

GOVERNMENT OF THE DISTRICT OF COLUMBIA
Department of Energy and Environment

CHAPTER 2 TECHNICAL SUPPORT MEMORANDUM

TO: File

THROUGH: Stephen S. Ours, P.E.
Chief, Permitting Branch

FROM: Olivia Achuko *NOA*
Environmental Engineer

**SUBJECT: Smithsonian Institution, National Museum of Natural History
Permit No. 6903-R2 to Operate One (1) Non-Auto Body Paint Spray Booth**

DATE: April 23, 2025

BACKGROUND INFORMATION

A permit application to operate one non-automotive paint spray booth at the National Museum of Natural History, 10th Street and Constitution Avenue NW, was received by the Air Quality Division (“AQD”) of the Department of Energy and Environment (“DOEE” or “the Department”) on November 27, 2024. The associated fee payment was received on January 27, 2025. This application is a request to renew permit No. 6903-R1, issued March 2, 2021, with an expiration date of March 1, 2025.

The applicant has not requested that any of the information submitted to the Department be held confidential pursuant to 20 DCMR 101.

TECHNICAL INFORMATION

The paint booth to be permitted is a DeVilbiss cross-draft booth, identified as PB-1.

Based on the emission calculations provided by the facility, this paint booth has the potential to emit 0.03 tons per year (TPY) of VOC and <0.01 TPY of particulate matter.

REGULATORY REVIEW

In developing this permit, the following regulations were evaluated for applicability.

Smithsonian Institution, National Museum of Natural History
Permit No. 6903-R2 to Operate One (1) Non-Automotive Paint Spray Booth

April 23, 2025

Page 2

20 DCMR Chapter 2, Section 200: General Permit Requirements

Pursuant to 20 DCMR 200.1 and 200.2, because the equipment is a stationary source that has the potential to emit air pollutants, a permit from the Department must be obtained to install and operate the equipment.

20 DCMR Chapter 2, Section 204: Permit Requirements for Sources Affecting Non-Attainment Areas

Because the facility did not significantly increase emissions as a result of installation of the paint booth (the potential to emit VOCs of 0.03 TPY is well below the 25 TPY value meeting the definition of “significant”), the requirements of this section were never applicable. For this renewal, no modifications are occurring, so again, this regulation is not triggered.

20 DCMR Chapter 2, Section 205: New Source Performance Standards

There are no NSPS subparts applicable to the paint booth.

20 DCMR Chapter 2, Section 209: Permit Requirements for Non-Major Stationary Sources (Minor New Source Review)

The potential emissions VOCs (0.03 TPY) is well below the 5 TPY threshold for applicability of this regulation (plus the equipment is already installed). Similarly, the potential emissions of all HAPs, combined (<0.01 TPY) and particulate matter (<0.01 TPY) are well below the threshold for applicability of this regulation. As such, the requirements of this regulation were never applicable previously, nor are they applicable at this time.

20 DCMR Chapter 6, Section 606: Visible Emissions

The visible emissions limitations of 20 DCMR 606 are applicable to this facility. Proper operation of the equipment would preclude any visible emissions from being emitted into the outdoor atmosphere from the operation of the paint/spray booth and other equipment at the facility. This more stringent requirement (required by 20 DCMR 201) is contained in Condition II(c).

20 DCMR 700 – Miscellaneous Volatile Organic Compounds (VOCs):

The requirements of 20 DCMR 700 were included in the permit. Because the facility will not be performing activities regulated by other sections of Chapter 7, such as mobile equipment repair and refinishing, most activities occurring in this unit will be regulated under this section. Many of the monitoring and record keeping requirements in the permit are designed to document compliance with this section.

20 DCMR Chapter 7, Section 708: Non-photochemically Reactive Solvents:

Section 708 requires that users of non-photochemically reactive solvents if not subject to other sections of Chapter 7 shall comply with 20 DCMR 708.2. The rule limits aggregate nonphotochemically reactive solvent emissions to less than 8 lb/hr and 40 lb/day. This requirement was placed in Condition II(d) of the permit. Subsequent requirements establish monitoring and record keeping requirements to ensure compliance.

Smithsonian Institution, National Museum of Natural History
Permit No. 6903-R2 to Operate One (1) Non-Automotive Paint Spray Booth

April 23, 2025

Page 3

20 DCMR 714 – Control Techniques Guidelines (CTGs):

20 DCMR 714 is not applicable to the paint booth since the source does not operate any of the source categories (Miscellaneous Metal Product and Plastic Parts Surface Coatings, Large Appliance Coatings, and Metal Furniture Coatings) specified in 20 DCMR 714.

20 DCMR 715 – Major Source and Case-By-Case Reasonably Available Control Technology (RACT):

20 DCMR 715 is not applicable to the paint booth since the source does not have theoretical potential plant-wide emissions greater than or equal to twenty-five tons per year (25 tpy).

20 DCMR Chapter 7, Sections 743 through 749 - Adhesives and Sealants:

These sections apply to the use of adhesives, sealants, adhesive primers, and sealant primers. The applicant has not indicated an intention to use these products. However, to provide flexibility for them to use them, in conjunction with the paint spray booth operations, the applicable requirements of 20 DCMR 743 through 749 have been included in Condition III(b) of this permit, with subsequent sections requiring associated monitoring and record keeping.

20 DCMR 770 – Miscellaneous Industrial Solvent Cleaning Operations:

Pursuant to 20 DCMR 770.9(h), products used to clean resin, coating, ink, and adhesive mixing, molding, and application equipment, are not subject to 20 DCMR 770. Therefore, 20 DCMR 770 is not applicable to the paint booth.

20 DCMR 771 – Miscellaneous Cleaning and VOC Materials Handling Standards:

20 DCMR 771 is not applicable to the paint booth because the paint booth does not apply coatings, inks, or adhesives to flexible packaging nor is the unit subject to 20 DCMR 770 as discussed above. Therefore, 20 DCMR 771 is not applicable to this unit.

20 DCMR Chapter 9, Section 903: Odorous or Other Nuisance Air Pollutants

“An emission into the atmosphere of odorous or other air pollutants from any source in any quantity and of any characteristic, and duration which is, or is likely to be injurious to the public health or welfare, or which interferes with the reasonable enjoyment of life or property is prohibited [20 DCMR 903.1]” is applicable to all sources. It can be found in Condition II(b) of the permit.

This regulation was updated substantially on August 4, 2023. The main updates related to adding requirements for certain facilities to prepare, submit to the Department for approval, and implement odor control plans (OCPs). However, non-automotive paint spray booths are not included in the categories of sources that are required to submit OCPs, unless ordered to do so by the Department under certain circumstances. The Department has not issued such an order in this case. As such, the new OCP requirements do not apply to this facility at this time.

However, one addition to the regulation, 20 DCMR 903.13(b), which adds an affirmative defense provision, does apply to the facility. As such, this provision has been added to the permit as a part of Condition II(b).

Smithsonian Institution, National Museum of Natural History
Permit No. 6903-R2 to Operate One (1) Non-Automotive Paint Spray Booth

April 23, 2025

Page 4

It is additionally noted in the permit that 20 DCMR 903 is District-enforceable only. This is because it has not been incorporated into the District's State Implementation Plan (SIP) found at 40 CFR 52, Subpart J.

40 CFR 60, Subpart EE – New Source Performance Standard for Surface Coating of Metal Furniture:

This subpart does not apply to this unit because the source performs application of latex paints to exhibit display items in the paint booth. This facility is not a “metal furniture surface coating operation”. The application notes that there is no metal furniture coated in the booth. As a result, Condition III(j) has been added to the permit to prohibit metal furniture coating in the booth.

40 CFR 63, Subpart HHHHHH – National Emission Standards for Hazardous Air Pollutants: Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources:

This subpart does not apply to this facility because the paint booth does not perform: 1) paint stripping operations that involve the use of chemical strippers that contain methylene chloride (MeCl), Chemical Abstract Service number 75092, in paint removal processes; 2) Autobody refinishing operations that encompass motor vehicle and mobile equipment spray-applied surface coating operations; or 3) Spray application of coatings containing compounds of chromium (Cr), lead (Pb), manganese (Mn), nickel (Ni), or cadmium (Cd), collectively referred to as the target HAP to any part or product made of metal or plastic, or combinations of metal and plastic that are not motor vehicles or mobile equipment. Therefore, 40 CFR 63, Subpart HHHHHH is not applicable to this unit. Conditions have been added to the permit to ensure that these activities do not occur in the unit in the future. See Conditions III(a), III(c), and III(f)(1) and associated monitoring and record keeping requirements.

RECOMMENDATIONS

The application to operate the paint booth and the attached operating permit comply with all applicable federal and District air pollution control laws and regulations.

The application and draft permit will be posted for public review in the D.C. Register and on the DOEE website on May 2, 2025 and will be available for public comment through June 2, 2025. If no public comments are received, it is recommended that permit No. 6903-R2 be issued. If adverse comments are submitted or a hearing is requested, AQD will consider all comments before determining whether it is appropriate to issue the permit as drafted.

SSO:NOA