



Missouri Department of dnr.mo.gov

NATURAL RESOURCES

Michael L. Parson, Governor

Carol S. Comer, Director

DEC 10 2018

Ms. Jodi Stickler-Morris
Advanced Environmental Scientist
3M Springfield
3M Center, Building 0224-05-W-03
Saint Paul, MN 55144

RE: New Source Review Permit Amendment - Permit Number: 092017-003A
Project Number: 2018-10-030; Installation Number: 077-0051

Dear Ms. Stickler-Morris:

3M Springfield (3M) submitted a permit application, dated October 18, 2018, to modify the Filling House QA Spray Booth (EU-0403). The proposed modification involves an alternative use of the spray booth for the purposes of recovering adhesives from off-spec canisters and canisters returned by customers. The spray booth was originally permitted in September of 2017, Permit No. 092017-003. Due to the close proximity in timing of this proposed modification and the issued permit, Permit No. 092017-003 is being amended to include the alternate operating scenario involving the adhesive recovery process.

As stated in your application and through subsequent conversations, the Filling House QA Spray Booth was initially installed to test aerosol adhesive containers filled on CAN1 and CAN2 lines. 3M proposes to allow for an additional use of the spray booth to include adhesive recovery from containers returned by customers or off-spec products. There is no physical construction associated with this modification. Containers will be emptied within the confines of the spray booth. A determination will be made on whether the adhesive product can be reworked or must be disposed of as waste. The propellant remaining in the containers will be released to the atmosphere via the spray booth exhaust system. A small amount of solvent vapors from the adhesive itself may also be released during the recovery process.

The potential emissions associated with the adhesive recovery process were based on mass balance calculations. The worst case material contains 45% propellant by weight. All propellant is assumed to be volatile organic compounds (VOCs) and 100% of it is assumed to be emitted to the atmosphere. Solvent emissions were based on a 5% solvent loss. Solvent losses were based on 10% of the solvent contained in the adhesive as being emitted. (This equates to 10% of the remaining 50% of adhesive material or 5% of the total product weight). A 10% solvent loss is viewed as a conservative estimate since pumps at the facility can only handle material that meets specific viscosity requirements. If more than 5% of the solvent is lost, the material is too viscous to pump and is unusable. Worst case HAPs for each adhesive were also estimated.

In order to ensure that the project stays below major source levels for VOCs, 3M needs to ensure that project emissions remain below 40 tons per year (tpy). In order to achieve this, the potential emissions associated with all of the other equipment including the original purpose of the QA Spray booth were subtracted from the 40 tpy VOC threshold to get the maximum amount that can be emitted during the adhesive recovery scenario and still remain below the major source VOC threshold (40 tpy minus 13.8 tpy = 26.2 tpy). However, 3M has opted to not track VOC emissions associated with the original



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operating scenario on a monthly basis. As such, this results in a lower indirect VOC limit on adhesive recovery.

The following table provides an updated emissions summary for this project. Existing actual emissions were taken from the installation's 2016 EIQ. Potential emissions of the application represent the potential of the new equipment, the worst case operating scenario of the QA Spray Booth for each pollutant, and assuming continuous operation (8760 hours per year), except for the emergency generator which is for operation at 500 hours per year. All HAPs for the project are currently below the SMAL, but if future projects exceed the SMAL, modeling may be required.

Table 1: Emissions Summary (tpy)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Actual Emissions (2016 EIQ)	Potential Emissions of Phase I, II and III	Potential Emissions of Phase IV	Conditioned Project (Phase I, II, III and IV) Potential Emissions	New Installation Conditioned Potential
PM	25.0	N/D	0.78	4.01	4.79	N/A
PM ₁₀	15.0	0.46	0.78	4.00	4.78	N/A
PM _{2.5}	10.0	0.46	0.78	4.00	4.78	N/A
SO ₂	40.0	0.03	N/A	0.03	0.03	N/A
NO _x	40.0	6.05	N/A	6.79	6.79	N/A
VOC	40.0	47.78	1.67	225.30	226.97	<40 ¹
CO	100.0	5.09	N/A	5.29	5.29	N/A
HAPs	10.0/25.0	0.0012	1.31	49.27	<9.9/24.9	<9.9/24.9
Toluene	10.0	N/D	0.55	15.80	16.35	<9.9
Manganese Compounds	0.8	N/D	0.12	N/A	0.12	N/A
Formaldehyde	2	N/D	1.29	0.0041	1.294	N/A
Methanol	10	N/D	0.0036	0.072	0.076	<9.9
Phenol	0.1	N/D	0.019	N/A	0.019	N/A
Xylene	10	N/D	0.0001	0.00017	0.00027	<9.9
Ethylbenzene	10	N/D	0.003	0.00001	0.003	<9.9
Benzene	2	N/A	0.0005	0.0014	0.0019	N/A
Hexane	10	N/D	N/A	16.45	16.45	<9.9
Vinyl Acetate	1	N/D	N/A	0.00016	0.00197	N/A
Methylene Chloride	10	N/D	N/A	17.15	17.15	<9.9
Chromium Compounds	5	N/D	N/A	0.053	0.053	N/A

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

¹ The project is being indirectly limited to 40 tons per year of VOC by the limit on the emissions associated with adhesive recovery in the QA Spray Booth.

Ms. Stickler-Morris
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If you were adversely affected by this permit decision, you may be entitled to pursue an appeal before the administrative hearing commission pursuant to Sections 621.250 and 643.075.6 RSMo. To appeal, you must file a petition with the administrative hearing commission within thirty 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 administrative hearing commission, whose contact information is: Administrative Hearing Commission, United States Post Office Building, 131 West High Street, Third Floor, P.O. Box 1557, Jefferson City, Missouri 65102, phone: 573-751-2422, fax: 573-751-5018, website: www.oa.mo.gov/ahc.

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

Sincerely,

AIR POLLUTION CONTROL PROGRAM



Kendall B. Hale
Permits Section Chief

KBH:shj

Enclosures

c: Southwest Regional Office
PAMS File: 2018-10-030

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Permit No.	092017-003A
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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."

3M Springfield
Greene County, S16, T29N, R21W

1. VOC Emission Limitation
 - A. 3M Springfield shall emit less than 26.2 tons of VOCs in any consecutive 12-month period from the Filling House QA Spray Booth (EU-0403) for the purposes of adhesive recovery.
 - B. Attachment A, or equivalent forms, such as electronic forms, approved by the Air Pollution Control Program shall be used to demonstrate compliance with Special Condition 1.A.
2. Record Keeping and Reporting Requirements
 - A. 3M Springfield shall maintain all records required by this permit for not less than five years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request. These records shall include SDS for all materials recovered.
 - B. 3M Springfield shall report to the Air Pollution Control Program's Compliance/Enforcement Section, by mail at P.O. Box 176, Jefferson City, MO 65102 or by email at AirComplianceReporting@dnr.mo.gov, no later than 10 days after the end of the month during which any record required by this permit shows an exceedance of a limitation imposed by this permit.

