst: If the Permittee changes the CE 001 catalyst, the Permittee shall reestablish the pressure drop operating value across the catalyst and conduct a performance test to demonstrate that the required CO reduction requirement is being met.	40 CFR Section 63.6640(b)
OPERATING REQUIREMENTS	hdr
Permitted Fuel: Distillate fuel oil with a sulfur content not to exceed 0.495 percent by weight.	Minn. R. 7007.0800, subp. 2
CE 001 Catalytic Oxidizer Operating Requirements:  1. Maintain the catalyst so that the pressure drop across the catalyst does not change by more than 2.0 inches of water column at 100 percent load, +/-10 percent, from the pressure drop that was measured during the initial performance test;  2. Maintain EU 017 exhaust temperature so that CE 001 inlet temperature is no less than 450 deg. F and no greater than 1350 deg. F, on a 4-hour rolling average.	40 CFR Section 63.6600(b); 40 CFR pt. 63, subp. ZZZZ, Table 2b
The Permittee shall operate and maintain EU 017 and CE 001 in a manner consistent with good air pollution control practices for minimizing emissions at all times including during startup, shutdown, and malfunction.	40 CFR Section 63.6605(b)
MONITORING REQUIREMENTS	hdr
Fuel Supplier Certification: The Permittee shall obtain and maintain a fuel supplier certification for each shipment of distillate fuel oil, certifying that the sulfur content does not exceed 0.495% by weight.	Minn. R. 7007.0800, subps. 4 & 5

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-11** 03/21/12

Facility Name: Minnesota Diversified Products Inc

Permit Number: 05300443 - 004

<p>Catalyst Temperature Monitoring: The Permittee shall install, operate, and maintain a continuous parameter monitoring system (CPMS) to measure catalyst inlet temperature, according to the requirements of 40 CFR Section 63.8.</p> <p>The Permittee shall continuously monitor catalyst inlet temperature (except during monitor malfunction, associated repairs, and required quality assurance and control activities) whenever EU 017 is operating.</p> <p>Data measured and recorded during malfunctions, associated repairs, and required quality assurance or control activities shall not be used in reporting of emission or operating levels.</p>	40 CFR Sections 63.8, 63.6625(b), 63.6635(b), and 63.6635(c)
<p>Pressure Drop Monitoring: The Permittee shall measure the catalyst pressure drop once each month and demonstrate the pressure drop is within the operating limitation established during the performance test.</p>	40 CFR Section 63.6640(a)
<p>Upon promulgation of a performance specification for the CPMS, the Permittee shall comply with the quality control provisions in 40 CFR Section 63.8(d) and shall conduct the required performance evaluation in 40 CFR Section 63.8(e), unless an alternative monitoring method has been approved under the provisions of 40 CFR Section 63.8(f).</p>	40 CFR Section 63.8(a)(2)
<b>CONTINUOUS COMPLIANCE REQUIREMENTS</b>	hdr
<p>The Permittee shall demonstrate continuous compliance with the requirements in Tables 2a and 2b of subp. ZZZZ, as follows:</p> <ol style="list-style-type: none"> <li>1. conduct performance tests every 12 months, to demonstrate that the CO reduction requirement is attained; following any test that demonstrates noncompliance the Permittee shall conduct semiannual performance tests until two consecutive performance tests show compliance, at which time the Permittee may resume annual testing.</li> <li>2. collect catalyst inlet temperature data according to 40 CFR Section 63.6625(b);</li> <li>3. reduce catalyst inlet temperature data to 4-hour rolling averages;</li> <li>4. maintain the 4-hour rolling average between 450 deg. F and 1350 deg. F;</li> <li>5. measure catalyst pressure drop once each month and demonstrate the pressure drop is within the operating limitation established during the performance test.</li> </ol>	40 CFR Section 63.6640(a)
<p>The Permittee shall report each event when the CO emissions reduction requirement, the catalyst inlet temperature, or the catalyst pressure drop did not meet the applicable limitation or requirement.</p>	40 CFR Section 63.6640(b)
<p>The Permittee shall develop a startup, shutdown, and malfunction plan (SSMP) no later than the date of initial startup of EU 017, and the SSMP shall meet the requirements of 40 CFR Section 63.6(e)(3).</p> <p>The Permittee shall operate in accordance with its SSMP during startup, shutdown, and malfunction. Deviations from the emission or operating limitations during startup, shutdown, or malfunction are not violations if the Permittee demonstrates that it was operating EU 017 in accordance with the SSMP. For new, reconstructed, and rebuilt stationary RICE, deviations from the emission or operating limitations during the first 200 hours of operation from engine startup (engine burn-in period) are not violations.</p>	40 CFR Sections 63.6(e)(3), 63.6640(c), and 63.6640(d)
<b>RECORDKEEPING REQUIREMENTS</b>	hdr
<p>The Permittee shall maintain the following records:</p> <ol style="list-style-type: none"> <li>1. A copy of each notification and report submitted to comply with subp. ZZZZ, including all documentation supporting any Initial Notification or Notification of Compliance Status submitted, according to the requirement in 40 CFR Section 63.10(b)(2)(xiv);</li> <li>2. The records in 40 CFR Section 63.6(e)(3)(iii) through (v) related to startup, shutdown, and malfunction;</li> <li>3. Records of performance tests and performance evaluations as required in 40 CFR Section 63.10(b)(2)(viii);</li> <li>4. Records described in 40 CFR Section 63.10(b)(2)(vi) through (xi); and</li> <li>5. Previous (i.e., superseded) versions of the performance evaluation plan as required in 40 CFR Section 63.8(d)(3).</li> </ol>	40 CFR Section 63.6655(a) and (b)
<p>The Permittee shall maintain records of performance tests, catalyst inlet temperature, and catalyst pressure drop.</p>	40 CFR Section 63.6655(d)
<b>NOTIFICATION AND REPORTING REQUIREMENTS</b>	hdr

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

03/21/12

Facility Name: Minnesota Diversified Products Inc

Permit Number: 05300443 - 004

<p>40 CFR pt. 63, subp. A Notifications: The Permittee shall submit applicable notifications described in 40 CFR pt. 63, subp. A. Some of these notifications are listed individually in other locations in this permit. The remaining applicable notifications (that have not yet been completed) are indicated below:</p> <ol style="list-style-type: none"> <li>1. 63.9(c) compliance extension request, if applicable</li> <li>2. 63.9(d) notification that the source is subject to special compliance requirements, if applicable</li> <li>3. 63.9(g)(1) CMS performance evaluation notification, once applicable</li> </ol> <p>The Permittee shall also report each instance when the requirements in subp. ZZZZ Table 8 (applicability of Part 63 general provisions to subp. ZZZZ) were not met.</p>	40 CFR Sections 63.6640(e) and 63.6645(a)
<p>Compliance Report Content - No Deviations: The report shall contain the following information:</p> <ol style="list-style-type: none"> <li>1. Company name and address;</li> <li>2. Responsible official's statement certifying report content accuracy with official's name, title, and signature;</li> <li>3. Report date and beginning and ending dates of reporting period;</li> <li>4. All information in 40 CFR Section 63.10(d)(5)(i) for startup, shutdown, or malfunction for the reporting period (periodic startup, shutdown, and malfunction report);</li> <li>5. A statement that no deviations occurred, if there were no deviations during the reporting period;</li> <li>6. A statement that there were no periods that the CMS was out-of-control, if there were no out-of-control periods during the reporting period.</li> </ol>	40 CFR Section 63.6650(c)(1) through (6)
<p>Compliance Report Content - Deviations: For each deviation from an emission or operating limitation, the Permittee shall include information from 40 CFR Section 63.6650(c)(1) through (4) and the following:</p> <ol style="list-style-type: none"> <li>1. Date and start/stop time of each malfunction;</li> <li>2. Date, time, and duration that each CMS was inoperative except for zero (low level) and high level checks;</li> <li>3. Date, time, and duration that each CMS was out-of-control, including information in 40 CFR Section 63.8(c)(8);</li> <li>4. Date and time each deviation started and stopped, and whether each deviation occurred during a malfunction or other during another period;</li> <li>5. A summary of the total duration of the deviation during the reporting period, and the total duration as a percent of the total source operating time during that reporting period;</li> </ol> <p>continued</p>	40 CFR Section 63.6650(e)(1) though (5)
<ol style="list-style-type: none"> <li>6. A breakdown of the total duration of the deviations during the reporting period into those that are due to control equipment problems, process problems, other known causes, and other unknown causes;</li> <li>7. A summary of the total duration of CMS downtime during the reporting period, and the total duration of CMS downtime as a percent of the total operating time of the stationary RICE at which the CMS downtime occurred during that reporting period;</li> <li>8. An identification of each parameter and pollutant that was monitored at the stationary RICE;</li> <li>9. A brief description of the stationary RICE;</li> <li>10. A brief description of the CMS;</li> <li>11. The date of the latest CMS certification or audit;</li> <li>12. A description of any changes in CMS, processes, or controls since the last reporting period.</li> </ol>	40 CFR Section 63.6650(e)(6) through (12)



## TABLE B: SUBMITTALS

B-1 03/21/12

Facility Name: Minnesota Diversified Products Inc  
Permit Number: 05300443 - 004

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 to be submitted to the U.S. EPA regional office to:

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

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

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

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

Send any application for a permit or permit amendment to:

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

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

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

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

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

**TABLE B: ONE TIME SUBMITTALS OR NOTIFICATIONS****B-2** 03/21/12

Facility Name: Minnesota Diversified Products Inc

Permit Number: 05300443 - 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
Notification of the Actual Date of Initial Startup	due 15 days after Initial Startup of EU015 and EU016. This applies separately to each emissions unit.	GP002
Notification of the Date Construction Began	due 30 days after Start Of Construction of EU015 and EU016. This applies separately to each emissions unit.	GP002
Report	due 2 days after Startup, shutdown, or malfunction when actions taken by the Permittee during the startup, shutdown, or malfunction are not consistent with the SSMP. The immediate report shall be made by telephone or facsimile, and a written report shall be submitted within 7 days after the end of the event. Days are determined on a business day basis.	EU017

**TABLE B: RECURRENT SUBMITTALS****B-3** 03/21/12

Facility Name: Minnesota Diversified Products Inc

Permit Number: 05300443 - 004

What to send	When to send	Portion of Facility Affected
Report	due 31 days after end of each half-year starting 08/14/2004. This is the Compliance Report required by Section 63.6650(b). For details regarding the report content, refer to the "Compliance Report Content - No Deviations" and "Compliance Report Content - Deviations" requirements for EU 017 in Table A.	EU017
Semiannual Deviations Report	due 30 days after end of each calendar half-year following Permit Issuance. The first semiannual report submitted by the Permittee shall cover the calendar half-year in which the permit is issued. The first report of each calendar year covers January 1 - June 30. The second report of each calendar year covers July 1 - December 31. If no deviations have occurred, the Permittee shall submit the report stating no deviations.	Total Facility
Annual Report	due 31 days after end of each calendar year following Permit Issuance. The Permittee shall submit an annual report by January 31 that describes the changes made at the facility during the previous calendar year using the latest MPCA application forms. The report shall document the VOC 12-month rolling average calculations for the previous calendar year. The report shall be submitted with the annual Compliance Certification listed in Table B. As part of the Annual Report, the Permittee shall verify and certify that the facility has maintained minor source status for New Source Review.	Total Facility
Compliance Certification	due 31 days after end of each calendar year following Permit Issuance (for the previous calendar year). The Permittee shall submit this on a form approved by the Commissioner, both to the Commissioner and to the US EPA regional office in Chicago. This report covers all deviations experienced during the calendar year.	Total Facility

## APPENDIX I

Facility Name: Minnesota Diversified Products Inc

Permit Number: 05300443-004

### Insignificant Activities and General Applicable Requirements

The table below lists the insignificant activities that are currently at the Facility and their associated general applicable requirements.

Minn. R. 7007.1300, subpart	Rule Description of the Activity	General Applicable Requirement(s)
3(A)	Fuel use: space heaters fueled by, kerosene, natural gas, or propane if combined total capacity is less than 420,000 Btu/hr.  <i>MDP has 22 space heaters for a combined total of 300,000 Btu/hr.</i>	Minn. R. 7011.0510 or Minn. R. 7011.0515
3(B)	Furnaces, boilers, and incinerators:	
3(B)(2)	Fuel burning equipment with a capacity less than 420,000 Btu/hour, but only if the total combined capacity of all fuel burning equipment at the stationary source with a capacity less than 420,000 Btu/hour is less than or equal to 1,400,000 Btu/hour.  <i>MDP has a furnace for building heat with a capacity of 300,000 Btu/hr.</i>	Minn. R. 7011.0510 or Minn. R. 7011.0515
3(H)	Miscellaneous:	
3(H)(3)	Brazing, soldering or welding equipment;	Minn. R. 7011.0515
3(H)(4)	Blueprint copiers and photographic processes;	Minn. R. 7011.0110
3(I)	Individual emissions units at a stationary source, each of which have a potential to emit the following pollutants in amounts less than:  1. 4,000 lbs/year of carbon monoxide;  2. 2,000 lbs/year each of nitrogen oxide, sulfur dioxide, particulate matter, particulate matter less than ten microns, volatile organic compounds (including hazardous air pollutant-containing VOC), and ozone; and  3. 1,000 tons/year of CO <sub>2</sub> e  <i>MDP has a small printing operation and EPS cutting.</i>  <i>MDP has a make-up air unit with a capacity of 1.46 MMBtu/hr.</i>	Minn. R. 7011.0715  Minn. R. 7011.0510 or Minn. R. 7011.0515

## APPENDIX II

Facility Name: Minnesota Diversified Products Inc

Permit Number: 05300443-004

### Equipment Capacity and Maximum Contents of Materials

The maximum capacity of each process unit is given in the table below as well as the maximum VOC content of the raw material.

Emission Unit (EU)	Maximum Capacity	Maximum VOC Content
001	2500 lb foam/hr	7.0 wt %
003	2585 lb foam/hr	7.0 wt %
005	93 lb foam/hr	7.0 wt %
006	93 lb foam/hr	7.0 wt %
007	550 lb foam/hr	≤ 350 ppm
008	1543 lb foam/hr	≤ 350 ppm
011	1990 lb foam/hr	7.0 wt %
012	106 lb bead/hr	7.0 wt %
015	120 lb foam/hr	7.0 wt %
016	120 lb foam/hr	7.0 wt %

### **APPENDIX III**

Facility Name: Minnesota Diversified Products Inc

Permit Number: 05300443-004

### **Emission Unit Description from Delta**

*(paper copy only)*



## FACILITY DESCRIPTION: GROUPS (GP)

Show: Active and Pending Records

Action: PER 004

AQD Facility ID: 05300443

Facility Name: Minnesota Diversified Products Inc

	ID No.	Group Status	Added By (Action)	Retired By (Action)	Include in EI	Operator ID for Item	Group Description	Group Items
1	GP 001	Active	PER 003		<input type="checkbox"/>		Total Facility VOC Limits	EU 001, EU 003, EU 005, EU 006, EU 007, EU 008, EU 011, EU 012, EU 015, EU 016
2	GP 001	Active	PER 004		<input type="checkbox"/>		Total Facility VOC Limits	EU 001, EU 003, EU 005, EU 006, EU 007, EU 008, EU 011, EU 012, EU 015, EU 016
3	GP 002	Active	PER 001		<input type="checkbox"/>		New Equipment	EU 011, EU 015, EU 016
4	GP 002	Active	PER 004		<input type="checkbox"/>		New Equipment	EU 015, EU 016
5	GP 003	Retired	PER 003		<input type="checkbox"/>		VOC Units Other Than Extrusion	EU 001, EU 002, EU 005, EU 006, EU 011, EU 012, EU 015, EU 016



## FACILITY DESCRIPTION: STACK/VENTS (SV)

Show: Active and Pending Records  
Action: PER 004  
AQD Facility ID: 05300443  
Facility Name: Minnesota Diversified Products Inc

	ID No.	Stack/ Vent Status	Added By (Action)	Retired By (Action)	Operator ID for Item	Operators Description	Height of Opening From Ground (feet)	Inside Dimensions		Design Flow Rate at Top (ACFM)	Exit Gas Temperature at Top (°F)	Flow Rate/ Temperature Information Source	Discharge Direction
								Diameter or Length (feet)	Width (feet)				
1	SV 001	Active	PER 001			Pre-Expander (201)	20	0.83		3000	150	Estimate	Up, No Cap
2	SV 002	Active	PER 001			25" Block Mold (202)	25	0.83		1000	150	Estimate	Up, No Cap
3	SV 003	Removec	PER 003			31" Block Mold (203)	25	0.83		1000	150	Estimate	Up, No Cap
4	SV 004	Removec	PER 003			Tri-904 Pre-Expander/New Pre-Expander	13	2.5		3000	150	Estimate	Up, No Cap
5	SV 005	Active	PER 001			Custom Shape Mold (205)	25	0.83		1000	150	Estimate	Up, No Cap
6	SV 006	Active	PER 001			Custom Shape Mold (206)	25	0.83		1000	150	Estimate	Up, No Cap
7	SV 007	Active	PER 001			Extruders (801) (Gen Vent)	1	2.0		2000	70	Estimate	Horizontal
8	SV 008	Active	PER 001			Boiler 1 Vent (207)	23	1.17		1900	300	Estimate	Up, With Cap
9	SV 009	Active	PER 001			Boiler 2 Vent (208)	23.0	1.17		1690	300	Estimate	Up, With Cap
10	SV 010	Active	PER 001			Proposed Shape Mold Press	25	0.83		1000	150	Estimate	Horizontal
11	SV 011	Removec	PER 003			Laminator (601)	13	1.5		3000	70	Estimate	Horizontal
12	SV 012	Active	PER 001			Hot Wire Cutters	25	1.5		10000	70	Estimate	Horizontal
13	SV 013	Active	PER 001			Projected Shape Molder (new)							
14	SV 014	Active	PER 001			Projected Shape Molder (new)							
15	SV 015	Active	PER 002			Peaking Generator	22.5	0.83		6432	957	Manufacturer	Up, No Cap





## FACILITY DESCRIPTION: CONTROL EQUIPMENT (CE)

Show: Active and Pending Records

Action: PER 004

AQD Facility ID: 05300443

Facility Name: Minnesota Diversified Products Inc

	ID No.	Control Equip. Status	Added By (Action)	Retired By (Action)	Operator ID for Item	Control Equip. Type	Control Equipment Description	Manufacturer	Model	Pollutants Controlled	Capture Efficiency (%)	Destruction/Collection Efficiency (%)	Afterburner Combustion Parameters
1	CE 001	Active	PER 002			099	Oxidation Catalyst	Caterpillar		CO	100	70	957F; 2.5 in wc
2	CE 001	Active	PER 004			099	Oxidation Catalyst	Caterpillar	10-24-10-L1	CO	100	70	957F; 2.5 in wc



## FACILITY DESCRIPTION: EMISSION UNIT (EU)

Show: Active and Pending Records  
Action: PER 004  
AQD Facility ID: 05300443  
Facility Name: Minnesota Diversified Products Inc

	ID No.	Emission Unit Status	Added By (Action)	Retired By (Action)	Insignificant Activity	Operator ID for Item	Stack/Vent ID No(s).	Control Equip. ID No(s).	Operator Description	Manufacturer	Model Number	SIC	Max. Design Capacity	Maximum Design Capacity			Max Fuel Input (mil Btu)
														Materials	Units n	Units d	
1	EU 001	Active	PER 001		<input type="checkbox"/>		SV 001 (M)		Dingeldein Pre-Expander	Dingeldein	VA-K2000	3086	2500		Lb	Hr	
2	EU 001	Active	PER 004		<input type="checkbox"/>		SV 001 (M)		Dingeldein Pre-Expander	Dingeldein	VA-K2000	3086	2500	Foam	Lb	Hr	
3	EU 002	Removed	PER 003		<input type="checkbox"/>				25" Block Mold	Wieser	SF18-4-25 D111A	3086	1340		Lb	Hr	
4	EU 003	Active	PER 001		<input type="checkbox"/>		SV 003 (M)		31" Block Mold	Wieser	SF 5 5-1 2-0 7VO	3086	2585		Lb	Hr	
5	EU 003	Active	PER 004		<input type="checkbox"/>		SV 003 (M)		31" Block Mold	Wieser	SF 5 5-1 2-0 7VO	3086	2585	Foam	Lb	Hr	
6	EU 004	Removed	PER 003		<input type="checkbox"/>				Tri-904 Pre-Expander (to be removed)	Tri-904	904	3086	700		Lb	Hr	
7	EU 005	Active	PER 003		<input type="checkbox"/>				Custom Shape Mold (205)	Kurtz	K813	3086	93		Lb	Hr	
8	EU 005	Active	PER 004		<input type="checkbox"/>		SV 005 (M)		Custom Shape Mold (205)	Kurtz	K813	3086	93	Foam	Lb	Hr	
9	EU 006	Active	PER 001		<input type="checkbox"/>		SV 006 (M)		Custom Shape Mold (206)	Kurtz	K813	3086	93		Lb	Hr	
10	EU 006	Active	PER 004		<input type="checkbox"/>		SV 006 (M)		Custom Shape Mold (206)	Kurtz	K813	3086	93	Foam	Lb	Hr	
11	EU 007	Active	PER 001		<input type="checkbox"/>		SV 007 (M)		48" Extruder	Gloucester Engineering	29195	3086	1543	Foam	Lb	Hr	
12	EU 008	Active	PER 001		<input type="checkbox"/>		SV 007 (M)		24" Extruder	LMP Engineering	RC41/EP	3086	550	Foam	Lb	Hr	
13	EU 009	Active	PER 001		<input type="checkbox"/>		SV 008 (M)		Boiler 1	York-Shipley	FA 200	3086	7.53	Heat	Mmbtu	Hr	7.53
14	EU 010	Active	PER 001		<input type="checkbox"/>		SV 009 (M)		Boiler 2	York-Shipley	200-4G	3086	6.70	Heat	Mmbtu	Hr	6.70
15	EU 011	Active	PER 001		<input type="checkbox"/>		SV 004 (M)		Pre-Expander (new)	Hirsch Maschinenbau	Vacutrans Preex 6000	3086	1990		Lb	Hr	
16	EU 011	Active	PER 004		<input type="checkbox"/>		SV 004 (M)		Pre-Expander	Hirsch Maschinenbau	Vacutrans Preex 6000	3086	1990	Foam	Lb	Hr	
17	EU 012	Active	PER 001		<input type="checkbox"/>		SV 010 (M)		Shape Mold Press (Proposed)	Hirsch Maschinenbau	Vacutrans HS 1300	3086	106		Lb	Hr	
18	EU 012	Active	PER 004		<input type="checkbox"/>		SV 010 (M)		Shape Mold Press	Hirsch Maschinenbau	Vacutrans HS 1300	3086	106	Foam	Lb	Hr	
19	EU 013	Removed	PER 003		<input type="checkbox"/>		SV 011 (M)		24" Laminator	Black Bros	171509	3086	110		Ft2	Hr	
20	EU 014	Active	PER 001		<input type="checkbox"/>				Hot Wire Cutting Tables	Misc	Misc	3086	2500		Lb	Hr	
21	EU 014	Active	PER 004		<input type="checkbox"/>		SV 012 (M)		Hot Wire Cutting Tables	Misc	Misc	3086	2500	Foam	Lb	Hr	
22	EU 015	Active	PER 001		<input type="checkbox"/>		SV 013 (M)		New Shape Molder 1 (projected)	TBD	TBD	3086	120		Lb	Hr	
23	EU 015	Active	PER 004		<input type="checkbox"/>				New Shape Molder 1 (projected)	TBD	TBD	3086	120	Foam	Lb	Hr	
24	EU 016	Active	PER 001		<input type="checkbox"/>		SV 014 (M)		New Shape Molder 2 (projected)	TBD	TBD	3086	120		Lb	Hr	
25	EU 016	Active	PER 004		<input type="checkbox"/>				New Shape Molder 2 (projected)	TBD	TBD	3086	120	Foam	Lb	Hr	

**FACILITY DESCRIPTION: EMISSION UNIT (EU)**

	ID No.	Emission Unit Status	Added By (Action)	Commence Const. Date	Initial Startup Date	Removal Date	Firing Method	Pct. Fuel/ Space Heat	Bottleneck	Elevator Type
1	EU 001	Active	PER 001	12/31/1985	12/31/1985					
2	EU 001	Active	PER 004	12/31/1985	12/31/1985					
3	EU 002	Removed	PER 003	12/31/1987	12/31/1987	12/31/2005				
4	EU 003	Active	PER 001	12/31/1988	12/31/1988					
5	EU 003	Active	PER 004	12/31/1988	12/31/1988					
6	EU 004	Removed	PER 003	12/31/1990	12/31/1990	12/31/2002				
7	EU 005	Active	PER 003	12/31/1990	12/31/1990					
8	EU 005	Active	PER 004	12/31/1990	12/31/1990					
9	EU 006	Active	PER 001	12/31/1990	12/31/1990					
10	EU 006	Active	PER 004	12/31/1990	12/31/1990					
11	EU 007	Active	PER 001	12/31/1998	12/31/1998					
12	EU 008	Active	PER 001	12/31/1983	12/31/1983					
13	EU 009	Active	PER 001	12/31/1978	12/31/1978					
14	EU 010	Active	PER 001	12/31/1973	12/31/1973					
15	EU 011	Active	PER 001	08/01/2001	08/02/2001					
16	EU 011	Active	PER 004	08/01/2001	08/02/2001					
17	EU 012	Active	PER 001	06/01/2002	06/01/2002					
18	EU 012	Active	PER 004	06/01/2002	06/01/2002					
19	EU 013	Removed	PER 003	12/31/1990	12/31/1990	12/31/2005				
20	EU 014	Active	PER 001	12/31/1985	12/31/1985					
21	EU 014	Active	PER 004	12/31/1985	12/31/1985					
22	EU 015	Active	PER 001							
23	EU 015	Active	PER 004							
24	EU 016	Active	PER 001							
25	EU 016	Active	PER 004							



## FACILITY DESCRIPTION: EMISSION UNIT (EU)

Show: Active and Pending Records

Action: PER 004

AQD Facility ID: 05300443

Facility Name: Minnesota Diversified Products Inc

	ID No.	Emission Unit Status	Added By (Action)	Retired By (Action)	Insignificant Activity	Operator ID for Item	Stack/Vent ID No(s).	Control Equip. ID No(s).	Operator Description	Manufacturer	Model Number	SIC	Max. Design Capacity	Maximum Design Capacity			Max Fuel Input (mil Btu)
														Materials	Units n	Units d	
26	EU 017	Active	PER 002		<input type="checkbox"/>		SV 015 (M)	CE 001	Caterpillar 3412 Diesel Generator 750 KW; 1000 hp	Caterpillar	3412	3086	1000	Energy	Hp		7.47

**FACILITY DESCRIPTION: EMISSION UNIT (EU)**

	ID No.	Emission Unit Status	Added By (Action)	Commence Const. Date	Initial Startup Date	Removal Date	Firing Method	Pct. Fuel/ Space Heat	Bottleneck	Elevator Type
26	EU 017	Active	PER 002	08/01/2004	01/01/2005					

**TECHNICAL SUPPORT DOCUMENT**  
**For**  
**AIR EMISSION PERMIT NO. 05300443-004**

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

**1. General Information**

**1.1 Applicant and Stationary Source Location:**

**Table 1. Applicant and Source Address**

<b>Applicant/Address</b>	<b>Stationary Source/Address (SIC Code: 3086)</b>
Minnesota Diversified Products, Inc. 9091 County Road 50 Rockford Hennepin County	Minnesota Diversified Products, Inc. 9091 County Road 50 Rockford Hennepin County
Contact: Steve Slavik Phone: 763-477-5854	

**1.2 Facility Description**

Minnesota Diversified Products, Inc. (MDP) manufactures rigid polystyrene board stock by both foam extrusion and the Expandable Polystyrene (EPS) bead process. The EPS process results in emissions of VOCs and combustion products from the boilers used to produce steam for the process. The extrusion process results in emissions of methyl formate and HFC-134a, which are used as blowing agents. MDP also fabricates pre-manufactured urethane, fabricates and repairs equipment in a machine shop, and laminates other products onto foam products using water-based adhesives. The Facility also has a peaking electric generator as well as several smaller sources that qualify as insignificant activities (IAs) under Minn. R. 7007.1300, subp. 3. These are described in Section 3.3 of this TSD.

This Part 70 Reissuance carries forward limits established in the original Part 70 permit that restrict VOC emissions to less than the major source level under NSR.

**1.3 Description of any Changes Allowed with this Permit Issuance**

The Facility has changed from using methyl chloride, HCFC-142b, and HCFC-22 as its blowing agents to using Ecomate (97.5% methyl formate, 2.5% methanol) and HFC-134a. This change reduces the Facility's HAP emissions.

The Facility is required to report to the EPA's Toxic Release Program, but is no longer subject to the Pollution Prevention Planning and Progress Reporting requirements due to the change in blowing agents.

Construction of emissions units 015 and 016 was originally authorized permit action 001 (3/4/2002) but have not been installed as of this permit reissuance. As a result, the requirement authorizing installation and operation in the permit has been reduced to 180 days after permit reissuance.

#### 1.4 Description of All Amendments Issued Since the Issuance of the Last Total Facility Permit

Permit Number and Issuance Date	Action Authorized
None	None

#### 1.5 Facility Emissions:

**Table 2. Total Facility Potential to Emit Summary**

	PM tpy	PM <sub>10</sub> tpy	PM <sub>2.5</sub> tpy	SO <sub>2</sub> tpy	NO <sub>x</sub> tpy	CO tpy	CO <sub>2</sub> e tpy	VOC tpy	Singl e HAP tpy	All HAPs tpy
Total Facility Limited Potential Emissions	34.5 2	34.1 1	34.0 6	17.5 6	85.7 3	13.5 1	14083 1	238. 1	6.25	9.62
Total Facility Actual Emissions (2009)	0.03	0.03	ND	0.00	0.33	0.28	*	15.3 2	*	

\*Not reported in MN emission inventory.

**Table 3. Facility Classification**

Classification	Major/Affected Source	Synthetic Minor/Area	Minor/Area
PSD	CO <sub>2</sub> e	VOC	
Part 70 Permit Program	VOC, CO <sub>2</sub> e		PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> , NO <sub>x</sub> , CO, HAP
Part 63 NESHAP			X

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

### New Source Review

While the existing Facility has a PTE of 14,126 tpy of greenhouse gases and a PTE of 140,831 tpy of CO<sub>2</sub>e, there are no proposed increases in CO<sub>2</sub>e due to this permit action. Therefore, GHGs are not subject to regulation under NSR for this permit action ("subject to regulation" is defined in 40 CFR § 52.21(b)(49)). In addition, the existing Facility is subject to limits such that all other NSR regulated air pollutants are less than the major source thresholds for NSR (40 CFR § 52.21(b)(1)). Therefore, as defined by the federal rules, the Facility is not considered an existing major source for NSR.

However, because the Facility has a PTE of 14,126 tpy of greenhouse gases and a PTE of 140,831 tpy of CO<sub>2</sub>e, any change which increases greenhouse gases by 75,000 tpy or more per 40 CFR § 52.21(b)(49) is subject to significant increases in emissions listed in 40 CFR § 52.21(b)(23) and not major source thresholds. The flexibility in operations allowed in previous permits has been modified and the Facility shall evaluate any change or modification to existing processes, operations and emission units or construction, installation and operation of new emission units to see if an amendment is required.

#### Part 70 Permit Program

The Facility is a major source under the Part 70 permit program. This status is not being changed with this permit action.

#### New Source Performance Standards (NSPS)

There are no New Source Performance Standards applicable to the operations at this Facility.

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

Previously, the Facility is a major source under NESHAP. 40 CFR pt. 63, subp. ZZZZ applies to the electric generator (EU 017).

The NESHAP for boilers at area sources (40 CFR pt. 63 subp. JJJJJ) was promulgated by EPA on March 21, 2011 but does not apply to natural gas or propane fired boilers.

#### Compliance Assurance Monitoring (CAM)

The electric generating unit has control equipment that is used to meet the NESHAP standards; however, the potential emissions from the unit are not greater than the major source level (i.e., 100 tpy of CO). In addition, CAM does not apply to NESHAPs promulgated after November 15, 1990, so CAM does not apply to this unit for the NESHAP. No other units at the Facility currently have control equipment that is used to meet an applicable limit, so CAM does not apply.

#### Environmental Review & AERA

An Environmental Assessment Worksheet (EAW,) is not required. The Facility is not required to perform an Air Emissions Risk Analysis (AERA).

#### Minnesota State Rules

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

- Minn. R. 7011.0510 Standards of Performance for Existing Indirect Heating Equipment
- Minn. R. 7011.0515 Standards of Performance for New Indirect Heating Equipment
- Minn. R. 7011.0715 Standards of Performance for Post 1969 Industrial Process Equipment
- Minn. R. 7011.2300 Standards of Performance for Stationary Internal Combustion Engines



**Table 4. Regulatory Overview of Facility**

Level*	Applicable Regulations	Comments:
GP 001 (Total Facility VOC Limits)	40 CFR § 52.21  Minn. R. 7011.0715	Prevention of Significant Deterioration (PSD). Limits taken to avoid major source and modification classification under PSD for all noncombustion emissions of VOC. It is a rolling limit due to substantial and unpredictable variations in operation.  All emissions from significant non-combustion units are tracked under the Cap.  Standards of Performance for Post 1969 Industrial Process Equipment. This applies to all units in GP 001, individually. The majority of these units are not expected to generate particulate matter.
EU 009	Minn. R. 7011.0510	Minnesota Standard of Performance for New Indirect Heating Units. Fuel limited to natural gas and propane.  The permit contains limits based on: <ul style="list-style-type: none"> <li>allowable fuels;</li> <li>the unit was constructed after 1977;</li> <li>it is located inside the Minneapolis/St. Paul Air Quality Control Region; and</li> <li>the unit and the site have <math>\leq 250</math> MMBtu/hr capacity.</li> </ul>
EU 010	Minn. R. 7011.0510	Minnesota Standard of Performance for Existing Indirect Heating Units. Fuel limited to natural gas and propane.  The permit contains limits based on: <ul style="list-style-type: none"> <li>allowable fuels;</li> <li>the unit was constructed before 1977;</li> <li>it is located inside the Minneapolis/St. Paul Air Quality Control Region; and</li> <li>the unit and the site have <math>\leq 250</math> MMBtu/hr capacity.</li> </ul>
EU 014	Minn. R. 7011.0715	Standards of Performance for Post 1969 Industrial Process Equipment.
EU 017	40 CFR pt. 63, subp. ZZZZ	National Emissions Standards for Hazardous Air Pollutants from Reciprocating Internal Combustion Engines (RICE). The unit is considered new under the standard and is a compression ignition (CI) engine. Completed requirements have been removed. In addition, the permit language was clarified to state that specific parts of 40 CFR § 63.8 do not apply until EPA promulgates a performance standard for the continuous monitoring system (inlet temp monitor). This is one of the issues addressed in EPA's September 30, 2005, Questions and Answers document on the ttn (question #25).

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

### **3. Technical Information**

The MSDS for the raw expandable polystyrene pellets used in the pre-expanders (EU001 and EU011) and in the block molds (EU003, EU005, EU006, EU012, EU015 and EU016) was reviewed. Based on this document, no free styrene is emitted by these emissions units.

The Permittee has provided MSDS showing that the raw expandable polystyrene pellets used in the pre-expanders (EU001 and EU011) and the block molds (EU003, EU005, EU006, EU012, EU015, and EU016) do not contain free styrene. The PTE calculations have been updated accordingly.

This permit modifies GP 002 because EU 011 has been installed and incorporated into GP 001 and EU 015 and EU 016 have not yet been installed. Authorization for the installation of EU 015 and EU 016 has been reduced to 180 days after reissuance of this permit.

This permit includes PTE calculations for greenhouse gases and CO<sub>2</sub>e as a result of regulations promulgated by the EPA and subsequently adopted by the State. The Facility uses HFC-134a as one of its blowing agents in the polystyrene extrusion process. HFC-134a has a global warming potential of 1300 relative to CO<sub>2</sub>.

The Permittee has requested that the requirement to keep fuel purchase records for the boilers be removed from the permit. That request has been denied because fuel purchase records are needed in order to show compliance with Minn. R. 7011.0510, subp. 1.

#### **3.1 Calculations of Potential to Emit**

Attachment 1 to this TSD contains a summary of the PTE of the Facility as well as detailed spreadsheets and supporting information prepared by the MPCA. Emissions factors for PTE calculations were taken from MSDS provided by the Facility; the 2006 IPCC report, Chapter 7, Table 7.6; AP-42 Section 1.4; AP-42 Section 1.5; AP-42 Section 3.4; and 40 CFR Section 98.

#### **EPS Bead Processes**

These operations consist of the pre-expanders, molders, and storage. The VOC emissions from the polystyrene bead processes are assumed to be 100% with the majority of VOC lost during pre-expansion (43%) and molding (42%) per EPA 450/3-90-020. The remaining 15% is lost during final product storage and after the product leaves the Facility. Since it is unknown how long it takes for the remaining 15% to evaporate, it is assumed that all VOC is emitted at the Facility.

#### **Extrusion**

One of the blowing agents, HFC-134a, used in the extrusion process has a global warming potential. The emissions factor for HFC-134a is 25%, which is based on documentation from the IPCC (2006)(see Attachment 2). A mass balance is used in order to determine the total tonnage of greenhouse gases. For CO<sub>2</sub>e PTE calculations, GWPs are based on Table A of 40 CFR pt. 98.

#### **Boilers**

PTE calculations are based on EPA approved emissions factors from AP-42, 40 CFR Section 98 Tables C-1 and C-2, the fuels burned, and the boiler capacities.

### Hot Wire Cutters

The PTE calculations are based on the historical material collected from these operations.

### Electric Peaking Generator

The PTE calculations are based on EPA approved emissions factors from AP-42, 40 CFR Section 98 Tables C-1 and C-2, the fuel burned, and the unit capacity.

## 3.2 Permit Calculations

Section 3.4 of this TSD explains the various monitoring required by the permit. For the VOC limit, this includes calculating actual emissions on a monthly basis.

### Calculation of VOC emissions

Total VOC emissions must each be calculated monthly using the following equation:

$$MER = (A1 \times B1) + (A2 \times B2) + (A3 \times B3) + \dots$$

Where:

MER = the monthly VOC emissions, in pounds/month

A# = the amount of each VOC-containing material used in the previous month (e.g., EPS bead, adhesive, etc.), in pounds.

B# = the weight percent of VOC in A#, as a fraction. For example, if a material were 50% by weight VOC, this would be 0.50.

## 3.3 Periodic Monitoring

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

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

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

Table 5 summarizes the periodic monitoring requirements for those emission units for which the monitoring required by the applicable requirement is nonexistent or inadequate.

**Table 5. Periodic Monitoring**

Level*	Requirement (basis)	Additional Monitoring	Discussion
VOC Limits: GP 001	$VOC \leq 40,000$ pounds per	Record keeping: Daily records of EPS and	Records can be generated on a daily basis for the EPS Bead and extrusion processes, based on meter

Level*	Requirement (basis)	Additional Monitoring	Discussion
	<p>month, using a 12-month rolling average (limit to avoid NSR)</p> <p>PM: variable, depending on airflow</p> <p>Opacity: <math>\leq 20\%</math> (Minn. R. 7011.0715)</p>	<p>extrusion materials; On-going MSDS records of coating content; Monthly calculations of emissions.</p> <p>None</p>	<p>readings and written production logs. The remaining materials (e.g., adhesives) are very low volume and will be based on monthly usage records.</p> <p>Most of these units are not reasonably expected to generate particulate matter; therefore, it is highly unlikely that they could violate the applicable requirement.</p>
EU 009, Boiler	<p>PM: <math>\leq 0.4</math> lb/MMBtu</p> <p>Opacity: <math>\leq 20\%</math> (Minn. R. 7011.0515)</p> <p>Fuel limited to natural gas and propane by design</p>	<p>None</p> <p>Fuel purchase records.</p>	<p>Boiler uses natural gas with propane as backup; therefore, the likelihood of violating either of the emission limits is very small. The Permittee can demonstrate that these units will continue to operate such that emissions are well below the emission limits by burning only these fuels. PTE using AP-42: PM is 0.007 compared to the rule limit of 0.4 lb/MMBtu.</p>
EU 010, Boiler	<p>PM: <math>\leq 0.4</math> lb/MMBtu</p> <p>Opacity: <math>\leq 20\%</math> (Minn. R. 7011.0510)</p> <p>Fuel limited to natural gas and propane by design</p>	<p>None</p> <p>Fuel purchase records.</p>	<p>Boiler uses natural gas with propane as backup; therefore, the likelihood of violating either of the emission limits is very small. The Permittee can demonstrate that these units will continue to operate such that emissions are well below the emission limits by burning only these fuels. PTE using AP-42: PM is 0.007 lb/MMBtu compared to the rule limit of 0.4 lb/MMBtu.</p>
EU 014, Hot Wire Cutters	<p>PM: variable, depending on airflow</p> <p>Opacity: <math>\leq 20\%</math> (Minn. R.</p>	<p>None</p>	<p>Based on PTE calculations submitted by the Permittee, it is highly unlikely that they could violate the applicable requirement. In addition, this operation is vented into the general building area so testing is not feasible.</p>

Level*	Requirement (basis)	Additional Monitoring	Discussion
	7011.0715)		
EU 017, Peaking Generator	CO limit and requirements (40 CFR pt. 63, subp. ZZZZ)  Opacity $\leq$ 20% SO <sub>2</sub> < 0.5 lb/MMBtu (Minn. R. 7011.2300)  Fuel limited to distillate fuel oil with sulfur content of $\leq$ 0.495% by weight	None  See fuel limit below for monitoring for SO <sub>2</sub> .  Fuel purchase records and certification.	Monitoring from the NESHAP is assumed to be adequate.  Distillate fuel oil is oil that meets ASTM D396-78. The ASTM definition requires sulfur < 0.5%; therefore the likelihood of violating this limit is very small. Fuel certification records are adequate for periodic monitoring.

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

### 3.4 Insignificant Activities

MDP has several operations which are classified as insignificant activities under the MPCA's permitting rules. These are listed in Appendix I to the permit.

The permit is required to include periodic monitoring for all emissions units, including insignificant activities, per EPA guidance. The insignificant activities at this Facility are only subject to general applicable requirements. Using the criteria outlined earlier in this TSD, the following table documents the justification why no additional periodic monitoring is necessary for the current insignificant activities. See Attachment 1 of this TSD for PTE information for the insignificant activities.

**Table 6. Insignificant Activities**

Insignificant Activity	General Applicable Emission limit	Discussion
Fuel use: space heaters fueled by natural gas, or propane	PM $\leq$ 0.4 lb/MMBtu; SO <sub>2</sub> $\leq$ 2.0 lb/MMBtu; and Opacity $\leq$ 20% (Minn. R. 7011. 0510 or Minn. R. 7011.0515)	For this unit, based on the fuels used and EPA published emissions factors, it is highly unlikely that it could violate the applicable requirements. In addition, these types of units are typically operated and vented inside a building, so testing for PM or opacity is not feasible.
Furnace: building heat, capacity of 300,000 Btu/hr	PM $\leq$ 0.4 lb/MMBtu; SO <sub>2</sub> $\leq$ 2.0 lb/MMBtu; and	For this unit, based on the fuels used and EPA published emissions factors, it is highly unlikely that

Insignificant Activity	General Applicable Emission limit	Discussion
	Opacity $\leq$ 20% (Minn. R. 7011. 0510 or Minn. R. 7011.0515)	it could violate the applicable requirements. In addition, these types of units are typically operated and vented inside a building, so testing for PM or opacity is not feasible.
Brazing, soldering or welding equipment	PM, variable depending on process rate, not to exceed 0.30 gr/dscf of exhaust gas; and Opacity $\leq$ 20% (Minn. R. 7011.0715)	For these units, based on EPA published emissions factors, it is highly unlikely that they could violate the applicable requirement. In addition, these units are typically operated and vented inside a building, so testing for PM or opacity is not feasible.
Blueprint copiers and photographic processes	Opacity $\leq$ 20% (Minn. R. 7011.0110)	While no known emissions estimation method exists for these units, based on general knowledge of how they operate, it is highly unlikely that they could generate visible emissions. In addition, these units would be operated and vented directly into an office area, so monitoring or testing is not feasible.
Individual units with potential emissions less than: 1. 4000 lb/year of CO; 2. 2000 lb/yr of NO <sub>x</sub> , SO <sub>2</sub> , PM, PM <sub>10</sub> , VOCs (including HAPs containing VOC) and ozone; and 3. 1000 ton/yr of CO <sub>2</sub> e	PM, variable depending on process rate, not to exceed 0.30 gr/dscf of exhaust gas; and Opacity $\leq$ 20% (Minn. R. 7011.0715)  PM $\leq$ 0.4 lb/MMBtu;  (Minn. R. 7011.0510 or Minn. R. 7011.0515)	These are printing operations, EPS cutting, and a make-up air unit.  The printing operations and EPS cutting are not expected to generate particulate matter.  For the make-up air unit, based on EPA published emissions factors; it is highly unlikely that they could violate the applicable requirement.  In addition, all of these units are operated and vented inside a building, so testing for PM or opacity is not feasible. The mixing area is not expected to generate particulate matter.

### 3.5 Permit Organization

In general, the permit meets the MPCA Delta Guidance for ordering and grouping of requirements. One item that deviates from guidance is the listing of certain applicable requirements at the group level even though they apply at the individual unit or control device. Specifically, the Industrial Process Equipment Rules is listed at GP 001. These units by design are not expected to generate particulate matter; therefore, it is nearly impossible for them to violate the limits. It is highly unlikely that the MPCA would need to track noncompliance with these limits at the individual unit level.

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

### **3.6 Comments Received**

Public Notice Period: February 3<sup>rd</sup>, 2012 – March 5<sup>th</sup>, 2012

Comments were not received from the public during the public notice period.

EPA 45-day Review Period: February 3<sup>rd</sup>, 2012 – March 19, 2012

The permit was sent to EPA for their 45-day review on February 3<sup>rd</sup>, 2012. Comments were not received from EPA during their review period.

## **4. Permit Fee Assessment**

This permit action is the reissuance of an individual Part 70; therefore, no application fees apply under Minn. R. 7002.0016, subp. 1.

## **5. Conclusion**

Based on the information provided by Minnesota Diversified Products, Inc., the MPCA has reasonable assurance that the proposed operation of the emission Facility, as described in the Air Emission Permit No. 05300443-004 and this TSD, will not cause or contribute to a violation of applicable federal regulations and Minnesota Rules.

Staff Members on Permit Team:     Cindy Schafer (permit writer/engineer)  
   Brent Rohne (enforcement)  
   Curt Stock (stack testing)  
   Peggy Bartz (peer reviewer)

AQ File No. 2273A; DQ No. 3573;

Attachments:    1. PTE Summary Calculation Spreadsheets  
                         2. IPCC 2006 Guidelines for National Greenhouse Gas Inventories Table 7.6  
                         3. Facility Description and CD-01 Forms

**ATTACHMENT 1**  
**PTE SUMMARY AND CALCULATION SPREADSHEETS**



Emission Unit Identification No.: **EU 001 Pre-Expander (GP001)**

Stack/Vent Designation No.: SV001

Maximum Capacity: 2500 lb/hr

Operating Hours: 8760 hr/yr

Pollutant	Emission Factor (lb/lb)	Hourly Potential Emission Rate (lb/hr)	Uncontrolled Potential Emissions (tons/yr)	Pollution Control Efficiency (%)	Controlled Potential Emissions (tons/yr)	Limited Potential Emissions <sup>1</sup> (tons/yr)
VOCs <sup>2,3</sup>	3.01E-02	7.53E+01	3.30E+02	0	3.30E+02	2.35E+02

<sup>1</sup> Limit on VOC emissions to avoid PSD - limit is for GP001

<sup>2</sup> Manufacturers data: see MSDS for STYROPOR BFL-322

<sup>3</sup> Beads have a max VOC content of 7% and release 24% during expansion and 19% during 24hrs storage of prepuff (43% total).

VOC emission factor is then:

$(0.07) \times (0.43) = 0.0301$  lb VOC/Lb beads

Emission Unit Identification No.: **EU003 31" Block Mold (GP001)**

Stack/Vent Designation No.: SV003

Maximum Capacity: 2585 lb/hr

Operating Hours: 8760 hr/yr

Pollutant	Emission Factor (lb/lb)	Hourly Potential Emission Rate (lb/hr)	Uncontrolled Potential Emissions (tons/yr)	Pollution Control Efficiency (%)	Controlled Potential Emissions (tons/yr)	Limited Potential Emissions <sup>1</sup> (tons/yr)
VOCs <sup>2,3</sup>	2.94E-02	7.60E+01	3.33E+02	0	3.33E+02	2.35E+02

<sup>1</sup> Limit on VOC emissions to avoid PSD - limit is for GP001

<sup>2</sup> Manufacturers data: see MSDS for STYROPOR BFL-322

<sup>3</sup> Beads have a max VOC content of 7% and release 14% during molding, 15% during 1st 24 hours after molding and 13% during 2nd 24hrs storage after molding (42% total). VOC emission factor is then:

$(0.07) \times (0.42) = 0.0294$  lb VOC/Lb beads

Emission Unit Identification No.: EU005 Custom Shape Molder (GP001)

Stack/Vent Designation No.: SV005

Maximum Capacity: 93 lb/hr

Operating Hours: 8760 hr/yr

Pollutant	Emission Factor (lb/lb)	Hourly Potential Emission Rate (lb/hr)	Uncontrolled Potential Emissions (tons/yr)	Pollution Control Efficiency (%)	Controlled Potential Emissions (tons/yr)	Limited Potential Emissions <sup>1</sup> (tons/yr)
VOCs <sup>2,3</sup>	2.94E-02	2.73E+00	1.20E+01	0	1.20E+01	2.35E+02

<sup>1</sup> Limit on VOC emissions to avoid PSD - limit is for GP001

<sup>2</sup> Manufacturers data: see MSDS for STYROPOR BFL-322

<sup>3</sup> Beads have a max VOC content of 7% and release 14% during molding, 15% during 1st 24 hours after molding and 13% during 2nd 24hrs storage after molding (42% total). VOC emission factor is then:  
 $(0.07) \times (0.42) = 0.0294$  lb VOC/Lb beads

Emission Unit Identification No.: EU006 Custom Shape Molder (GP001)

Stack/Vent Designation No.: SV005

Maximum Capacity: 93 lb/hr

Operating Hours: 8760 hr/yr

Pollutant	Emission Factor (lb/lb)	Hourly Potential Emission Rate (lb/hr)	Uncontrolled Potential Emissions (tons/yr)	Pollution Control Efficiency (%)	Controlled Potential Emissions (tons/yr)	Limited Potential Emissions <sup>1</sup> (tons/yr)
VOCs <sup>2,3</sup>	2.94E-02	2.73E+00	1.20E+01	0	1.20E+01	2.35E+02

<sup>1</sup> Limit on VOC emissions to avoid PSD - limit is for GP001

<sup>2</sup> Manufacturers data: see MSDS for STYROPOR BFL-322

<sup>3</sup> Beads have a max VOC content of 7% and release 14% during molding, 15% during 1st 24 hours after molding and 13% during 2nd 24hrs storage after molding (42% total). VOC emission factor is then:  
 $(0.07) \times (0.42) = 0.0294$  lb VOC/Lb beads

Emission Unit Identification No.: **EU007 48" Extruder (GP001)**  
 Stack/Vent Designation No.: **SV007**  
 Maximum Capacity: 1543 lb/hr % of total max capacity  
 Max HFC-134a used per month:<sup>6</sup> 65000 lb/month 0.74  
 Max Ecomate usage rate:<sup>7</sup> 57.1 lb/hr  
 Operating Hours: 8760 hr/yr

Pollutant	Emission Factor (lb/lb)	Hourly Potential Emission Rate (lb/month) or (lb/hr) <sup>5</sup>	Uncontrolled Potential Emissions (tons/yr)	Pollution Control Efficiency (%)	Controlled Potential Emissions (tons/yr)	Limited Potential Emissions <sup>1</sup> (tons/yr)
HFC-134a <sup>4</sup>	2.50E-01	1.20E+04	7.19E+01	0	7.19E+01	
CO <sub>2</sub> e <sup>6</sup>	3.25E+02	1.56E+07	9.34E+04	0	9.34E+04	
HAPs - Total		1.59E+00	6.97E+00	0	6.97E+00	
Ethyl benzene <sup>2,3</sup>	3.50E-04	5.40E-01	2.37E+00	0	2.37E+00	
Methanol <sup>3</sup>	2.50E-02	1.05E+00	4.61E+00	0	4.61E+00	
VOCs		1.59E+00	6.97E+00	0	6.97E+00	2.35E+02

<sup>1</sup> Limit on VOC emissions to avoid PSD - limit is for GP001

<sup>2</sup> Manufacturers data: see MSDS for STYRON 610 Clear Polystyrene

<sup>3</sup> Ethyl benzene and Methanol are both HAPs and VOCs

<sup>4</sup> Emission Factor taken from IPCC 2006 report ch. 7 Table 7.6

<sup>5</sup> Units for HFC-134a and CO<sub>2</sub>e are lb/month all other pollutants are lb/hr

<sup>6</sup> Permittee provided data for max HFC-134a used per month for both EU007 and EU008 combined. Emissions are divided between the two emissions units based on maximum capacity

<sup>7</sup> Permittee provided data for max ecomate used per year for both EU007 and EU008 combined. Usage rate is divided by 8760 hr/yr and emissions are divided between the two emissions units based on maximum capacity

Emission Unit Identification No.: **EU008 24" Extruder (GP001)**  
 Stack/Vent Designation No.: **SV007**  
 Maximum Capacity: 550 lb/hr % of total max capacity  
 Max HFC-134a used per month:<sup>6</sup> 65000 lb/month 0.26  
 Max Ecomate usage rate:<sup>7</sup> 57.1 lb/hr  
 Operating Hours: 8760 hr/yr

Pollutant	Emission Factor (lb/lb)	Hourly Potential Emission Rate (lb/month) or (lb/hr) <sup>5</sup>	Uncontrolled Potential Emissions (tons/yr)	Pollution Control Efficiency (%)	Controlled Potential Emissions (tons/yr)	Limited Potential Emissions <sup>1</sup> (tons/yr)
HFC-134a <sup>4</sup>	2.50E-01	4.27E+03	2.56E+01	0	2.56E+01	
CO <sub>2</sub> e <sup>6</sup>	3.25E+02	5.55E+06	3.33E+04	0	3.33E+04	
HAPs - Total		5.67E-01	2.49E+00	0	2.49E+00	
Ethyl benzene <sup>2,3</sup>	3.50E-04	1.93E-01	8.43E-01	0	8.43E-01	
Methanol <sup>3</sup>	2.50E-02	3.75E-01	1.64E+00	0	1.64E+00	
VOCs		5.67E-01	2.49E+00	0	2.49E+00	2.35E+02

<sup>1</sup> Limit on VOC emissions to avoid PSD - limit is for GP001

<sup>2</sup> Manufacturers data: see MSDS for STYRON 610 Clear Polystyrene

<sup>3</sup> Ethyl benzene and Methanol are both HAPs and VOCs

<sup>4</sup> Emission Factor taken from IPCC 2006 report ch. 7 Table 7.6

<sup>5</sup> Units for HFC-134a and CO<sub>2</sub>e are lb/month all other pollutants are lb/hr

<sup>6</sup> Permittee provided data for max HFC-134a used per month for both EU007 and EU008 combined. Emissions are divided between the two emissions units based on maximum capacity

<sup>7</sup> Permittee provided data for max ecomate used per year for both EU007 and EU008 combined. Usage rate is divided by 8760 hr/yr and emissions are divided between the two emissions units based on maximum capacity

Emission Unit Identification No.: **EU 011 Pre-Expander (GP001)**

Stack/Vent Designation No.: SV004

Maximum Capacity: 1990 lb/hr

Operating Hours: 8760 hr/yr

Pollutant	Emission Factor (lb/lb)	Hourly Potential Emission Rate (lb/hr)	Uncontrolled Potential Emissions (tons/yr)	Pollution Control Efficiency (%)	Controlled Potential Emissions (tons/yr)	Limited Potential Emissions <sup>1</sup> (tons/yr)
VOCs <sup>2,3</sup>	3.01E-02	5.99E+01	2.62E+02	0	2.62E+02	2.35E+02

<sup>1</sup> Limit on VOC emissions to avoid PSD - limit is for GP001

<sup>2</sup> Manufacturers data: see MSDS for STYROPOR BFL-322

<sup>3</sup> Beads have a max VOC content of 7% and release 24% during expansion and 19% during 24hrs storage of prepuff (43% total).  
(0.07)\*(0.43) = 0.0301 lb VOC/Lb beads

Emission Unit Identification No.: **EU 012 Shape Mold Press (GP001)**

Stack/Vent Designation No.: SV010

Maximum Capacity: 106 lb/hr

Operating Hours: 8760 hr/yr

Pollutant	Emission Factor (lb/lb)	Hourly Potential Emission Rate (lb/hr)	Uncontrolled Potential Emissions (tons/yr)	Pollution Control Efficiency (%)	Controlled Potential Emissions (tons/yr)	Limited Potential Emissions <sup>1</sup> (tons/yr)
VOCs <sup>2,3</sup>	2.94E-02	3.12E+00	1.36E+01	0	1.36E+01	2.35E+02

<sup>1</sup> Limit on VOC emissions to avoid PSD - limit is for GP001

<sup>2</sup> Manufacturers data: see MSDS for STYROPOR BFL-322

<sup>3</sup> Beads have a max VOC content of 7% and release 24% during expansion and 19% during 24hrs storage of prepuff (43% total).  
(0.07)\*(0.42) = 0.0294 lb VOC/Lb beads

Emission Unit Identification No.: **EU 015 Shape Mold Press - Projected (GP001)**

Stack/Vent Designation No.: SV013

Maximum Capacity: 120 lb/hr

Operating Hours: 8760 hr/yr

Pollutant	Emission Factor (lb/lb)	Hourly Potential Emission Rate (lb/hr)	Uncontrolled Potential Emissions (tons/yr)	Pollution Control Efficiency (%)	Controlled Potential Emissions (tons/yr)	Limited Potential Emissions <sup>1</sup> (tons/yr)
VOCs <sup>2,3</sup>	2.94E-02	3.53E+00	1.55E+01	0	1.55E+01	2.35E+02

<sup>1</sup> Limit on VOC emissions to avoid PSD - limit is for GP001

<sup>2</sup> Manufacturers data: see MSDS for STYROPOR BFL-322

<sup>3</sup> Beads have a max VOC content of 7% and release 24% during expansion and 19% during 24hrs storage of prepuff (43% total).  
(0.07)\*(0.42) = 0.0294 lb VOC/Lb beads

Emission Unit Identification No.: **EU 016 Shape Mold Press - Projected (GP001)**

Stack/Vent Designation No.: SV014

Maximum Capacity: 120 lb/hr

Operating Hours: 8760 hr/yr

Pollutant	Emission Factor (lb/lb)	Hourly Potential Emission Rate (lb/hr)	Uncontrolled Potential Emissions (tons/yr)	Pollution Control Efficiency (%)	Controlled Potential Emissions (tons/yr)	Limited Potential Emissions <sup>1</sup> (tons/yr)
VOCs <sup>2,3</sup>	2.94E-02	3.53E+00	1.55E+01	0	1.55E+01	2.35E+02

<sup>1</sup> Limit on VOC emissions to avoid PSD - limit is for GP001

<sup>2</sup> Manufacturers data: see MSDS for STYROPOR BFL-322

<sup>3</sup> Beads have a max VOC content of 7% and release 24% during expansion and 19% during 24hrs storage of prepuff (43% total).  
(0.07)\*(0.42) = 0.0294 lb VOC/Lb beads

Emission Unit Identification No.: **F001 Fugitive Emissions (GP001)**

Stack/Vent Designation No.: NA

Maximum Capacity: 4490 lb/hr (EU001 + EU011 - these units start the processes)

Operating Hours: 8760 hr/yr

Pollutant	Emission Factor (lb/lb)	Hourly Potential Emission Rate (lb/hr)	Uncontrolled Potential Emissions (tons/yr)	Pollution Control Efficiency (%)	Controlled Potential Emissions (tons/yr)	Limited Potential Emissions <sup>1</sup> (tons/yr)
VOCs <sup>3</sup>	1.05E-02	4.71E+01	2.06E+02	0	2.06E+02	2.35E+02

<sup>1</sup> Limit on VOC emissions to avoid PSD - limit is for GP001

<sup>2</sup> Manufacturers data: see MSDS for STYROPOR BFL-322

<sup>3</sup> Beads have a max VOC content of 7% and release 43% during expansion and 42% during molding, so if 100% of VOCs emitted at (0.07)\*(0.15) = 0.0105 lb VOC/Lb beads

GP001 Totals

Pollutant	Hourly Potential Emission Rate (lb/hr) or (lb/month)	Uncontrolled Potential Emissions (tons/yr)	Limited Potential Emissions <sup>1</sup> (tons/yr)
HFC-134a <sup>4</sup>	1.63E+04	7.12E+04	7.12E+04
CO <sub>2</sub> <sup>6</sup>	2.11E+07	9.25E+07	9.25E+07
HAPs - Total	2.16E+00	9.46E+00	9.46E+00
Ethyl benzene <sup>2,3</sup>	7.33E-01	3.21E+00	3.21E+00
VOCs	2.76E+02	1.21E+03	2.35E+02



Emission Unit Identification No.: EU 009 Boiler 1  
 Stack/Vent Designation No.: SV008  
 Maximum Capacity: 7.53 MmBtu/hr  
 Operating Hours: 8760 hr/yr

**Fuel Data:**

Fuel Type	Sulfur Content	Units	% Ash	Heat Value	Units	Fuel Consumption	Units
Natural Gas	0.0001	%	Negligible	1020	Btu/scf	0.007	MMscf/hr
Propane	15	gr/100ft <sup>3</sup>	Negligible	90.5	MMBtu/Mgal	0.083	Mgal/hr

Pollutant	Natural Gas Emissions						Propane Emissions					
	Emission Factor <sup>1</sup> (lb/10 <sup>6</sup> scf)	Hourly Potential Emission Rate (lb/hr)	Uncontrolled Potential Emissions (tons/yr)	Pollution Control Efficiency (%)	Controlled Potential Emissions (tons/yr)	Limited Potential Emissions (tons/yr)	Emission Factor <sup>5</sup> (lb/10 <sup>3</sup> gal)	Hourly Potential Emission Rate (lb/hr)	Uncontrolled Potential Emissions (tons/yr)	Pollution Control Efficiency (%)	Controlled Potential Emissions (tons/yr)	Limited Potential Emissions (tons/yr)
PM	7.6E+00	5.6E-02	2.46E-01	0	2.5E-01		7.0E-01	5.82E-02	2.55E-01	0	2.55E-01	
PM <sub>10</sub>	7.6E+00	5.6E-02	2.46E-01	0	2.5E-01		7.0E-01	5.82E-02	2.55E-01	0	2.55E-01	
PM <sub>2.5</sub>	7.6E+00	5.6E-02	2.46E-01	0	2.5E-01		7.0E-01	5.82E-02	2.55E-01	0	2.55E-01	
SO <sub>x</sub>	6.0E-01	4.4E-03	1.94E-02	0	1.9E-02		1.5E+00	1.25E-01	5.47E-01	0	5.47E-01	
NO <sub>x</sub>	1.0E+02	7.4E-01	3.23E+00	0	3.2E+00		1.3E+01	1.08E+00	4.74E+00	0	4.74E+00	
CO	8.4E+01	6.2E-01	2.72E+00	0	2.7E+00		7.5E+00	6.24E-01	2.73E+00	0	2.73E+00	
Lead	5.0E-04	3.7E-06	1.62E-05	0	1.6E-05		ND	ND	ND	0	ND	
VOC	5.5E+00	4.1E-02	1.78E-01	0	1.8E-01		8.0E-01	6.66E-02	2.92E-01	0	2.92E-01	
CO <sub>2</sub> <sup>7</sup>	1.19E+05	8.8E+02	3.86E+03	0	3.9E+03		1.23E+04	1.02E+03	4.47E+03	0	4.47E+03	
CH <sub>4</sub> <sup>7</sup>	2.25E+00	1.7E-02	7.27E-02	0	7.3E-02		5.99E-01	4.98E-02	2.18E-01	0	2.18E-01	
N <sub>2</sub> O <sup>7</sup>	2.25E-01	1.7E-03	7.27E-03	0	7.3E-03		1.20E-01	9.96E-03	4.36E-02	0	4.36E-02	
CO <sub>2</sub> e <sup>6</sup>	1.19E+05	8.81E+02	3.86E+03	0	3.9E+03		1.23E+04	1.02E+03	4.49E+03	0	4.49E+03	
Benzene	2.1E-03	1.6E-05	6.79E-05	0	6.8E-05							
Dichlorobenzene	1.2E-03	8.9E-06	3.88E-05	0	3.9E-05							
Formaldehyde	7.5E-02	5.5E-04	2.43E-03	0	2.4E-03							
Hexane	1.8E+00	1.3E-02	5.82E-02	0	5.8E-02							
Naphthalene	6.1E-04	4.5E-06	1.97E-05	0	2.0E-05							
POM <sup>2</sup>	8.82E-05	6.51E-07	2.85E-06	0	2.85E-06							
Toluene	3.4E-03	2.5E-05	1.10E-04	0	1.1E-04							
Total HAPs <sup>3</sup>	1.88E+00	1.4E-02	6.09E-02	0	6.1E-02							
Arsenic	2.0E-04	1.5E-06	6.47E-06	0	6.5E-06							
Beryllium	1.2E-05	8.9E-08	3.88E-07	0	3.9E-07							
Cadmium	1.1E-03	8.1E-06	3.56E-05	0	3.6E-05							
Chromium	1.4E-03	1.0E-05	4.53E-05	0	4.5E-05							
Cobalt	8.4E-05	6.2E-07	2.72E-06	0	2.7E-06							
Manganese	3.8E-04	2.8E-06	1.23E-05	0	1.2E-05							
Mercury	2.6E-04	1.9E-06	8.41E-06	0	8.4E-06							
Nickel	2.1E-03	1.6E-05	6.79E-05	0	6.8E-05							
Selenium	2.4E-05	1.8E-07	7.76E-07	0	7.8E-07							

<sup>1</sup> Emissions Factors found in AP-42 Section 1.4 Natural Gas Combustion (7/98)

<sup>2</sup> The Emissions Factor for POM is the sum of the emissions factors for the following compounds as defined in AP-42 Table 1.4-3 (7/98):

Pollutant	Emission Factor <sup>1</sup> (lb/10 <sup>6</sup> scf)	Pollutant	Emission Factor <sup>1</sup> (lb/10 <sup>6</sup> scf)
2-Methylnaphthalene	2.4E-05	Benzo(g,h,i)perylene	1.2E-06
3-Methylchloranthrene	1.8E-06	Benzo(k)fluoranthene	1.8E-06
7,12-Dimethylbenz(a)anthracene	1.6E-05	Chrysene	1.8E-06
Acenaphthene	1.8E-06	Dibenzo(a,h)anthracene	1.2E-06
Acenaphthylene	1.8E-06	Fluoranthene	3.0E-06

Anthracene	2.4E-06	Fluorene	2.8E-06
Benz(a)anthracene	1.8E-06	Indeno(1,2,3-cd)pyrene	1.8E-06
Benzo(a)pyrene	1.2E-06	Phenanthrene	1.7E-05
Benzo(b)fluoranthene	1.8E-06	Pyrene	5.0E-06
<b>Total</b>			<b>8.82E-05</b>

<sup>3</sup> Total HAPs include: Benzene, Dichlorobenzene, Formaldehyde, Hexane, Naphthalene, Toluene and POM<sup>4</sup>

<sup>4</sup> POM is a HAP as defined by Section 112(b) of the Clean Air Act

<sup>5</sup> Emissions Factors found in AP-42 Section 1.5 Liquefied Petroleum Gas Combustion (7/08)

<sup>6</sup> Global warming potentials found in 40 CFR Part 98 Subp A Table A-1

<sup>7</sup> Emissions Factors found in 40 CFR Section 98 Tables C-1 and C-2

Worst-Case Scenario			
Pollutant	Hourly Potential Emission Rate (lb/hr)	Uncontrolled Potential Emissions (tons/yr)	Fuel
PM	5.82E-02	2.55E-01	Propane
PM <sub>10</sub>	5.82E-02	2.55E-01	Propane
PM <sub>2.5</sub>	5.82E-02	2.55E-01	Propane
SO <sub>x</sub>	1.25E-01	5.47E-01	Propane
NO <sub>x</sub>	1.08E+00	4.74E+00	Propane
CO	6.24E-01	2.73E+00	Propane
Lead	3.69E-06	1.62E-05	Natural Gas
VOC	6.66E-02	2.92E-01	Propane
CO <sub>2</sub>	1.02E+03	4.47E+03	Propane
CH <sub>4</sub>	4.98E-02	2.18E-01	Propane
N <sub>2</sub> O	9.96E-03	4.36E-02	Propane
CO <sub>2</sub> e	1.02E+03	4.49E+03	Propane
Benzene	1.55E-05	6.79E-05	Natural Gas
Dichlorobenzene	8.86E-06	3.88E-05	Natural Gas
Formaldehyde	5.54E-04	2.43E-03	Natural Gas
Hexane	1.33E-02	5.82E-02	Natural Gas
Naphthalene	4.50E-06	1.97E-05	Natural Gas
POM <sup>2</sup>	6.51E-07	2.85E-06	Natural Gas
Toluene	2.51E-05	1.10E-04	Natural Gas
Total HAPs <sup>3</sup>	1.39E-02	6.09E-02	Natural Gas
Arsenic	1.48E-06	6.47E-06	Natural Gas
Beryllium	8.86E-08	3.88E-07	Natural Gas
Cadmium	8.12E-06	3.56E-05	Natural Gas
Chromium	1.03E-05	4.53E-05	Natural Gas
Cobalt	6.20E-07	2.72E-06	Natural Gas
Manganese	2.81E-06	1.23E-05	Natural Gas
Mercury	1.92E-06	8.41E-06	Natural Gas
Nickel	1.55E-05	6.79E-05	Natural Gas
Selenium	1.77E-07	7.76E-07	Natural Gas

Emission Unit Identification No.: EU 009 Boiler 1  
 Stack/Vent Designation No.: SV008  
 Maximum Capacity: 6.70 MMBtu/hr  
 Operating Hours: 8760 hr/yr

**Fuel Data:**

Fuel Type	Sulfur Content	Units	% Ash	Heat Value	Units	Fuel Consumption	Units
Natural Gas	0.0001	%	Negligible	1020	Btu/scf	0.007	MMscf/hr
Propane	15	gr/100ft <sup>3</sup>	Negligible	90.5	MMBtu/Mgal	0.083	Mgal/hr

Pollutant	Natural Gas Emissions						Propane Emissions					
	Emission Factor <sup>1</sup> (lb/10 <sup>6</sup> scf)	Hourly Potential Emission Rate (lb/hr)	Uncontrolled Potential Emissions (tons/yr)	Pollution Control Efficiency (%)	Controlled Potential Emissions (tons/yr)	Limited Potential Emissions (tons/yr)	Emission Factor <sup>5</sup> (lb/10 <sup>3</sup> gal)	Hourly Potential Emission Rate (lb/hr)	Uncontrolled Potential Emissions (tons/yr)	Pollution Control Efficiency (%)	Controlled Potential Emissions (tons/yr)	Limited Potential Emissions (tons/yr)
PM	7.6E+00	5.0E-02	2.19E-01	0	2.2E-01		7.0E-01	5.18E-02	2.27E-01	0	2.27E-01	
PM <sub>10</sub>	7.6E+00	5.0E-02	2.19E-01	0	2.2E-01		7.0E-01	5.18E-02	2.27E-01	0	2.27E-01	
PM <sub>2.5</sub>	7.6E+00	5.0E-02	2.19E-01	0	2.2E-01		7.0E-01	5.18E-02	2.27E-01	0	2.27E-01	
SO <sub>x</sub>	6.0E-01	3.9E-03	1.73E-02	0	1.7E-02		1.5E+00	1.11E-01	4.86E-01	0	4.86E-01	
NO <sub>x</sub>	1.0E+02	6.6E-01	2.88E+00	0	2.9E+00		1.3E+01	9.62E-01	4.22E+00	0	4.22E+00	
CO	8.4E+01	5.5E-01	2.42E+00	0	2.4E+00		7.5E+00	5.55E-01	2.43E+00	0	2.43E+00	
Lead	5.0E-04	3.3E-06	1.44E-05	0	1.4E-05		ND	ND	ND	0	ND	
VOC	5.5E+00	3.6E-02	1.58E-01	0	1.6E-01		8.0E-01	5.92E-02	2.59E-01	0	2.59E-01	
CO <sub>2</sub> <sup>7</sup>	1.19E+05	7.8E+02	3.43E+03	0	3.4E+03		1.23E+04	9.08E+02	3.98E+03	0	3.98E+03	
CH <sub>4</sub> <sup>7</sup>	2.25E+00	1.5E-02	6.47E-02	0	6.5E-02		5.99E-01	4.43E-02	1.94E-01	0	1.94E-01	
N <sub>2</sub> O <sup>7</sup>	2.25E-01	1.5E-03	6.47E-03	0	6.5E-03		1.20E-01	8.86E-03	3.88E-02	0	3.88E-02	
CO <sub>2</sub> e <sup>6</sup>	1.19E+05	7.84E+02	3.43E+03	0	3.4E+03		1.23E+04	9.12E+02	3.99E+03	0	3.99E+03	
Benzene	2.1E-03	1.4E-05	6.04E-05	0	6.0E-05							
Dichlorobenzene	1.2E-03	7.9E-06	3.45E-05	0	3.5E-05							
Formaldehyde	7.5E-02	4.9E-04	2.16E-03	0	2.2E-03							
Hexane	1.8E+00	1.2E-02	5.18E-02	0	5.2E-02							
Naphthalene	6.1E-04	4.0E-06	1.76E-05	0	1.8E-05							
POM <sup>2</sup>	8.82E-05	5.79E-07	2.54E-06	0	2.54E-06							
Toluene	3.4E-03	2.2E-05	9.78E-05	0	9.8E-05							
Total HAPs <sup>3</sup>	1.9E+00	1.2E-02	5.42E-02	0	5.4E-02							
Arsenic	2.0E-04	1.3E-06	5.75E-06	0	5.8E-06							
Beryllium	1.2E-05	7.9E-08	3.45E-07	0	3.5E-07							
Cadmium	1.1E-03	7.2E-06	3.16E-05	0	3.2E-05							
Chromium	1.4E-03	9.2E-06	4.03E-05	0	4.0E-05							
Cobalt	8.4E-05	5.5E-07	2.42E-06	0	2.4E-06							
Manganese	3.8E-04	2.5E-06	1.09E-05	0	1.1E-05							
Mercury	2.6E-04	1.7E-06	7.48E-06	0	7.5E-06							
Nickel	2.1E-03	1.4E-05	6.04E-05	0	6.0E-05							
Selenium	2.4E-05	1.6E-07	6.90E-07	0	6.9E-07							

<sup>1</sup> Emissions Factors found in AP-42 Section 1.4 Natural Gas Combustion (7/98)

<sup>2</sup> The Emissions Factor for POM is the sum of the emissions factors for the following compounds as defined in AP-42 Table 1.4-3 (7/98):

Pollutant	Emission Factor <sup>1</sup> (lb/10 <sup>6</sup> scf)	Pollutant	Emission Factor <sup>1</sup> (lb/10 <sup>6</sup> scf)
2-Methylnaphthalene	2.4E-05	Benzo(g,h,i)perylene	1.2E-06
3-Methylchloranthrene	1.8E-06	Benzo(k)fluoranthene	1.8E-06
7,12-Dimethylbenz(a)anthracene	1.6E-05	Chrysene	1.8E-06
Acenaphthene	1.8E-06	Dibenzo(a,h)anthracene	1.2E-06
Acenaphthylene	1.8E-06	Fluoranthene	3.0E-06

Anthracene	2.4E-06	Fluorene	2.8E-06
Benz(a)anthracene	1.8E-06	Indeno(1,2,3-cd)pyrene	1.8E-06
Benzo(a)pyrene	1.2E-06	Phenanthrene	1.7E-05
Benzo(b)fluoranthene	1.8E-06	Pyrene	5.0E-06
<b>Total</b>			8.82E-05

<sup>3</sup> Total HAPs include: Benzene, Dichlorobenzene, Formaldehyde, Hexane, Naphthalene, Toluene and POM<sup>4</sup>

<sup>4</sup> POM is a HAP as defined by Section 112(b) of the Clean Air Act

<sup>5</sup> Emissions Factors found in AP-42 Section 1.5 Liquefied Petroleum Gas Combustion (7/08)

<sup>6</sup> Global warming potentials found in 40 CFR Part 98 Subp A Table A-1

<sup>7</sup> Emissions Factors found in 40 CFR Section 98 Tables C-1 and C-2

Worst-Case Scenario			
Pollutant	Hourly Potential Emission Rate (lb/hr)	Uncontrolled Potential Emissions (tons/yr)	Fuel
PM	5.18E-02	2.27E-01	Propane
PM <sub>10</sub>	5.18E-02	2.27E-01	Propane
PM <sub>2.5</sub>	5.18E-02	2.27E-01	Propane
SO <sub>x</sub>	1.11E-01	4.86E-01	Propane
NO <sub>x</sub>	9.62E-01	4.22E+00	Propane
CO	5.55E-01	2.43E+00	Propane
Lead	3.28E-06	1.44E-05	Natural Gas
VOC	5.92E-02	2.59E-01	Propane
CO <sub>2</sub>	9.08E+02	3.98E+03	Propane
CH <sub>4</sub>	4.43E-02	1.94E-01	Propane
N <sub>2</sub> O	8.86E-03	3.88E-02	Propane
CO <sub>2</sub> e	9.12E+02	3.99E+03	Propane
Benzene	1.38E-05	6.04E-05	Natural Gas
Dichlorobenzene	7.88E-06	3.45E-05	Natural Gas
Formaldehyde	4.93E-04	2.16E-03	Natural Gas
Hexane	1.18E-02	5.18E-02	Natural Gas
Naphthalene	4.01E-06	1.76E-05	Natural Gas
POM <sup>2</sup>	5.79E-07	2.54E-06	Natural Gas
Toluene	2.23E-05	9.78E-05	Natural Gas
Total HAPs <sup>3</sup>	1.24E-02	5.42E-02	Natural Gas
Arsenic	1.31E-06	5.75E-06	Natural Gas
Beryllium	7.88E-08	3.45E-07	Natural Gas
Cadmium	7.23E-06	3.16E-05	Natural Gas
Chromium	9.20E-06	4.03E-05	Natural Gas
Cobalt	5.52E-07	2.42E-06	Natural Gas
Manganese	2.50E-06	1.09E-05	Natural Gas
Mercury	1.71E-06	7.48E-06	Natural Gas
Nickel	1.38E-05	6.04E-05	Natural Gas
Selenium	1.58E-07	6.90E-07	Natural Gas

Emission Unit Identification No.: **EU 014 Hot Wire Cutting Tables**

Stack/Vent Designation No.: SV001

Maximum Capacity: 2500 lb/hr

0.35 MMBtu/hr

Operating Hours: 8760 hr/yr

Fuel Consumption

Fuel Type	Heat Value	Units	Rate	Units
Natural Gas	0.15	MMBtu/gallon		2.36 gallons/hr

Pollutant	Emission Factor (lb/lb) or (lb/MMBtu) <sup>4</sup>	Hourly Potential Emission Rate (lb/hr)	Uncontrolled Potential Emissions (tons/yr)	Pollution Control Efficiency (%)	Controlled Potential Emissions (tons/yr)	Limited Potential Emissions (tons/yr)
PM <sup>1</sup>	2.90E-03	7.25E+00	3.18E+01	0	3.176E+01	
PM <sub>10</sub> <sup>1</sup>	2.90E-03	7.25E+00	3.18E+01	0	3.176E+01	
PM <sub>2.5</sub> <sup>1</sup>	2.90E-03	7.25E+00	3.18E+01	0	3.176E+01	
CO <sub>2</sub> <sup>2</sup>	1.66E+02	5.80E+01	2.54E+02	0	2.54E+02	
CH <sub>4</sub> <sup>2</sup>	6.62E-03	2.32E-03	1.01E-02	0	1.01E-02	
N <sub>2</sub> O <sup>2</sup>	1.32E-03	4.63E-04	2.03E-03	0	2.03E-03	
CO <sub>2</sub> e <sup>3</sup>	1.66E+02	5.82E+01	2.55E+02	0	2.55E+02	

<sup>1</sup> Emission Factors found in TSD Attachment 2 of Permit Action 003

<sup>2</sup> Emission Factors found in 40 CFR 98 Subp. C Tables C-1 and C-2

<sup>3</sup> Global warming potentials found in 40 CFR Part 98 Subp A Table A-1

<sup>4</sup> Units for Greenhouse gases in lb/MMBtu all other pollutants are in lb/lb

Emission Unit Identification No.: **EU 017 Caterpillar 3412 Diesel Generator**  
 Stack/Vent Designation No.: **SV013**  
 Control Equipment Designation No.: **CE001**  
 Maximum Capacity: **7.47 MMBtu/hr**  
 Operating Hours: **8760 hr/yr**

**Engine Data Data:**

Fuel Type	Rated Engine Horsepower (hp)	Maximim Fuel Input (MMBtu/hr)	Sulfur (%)
Diesel	1000	7.47	0.5

Pollutant	Emission Factor <sup>1</sup> (lb/MMBtu)	Hourly Potential Emission Rate (lb/hr)	Uncontrolled Potential Emissions (tons/yr)	Pollution Control Efficiency (%)	Controlled Potential Emissions (tons/yr)	Limited Potential Emissions (tons/yr)
PM	6.97E-02	5.21E-01	2.28E+00	0	2.28E+00	
PM <sub>10</sub>	5.73E-02	4.28E-01	1.87E+00	0	1.87E+00	
PM <sub>2.5</sub> <sup>6</sup>	5.56E-02	4.15E-01	1.82E+00	0	1.82E+00	
SO <sub>x</sub>	5.05E-01	3.77E+00	1.65E+01	0	1.65E+01	
NO <sub>x</sub>	2.35E+00	1.75E+01	7.68E+01	0	7.68E+01	
CO	8.50E-01	6.35E+00	2.78E+01	70.00%	8.34E+00	
Lead	ND	ND	ND	ND	ND	
VOC <sup>2</sup>	8.19E-02	6.12E-01	2.68E+00	0	2.68E+00	
CO <sub>2</sub> <sup>7</sup>	1.63E+02	1.22E+03	5.33E+03	0	5.33E+03	
CH <sub>4</sub> <sup>7</sup>	6.62E-03	4.94E-02	2.16E-01	0	2.16E-01	
N <sub>2</sub> O <sup>7</sup>	1.32E-03	9.88E-03	4.33E-02	0	4.33E-02	
CO <sub>2</sub> e <sup>4</sup>	1.63E+02	1.22E+03	5.35E+03	0	5.35E+03	
Benzene	7.76E-04	5.80E-03	2.54E-02	0	2.54E-02	
Toluene	2.81E-04	2.10E-03	9.19E-03	0	9.19E-03	
Xylene	1.93E-04	1.44E-03	6.31E-03	0	6.31E-03	
Propylene	2.79E-03	2.08E-02	9.13E-02	0	9.13E-02	
Formaldehyde	7.89E-05	5.89E-04	2.58E-03	0	2.58E-03	
Acetaldehyde	2.52E-05	1.88E-04	8.25E-04	0	8.25E-04	
Acrolein	7.88E-06	5.89E-05	2.58E-04	0	2.58E-04	
Naphthalene	1.30E-04	9.71E-04	4.25E-03	0	4.25E-03	

PAH <sup>3</sup>	8.15E-05	6.09E-04	2.67E-03	0	2.67E-03	
Total HAPs <sup>3</sup>	1.49E-03	1.11E-02	4.88E-02	0	4.88E-02	

<sup>1</sup> Emission Factors taken from AP-42 Section 3.4 Large Stationary Diesel and All Stationary Dual-Fuel Engines

<sup>2</sup> VOC Emission Factor taken from the TOC Emission Factor of which 91% is nonmethane and 9% methane (AP-42 Section 3.4 Table 3.4-1)

<sup>3</sup> Naphthalene is both a PAH and a HAP but is included in the Total HAPs calculation but not the PAH calculation for Emission Factor

<sup>4</sup> Global warming potentials taken from Table A-1 of 40 CFR Part 98 Subp. A

<sup>5</sup> The Emissions Factor for PAH is the sum of the emissions factors for the following compounds as defined in AP-42 Section 3.4

Uncontrolled Potential				Uncontrolled Potential			
Pollutant	Emission Factor (lb/MMBtu)	Hourly Potential Emissions Rate (lb/hr)	Emissions (tons/yr)	Pollutant	Emission Factor (lb/MMBtu)	Hourly Potential Emissions Rate (lb/hr)	Emissions (tons/yr)
Acenaphthylene	9.23E-06	6.89E-05	3.02E-04	Chrysene	1.53E-06	1.14E-05	5.01E-05
Acenaphthene	4.68E-06	3.50E-05	1.53E-04	Benzo(b)fluoranth	1.11E-06	8.29E-06	3.63E-05
Fluorene	1.28E-05	9.56E-05	4.19E-04	Benzo(k)fluoranth	2.18E-07	1.63E-06	7.13E-06
Phenanthrene	4.08E-05	3.05E-04	1.33E-03	Benzo(a)pyrene	2.57E-07	1.92E-06	8.41E-06
Anthracene	1.23E-06	9.19E-06	4.02E-05	Indeno(1,2,3-cd)p	4.14E-07	3.09E-06	1.35E-05
Fluoranthene	4.03E-06	3.01E-05	1.32E-04	Dibenzo(a,h)anthr	3.46E-07	2.58E-06	1.13E-05
Pyrene	3.71E-06	2.77E-05	1.21E-04	Benzo(g,h,i)peryle	5.56E-07	4.15E-06	1.82E-05
Benz(a)anthracene	6.22E-07	4.65E-06	2.04E-05	<b>Total</b>	8.15E-05	6.09E-04	2.67E-03

<sup>6</sup> This emission factor is equal to filterable particulate < 3 um plus condensable particulate as defined in AP-42 Table 3.4-2

<sup>7</sup> Emissions factors taken from 40 CFR 98 Tables C-1 and C-2

Emission Unit Identification No.: **Insignificant Activites 7007.1300 subp. 3(I)**

Stack/Vent Designation No.: NA

Maximum Capacity: 2093 lb/hr

Operating Hours: 8760 hr/yr

Product milling and cutting

Pollutant	Emission Factor <sup>1</sup> (lb/1000lb)	Hourly Potential Emission Rate (lb/hr)	Uncontrolled Potential Emissions (tons/yr)
PM	1.80E-04	3.77E-04	1.65E-03
PM <sub>10</sub>	1.80E-04	3.77E-04	1.65E-03
PM <sub>2.5</sub>	1.80E-04	3.77E-04	1.65E-03

EF in lb/ton  
0.36016334

<sup>1</sup> Emission Factor from AP-42 Section 11.28 Table 11.28-1

Emission Unit Identification No.: **Insignificant Activites 7007.1300 subp. 3(B)(2)**

Stack/Vent Designation No.: NA

Maximum Capacity: 0.2 MMBtu/hr

Heat capacity of fuel: 1050 Btu/scf

\* Assumed fuel is natural gas - no data provided by permittee

Operating Hours: 8760 hr/yr

Building Heat (Combustion)

Pollutant	Emission Factor <sup>1</sup> (lb/MMscf)	Hourly Potential Emission Rate (lb/hr)	Uncontrolled Potential Emissions (tons/yr)
PM	7.60E+00	1.45E-03	6.34E-03
PM <sub>10</sub>	7.60E+00	1.45E-03	6.34E-03
PM <sub>2.5</sub>	7.60E+00	1.45E-03	6.34E-03
NO <sub>x</sub>	1.00E+02	1.90E-02	8.34E-02
SO <sub>x</sub>	6.00E-01	1.14E-04	5.01E-04
CO	8.40E+01	1.60E-02	7.01E-02
VOC	5.50E+00	1.05E-03	4.59E-03
Total HAP	1.89E+00	3.60E-04	1.58E-03



CO <sub>2</sub> e	1.21E+05	2.30E+01	1.01E+02
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<sup>1</sup> Emissions Factors from AP-42 Section 1.4 Natural Gas Combustion

Emission Unit Identification No.: **Insignificant Activites 7007.1300 subp. 3(A)**

Stack/Vent Designation No.: NA

Maximum Capacity: 0.3 MMBtu/hr

Heat capacity of fuel: 1050 Btu/scf \* Assumed fuel is natural gas - no data provided by permittee

Operating Hours: 8760 hr/yr

Space Heaters 22 space heaters for a combined total of 300,000 Btu/hr

Pollutant	Emission Factor <sup>1</sup> (lb/MMscf)	Hourly Potential Emission Rate (lb/hr)	Uncontrolled Potential Emissions (tons/yr)
PM	7.60E+00	2.17E-03	9.51E-03
PM <sub>10</sub>	7.60E+00	2.17E-03	9.51E-03
PM <sub>2.5</sub>	7.60E+00	2.17E-03	9.51E-03
NO <sub>x</sub>	1.00E+02	2.86E-02	1.25E-01
SO <sub>x</sub>	6.00E-01	1.71E-04	7.51E-04
CO	8.40E+01	2.40E-02	1.05E-01
VOC	5.50E+00	1.57E-03	6.88E-03
Total HAP	1.89E+00	5.40E-04	2.37E-03
CO <sub>2</sub> e	1.21E+05	3.45E+01	1.51E+02

<sup>1</sup> Emissions Factors from AP-42 Section 1.4 Natural Gas Combustion

Emission Unit Identification No.: **Insignificant Activites 7007.1300 subp. 3(H)(3)**

Stack/Vent Designation No.: NA

Maximum Capacity: ND

Operating Hours: 8760 hr/yr

Brazing, soldering and welding

Pollutant	Emission Factor <sup>1</sup> (kg/Mg)	Hourly Potential Emission Rate (lb/hr)	Uncontrolled Potential Emissions (tons/yr)
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PM No Data

HAP No Data

Emission Unit Identification No.: **Insignificant Activites 7007.1300 subp. 3(H)(4)**

Stack/Vent Designation No.: NA

Maximum Capacity: ND

Operating Hours: 8760 hr/yr

Copiers

Pollutant	Emission Factor <sup>1</sup> (kg/Mg)	Hourly Potential Emission Rate (lb/hr)	Uncontrolled Potential Emissions (tons/yr)
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Unknown No Data

Emission Unit Identification No.: **Insignificant Activites 7007.1300 subp. 3(I)**

Stack/Vent Designation No.: NA

Maximum Capacity: ND

Operating Hours: 8760 hr/yr

Printers

Pollutant	Emission Factor <sup>1</sup> (kg/Mg)	Hourly Potential Emission Rate (lb/hr)	Uncontrolled Potential Emissions (tons/yr)
VOC	ND	0.14	0.63

\*Annual PTE from Permittee based on usage based on value in PER 003 TSD Calculations; hourly back-calculated using 8760 hr/yr

Emission Unit Identification No.: **Insignificant Activities 7007.1300(3)(B)(2)**

Stack/Vent Designation No.: NA

Maximum Capacity: 1.46 MMBtu/hr

Operating Hours: 8760 hr/yr

Makeup Air Unit

#### Fuel Data

Fuel Type	Sulfur (%)	Heat Value	Units	Max Fuel Consumption Rate	Units
Natural Gas	0.0001	1020	Btu/scf	0.001	MMscf/hr

Pollutant	Natural Gas Emissions					
	Emission Factor <sup>1</sup> (lb/10 <sup>6</sup> scf)	Hourly Potential Emission Rate (lb/hr)	Uncontrolled Potential Emissions (tons/yr)	Pollution Control Efficiency (%)	Controlled Potential Emissions (tons/yr)	Limited Potential Emissions (tons/yr)
PM	7.6E+00	1.09E-02	4.76E-02	0	4.76E-02	
PM <sub>10</sub>	7.6E+00	1.09E-02	4.76E-02	0	4.76E-02	
PM <sub>2.5</sub>	7.6E+00	1.09E-02	4.76E-02	0	4.76E-02	
SO <sub>x</sub>	6.0E-01	8.59E-04	3.76E-03	0	3.76E-03	
NO <sub>x</sub>	1.0E+02	1.43E-01	6.27E-01	0	6.27E-01	
CO	8.4E+01	1.20E-01	5.27E-01	0	5.27E-01	
Lead	5.0E-04	7.16E-07	3.13E-06	0	3.13E-06	
VOC	5.5E+00	7.87E-03	3.45E-02	0	3.45E-02	
CO <sub>2</sub> <sup>7</sup>	1.19E+05	1.71E+02	7.48E+02	0	7.48E+02	
CH <sub>4</sub> <sup>7</sup>	2.25E+00	3.22E-03	1.41E-02	0	1.41E-02	
N <sub>2</sub> O <sup>7</sup>	2.25E-01	3.22E-04	1.41E-03	0	1.41E-03	
CO <sub>2</sub> e <sup>6</sup>	1.19E+05	1.71E+02	7.48E+02	0	7.48E+02	
Benzene	2.1E-03	3.01E-06	1.32E-05	0	1.32E-05	
Dichlorobenzene	1.2E-03	1.72E-06	7.52E-06	0	7.52E-06	

Formaldehyde	7.5E-02	1.07E-04	4.70E-04	0	4.70E-04	
Hexane	1.8E+00	2.58E-03	1.13E-02	0	1.13E-02	
Naphthalene	6.1E-04	8.73E-07	3.82E-06	0	3.82E-06	
POM <sup>2</sup>	8.82E-05	1.26E-07	5.53E-07	0	5.53E-07	
Toluene	3.4E-03	4.87E-06	2.13E-05	0	2.13E-05	
Total HAPs <sup>3</sup>	1.88E+00	2.69E-03	1.18E-02	0	1.18E-02	
Arsenic	2.0E-04	2.86E-07	1.25E-06	0	1.25E-06	
Beryllium	1.2E-05	1.72E-08	7.52E-08	0	7.52E-08	
Cadmium	1.1E-03	1.57E-06	6.90E-06	0	6.90E-06	
Chromium	1.4E-03	2.00E-06	8.78E-06	0	8.78E-06	
Cobalt	8.4E-05	1.20E-07	5.27E-07	0	5.27E-07	
Manganese	3.8E-04	5.44E-07	2.38E-06	0	2.38E-06	
Mercury	2.6E-04	3.72E-07	1.63E-06	0	1.63E-06	
Nickel	2.1E-03	3.01E-06	1.32E-05	0	1.32E-05	
Selenium	2.4E-05	3.44E-08	1.50E-07	0	1.50E-07	

<sup>1</sup> Emissions Factors found in AP-42 Section 1.4 Natural Gas Combustion (7/98)

<sup>2</sup> The Emissions Factor for POM is the sum of the emissions factors s as defined in AP-42 Table 1.4-3 (7/98) (see EU 009 or EU 010)

<sup>3</sup> Total HAPs include: Benzene, Dichlorobenzene, Formaldehyde, Hexane, Naphthalene, Toluene and POM<sup>4</sup>

Total	
Pollutant	Tons/yr
PM	6.51E-02
PM <sub>10</sub>	6.51E-02
PM <sub>2.5</sub>	6.51E-02
NO <sub>x</sub>	8.36E-01
SO <sub>x</sub>	5.01E-03
CO	7.02E-01
VOC	6.76E-01
Total HAP	1.57E-02
Greenhouse Gases	7.48E+02
CO <sub>2</sub> e	1.00E+03

Totals include permit limits.

Unit	Description	VOC		PM		PM <sub>10</sub>		PM <sub>2.5</sub>	
		(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)
EU001	Pre-Expander	75.25	329.6	0.0	0.0	0.0	0.0	0.0	0.0
EU003	Block Mold	76.00	332.9	0.0	0.0	0.0	0.0	0.0	0.0
EU005	Shape Mold	2.73	11.98	0.0	0.0	0.0	0.0	0.0	0.0
EU006	Shape Mold	2.73	11.98	0.0	0.0	0.0	0.0	0.0	0.0
EU007	Extruder	1.6	7.0	0.0	0.0	0.0	0.0	0.0	0.0
EU008	Extruder	0.6	2.5	0.0	0.0	0.0	0.0	0.0	0.0
EU009	Boiler	0.067	0.292	0.058	0.255	0.058	0.255	0.058	0.255
EU010	Boiler	0.059	0.259	0.052	0.227	0.052	0.227	0.052	0.227
EU011	Pre-Expander (new)	59.9	262.4	0.0	0.0	0.0	0.0	0.0	0.0
EU012	Shape Mold	3.12	13.65	0.0	0.0	0.0	0.0	0.0	0.0
EU014	Hot Wire Cutters	0.0	0.0	7.25	31.76	7.25	31.76	7.25	31.76
EU015	Shape Mold (new)	3.53	15.45	0.0	0.0	0.0	0.0	0.0	0.0
EU016	Shape Mold (new)	3.53	15.45	0.0	0.0	0.0	0.0	0.0	0.0
EU017	Generator	0.612	2.68	0.52	2.28	0.43	1.87	0.42	1.82
F001	Storage Emissions	47.1	206.5	0.0	0.0	0.0	0.0	0.0	0.0
	<b>Total</b>	<b>276.8</b>	<b>238.1</b>	<b>7.88</b>	<b>34.52</b>	<b>7.79</b>	<b>34.11</b>	<b>7.78</b>	<b>34.06</b>
IAs	various	0.15	0.68	0.01	0.07	0.01	0.07	0.01	0.07
	<b>Total w/IAs</b>	<b>276.99</b>	<b>238.81</b>	<b>7.90</b>	<b>34.58</b>	<b>7.80</b>	<b>34.18</b>	<b>7.79</b>	<b>34.12</b>

<sup>1</sup>Includes controls; see the EU 017 sheet for uncontrolled PTE information.

<sup>2</sup>See boiler sheets for more individual HAP information from combustion

### Limited VOC Emissions

The permit limits the VOC usage from GP001 to 39,150 lb/month or 234.9 tpy.

Totals include permit limits.

Unit	Description	Total HAP <sup>2</sup>		Greenhouse Gases		CO <sub>2</sub> e	
		(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)
EU001	Pre-Expander	0.0	0.0	0.0	0.0	0.0	0.0
EU003	Block Mold	0.0	0.0	0.0	0.0	0.0	0.0
EU005	Shape Mold	0.0	0.0	0.0	0.0	0.0	0.0
EU006	Shape Mold	0.0	0.0	0.0	0.0	0.0	0.0
EU007	Extruder	1.6	7.0	NA	71.9	NA	93442.5
EU008	Extruder	0.6	2.5	NA	25.6	NA	33307.5
EU009	Boiler	0.014	0.061	1020.5	4469.9	1024.6	4487.7
EU010	Boiler	0.012	0.054	908.0	3977.2	911.7	3993.1
EU011	Pre-Expander (new)	0.00	0.00	0.0	0.0	0.0	0.0
EU012	Shape Mold	0.0	0.0	0.0	0.0	0.0	0.0
EU014	Hot Wire Cutters	0.0	0.0	58.0	253.9	58.2	254.7
EU015	Shape Mold (new)	0.0	0.0	0.0	0.0	0.0	0.0
EU016	Shape Mold (new)	0.0	0.0	0.0	0.0	0.0	0.0
EU017	Generator	0.011	0.049	1216.3	5327.411	1220.3	5345.1
F001	Storage Emissions	0.0	0.0	0.0	0.0	0.0	0.0
	<b>Total</b>	<b>2.20</b>	<b>9.62</b>	<b>3202.8</b>	<b>14125.84</b>	<b>3215</b>	<b>140831</b>
IAs	various	3.59E-03	1.57E-02	1.71E+02	7.48E+02	228.35	1000.15
	<b>Total w/IAs</b>	<b>2.20</b>	<b>9.64</b>	<b>3373.5</b>	<b>14873.47</b>	<b>3443</b>	<b>141831</b>

Totals include permit limits.

Unit	Description	CO		SO <sub>2</sub>		NO <sub>x</sub>	
		(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)
EU001	Pre-Expander	0.0	0.0	0.0	0.0	0.0	0.0
EU003	Block Mold	0.0	0.0	0.0	0.0	0.0	0.0
EU005	Shape Mold	0.0	0.0	0.0	0.0	0.0	0.0
EU006	Shape Mold	0.0	0.0	0.0	0.0	0.0	0.0
EU007	Extruder	0.0	0.0	0.0	0.0	0.0	0.0
EU008	Extruder	0.0	0.0	0.0	0.0	0.0	0.0
EU009	Boiler	0.62	2.73	0.12	0.55	1.08	4.74
EU010	Boiler	0.56	2.43	0.11	0.49	0.96	4.22
EU011	Pre-Expander (new)	0.0	0.0	0.0	0.0	0.0	0.0
EU012	Shape Mold	0.0	0.0	0.0	0.0	0.0	0.0
EU014	Hot Wire Cutters	0.0	0.0	0.0	0.0	0.0	0.0
EU015	Shape Mold (new)	0.0	0.0	0.0	0.0	0.0	0.0
EU016	Shape Mold (new)	0.0	0.0	0.0	0.0	0.0	0.0
EU017	Generator	6.35	8.34	3.77	16.52	17.53	76.78
F001	Storage Emissions	0.0	0.0	0.0	0.0	0.0	0.0
	<b>Total</b>	<b>8</b>	<b>13.51</b>	<b>4</b>	<b>17.56</b>	<b>20</b>	<b>85.73</b>
IAs	various	0.160	0.702	1.14E-03	0.005	0.191	0.836
	<b>Total w/IAs</b>	<b>8</b>	<b>14</b>	<b>4</b>	<b>18</b>	<b>20</b>	<b>87</b>



**ATTACHMENT 2**  
**2006 IPCC GUIDELINES FOR NATIONAL GREENHOUSE GAS INVENTORIES**  
**CHAPTER 7: EMISSIONS OF FLUORINATED SUBSTITUTES FOR OZONE DEPLETING**  
**SUBSTANCES (pg 35-38)**

In earlier assessments the calculation of decommissioning losses has been based on the premise that all blowing agent remaining in a foam at end-of-life will be lost at the decommissioning stage. From an emissions standpoint, this is a worst case scenario, even for disposal methods which are not targeted at recovery and destruction (see footnote 13). In practice, recovery and destruction of blowing agent or direct destruction (e.g., incineration) will further alleviate these losses. Hence Equation 7.7 carries a fourth component to allow for HFC emissions prevented in this way. The UNEP TEAP Task Force Report on Foams End-of-Life (UNEP-TEAP, 2005) addresses the many of the potential ways in which foam blowing agent emissions can be avoided and introduces the concept of Recovery and Destruction Efficiency (RDE) to assess the effectiveness of such methods.

Even where active recovery and destruction methods are not practised, it is still unlikely that all blowing agent will be released at end of life, particularly when foams are typically left in tact during disposal (e.g. during land-filling). Under these circumstances, a considerable proportion of the blowing agent will remain in the waste stream and an additional *banked* emission source will be established. Since the emission rates from such a bank will be lower than 100 percent, Equation 7.7 will over-estimate emissions where a significant proportion of the foam containing HFCs used in the country has already been decommissioned. Although it would be possible to envisage a fifth component to Equation 7.7 to address this element of emission, it is not deemed of sufficient relevance to warrant such an approach for the global phase of HFC use being covered by these *Guidelines*. However, some of the more sophisticated globally or regionally-derived assessments may address this issue.

If it is not possible to collect data for potential losses upon decommissioning, it should be assumed that all chemical not emitted in manufacturing is emitted over the lifetime of the foam. However, particular care should be taken to check whether articles such as domestic or commercial refrigerators and freezers are exported to another country for re-use. Where the foam application cannot be disaggregated to the sub-application level and no globally or regionally derived activity data is available, a Tier 1a method needs to be followed. *Good practice* in the choice of a Tier 1 method is to assume that all closed cell foam emissions follow the Gamlen model (see Table 7.5)

TABLE 7.5 DEFAULT EMISSION FACTORS FOR HFC FROM CLOSED-CELL FOAM	
Emission Factor	Default Values
Product Lifetime	n = 20 years
First Year Losses	10% of the original HFC charge/year, although the value could drop to 5% if significant recycling takes place during manufacturing.
Annual Losses	4.5% of the original HFC charge/year
Source: Gamlen <i>et al.</i> (1986).	

If both historical and current country-specific activity data is available for closed cell foams at the application level, it is possible to apply the Gamlen model to this information. However, the primary challenge for inventory compilers is usually in the characterisation of historic activity data at a country level. If such difficulties exist, it is usually possible to estimate activity data at a country level from the application of geo-economic factors provided that regional, globally or regionally-validated activity data are known. This approach is covered further in Section 7.4.2.3.

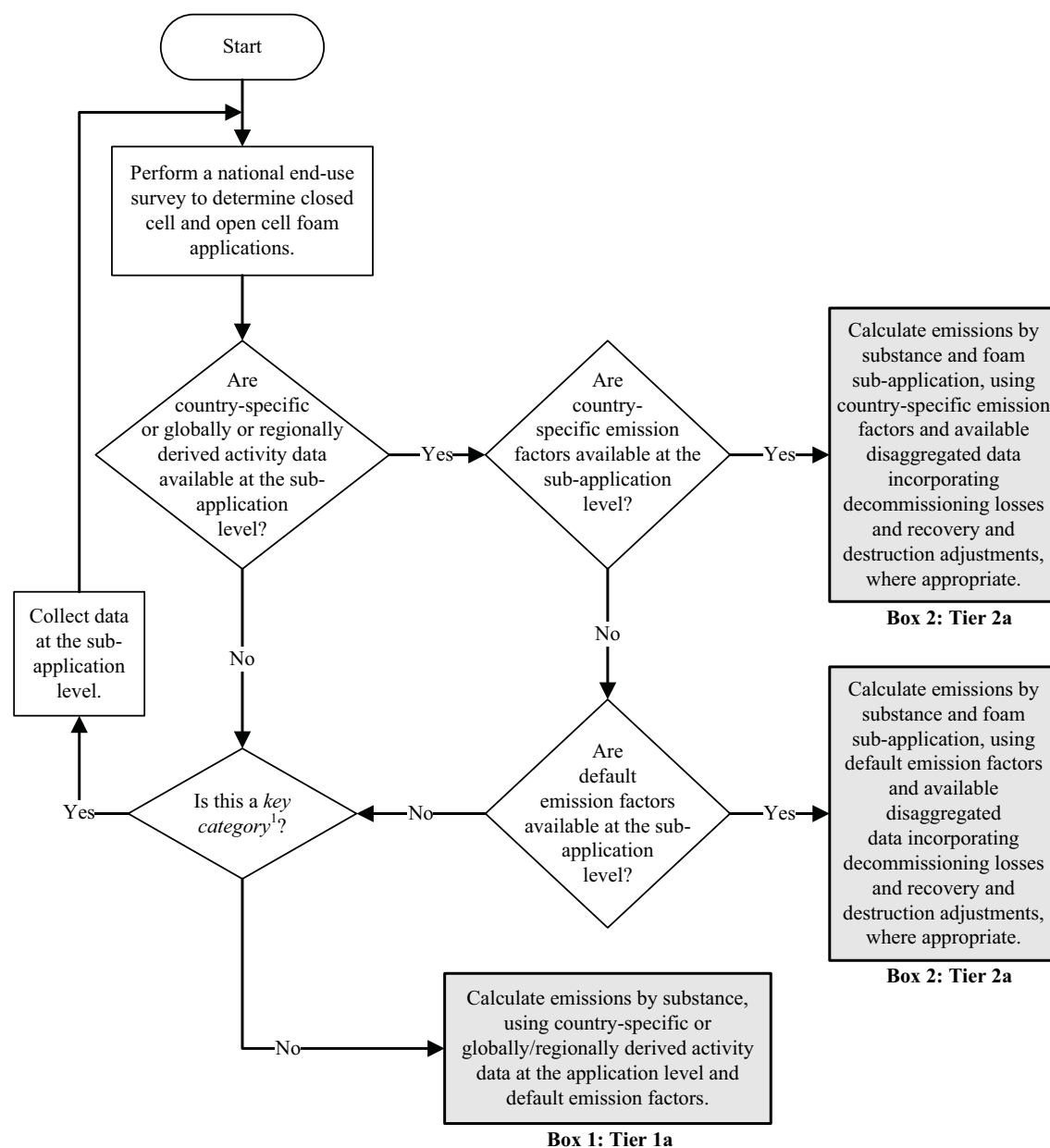
Where net consumption activity data is available at the sub-application level, either from sources of country-specific data or from globally or regionally derived activity datasets, it is *good practice* to use Tier 2 methods that reflect the level of disaggregation. This is particularly important for foams because of the heterogeneous nature of the various sub-applications involved. The decision tree in Figure 7.4 describes *good practice* in selecting methods for estimating emissions.

### 7.4.2.2 CHOICE OF EMISSION FACTORS

As in other applications, the first choice for emission factors is to develop and use peer-reviewed and well documented country-specific data based on field research on each foam type (open cell and closed cell) in support of a Tier 2a approach. As noted previously, if no information is available at the sub-application level, emission factors can be adopted from the Emission Factor Database (EFDB) or from the data contained in this section. However, it should be noted that the data contained in this section will not be replaced with updated

values in the same way as may happen for the EFDB. Either country-specific or globally/regionally-derived approaches will lead to the necessary assessment of decommissioning losses.<sup>15</sup>

**Figure 7.4 Decision tree for emissions from the foam application**



Note:

1. See Volume 1 Chapter 4, Methodological Choice and Identification of Key Categories (noting Section 4.1.2 on limited resources), for discussion of *key categories* and use of decision trees.

Table 7.6, Default Emission Factors for HFC-134a/HFC-152a (Foam Sub-Application) and Table 7.7, Default Emission Factors for HFC-245a/HFC-365mfc/HFC-227ea (Foam Sub-Application) lists default emission factors

<sup>15</sup> It has also been noted that decommissioning may not necessarily involve total loss of blowing agent at that point, either because of a level of secondary use or because the item has been discarded intact (e.g., many refrigerators). These could be considered as some of the end-of-life management options available to nations, but are clearly less effective than proper destruction or recovery technologies. Emission models should focus proper attention to end-of-life issues.

assumptions for the most important current closed-cell foam applications. Use of these factors will require data on chemical sales at the sub-application level for both current and historic consumption in order that the bank of chemical in equipment/products for these sub-applications is properly considered.

<b>TABLE 7.6</b> <b>DEFAULT EMISSION FACTORS FOR HFC-134a AND HFC-152a USES (FOAM SUB-APPLICATIONS)</b> <b>(IPCC/TEAP, 2005)</b>				
<b>Sub-Application</b>	<b>Product Life in years</b>	<b>First Year Loss %</b>	<b>Annual Loss %</b>	<b>Maximum Potential End-of-Life Loss %</b>
Polyurethane – Integral Skin	12	95	2.5	0
Polyurethane – Continuous Panel	50	10	0.5	65
Polyurethane – Discontinuous Panel	50	12.5	0.5	62.5
Polyurethane – Appliance	15	7	0.5	85.5
Polyurethane – Injected	15	12.5	0.5	80
One Component Foam (OCF) <sup>a</sup>	50	95	2.5	0
Extruded Polystyrene (XPS) <sup>b</sup> - HFC-134a	50	25	0.75	37.5
Extruded Polystyrene (XPS) - HFC-152a	50	50	25	0
Extruded Polyethylene (PE) <sup>a</sup>	50	40	3	0
Source:				
<sup>a</sup> Ashford and Jeffs (2004) assembled from UNEP FTOC Reports (UNEP-FTOC, 1999; UNEP-FTOC, 2003).				
<sup>b</sup> Vo and Paquet (2004): An Evaluation of Thermal Conductivity over time for Extruded Polystyrene Foams blown with HFC-134a and HCFC-142b				

Some articles, such as reefers or insulated truck bodies, may spend almost all of their practical lives in transit between countries. Since these applications have very low in-use emissions it is reasonable if only the manufacturing and decommissioning losses are taken into account.

<b>TABLE 7.7</b> <b>DEFAULT EMISSION FACTORS FOR HFC-245fa/HFC-365mfc/HFC-227ea USES (FOAM SUB-APPLICATION)</b>				
<b>HFC-245a/HFC-365mfc Applications</b>	<b>Product Life in years</b>	<b>First Year Loss %</b>	<b>Annual Loss %</b>	<b>Maximum Potential End-of-Life Loss %</b>
Polyurethane – Continuous Panel	50	5	0.5	70
Polyurethane – Discontinuous Panel	50	12	0.5	63
Polyurethane – Appliance	15	4	0.25	92.25
Polyurethane – Injected	15	10	0.5	82.5
Polyurethane – Cont. Block	15	20	1	65
Polyurethane – Disc. Block for pipe sections	15	45	0.75	43.75
Polyurethane – Disc. Block for panels	50	15	0.5	60
Polyurethane – Cont. Laminate / Boardstock	25	6	1	69
Polyurethane – Spray	50	15	1.5	10
Polyurethane – Pipe-in-Pipe	50	6	0.25	81.5
Phenolic – Discontinuous Block	15	45	0.75	43.75
Phenolic – Discontinuous Laminate	50	10	1	40
Polyurethane – Integral Skin	12	95	2.5	0
Source: Ashford and Jeffs (2004) assembled from UNEP FTOC Reports (UNEP-FTOC, 1999; UNEP-FTOC, 2003)				

If only aggregated chemical sales data for closed-cell foam are available and information on specific foam types cannot be obtained, the general default emission factors shown in Table 7.5 can be used in support of a Tier 1a

method.<sup>16</sup> This replicates the previous Tier 2 guidance contained in the *Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories* (IPCC, 1997) but is now classified as a Tier 1a method following the exclusion of potential emission methods for ODS substitutes.

Use of these default emission factors will result in 90 percent of the initial charges being emitted over twenty years of annual use, after the initial 10 percent during the first year.

### **7.4.2.3 CHOICE OF ACTIVITY DATA**

Two types of activity data are needed in order to prepare the emissions estimates:

1. the amount of chemical used in foam manufacturing in a country and not subsequently exported, and
2. the amount of chemical contained in foam imported into the country.

Data collection issues related to these two areas differ.

#### **Chemical used in foam manufacture**

The amount of bulk chemicals used in the foam blowing industry should include both domestically produced and imported HFCs. Domestic chemical sales data to the foam industry should be available directly from chemical suppliers or foam manufacturers at the application level (Tier 1a) and may extend to a sub-application analysis (Tier 2a). As with other ODS substitute applications, imported chemical data may be available from customs officials or chemical distributors.

Historic consumption data is required to build an adequate picture of the development of blowing agent banks. However, this does not apply to open-celled foams which lose their blowing agents in the first year. For open-cell foam, all emissions will occur during manufacture, with the exception of the OCF sub-sector mentioned above. Thus, it is necessary to determine the share of chemical associated with the manufacture of open-celled foam. These data can be determined through an end-use survey, or approximated by reviewing similar end-use data gathered on CFCs and HCFCs.

#### **Chemical contained in imported and exported foams**

Inventory compilers in countries that export closed-cell foam should subtract these volumes from their calculations of annual banks and ultimately decommissioning losses, since the in-use emissions will occur in the importing country. Data on the chemical charge of exported closed-cell foam may be available from large manufacturers. However, customs data itself is unlikely to yield relevant information on blowing agent type unless special provisions have been set up by the reporting country.

Similarly, inventory compilers in countries that import products containing closed-cell foam, should include estimates of emissions from these imported products for completeness. Since the inventory compiler will have even less knowledge and control of products manufactured outside of the country than for those manufactured and subsequently exported, information on the blowing agents contained in closed-cell foam products imported is even more difficult to collect. Accordingly, inventory compilers in countries whose emissions occur only from imported closed-cell foam may need to use expert judgement in estimating this data (see Volume 1, Chapters 2 and 3).

In the past, inventory compilers were not able to use international HFC production and consumption data sets to develop estimates of chemical contained in imported closed-cell foam because these data sets did not include regional use and trade pattern databases. For example, the Alternative Fluorocarbons Environmental Acceptability Study (AFEAS) statistics-gathering process compiled global activity data up until 1997 for HFC-134a in the foam sector<sup>17</sup> but regional breakdowns were unavailable.

To help resolve this problem, some databases now contain national mechanisms to assist inventory compilers by taking advantage of international HFC/PFC consumption and emission data sets to access globally or regionally derived activity data and bank estimates for blowing agents contained in closed cell foams within their own countries. These can be applied within Tier 2a assessments and will provide estimated consumption and bank data at the sub-application level, to which the default emission factors contained in Tables 7.6 and 7.7 (or updated versions thereof carried in the EFDB or elsewhere) can be applied.

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<sup>16</sup> No emission factors are provided for open-cell foams because all emissions occur during the first year.

<sup>17</sup> HFC-134a is the most commonly used HFC. AFEAS data can found at <http://www.afeas.org>.

**ATTACHMENT 3**  
**FACILITY DESCRIPTION AND CD-01**  
*(paper copy only)*



## FACILITY DESCRIPTION: GROUPS (GP)

Show: Active and Pending Records

Action: PER 004

AQD Facility ID: 05300443

Facility Name: Minnesota Diversified Products Inc

	ID No.	Group Status	Added By (Action)	Retired By (Action)	Include in EI	Operator ID for Item	Group Description	Group Items
1	GP 001	Active	PER 003		<input type="checkbox"/>		Total Facility VOC Limits	EU 001, EU 003, EU 005, EU 006, EU 007, EU 008, EU 011, EU 012, EU 015, EU 016
2	GP 001	Active	PER 004		<input type="checkbox"/>		Total Facility VOC Limits	EU 001, EU 003, EU 005, EU 006, EU 007, EU 008, EU 011, EU 012, EU 015, EU 016
3	GP 002	Active	PER 001		<input type="checkbox"/>		New Equipment	EU 011, EU 015, EU 016
4	GP 002	Active	PER 004		<input type="checkbox"/>		New Equipment	EU 015, EU 016
5	GP 003	Retired	PER 003		<input type="checkbox"/>		VOC Units Other Than Extrusion	EU 001, EU 002, EU 005, EU 006, EU 011, EU 012, EU 015, EU 016



## FACILITY DESCRIPTION: STACK/VENTS (SV)

Show: Active and Pending Records  
Action: PER 004  
AQD Facility ID: 05300443  
Facility Name: Minnesota Diversified Products Inc

	ID No.	Stack/ Vent Status	Added By (Action)	Retired By (Action)	Operator ID for Item	Operators Description	Height of Opening From Ground (feet)	Inside Dimensions		Design Flow Rate at Top (ACFM)	Exit Gas Temperature at Top (°F)	Flow Rate/ Temperature Information Source	Discharge Direction
								Diameter or Length (feet)	Width (feet)				
1	SV 001	Active	PER 001			Pre-Expander (201)	20	0.83		3000	150	Estimate	Up, No Cap
2	SV 002	Active	PER 001			25" Block Mold (202)	25	0.83		1000	150	Estimate	Up, No Cap
3	SV 003	Removec	PER 003			31" Block Mold (203)	25	0.83		1000	150	Estimate	Up, No Cap
4	SV 004	Removec	PER 003			Tri-904 Pre-Expander/New Pre-Expander	13	2.5		3000	150	Estimate	Up, No Cap
5	SV 005	Active	PER 001			Custom Shape Mold (205)	25	0.83		1000	150	Estimate	Up, No Cap
6	SV 006	Active	PER 001			Custom Shape Mold (206)	25	0.83		1000	150	Estimate	Up, No Cap
7	SV 007	Active	PER 001			Extruders (801) (Gen Vent)	1	2.0		2000	70	Estimate	Horizontal
8	SV 008	Active	PER 001			Boiler 1 Vent (207)	23	1.17		1900	300	Estimate	Up, With Cap
9	SV 009	Active	PER 001			Boiler 2 Vent (208)	23.0	1.17		1690	300	Estimate	Up, With Cap
10	SV 010	Active	PER 001			Proposed Shape Mold Press	25	0.83		1000	150	Estimate	Horizontal
11	SV 011	Removec	PER 003			Laminator (601)	13	1.5		3000	70	Estimate	Horizontal
12	SV 012	Active	PER 001			Hot Wire Cutters	25	1.5		10000	70	Estimate	Horizontal
13	SV 013	Active	PER 001			Projected Shape Molder (new)							
14	SV 014	Active	PER 001			Projected Shape Molder (new)							
15	SV 015	Active	PER 002			Peaking Generator	22.5	0.83		6432	957	Manufacturer	Up, No Cap





## FACILITY DESCRIPTION: CONTROL EQUIPMENT (CE)

Show: Active and Pending Records

Action: PER 004

AQD Facility ID: 05300443

Facility Name: Minnesota Diversified Products Inc

	ID No.	Control Equip. Status	Added By (Action)	Retired By (Action)	Operator ID for Item	Control Equip. Type	Control Equipment Description	Manufacturer	Model	Pollutants Controlled	Capture Efficiency (%)	Destruction/Collection Efficiency (%)	Afterburner Combustion Parameters
1	CE 001	Active	PER 002			099	Oxidation Catalyst	Caterpillar		CO	100	70	957F; 2.5 in wc
2	CE 001	Active	PER 004			099	Oxidation Catalyst	Caterpillar	10-24-10-L1	CO	100	70	957F; 2.5 in wc



## FACILITY DESCRIPTION: EMISSION UNIT (EU)

Show: Active and Pending Records  
Action: PER 004  
AQD Facility ID: 05300443  
Facility Name: Minnesota Diversified Products Inc

	ID No.	Emission Unit Status	Added By (Action)	Retired By (Action)	Insignificant Activity	Operator ID for Item	Stack/Vent ID No(s).	Control Equip. ID No(s).	Operator Description	Manufacturer	Model Number	SIC	Max. Design Capacity	Maximum Design Capacity			Max Fuel Input (mil Btu)
														Materials	Units n	Units d	
1	EU 001	Active	PER 001		<input type="checkbox"/>		SV 001 (M)		Dingeldein Pre-Expander	Dingeldein	VA-K2000	3086	2500		Lb	Hr	
2	EU 001	Active	PER 004		<input type="checkbox"/>		SV 001 (M)		Dingeldein Pre-Expander	Dingeldein	VA-K2000	3086	2500	Foam	Lb	Hr	
3	EU 002	Removed	PER 003		<input type="checkbox"/>				25" Block Mold	Wieser	SF18-4-25 D111A	3086	1340		Lb	Hr	
4	EU 003	Active	PER 001		<input type="checkbox"/>		SV 003 (M)		31" Block Mold	Wieser	SF 5 5-1 2-0 7VO	3086	2585		Lb	Hr	
5	EU 003	Active	PER 004		<input type="checkbox"/>		SV 003 (M)		31" Block Mold	Wieser	SF 5 5-1 2-0 7VO	3086	2585	Foam	Lb	Hr	
6	EU 004	Removed	PER 003		<input type="checkbox"/>				Tri-904 Pre-Expander (to be removed)	Tri-904	904	3086	700		Lb	Hr	
7	EU 005	Active	PER 003		<input type="checkbox"/>				Custom Shape Mold (205)	Kurtz	K813	3086	93		Lb	Hr	
8	EU 005	Active	PER 004		<input type="checkbox"/>		SV 005 (M)		Custom Shape Mold (205)	Kurtz	K813	3086	93	Foam	Lb	Hr	
9	EU 006	Active	PER 001		<input type="checkbox"/>		SV 006 (M)		Custom Shape Mold (206)	Kurtz	K813	3086	93		Lb	Hr	
10	EU 006	Active	PER 004		<input type="checkbox"/>		SV 006 (M)		Custom Shape Mold (206)	Kurtz	K813	3086	93	Foam	Lb	Hr	
11	EU 007	Active	PER 001		<input type="checkbox"/>		SV 007 (M)		48" Extruder	Gloucester Engineering	29195	3086	1543	Foam	Lb	Hr	
12	EU 008	Active	PER 001		<input type="checkbox"/>		SV 007 (M)		24" Extruder	LMP Engineering	RC41/EP	3086	550	Foam	Lb	Hr	
13	EU 009	Active	PER 001		<input type="checkbox"/>		SV 008 (M)		Boiler 1	York-Shipley	FA 200	3086	7.53	Heat	Mmbtu	Hr	7.53
14	EU 010	Active	PER 001		<input type="checkbox"/>		SV 009 (M)		Boiler 2	York-Shipley	200-4G	3086	6.70	Heat	Mmbtu	Hr	6.70
15	EU 011	Active	PER 001		<input type="checkbox"/>		SV 004 (M)		Pre-Expander (new)	Hirsch Maschinenbau	Vacutrans Preex 6000	3086	1990		Lb	Hr	
16	EU 011	Active	PER 004		<input type="checkbox"/>		SV 004 (M)		Pre-Expander	Hirsch Maschinenbau	Vacutrans Preex 6000	3086	1990	Foam	Lb	Hr	
17	EU 012	Active	PER 001		<input type="checkbox"/>		SV 010 (M)		Shape Mold Press (Proposed)	Hirsch Maschinenbau	Vacutrans HS 1300	3086	106		Lb	Hr	
18	EU 012	Active	PER 004		<input type="checkbox"/>		SV 010 (M)		Shape Mold Press	Hirsch Maschinenbau	Vacutrans HS 1300	3086	106	Foam	Lb	Hr	
19	EU 013	Removed	PER 003		<input type="checkbox"/>		SV 011 (M)		24" Laminator	Black Bros	171509	3086	110		Ft2	Hr	
20	EU 014	Active	PER 001		<input type="checkbox"/>				Hot Wire Cutting Tables	Misc	Misc	3086	2500		Lb	Hr	
21	EU 014	Active	PER 004		<input type="checkbox"/>		SV 012 (M)		Hot Wire Cutting Tables	Misc	Misc	3086	2500	Foam	Lb	Hr	
22	EU 015	Active	PER 001		<input type="checkbox"/>		SV 013 (M)		New Shape Molder 1 (projected)	TBD	TBD	3086	120		Lb	Hr	
23	EU 015	Active	PER 004		<input type="checkbox"/>				New Shape Molder 1 (projected)	TBD	TBD	3086	120	Foam	Lb	Hr	
24	EU 016	Active	PER 001		<input type="checkbox"/>		SV 014 (M)		New Shape Molder 2 (projected)	TBD	TBD	3086	120		Lb	Hr	
25	EU 016	Active	PER 004		<input type="checkbox"/>				New Shape Molder 2 (projected)	TBD	TBD	3086	120	Foam	Lb	Hr	

**FACILITY DESCRIPTION: EMISSION UNIT (EU)**

	ID No.	Emission Unit Status	Added By (Action)	Commence Const. Date	Initial Startup Date	Removal Date	Firing Method	Pct. Fuel/ Space Heat	Bottleneck	Elevator Type
1	EU 001	Active	PER 001	12/31/1985	12/31/1985					
2	EU 001	Active	PER 004	12/31/1985	12/31/1985					
3	EU 002	Removed	PER 003	12/31/1987	12/31/1987	12/31/2005				
4	EU 003	Active	PER 001	12/31/1988	12/31/1988					
5	EU 003	Active	PER 004	12/31/1988	12/31/1988					
6	EU 004	Removed	PER 003	12/31/1990	12/31/1990	12/31/2002				
7	EU 005	Active	PER 003	12/31/1990	12/31/1990					
8	EU 005	Active	PER 004	12/31/1990	12/31/1990					
9	EU 006	Active	PER 001	12/31/1990	12/31/1990					
10	EU 006	Active	PER 004	12/31/1990	12/31/1990					
11	EU 007	Active	PER 001	12/31/1998	12/31/1998					
12	EU 008	Active	PER 001	12/31/1983	12/31/1983					
13	EU 009	Active	PER 001	12/31/1978	12/31/1978					
14	EU 010	Active	PER 001	12/31/1973	12/31/1973					
15	EU 011	Active	PER 001	08/01/2001	08/02/2001					
16	EU 011	Active	PER 004	08/01/2001	08/02/2001					
17	EU 012	Active	PER 001	06/01/2002	06/01/2002					
18	EU 012	Active	PER 004	06/01/2002	06/01/2002					
19	EU 013	Removed	PER 003	12/31/1990	12/31/1990	12/31/2005				
20	EU 014	Active	PER 001	12/31/1985	12/31/1985					
21	EU 014	Active	PER 004	12/31/1985	12/31/1985					
22	EU 015	Active	PER 001							
23	EU 015	Active	PER 004							
24	EU 016	Active	PER 001							
25	EU 016	Active	PER 004							



## FACILITY DESCRIPTION: EMISSION UNIT (EU)

Show: Active and Pending Records

Action: PER 004

AQD Facility ID: 05300443

Facility Name: Minnesota Diversified Products Inc

	ID No.	Emission Unit Status	Added By (Action)	Retired By (Action)	Insignificant Activity	Operator ID for Item	Stack/Vent ID No(s).	Control Equip. ID No(s).	Operator Description	Manufacturer	Model Number	SIC	Max. Design Capacity	Maximum Design Capacity			Max Fuel Input (mil Btu)
														Materials	Units n	Units d	
26	EU 017	Active	PER 002		<input type="checkbox"/>		SV 015 (M)	CE 001	Caterpillar 3412 Diesel Generator 750 KW; 1000 hp	Caterpillar	3412	3086	1000	Energy	Hp		7.47

**FACILITY DESCRIPTION: EMISSION UNIT (EU)**

	ID No.	Emission Unit Status	Added By (Action)	Comm- ence Const. Date	Initial Startup Date	Removal Date	Firing Method	Pct. Fuel/ Space Heat	Bottleneck	Elevator Type
26	EU 017	Active	PER 002	08/01/2004	01/01/2005					



# COMPLIANCE PLAN **CD-01**

Facility Name: Minnesota Diversified Products Inc

Permit Number: 05300443 - 004

**Subject Item: Total Facility**

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	SOURCE-SPECIFIC REQUIREMENTS
2.0		CD	Minn. R. 7007.0800, subp. 2	Permit Appendices: This permit contains appendices as listed in the permit Table of Contents. The Permittee shall comply with all requirements contained in the appendices.
3.0		CD	Title I Condition: To avoid classification as major source and modification under 40 CFR Section 52.21 & Minn. R. 7007.3000	This permit establishes limits on the facility to keep it a minor source under New Source Review. The Permittee cannot make any change at the source that would make the source a major source under New Source Review until a permit amendment has been issued. This includes changes that might otherwise qualify as insignificant modifications and minor or moderate amendments.
4.0		S/A	Minn. R. 7007.0800, subp. 2	Annual Report: due 31 days after end of each calendar year following Permit Issuance. The Permittee shall submit an annual report by January 31 that describes the changes made at the facility during the previous calendar year using the latest MPCA application forms. The report shall document the VOC 12-month rolling average calculations for the previous calendar year. The report shall be submitted with the annual Compliance Certification listed in Table B. As part of the Annual Report, the Permittee shall verify and certify that the facility has maintained minor source status for New Source Review.
5.0		CD	Minn. R. 7007.0800, subp. 2	Equipment Labeling and Inventory: The Permittee shall permanently affix a unique number to each emissions unit for tracking purposes. The numbers shall correlate the unit to the appropriate EU and GP numbers used in this permit. The number shall be affixed by placard, stencil, or other similar means, and shall be maintained so that they are readable and visible at all times from a safe distance.  The Permittee shall maintain a written list of all emissions units on site. The list shall correlate the units to the numbers used in this permit (EU and GP) and shall include the data from Appendix III of this permit. The Permittee shall update the list to include any new, replaced, or modified equipment prior to making the change.
6.0		CD	hdr	OPERATIONAL REQUIREMENTS
7.0		CD	40 CFR pt. 50; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080	The Permittee shall comply with National Primary and Secondary Ambient Air Quality Standards, 40 CFR pt. 50, and the Minnesota Ambient Air Quality Standards, Minn. R. 7009.0010 to 7009.0080. Compliance shall be demonstrated upon written request by the MPCA.
8.0		CD	Minn. R. 7011.0020	Circumvention: Do not install or use a device or means that conceals or dilutes emissions, which would otherwise violate a federal or state air pollution control rule, without reducing the total amount of pollutant emitted.
9.0		CD	Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, subp. 16(J)	Air Pollution Control Equipment: Operate all pollution control equipment whenever the corresponding process equipment and emission units are operated.
10.0		CD	Minn. R. 7007.0800, subps. 14 and 16(J)	Operation and Maintenance Plan: Retain at the stationary source an operation and maintenance plan for all air pollution control equipment. At a minimum, the O & M plan shall identify all air pollution control equipment and control practices and shall include a preventative maintenance program for the equipment and practices, a description of (the minimum but not necessarily the only) corrective actions to be taken to restore the equipment and practices to proper operation to meet applicable permit conditions, a description of the employee training program for proper operation and maintenance of the control equipment and practices, and the records kept to demonstrate plan implementation.
11.0		CD	Minn. R. 7019.1000, subp. 4	Operation Changes: In any shutdown, breakdown, or deviation the Permittee shall immediately take all practical steps to modify operations to reduce the emission of any regulated air pollutant. The Commissioner may require feasible and practical modifications in the operation to reduce emissions of air pollutants. No emissions units that have an unreasonable shutdown or breakdown frequency of process or control equipment shall be permitted to operate.
12.0		CD	Minn. R. 7011.0150	Fugitive Emissions: Do not cause or permit the handling, use, transporting, or storage of any material in a manner which may allow avoidable amounts of particulate matter to become airborne. Comply with all other requirements listed in Minn. R. 7011.0150.
13.0		CD	Minn. R. 7030.0010 - 7030.0080	Noise: The Permittee shall comply with the noise standards set forth in Minn. R. 7030.0010 to 7030.0080 at all times during the operation of any emission units. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.



## COMPLIANCE PLAN **CD-01**

Facility Name: Minnesota Diversified Products Inc

Permit Number: 05300443 - 004

14.0		CD	Minn. R. 7007.0800, subp. 9(A)	Inspections: The Permittee shall comply with the inspection procedures and requirements as found in Minn. R. 7007.0800, subp. 9(A).
15.0		CD	Minn. R. 7007.0800, subp. 16	The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16.
16.0		CD	hdr	PERFORMANCE TESTING
17.0		CD	Minn. R. ch. 7017	Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017 unless otherwise noted in Tables A, B, and/or C.
18.0		CD	Minn. R. 7017.2018; Minn. R. 7017.2030, subps. 1-4, Minn. R. 7017.2035, subps. 1-2	<p>Performance Test Notifications and Submittals:</p> <p>Performance Tests are due as outlined in Table A of the permit. See Table B for additional testing requirements.</p> <p>Performance Test Notification (written): due 30 days before each Performance Test Performance Test Plan: due 30 days before each Performance Test Performance Test Pre-test Meeting: due 7 days before each Performance Test Performance Test Report: due 45 days after each Performance Test Performance Test Report - Microfiche Copy: due 105 days after each Performance Test</p> <p>The Notification, Test Plan, and Test Report may be submitted in an alternative format as allowed by Minn. R. 7017.2018.</p>
19.0		CD	hdr	MONITORING REQUIREMENTS
20.0		CD	Minn. R. 7007.0800, subp. 4(D)	Monitoring Equipment Calibration: The Permittee shall calibrate all required monitoring equipment at least once every 12 months (any requirements applying to continuous emission monitors are listed separately in this permit).
21.0		CD	Minn. R. 7007.0800, subp. 4(D)	Operation of Monitoring Equipment: Unless otherwise noted in Tables A, B, and/or C, monitoring a process or control equipment connected to that process is not necessary during periods when the process is shutdown, or during checks of the monitoring systems, such as calibration checks and zero and span adjustments. If monitoring records are required, they should reflect any such periods of process shutdown or checks of the monitoring system.
22.0		CD	hdr	RECORDKEEPING
23.0		CD	Minn. R. 7007.0800, subp. 5(C)	Recordkeeping: Retain all records at the stationary source, unless otherwise specified within this permit, 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).
24.0		CD	Minn. R. 7007.0800, subp. 5(B)	Recordkeeping: Maintain records describing any insignificant modifications (as required by Minn. R. 7007.1250, subp. 3) or changes contravening permit terms (as required by Minn. R. 7007.1350, subp. 2), including records of the emissions resulting from those changes.
25.0		CD	Minn. R. 7007.1200, subp. 4	If the Permittee determines that no permit amendment or notification is required prior to making a change, the Permittee must retain records of all calculations required under Minn. R. 7007.1200. For expiring permits, these records shall be kept for a period of five years from the date the change was made or until permit reissuance, whichever is longer. The records shall be kept at the stationary source for the current calendar year of operation and may be kept at the stationary source or office of the stationary source for all other years. The records may be maintained in either electronic or paper format.
26.0		CD	hdr	REPORTING/SUBMITTALS
27.0		CD	Minn. R. 7019.1000, subp. 3	<p>Shutdown Notifications: Notify the Commissioner at least 24 hours in advance of a planned shutdown of any control equipment or process equipment if the shutdown would cause any increase in the emissions of any regulated air pollutant. If the owner or operator does not have advance knowledge of the shutdown, notification shall be made to the Commissioner as soon as possible after the shutdown. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 3.</p> <p>At the time of notification, the owner or operator shall inform the Commissioner of the cause of the shutdown and the estimated duration. The owner or operator shall notify the Commissioner when the shutdown is over.</p>



## COMPLIANCE PLAN **CD-01**

Facility Name: Minnesota Diversified Products Inc

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28.0		CD	Minn. R. 7019.1000, subp. 2	<p>Breakdown Notifications: Notify the Commissioner within 24 hours of a breakdown of more than one hour duration of any control equipment or process equipment if the breakdown causes any increase in the emissions of any regulated air pollutant. The 24-hour time period starts when the breakdown was discovered or reasonably should have been discovered by the owner or operator. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 2.</p> <p>At the time of notification or as soon as possible thereafter, the owner or operator shall inform the Commissioner of the cause of the breakdown and the estimated duration. The owner or operator shall notify the Commissioner when the breakdown is over.</p>
29.0		CD	Minn. R. 7019.1000, subp. 1	Notification of Deviations Endangering Human Health or the Environment: As soon as possible after discovery, notify the Commissioner or the state duty officer, either orally or by facsimile, of any deviation from permit conditions which could endanger human health or the environment.
30.0		CD	Minn. R. 7019.1000, subp. 1	<p>Notification of Deviations Endangering Human Health or the Environment Report: Within 2 working days of discovery, notify the Commissioner in writing of any deviation from permit conditions which could endanger human health or the environment. Include the following information in this written description:</p> <ol style="list-style-type: none"> <li>1. the cause of the deviation;</li> <li>2. the exact dates of the period of the deviation, if the deviation has been corrected;</li> <li>3. whether or not the deviation has been corrected;</li> <li>4. the anticipated time by which the deviation is expected to be corrected, if not yet corrected; and</li> <li>5. steps taken or planned to reduce, eliminate, and prevent reoccurrence of the deviation.</li> </ol>
31.0		S/A	Minn. R. 7007.0800, subp. 6(A)(2)	Semiannual Deviations Report: due 30 days after end of each calendar half-year following Permit Issuance. The first semiannual report submitted by the Permittee shall cover the calendar half-year in which the permit is issued. The first report of each calendar year covers January 1 - June 30. The second report of each calendar year covers July 1 - December 31. If no deviations have occurred, the Permittee shall submit the report stating no deviations.
32.0		CD	Minn. R. 7007.1150 - 7007.1500	Application for Permit Amendment: If a permit amendment is needed, submit an application in accordance with the requirements of Minn. R. 7007.1150 through Minn. R. 7007.1500. Submittal dates vary, depending on the type of amendment needed.
33.0		S/A	Minn. R. 7007.0400, subp. 2	Application for Permit Reissuance: due 180 days before expiration of Existing Permit
34.0		CD	Minn. R. 7007.1400, subp. 1(H)	Extension Requests: The Permittee may apply for an Administrative Amendment to extend a deadline in a permit by no more than 120 days, provided the proposed deadline extension meets the requirements of Minn. R. 7007.1400, subp. 1(H). Performance testing deadlines from the General Provisions of 40 CFR pt. 60 and pt. 63 are examples of deadlines for which the MPCA does not have authority to grant extensions and therefore do not meet the requirements of Minn. R. 7007.1400, subp. 1(H).
35.0		S/A	Minn. R. 7007.0800, subp. 6(C)	Compliance Certification: due 31 days after end of each calendar year following Permit Issuance (for the previous calendar year). The Permittee shall submit this on a form approved by the Commissioner, both to the Commissioner and to the US EPA regional office in Chicago. This report covers all deviations experienced during the calendar year.
36.0		CD	Minn. R. 7019.3000 - 7019.3100	Emission Inventory Report: due on or before April 1 of each calendar year following permit issuance, to be submitted on a form approved by the Commissioner.
37.0		CD	Minn. R. 7002.0005 - 7002.0095	Emission Fees: due 60 days after receipt of an MPCA bill.
38.0		CD	40 CFR pt. 68	The Permittee must submit a Risk Management Plan (RMP) under 40 CFR pt. 68. Each owner or operator of a stationary source, at which a regulated substance is present above a threshold quantity in a process, shall design and implement an accidental release prevention program. An initial RMP must be submitted no later than the latest of the following dates: 1) June 21, 1999; 2) Three years after the date on which a regulated substance is first listed under 40 CFR Section 68.130; or 3) The date on which a regulated substance is first present above a threshold quantity in a process. A full update and resubmission of the RMP is required at least once every five years. The five-year anniversary date is reset whenever your facility fully updates and resubmits their RMP. Submit RMPs to the Risk Management Plan Reporting Center, P.O. Box 1515, Lanham-Seabrook, Maryland 20703-1515. RMP information may be obtained at <a href="http://www.epa.gov/swercepp">http://www.epa.gov/swercepp</a> or by calling 1-800-424-9346.





## COMPLIANCE PLAN **CD-01**

Facility Name: Minnesota Diversified Products Inc

Permit Number: 05300443 - 004

**Subject Item:** GP 001 Total Facility VOC Limits

**Associated Items:** EU 001 Dingeldein Pre-Expander  
EU 003 31" Block Mold  
EU 005 Custom Shape Mold (205)  
EU 006 Custom Shape Mold (206)  
EU 007 48" Extruder  
EU 008 24" Extruder  
EU 011 Pre-Expander  
EU 012 Shape Mold Press  
EU 015 New Shape Molder 1 (projected)  
EU 016 New Shape Molder 2 (projected)

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	LIMITS
2.0		LIMIT	Title I Condition: To avoid classification as major source and modification under 40 CFR Section 52.21 & Minn. R. 7007.3000	<p>Volatile Organic Compounds: less than or equal to 39,150 lbs/month using 12-month Rolling Average 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 non-combustion VOC-emitting equipment at the Facility is subject to this limit, except for the following activities listed in Appendix I of this permit: blueprint copiers and photographic processes and a printing operation. VOC contents for each VOC-containing material shall be determined as described under the Material Content requirement in GP 001.</p>
3.0		CD	Title I Condition: To avoid classification as major source and modification under 40 CFR Section 52.21 & Minn. R. 7007.3000	<p>VOC limit continued:</p> <p>If the Permittee replaces any existing VOC-emitting equipment, adds new VOC-emitting equipment, or modifies the existing equipment, such equipment is subject to this permit limit as well as all of the requirements of GP 001. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment, as applicable.</p>
4.0		LIMIT	Minn. R. 7011.0715, subp. 1(A)	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. This applies separately to each emissions unit. None of these processes are expected to generate any particulate matter.
5.0		LIMIT	Minn. R. 7011.0715, subp. 1(B)	Opacity: less than or equal to 20 percent opacity . This applies separately to each emissions unit.
6.0		CD	hdr	MONITORING
7.0		CD	Title I Condition: To avoid classification as major source and modification under 40 CFR Section 52.21 & Minn. R. 7007.3000; Minn. R. 7007.0800. subp. 4 and 5	<p>Daily Recordkeeping.</p> <p>For VOC used in the EPS bead and extruded foam processes: On each day of operation, the Permittee shall maintain production records showing the amount of each VOC-containing material used. This shall be based on written usage logs and meter readings.</p> <p>For other VOC-containing materials: The Permittee shall calculate, maintain, and record monthly usage showing the quantity of each material used. This shall be based on either written usage logs or purchase/delivery records.</p>
8.0		CD	Minn. R. 7007.0800, subp. 4 and 5	<p>Monthly Recordkeeping -- VOC Emissions.</p> <p>By the 15th day of the month, the Permittee shall calculate and record the following:</p> <ol style="list-style-type: none"> <li>1) The total usage of VOC-containing materials for the previous calendar month using the daily and monthly usage records. This record shall also include the VOC and contents of each material as determined by the Material Content requirement of this permit.</li> <li>2) The VOC emissions, in pounds, for the previous month using the formula specified in this permit.</li> <li>3) The 12-month rolling average VOC emissions for the previous 12-month period by summing the monthly VOC emissions data for the previous 12 months and dividing by 12.</li> </ol>



## COMPLIANCE PLAN **CD-01**

Facility Name: Minnesota Diversified Products Inc

Permit Number: 05300443 - 004

9.0		CD	Minn. R. 7007.0800, subp. 4 and 5	<p>Monthly Calculation -- VOC Emissions. The Permittee shall calculate the Monthly Emissions Rate of VOC (MER) using the following equation:</p> $\text{MER (lbs/month)} = (A1 \times B1) + (A2 \times B2) + (A3 \times B3) \dots$ <p>where: A# = amount of each VOC-containing material used (e.g., EPS bead, adhesive, etc.), in pounds/month; B# = weight percent VOC in A#, as a fraction.</p>
10.0		CD	Minn. R. 7007.0800, subp. 4 and 5	<p>Material Content of EPS Bead: The Permittee shall use the Certificate of Analysis (COA) provided by the supplier to determine the VOC content of each shipment. If a COA is not available, the Permittee shall use 7% for the VOC content. However, if in the preceeding 12 months, EPS bead with a content greater than 7% was used, then the Permittee shall assume that the VOC content is equivalent to the highest VOC content used in the preceeding 12 months.</p> <p>Other alternative methods approved by the MPCA may be used to determine the VOC contents. The Commissioner reserves the right to require the Permittee to determine the VOC contents of any material, according to EPA or ASTM reference methods. If an EPA or ASTM reference method is used for material content determination, the data obtained shall supersede the MSDS.</p>
11.0		CD	Minn. R. 7007.0800, subp. 4 and 5	<p>Material Content of Other Materials: VOC contents in other materials shall be determined by the Material Safety Data Sheet (MSDS) provided by the supplier for each material used. If a material content range is given on the MSDS, the highest number in the range shall be used in all compliance calculations. Other alternative methods approved by the MPCA may be used to determine the VOC contents. The Commissioner reserves the right to require the Permittee to determine the VOC contents of any material, according to EPA or ASTM reference methods. If an EPA or ASTM reference method is used for material content determination, the data obtained shall supersede the MSDS.</p>
12.0		CD	Minn. R. 7005.0100, subp. 35a	<p>Maximum Contents of Materials: The Permittee assumed certain worst-case contents of materials when determining the short term potential to emit of units in GP001. These assumptions are listed in Appendix II of this permit. Changing to a material that has a higher content of any of the given pollutants is considered a change in method of operation that must be evaluated under Minn. R. 7007.1200, subp. 3 to determine if a permit amendment or notification is required under Minn. R. 7007.1150.</p>



## COMPLIANCE PLAN **CD-01**

Facility Name: Minnesota Diversified Products Inc

Permit Number: 05300443 - 004

**Subject Item:** GP 002 New Equipment

**Associated Items:** EU 015 New Shape Molder 1 (projected)

EU 016 New Shape Molder 2 (projected)

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	REQUIREMENTS
2.0		CD	Title I Condition: To avoid classification of changes as major modifications under 40 CFR Section 52.21 and Minn. R. 7007.3000	Construction Authorization: The Permittee is authorized to install and operate EU015 and EU016, as defined by the emissions unit information in Appendix II of the permit. The units shall meet all the requirements of this permit (e.g. GP001).
3.0		S/A	Minn. R. 7007.0800, subp. 2	Start Of Construction: due 180 days after Permit Issuance. The construction authorization is effective until 180 days after issuance of permit no. 05300443-004 and applies to EU015 and EU016 individually.
4.0		S/A	Minn. R. 7007.0800, subp 2	Notification of the Date Construction Began: due 30 days after Start Of Construction of EU015 and EU016. This applies separately to each emissions unit.
5.0		S/A	Minn. R. 7007.0800, subp 2	Notification of the Actual Date of Initial Startup: due 15 days after Initial Startup of EU015 and EU016. This applies separately to each emissions unit.



## COMPLIANCE PLAN **CD-01**

Facility Name: Minnesota Diversified Products Inc

Permit Number: 05300443 - 004

**Subject Item:** EU 009 Boiler 1

**Associated Items:** SV 008 Boiler 1 Vent (207)

	NC/ CA	Type	Citation	Requirement
1.0		LIMIT	Minn. R. 7011.0515, subp. 1	Total Particulate Matter: less than or equal to 0.4 lbs/million Btu heat input . The potential to emit based on equipment design and allowable fuels is 0.007 lb/MMBtu.
2.0		LIMIT	Minn. R. 7011.0515, subp. 2	Opacity: less than or equal to 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity.
3.0		CD	Minn. R. 7005.0100, subp. 35a	Fuel Type: Natural Gas or Propane only, by design.
4.0		CD	Minn. R. 7007.0800, subp. 5	Fuel Records: The Permittee shall keep records of fuel purchases for the Facility on a monthly basis.



## COMPLIANCE PLAN **CD-01**

Facility Name: Minnesota Diversified Products Inc

Permit Number: 05300443 - 004

**Subject Item:** EU 010 Boiler 2

**Associated Items:** SV 009 Boiler 2 Vent (208)

	NC/ CA	Type	Citation	Requirement
1.0		LIMIT	Minn. R. 7011.0510, subp. 1	Total Particulate Matter: less than or equal to 0.4 lbs/million Btu heat input . The potential to emit based on equipment design and allowable fuels is 0.007 lb/MMBtu.
2.0		LIMIT	Minn. R. 7011.0510, subp. 2	Opacity: less than or equal to 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity.
3.0		CD	Minn. R. 7005.0100, subp. 35a	Fuel Type: Natural Gas or Propane only, by design.
4.0		CD	Minn. R. 7007.0800, subp. 5	Fuel Records: The Permittee shall keep records of fuel purchases for the Facility on a monthly basis.



## COMPLIANCE PLAN **CD-01**

Facility Name: Minnesota Diversified Products Inc

Permit Number: 05300443 - 004

**Subject Item:** EU 014 Hot Wire Cutting Tables

**Associated Items:** SV 012 Hot Wire Cutters

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



## COMPLIANCE PLAN **CD-01**

Facility Name: Minnesota Diversified Products Inc

Permit Number: 05300443 - 004

**Subject Item:** EU 017 Caterpillar 3412 Diesel Generator 750 KW; 1000 hp

**Associated Items:** CE 001 Oxidation Catalyst

SV 015 Peaking Generator

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	EU 017 is a new compression ignition reciprocating internal combustion engine subject to 40 CFR pt. 63, subp. ZZZZ (referred to as "subp. ZZZZ" in this permit).  Some of the applicable general provision requirements from title 40 pt. 63, subp. A are included here for reference. The Permittee shall refer to Table 8 in subp. ZZZZ, for a complete list of applicable general requirements in subp. A of 40 CFR pt. 63.
2.0		CD	hdr	LIMITS
3.0		LIMIT	Minn. R. 7011.2300, subp. 1	Opacity: less than or equal to 20 percent once operating temperatures have been attained.
4.0		LIMIT	Minn. R. 7011.2300, subp. 2	Sulfur Dioxide: less than or equal to 0.5 lbs/million Btu heat input
5.0		LIMIT	40 CFR Sections 63.6600(b) and 63.6605(a); 40 CFR part 63, subp. ZZZZ Table 2a	Carbon Monoxide: greater than or equal to 70 percent reduction on a 4-hour rolling average basis. This limit applies at all times except during periods of startup, shutdown, and malfunction.
6.0		CD	hdr	PERFORMANCE TESTING REQUIREMENTS
7.0		S/A	40 CFR Sections 63.6615, 63.6620, and 63.6640(a); Minn. R. 7017.2020, subp. 1	Performance Test: due before end of each year starting 10/11/2011. The next subsequent performance test is due after 12 months after the initial performance test (10/11/2011). Subsequent annual testing shall be conducted to determine CO reduction according to the requirements of Tables 3 and 4 in subp. ZZZZ, and 40 CFR Section 63.6620.  If any annual test shows noncompliance, the Permittee shall resume semiannual testing.
8.0		CD	40 CFR Sections 63.7(b)(1) and 63.6645(e); Minn. R. 7017.2030, subp. 1-4; Minn. R. 7017.2018 and Minn. R. 7017.2035, subps. 1&2	Performance Test Notifications and Submittals:  Notification of Intent to Conduct Performance Test (written): due 60 days before each Performance Test as required by 40 CFR Sections 63.6645(e) and 63.7(b)(1) Performance Test Plan: due 30 days before each Performance Test (must also meet requirements of 40 CFR Section 63.7(c)) Performance Test Pre-Test Meeting: due 7 day before each Performance Test Performance Test Report: due 45 days after each Performance Test Performance Test Report - Microfiche Copy or CD: due 105 day after each Performance Test.  The Notification, Test Plan, and Test Report may be submitted in alternative format as allowed by Minn. R. 7017.2018.
9.0		CD	40 CFR Section 63.6640(b)	Performance Test - Change of Catalyst: If the Permittee changes the CE 001 catalyst, the Permittee shall reestablish the pressure drop operating value across the catalyst and conduct a performance test to demonstrate that the required CO reduction requirement is being met.
10.0		CD	hdr	OPERATING REQUIREMENTS
11.0		CD	Minn. R. 7007.0800, subp. 2	Permitted Fuel: Distillate fuel oil with a sulfur content not to exceed 0.495 percent by weight.
12.0		CD	40 CFR Section 63.6600(b); 40 CFR pt. 63, subp. ZZZZ, Table 2b	CE 001 Catalytic Oxidizer Operating Requirements:  1. Maintain the catalyst so that the pressure drop across the catalyst does not change by more than 2.0 inches of water column at 100 percent load, +/-10 percent, from the pressure drop that was measured during the initial performance test;  2. Maintain EU 017 exhaust temperature so that CE 001 inlet temperature is no less than 450 deg. F and no greater than 1350 deg. F, on a 4-hour rolling average.
13.0		CD	40 CFR Section 63.6605(b)	The Permittee shall operate and maintain EU 017 and CE 001 in a manner consistent with good air pollution control practices for minimizing emissions at all times including during startup, shutdown, and malfunction.
14.0		CD	hdr	MONITORING REQUIREMENTS



## COMPLIANCE PLAN **CD-01**

Facility Name: Minnesota Diversified Products Inc

Permit Number: 05300443 - 004

15.0		CD	Minn. R. 7007.0800, subps. 4 & 5	Fuel Supplier Certification: The Permittee shall obtain and maintain a fuel supplier certification for each shipment of distillate fuel oil, certifying that the sulfur content does not exceed 0.495% by weight.
16.0		CD	40 CFR Sections 63.8, 63.6625(b), 63.6635(b), and 63.6635(c)	<p>Catalyst Temperature Monitoring: The Permittee shall install, operate, and maintain a continuous parameter monitoring system (CPMS) to measure catalyst inlet temperature, according to the requirements of 40 CFR Section 63.8.</p> <p>The Permittee shall continuously monitor catalyst inlet temperature (except during monitor malfunction, associated repairs, and required quality assurance and control activities) whenever EU 017 is operating.</p> <p>Data measured and recorded during malfunctions, associated repairs, and required quality assurance or control activities shall not be used in reporting of emission or operating levels.</p>
17.0		CD	40 CFR Section 63.6640(a)	Pressure Drop Monitoring: The Permittee shall measure the catalyst pressure drop once each month and demonstrate the pressure drop is within the operating limitation established during the performance test.
18.0		CD	40 CFR Section 63.8(a)(2)	Upon promulgation of a performance specification for the CPMS, the Permittee shall comply with the quality control provisions in 40 CFR Section 63.8(d) and shall conduct the required performance evaluation in 40 CFR Section 63.8(e), unless an alternative monitoring method has been approved under the provisions of 40 CFR Section 63.8(f).
19.0		CD	hdr	CONTINUOUS COMPLIANCE REQUIREMENTS
20.0		CD	40 CFR Section 63.6640(a)	<p>The Permittee shall demonstrate continuous compliance with the requirements in Tables 2a and 2b of subp. ZZZZ, as follows:</p> <ol style="list-style-type: none"> <li>1. conduct performance tests every 12 months, to demonstrate that the CO reduction requirement is attained; following any test that demonstrates noncompliance the Permittee shall conduct semiannual performance tests until two consecutive performance tests show compliance, at which time the Permittee may resume annual testing.</li> <li>2. collect catalyst inlet temperature data according to 40 CFR Section 63.6625(b);</li> <li>3. reduce catalyst inlet temperature data to 4-hour rolling averages;</li> <li>4. maintain the 4-hour rolling average between 450 deg. F and 1350 deg. F;</li> <li>5. measure catalyst pressure drop once each month and demonstrate the pressure drop is within the operating limitation established during the performance test.</li> </ol>
21.0		CD	40 CFR Section 63.6640(b)	The Permittee shall report each event when the CO emissions reduction requirement, the catalyst inlet temperature, or the catalyst pressure drop did not meet the applicable limitation or requirement.
22.0		CD	40 CFR Sections 63.6(e)(3), 63.6640(c), and 63.6640(d)	<p>The Permittee shall develop a startup, shutdown, and malfunction plan (SSMP) no later than the date of initial startup of EU 017, and the SSMP shall meet the requirements of 40 CFR Section 63.6(e)(3).</p> <p>The Permittee shall operate in accordance with its SSMP during startup, shutdown, and malfunction. Deviations from the emission or operating limitations during startup, shutdown, or malfunction are not violations if the Permittee demonstrates that it was operating EU 017 in accordance with the SSMP. For new, reconstructed, and rebuilt stationary RICE, deviations from the emission or operating limitations during the first 200 hours of operation from engine startup (engine burn-in period) are not violations.</p>
23.0		CD	hdr	RECORDKEEPING REQUIREMENTS
24.0		CD	40 CFR Section 63.6655(a) and (b)	<p>The Permittee shall maintain the following records:</p> <ol style="list-style-type: none"> <li>1. A copy of each notification and report submitted to comply with subp. ZZZZ, including all documentation supporting any Initial Notification or Notification of Compliance Status submitted, according to the requirement in 40 CFR Section 63.10(b)(2)(xiv);</li> <li>2. The records in 40 CFR Section 63.6(e)(3)(iii) through (v) related to startup, shutdown, and malfunction;</li> <li>3. Records of performance tests and performance evaluations as required in 40 CFR Section 63.10(b)(2)(viii);</li> <li>4. Records described in 40 CFR Section 63.10(b)(2)(vi) through (xi); and</li> <li>5. Previous (i.e., superseded) versions of the performance evaluation plan as required in 40 CFR Section 63.8(d)(3).</li> </ol>
25.0		CD	40 CFR Section 63.6655(d)	The Permittee shall maintain records of performance tests, catalyst inlet temperature, and catalyst pressure drop.
26.0		CD	hdr	NOTIFICATION AND REPORTING REQUIREMENTS





## COMPLIANCE PLAN **CD-01**

Facility Name: Minnesota Diversified Products Inc

Permit Number: 05300443 - 004

27.0		CD	40 CFR Sections 63.6640(e) and 63.6645(a)	<p>40 CFR pt. 63, subp. A Notifications: The Permittee shall submit applicable notifications described in 40 CFR pt. 63, subp. A. Some of these notifications are listed individually in other locations in this permit. The remaining applicable notifications (that have not yet been completed) are indicated below:</p> <ol style="list-style-type: none"> <li>1. 63.9(c) compliance extension request, if applicable</li> <li>2. 63.9(d) notification that the source is subject to special compliance requirements, if applicable</li> <li>3. 63.9(g)(1) CMS performance evaluation notification, once applicable</li> </ol> <p>The Permittee shall also report each instance when the requirements in subp. ZZZZ Table 8 (applicability of Part 63 general provisions to subp. ZZZZ) were not met.</p>
28.0		S/A	40 CFR Section 63.10(d)(5)(ii)	Report: due 2 days after Startup, shutdown, or malfunction when actions taken by the Permittee during the startup, shutdown, or malfunction are not consistent with the SSMP. The immediate report shall be made by telephone or facsimile, and a written report shall be submitted within 7 days after the end of the event. Days are determined on a business day basis.
29.0		S/A	40 CFR Section 63.6650(b)	Report: due 31 days after end of each half-year starting 08/14/2004. This is the Compliance Report required by Section 63.6650(b). For details regarding the report content, refer to the "Compliance Report Content - No Deviations" and "Compliance Report Content - Deviations" requirements for EU 017 in Table A.
30.0		CD	40 CFR Section 63.6650(c)(1) through (6)	<p>Compliance Report Content - No Deviations: The report shall contain the following information:</p> <ol style="list-style-type: none"> <li>1. Company name and address;</li> <li>2. Responsible official's statement certifying report content accuracy with official's name, title, and signature;</li> <li>3. Report date and beginning and ending dates of reporting period;</li> <li>4. All information in 40 CFR Section 63.10(d)(5)(i) for startup, shutdown, or malfunction for the reporting period (periodic startup, shutdown, and malfunction report);</li> <li>5. A statement that no deviations occurred, if there were no deviations during the reporting period;</li> <li>6. A statement that there were no periods that the CMS was out-of-control, if there were no out-of-control periods during the reporting period.</li> </ol>
31.0		CD	40 CFR Section 63.6650(e)(1) through (5)	<p>Compliance Report Content - Deviations: For each deviation from an emission or operating limitation, the Permittee shall include information from 40 CFR Section 63.6650(c)(1) through (4) and the following:</p> <ol style="list-style-type: none"> <li>1. Date and start/stop time of each malfunction;</li> <li>2. Date, time, and duration that each CMS was inoperative except for zero (low level) and high level checks;</li> <li>3. Date, time, and duration that each CMS was out-of-control, including information in 40 CFR Section 63.8(c)(8);</li> <li>4. Date and time each deviation started and stopped, and whether each deviation occurred during a malfunction or other during another period;</li> <li>5. A summary of the total duration of the deviation during the reporting period, and the total duration as a percent of the total source operating time during that reporting period;</li> </ol> <p>continued</p>
32.0		CD	40 CFR Section 63.6650(e)(6) through (12)	<ol style="list-style-type: none"> <li>6. A breakdown of the total duration of the deviations during the reporting period into those that are due to control equipment problems, process problems, other known causes, and other unknown causes;</li> <li>7. A summary of the total duration of CMS downtime during the reporting period, and the total duration of CMS downtime as a percent of the total operating time of the stationary RICE at which the CMS downtime occurred during that reporting period;</li> <li>8. An identification of each parameter and pollutant that was monitored at the stationary RICE;</li> <li>9. A brief description of the stationary RICE;</li> <li>10. A brief description of the CMS;</li> <li>11. The date of the latest CMS certification or audit;</li> <li>12. A description of any changes in CMS, processes, or controls since the last reporting period.</li> </ol>