



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

Northeast Regional Office • 205B Lowell Street, Wilmington MA 01887 • 978-694-3200

DEVAL L. PATRICK
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Commissioner

April 16, 2014

Mr. William Serra
Smith & Wesson Corporation
2100 Roosevelt Avenue
Springfield, MA 01102-2208

RE: SPRINGFIELD
Transmittal No.: X259122
Application No.: WE-14-004
Class: *Submin*
FMF No.: 130231
AIR QUALITY PLAN APPROVAL

Dear Mr. Serra:

The Massachusetts Department of Environmental Protection (“MassDEP”), Bureau of Waste Prevention, has reviewed your Limited Plan Application (“Application”) listed above. This Application concerns the proposed alteration of an existing spray booth and the construction and operation of a new spray booth at your firearms manufacturing facility located at 2100 Roosevelt Avenue in Springfield, Massachusetts (“Facility”).

This Application was submitted in accordance with 310 CMR 7.02 Plan Approval and Emission Limitations as contained in 310 CMR 7.00 “Air Pollution Control,” regulations adopted by MassDEP pursuant to the authority granted by Massachusetts General Laws, Chapter 111, Section 142 A-J, Chapter 21C, Section 4 and 6, and Chapter 21E, Section 6. MassDEP’s review of your Application has been limited to air pollution control regulation compliance and does not relieve you of the obligation to comply with any other regulatory requirements.

MassDEP has determined that the Application is administratively and technically complete and that the Application is in conformance with the Air Pollution Control regulations and current air pollution control engineering practice, and hereby grants this **Plan Approval** for said Application, as submitted, subject to the conditions listed below.

Please review the entire Plan Approval, as it stipulates the conditions with which the Facility owner/operator (“Permittee”) must comply in order for the Facility to be operated in compliance with this Plan Approval.

1. DESCRIPTION OF FACILITY AND APPLICATION

Smith & Wesson Corporation (“Smith & Wesson”) produces small-arm firearms at the manufacturing facility located at 2100 Roosevelt Avenue in Springfield, Massachusetts. At the facility, Smith & Wesson currently operates a spray booth (Spray Booth #1) to apply surface coatings to firearms. Installation and operation of the existing booth was first approved in 1996 (Approval #1-P-096-014). The Plan Approval was amended in 2001 (Approval #1-P-01-045; Transmittal #W021749) and administratively amended again in 2011. This spray booth will be upgraded and relocated within the facility. This spray booth will be re-designated as Spray Booth #1A.

Spray Booth #1A will remain an automatic spray booth that utilizes two (2) stationary Ransburg Electrostatic Systems AeroBell Rotary Atomizer spray guns to apply a single component low-VOC coating (Agateen) to various parts of handguns. The composition of this water-based low VOC coating has a VOC content of 17.6% by weight and a total HAP content of 9% by weight. The VOC content of the applied coating is determined to be 3.8 lb VOC/gallon of solids applied. The coated parts are then warm-air dried in a drying oven heated by a 400,000 Btu/hr gas fired heater.

In addition, a new spray booth, designated as Spray Booth #2, will be added to the facility. Spray Booth #2 will be a manual booth that will utilize a two component low-VOC coating (Cerakote). An Electric Mix Solution system will mix the 2 part Cerakote materials on demand which will be manually applied using a R70 Vector Electrostatic Hand Gun. Although the two component coating is solvent-based, up to 70% of Part A of the mixture is made up of the solvent 1-chloro-4-(trifluoromethyl)-benzene (Cas. #98-56-6) which is listed in 310 CMR 7.00 as a VOC exempt solvent (non-photo reactive) and is not a HAP. The Part B hardening agent contains up to 32% phenol, which is a VOC and HAP, but is used at a ratio of 1/16 in the final mixture, resulting in low VOC and HAP content coating. The coated parts are dried using a natural gas fired convection-curing oven heated by a 1.0 MMBtu/hr Eclipse Air Heat Burner.

This Limited Plan Approval (“LPA”) Application was submitted to obtain approval to modify the facilities existing paint spray booth and also to construct a new manual paint spray booth. This LPA is approving both paint spray booths and **supersedes existing limited plan approvals 1-P-096-014 and 1-P-01-045** in their entirety. James Gagnon of O’Reilly, Talbot & Okun Associates prepared the LPA Application.

Though coating of miscellaneous metal parts is performed in the booths, the emissions from this facility will be less than 10.0 tons VOC per consecutive 12 month period. Due to the low VOC content of the paint, the 10 tons per year VOC limit and the impracticality of add on control equipment, MassDEP agrees that this provides the Best System of Emission Reduction (BSER).

2. EMISSION UNIT (EU) IDENTIFICATION

Each Emission Unit (EU) identified in Table 1 is subject to and regulated by this Plan Approval:

Table 1			
EU#	Description	Design Capacity	Pollution Control Device (PCD)
1A	Electrostatic Rotary Atomizer (Automatic)	N/A	Mat Fabric Filter
2	R70 Vector Electrostatic Handgun (Manual)	N/A	Mat Fabric Filter

Table 1 Key:

EU# = Emission Unit Number

PCD = Pollution Control Device

3. APPLICABLE REQUIREMENTS

A. OPERATIONAL, PRODUCTION and EMISSION LIMITS

The Permittee is subject to, and shall not exceed the Operational, Production, and Emission Limits as contained in Table 2 below:

Table 2			
EU#	Operational / Production Limit	Air Contaminant	Emission Limit
1A	1. 0.76 Gallon per Hour Maximum Application Rate;	PM ¹	0.002 TPM 0.01 TPY
	2. 6,658 Gal./Year of Agateen in a 12 consecutive month period;	VOC	0.85 TPM 5.1 TPY
	3. Maximum VOC content of coating utilized by EU #1A shall not exceed 6.7 pounds VOC/Gal. solids as applied;	HAP (Individual)	0.33 TPM 2.0 TPY

Table 2			
EU#	Operational / Production Limit	Air Contaminant	Emission Limit
	4. Maximum HAP content of coating utilized by EU#1A shall not exceed 0.78 pounds HAP/Gal. as applied.	HAP (Total)	0.44 TPM 2.6 TPY
1A		Cleanup Solvent (non-HAP VOC)	0.125 TPM 0.75 TPY
2	1. 0.64 Gallon per Hour Maximum Application Rate;	PM ¹	0.003 TPM 0.02 TPY
	2. 2,600 Gal./Year of Cerakote (Total Mix) in a 12consecutive month period;	VOC	0.17 TPM 1.0 TPY
	3. Maximum VOC content of coating utilized by EU #2 shall not exceed 6.7 pounds VOC/Gal. solids as applied;	HAP (Individual)	0.03 TPM 0.2 TPY
	4. Maximum HAP content of coating utilized by EU#2 shall not exceed 0.15 pounds HAP/Gal. as applied.	HAPs (Total)	0.03 TPM 0.2 TPY
		Non-VOC Solvent	1.6 TPM 9.8 TPY

Table 2 Key:

EU# = Emission Unit Number

Gal. = Gallons

Lbs/Hr = Pounds per Hour

PM = Total Particulate Matter including Particulate Matter less than or equal to 10 microns in diameter and Particulate Matter less than or equal to 2.5 microns in diameter

VOC = Volatile Organic Compounds

HAP (single) = maximum single Hazardous Air Pollutant

HAPs (total) = total Hazardous Air Pollutants.

CO₂ = Carbon Dioxide

TPM = tons per month

TPY = tons per consecutive 12-month period

B. COMPLIANCE DEMONSTRATION

The Permittee is subject to, and shall comply with, the monitoring, testing, record keeping, and reporting requirements as contained in Tables 3, 4, and 5 below:

Table 3	
EU#	Monitoring and Testing Requirements
1A&2	1. The Permittee shall monitor material usage on a daily basis.
	2. The Permittee shall monitor VOC and HAPs content of each coating used.
	3. EU #s 1A & 2 shall be equipped with instrumentation to continuously monitor the pressure drop across the mat fabric filter.
Facility-wide	4. If and when MassDEP requires it, the Permittee shall conduct emission testing in accordance with USEPA Reference Test Methods and regulation 310 CMR 7.13.

Table 3 Key:

EU# = Emission Unit Number

VOC = Volatile Organic Compound

HAPs = total Hazardous Air Pollutants

Table 4	
EU#	Record Keeping Requirements
1A & 2	1. The Permittee shall record the pressure drop across the paint spray filters associated with EU#s 1A & 2 at least once per day during which coating operations occur and record the acceptable limit of pressure drop as specified by the filter or spraying machine manufacturer.

Table 4

EU#	Record Keeping Requirements
	<p>2. The Permittee shall prepare and maintain sufficient records to demonstrate compliance for each calendar month. Such records shall include but are not limited to:</p> <p>a. For each coating as applied;</p> <ol style="list-style-type: none"> 1) Gallons of coating used; 2) Coating density (pounds per gallon); 3) Pounds of VOC per gallon of coating; 4) Pounds of solids per gallon of coating; 5) Pounds of water per gallon of coating; 6) Pounds of other non-VOC liquid per gallon of coating; 7) Pounds of VOC per gallon of solids as applied; and 8) Pounds of total HAP per gallon of coating. <p>b. Gallons of exempt/non-compliance coatings used; and</p> <p>c. Gallons of cleanup solution used and pounds VOC per gallon; and</p> <p>d. Maintenance records of filter pad replacement and disposal</p>
1A & 2	3. The Permittee shall include all emissions associated with surface preparation and/or cleanup solutions in the monthly and 12 month rolling emissions calculations to determine the Permittee's compliance status with emission limits contained in Table 2 above.
	4. The Permittee shall maintain sufficient records to demonstrate the pounds of VOC and HAP emitted each month and in each 12 consecutive month period.
	5. The Permittee shall keep documentation of the particle control efficiency of the fabric filter material used in EU#s 1A & 2.
Facility-wide	6. The Permittee shall maintain adequate records on-site to demonstrate compliance with all operational, production, and emission limits contained in Table 2 above. Records shall also include the actual emissions of air contaminant(s) emitted for each calendar month and for each consecutive twelve month period (current month plus prior eleven months). These records shall be compiled no later than the 15 th day following each month. An electronic version of the MassDEP approved record keeping form, in Microsoft Excel format, can be downloaded at http://www.mass.gov/dep/air/approvals/aqforms.htm#report .
	7. The Permittee shall maintain records of monitoring and testing as required by Table 3.
	8. The Permittee shall maintain a copy of this Plan Approval, underlying Application and the most up-to-date SOMP for the EU(s) and PCD(s) approved herein on-site.
	9. The Permittee shall maintain a record of routine maintenance activities performed on the approved EU(s), PCD(s) and monitoring equipment. The records shall include, at a minimum, the type or a description of the maintenance performed and the date and time the work was completed.

Table 4	
EU#	Record Keeping Requirements
	10. The Permittee shall maintain a record of all malfunctions affecting air contaminant emission rates on the approved EU(s), <i>PCD(s)</i> and monitoring equipment. At a minimum, the records shall include: date and time the malfunction occurred; description of the malfunction; corrective actions taken; the date and time corrective actions were initiated and completed; and the date and time emission rates and monitoring equipment returned to compliant operation.
	11. The Permittee shall maintain records required by this Plan Approval <i>ON-SITE</i> for a minimum of five (5) years.
	12. Maintain records of facility operations such that information may be reported as required for compliance with 310 CMR 7.12.
	13. The Permittee shall make records required by this Plan Approval available to MassDEP and USEPA personnel upon request.

Table 4 Key:

- EU#* = Emission Unit Number
- VOC* = Volatile Organic Compound
- HAP* = Hazardous Air Pollutant
- PCD* = Pollution Control Device
- SOMP* = Standard Operating and Maintenance Procedure
- USEPA* = United States Environmental Protection Agency

Table 5	
EU#	Reporting Requirements
Facility-wide	1. The Permittee shall submit to MassDEP all information required by this Plan Approval over the signature of a "Responsible Official" as defined in 310 CMR 7.00 and shall include the Certification statement as provided in 310 CMR 7.01(2)(c).
	2. The Permittee shall notify the Western Regional Office of MassDEP, BWP Permit Chief by telephone (413) 755-2115, email, Marc.Simpson@state.ma.us or fax (413) 784-1149, as soon as possible, but no later than one (1) business day after discovery of an exceedance(s) of Table 2 requirements. A written report shall be submitted to Permit Chief at MassDEP within three (3) business days thereafter and shall include: identification of exceedance(s), duration of exceedance(s), reason for the exceedance(s), corrective actions taken, and action plan to prevent future exceedance(s).
	3. The Permittee shall provide a copy to MassDEP of any record required to be maintained by this Plan Approval within 30-days from MassDEP's request.
	4. The Permittee shall submit to MassDEP for approval a stack emission pretest protocol, at least 30 days prior to emission testing, for emission testing as defined in Table 3 Monitoring and Testing Requirements.
	5. The Permittee shall submit to MassDEP a final stack emission test results report, within 45 days after emission testing, for emission testing as defined in Table 3 Monitoring and Testing Requirements.

Table 5 Key:

- EU#* = Emission Unit Number

CMR = Code of Massachusetts Regulations
BWP = Bureau of Waste Prevention

4. SPECIAL TERMS AND CONDITIONS

The Permittee is subject to, and shall comply with, the following special terms and conditions:

- A. The Permittee shall comply with the Special Terms and Conditions as contained in Table 6 below:

Table 6	
EU#	Special Terms and Conditions
1A	1. The paint spray booth shall use coatings that have VOC contents below 4.0 Lbs. VOC (including volatile hazardous air pollutants) /gallon of solids as applied.
2	2. The paint spray booth shall use coatings that have VOC contents below 3.79 Lbs. VOC (including volatile hazardous air pollutants) / gallon of solids as applied.
1A & 2	3. Smith & Wesson shall ensure that the paint spray operations conform with the design and performance criteria specified in Regulation 310 CMR 7.03(16); namely 310 CMR 7.03(13)(b)-(f) and (h)-(k)..
	4. Spraying operations shall not be conducted outside of the spray booth.
	5. All air pollution control system monitoring devices including, but not limited to, differential pressure gauges, pressure tap lines, flow rate meters, and chart recorders shall be maintained in good working order and calibrated in accordance with the manufacturer's recommendations.

Table 6	
EU#	Special Terms and Conditions
Facility-wide	<p>6. The Permittee shall comply with the following work practices:</p> <ul style="list-style-type: none"> a. Store all VOC and/or HAP-containing paints, primers, sealants, sealant primers, process-related waste materials, fresh and spent cleaning solvents and VOC and/or HAP-containing materials in closed containers; b. ensure that mixing and storage containers used for VOC and/or HAP-containing paints, primers, sealants, sealant primers, process-related waste materials, and VOC and/or HAP-containing materials are kept closed at all times except when depositing or removing these materials; c. minimize spills of VOC and/or HAP-containing paints, primers, sealants, sealant primers, process-related waste materials, and VOC and/or HAP-containing materials; d. convey VOC and/or HAP-containing paints, primers, sealants, sealant primers, process-related waste materials, and VOC and/or HAP-containing materials from one location to another in closed containers or pipes; e. minimize VOC and/or HAP emissions from cleaning of application, storage, mixing, and conveying equipment by ensuring that: (i) equipment cleaning is performed without atomizing the cleanup solvent; and, (ii) all spent solvent is captured in closed containers; and f. store and dispose of all absorbent materials, such as cloth or paper, that are contaminated with VOC and/or HAP-containing paints, primers, sealants, sealant primers, process-related waste materials, or VOC and/or HAP-containing materials in non-absorbent containers that shall be kept closed except when placing materials in or removing materials from the container.

Table 6 Key:

EU# = Emission Unit Number
VOC = Volatile Organic Compound
HAP = Hazardous Air Pollutant
Lbs. = Pounds

B. The Permittee shall install and use an exhaust stack, as required in Table 7, on each of the Emission Units that is consistent with good air pollution control engineering practice and that discharges so as to not cause or contribute to a condition of air pollution. Each exhaust stack shall be configured to discharge the gases vertically and shall not be equipped with any part or device that restricts the vertical exhaust flow of the emitted gases, including but not limited to rain protection devices known as “shanty caps” and “egg beaters.” The Permittee shall install and utilize exhaust stacks with the following parameters, as contained in Table 7 below, for the Emission Units that are regulated by this Plan Approval:

Table 7				
EU#	Stack Height Above Ground (feet)	Stack Inside Exit Dimensions (feet)	Stack Gas Exit Velocity Range (feet per second)	Stack Gas Exit Temperature Range (°F)

Table 7				
EU#	Stack Height Above Ground (feet)	Stack Inside Exit Dimensions (feet)	Stack Gas Exit Velocity Range (feet per second)	Stack Gas Exit Temperature Range (°F)
1A	30	2.0	50	70
1A Oven	30	0.83	32	300
2	30	2.0	50	70
2 Oven	30	0.83	32	300

Table 7 Key:
EU# = Emission Unit Number
°F = Degree Fahrenheit

5. GENERAL CONDITIONS

The Permittee is subject to, and shall comply with, the following general conditions:

- A. Pursuant to 310 CMR 7.01, 7.02, 7.09 and 7.10, should any nuisance condition(s), including but not limited to smoke, dust, odor or noise, occur as the result of the operation of the Facility, then the Permittee shall immediately take appropriate steps including shutdown, if necessary, to abate said nuisance condition(s).
- B. If asbestos remediation/removal will occur as a result of the approved construction, reconstruction, or alteration of this Facility, the Permittee shall ensure that all removal/remediation of asbestos shall be done in accordance with 310 CMR 7.15 in its entirety and 310 CMR 4.00.
- C. If construction or demolition of an industrial, commercial or institutional building will occur as a result of the approved construction, reconstruction, or alteration of this Facility, the Permittee shall ensure that said construction or demolition shall be done in accordance with 310 CMR 7.09(2) and 310 CMR 4.00.
- D. Pursuant to 310 CMR 7.01(2)(b) and 7.02(7)(b), the Permittee shall allow MassDEP and / or USEPA personnel access to the Facility, buildings, and all pertinent records for the purpose of making inspections and surveys, collecting samples, obtaining data, and reviewing records.
- E. This Plan Approval does not negate the responsibility of the Permittee to comply with any other applicable Federal, State, or local regulations now or in the future.
- F. Should there be any differences between the Application and this Plan Approval, the Plan Approval shall govern.

- G. Pursuant to 310 CMR 7.02(3)(k), MassDEP may revoke this Plan Approval if the construction work is not commenced within two years from the date of issuance of this Plan Approval, or if the construction work is suspended for one year or more.
- H. This Plan Approval may be suspended, modified, or revoked by MassDEP if MassDEP determines that any condition or part of this Plan Approval is being violated.
- I. This Plan Approval may be modified or amended when in the opinion of MassDEP such is necessary or appropriate to clarify the Plan Approval conditions or after consideration of a written request by the Permittee to amend the Plan Approval conditions.
- J. The Permittee shall conduct emission testing, if requested by MassDEP, in accordance with USEPA Reference Test Methods and regulation 310 CMR 7.13. If required, a pretest protocol report shall be submitted to MassDEP at least 30 days prior to emission testing and the final test results report shall be submitted within 45 days after emission testing.
- K. Pursuant to 310 CMR 7.01(3) and 7.02(3)(f), the Permittee shall comply with all conditions contained in this Plan Approval. Should there be any differences between provisions contained in the General Conditions and provisions contained elsewhere in the Plan Approval, the latter shall govern.

6. MASSACHUSETTS ENVIRONMENTAL POLICY ACT

MassDEP has determined that the filing of an Environmental Notification Form (ENF) with the Secretary of Energy & Environmental Affairs, for air quality control purposes, was not required prior to this action by MassDEP. Notwithstanding this determination, the Massachusetts Environmental Policy Act (MEPA) and 301 CMR 11.00, Section 11.04, provide certain “Fail-Safe Provisions,” which allow the Secretary to require the filing of an ENF and/or an Environmental Impact Report (EIR) at a later time.

7. APPEAL PROCESS

This Plan Approval is an action of MassDEP. If you are aggrieved by this action, you may request an adjudicatory hearing. A request for a hearing must be made in writing and postmarked within twenty-one (21) days of the date of issuance of this Plan Approval.

Under 310 CMR 1.01(6)(b), the request must state clearly and concisely the facts, which are the grounds for the request, and the relief sought. Additionally, the request must state why the Plan Approval is not consistent with applicable laws and regulations.

The hearing request along with a valid check payable to the Commonwealth of Massachusetts in the amount of one hundred dollars (\$100.00) must be mailed to:

Commonwealth of Massachusetts
Department of Environmental Protection
P.O. Box 4062
Boston, MA 02211

This request will be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver as described below. The filing fee is not required if the appellant is a city or town (or municipal agency), county, or district of the Commonwealth of Massachusetts, or a municipal housing authority.

MassDEP may waive the adjudicatory hearing-filing fee for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file, together with the hearing request as provided above, an affidavit setting forth the facts believed to support the claim of undue financial hardship.

Should you have any questions concerning this Plan Approval, please contact Todd Wheeler by telephone at (413) 755-2297, or in writing at the letterhead address.

*This final document copy is being provided to you electronically by the
Department of Environmental Protection. A signed copy of this document
is on file at the DEP office listed on the letterhead.*

Marc Simpson
Permit Chief
Bureau of Waste Prevention

Enclosure

ecc: MassDEP/Boston - Yi Tian
MassDEP/WERO – Peter Czapienski
O’Reilly, Talbot & Okun Associates – James Gagnon, PE, LSP, CIH