

AIR EMISSION PERMIT NO. 05300138- 004
Total Facility Operating Permit - Reissuance

IS ISSUED TO

Northland Aluminum Products Inc

NORTHLAND ALUMINUM PRODUCTS INC.
5005 County Road 25
St. Louis Park, Hennepin County, MN 55416

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.

Permit Applications Table

Permit Type	Application Dates	Permit Action
Total Facility Operating Permit -Reissuance	03/23/06, 09/05/08, 10/06/09	004

This permit reissuance supersedes Air Emission Permit No. 05300138-003 and authorizes the Permittee to operate 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.

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

Operating Permit Issue Date: December 15, 2009

Expiration Date: December 15, 2014

– All Title I Conditions do not expire.

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

for Paul Eger
Commissioner

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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:

Northland Aluminum Products manufactures metal and plastic cookware/bakeware and conducts some custom parts surface coating. Air emission sources at the facility include plastics compression molding, metal surface preparation (thermal spraying), coating, and combustion. Coating operations includes spray application of liquid and powder coatings. The site combustion equipment includes boilers and curing ovens fueled by natural gas. The facility's thermal spraying operations are controlled by baghouses. All of the facility's coating lines have panel filters for particulate control.

The facility is a major source under the National Emissions Standards for Hazardous Air Pollutants program (40 CFR pt. 63). The permit contains limits on Volatile Organic Compound emissions to avoid major source classification under New Source Review (40 CFR § 52.21).

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-1**

12/15/09

Facility Name: Northland Aluminum Products Inc

Permit Number: 05300138 - 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
SOURCE-SPECIFIC REQUIREMENTS	hdr
Insignificant Activities: The Permittee shall evaluate the emissions from changes made under Minn. R. 7007.1300 on an annual basis. The Permittee shall not make any change that causes emissions to exceed permit thresholds in Minn. R. ch. 7007 without first obtaining a major permit amendment.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and 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.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000
Permit Appendices: This permit contains 4 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
OPERATIONAL REQUIREMENTS	hdr
The Permittee shall comply with National Primary and Secondary Ambient Air Quality Standards, 40 CFR pt. 50, and the Minnesota Ambient Air Quality Standards, Minn. R. 7009.0010 to 7009.0080. Compliance shall be demonstrated upon written request by the MPCA.	40 CFR pt. 50; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subps. 7A, 7L & 7M; Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
Circumvention: Do not install or use a device or means that conceals or dilutes emissions, which would otherwise violate a federal or state air pollution control rule, without reducing the total amount of pollutant emitted.	Minn. R. 7011.0020
Air Pollution Control Equipment: Operate all pollution control equipment whenever the corresponding process equipment and emission units are operated, unless otherwise noted in Table A.	Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, subp. 16(J)
Operation and Maintenance Plan: Retain at the stationary source an operation and maintenance plan for all air pollution control equipment. At a minimum, the O & M plan shall identify all air pollution control equipment and control practices and shall include a preventative maintenance program for the equipment and practices, a description of (the minimum but not necessarily the only) corrective actions to be taken to restore the equipment and practices to proper operation to meet applicable permit conditions, a description of the employee training program for proper operation and maintenance of the control equipment and practices, and the records kept to demonstrate plan implementation.	Minn. R. 7007.0800, 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
PERFORMANCE TESTING	hdr
Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017 unless otherwise noted in Tables A and/or B.	Minn. R. ch. 7017

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

12/15/09

Facility Name: Northland Aluminum Products Inc

Permit Number: 05300138 - 004

<p>Performance Test Notifications and Submittals:</p> <p>Performance Tests are due as outlined in Tables A and B of the permit. See Table B for additional testing requirements.</p> <p>Performance Test Notification (written): due 30 days before each Performance Test Performance Test Plan: due 30 days before each Performance Test Performance Test Pre-test Meeting: due 7 days before each Performance Test Performance Test Report: due 45 days after each Performance Test Performance Test Report - Microfiche Copy: due 105 days after each Performance Test</p> <p>The Notification, Test Plan, and Test Report may be submitted in alternative format as allowed by Minn. R. 7017.2018.</p>	<p>Minn. R. 7017.2030, subp. 1-4, 7017.2018 and 7017.2035, subp. 1-2</p>
<p>Limits set as a result of a performance test (conducted before or after permit issuance) apply until superseded as stated in the MPCA's Notice of Compliance letter granting preliminary approval. Preliminary approval is based on formal review of a subsequent performance test on the same unit as specified by Minn. R. 7017.2025, subp. 3. The limit is final upon issuance of a permit amendment incorporating the change.</p>	<p>Minn. R. 7017.2025, subp. 3</p>
MONITORING REQUIREMENTS	hdr
<p>Monitoring Equipment Calibration: Annually calibrate all required monitoring equipment.</p>	<p>Minn. R. 7007.0800, subp. 4(D)</p>
<p>Operation of Monitoring Equipment: Unless otherwise noted in Tables A and/or B, monitoring a process or control equipment connected to that process is not necessary during periods when the process is shutdown, or during checks of the monitoring systems, such as calibration checks and zero and span adjustments. If monitoring records are required, they should reflect any such periods of process shutdown or checks of the monitoring system.</p>	<p>Minn. R. 7007.0800, subp. 4(D)</p>
MODELING REQUIREMENTS	hdr
<p>Parameters Used in Modeling: The parameters used in the PM10 modeling performed for determining emission and/or operational limits for this facility are listed in Appendix B of this permit.</p>	<p>Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080</p>
RECORDKEEPING	hdr
<p>Recordkeeping: Retain all records at the stationary source for a period of five (5) years from the date of monitoring, sample, measurement, or report. Records which must be retained at this location include all calibration and maintenance records, all original recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. Records must conform to the requirements listed in Minn. R. 7007.0800, subp. 5(A).</p>	<p>Minn. R. 7007.0800, subp. 5(C)</p>
<p>Recordkeeping: Maintain records describing any insignificant modifications (as required by Minn. R. 7007.1250, subp. 3) or changes contravening permit terms (as required by Minn. R. 7007.1350, subp. 2), including records of the emissions resulting from those changes.</p>	<p>Minn. R. 7007.0800, subp. 5(B)</p>
<p>When 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. For nonexpiring permits, these records shall be kept for a period of five years from the date that the change was made. The records shall be kept at the stationary source for the current calendar year of operation and may be kept at the stationary source or office of the stationary source for all other years. The records may be maintained in either electronic or paper format.</p>	<p>Minn. R. 7007.1200, subp. 4</p>
REPORTING/SUBMITTALS	hdr
<p>Shutdown Notifications: Notify the Commissioner at least 24 hours in advance of a planned shutdown of any control equipment or process equipment if the shutdown would cause any increase in the emissions of any regulated air pollutant. If the owner or operator does not have advance knowledge of the shutdown, notification shall be made to the Commissioner as soon as possible after the shutdown. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 3.</p> <p>At the time of notification, the owner or operator shall inform the Commissioner of the cause of the shutdown and the estimated duration. The owner or operator shall notify the Commissioner when the shutdown is over.</p>	<p>Minn. R. 7019.1000, subp. 3</p>

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

12/15/09

Facility Name: Northland Aluminum Products Inc

Permit Number: 05300138 - 004

Breakdown Notifications: Notify the Commissioner within 24 hours of a breakdown of more than one hour duration of any control equipment or process equipment if the breakdown causes any increase in the emissions of any regulated air pollutant. The 24-hour time period starts when the breakdown was discovered or reasonably should have been discovered by the owner or operator. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 2. At the time of notification or as soon as possible thereafter, the owner or operator shall inform the Commissioner of the cause of the breakdown and the estimated duration. The owner or operator shall notify the Commissioner when the breakdown is over.	Minn. R. 7019.1000, subp. 2
Notification of Deviations Endangering Human Health or the Environment: As soon as possible after discovery, notify the Commissioner or the state duty officer, either orally or by facsimile, of any deviation from permit conditions which could endanger human health or the environment.	Minn. R. 7019.1000, subp. 1
Notification of Deviations Endangering Human Health or the Environment Report: Within 2 working days of discovery, notify the Commissioner in writing of any deviation from permit conditions which could endanger human health or the environment. Include the following information in this written description: 1. the cause of the deviation; 2. the exact dates of the period of the deviation, if the deviation has been corrected; 3. whether or not the deviation has been corrected; 4. the anticipated time by which the deviation is expected to be corrected, if not yet corrected; and 5. steps taken or planned to reduce, eliminate, and prevent reoccurrence of the deviation.	Minn. R. 7019.1000, subp. 1
Application for Permit Amendment: If a permit amendment is needed, submit an application in accordance with the requirements of Minn. R. 7007.1150 through Minn. R. 7007.1500. Submittal dates vary, depending on the type of amendment needed.	Minn. R. 7007.1150 through Minn. R. 7007.1500
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).	Minn. R. 7007.1400, subp. 1(H)
Emission Inventory Report: due on or before April 1 of each calendar year following permit issuance. The Permittee shall submit this on a form approved by the Commissioner.	Minn. R. 7019.3000 through Minn. R. 7019.3100
Emission Fees: due 60 days after receipt of an MPCA bill.	Minn. R. 7002.0005 through Minn. R. 7002.0095

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

12/15/09

Facility Name: Northland Aluminum Products Inc

Permit Number: 05300138 - 004

Subject Item: GP 002 Indirect Heating Equipment**Associated Items:** EU 019 Continental Steam Boiler

EU 026 Line C Curing Oven

EU 028 Line E Curing Oven

EU 034 Pennant Boiler

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.4 lbs/million Btu heat input . This limit applies to each unit individually. The highest potential to emit from these units is 0.008 lb/MMBtu due to equipment design and allowable fuels.	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. This limit applies to each unit individually.	Minn. R. 7011.0510, subp. 2
The Permittee shall burn only natural gas in EU019, EU026, EU028, and EU034.	7005.0100, subp. 35a
The Permittee shall keep records of fuel type and usage on a monthly basis.	Minn. R. 7007.0800, subp. 5

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

12/15/09

Facility Name: Northland Aluminum Products Inc

Permit Number: 05300138 - 004

Subject Item: GP 003 Direct Heating Equipment

Associated Items: EU 024 Line A Curing Oven
EU 025 Line B Curing Oven
EU 027 Line D Curing Oven
EU 029 Line F Curing Oven
EU 030 Line G Curing Oven
EU 031 Line H1 Curing Oven
EU 032 Line J2 Curing Oven
EU 033 Line J3 Curing Oven

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. This limit applies to each unit individually.	Minn. R. 7011.0610, subp. 1A(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. This limit applies to each unit individually.	Minn. R. 7011.0610, subp. 1A(2)
The Permittee shall burn only natural gas in EU024, EU025, EU027, EU029, EU030, EU031, EU032 and EU033.	Minn. R. 7005.0100, subp. 35a
The Permittee shall keep records of fuel type and usage on a monthly basis.	Minn. R. 7007.0800, subp. 5

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

12/15/09

Facility Name: Northland Aluminum Products Inc

Permit Number: 05300138 - 004

Subject Item: GP 004 VOC and PM Sources**Associated Items:** EU 001 Line A Primer Paint Booth

EU 002 Line A Finish Paint Booth

EU 003 Line B Primer Paint Booth

EU 004 Line B Finish Paint Booth

EU 005 Line C Primer Paint Booth

EU 006 Line C Finish Paint Booth

EU 007 Line D Primer Paint Booth

EU 008 Line D Finish Paint Booth

EU 009 Line E Paint Booth

EU 010 Line F Primer Paint Booth

EU 011 Line F Finish Paint Booth

EU 012 Line G Spray Booth

EU 013 Line H1 Paint Booth

EU 014 Line J1 Paint Booth

EU 015 Line J2 Paint Booth

EU 016 Line J3 Paint Booth

EU 017 Line H2 Paint Booth

EU 018 Thermal Spray Booth

EU 022 Molding Room Including 19 Compression Molding Presses

What to do	Why to do it
INDUSTRIAL PROCESS EQUIPMENT REQUIREMENTS (EU001-EU018)	hdr
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011. 0735. This limit applies to each unit individually.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity . This limit applies to each unit individually.	Minn. R. 7011.0715, subp. 1(B)
For periodic monitoring requirements see Group 5 for the Panel Filters on the paint booths (EU 001- EU 017) and CE 018 for the fabric filter on the Thermal Spray Booth (EU 018).	hdr
VOC & PM REQUIREMENTS: EMISSION AND OPERATIONAL REQUIREMENTS	hdr
The Permittee shall vent emissions from EU 001-EU 017 to control equipment meeting the requirements of GP 005.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000
The Permittee shall vent emissions from EU 018 to control equipment meeting the requirements of CE 018.	
Volatile Organic Compounds: less than or equal to 200 tons/year using 12-month Rolling Sum by restricting the total paints, coatings, solvents and molding compounds used in any 12-month period.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000
Spray Booth Restrictions: Spray booth capacities shall not exceed the capacity limits in Appendix B of this permit. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.	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

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

12/15/09

Facility Name: Northland Aluminum Products Inc

Permit Number: 05300138 - 004

<p>Total Enclosure Requirements:</p> <p>Within 30 days following permit issuance, all painting and coating operations shall be conducted in a total enclosure (building or a portion of a building) meeting the following requirements:</p> <ol style="list-style-type: none"> 1.) All air vented from the total enclosure shall be sent through air pollution control equipment meeting the requirements of GP 005 or CE 018. 2.) All windows and uncontrolled air vents leading to/from the total enclosure shall remain closed during operation of any of the paint booths. 3.) All other openings or doors leading to/from the total enclosure shall remain closed or equipped with overlapping strip doors or air curtains. <p>This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.</p>	<p>Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080</p>
<p>Air Curtain Requirements:</p> <p>Within 30 days following permit issuance:</p> <p>The air curtains shall be operated at all items that any of the paint booths are in operation.</p> <p>The air curtains shall be maintained and operated according to the manufacturers' specifications.</p> <p>This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.</p>	<p>Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080</p>
<p>Maximum Contents of Materials and Application Rate: The Permittee assumed certain materials contents and application rates when determining the annual and short term potential to emit of units in GP 004. These assumptions are listed in Appendix B of this permit. Changing to a material that has a higher content of VOCs or solids, or increasing the application rate 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>	<p>Minn. R. 7005.0100, subp. 35a</p>
<p>MONITORING REQUIREMENTS</p>	<p>hdr</p>
<p>Daily Recordkeeping. On each day of operation, the Permittee shall record the total quantity of all coatings and other VOC, solids, and HAP containing materials used at the facility. This shall be based on written usage logs and/or flowmeters.</p>	<p>Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 4 and 5</p>
<p>Monthly Recordkeeping -- VOC Emissions.</p> <p>By the 15th of the month, the Permittee shall calculate and record the following:</p> <ol style="list-style-type: none"> 1) The total usage of VOC containing materials for the previous calendar month using the daily usage records. This record shall also include the VOC contents of each material as determined by the Material Content requirement of this permit. 2) The VOC emissions for the previous month using the formulas specified in this permit. 3) The 12 month rolling sum VOC emissions for the previous 12 month period by summing the monthly VOC emissions data for the previous 12 months. 	<p>Minn. R. 7007.0800, subps. 4 and 5</p>
<p>By the 15th of each month the Permittee shall calculate VOC emissions for the previous 12 months using the following equation:</p> $E \text{ (VOC)} = \text{sum}[X \text{ (coatings/solvents)} \times U \text{ (coatings/solvents)}] + \text{sum}[X \text{ (molding)} \times EF \times U \text{ (molding)}] - \text{sum}[X \text{ (offsite recycling)} \times U \text{ (offsite recycling)}]$	<p>Minn. R. 7007.0800, subps. 4 and 5</p>
<p>Where:</p> <p>E = 12-month rolling sum emissions (tons/yr)</p> <p>X = VOC content by weight (lb VOC/lb material)</p> <p>U = Usage for the previous 12-month rolling period (tons/yr)</p> <p>EF = VOC emission factor for closed molding process (lb emitted/lb VOC used)</p>	<p>continued from above</p>
<p>Material Content: VOC and HAPs contents in coating 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 and HAPs contents. The Commissioner reserves the right to require the Permittee to determine the VOC, HAP, and solids 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>	<p>Minn. R. 7007.0800, subps. 4 and 5</p>

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

12/15/09

Facility Name: Northland Aluminum Products Inc

Permit Number: 05300138 - 004

<p>Waste Credit: If the Permittee elects to obtain credit for HAPs and/or VOC shipped in waste materials, the Permittee shall either use item 1 or 2 to determine the VOC and/or total and individual HAP content for each credited shipment.</p> <p>1) The Permittee shall analyze a composite sample of each waste shipment to determine the weight content of VOC, total HAP, and each individual HAP, excluding water.</p> <p>2) The Permittee may use supplier data for raw materials to determine the VOC and total and individual HAP contents of each waste shipment, using the same content data used to determine the content of raw materials. If the waste contains several materials, the content of mixed waste shall be assumed to be the lowest VOC and total and individual HAP content of any of the materials.</p>	<p>Minn. R. 7007.0800, subps. 4 and 5</p>
<p>Signage and Inspection of Building Openings:</p> <p>The Permittee shall post signs on all doors and windows leading to the outside from Buildings 1 & 2 total enclosures, stating that the doors and windows must remain closed while the paint booths are in operation</p> <p>The Permittee shall conduct inspections at least once each calendar week, while the paint booths are in use, to determine if the doors and windows are closed as required by this permit. The Permittee shall maintain a written record of the inspections and any corrective action taken.</p> <p>This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.</p>	<p>Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080</p>
<p>Signage and Inspection of Air Curtains:</p> <p>The Permittee shall post signs at each exit that has an air curtain that states that the air curtain must be operated at all times that any of the spray booths are in operation.</p> <p>The Permittee shall conduct inspections at least once each calendar week, while the paint booths are in use, to determine if the air curtains are in operation as required by this permit. The Permittee shall maintain a written record of the inspections and any corrective action taken.</p> <p>This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.</p>	<p>Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080</p>

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

12/15/09

Facility Name: Northland Aluminum Products Inc

Permit Number: 05300138 - 004

Subject Item: GP 005 Panel Filters**Associated Items:** CE 001 Mat or Panel Filter

CE 002 Mat or Panel Filter

CE 003 Mat or Panel Filter

CE 004 Mat or Panel Filter

CE 005 Mat or Panel Filter

CE 006 Mat or Panel Filter

CE 007 Mat or Panel Filter

CE 008 Mat or Panel Filter

CE 009 Mat or Panel Filter

CE 010 Mat or Panel Filter

CE 011 Mat or Panel Filter

CE 012 Mat or Panel Filter

CE 013 Mat or Panel Filter

CE 014 Mat or Panel Filter

CE 015 Mat or Panel Filter

CE 016 Mat or Panel Filter

CE 017 Mat or Panel Filter

What to do	Why to do it
The Permittee shall operate and maintain the panel filters any time that any process equipment controlled by the panel filters are in operation. The Permittee shall document periods of non-operation of the control equipment.	Title I Condition: To avoid classification as a major source and modification under 40 CFR Section 52.21 and Minn. R. 7007.3000
The Permittee shall use, for each piece of control equipment, a panel filter followed by a pocket filter that have a combined control efficiency as required by this permit.	Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency, for Total Particulate Matter: greater than or equal to 97 percent	Title I Condition: To avoid classification as a major source and modification under 40 CFR Section 52.21 and Minn. R. 7007.3000
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency, for Particulate Matter < 10 micron: greater than or equal to 97 percent	Title I Condition: To avoid classification as a major source and modification under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency, for PM < 2.5 micron: greater than or equal to 97 percent control efficiency	Title I Condition: To avoid classification as a major source and modification under 40 CFR Section 52.21 and Minn. R. 7007.3000
Daily Inspections: At least once per 24-hour period, the Permittee shall visually inspect the condition of the panel filter with respect to alignment, saturation, tears, holes and any other matter that may affect the filter's performance. The Permittee shall record the time and date of each inspection and any actions resulting from the inspection.	Title I Condition: To avoid classification as a major source and modification under 40 CFR Section 52.21 and Minn. R. 7007.3000; 40 CFR Section 64.3; Minn. R. 7017.0200
Periodic Inspections: The Permittee shall inspect the control equipment components as required by the manufacturing specifications. The Permittee shall maintain a written record of these inspections.	Minn. R. 7007.0800, subps. 4, 5, and 14
Corrective Actions: If the filters or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter.	Minn. R. 7007.0800, subps. 4, 5, and 14

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Northland Aluminum Products Inc
Permit Number: 05300138 - 004

The Permittee shall operate and maintain the panel filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.	Minn. R. 7007.0800, subp. 14
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TABLE A: LIMITS AND OTHER REQUIREMENTS**A-11**

12/15/09

Facility Name: Northland Aluminum Products Inc

Permit Number: 05300138 - 004

Subject Item: GP 006 Surface Coating Operations (NESHAP MMMM)

Associated Items:

EU 001 Line A Primer Paint Booth

EU 002 Line A Finish Paint Booth

EU 003 Line B Primer Paint Booth

EU 004 Line B Finish Paint Booth

EU 005 Line C Primer Paint Booth

EU 006 Line C Finish Paint Booth

EU 007 Line D Primer Paint Booth

EU 008 Line D Finish Paint Booth

EU 009 Line E Paint Booth

EU 010 Line F Primer Paint Booth

EU 011 Line F Finish Paint Booth

EU 012 Line G Spray Booth

EU 013 Line H1 Paint Booth

EU 014 Line J1 Paint Booth

EU 015 Line J2 Paint Booth

EU 016 Line J3 Paint Booth

EU 017 Line H2 Paint Booth

EU 018 Thermal Spray Booth

What to do	Why to do it
NESHAP MMMM REQUIREMENTS	hdr
<p>Emission Limits:</p> <p>At the time of permit issuance, the Permittee is complying with the predominant activity emission limit. The Permittee shall comply with the facility-specific emission limit if the Permittee is no longer eligible to comply with the predominant activity emission limit (e.g. if the miscellaneous metal parts and products surface coating operations, as defined in 40 CFR subpart MMMM, no longer account for 90 percent or more of the surface coating activity at the facility). This permit does not pre-authorize switching back from the facility-specific emission limit to the predominant activity emission limit.</p>	Minn. R. 7007.0800, subp. 2 and 40 CFR 63.3881(e); Minn. R. 7011.8090 and 40 CFR 63.4481(e); Minn. R. 7011.8130
<p>Emission Limit Recordkeeping:</p> <p>The Permittee shall maintain records which document the limit with which they are complying at any given time. The log shall be updated if the Permittee changes from the predominant activity limit to the facility-specific limit, and it shall indicate the date of the change.</p>	Minn. R. 7007.0800, subp. 5
<p>Based on the current and expected operations of the affected source, this permit only includes requirements for 1) the general use coating predominant activity limit using the emission rate without add-on controls, and 2) the general use coating facility-specific emission rate without add-on controls</p> <p>If the Permittee later chooses to switch to or add other compliance options allowed in the standard, the Permittee shall comply with all applicable portions of 40 CFR pt. 63, subp. MMMM for those options. In addition, the Permittee shall apply for a permit amendment, as appropriate (e.g., to add applicable NESHAP language, installation of an oxidizer, etc.).</p>	40 CFR Sections 63.3890 and 63.3891; Minn. R. 7007.1150; Minn. R. 7011.8090
Unless otherwise noted, all equations for 40 CFR pt 63, subp. MMMM referenced in the requirements of GP 006 can be found in Appendix D of this permit.	Minn. R. 7007.0800, subps. 4 and 5
GENERAL PROVISIONS	hdr
The Permittee shall comply with the applicable General Provisions in Table 2 to 40 CFR 63.3880.	40 CFR Section 63.3880, Table 2; Minn. R. 7011.8090
APPLICABILITY	hdr

TABLE A: LIMITS AND OTHER REQUIREMENTS
A-12

12/15/09

Facility Name: Northland Aluminum Products Inc

Permit Number: 05300138 - 004

<p>Predominant Activity Emission Limit: If the affected source meets the applicability criteria of this subpart and at the same facility the Permittee performs surface coating the meets the applicability criteria of any other final surface coating NESHAP in this part, the Permittee may comply with the emissions limitation representing the predominant surface coating activity at the facility according the paragraphs below:</p> <p>- If a surface coating operation accounts for 90 percent or more of the surface coating activity at the facility (that is, the predominant activity), then compliance with the emission limitations for the predominant activity for all surface coating operations constitutes compliance with these and other applicable surface coating NESHAP; and</p>	40 CFR Sections 63.3881(e)(2) and 63.4481(e)(2); Minn. R. 7011.8090; Minn. R. 7011.8130
<p>Continued</p> <p>-In determining the predominant activity, the Permittee must include coating activities that meet the applicability criteria of other surface coating NESHAP and constitute more than 1 percent of total coating activities at the facility. Coating activities that meet the applicability criteria of other surface coating NESHAP but comprise less than 1 percent of coating activities need not be included in the determination of predominant activity but must be included in the compliance calculation.</p> <p>-The Permittee must use liters (gal) of solids used as a measure of relative surface coating activity over a representative period of operation. The determination of predominant activity must accurately reflect current and projected coating operations and must be verifiable through appropriate documentation. The use of parameters other than coating consumption and volume solids content must be approved by the Administrator.</p>	40 CFR Sections 63.3881(e)(2) and 63.4481(e)(2); Minn. R. 7011.8090; Minn. R. 7011.8130
<p>Facility-Specific Emission Limit: If the affected source meets the applicability criteria of this subpart and at the same facility the Permittee performs surface coating that meets the applicability criteria of any other final surface coating NESHAP in this part, the Permittee may comply with the facility-specific emission limit calculated from the relative amount of coating activity that is subject to each emission limit.</p> <p>In calculating a facility-specific emission limit, the Permittee shall include coating activities that meet the applicability criteria of other surface coating NESHAP and constitute more than 1 percent of total coating activities at the facility. Coating activities that meet the applicability criteria of other surface coating NESHAP but comprise less than 1 percent of total coating activities need not be included in the calculation of the facility-specific emission limit but must be included in the compliance calculations.</p>	40 CFR Sections 63.3881(e)(3) and 63.4481(e)(3); Minn. R. 7011.8090; Minn. R. 7011.8130
<p>The affected source is the collection of all of the items listed below that are used for surface coating of miscellaneous metal parts and products within each subcategory.</p> <p>1) All coating operations as defined in 40 CFR Section 63.3981;</p> <p>2) All storage containers and mixing vessels in which coatings, thinners and/or other additives, and cleaning materials are stored or mixed;</p> <p>3) All manual and automated equipment and containers used for conveying coatings, thinners and/or other additives, and cleaning materials; and</p> <p>4) All storage containers and all manual and automated equipment and containers used for conveying waste materials generated by a coating operation.</p>	40 CFR Section 63.3882(b); Minn. R. 7011.8090
EMISSIONS LIMITS	hdr
1) Predominant Activity Limit	hdr
HAPs - Organic: less than or equal to 2.6 lbs/gallon coating solids used during each 12-month compliance period.	40 CFR Section 63.3890(b)(1); Minn. R. 7011.8090
2) Facility-specific Limit	hdr
<p>The Permittee shall comply with the facility-specific emission limit, calculated according to the Equation 1 of 40 CFR Section 63.3890(c)(2) (as documented in Appendix D of this permit), for each 12-month compliance period.</p> <p>The Permittee shall calculate the facility-specific emission limit for the facility when they submit the notification of compliance status required under 40 CFR Section 63.3910(c), and on a monthly basis afterward using the coating data for the relevant 12-month compliance period.</p>	40 CFR Section 63.3890(c)(2); Minn. R. 7011.8090
OPERATING LIMITS	hdr
For any coating operation(s) on which the Permittee uses the compliant material option or the emission rate without add-on controls option, the Permittee is not required to meet any operating limits.	40 CFR Section 63.3892(a); Minn. R. 7011.8090
For any coating operation(s) on which the Permittee uses the compliant material option or the emission rate without add-on controls option, the Permittee is not required to meet any work practice standards.	40 CFR Section 63.3893(a); Minn. R. 7011.8090

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

12/15/09

Facility Name: Northland Aluminum Products Inc

Permit Number: 05300138 - 004

COMPLIANCE REQUIREMENTS	hdr
<p>The Permittee must include all coatings (as defined in 40 CFR Section 63.3981), thinners and/or other additives, and cleaning materials used in the affected source when determining whether the organic HAP emission rate is equal to or less than the applicable emission limit in 40 CFR Section 63.3890 ("HAP emission limit"). To make this determination, the Permittee must use at least one of the three compliance options listed in paragraphs (a) through (c) of 40 CFR Section 63.3891.</p> <p>As stated earlier, this permit only includes the requirements associated with emission rate without add-on controls option specified in 40 CFR Section 63.3891(b).</p>	40 CFR Section 63.3891; Minn. R. 7011.8090
<p>Continued:</p> <p>Even so, the Permittee may apply any of the compliance options to an individual coating operation, or to multiple coating operations as a group, or to the entire affected source. The Permittee may use different compliance options for different coating operations, or at different times on the same coating operation. The Permittee may employ different compliance options when different coatings are applied to the same part, or when the same coating is applied to different parts. However, the Permittee may not use different compliance options at the same time on the same coating operation. If the Permittee switches between compliance options for any coating operation or group of coating operations, the Permittee must document this switch as required by 40 CFR Section 63.3930(c), and the Permittee must report it in the next semiannual compliance report listed in Table B of this permit.</p>	40 CFR Section 63.3891; Minn. R. 7011.8090 (cont.)
<p>Emission rate without add-on controls option. The Permittee shall demonstrate that, based on the coatings, thinners and/or other additives, and cleaning materials used in the coating operation(s), the organic HAP emission rate for the coating operation(s) is less than or equal to the HAP emission limit, calculated as a rolling 12-month emission rate and determined on a monthly basis. The Permittee must meet all the requirements of 40 CFR Sections 63.3950, 63.3951, and 63.3952 to demonstrate compliance with the emission limit using this option.</p>	CFR Section 63.3891(b); Minn. R. 7011.8090
<p>The Permittee must be in compliance with the emission limitations as specified below:</p> <p>1) Any coating operation(s) for which the Permittee uses the compliant material option or the emission rate without add-on controls option, as specified in 40 CFR Section 63.3891(a) and (b), must be in compliance with the HAP emission limit at all times.</p> <p>2) The Permittee must always operate and maintain the affected source according to the provisions in 40 CFR Section 63.6(e)(1)(i).</p>	40 CFR Section 63.3900(a)(1) and (b); Minn. R. 7011.8090
<p>To demonstrate continuous compliance, the organic HAP emission rate for each compliance period, determined according to 40 CFR Section 63.3951(a) through (g), must be less than or equal to the HAP emission limit. A compliance period consists of 12 months. Each month after the end of the initial compliance period described in 40 CFR Section 63.3950 is the end of a compliance period consisting of that month and the preceding 11 months. The Permittee must perform the calculations in 40 CFR Section 63.3951(a) through (g) on a monthly basis using data from the previous 12 months of operation.</p>	40 CFR Section 63.3952(a); Minn. R. 7011.8090
<p>If the organic HAP emission rate for any 12-month compliance period exceeded the HAP emission limit, this is a deviation from the emission limitation for that compliance period and must be reported as specified in 40 CFR Sections 63.3910(c)(6) and 63.3920(a)(6).</p>	40 CFR Section 63.3952(b); Minn. R. 7011.8090
<p>The Permittee does not need to redetermine the mass of organic HAP in coatings, thinners and/or other additives, or cleaning materials that have been reclaimed on-site (or reclaimed off-site if the Permittee has documentation showing that they received back the exact same materials that were sent off-site) and reused in the coating operation for which the Permittee uses the emission rate without add-on controls option. If the Permittee uses coatings, thinners and/or other additives, or cleaning materials that have been reclaimed on-site, the amount of each used in a month may be reduced by the amount of each that is reclaimed. That is, the amount used may be calculated as the amount consumed to account for materials that are reclaimed.</p>	40 CFR Section 63.3951; Minn. R. 7011.8090

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

12/15/09

Facility Name: Northland Aluminum Products Inc

Permit Number: 05300138 - 004

<p>Mass Fraction of HAP: The Permittee shall determine the mass fraction of organic HAP for each coating, thinner and/or other additive, and cleaning material used during each month by using information such as manufacturer's formulation data, if it represents each organic HAP that is present at 0.1 percent by mass or more for OSHA-defined carcinogens as specified in 29 CFR Section 1910.1200(d)(4) and at 1.0 percent by mass or more for other compounds. For reactive adhesives in which some of the HAP react to form solids and are not emitted to the atmosphere, the Permittee may rely on manufacturer's data that expressly states the organic HAP or volatile matter mass fraction emitted.</p> <p>If the Permittee chooses not use manufacturer's formulation data, they shall use one of the options specified in 40 CFR Section 63.3941(a).</p>	40 CFR Section 63.3951(a) and 63.3941(a); Minn. R. 7011.8090
<p>Volume Fraction of Solids: The Permittee shall determine the volume fraction of coating solids (liter (gal) of coating solids per liter (gal) of coating) for each coating used during each month by using the volume fraction of coating solids for each coating from the supplier or manufacturer.</p> <p>If the Permittee chooses not to use supplier or manufacturer data, they shall use a method specified in 40 CFR Section 63.3941(b).</p>	40 CFR Section 63.3951(b); and 63.3941(b); Minn. R. 7011.8090
<p>Density: The Permittee shall determine the density of each liquid coating, thinner and/or other additive, and cleaning material used during each month from information from the supplier or manufacturer of the material. If the Permittee is including powder coatings in the compliance determination, determine the density of powder coatings, using ASTM Method D5965-02, "Standard Test Methods for Specific Gravity of Coating Powders" (incorporated by reference, see 40 CFR Section 63.14), or information from the supplier.</p>	40 CFR Section 63.3951(c) and 63.3941(c); Minn. R. 7011.8090
<p>continued</p> <p>If there is disagreement between ASTM Method D1475-98 or ASTM Method D5965-02 test results and other such information sources, the test results will take precedence unless, after consultation the Permittee demonstrates to the satisfaction of the Agency that the formulation data are correct. If the Permittee purchases materials or monitor consumption by weight instead of volume, the Permittee does not need to determine material density. Instead, the Permittee may use the material weight in place of the combined terms for density and volume in Equations 1A, 1B, 1C, and 2.</p>	40 CFR Section 63.3951(c); Minn. R. 7011.8090 (cont)
<p>Volume: The Permittee shall determine the volume (liters or gal) of each coating, thinner and/or other additive, and cleaning material used during each month by measurement or usage records. If the Permittee purchases materials or monitors consumption by weight instead of volume, the Permittee does not need to determine the volume of each material used. Instead, the Permittee may use the material weight in place of the combined terms for density and volume in Equations 1A, 1B, and 1C of 40 CFR Section 63.3951 (and documented in Appendix D of this permit).</p>	40 CFR Section 63.3951(d); Minn. R. 7011.8090
<p>The mass of organic HAP emissions is the combined mass of organic HAP contained in all coatings, thinners and/or other additives, and cleaning materials used during each month minus the organic HAP in certain waste materials. The Permittee shall calculate the following using the referenced equations in Appendix D of this permit:</p> <ol style="list-style-type: none"> 1) Calculate the mass of organic HAP emissions using Equation 1. 2) Calculate the kg (lb) organic HAP in the coatings used during the month using Equation 1A. 3) Calculate the kg (lb) of organic HAP in the thinners and/or other additives used during the month using Equation 1B. 4) Calculate the kg (lb) organic HAP in the cleaning materials used during the month using Equation 1C. 5) If the Permittee chooses to account for the mass of organic HAP contained in waste materials sent or designated for shipment to a hazardous waste TSDF in Equation 1, then the Permittee must determine the mass according to 40 CFR Section 63.3951(e)(4)(i) through (iv). 	40 CFR Section 63.3951(e); Minn. R. 7011.8090
<p>The Permittee shall determine the total volume of coating solids used, liters (gal), which is the combined volume of coating solids for all the coatings used during each month, using Equation 2 of 40 CFR Section 63.3951 and documented in Appendix D of this permit.</p>	40 CFR Section 63.3951(f); Minn. R. 7011.8090
<p>The Permittee shall calculate the organic HAP emission rate for the compliance period, kg (lb) organic HAP emitted per liter (gal) coating solids used, using Equation 3 of 40 CFR Section 63.3951 and documented in Appendix D of this permit.</p>	40 CFR Section 63.3951(g); Minn. R. 7011.8090

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

12/15/09

Facility Name: Northland Aluminum Products Inc

Permit Number: 05300138 - 004

The Permittee may use the mass fraction values in Table 3 for solvent blends for which the Permittee does not have test data or manufacturer's formulation data and which match either the solvent blend name or the chemical abstract series (CAS) number. If a solvent blend matches both the name and CAS number for an entry, that entry's organic HAP mass fraction must be used for that solvent blend. Otherwise, use the organic HAP mass fraction for the entry matching either the solvent blend name or CAS number, or use the organic HAP mass fraction from Table 4 if neither the name nor CAS number match.	40 CFR pt. 63, subp. MMMM, Table 3; 40 CFR Section 63.3951(a); Minn. R. 7011.8090
The Permittee may use the mass fraction values in Table 4 for solvent blends for which the Permittee does not have test data or manufacturer's formulation data.	40 CFR pt. 63, subp. MMMM, Table 4; 40 CFR Section 63.3951(a); Minn. R. 7011.8090
RECORDKEEPING	hdr
The Permittee must collect and keep records of the data and information specified below. Failure to collect and keep these records is a deviation from the applicable standard. 1) A copy of each notification and report that the Permittee submitted to comply with 40 CFR pt. 63, subp. MMMM, and the documentation supporting each notification and report. If the Permittee is complying with the predominant activity alternative, records must include the data and calculations used to determine the predominant activity for each 12-month compliance period. If the Permittee is complying with the facility-specific emission limit alternative, records must include the data and calculations used to determine the facility-specific emission limit for the initial compliance demonstration. The Permittee shall keep records of any data used in each annual predominant activity determination and in the calculation of the facility-specific emission limit for each 12-month compliance period;	40 CFR Section 63.3930(a), (b), (c)(1) and (c)(3), (d), (e), (f), (g), (h) and (j); 40 CFR Section 63.3952(d); Minn. R. 7011.8090
continued 2) A current copy of information provided by materials suppliers or manufacturers, such as manufacturer's formulation data, or test data used to determine the mass fraction of organic HAP and density for each coating, thinner and/or other additive, and cleaning material, and the volume fraction of coating solids for each coating. If the Permittee conducted testing to determine mass fraction of organic HAP, density, or volume fraction of coating solids, the Permittee must keep a copy of the complete test report. If the Permittee uses information provided to the Permittee by the manufacturer or supplier of the material that was based on testing, the Permittee must keep the summary sheet of results provided to the Permittee by the manufacturer or supplier. The Permittee is not required to obtain the test report or other supporting documentation from the manufacturer or supplier;	40 CFR Section 63.3930(a), (b), (c)(1) and (c)(3), (d), (e), (f), (g), (h) and (j); 40 CFR Section 63.3952(d); Minn. R. 7011.8090 (cont)
continued 3) For each compliance period, the records specified below: - A record of the coating operations on which the Permittee used each compliance option and the time periods (beginning and ending dates and times) for each option the Permittee used; and - A record of the calculation of the total mass of organic HAP emissions for the coatings, thinners and/or other additives, and cleaning materials used each month using Equations 1, 1A, 1B, 1C, and 2 of 40 CFR Section 63.3951, if applicable, the calculation used to determine mass of organic HAP in waste materials according to 40 CFR Section 63.3951(e)(4); the calculation of the total volume of coating solids used each month using Equation 2 of 40 CFR Section 63.3951; and the calculation of each 12-month organic HAP emission rate using Equation 3 of 40 CFR Section 63.3951; 4) A record of the name and volume of each coating, thinner and/or other additive, and cleaning material used during each compliance period;	40 CFR Section 63.3930(a), (b), (c)(1) and (c)(3), (d), (e), (f), (g), (h) and (j); 40 CFR Section 63.3952(d); Minn. R. 7011.8090 (cont)
continued 5) A record of the mass fraction of organic HAP for each coating, thinner and/or other additive, and cleaning material used during each compliance period unless the material is tracked by weight; 6) A record of the volume fraction of coating solids for each coating used during each compliance period; 7) The density for each coating, thinner and/or other additive, and cleaning material used during each compliance period; 8) If the Permittee uses an allowance in Equation 1 for organic HAP contained in waste materials according to 40 CFR Section 63.3951(e)(4), the Permittee must keep the following records: - The name and address of each TSDF to which the Permittee sent waste materials for which the Permittee uses an allowance in Equation 1 in Appendix D of this permit; a statement of which subparts under 40 CFR parts 262, 264, 265, and 266 apply to the facility; and the date of each shipment;	40 CFR Section 63.3930(a), (b), (c)(1) and (c)(3), (d), (e), (f), (g), (h) and (j); 40 CFR Section 63.3952(d); Minn. R. 7011.8090 (cont)

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

12/15/09

Facility Name: Northland Aluminum Products Inc

Permit Number: 05300138 - 004

continued - Identification of the coating operations producing waste materials included in each shipment and the month or months in which the Permittee used the allowance for these materials in Equation 1; - The methodology used in accordance with 40 CFR Section 63.3951(e)(4) to determine the total amount of waste materials sent to or the amount collected, stored, and designated for transport to a TSDF each month; and the methodology to determine the mass of organic HAP contained in these waste materials. This must include the sources for all data used in the determination, methods used to generate the data, frequency of testing or monitoring, and supporting calculations and documentation, including the waste manifest for each shipment. 9) The Permittee must keep records of the date, time, and duration of each deviation.	40 CFR Section 63.3930(a), (b), (c)(1) and (c)(3), (d), (e), (f), (g), (h) and (j); 40 CFR Section 63.3952(d); Minn. R. 7011.8090 (cont)
The Permittee's records must be in a form suitable and readily available for expeditious review, according to 40 CFR Section 63.10(b)(1). Where appropriate, the records may be maintained as electronic spreadsheets or as a database. As specified in 40 CFR Section 63.10(b)(1), the Permittee must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. The Permittee must keep each record on-site for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record according to 40 CFR Section 63.10(b)(1). The Permittee may keep the records off-site for the remaining 3 years.	40 CFR Sections 63.3931 and 63.3952(d); Minn. R. 7011.8090
REPORTING	hdr
Content of Semiannual Compliance Report: At a minimum, the report shall include: 1) Company name and address; 2) Statement by a responsible official with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report; 3) Date of report and beginning and ending dates of the reporting period. The reporting period is the 6-month period ending on June 30 or December 31. Note that the information reported for each of the 6 months in the reporting period will be based on the last 12 months of data prior to the date of each monthly calculation; 4) Identification of the compliance option or options specified in 40 CFR Section 63.3891 that the Permittee used on each coating operation during the reporting period. If the Permittee switched between compliance options during the reporting period, the Permittee must report the beginning and ending dates for each option the Permittee used.	40 CFR Sections 63.3920(a)(3), (4) and (6) and 63.3952(c); Minn. R. 7011.8090
continued 5) If the Permittee used the emission rate without add-on controls or the emission rate with add-on controls compliance option (40 CFR Section 63.3891(b) or (c)), the calculation results for each rolling 12-month organic HAP emission rate during the 6-month reporting period; 6) If the Permittee used the predominant activity alternative, the annual determination of predominant activity if it was not included in the previous semi-annual compliance report; 7) If the Permittee used the facility-specific emission limit alternative, the calculation of the facility-specific emission limit for each 12-month compliance period during the 6-month reporting period; 9) If there were no deviations from the applicable HAP emission limit, the semiannual compliance report must include a statement that there were no deviations from the emission limitations during the reporting period; and	40 CFR Sections 63.3920(a)(3), (4) and (6) and 63.3952(c); Minn. R. 7011.8090 (cont)
continued 8) If there was a deviation from the applicable HAP emission limit, the semiannual compliance report must contain the following information: - The beginning and ending dates of each compliance period during which the 12-month organic HAP emission rate exceeded the applicable HAP emission limit; - The calculations used to determine the 12-month organic HAP emission rate for the compliance period in which the deviation occurred. The Permittee must submit the calculations for Equations 1, 1A, 1B, 1C, 2, and 3 (40 CFR Section 63.3951(c)), and if applicable, the calculation used to determine mass of organic HAP in waste materials according to 40 CFR Section 63.3951(e)(4). The Permittee does not need to submit background data supporting these calculations (e.g., information provided by materials suppliers or manufacturers, or test reports); and - A statement of the cause of each deviation.	40 CFR Sections 63.3920(a)(3), (4) and (6) and 63.3952(c); Minn. R. 7011.8090 (cont)

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

12/15/09

Facility Name: Northland Aluminum Products Inc

Permit Number: 05300138 - 004

Subject Item: EU 022 Molding Room Including 19 Compression Molding Presses**Associated Items:** GP 004 VOC and PM Sources

SV 022 Molding Room Exhaust

SV 023 New Molders Exhaust

What to do	Why to do it
APPLICABILITY	hdr
These requirements are limited to reinforced plastic composites production in which reinforced and/or nonreinforced plastic composites or plastic molding compounds are manufactured in a closed molding using thermoset resins and/or gel coats that contain styrene to produce plastic composites. This also includes cleaning, mixing, HAP-containing materials storage, and repair operations associated with the production of plastic composites.	40 CFR Section 63.5790(b); Minn. R. 7011.7800
GENERAL PROVISIONS	hdr
The Permittee shall comply with the applicable General Provisions in Table 15 to this Section.	40 CFR Part 63 subp. WWWW, Table 15; 40 CFR Section 63.5925; Minn. R. 7011.7800
COMPLIANCE REQUIREMENTS	hdr
The Permittee must always operate and maintain the affected source according to the provisions in 40 CFR Section 63.6(e)(1)(i).	40 CFR Section 63.5835(c); Minn. R. 7011.7800
WORK PRACTICE STANDARDS	hdr
1. Uncover, unwrap or expose only one charge per mold cycle per compression/injection molding machine. For machines with multiple molds, one charge means sufficient material to fill all molds for one cycle. For machines with robotic loaders, no more than one charge may be exposed prior to the loader. For machines fed by hoppers, sufficient material may be uncovered to fill the hopper. Hoppers must be closed when not adding materials. Materials may be uncovered to feed to slitting machines. Materials must be recovered after slitting.	40 CFR Part 63 subp. WWWW, Table 4; Minn. R. 7011.7800
2. Do not use cleaning solvents that contain HAP, except that styrene may be used as a cleaner in closed systems, and organic HAP containing cleaners may be used to clean cured resin from application equipment. Application equipment includes any equipment that directly contacts resin.	40 CFR Part 63 subp. WWWW, Table 4; Minn. R. 7011.7800 (cont)
3. Keep containers that store HAP-containing materials closed or covered except during the addition or removal of materials. Bulk HAP-containing materials storage tanks may be vented as necessary for safety.	40 CFR Part 63 subp. WWWW, Table 4; Minn. R. 7011.7800 (cont)
RECORDKEEPING	hdr
The Permittee shall keep the following records 1) A copy of each notification and report that the Permittee submitted to comply with this subpart; 2) A certified statement that the affected source is in compliance with the work practice requirements in Table 4 to this subpart, as applicable.	40 CFR Section 63.5915(a)(1) and (d)
The Permittee must maintain all applicable records in such a manner that they can be readily accessed and are suitable for inspection according to 40 CFR Section 63.10(b)(1).	40 CFR Section 63.5920(a); Minn. R. 7011.7800
The Permittee must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. The Permittee must keep each record onsite for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to 40 CFR Section 63.10(b)(1). The Permittee can keep the records offsite for the remaining 3 years.	40 CFR Section 63.5920(b) and (c); Minn. R. 7011.7800
The Permittee may keep records in hard copy or computer readable form including, but not limited to, paper, microfilm, computer floppy disk, magnetic tape, or microfiche.	40 CFR Section 63.5920(d); Minn. R. 7011.7800
REPORTING	hdr
See Table B for the Semiannual Compliance Report required by 40 CFR Section 63.5910.	

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

12/15/09

Facility Name: Northland Aluminum Products Inc

Permit Number: 05300138 - 004

<p>Contents of Semiannual Compliance Report:</p> <p>1) Company name and address.</p> <p>2) Statement by a responsible official with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report.</p> <p>3) Date of the report and beginning and ending dates of the reporting period.</p> <p>4) If there are no deviations from the requirements for work practice standards in Table 4 to this subpart, a statement that there were no deviations from the organic HAP work practice standards during the reporting period.</p>	<p>40 CFR Part 63, subp. WWW, Table 14; 40 CFR Section 63.5910(b) and (d); Minn. R. 7011.7800 and Minn. R. 7007.0800, subp. 6(A)(2)</p>
<p>Contents of Semiannual Compliance Report, Continued:</p> <p>For each deviation from the requirements for work practice standards that occurs at an affected source, the compliance report must also contain the information in paragraphs below. This includes periods of startup, shutdown, and malfunction.</p> <p>1) The total operating time of each affected source during the reporting period.</p> <p>2) Information on the number, duration, and cause of deviations (including unknown cause, if applicable), as applicable, and the corrective action taken.</p>	<p>40 CFR Part 63, subp. WWW, Table 14; 40 CFR Section 63.5910(b) and (d); Minn. R. 7011.7800 and Minn. R. 7007.0800, subp. 6(A)(2) (cont)</p>

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

12/15/09

Facility Name: Northland Aluminum Products Inc

Permit Number: 05300138 - 004

Subject Item: CE 018 Fabric Filter - Low Temperature, i.e., T<180 Degrees F**Associated Items:** EU 018 Thermal Spray Booth

What to do	Why to do it
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for Total Particulate Matter: greater than or equal to 99 percent control efficiency	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for Particulate Matter < 10 micron: greater than or equal to 93 percent control efficiency	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for, PM < 2.5 micron: greater than or equal to 93 percent control efficiency	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000
Pressure Drop: greater than or equal to 0.5 inches of water column and less than or equal to 5 inches of water column, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3, based on the values recorded during the most recent MPCA approved performance test where compliance was demonstrated. The Permittee shall record the pressure drop once every 24 hours when in operation.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7011.0080
Visible Emissions: The Permittee shall check the fabric filter stack (SV 018) for any visible emissions once each week during daylight hours. If EU 018 is not operated during a given week, the Permittee is not required to conduct visible emissions checks, but the Permittee shall document weeks of non-operation.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7011.0080
Recordkeeping of Visible Emissions and Pressure Drop. The Permittee shall record the time and date of each visible emission inspection and pressure drop reading, and whether or not any visible emissions were observed, and whether or not the observed pressure drop was within the range specified in this permit.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7011.0080
The control equipment is considered listed control equipment under Minn. R. 7011.0060 to 7011.0080. The Permittee shall operate and maintain the fabric filter at all times that any process equipment controlled by the fabric filter is operating.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7011.0065, subp. 2(A)
Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - visible emissions are observed; - the recorded pressure drop is outside the required operating range; or - the fabric filter or any of its components are found during the inspections to need repair. Corrective actions shall return the pressure drop to within the permitted range and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the fabric filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter.	Minn. R. 7007.0800, subps. 4, 5, and 14
Monitoring Equipment: The Permittee shall install and maintain the necessary monitoring equipment for measuring and recording pressure drop as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored fabric filter is in operation.	Minn. R. 7011.0075, subp. 3
The Permittee shall maintain each piece of control equipment according to the manufacturer's specification, shall conduct inspections, and maintain documentation of those actions as required by Minn. R. 7011.0075, subp. 2(A) to 2(I).	Minn. R. 7011.0075, subp. 2

TABLE B: SUBMITTALS

B-1 12/15/09

Facility Name: Northland Aluminum Products Inc
Permit Number: 05300138 - 004

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 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

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

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

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

Send any application for a permit or permit amendment to:

AQ Permit Technical Advisor
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 Technical Advisor 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** 12/15/09

Facility Name: Northland Aluminum Products Inc

Permit Number: 05300138 - 004

What to send	When to send	Portion of Facility Affected
Application for Permit Reissuance	due 180 days before expiration of Existing Permit	Total Facility
Computer Dispersion Modeling Protocol	due 180 days after Permit Issuance for PM2.5. This protocol will describe the proposed modeling methodology and input data, in accordance with MPCA modeling guidance for Title V air dispersion modeling analyses. This is a state-only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act. The protocol should also include justification for PM2.5 control efficiencies.	Total Facility
Computer Dispersion Modeling Results	due 60 days after receipt of written MPCA approval of computer dispersion modeling protocol for PM2.5. To be submitted after the MPCA has reviewed and approved the modeling protocol. The submittal should adhere to MPCA modeling guidance for Title V air dispersion modeling analyses. This is a state-only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.	Total Facility

TABLE B: RECURRENT SUBMITTALS**B-3** 12/15/09

Facility Name: Northland Aluminum Products Inc

Permit Number: 05300138 - 004

What to send	When to send	Portion of Facility Affected
Semiannual Compliance Report	<p>due 31 days after end of each calendar half-year starting 02/01/2008. The report shall contain the information specified in Table A of this permit, under GP 006.</p> <p>Each semiannual compliance report must cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31.</p> <p>This report may be submitted with the Semiannual Deviations Report also listed in Table B of this permit.</p>	GP006
Semiannual Compliance Report	<p>due 31 days after end of each calendar half-year starting 06/30/2006</p> <p>Each compliance report must cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31.</p> <p>The compliance report may be submitted with the semiannual deviations report also listed in Table B.</p>	EU022
Semiannual Deviations Report	<p>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.</p>	Total Facility
Compliance Certification	<p>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.</p>	Total Facility

APPENDIX A: Insignificant Activities and General Applicable Requirements

Facility Name: Northland Aluminum Products Inc

Permit Number: 05300138-004

Minn. Rule	Rule Description of Activity	General Applicable Requirements
7007.1300, subp. 3(A)	Natural Gas fueled space heaters. <i>Northland Aluminum has 2 make-up air/heat units and 10 space heaters that qualify under this subpart.</i>	Minn R. 7011.0510 (PM and opacity)
7007.1300, subp. 3(I)	Emissions units with PTE less than a) 4,000 lb/yr CO b) 2,000 lb/yr PM/PM ₁₀ , NO _x , SO ₂ , and VOC <i>Northland Aluminum has 1 make-up air/heat unit, 4 heaters, 1 furnace, 1 hot water boiler, and one HVAC that qualify under this subpart.</i>	Minn. R. 7011.0510 (PM and Opacity)
7007.1300, subp. 4	Emissions units with PTE less than a) 5.7 lb/hr CO b) 2.28 lb/hr PM/PM ₁₀ , NO _x , SO ₂ , and VOC <i>Northland Aluminum has 6 make-up air/heat units, an emergency generator, and a silk screening operation that qualify under this subpart</i>	Minn. R. 7011.0510, 7011.0710 (PM and Opacity)

APPENDIX B: Maximum Materials Contents and Application Rates

Facility Name: Northland Aluminum Products Inc

Permit Number: 05300138-004

The table below gives the maximum application rate and maximum materials contents (at the time of permit issuance) used in calculating potential to emit for units listed in GP 004. The values listed in the table are not limits; however, changing to a material that has a higher VOC or solids content, or increasing the application rate, 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.

Emission Unit(s)	Max Application Rate	Max Solids Contents	Max VOC Contents
1-8, 10-17	3 gal/hr/booth*	4.78 lb/gal*	6.8 lb/gal
9	3 gal/hr/booth*	4.78 lb/gal*	6.8 lb/gal
18	10 lb/hr	100%	--

Emission Unit	Max Material Usage Rate
EU 022	2303 lb/hr

*This only applies to liquid coating. Northland Aluminum conducts both powder coating and liquid coating within many of its spray booths. Potential particulate emissions are much lower for powder coating than for liquid coating because the transfer efficiency for powder coating is significantly higher. Therefore, it is possible that the maximum application rate of powder coating could be larger than 3 gal/hr/booth, but the PTE would be well below that of what was calculated as worst case for the facility. So, the 3 gal/hr/booth only applies to liquid coating

APPENDIX C: Stack Parameters Used in Modeling

Stack ID	Delta ID	Description	PM ₁₀ Emission Rate (g/s)	Stack Height (m)	Exit Temp (K)	Exit Velocity (m/s)	Exit Diameter (m)	Elevation (m)	UTM coordinates (m)	
									x	y
SV001	EU001	Line A Primer Paint Booth	1.39E-03	44.4	316.3	4.05	0.86	274	472872.2	4976777.6
SV002	EU002	Line A Finish Paint Booth	1.39E-03	44	316.9	9.41	0.62	274	472868.7	4976771.1
SV003	EU003	Line B Primer Paint Booth	1.39E-03	33.3	313.0	10.62	0.62	273	472869	4976644.5
SV004	EU004	Line B Finish Paint Booth	1.39E-03	29.5	316.3	4.62	0.86	271	472876.8	4976640.6
SV005	EU005	Line C Primer Paint Booth	1.39E-03	33.7	306.9	3.56	0.86	275	472856.2	4976657.4
SV006	EU006	Line C Finish Paint Booth	1.39E-03	35.2	316.3	8.06	0.65	275	472859.0	4976665.3
SV007	EU007	Line D Primer Paint Booth	1.39E-03	30	295.8	10.51	0.58	271	472882.7	4976665.3
SV008	EU008	Line D Finish Paint Booth	1.39E-03	33	311.9	5.17	0.86	271	472880.2	4976653.5
SV009	EU009	Line E Primer Paint Booth	3.78E-03	50.3	297.4	5.93	0.86	271	472896.7	4976786.4
SV010	EU010	Line F Primer Paint Booth	1.39E-03	40.9	301.9	9.27	0.61	269	472913.9	4976778.1
SV011	EU011	Line F Finish Paint Booth	1.39E-03	39.9	299.7	10.15	0.61	269	472907.2	4976777.2
SV012	EU012	Line G Spray Booth	1.39E-03	33.8	305.2	7.14	0.58	276	472854.9	4976673.2
SV013	EU013	Line H1 Paint Booth	1.39E-03	37.3	305.8	11.16	0.48	274	472860.6	4976662
SV014	EU014	Line J1 Paint Booth	1.39E-03	26.7	310.8	8.49	0.61	273	472874.4	4976684.7
SV015	EU015	Line J2 Paint Booth	1.39E-03	31	303.0	12.95	0.62	276	472854.7	4976677.0
SV016	EU016	Line J3 Paint Booth	1.39E-03	26.7	309.7	8.09	0.61	273	472875.9	4976681.6
SV017	EU017	Line H2 Paint Booth	1.39E-03	37	300.2	4.38	0.48	274	472868.3	4976666.6
SV018	EU018	Thermal Spray Booth	8.82E-03	37	295.8	6.12	0.53	272	472869.6	4976640.94
SV019	EU019	Continental Steam boiler	1.37E-03	38.2	490.2	0.01	0.43	269	472908.4	4976748.2
SV020	EU 034	New Pennant Boiler	4.56E-04	34.4	435.8	0.57	0.29	274	472872.2	4976739.8
SV024	EU024	Sandblasting Reclaimer*	2.53E-03	28.3	294.1	20.32	0.86	276	472824.9	4976634.2
SV025	EU025	Line A Curing Oven	2.74E-03	50	418.0	6.81	0.33	273	472876.2	4976771.9
SV026	EU026	Line B Curing Oven	2.74E-03	28.5	556.9	8.03	0.34	271	472880.8	4976642.9
SV027	EU027	Line C Curing Oven	4.01E-03	39	603.0	6.58	0.34	274	472859.2	4976648.5
SV028	EU028	Line D Curing Oven	2.74E-03	32	488.0	4.62	0.34	271	472876.1	4976654.7
SV029	EU029	Line E Curing Oven	2.37E-03	48.6	544.1	4.87	0.45	270	472900	4976785.5
SV030	EU030	Line F Curing Oven	2.19E-03	34.2	413.0	0.01	0.66	269	472905	4976780.7
SV031	EU031	Line G Curing Oven	2.28E-04	29.3	403.0	3.64	0.24	277	47284.3	4976679.1
SV032	EU032	Line H1 Curing Oven	2.28E-04	30.3	434.1	0.01	0.24	277	472851.1	4976680.9
SV033	EU033	Line J2 Curing Oven	3.19E-03	25.3	423.0	5.86	0.24	276	472854.9	4976679.7
SV034	EU034	Line J3 Curing Oven	7.51E-03	26.4	435.9	7.29	0.21	273	472877.9	9976677.74

*At the time the modeling was conducted, the sandblasting reclaimer was in operation, and the emission were included in the modeling analysis. Prior to permit issuance, the sandblasting reclaimer was decommissioned.

APPENDIX D: Part 63 Subpart Mmmm Compliance Equations

Facility Name: Northland Aluminum Products Inc

Permit Number: 05300138-004

Equations from 40 CFR Section 63.3951

EQUATION 1

$$H_e = A + B + C - R_w$$

Where:

H_e = Total mass of organic HAP emissions during the month, kg (lb).

A = Total mass of organic HAP in the coatings used during the month, kg (lb), as calculated in Equation 1A.

B = Total mass of organic HAP in the thinners and/or other additives used during the month, kg (lb), as calculated in Equation 1B.

C = Total mass of organic HAP in the cleaning materials used during the month, kg (lb), as calculated in Equation 1C.

R_w = Total mass of organic HAP in waste materials sent or designated for shipment to a hazardous waste TSDF for treatment or disposal during the month, kg (lb), determined according to 40 CFR § 63.3951(e)(4). (The Permittee may assign a value of zero to R_w if the Permittee does not wish to use this allowance.)

EQUATION 1A

$$A = \sum_{i=1}^m (Vol_{c,i})(D_{c,i})(W_{c,i})$$

Where:

A = Total mass of organic HAP in the coatings used during the month, kg (lb).

$Vol_{c,i}$ = Total volume of coating, i, used during the month, liters (gals).

$D_{c,i}$ = Density of coating, i, kg coating per liter (gal) coating.

$W_{c,i}$ = Mass fraction of organic HAP in coating, i, kg (lb) organic HAP per kg coating. For reactive adhesives as defined in 40 CFR § 63.3981, use the mass fraction of organic HAP that is emitted as determined using the method in appendix A to 40 CFR pt. 63, subp. PPPP.

m = Number of different coatings used during the month.

EQUATION 1B

$$B = \sum_{j=1}^n (Vol_{i,j})(D_{i,j})(W_{i,j})$$

Where:

B = Total mass of organic HAP in the thinners and/or other additives used during the month, kg.

$Vol_{i,j}$ = Total volume of thinner and/or other additive, j, used during the month, liters.

$D_{i,j}$ = Density of thinner and/or other additive, j, kg per liter.

$W_{i,j}$ = Mass fraction of organic HAP in thinner and/or other additive, j, kg organic HAP per kg thinner and/or other additive. For reactive adhesives as defined in 40 CFR § 63.3981, use the mass fraction of organic HAP that is emitted as determined using the method in appendix A to 40 CFR pt. 63, subp. PPPP.

n = Number of different thinners and/or other additives used during the month.

EQUATION 1C

$$C = \sum_{k=1}^p (Vol_{s,k})(D_{s,k})(W_{s,k})$$

Where:

C = Total mass of organic HAP in the cleaning materials used during the month, kg.

$Vol_{s,k}$ = Total volume of cleaning material, k, used during the month, liters.

$D_{s,k}$ = Density of cleaning material, k, kg per liter.

$W_{s,k}$ = Mass fraction of organic HAP in cleaning material, k, kg organic HAP per kg material.

p = Number of different cleaning materials used during the month.

EQUATION 2

$$V_{st} = \sum_{i=1}^m (Vol_{c,i})(V_{s,i})$$

Where:

V_{st} = Total volume of coating solids used during the month, liters.

$Vol_{c,i}$ = Total volume of coating, i, used during the month, liters.

$V_{s,i}$ = Volume fraction of coating solids for coating, i, liter solids per liter coating, determined according to 40 CFR § 63.3941(b).

m = Number of coatings used during the month.

EQUATION 3

$$H_{yr} = \frac{\sum_{y=1}^n H_e}{\sum_{y=1}^n V_{st}}$$

Where:

H_{yr} = Average organic HAP emission rate for the compliance period, kg organic HAP emitted per liter coating solids used.

H_e = Total mass of organic HAP emissions from all materials used during month, y, kg, as calculated by Equation 1.

V_{st} = Total volume of coating solids used during month, y, liters, as calculated by Equation 2.

y = Identifier for months.

n = Number of full or partial months in the compliance period (for the initial compliance period, n equals 12 if the compliance date falls on the first day of a month; otherwise n equals 13; for all following compliance periods, n equals 12).

Equation from 40 CFR Section 63.3890(c)(2)

EQUATION 1:

$$\text{Facility-Specific Emission Limit} = \frac{\sum_{i=1}^n (\text{Limit}_i)(\text{Solids}_i)}{\sum_{i=1}^n (\text{Solids}_i)}$$

Where:

Facility Specific Emission Limit = Facility-specific emission limit for each 12-month compliance period, kg (lb) organic HAP per kg (lb) coating solids used

Limit_i = The new existing source emission limit applicable to coating operation, i, included in the facility-specific emission limited, converted to kg (lb) organic HAP per kg (lb) coating solids used, if the emission limit is not already in those units. All emission limits included in the facility-specific emission limit must be in the same units.

Solids_i = The liters (gal) of solids used in coating operation, i, in the 12-month compliance period that is subject to emission limit, i. The Permittee may estimate the volume of coating solids used form parameters other than coating consumption and volume solids (e.g. design specification for the parts or products coated and the number of items produced). The use of parameters other than coating consumption and volume solids content must be approved by the Administrator.

n = The number of different coating operations included in the facility-specific emission limit

TECHNICAL SUPPORT DOCUMENT
For
AIR EMISSION PERMIT NO. 05300138-004

This technical support document 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:

Applicant/Address	Stationary Source/Address (SIC Code: 3499)
Northland Aluminum Products 5005 Highway 7 Saint Louis Park, MN 55416	5005 Highway 7 St. Louis Park, MN 55416 Hennepin County
Contact: Bette Danielson Phone: 952-924-9655	

1.2. Description of Facility

Northland Aluminum Products manufactures metal and plastic cookware/bakeware and conducts some custom parts surface coating. Air emission sources at the facility include plastics compression molding, thermal spraying, coating, and combustion. Coating operations include spray application of liquid and powder coatings. The site's combustion equipment includes boilers and curing ovens fueled by natural gas. The facility's thermal spraying operations are controlled by a fabric filter. All of the facility's coating lines have panel filters for particulate control. The facility has taken measures to make the portions of the two buildings that contain the coating lines total enclosures, so that it is assumed that the pollution control devices achieve 100% capture efficiency.

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

Permit Number and Issuance Date	Action Authorized
05300138-003 March 12, 2008	Installation and operation of a new boiler
05300138-002 December 22, 2005	Changes to requirements for calculation of PM emissions

1.4. Facility Emissions:

Table 1. Total Facility Potential to Emit Summary

	PM tpy	PM ₁₀ tpy	PM _{2.5} tpy	SO ₂ tpy	NO _x tpy	CO tpy	VOC tpy	HAPs tpy
VOC and PM sources	9.16	11.0	10.2	-	-	-	200	208*
Indirect Heating	5.71 x 10 ⁻²	5.71 x 10 ⁻²	5.71 x 10 ⁻²	4.51 x 10 ⁻³	0.75	0.63	4.31 x 10 ⁻²	6.93 x 10 ⁻²
Direct Heating	0.64	0.64	0.64	5.02 x 10 ⁻²	8.36	7.03	0.48	.10
Total Facility	9.86	11.7	10.9	5.47 x 10⁻²	9.11	7.66	201	208

*VOC emissions from coating, solvent use, and molding are limited to 200 tpy; therefore, volatile HAPs will be less than 200 tpy. So, total HAPs from those sources will be less than 200 tpy + controlled metal HAP PTE.

Table 2. Facility Classification

Classification	Major/Affected Source	Synthetic Minor	Minor
PSD		X	
Part 70 Permit Program	X		
Part 63 NESHAP	X		

1.5 Changes to Permit

The following changes have been made in the reissued permit:

- Updated to reflect current MPCA templates and standard citation formatting;
- Completed requirements have been deleted;
- Data has been updated for changes in operation and new information submitted by the Permittee;
- Some requirements have been reordered to help with clarity;
- Emissions in Delta have been updated based on information submitted by the Permittee;
- PM/PM₁₀ synthetic minor limit removed because revised PTE calculations show controlled PM/PM₁₀ emissions below 100 tpy;
- Permit requires that if the Permittee wishes to change coatings or application rate, they cannot do so without first evaluating whether the change requires an amendment or a notification. The Permittee has always been subject to this requirement, it is now explicitly laid out in the permit;
- Requirements for NESHAP subps. MMMM, PPPP, and WWWW were added;
- Control efficiencies for panel filters were updated based on two filters in series;
- Control efficiencies for PM_{2.5} added;

- Requirements and associated monitoring and recordkeeping was added to maintain portions of the buildings that contain coating operations as total enclosures;
- The equation for calculating VOC emissions was revised to allow for the use of different emission factors based on the type of molding process;
- Parameters used in PM₁₀ modeling added to Appendix C of the permit;
- Requirement added to submit a modeling protocol and dispersion modeling for PM_{2.5};

2. Regulatory and/or Statutory Basis

New Source Review (NSR)

The facility is a synthetic minor source with respect to the New Source Review program. Northland Aluminum Products takes a limit on VOC emissions from non-combustion units to keep them below the 250 tpy New Source Review major source threshold. The synthetic minor limit is 200 tpy VOC.

Part 70 Permit Program

Northland Aluminum Products is a major source with respect to the Part 70 Permit Program.

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)

The facility is a major source under 40 CFR pt. 63. The NESHAPs that apply are:

- Subpart MMMM NESHAP for Surface Coating of Miscellaneous Metal Parts and Products
- Subpart PPPP NESHAP for Surface Coating of Plastic Parts and Products
- Subpart WWWW NESHAP for Reinforced Plastic Composites Production

Compliance Assurance Monitoring (CAM)

The facility is not subject to CAM because none of the emission units that use control equipment have uncontrolled potential emissions above 100 tpy.

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. 7011.0610 Standards of Performance for Fossil-Fuel-Burning Direct Heating Equipment
- Minn. R. 7011.0715 Standards of Performance for Post-1969 Industrial Process Equipment

Table 3. Regulatory Overview of Facility

EU, GP, or SV	Applicable Regulations	Comments:
FC	40 CFR § 52.21 and Minn. R. 7007.3000 Minn. Stat. Section 166.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2, & 4; Minn. R. 7009.0010-7009.0800	Prevention of Significant Deterioration (PSD): The facility cannot make any changes that would make the facility a major source under New Source Review without first obtaining a permit amendment. National Ambient Air Quality Standards (NAAQS); Parameters used in Modeling: The Parameters used in the PM ₁₀ dispersion modeling are documented in Appendix C of the permit.
	Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7009.0020; Minn. R. 7007.0100; Minn. R. 7007.0800, subp. 2	NAAQS; Computer Dispersion Modeling Protocol and Results: The Permittee is required to submit a modeling protocol and modeling results for PM _{2.5} dispersion modeling.
GP 002	40 CFR § 63.51 Minn. R. 7011.0510	National Emission Standards for Hazardous Air Pollutants (NESHAP): EU 034 is a new affected source for 112(J). Standards of Performance for Existing Indirect Heating Equipment. Fuel limited to natural gas only.
GP 003	Minn. R. 7011.0610	Standards of Performance for Fossil-Fuel-Burning Direct Heating Equipment. Fuel limited to natural gas only.
GP 004	40 CFR § 52.21 and Minn. R. 7007.3000	PSD: Limits on VOC emissions to avoid major source and modification classification under PSD program. Requirement to control PM/PM ₁₀ /PM _{2.5} emissions from units in GP 004

EU, GP, or SV	Applicable Regulations	Comments:
GP 004 Cont.	<p>Minn. Stat. Section 166.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2, & 4; Minn. R. 7009.0010-7009.0800</p> <p>Minn. R. 7005.0100, subp. 35a</p> <p>Minn. R. 7011.0715</p>	<p>NAAQS:</p> <p>Building Requirements: Requirements to ensure that the portions of the buildings containing paint lines (buildings 1 & 2) are total enclosures. The requirements include venting all air exhausted to the atmosphere through control equipment and closing all windows, doors, and uncontrolled roof vents. For doorways/openings that do not have a door and/or traffic through the openings is such that a typical door is not practical, the Permittee shall use air curtains or overlapping strip doors.</p> <p>Spray Booth Restrictions: Requirements limiting the capacity of spray booth to the capacities used in NAAQS modeling.</p> <p>This is a state only requirement and is not enforceable by the EPA Administrator and citizens under the Clean Air Act. (This requirement is not a cited under the PSD program because 100% capture efficiency is not needed to keep the PM/PM₁₀/PM_{2.5} PTE below 250 tpy.)</p> <p>Maximum Contents of Materials and Application Rate: Requirement to evaluate any proposed increase in application rate or VOC or solids content of a material for the requirement to submit a permit amendment or notification.</p> <p>Standards of Performance for Post-1969 Industrial Process Equipment</p>
GP 005	<p>40 CFR § 52.21 and Minn. R. 7007.3000;</p> <p>(for PM₁₀ control efficiency only) Minn. Stat. Section 166.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2, & 4; Minn. R. 7009.0010-7009.0800</p>	<p>NAAQS and PSD: Establishes an overall control efficiency for two panel filters in series based on the control equipment rule and includes associated monitoring and operating procedures. The requirement is cited as both a PSD and NAAQS requirement because the control equipment is used to avoid classification as a major source under the PSD program, but the specific value for control efficiency was made more stringent as a result of the NAAQS modeling.</p>

EU, GP, or SV	Applicable Regulations	Comments:
GP 006	40 CFR § 63, subp. MMMM and Minn. R. 7011.8090	NESHAP for Surface Coating of Miscellaneous Metal Parts and Products, predominant activity alternative for general use coating and emission rate without add-on controls option and facility specific emission rate for general use coating and emission rate without add-on controls option.
	40 CFR § 63, subp. PPPP and Minn. R. 7011.8130	NESHAP for Surface Coating of Plastic Parts and Products (compliance with subpart MMMM using the predominant activity or facility-specific emission limit alternative constitutes compliance with subpart PPPP.)
EU 022	40 CFR § 63, subp. WWWW and Minn. R. 7011.7800	NESHAP for Reinforced Plastic Composites Production, for closed molding operation
CE 018	40 CFR § 52.21 and Minn. R. 7007.3000	PSD: Establishes overall control efficiency for the fabric filters with associated monitoring and operating procedures. The control equipment is used to avoid classification as a major source under the PSD program.

3. Technical Information

3.1 Calculation of Potential to Emit (PTE)

Attachment 2 to this TSD contains spreadsheets and supporting information prepared by the MPCA showing PTE calculations.

For PTE calculations, the VOC, HAP, and PM/PM₁₀ emissions from the coating operations are based on the current coatings formulations and application rates for this facility. The Permittee assumed certain worst-case material contents and application rates when determining the annual and short term potential to emit of the units used for coating processes. These assumptions are shown in the calculations in Attachment 2 and are documented in Appendix B of the permit.

The worst-case application rate documented in Appendix B and used in the PTE calculation in Attachment 2 is for liquid coating only. The facility also performs powder coating, and may do so at a higher application rate than listed in Appendix B. The transfer efficiency for the powder coating is greater than that of liquid coating so that even with a higher application rate, the PTE for the powder coating would be significantly lower. Thus, only the liquid coating application rate is listed in Appendix B.

The Permittee may change formulations or application rates, but changing to a material that has a higher content of any of the given pollutants or increasing application rate 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.

Spray Booths:

PTE from spray booth coating operations are calculated using a mass balance approach. All calculations are based on worst-case material contents (e.g. highest VOC and solids content) and application rate based on the worst-case product coated at the facility. When calculating particulate emissions, a 30% minimum transfer efficiency is assumed for air atomization spray guns, and a 75% minimum transfer efficiency is assumed for HVLP guns.

VOC HAP emissions were calculated assuming the same emission rate as VOCs. Particulate HAP emissions are calculated based on a mass fraction of metals in the total solids content of the coatings.

Combustion Equipment:

PTE Combustion calculations are based on equipment capacity and EPA's published emissions factors for the fuels burned. Combustion equipment at the facility only burns natural gas.

Molding Room Emissions:

The molding room emission factor for styrene come from AP-42, 4th edition. The phenol and formaldehyde molding room emission factor is from the manufacturer.

Control Equipment:

Controlled emissions are calculated using the control efficiency from the Control Equipment Rule, Minn. R. 7011.0070. Each spray booth filter (CE 001-CE 017) has two filters in series, a panel filter followed by a pocket filter. The manufacturers of the filters indicate that both filters achieve greater than 99% control. Because this efficiency cannot be verified by testing, the control equipment rule efficiency for panel filters is used for each filter. The overall control efficiency is assumed to be 97%, the theoretical equivalent of two 85% filters in series. See Attachment 2 for calculations.

There is relatively little data available for PM_{2.5} control efficiencies. In absence of such data, the same efficiency is used for PM_{2.5} as for PM₁₀. It is possible that PM_{2.5} control efficiency is lower than PM₁₀ control efficiency for fabric filters and panel filters; however, using a lower value for PM_{2.5} control efficiency yields a higher controlled PM_{2.5} PTE value than controlled PM₁₀ PTE value. This discrepancy is unreasonable because PM_{2.5} is a subset of PM₁₀. The PM_{2.5} control efficiencies in this permit are an interim value and should be re-evaluated when the Permittee performs PM_{2.5} modeling as required by this permit. The modeling requirement also instructs the Permittee to submit justification/data with the modeling protocol supporting why PM_{2.5} and PM₁₀ control efficiencies for the panel filters and fabric filter can be considered the same.

Fine Particulate Matter (PM_{2.5})

The sources of particulate matter at Northland Aluminum include combustion equipment and spray booths. On behalf of the facility, Wenck Associates submitted a technical memorandum describing how PM_{2.5} emissions are calculated for the facility. The memo is Attachment 4. Wenck reviewed EPA's AP-42, FIRE, and SPECIATE databases as well as nationwide emission inventories and particle size data from the California Air Resources Board. Based on Wenck's review of these resources, Table 4 below shows the percent of particulate emissions that are

PM_{2.5} for each of Northland Aluminum's operations that emit particulate matter. For more information on the source and justification of these values, see Attachment 4.

Table 4: Weight Percent of PM Emissions that are PM_{2.5} Emissions

Operation Type	% of Particulate Emissions that are PM _{2.5}
Surface Coating	92.5
Thermal Spraying	92.5
Natural Gas Combustion	100

3.2 Calculation of Emissions for Compliance Purposes

VOC Synthetic Minor Limit:

On a monthly basis, Northland Aluminum Products is required to calculate the 12-month rolling sum VOC emissions to assure compliance with their synthetic minor limit. Emissions are calculated based on daily records of coatings, and other VOC, or HAP containing material usage. The equation to be used is documented in the permit under GP 004. The equation allows Northland Aluminum Products to take credit for waste shipped offsite. The facility determines the VOC and/or total and individual HAP content of each waste shipment using supplier data for raw materials, using the same content data used to determine the content of raw materials.

Subpart M NESHAP:

The Permittee is required to calculate the organic HAP emission rate for its coating operations to demonstrate compliance with the general use coating limit in Subpart M. The equations used for these calculations are found in Appendix D of the permit. Currently, all properties of the coatings (i.e. mass fraction of organic HAP in coatings, volume fraction of coating solids, density of coating) are determined using manufacturer and supplier data.

3.3 Synthetic Minor Limit

Northland Aluminum Products has accepted a limit on its VOC emissions in order to avoid classification as a major source under the PSD program. They comply with this limit by restricting the amount of paints, coating, solvents, and molding compounds used at the facility. The VOC limit is set at 200 tpy, leaving a large margin of compliance with the PSD major source threshold.

Prior to this permit action, Northland Aluminum also had a synthetic minor limit on PM/PM₁₀ emissions because the PTE of these pollutants was over 250 tpy. The limit was set at 100 tpy because if the facility's particulate emissions exceeded 100 tpy it is likely that the facility's VOC emissions would exceed the 200 tpy limit. However, Northland Aluminum was required to conduct modeling to demonstrate compliance with the NAAQS (see discussion in Section 3.5). To model compliance with the 24-hr PM₁₀ NAAQS standard, Northland Aluminum made a number of changes at their facility that significantly lowered their controlled PTE to below 100 tpy (Also see Section 3.5 for description of changes that were made to lower the facility's PTE).

Therefore, the PM/PM₁₀ synthetic limit was removed from the permit as well as the requirement to conduct a 12-month rolling sum. However, the requirement to keep daily records of solids containing materials usage was retained.

3.4 Surface Coating NESHAPs

Northland Aluminum Products is subject to both the 40 CFR pt. 63 subpart M NESHAP for Surface Coating of Miscellaneous Metal Parts and Products and the subpart P NESHAP for Surface Coating of Plastic Parts and Products. Both the Subpart M and Subpart P NESHAP allow the Permittee to comply with a “predominant activity alternative” if the facility performs surface coating activities that meet the applicability criteria of more than one final surface coating NESHAP. Currently, because over 90% of Northland Aluminum Products’ surface coating is classified as “general use” surface coating of metal parts, Northland Aluminum Products only has to comply with the applicable limits and standards in Subpart M. Compliance with those standards constitutes compliance with the Subpart P NESHAP.

The Subpart M and Subpart P NESHAP both also allow for the use of a “facility-specific emission rate alternative”, which is essentially a limit determined by a weighted average based on how much of a certain type of coating a facility performs, and the corresponding emission limit for that type of coating. Northland Aluminum wishes to have the option to comply with the facility-specific emission rate alternative, as allowed by the NESHAP, if their plastic parts coating exceeds 10% of all coating operations at the facility (because at that point they would no longer be eligible to comply with the predominant activity alternative). GP 006 allows Northland Aluminum to switch to the facility-specific emission limit, and requires the Permittee to maintain records which document the limit with which they are complying at any given time and document whether the Permittee switches to the facility-specific emission rate and the date of such change. Switching from the predominant activity alternative to the facility-specific emission rate, in Northland Aluminum’s case, would be switching to a more stringent limit. Consequently, the permit does not authorize the Permittee to switch back to the predominant activity alternative after they have moved to the facility-specific emission rate. The purpose of this requirement is not to allow the Permittee to vacillate between limits; the requirement provides a contingency, congruent with the requirements of the NESHAP, for a one-time switch to the more stringent facility-specific option if plastics parts coating exceeds 10%. See Attachment 2 for further justification for this permit condition.

Additionally, the surface coating NESHAPs allow for a variety of compliance options. Northland Aluminum Products uses the “without add-on control equipment” compliance option. If the facility chooses to change its compliance option in the future it must first evaluate the change for the need to submit a permit amendment or notification.

3.5 NAAQS Modeling

In 2003, initial screening of the Northland Aluminum Products facility predicted concentrations above the NAAQS 24-Hour PM₁₀ standard. More refined screening of PTE using the modeling information submitted by Northland Aluminum Products and the screening model DISPERSE was conducted in December of 2007. The results of the DISPERSE screening show that Northland Aluminum Products has predicted concentrations above the NAAQS 24-Hour PM₁₀ standard. The 24-hour PM₁₀ NAAQS standard is 150 µg/m³; refined screening shows Northland Aluminum Products 24-hour PM₁₀ of 1925 µg/m³. The previous permit action, 05300138-003, added requirements for the facility to perform more refined modeling.

Initial screening also showed predicted concentrations above the lead standard; however, the facility no longer uses lead coatings.

Northland Aluminum submitted a modeling protocol in July 2008 and a modeling analysis in September 2008. The MPCA did not approve the protocol or the analysis because the model used a lower PTE based on a spray coating solids content, maximum application rate, control efficiency, and capture efficiency that were different than what was used to calculate PTE for permitting. This lower PTE was needed to model compliance, so Northland Aluminum was required to make changes to their facility so that they could lower their PTE.

Changes made by the facility as a result of the NAAQS modeling:

- *Solids content and max application rate*: Northland reevaluated their maximum solids content and application rate, and resubmitted EC-07 and GI-07 forms using the lower solids content and application rate.
- *Control efficiency*: Northland was not able to accept the manufacturer's guarantee for the control efficiency of its panel filters because it could not be verified through testing. Alternatively, Northland Aluminum was able to take credit for 97% control efficiency (versus 85% that was previously permitted) by taking into account that each booth has two filters in series.
- *Capture efficiency*: Northland Aluminum made changes to its facility so that parts of buildings 1 and 2 that house all coating operations can be considered total enclosures (100% capture efficiency). To achieve the total enclosure, Northland will close roof vents and install a combination of air curtains, quick-close doors, and overlapping strip doors on all other openings leading to/from the coating areas. The quick-close doors will allow fork lifts to move through the coating areas. The overlapping doors are used in areas where there is pedestrian traffic.

Changes and additions to the permit as a result of the NAAQS modeling:

- *Parameters used in modeling*: Appendix C to the permit contains the parameters that were used in the NAAQS PM₁₀ modeling.
- *Requirements for maintaining parts of buildings 1 & 2 as total enclosures*: The permit now contains requirements for the facility to close all windows, doors, and uncontrolled roof vents leading to/from areas where coating operations are conducted. In areas were

there were no doors, or it would be impractical to install a traditional door, the facility is required to install either air curtains, quick-close doors, or overlapping strip doors. The Permittee is also now required to conduct weekly inspections to ensure that all windows, doors, and vents remain closed when the spray booths are in operation.

- *Removal of PM/PM₁₀ synthetic minor:* (discussed in Section 3.3)
- *Restrictions on spray booths:* paint booth capacities are limited by the maximum capacity used in determining PTE as listed in Appendix B to the permit.

The results of Northland Aluminum Product's NAAQS PM₁₀ dispersion modeling are summarized in Table 5 below. The results are also summarized in a memo from MPCA air modeling dispersion staff. This memo is Attachment 5 to the TSD.

Table 5: PM₁₀ Dispersion Modeling Results

Source	PM ₁₀
	24-Hour Average (µg/m ³)
Northland Aluminum Products	47.4
Background	43
Total Ambient Concentration	90.4
National Ambient Air Quality Standards	150
Minnesota Ambient Air Quality Standards	150

MPCA policy now allows for margin of compliance to be included as a factor in deciding the level of future modeling that might be needed for a given facility. The policy gives the modeling results a growth level ranking for each pollutant and averaging period based on how the results compare to the standard.

The total modeled ambient concentration of PM₁₀ is roughly 60% of the NAAQS. Therefore, Northland Aluminum falls into tier 1, the least restrictive of the tiers. Tier 1 does not automatically require remodeling if changes are made at the facility. Tier 1 requires that parameters are documented in the permit. The modeling parameters are listed in Appendix C of the permit. Attachment 3 to the TSD contains information from the MPCA's current policy guidelines on using growth level ranking to evaluate modeling results.

PM_{2.5} NAAQS Modeling

The MPCA requires that all facilities that show a modeled concentration of PM₁₀ above the PM_{2.5} NAAQS must also conduct PM_{2.5} modeling. Based on the additional time needed to determine less conservative PM_{2.5} controlled emissions rates, and the fact that this permit action does not authorize an increase in PM/PM₁₀/PM_{2.5} emissions, this permit contains a requirement to submit a modeling protocol for PM_{2.5} 180 days after permit issuance.

3.6 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 considers the following:

- The likelihood of 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 6 summarizes the periodic monitoring requirements for those emission units for which the monitoring required by the applicable requirement is nonexistent or inadequate.

Table 6. Periodic Monitoring

Emission Unit or Group	Requirement (basis)	Additional Monitoring	Discussion
GP 002: Indirect Heating Equipment	$PM/PM_{10} \leq 0.4$ lb/MMBtu heat input (PTE = 0.008 lb/MMBtu) Opacity $\leq 20\%$ (Minn. R. 7011.0510) Fuel limited to natural gas only	None Records of fuel usage kept on-site	All units use natural gas; 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 only burning natural gas.
GP 003: Direct Heating Equipment	$PM/PM_{10} \leq 0.3$ gr/dscf Opacity $\leq 20\%$ (Minn. R. 7011.0610) Fuel limited to natural gas only	None Records of fuel usage kept on-site	All units use natural gas; 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 only burning natural gas.

Emission Unit or Group	Requirement (basis)	Additional Monitoring	Discussion
GP 004: VOC and PM/PM ₁₀ sources	<p>VOC \leq 200 tons per year, on a 12 month rolling basis (limit to avoid NSR)</p> <p>PM/PM₁₀ \leq 0.3 gr/dscf</p> <p>Opacity \leq 20% (Minn. R. 7011.7015)</p> <p>Portions of Building 1 & 2 as total enclosure (100% capture efficiency) (requirement resulting from NAAQS modeling)</p>	<p>Recordkeeping: Daily records of coating, VOC, and HAP containing materials usage; On-going MSDS records of coating contents; Monthly calculations of emissions.</p> <p>None</p> <p>Inspections: weekly inspections; records of inspections and corrective actions</p>	<p>To ensure continual compliance, records of coating usage and usage of other VOC and HAP-containing materials shall be generated using written usage logs and/or flowmeters and/or delivery records. Monthly calculations shall be performed using the equations in GP 004 of the permit.</p> <p>Monitoring associated with the control equipment on the spray booths (at GP 005 and CE 018) is considered adequate to provide a reasonable assurance of compliance with the limits.</p> <p>The Permittee shall conduct weekly inspections to ensure that all windows, doors, and uncontrolled vents are closed during operation of the spray booths and to ensure that all air curtains are operating during operation the spray booths. Records shall be kept of the inspections and any corrective actions.</p>
GP 005: Panel Filters	<p>PM/ PM₁₀/ PM_{2.5}: Control Efficiency \geq 97%</p> <p>Pressure Drop: $0.1 \leq \Delta P \leq 0.5$ in. water column (limit to avoid NSR, and based on NAAQS modeling)</p>	<p>O&M Plan, records of pressure drop every 24-hr period; daily inspections; periodic inspections; records of inspections and corrective actions.</p>	<p>The Permittee shall record the pressure drop across the filter at least once every 24-hour period. The Permittee shall also perform daily visual inspections of the filters and periodic inspections as required by the manufacturer's specifications. Records shall be kept of these inspections as well as any corrective actions.</p>
GP 006: Surface Coating Operations	<p>Organic HAP emissions \leq 2.6 lbs/gallon coating solids used (12-month rolling basis)</p> <p>Subp. MMMM NESHAP</p>	<p>None</p>	<p>NESHAP requirements are considered adequate monitoring.</p>

Emission Unit or Group	Requirement (basis)	Additional Monitoring	Discussion
CE 018: Fabric Filter	PM: Control Efficiency $\leq 99\%$ PM ₁₀ /PM _{2.5} : Control Efficiency $\leq 93\%$ Pressure Drop: $0.5 \leq \Delta P \leq 5$ in. water column (Limit to avoid NSR)	Recordkeeping: record of pressure drop once every 24-hrs, records of visible emissions, corrective actions, O&M plan	Monitoring based on the Minnesota Performance Standard for Control Equipment is adequate to have a reasonable assurance of compliance

3.7 Insignificant Activities

Northland Aluminum Products has several operations which are classified as insignificant activities. These are listed in Appendix A 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 2 of this TSD for PTE information for the insignificant activities.

Table 7. Insignificant Activities

Insignificant Activity	Discussion	General Applicable Requirement
7007.1300, subp. 3(A)	Natural Gas fueled space heaters. <i>Northland Aluminum Products has 2 make-up air/heat units and 10 space heaters that qualify under this subpart.</i>	Minn. R. 7011.0510 (PM and opacity)
7007.1300, subp. 3(I)	Emissions units with PTE less than a) 4,000 lb/yr CO b) 2,000 lb/yr PM/PM ₁₀ , NO _x , SO ₂ , and VOC <i>Northland Aluminum Products has 1 make-up air/heat unit, 4 heaters, 1 furnace, 1 hot water boiler, and one HVAC that qualify under this subpart.</i>	Minn. R. 7011.0510 (PM and Opacity)
7007.1300, subp. 4	Emissions units with PTE less than a) 5.7 lb/hr CO b) 2.28 lb/hr PM/PM ₁₀ , NO _x , SO ₂ , and VOC <i>Northland Aluminum Products has 6 make-up air/heat units, an emergency generator, and a silk screening operation that qualify under this subpart.</i>	Minn. R. 7011.0510, 7011.0710 (PM and Opacity)

3.8 Permit Organization

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

Appendix A is a listing of the Facility's Insignificant Activities and their general applicable requirements. This is a fairly standard way to include these in the permit, since it is highly unlikely that the MPCA would need to have these as trackable items in Delta.

Appendix B is a listing of maximum materials content and maximum application rate for the coating materials. These tables are too extensive to put into Delta.

Appendix C is a table of parameters used in the NAAQS modeling. This table is too extensive to put into Delta.

Appendix D contains the Subpart M NESHAP compliance equations. These equations are too complex to enter into Delta and must go in an appendix.

3.9 Comments Received

Public Notice Period: 10/23/2009 – 11/23/2009

EPA 45-day Review Period: 10/23/2009 – 12/07/2009

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

4. Conclusion

Based on the information provided by Northland Aluminum Products, the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission Permit No. 05300138-004 and this technical support document, will not cause or contribute to a violation of applicable federal regulations and Minnesota Rules.

Staff Members on Permit Team: Kelsey Suddard (permit writer/engineer)
 Curt Stock (stack testing)
 Ruth Roberson (air dispersion modeling)
 Adriane Lenshek (peer reviewer)

AQ File No. 2457; DQ 968, 05300138

Attachments: 1. Compliance Plan, Form CD-01

2. MPCA Emissions Calculations
3. MPCA's Policy on Using Growth Rate to Evaluate Modeling Results
4. Technical Memorandum on Potential PM_{2.5} Air Emissions
5. Memo: Northland Aluminum Products Modeling for PM₁₀