

STATE OF MISSOURI

PERMIT BOOK



DEPARTMENT OF NATURAL RESOURCES

MISSOURI AIR CONSERVATION COMMISSION

PERMIT TO CONSTRUCT

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the air contaminant source(s) described below, in accordance with the laws, rules and conditions as set forth herein.

Permit Number: 112007-005 Project Number: 2007-08-027

Parent Company: Sabreliner Corporation

Parent Company Address: 7733 Forsyth Blvd., Suite 1500
St. Louis, MO 63105

Installation Name: Sabreliner Corporation St. Mary

Installation Address: 17452 Bartels Industrial Drive

Location Information: Ste. Genevieve County, S32, T37N, R10


Application for Authority to Construct was made for:
Installation of two paint booths. This review was conducted in accordance with
Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits
Required.*

Standard Conditions (on reverse) are applicable to this permit.

Standard Conditions (on reverse) and Special Conditions are applicable to
this permit.

NOV 14 2007

EFFECTIVE DATE


DIRECTOR OR DESIGNEE
DEPARTMENT OF NATURAL RESOURCES

STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review. In the event that there is a discrepancy between the permit application and this permit, the conditions of this permit shall take precedence. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the department's Air Pollution Control Program of the anticipated date of start up of this (these) air contaminant source(s). The information must be made available not more than 60 days but at least 30 days in advance of this date. Also, you must notify the Department of Natural Resources Regional office responsible for the area within which you are located with 15 days after the actual start up of this (these) air contaminant source(s).

A copy of this permit and permit review shall be kept at the installation address and shall be made available to Department of Natural Resources' personnel upon request.

You may appeal this permit or any of the listed special conditions to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.075.6 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed. If it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC.

If you choose not to appeal, this certificate, the project review and your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant source(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit at (573) 751-4817. If you prefer to write, please address your correspondence to the Missouri Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176, attention: Construction Permit Unit.

Page No.	3
Permit No.	
Project No.	2007-08-027

SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

The special conditions listed in this permit were included based on the authority granted the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060 paragraph (12)(A)10. "Conditions required by permitting authority."

Sabreliner Corporation St. Mary
Ste. Genevieve County, S32, T37N, R10

1. Superseding Condition

The conditions of this permit supersede all special conditions found in the previously issued construction permit (Permit Number 2002-03-108) from the Air Pollution Control Program.

2. Emission Limitations for Hazardous Air Pollutants (HAPs)

- A. Sabreliner Corporation St. Mary shall emit less than ten (10) tons individually or twenty-five (25) tons combined of Hazardous Air Pollutants (HAPs) from the entire installation in any consecutive 12-month period.
- B. Sabreliner Corporation St. Mary shall utilize less than 2,986 lbs of strontium chromate at this installation in any consecutive 12-month period.
- C. Attachments A, B and C, or equivalent forms approved by the Air Pollution Control Program shall be used to demonstrate compliance with Special Conditions 2.A. and 2.B. Sabreliner Corporation St. Mary shall maintain all records required by this permit for not less than five (5) years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request. These records shall include Material Safety Data Sheets (MSDS) for all hazardous materials and volatile organic compounds used at this installation.
- D. Sabreliner Corporation St. Mary shall report to the Air Pollution Control Program's Enforcement Section, P.O. Box 176, Jefferson City, Missouri 65102, no later than ten (10) days after the end of the month during which the records from Special Condition 1.C. indicate that the source exceeds the limitation of Special Conditions 1.A. or 1.B.
- E. Sabreliner Corporation St. Mary shall emit less than nine (9) grams per hour of hexavalent chromium from spray painting operations.

Page No.	4
Permit No.	
Project No.	2007-08-027

SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

3. Sabreliner Corporation St. Mary shall control emissions from the paint booths by using a three-stage filtering system (blanket, panel and bag) as specified in the permit application. The filtering system shall be operated and maintained in accordance with the manufacturer's specifications. The filtering system shall be equipped with a gauge or meter, which indicates the pressure drop across the control device. These gauges or meters shall be located such that the DNR employees may easily observe them. Replacement filters shall be kept on hand at all times. The panel filters and bags shall be made of fibers appropriate for operating conditions expected to occur (i.e. temperature limits, acidic and alkali resistance, and abrasion resistance).
4. Sabreliner Corporation St. Mary shall monitor and record the operating pressure drop across the filtering system at least once every 24 hours. The operating pressure drop shall be maintained within the manufacturer's specifications.
5. Sabreliner Corporation St. Mary shall maintain an operating and maintenance log for the filtering system which shall include the following:
 - A. Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and
 - B. Maintenance activities, with inspection schedule, repair actions, and replacements, etc.
6. Sabreliner Corporation St. Mary shall keep surface coating materials in sealed containers whenever the materials are not in use. Sabreliner Corporation St. Mary shall provide and maintain suitable, easily read, permanent markings on surface coatings used at this installation.
7. Emission Testing – Hexavalent Chromium
 - A. Emission testing shall be conducted in order to verify compliance with the hexavalent chromium emission limitation, Special Condition 1.E.
 - B. The emission tests shall be performed within 60 days of achieving the maximum production rate, but no later than 180 days after initial startup.
 - C. The emission tests shall be conducted for one spray booth in operation utilizing approximately 2 gallons per hour of the CA 7233 primer with activator.
 - D. As part of the emission test an analysis of the concentration of strontium

Page No.	5
Permit No.	
Project No.	2007-08-027

SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

chromate in the CA 7233 primer shall be provided.

- E. The date on which emission tests are conducted shall be pre-arranged with the Air Pollution Control Program a minimum of 30 days prior to the proposed test so that a pre-test meeting may be arranged if necessary, and to assure that the test date is acceptable for an observer to be present. A completed Proposed Test Plan form (copy enclosed) may serve the purpose of notification and must be approved by the Air Pollution Control Program prior to conducting the required emission testing.
- F. Two (2) copies of a written report of the emission test results shall be submitted to the Director of the Air Pollution Control Program within 30 days of completion of any required testing. The report must include legible copies of the raw data sheets, analytical instrument laboratory data, and complete sample calculations from the required EPA method for at least one (1) sample run.
- G. Only the initial compliance verification testing will be required provided that the emission rate is below nine (9) grams per hour of hexavalent chromium and there are no reasons to invalidate the results.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE
SECTION (5) REVIEW

Project Number: 2007-08-027
Installation ID Number: 186-0041
Permit Number:

Sabreliner Corporation St. Mary
17452 Bartels Industrial Drive

Complete: July 30, 2007
Reviewed: October 2007

Parent Company:
Sabreliner Corporation
7733 Forsyth Blvd.
Suite 1500
St. Louis, MO 63105

Ste. Genevieve County, S32, T37N, R10

REVIEW SUMMARY

- Sabreliner Corporation St. Mary has applied for authority to install two paint booths. The previously permitted paint booth will be taken out of service.
- Hazardous Air Pollutant (HAP) emissions are expected from the proposed equipment. HAPs of concern from this process are strontium chromate, xylenes, ethyl benzene and toluene.
- A make-up air heater will create NO_x emissions from natural gas combustion.
- None of the New Source Performance Standards (NSPS) apply to the proposed equipment.
- The Maximum Achievable Control Technology (MACT) standard, 40 CFR Part 63, Subpart GG, National Emission Standards for Aerospace Manufacturing and Rework Facilities does not apply to the proposed equipment. HAP emissions from the proposed equipment are conditioned to ten (10) tons per year for any individual HAP and 25 tons per year for any combination of HAPs.
- A three-stage filtering system (blanket filter, panel filter and then a bag filter) will be used to control particulate emissions. The overall control efficiency for PM₁₀ is estimated to be 99%.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of NO_x, PM₁₀ and VOC are below de minimis levels and HAPs are conditioned to below de minimis levels.
- This installation is located in Ste. Genevieve County, an attainment area for all

criteria air pollutants.

- This installation is not on the list of *Named Installations* [10 CSR 10-6.020(3)(B), Table 2].
- Screen level ambient air quality modeling was performed to determine the ambient impact of hexavalent chromium. The result of this screen level modeling triggered an hourly emission limitation and an annual surface coating usage limitation.
- Emission testing is required for hexavalent chromium to demonstrate compliance with and hourly emission rate limitation.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

Sabreliner Corporation St. Mary is an existing installation that performs maintenance, refurbishing and repair of business and military aircraft in St. Mary, Missouri. In 2002 construction permit number 022003-001 was issued to Sabreliner for painting operations. The paint booth installed in 2002 was described as a Sunrise Shield Industries Bench Spray Booth Kit (Model No. BSB-1000-5.8). No welding operations are performed at this installation.

PROJECT DESCRIPTION

Sabreliner Corporation St. Mary will take the previously permitted paint booth out of service and install two new paint booths. The two new paint booths are identical and are described as follows:

AEI Reverse Flow Semi Downdraft Paint Booth (Model #AMD-1209156-RFB)	
Interior Width:	12 ft.
Interior height:	9 ft.
Depth:	16 ft.
Filtration:	3-Stage (blanket, panel and bag filters)

Each paint booth is equipped with a Rupp 11,000 CFM make-up air heater. The specifications for the make-up air heater indicate a maximum natural gas firing rate of 1.62 MMBTU/HR.

DeVillbiss high-volume low-pressure spray guns will be utilized in the paint booths. The spray guns are capable of delivering as much as 7.5 gallons per hour, but due to operational constraints, such as drying time and manpower, the maximum hourly application rate for the new paint booths is 2 gallons per hour. Anticipated annual usage of surface coatings is less than 1,000 gallons.

EMISSIONS/CONTROLS EVALUATION

The emissions of concern for this project are primarily VOCs and HAPs. There will also be small quantities of PM₁₀ and NO_x emitted. The xylenes, ethyl benzene and toluene present in the surface coating materials are classified as VOCs and as HAPs. Un-controlled potential emissions calculations assume that all of the strontium chromate, xylenes, ethyl benzene and toluene present in the surface coating materials are emitted.

Controlled potential emissions of strontium chromate are much lower than the uncontrolled potential emission figure due to the fact that approximately 65% will be transferred to the substrate and additional strontium chromate will settle within the paint booth and be filtered out through the 3-stage filtering system. Emissions testing will be conducted to verify compliance with the strontium chromate emission limit.

Table 1: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions (2006 EIQ)	Un-Controlled Potential Emissions of the Application	Controlled/ Conditioned Potential Emissions
PM ₁₀	15.0	2.06	N/D	N/D	<1
SO _x	40.0	N/A	N/A	N/A	N/A
NO _x	40.0	N/A	N/A	1.4	1.4
VOC	40.0	31.66	0.58	30.7	30.7
CO	100.0	N/A	N/A	N/D	N/D
Xylenes	10.0	<10.0	N/D	<10.0	<10.0
Ethyl Benzene	10.0	<10.0	N/D	<10.0	<10.0
Toluene	10.0	<10.0	N/D	<10.0	<10.0
Strontium Chromate	10.0	<10.0	N/D	17.0	0.078
Total HAPs	10.0/25.0	<25.0	N/D	<25.0	<25.0

N/A = Not Applicable; N/D = Not Determined

Existing potential emissions taken from construction permit number 02003-001.

PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (Section 5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

APPLICABLE REQUIREMENTS

Sabreliner Corporation St. Mary shall comply with the following applicable requirements.

The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved.

GENERAL REQUIREMENTS

- *Submission of Emission Data, Emission Fees and Process Information, 10 CSR 10-6.110*
The emission fee is the amount established by the Missouri Air Conservation Commission annually under Missouri Air Law 643.079(1). Submission of an Emissions Inventory Questionnaire (EIQ) is required June 1 for the previous year's emissions.
- *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin, 10 CSR 10-6.170*
- *Restriction of Emission of Visible Air Contaminants, 10 CSR 10-6.220*
- *Restriction of Emission of Odors, 10 CSR 10-3.090*

SPECIFIC REQUIREMENTS

- *Restriction of Emission of Particulate Matter From Industrial Processes, 10 CSR 10-6.400*
- *Maximum Allowable Emissions of Particulate Matter From Fuel Burning Equipment Used for Indirect Heating, 10 CSR 10-3.060*

AMBIENT AIR QUALITY IMPACT ANALYSIS

Screen level ambient air quality modeling was performed to determine the ambient impact of hexavalent chromium. Strontium chromate is 25.54 % by weight hexavalent chromium. For two (2) gallons per hour of the 7223 primer with activator and worst-case strontium chromate content from the material safety data sheet this equates to a strontium chromate application rate of 3.9 lbs/hr. Assuming 65% transfer to the metal substrate, 50% fallout in the booth and 99% control through the 3-stage filtering system, this leaves 0.0017 lbs/hr (0.000219 g/s) of hexavalent chromium emitted. The screen level ambient air quality results for 0.000219 g/s of hexavalent chromium are provided in Table 2 as follows:

Table 2: Results of Screening Level Risk Analysis Modeling

Pollutant	Modeled Impact	AAL	Time Period
Hexavalent Chromium (0.000219 g/s)	0.0261 ug/m ³	0.03 ug/m ³	24-hr
Hexavalent Chromium (0.000219 g/s)	0.0053 ug/m³	0.001 ug/m ³	Annual

The modeled impact exceeds the acceptable ambient level (AAL) of 0.001 ug/m³ (annual basis) therefore an annual limitation on strontium chromate usage/emissions is warranted. At 0.000042 g/s of hexavalent chromium emitted the modeled impact equals the annual AAL of 0.001 ug/m³. For an operating schedule of 16 hours per day and 260 days per year, 65% transfer to the metal substrate, 50% fallout in the booth and 99% control through the 3-stage filtering system this equates to 2,986 lbs per year of strontium chromate usage. Special condition 2.B. limits strontium chromate usage to less than 2,986 lbs per year.

STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, I recommend permit issuance with special conditions.

Stephen R. Jaques, P.E.
Environmental Engineer

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated July 25, 2007, received July 30 2007, designating Sabreliner Corporation as the owner and operator of the installation.
- Southeast Regional Office Site Survey, dated August 10, 2007.

Attachment A – Paint Booths - Individual HAP Compliance Worksheet

Sabreliner Corporation - St. Marys
 Ste. Genevieve County, S32, T37N, R10
 Project Number: 2007-08-027
 Installation ID Number: 186-0041
 Permit Number: _____

This sheet covers the HAP _____ from _____ to _____.
 (month, year) (month, year)

Copy this sheet as needed.

Column A	Column B	¹ Column C	² Column D	³ Column E	⁵ Column F
Paint Booth Material Identification	Monthly Amount of Material Used (gallons)	Density of Material (lb./gal.)	% Weight HAP of Material (% wt)	HAP Emissions (tons)	HAP 12-month Total (Tons)

1. Column C = $(\rho_{H2O} \times SG)$; $\rho_{H2O} = 8.34\text{lb/gal}$, SG (specific gravity) is obtained from MSDS.
2. Column D = Percentage by weight of the HAP present in the material; obtained from MSDS.
3. Column E = $\left(\frac{(\text{ColumnB} \times \text{ColumnC})}{2000} \times \frac{\text{ColumnD}}{100} \right)$
4. Column F = Rolling 12-month total from Column E. **Total shall not exceed 10 tons in any consecutive 12-Month period.**

Attachment B – Aggregate HAP Compliance Worksheet in a 12-Month Period

Sabreliner Corporation - St. Marys
 Ste. Genevieve County, S32, T37N, R10
 Project Number: 2007-08-027
 Installation ID Number: 186-0041
 Permit Number: _____

This sheet covers the period from _____ to _____.
(month, year) (month, year)

Column A	¹ Column B
HAP Identification	HAP Emissions (Tons/12-Month period)
² Total (tons/12-Month period)	

1. Column B = Emissions for a specific HAP, obtained from Attachment A
2. Total = Sum of Column B; **total shall not exceed 25 tons in any consecutive 12-Month period**

Attachment C – Paint Booths - Strontium Chromate Usage Worksheet

Sabreliner Corporation - St. Marys
 Ste. Genevieve County, S32, T37N, R10
 Project Number: 2007-08-027
 Installation ID Number: 186-0041
 Permit Number: _____

This sheet covers from _____ to _____.
 (month, year) (month, year)

Copy this sheet as needed.

Column A	Column B	¹ Column C	² Column D	³ Column E	⁵ Column F
Product Identification	Monthly Amount of Material Used (gallons)	Density of Material (lb./gal.)	% by Weight StCrO6 (% wt)	Monthly StCrO6 Usage (lbs)	StCrO6 Usage, 12-month Total (lbs)
Example below:					
CA 7223 Primer	<u>25</u>	<u>12.94</u>	<u>30</u>	<u>97.1</u>	

4. Column C = $(\rho_{H2O} \times SG)$; ρ_{H2O} = 8.34lb/gal, SG (specific gravity) is obtained from MSDS.
5. Column D = Percentage by weight of the HAP present in the material; obtained from MSDS.
6. Column E = (ColumnB X ColumnC X ColumnD)/100
7. Column F = Rolling 12-month total from Column E. **Total shall not exceed 2,968 lbs in any consecutive 12-Month period.**

Mr. Terry Miner
Director of Environmental Health and Safety
Sabreliner Corporation
7744 Forsyth Blvd., Suite 1500
St. Louis, MO 63105

RE: New Source Review Permit - Project Number: 2007-08-027

Dear Mr. Miner:

Enclosed with this letter is your permit to construct. Please study it carefully. Also, note the special conditions, if any, on the accompanying pages. The document entitled, "Review of Application for Authority to Construct," is part of the permit and should be kept with this permit in your files.

Operation in accordance with these conditions, your new source review permit application is necessary for continued compliance.

The reverse side of your permit certificate has important information concerning standard permit conditions and your rights and obligations under the laws and regulations of the State of Missouri.

If you have any questions regarding this permit, please do not hesitate to contact Steve Jaques at the department's Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or (573) 751-4817. Thank you for your attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Kendall B. Hale
New Source Review Unit Chief

KBH:sjl

Enclosures

c: Southeast Regional Office
PAMS File 2007-08-027

Permit Number: