

**AIR EMISSION PERMIT NO. 11300014- 001**

**IS ISSUED TO**

**ARCTIC CAT, INC.**

601 Brooks Avenue South  
Thief River Falls, Pennington County, Minnesota 56701

The emission units, control equipment and emission stacks at the stationary source authorized in this permit are as described in the following permit application(s):

**Permit Type**

Total Facility Operating Permit  
Major Amendment

**Application Date**

June 3, 1995  
September 9, 1997

This permit authorizes the Permittee to operate and modify 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. The stationary source may be modified or changed, but the stationary source as modified or change must meet all conditions of the permit at all times. Any changes or modifications other than what are required in the permit, the stationary source must follow the procedures of Minn. R. 7007.1150 to 7007.1500. Terms used in the permit as defined in the state air pollution control rules unless the term is explicitly defined in the permit.

**Permit Type:** Federal; Part 70

**Issue Date:** October 7, 1998

**Expiration:**

All Title I Conditions do not expire.

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Michael J. Sandusky  
Division Manager  
Air Quality Division

for Peder A. Larson  
Commissioner  
Minnesota Pollution Control Agency

ASO:lao

## **TABLE OF CONTENTS**

**Notice to the Permittee**

**Permit Shield**

**Facility Description**

**Table A: Limits and Other Requirements**

**Table B: Submittals**

**Table C: Compliance Schedule ( Not used in this permit)**

**Appendices: Attached and Referenced in Table A**

**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	(612)296-6300
Outside Metro Area	1-800-657-3864
TTY	(612)282-5332

The rule governing these programs are contained in Minn. R. ch. 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. Certain requirements which have been determined not to apply are listed in Table A of this permit.

The permit shield, however does not apply to:

1. Any national ambient air quality standards adopted under section 109 of the Clean Air Act or increment or visibility under part C of title I of the Clean Air Act,
2. Any state ambient air quality standard under Minn. R. ch 7009, and
3. The state noise pollution control rules, Minn. R. ch. 7030.

**FACILITY DESCRIPTION:**

Arctic Cat, Inc. manufactures snowmobiles, personal watercraft, and all terrain vehicles. The facility activities include vehicle and component design and vehicle assembly. Assembly includes machining, welding, painting, and engine testing. Fiberglass hoods, foam seats covers, and garments are also manufactured at the facility. The main sources of air emissions are from the electrodeposition coating, fiberglassing, foam seat production, logo silk screening, and engine testing.

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

10/07/98

Facility Name: Arctic Cat  
 Permit Number: 11300014 - 001

**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
Operation and Maintenance Plan: Retain at the stationary source an operation and maintenance plan for all air pollution control equipment on site.	Minn. R. 7007.0800, subp. 14 and Minn. R. 7007.0800, subp. 16(J)
Monitoring Equipment: Install or make needed repairs to monitoring equipment within 60 days of issuance of the permit if monitoring equipment is not installed and operational on the date the permit is issued.	Minn. R. 7007.0800, subp. 4(D)
Monitoring Equipment Calibration: Annually calibrate all required monitoring equipment (any requirements applying to continuous emission monitors are listed separately in this permit).	Minn. R. 7007.0800, subp. 4(D)
Operation of Monitoring Equipment: Unless otherwise noted in Tables A, B, and/or C, monitoring a process or control equipment connected to that process is not necessary during periods when the process is shutdown, or during checks of the monitoring systems, such as calibration checks and zero and span adjustments. If monitoring records are required, they should reflect any such periods of process shutdown or checks of the monitoring system.	Minn. R. 7007.0800, subp. 4(D)
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
Performance Testing: Conduct all performance tests in accordance with Minn. R. ch 7017 unless otherwise noted in Tables A, B, and/or C.	Minn. R. ch. 7017
Shutdowns: Notify the Commissioner at least 24 hours in advance of a planned shutdown of any process or control equipment if the shutdown would cause an increase in the emissions of any regulated air pollutant. At the time of notification, notify the Commissioner of the cause of the shutdown and the estimated duration. Notify the Commissioner again when the shutdown is over.	Minn. R. 7019.1000, subp. 3
Breakdowns: Notify the Commissioner within 24 hours of a breakdown of more than one hour duration of any process or control equipment if the breakdown causes an increase in the emissions of any regulated air pollutant. At the time of notification or as soon thereafter as possible, the permittee shall also notify the Commissioner of the cause of the breakdown and the estimated duration. Notify the Commissioner again when the breakdown is over.	Minn. R. 7019.1000, subp. 2
Oral Notification of Deviations Endangering Human Health or the Environment: As soon as possible after a discovery, notify the Commissioner orally or by facsimile of any deviation from permit conditions which could endanger human health or the environment.	Minn. R. 7019.1000, subp. 1
Written 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: cause of the deviation; exact dates of the period of the deviation; if the deviation has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the deviation.	Minn. R. 7019.1000, subp. 1
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)
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
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)
Record keeping: Maintain records describing any insignificant modifications (as required by Minn. R. 7007. 1250, subp. 3) or changes contravening permit terms (as required by Minn. R. 7007.1350 subp. 2), including records of the emissions resulting from those changes.	Minn. R. 7007. 0800, subp. 5(B)

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

10/07/98

Facility Name: Arctic Cat  
 Permit Number: 11300014 - 001

Record keeping: 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 strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. Records must conform to the requirements listed in Minn. R. 7007.0800, subp. 5(A).	Minn. R. 7007.0800, subp. 5(C)
Noise: The Permittee shall comply with the noise standards set forth in Minn. R. 7030.0010 to 7030.0080 at all times during the operation of any emission units. This is a state only requirement and is not federally enforceable.	Minn. R. 7030.0010 - 7030.0080
The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16.	Minn. R. 7007.0800, subp. 16
Inspections: Upon presentation of credentials and other documents as may be required by law, allow the Agency, or its representative, to enter the Permittee's premises to have access to and copy any records required by this permit, to inspect at reasonable times (which include any time the source is operating) any facilities, equipment, practices or operations, and to sample or monitor any substances or parameters at any location.	Minn. R. 7007.0800, subp. 9(A)
Emission Fees: due 60 days after receipt of an MPCA bill.	Minn. R. 7002.0005 through Minn. R. 7002.0095
Total Particulate Matter: less than or equal to 240 tons/year using 12-month Rolling Sum	Title I Condition: Limit to avoid classification as a major source or modification under 40 CFR Section 52.21
Particulate Matter < 10 micron: less than or equal to 240 tons/year using 12-month Rolling Sum	Title I Condition: Limit to avoid classification as a major source or modification under 40 CFR Section 52.21 and 40 CFR pt. 51, Appendix S
Carbon Monoxide: less than or equal to 240 tons/year using 12-month Rolling Sum	Title I Condition: Limit to avoid classification as a major source or modification under 40 CFR Section 52.21
Nitrogen Oxides: less than or equal to 240 tons/year using 12-month Rolling Sum	Title I Condition: Limit to avoid classification as a major source or modification under 40 CFR Section 52.21
Sulfur Dioxide: less than or equal to 240 tons/year using 12-month Rolling Sum	Title I Condition: Limit to avoid classification as a major source or modification under 40 CFR Section 52.21 and 40 CFR pt. 51, Appendix S
Volatile Organic Compounds: less than or equal to 246 tons/year using 12-month Rolling Sum	Title I Condition: Limit to avoid classification as a major source or modification under 40 CFR Section 52.21
Type of Emission Units Allowed: The stationary source shall not have any emission units other than the following process operations and emission units: spray guns, spraying and coating booths, degreasers, cleaning of surfaces, fuel storage, boilers, fabric filters, wall filters, panel filters, baghouses, internal combustion engine, burnoff ovens, furnaces, abrasive blasting and grinding, gluing ovens, treatment of resins and gelcoats, dip tanks, engine testing, screen printing, fiberglassing, assembly, molding, stenciling and/or any insignificant activities listed in Minn. R. 7007.1300.	Minn. R. 7007.0800, subp. 2
Labeling Requirements: The Permittee shall permanently display on each emission unit the Emission Unit (EU) number and on each item of air pollution control equipment, the Control Equipment (CE) number. The identifying number shall be legible from a safe distance.	Title I Condition: Monitoring for limit to avoid classification as a major source or modification under 40 CFR Section 52.21 and 40 CFR pt. 51, Appendix S, where applicable
Equipment List Inventory: The Permittee shall maintain a written list of all emission units on site that are not insignificant activities. The list shall include the type of equipment; identifying number; dates of installation, modification and/or reconstruction; and reference to applicable Standards of Performance for New Stationary Sources (40 CFR pt. 60) and National Emission Standards for Hazardous Air Pollutants (40 CFR pt. 63).	Title I Condition: Record keeping for limit to avoid classification as a major source or modification under 40 CFR Section 52.21 and 40 CFR pt. 51, Appendix S, where applicable
Updating the Equipment List Inventory: The list shall be updated to include new, modified, or relocated equipment before making a change. New emission units may be installed if they are of a type already listed in this permit, and existing units may be modified or moved, without obtaining a permit amendment, provided total facility emissions remain within the limits specified in the permit.	Title I Condition: Record keeping for limit to avoid classification as a major source or modification under 40 CFR Section 52.21 and 40 CFR pt. 51, Appendix S, where applicable
Emission Factors: The Permittee shall submit to the Commissioner for approval on-site generated emission factors and voluntary industry testing standards within 60 days before use.	Title I Condition: Monitoring for limit to avoid classification as a major source or modification under 40 CFR Section 52.21 and 40 CFR pt. 51, Appendix S, where applicable.
Record keeping: The Permittee shall record natural gas meter readings to determine monthly natural gas usage for each calendar month.	Minn. R. 7007.0800, subp. 5
Record keeping: For PM/PM10, and VOC, the solids and VOC content of purchased 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 methods approved by the MPCA may be used to determine the material content. The Division Manager reserves the right to require the Permittee to take samples of the materials, and to conduct analysis of material content using EPA reference methods. If an EPA reference method is used for material content determination, the data obtained shall supercede the MSDS.	Title I Condition: Record keeping for limit to avoid classification as a major source or modification under 40 CFR Section 52.21 and 40 CFR pt. 51, Appendix S, where applicable

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

10/07/98

Facility Name: Arctic Cat  
 Permit Number: 11300014 - 001

<p>Record keeping for PM/PM10 emissions: The Permittee shall maintain records and calculate the PM/PM10 emissions from applicable emission units. The emissions shall be calculated using the following equation:</p> $PM/PM10 = P \times T \times (100-E)/100$ <p>where:                  P = uncontrolled emission rate in pounds per hour                  T = time in operation, hours per calendar month                  E = control efficiency of the control equipment as specified in Minn. R. 7007.0080</p> <p>OR</p> $PM/PM10 = P \times (100-E)/100$ <p>where:                  P = total uncontrolled emissions per calendar month based on materials used.</p>	<p>Title I Condition: Monitoring for limit to avoid classification as a major source or modification under 40 CFR Section 52.21 and 40 CFR pt. 51, Appendix S, where applicable</p>
<p>Record keeping for NOx and CO emissions: The Permittee shall maintain records and calculate the NOx and CO emissions from applicable emission units. The emissions shall be calculated using the following equations:</p> $NOx = [(100 \text{ lb/MMcf} \times Qng) + (19 \text{ lb/1000 gal} \times Qprop) + \text{summation}(EFx Qgas)] \times 0.0005$ $CO = [(21 \text{ lb/MMcf} \times Qng) + (3.2 \text{ lb/1000 gal} \times Qprop) + \text{summation} (EF \times Qgas)] \times 0.0005$	<p>Title I Condition: Record keeping for limit to avoid classification as a major source or modification under 40 CFR Section 52.21 and 40 CFR pt. 51, Appendix S, where applicable</p> <p>CONTINUED</p>
<p>where:                  Qng = Quantity of natural gas combusted during the calendar month in millions of cubic feet.                  Qprop = Quantity of propane combusted during the calendar months in gallons                  EF = Emission Factor. The Permittee shall use emission factors published in EPA's AP-42 or on-site generated emissions factors based upon an EPA Certificate of Conformity (40 CFR Section 96.106), state certification processes, or voluntary industry testing standards                  Qgas = Horsepower engines were tested at during the test period multiplied by the time tested in hours or fuel usage in gallons, whichever is applicable                  lb/MMcf = pounds emitted per million cubic feet combusted                  0.0005 = conversion factor, ton/lb</p>	<p>Title I Condition: Record keeping for limit to avoid classification as a major source or modification under 40 CFR Section 52.21 and 40 CFR pt. 51, Appendix S, where applicable</p>
<p>Record keeping for VOC emissions: Once each day, the Permittee shall record the following for the previous day:</p> <p>A. pounds of VOC per material used per part;                  B. total VOC emitted in pounds per part;                  C. total VOC emitted in pounds per day</p>	<p>Title I Condition: Record keeping for limit to avoid classification as a major source or modification under 40 CFR Section 52.21 and 40 CFR pt. 51, Appendix S, where applicable</p>
<p>Record keeping for VOC emissions:The Permittee shall maintain records and calculate the VOC emissions from applicable emission units. The emissions shall be calculate using the following equation:</p> $VOC: [\text{Summation}(XnVn)+ (2.784 \text{ lb/MMcf} \times Qng) + (0.5 \text{ lb/1000 gal} \times Qprop)+ \text{Summation}[EF \times Qgas] \times 0.0005$	<p>Title I Condition: Monitoring for limit to avoid classification as a major source or modification under 40 CFR section 52.21and 40 CFR pt. 51, Appendix S where applicable</p> <p>CONTINUED</p>
<p>where:                  Xn = number of "n" parts produced, parts/calendar month                  Vn = amount of VOC used per "n" part, pounds/part and will include VOCs from parting/coating, fiberglassing, assembly and molding                  Qprop = Quantity of propane combusted during the calendar month in gallons                  Qng = Quantity of natural gas combusted during the calendar month in millions of cubic feet                  EF = Emission Factor: Arctic Cat shall use the emission factors published in EPA's AP-42 or on-site generated emission factors based upon an EPA Certificate of Conformity (40 CFR 96.106), state certification processes, or voluntary industry testing standards                  Qgas = Horsepower engines that were tested at during the test period multiplied by the time tested in hours or fuel usage in gallons, whichever is applicable                  lb/MMcf = pounds emitted per million cubic feet combusted                  0.0005 = conversion factor, ton/lb</p>	<p>Title I Condition: Monitoring for limit to avoid classification as a major source or modification under 40 CFR Section 52.21 and 40 CFR pt. 51, Appendix S, where applicable</p>
<p>Monitoring for VOC emissions: On a semi-annual basis, the Permittee shall reconcile their purchased records against the bill of material consumption rates. If the bill of material underestimates the purchase records by 20 percent or 10 tons, whichever is greater, on two consecutive periods, the Permittee shall change its method of tracking VOC usage to use a combination of flow meters and purchase records. Flow meters shall be used for the bulk materials and purchase records for smaller sources.</p>	<p>Title I Condition: Monitoring for limit to avoid classification as a major source or modification under 40 CFR Section 52.21 and 40 CFR pt. 51, Appendix S, where applicable</p>
<p>Install: due 60 days after Permit Issuance (The Permittee shall install a flow meter on each of the bulk material supply lines.)</p>	<p>Minn. R. 7007.0800, subp. 4</p>

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

10/07/98

Facility Name: Arctic Cat  
 Permit Number: 11300014 - 001

<p>Monitoring: If CO, NOx and VOC emissions from emission units other than insignificant activities exceeds 230 tons/year as a 12-month Rolling Sum, the Permittee shall calculate and record CO, NOx and VOC emissions from insignificant activities monthly. Emissions from Insignificant Activities must be included except for Insignificant Activities listed as Insignificant Activities in Minn. R. 7007.1300, subp. 2.</p>	<p>Title I Condition: Monitoring for limit to avoid classification as a major source or modification under 40 CFR section 52.21 and 40 CFR pt. 51, Appendix S where applicable</p>																
<p>The Permittee may submit to the Commissioner for approval a plan to record and deduct from total VOC use those VOCs which are removed from the facility as a liquid or solid waste or material for recycle. Upon approval, the Permittee may use the procedures of the plan in estimating the amount of VOC emitted to the atmosphere.</p>	<p>Title 1 Condition: Monitoring for limit to avoid classification as a major source or modification under 40 CFR section 52.21 and 40 CFR pt. 51, Appendix S, where applicable</p>																
<p>Monitoring: The Permittee shall calculate the 12-month rolling sum each calendar month for PM/PM10, CO, NOx and VOC emissions. The calculations must be completed by the 15th day of each month for the preceding calendar month.</p>	<p>Title I Condition: Monitoring for limit to avoid classification as a major source or modification under 40 CFR Section 52.21 and 40 CFR pt. 51, Appendix S, where applicable</p>																
<p>Monitoring: For the first 11 months after this permit is issued, the Permittee shall calculate the 12-month Rolling Sum using the previous 11 months of monthly fuel and materials use (determined prior to permit issuance). The Permittee shall calculate the 12-month Rolling Sum for gasoline usage only by using 1997 gasoline usage and dividing it by 12 to determine each of the applicable months in 1997. This monthly gasoline usage will be used to determine compliance with the 12-month Rolling sum for the first 12 months after the permit is issued. All calculations and usages shall be based on verifiable records maintained by the Permittee.</p>	<p>Title 1 Condition: Record keeping for limit to avoid classification as a major source or modification under 40 CFR Section 52.21 and 40 CFR pt. 51, Appendix S, where applicable</p>																
<p>Emission Factors for Internal Combustion Engines: The Permittee shall use the following emission factors to calculate emissions from internal combustion engines. The Permittee may use emission test data supplied by the manufacturer if approved by the Agency.</p> <table border="0" data-bbox="139 888 487 1077"> <tr> <td>N/A</td> <td>Gasoline</td> </tr> <tr> <td>Pollutant</td> <td>lb/1000 gal</td> </tr> <tr> <td>PM</td> <td>6.47</td> </tr> <tr> <td>PM10</td> <td>6.2</td> </tr> <tr> <td>SO2</td> <td>5.3</td> </tr> <tr> <td>NOx</td> <td>102.0</td> </tr> <tr> <td>VOC</td> <td>148</td> </tr> <tr> <td>CO</td> <td>3940</td> </tr> </table> <p>Gasoline heating value is 130,000 Btu/gal</p>	N/A	Gasoline	Pollutant	lb/1000 gal	PM	6.47	PM10	6.2	SO2	5.3	NOx	102.0	VOC	148	CO	3940	<p>Title I Condition: Emission factors for calculation of actual emissions for limit to avoid classification as a major source or modification under 40 CFR Section 52.21 and 40 CFR pt. 51, Appendix S, where applicable</p>
N/A	Gasoline																
Pollutant	lb/1000 gal																
PM	6.47																
PM10	6.2																
SO2	5.3																
NOx	102.0																
VOC	148																
CO	3940																
<p>Fuels Allowed: The Permittee shall use only natural gas, propane and gasoline in combustion sources.</p>	<p>Minn. R. 7007.0800, subp. 2</p>																
<p>Air Pollution Control Equipment: The Permittee shall comply with the air pollution control equipment rule requirements for all listed air pollution control equipment at the facility.</p>	<p>Minn. R. 7011.0060 - 7011.0080 and Minn. R. 7007.0800, subp. 2</p>																
<p>Environmental Assessment Worksheet (EAW): The Permittee shall not begin actual construction of any single project or projects that are connected or phased action which will cause a total increase in actual emissions of greater than 99 tons per year of any single criteria pollutant without first completing an EAW. "Connected actions" and "phased action" have the meanings given in Minn. R. 4410.0200, subs. 9b and 60.</p>	<p>Minn. Statue 1160.04, subd. 2b and Minn. R. 4410.4300, subp. 15</p>																
<p>Risk Management Plan: The Permittee may be required to submit a Risk Management Plan (RMP) under the federal rule, 40 CFR 68 which was promulgated on June 20, 1996. The rule requires each owner or operator of a stationary source, at which a regulated substance is present above a threshold quantity in a process to design and implement an accidental release prevention program. The RMP must be submitted to a centralized located as specified by US EPA. The Permittee shall obtain the RMP submittal information at <a href="http://www.epa.gov/swercepp">http://www.epa.gov/swercepp</a> or call 1-800-424-9346. These requirements must be complied with no later than the latest of the following dates: (1) June 21, 1999; (2) Three years after the date on which a regulated substance is first listed under 40 CFR Section 68.130; or (3) The date on which a regulated substance is first present above a threshold quantity in a process.</p>	<p>40 CFR pt. 68</p>																
<p>The Permittee shall not "construct or reconstruct" a major source of hazardous air pollutants as defined in 40 CFR pt. 63, subp. B without first obtaining a preconstruction permit.</p>	<p>40 CFR Section 63.5(b)(3)</p>																

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

10/07/98

Facility Name: Arctic Cat  
 Permit Number: 11300014 - 001

**Subject Item: GP 001 Molding,Coating & Fiberglass ( each unit)**

- Associated Items:** EU 001 Fiberglass Lay-up Station  
 EU 002 Gel Coat Spray Molding  
 EU 003 Gelcoat Backup  
 EU 004 Gluing Station  
 EU 005 Assembly Gluing Station  
 EU 006 Logo Silk Screening  
 EU 007 Molded Foam Seat Station  
 EU 008 Electrodeposition Coating  
 EU 009 Solvent Flashoff  
 EU 010 Solvent Flashoff  
 EU 011 Solvent Flashoff  
 EU 015 Cold Press Fiberglass Molding  
 EU 019 Finish Routing Stations  
 EU 020 Gel Coat Spray Layup

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011. 0735.	Minn. R. 7011.0715, subp. 1(A); Minn. R. 7011.0730; Minn. R. 7011.0735
Opacity: less than or equal to 20 percent opacity .	Minn. R. 7011.0715, subp. 1(B)

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

10/07/98

Facility Name: Arctic Cat  
Permit Number: 11300014 - 001

**Subject Item:** GP 002 Engine Testing ( each engine)

**Associated Items:** EU 012 Assembly Engine Testing  
EU 013 Engineering Testing  
EU 014 Engineering Testing

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

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

10/07/98

Facility Name: Arctic Cat  
 Permit Number: 11300014 - 001

**Subject Item:** GP 003 Ovens ( each oven)

**Associated Items:** EU 016 Powder Coat Bake Oven  
 EU 017 E Coating Drying Oven  
 EU 018 Drying Oven (Washline Area)

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0610, subp. 1(A)(1)
Opacity: less than or equal to 20 percent opacity ; except that a maximum of 60 percent opacity shall be permissible for four minutes in any 60-minute period and that a maximum of 40 percent opacity shall be permissible for four additional minutes in any 60-minute period.	Minn. R. 7011.0610, subp. 1(A)(2)
Sulfur Dioxide: less than or equal to 2.0 lbs/million Btu heat input .	Minn. R. 7011.0610, subp. 2(B)

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

10/07/98

Facility Name: Arctic Cat  
 Permit Number: 11300014 - 001

**Subject Item:** GP 004 Panel Filters (each unit)

**Associated Items:** CE 001 Mat or Panel Filter  
 CE 002 Mat or Panel Filter  
 CE 003 Mat or Panel Filter  
 EU 001 Fiberglass Lay-up Station

What to do	Why to do it
Collection efficiency of panel filter: The Permittee shall use filters with a manufacturer's guarantee of at least 96.5 % collection efficiency for particulate matter and particulate matter less than 10 microns.	Title I Condition: used to avoid classification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 14
Capture efficiency of panel filter: The Permittee shall operate and maintain the panel filter to ensure equal to or greater than 80% capture efficiency of particulate matter and particulate matter less than 10 microns.	Title I Condition: used to avoid classification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 14
Monitoring: Visually inspect condition of filters, including but not limited to alignment, saturation tears and holes.	Minn. R. 7007.0800, subp. 4
Recordkeeping: Record filter(s) condition every 24 hours, if in operation.	Minn. R. 7007.0800, subp. 4
Recordkeeping of corrective actions: The Permittee shall record any action taken in response to the observed filter condition, including the date and the time the filter was replaced.	Minn. R. 7007.0800, subp. 5

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

10/07/98

Facility Name: Arctic Cat  
 Permit Number: 11300014 - 001

**Subject Item:** GP 005 Panel Filters (each unit)

**Associated Items:** CE 004 Mat or Panel Filter  
 CE 005 Mat or Panel Filter  
 CE 006 Mat or Panel Filter  
 EU 002 Gel Coat Spray Molding

What to do	Why to do it
Collection efficiency of panel filter: The Permittee shall use filters with a manufacturer's guarantee of at least 96.5 % collection efficiency for particulate matter and particulate matter less than 10 microns.	Title I Condition: used to avoid classification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 14
Capture efficiency of panel filter: The Permittee shall operate and maintain the panel filter to ensure equal to or greater than 80% capture efficiency of particulate matter and particulate matter less than 10 microns.	Title I Condition: used to avoid classification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 14
Monitoring: Visually inspect condition of filters, including but not limited to alignment, saturation tears and holes.	Minn. R. 7007.0800, subp. 4
Recordkeeping: Record filter(s) condition every 24 hours, if in operation.	Minn. R. 7007.0800, subp. 4
Recordkeeping of corrective actions: The Permittee shall record any action taken in response to the observed filter condition, including the date and the time the filter was replaced.	Minn. R. 7007.0800, subp. 5

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

10/07/98

Facility Name: Arctic Cat  
 Permit Number: 11300014 - 001

**Subject Item:** GP 006 Panel Filtes (each unit)

**Associated Items:** CE 009 Mat or Panel Filter  
 CE 010 Mat or Panel Filter  
 EU 020 Gel Coat Spray Layup

What to do	Why to do it
Collection efficiency of panel filter: The Permittee shall use filters with a manufacturer's guarantee of at least 96.5 % collection efficiency for particulate matter and particulate matter less than 10 microns.	Title I Condition: used to avoid classification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 14
Capture efficiency of panel filter: The Permittee shall operate and maintain the panel filter to ensure equal to or greater than 80% capture efficiency of particulate matter and particulate matter less than 10 microns.	Title I Condition: used to avoid classification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 14
Monitoring: Visually inspect condition of filters, including but not limited to alignment, saturation tears and holes.	Minn. R. 7007.0800, subp. 4
Recordkeeping: Record filter(s) condition every 24 hours, if in operation.	Minn. R. 7007.0800, subp. 4
Recordkeeping of corrective actions: The Permittee shall record any action taken in response to the observed filter condition, including the date and the time the filter was replaced.	Minn. R. 7007.0800, subp. 5

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

10/07/98

Facility Name: Arctic Cat  
 Permit Number: 11300014 - 001

**Subject Item:** CE 007 Mat or Panel Filter

**Associated Items:** EU 003 Gelcoat Backup

What to do	Why to do it
Collection efficiency of panel filter: The Permittee shall use filters with a manufacturer's guarantee of at least 96.5 % collection efficiency for particulate matter and particulate matter less than 10 microns.	Title I Condition: used to avoid classification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 14
Capture efficiency of panel filter: The Permittee shall operate and maintain the panel filter to ensure equal to or greater than 80% capture efficiency of particulate matter and particulate matter less than 10 microns.	Title I Condition: used to avoid classification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 14
Monitoring: Visually inspect condition of filters, including but not limited to alignment, saturation tears and holes.	Minn. R. 7007.0800, subp. 4
Recordkeeping: Record filter(s) condition every 24 hours, if in operation.	Minn. R. 7007.0800, subp. 4
Recordkeeping of corrective actions: The Permittee shall record any action taken in response to the observed filter condition, including the date and the time the filter was replaced.	Minn. R. 7007.0800, subp. 5

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

10/07/98

Facility Name: Arctic Cat  
 Permit Number: 11300014 - 001

**Subject Item:** CE 008 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

**Associated Items:** EU 019 Finish Routing Stations

What to do	Why to do it
Operation and Maintenance of Fabric Filter: The Permittee shall operate and maintain the fabric filter according to the control equipment manufacturer's specifications. The Permittee shall retain the control equipment manufacturer's specifications on site.	Title I Condition: used to avoid classification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 14
Pressure Drop: The Permittee shall maintain the pressure differential according to the manufacturer's specifications.	Minn. R. 7007.0800, subp. 4
Recordkeeping of pressure drop range: The Permittee shall record pressure drop once every week, if in operation.	Minn. R. 7007.0800, subp. 5
Visible Emissions: The Permittee shall check the SV 022 associated with CE 008 for visible emissions during daylight hours, on a daily basis.	Minn. R. 7007.0800, subp. 4
Record keeping of Visible Emissions (VE): The Permittee shall keep records on the time and date of VE inspection, whether or not any VEs were observed, and if corrective action was needed. If visible emissions are observed, the Permittee shall take all practical steps to modify operations to reduce the emission and shall take corrective action to eliminate visible emissions prior to the following business day, or prior to the next day the emission unit, that is being controlled, is operated.	Minn. R. 7007.0800, subp. 5
Record keeping of corrective actions: The Permittee shall follow the Operation and Maintenance plan for the fabric filter and take corrective actions as soon as possible to eliminate any problem associated with this control equipment. The Permittee shall keep a record of the corrective actions taken.	Minn. R. 7007.0800, subp. 5

**TABLE B: SUBMITTALS**

10/07/98

Facility Name: Arctic Cat  
Permit Number: 11300014 - 001

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.

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 any application for a permit or permit amendment to:

Permit Technical Advisor  
Permit Section  
Air Quality 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:

Supervisor  
Compliance Determination Unit  
Air Quality Division  
Minnesota Pollution Control Agency  
520 Lafayette Road North  
St. Paul, Minnesota 55155-4194

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: ONE TIME SUBMITTALS OR NOTIFICATIONS**

10/07/98

Facility Name: Arctic Cat  
Permit Number: 11300014 - 001

<b>What to send</b>	<b>When to send</b>	<b>Portion of Facility Affected</b>
Application for Permit Reissuance	due 180 days before expiration of Existing Permit	Total Facility
Computer Dispersion Modeling Protocol	due 1,096 days after Permit Issuance . This protocol will describe the proposed modeling methodology and input data, in accordance with all requirements of 40 CFR pt. 51, Appendix W. The protocol will be based on projected operating conditions under the next permit term.	Total Facility
Computer Dispersion Modeling Results	due 1,462 days after Permit Issuance for PM10, NOx, and SO2. To be submitted after the MPCA has reviewed and approved the modeling protocol.	Total Facility

**TABLE B: RECURRENT SUBMITTALS**

10/07/98

Facility Name: Arctic Cat  
 Permit Number: 11300014 - 001

What to send	When to send	Portion of Facility Affected
Semiannual Deviations Report	due 30 days after end of each calendar half-year following Permit Issuance . The first semiannual report submitted by the Permittee shall cover the calendar half-year in which the permit is issued. The first report of each calendar year covers January 1 - June 30. The second report of each calendar year covers July 1 - December 31.  If there are no deviations during a report period, the Permittee shall submit the report stating there were no deviations.	Total Facility
Compliance Certification	due 30 days after end of each calendar year following Permit Issuance (for the previous calendar year). To be submitted on a form approved by the Commissioner , both to the Commissioner, and to the U.S. EPA regional office in Chicago. This report covers all deviations experienced during the calendar year. Address: Mr. George Czerniak, Chief Air Enforcement and Compliance Assurance Branch U. S. EPA Region V 77 West Jackson Boulevard Chicago, Illinois 60604	Total Facility
Emissions Inventory Report	due 91 days after end of each calendar year following Permit Issuance (April 1). To be submitted on a form approved by the Commissioner.	Total Facility
Equipment List	due 30 days after end of each calendar year following Permit Issuance to be submitted with the Compliance Certification. This report shall describe changes made to the stationary source without applying for an amendment. Such changes may include installation of new emission units of the same type described in this permit, and modification or relocation of emission units.	Total Facility

**TECHNICAL SUPPORT DOCUMENT**  
**For**  
**DRAFT AIR EMISSION PERMIT NO. 11300014-001**

This technical support document is for all the interested parties of the draft permit. The purpose of this document is to set forth the legal and factual basis for the draft permit conditions, including references to the applicable statutory or regulatory provisions.

**1. General Information**

1.1. Applicant and Stationary Source Location:

Owner and Operator Address and Phone Number (list both if different)	Facility Address (SIC Code: 3799)
Arctic Cat, Inc. 601 Brooks Avenue South Thief River Falls, Minnesota 56701	Arctic Cat, Inc. 601 Brooks Avenue South Thief River Falls, Minnesota 56701

1.2. Description of the facility

Arctic Cat, Incorporated (Arctic Cat) has submitted an application for a Total Facility Air Emission Permit as required by Minnesota Rules chapter (Minn. R. ch.)7007. Minn. R. ch. 7007 implements Title V of the federal Clean Air Act as amended 1990. The application was received on June 03, 1995.

Arctic Cat manufactures snowmobiles, personal watercraft, and all terrain vehicles. Facility activities include vehicle and component design and vehicle assembly. Assembly includes machining, welding, painting, and engine testing. Fiberglass hoods, foam seats covers, and garments are also manufactured at the facility. Sources of air emissions include electrodeposition coating, fibreglassing, foam seat production, logo silk screening, and engine testing.

The permit action described in this Technical Support Document (TSD) is the issuance of a total facility operating permit for this facility. The total facility operating permit contains all requirements of all federal regulations and State Rules based on the federal Clean Air Act.

*1.2.1 The following minor changes were made to the DRAFT permit and TSD during the public notice period:*

Added to the TSD, “the source is major for Hazardous Air Pollutants (HAPs) and will be subject to National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Fiberglass Boat Manufacturing.

Added to the DRAFT permit and the TSD, “prior to construction or reconstruction of an “affected source” under 40 CFR pt. 63, subp. B, the Permittee must apply for and obtain a preconstruction permit.”

### 1.3 Description of any changes allowed with this permit issuance

This permit action also responds to an application for a Major Permit amendment. The major amendment application requests that a VOC emission limit established previously, be modified from a 246 tons per year based on a 365-day rolling sum to a 246 tons per year based on a 12-month rolling sum and the issuance of a flex-cap permit. Arctic Cat will keep records of the 12-month rolling sum VOC emission limit on a daily basis but calculations of emissions will be done on a monthly basis. A 12-month rolling sum is warranted for Arctic Cat due to the substantial and unpredictable variation in their production. EPA guidance documents dated June 13, 1989, and February 24, 1992, indicate this is a viable option.

This permit will contain emission limits for each criteria pollutant subject to New Source Review (NSR) therefore, this stationary source will not be a major source under NSR.

This source is major for Hazardous Air Pollutants (HAPs). National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Fiberglass Boat Manufacturing to be promulgated November 15, 2000 will apply to this source. The fiberglass boat manufacturing NESHAP requires boat manufacturing facilities located at major sources to meet emission standards reflecting the application of the maximum achievable control technology (MACT). The MPCA will amend this permit if necessary, when the impact of this rule on the source is determined.

The permit also allows operating flexibility by authorizing the installation, replacement, and removal of equipment without a permit amendment, so long as the source remains in compliance with its permit. The Permittee will not “construct or reconstruct a major source of HAPS as defined in 40 CFR pt. 63, subp. B, without first obtaining a preconstruction permit.

1.4 Description of all amendments issued since the issuance of the last total facility permit and to be included in the Part 70 Permit.

Permit Number and Issuance Date	Action Authorized
890-92-OT-1 March 25, 1992	Total Facility Permit
Amendment 1 to 890-92-OT-1 October 23, 1992	Allowed the installation and operation of small parts powder paint system
Amendment 2 to 890-92-OT-1 July 21, 1993	Allowed the expansion of Arctic Cat's fiberglassing facility
Amendment 3 to 890-92-OT-1 February 21, 1997	Changed the name of the facility Modified the baghouse pressure drop range

1.5. Facility Emissions:

Table 1. Total Facility Potential to Emit Summary:

EU #	SV #	Emission Unit Description	PM tpy	PM10 tpy	SO2 tpy	NOx tpy	CO tpy	VOC tpy	Pb tpy	Single HAP tpy	All HAPs tpy
001	001-004	Fiberglass Lay-up Station	15.8	15.8	0.0	0.0	0.0		0.0		
002	005-007	Gel coat Spray Molding	6.22	6.22	0.0	0.0	0.0		0.0		
003	008	Gelcoat Backup	0.0	0.0	0.0	0.0	0.0				
004	009	Gluing Station	0.0	0.0	0.0	0.0	0.0				
005	009	Assembly Gluing Station	0.0	0.0	0.0	0.0	0.0				
006	010	Logo Silk Screening	0.0	0.0	0.0	0.0	0.0				
007	010	Molded Foam Seat Station	0.0	0.0	0.0	0.0	0.0				
008	011	Electrodeposition Coating	0.0	0.0	0.0	0.0	0.0				
009	012	Solvent Flashoff	0.0	0.0	0.0	0.0	0.0				
010	013	Solvent Flashoff	0.0	0.0	0.0	0.0	0.0				
011	014	Solvent Flashoff	0.0	0.0	0.0	0.0	0.0				
012	015	Assembly Engine Testing	0.02	0.02	0.01	0.25	9.59				
013	016	Engineering Testing	0.03	0.03	0.02	0.50	19.1				
014	017	Engineering Testing	0.09	0.09	0.07	1.47	56.95				
015	018	Cold Press Fiberglass Molding	0.0	0.0	0.0	0.0	0.0				
016	019	Powder Coat Bake Oven	0.02	0.02	0.00	0.66	0.13				
017	020	E Coating Drying Oven	0.02	0.02	0.0	0.66	0.13				
018	021	Drying Oven (Washline Area)	0.02	0.02	0.0	0.66	0.13				
019	022	Finish Routing Stations	0.01	0.01	0.0	0.0	0.0				
020	023	Gel Coat Spray Layup	0.79	0.79	0.0	0.0	0.0				
		Total	23.0	23.0	0.10	4.20	86.03	246	0.0	Note 1	Note 1

Note 1: HAPs are expected to be no more than the sum of PM 10 and VOC

Permit Action Number: 001

Date: 12/4/2003

Page 4

	PM tpy	PM10 tpy	SO <sub>2</sub> tpy	NO <sub>x</sub> tpy	CO tpy	VOC tpy	Pb tpy	Combined Total HAPs tpy
Total Facility Limited Potential Emissions*	240	240	240	240	240	246	0.0	304.8
Total Facility Actual Emissions*	0.48	0.31	0.03	0.02	4.66	51.76	0.0	22.6

\*These are the limited potential emissions from column 3 in GI-07 from Delta. They differ from those in the permit application sent by Arctic Cat in that they have been verified and corrected as need be by MPCA staff. These are the potential emissions that would appear in a public notice.

Table 2. Total Facility(TF) and Permit Classification

Classification (put x in appropriate box)	Major/Affected Source	*Synthetic Minor	*Minor
PSD (list pollutant)		PM, PM10, SO <sub>2</sub> , NO <sub>x</sub> , CO, VOC	
NAAR (list pollutant)			
Part 70 Permit Program (list pollutant)	PM10, SO <sub>2</sub> , NO <sub>x</sub> , CO, VOC, HAP		

\* Refers to potential emissions that are less than those specified as major by 40 CFR § 52.21, 40 CFR pt. 51 Appendix S, and 40 CFR pt. 70.

## 2. Regulatory and/or Statutory Basis

Summary Regulatory and/or Statutory Basis of the Emission or Operational Limit

### Regulatory Overview of Facility

* EU, GRP, or SV #	Applicable Regulations	** Comments:
Total Facility	Minn. R. chs. 7002, 7007, 7009, 7011, 7019, 7030, 40 CFR § 52.21, and 40 CFR pt. 51, Appendix S	This section of Table A contains requirements that apply to all facilities in Minnesota. It also contains source-wide limits which limits particulate matter less than 10 microns, carbon monoxide, nitrogen oxides, sulfur dioxide to less than 240 tons per year and volatile organic compounds to less than 246 tons per year based on a 12-month rolling sum. Following the limits are other requirements including record keeping and monitoring related to the limits. Reporting requirements are contained in Table B of the permit.
Total Facility	40 CFR pt. 63	National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Fiberglass Boat Manufacturing to be promulgated November 15, 2000.
Fiberglassing, molding, spraying, coating EU 001-003, 005-011 015, 019, 020	Minn. R. 7011.0700-7011.0735	Standards of Performance for Industrial Equipment  This standard includes limits for particulate matter and opacity.
Ovens EU 016, 017, 018,	Minn. R. 7011.0610, subp. 1(A)(1) and (2)	Standards of Performance for Direct Heating Equipment The ovens are used to speed up the coating drying process. Natural gas is used to provide the heat. This rule specifies limits for particulate matter, opacity and sulfur dioxide.
Engine Testing EU 012, 013, 014	Minn. R. 7011.2300	Standards of Performance for Stationary Internal Combustion Engines  Engines operated for testing are subject to Minnesota Rules for internal combustion engines. The rules specify a limit for opacity and for the amount of sulfur dioxide emitted. Sulfur dioxide is produced from sulfur in the fuel; thus, limiting the fuel type which essentially limits the sulfur dioxide emissions.

Fabric and Panel Filters CE 001-010	Minn. R. 7011.0600-7011.0080	Air Pollution Control Equipment  The Permittee will operate and maintain each piece of the listed pollution control equipment according to the control equipment manufacturers specifications, will comply with the requirements specified in the permit, and will maintain the operation and maintenance plan on-site in accordance with Minn. R. 7011.0075, subp. 2.
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### 3. Technical Information

#### Emission Calculations for Arctic Cat, Incorporated

##### 3a) Unrestricted Potential to Emit

Arctic Cat calculated emissions for each emission unit operating at 8760 hours per year and arrived at the following PTE in tons per year for the stationary source:

PM	PM10	SO2	NOx	CO	VOC	Combined HAP
* 246	* 246	0.12	4.19	86.09	* 246	**

\* Arctic Cat received a total facility permit in 1992 that limited its VOC and PM/PM10 emissions not to exceed 246 tons/year

\*\* Combined HAP are not expected to exceed the sum of PM and VOC

##### 3b) Actual Emissions

Arctic Cat's actual annual emissions in tons per year as reported in the Emission Inventory for 1995

PM	PM10	SO2	NOx	CO	VOC	Combined HAP
0.48	0.31	0.03	0.02	4.66	51.76	22.6

### 3c) Limited Potential to emit

Based on the actual emissions, Arctic Cat's Part 70 operating permit limits emissions as a 12-month rolling sum to the following:

PM	PM10	SO2	NOx	CO	VOC	Combined HAP
240	240	240	240	240	246	304.8

### 3d) Calculation of a 12-month Rolling Sum

The source-wide limits in this permit are expressed as a 12-month rolling sum . In a case where emissions are limited as a 12-month rolling sum, the emissions that results from fuel use, as an example, are calculated for each month from the fuel used for that month, and added to the total for the preceding eleven months. If more than one fuel is used in a month, the emissions must be calculated separately for each fuel, each month.

### 3e) Pollution Control Equipment

In accordance with Minn. R. 7007.0800, subp. 14, the permit team decided that Arctic Cat must maintain an operation and maintenance plan on-site instead of specifying operating and maintenance requirements for each piece of control equipment located in the stationary source.

The control efficiencies will be used to determine actual emissions for the purposes of the emission inventory. The control efficiencies were applied to determine potential emissions, and therefore, the applicable requirements associated with the control equipment.

The company will check for visible emissions on a daily basis for pollution control equipment (CE 08) in this permit. If any visible emissions are observed, then the Permittee will take corrective actions as soon as possible to eliminate the visible emissions. Checking for visible emissions on a daily basis will be used as an indicator to determine if the control equipment is operating properly. The Permittee will also check the pressure readings, as recommended by the manufacturer, once a week as an alternative indicator to determine if the control equipment is operating properly.

The company will also visually inspect for torn and plugged filters on a daily basis for the pollution control equipment ( CE 001-007, 090, 010) in this permit, if in operation. If the Permittee observes any torn or plugged filters, then the Permittee will take corrective actions and replace filters immediately.

### 3f) Monitoring and Record keeping

Permit Action Number: 001

Date: 12/4/2003

Page 8

Record keeping: For PM/PM10, VOC, the solids and VOC content of purchased material shall be determined by the Material Safety Data Sheet (MSDS) provided by the supplier of 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 methods approved by the Agency may be used to determine the material content. The MPCA reserves the right to require the Permittee to take samples of the materials, and to conduct analysis of material content using EPA reference methods. If an EPA reference is used for material content determination, the data obtained shall supersede the MSDS.

*Record keeping: For PM/PM10 emissions shall be calculated as follows:*

$$PM/PM10 = P \times T \times (100-E)/100$$

where:

P = uncontrolled emission rate in pounds per hour

T = time in operation, hour per month

E = control efficiency of the control equipment

or

$$PM/PM10 = P \times (100-E)/100$$

where:

P = total uncontrolled emission per month based on materials used.

*Record keeping: For NO<sub>x</sub> and CO emissions shall be calculated as follows:*

$$NO_x = \left[ \left( 100 \frac{\text{lb}}{\text{MMcf}} \times Q_{ng} \right) + \left( 19 \frac{\text{lb}}{1000\text{gal}} \times Q_{prop} \right) + \sum (EF \times Q_{gas}) \right] \times 0.0005$$

$$CO = \left[ \left( 21 \frac{\text{lb}}{\text{MMcf}} \times Q_{ng} \right) + \left( 3.2 \frac{\text{lb}}{1000\text{gal}} \times Q_{prop} \right) + \sum (EF \times Q_{gas}) \right] \times 0.0005$$

where:

Q<sub>ng</sub> = Quantity of natural gas combusted during the month in million cubic feet

Q<sub>prop</sub> = Quantity of propane combusted during the month in gallons.

EF = Emission Factor: Arctic Cat will use emission factors published in EPA's AP 42 or on-site emissions factors based upon an EPA Certificate of Conformity (40 CFR § 96.106), state certification processes, or voluntary industry testing standards

Q<sub>gas</sub> = Horsepower engines were tested at during the test period multiplied by the time tested in hours or fuel usage in gallons, whichever is applicable.

lb/MMcf = pounds emitted per million cubic feet combusted

0.0005 = conversion factor, ton/lb

The permit limits NO<sub>x</sub> and CO emissions to a 12-month rolling sum of less than 240 tons. *By limiting NO<sub>x</sub> and CO emissions, the permit will also limit SO<sub>2</sub> emissions, therefore no monitoring and record keeping provisions are included in the permit.*

*Record keeping: VOC emissions recorded on a daily basis for the previous day:*

- A. pounds of VOC per material used per part;
- B. total VOC emitted in pounds per part;
- C. total VOC emitted in pounds per day.

*Record keeping : VOC emissions based on a 12-month rolling sum shall be calculated as follows by the 15th day of each month for the previous month:*

VOC =

$$\left[ \sum (X_n V_n) + \left( 2.784 \frac{\text{lb}}{\text{MMcf}} \times Q_{\text{ng}} \right) + \left( 0.5 \frac{\text{lb}}{1000\text{gal}} \times Q_{\text{prop}} \right) + \sum [EF \times Q_{\text{gas}}] \right] \times 0.0005$$

where:

$X_n$  = number of “n” parts produced, parts per month

$V_n$  = amount of VOC used per “n” part, pounds per part and will include VOCs from painting/coating, fibreglassing, assembly and molding.

$Q_{\text{ng}}$  = Quantity of natural gas combusted during the month in millions of cubic feet

$Q_{\text{prop}}$  = Quantity of propane combusted during the month in gallons

EF = Emission Factor: Will use the EPA’s AP-42 emission factor or on-site generated emission factors based upon an EPA Certificate of Conformity (40 CFR § 96.106), state certification processes, or voluntary industry testing standards

$Q_{\text{gas}}$  = Horsepower engines were tested at during the test period multiplied by the time tested in hours or fuel usage in gallons, whichever is applicable.

lb/MMcf = pounds emitted per million cubic feet combusted

0.0005 = conversion factor

Arctic Cat uses the “Bill of Material” calculations based upon parts in order to better track material usage per part not only for production and engineering purposes but also pollution prevention and reduction purposes.

Arctic Cat will use bill of material in recording daily and calculating monthly VOC emission rate. The company will reconcile semi-annually their purchased records against the bill of material consumption rate. If the bill of material underestimates the purchase records by 20 percent or 10 tons, whichever is greater, on two consecutive periods, Arctic Cat will change its method of tracking VOC usage to use a combination of flow meters and purchase records. Flow meters will be used for the bulk materials and purchase records for smaller sources.

#### **4. Conclusion**

Based on the information provided by the Arctic Cat, Inc., the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission Permit No. 11300014-001 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:

Staff Engineer: Amrill Okonkwo at (612)296-7009  
Enforcement Staff: Dave Crowell at (218)828-6100  
CERC Staff: Cary Hernandez at (218)846-0746  
Enforcement Staff: Rhonda Land at (612)297-7707

Attachment: CD-01 Forms  
GI-07, Facility Emission Summary  
EC forms for calculations