

Wes Moore
Governor

State of



Maryland

Serena McIlwain
Secretary

DEPARTMENT OF THE ENVIRONMENT

Air and Radiation Administration
1800 Washington Boulevard, Suite 720
Baltimore, MD 21230

Construction Permit

Operating Permit

PERMIT NO. 510-3791-1-0478

DATE ISSUED DEC 17 2024

PERMIT FEE \$1,500.00 (Paid)

EXPIRATION DATE In accordance with COMAR 26.11.02.04B

LEGAL OWNER & ADDRESS

Vaughn Greene Funeral Services, P.A.
4905 York Rd.
Baltimore, MD 21212
Attn: Mr. Bill Miller, Managing Member

SITE

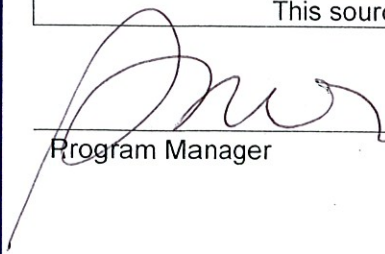
Vaughn Greene Funeral Services, P.A.
4905 York Rd.
Baltimore, MD 21212
AI # 1077

SOURCE DESCRIPTION

Installation of one (1) human crematory unit.

This source is subject to the conditions described on the attached pages.

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Program Manager


Director, Air and Radiation Administration

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This permit covers the following registered installations:

ARA Registration No.	Description	Installation Date
510-3791-1-0478	Matthews Environmental Solutions PowerPak II Plus, 175 pounds per hour, human crematory, equipped with a natural gas fired burner with a maximum rated heat input of up to 3.0 million Btu per hour.	To be installed

Part A – General Provisions

- (1) The following Air and Radiation Administration (ARA) permit-to-construct applications and supplemental information are incorporated into this permit by reference:
 - (a) Application for Processing or Manufacturing Equipment (Form 5) received June 8, 2020 and revised on November 11, 2020.
 - (b) Toxic Air Pollutant (TAP) Emissions Summary and Compliance Demonstration (Forms 5A and 5T) received June 8, 2020.
 - (c) Emission Point Data (Form 5EP) received June 8, 2020.
 - (d) Supplemental Information – Emissions calculations, screen modeling results, plot plan, and equipment specifications received June 8, 2020.

If there are any conflicts between representations in this permit and representations in the applications, the representations in the permit shall govern. Estimates of dimensions, volumes, emissions rates, operating rates, feed rates and hours of operation included in the applications do not constitute enforceable numeric limits beyond the extent necessary for compliance with applicable requirements.

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- (2) Upon presentation of credentials, representatives of the Maryland Department of the Environment ("MDE" or the "Department") and the Baltimore City Health Department shall at any reasonable time be granted, without delay and without prior notification, access to the Permittee's property and permitted to:
 - (a) inspect any construction authorized by this permit;
 - (b) sample, as necessary to determine compliance with requirements of this permit, any materials stored or processed on-site, any waste materials, and any discharge into the environment;
 - (c) inspect any monitoring equipment required by this permit;
 - (d) review and copy any records, including all documents required to be maintained by this permit, relevant to a determination of compliance with requirements of this permit; and
 - (e) obtain any photographic documentation or evidence necessary to determine compliance with the requirements of this permit.
- (3) The Permittee shall notify the Department prior to increasing quantities and/or changing the types of any materials referenced in the application or limited by this permit. If the Department determines that such increases or changes constitute a modification, the Permittee shall obtain a permit-to-construct prior to implementing the modification.
- (4) Nothing in this permit authorizes the violation of any rule or regulation or the creation of a nuisance or air pollution.
- (5) If any provision of this permit is declared by proper authority to be invalid, the remaining provisions of the permit shall remain in effect.
- (6) Subsequent to issuance of this permit, the Department may impose additional and modified requirements that are incorporated into a State permit-to-operate issued pursuant to COMAR 26.11.02.13.

Part B – Applicable Regulations

- (1) This source is subject to all applicable federal air pollution control requirements.
- (2) This source is subject to all applicable federally enforceable State air pollution control requirements including, but not limited to, the following regulations:

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- (a) COMAR 26.11.01.07C, which requires that the Permittee report to the Department occurrences of excess emissions.
- (b) COMAR 26.11.02.04B, which states that a permit to construct or an approval expires if, as determined by the Department:
 - (i) Substantial construction or modification is not commenced within 18 months after the date of issuance of the permit or approval, unless the Department specifies a longer period in the permit or approval;
 - (ii) Construction or modification is substantially discontinued for a period of 18 months after the construction or modification has commenced; or
 - (iii) The source for which the permit or approval was issued is not completed within a reasonable period after the date of issuance of the permit or approval.
- (c) COMAR 26.11.02.04D, which states that notwithstanding COMAR 26.11.02.04B and C, the Department may issue a temporary start-up State permit to operate for a source or emission unit within the source for a period not to exceed 90 days. In the case of a newly constructed or modified source, the Department may issue a temporary start-up State permit to operate for a period not to exceed 1 year.
- (d) COMAR 26.11.02.09A, which requires that the Permittee obtain a permit-to-construct if an installation is to be modified in a manner that would cause changes in the quantity, nature, or characteristics of emissions from the installation as referenced in this permit.
- (e) COMAR 26.11.08.01B(9-1) – a “Crematory” means a furnace where a human or animal corpse is burned with:
 - (i) The container or bag in which the human or animal corpse is placed or transported; and
 - (ii) The animal bedding, if applicable.
- (f) COMAR 26.11.08.04B, which prohibits visible emissions other than uncombined water in Areas III and IV. The Permittee is located in Area III as defined in COMAR 26.11.01.03C.

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Exceptions. The requirements do not apply to emissions during start-up, or adjustments or occasional cleaning of control equipment if:

- (1) The visible emissions are not greater than 40 percent opacity; and
 - (2) The visible emissions do not occur for more than 6 consecutive minutes in any 60-minute period.
- (g) COMAR 26.11.08.05B(2)(a), which limits the concentration of particulate matter in any exhaust gases to not more than 0.10 grains per standard cubic foot of dry exhaust gas.
- (3) This source is subject to all applicable State-only enforceable air pollution control requirements including, but not limited to, the following regulations:
- (a) COMAR 26.11.02.13A(1), which requires that the Permittee obtain from the Department, and maintain and renew as required, a valid State permit-to-operate.
 - (b) COMAR 26.11.02.19C & D, which require that the Permittee submit to the Department annual certifications of emissions, and that the Permittee maintain sufficient records to support the emissions information presented in such submittals.
 - (c) COMAR 26.11.06.08 and 26.11.06.09, which generally prohibit the discharge of emissions beyond the property line in such a manner that a nuisance or air pollution is created.
 - (d) COMAR 26.11.15.05, which requires that the Permittee implement "Best Available Control Technology for Toxics" (T – BACT) to control emissions of toxic air pollutants.
 - (e) COMAR 26.11.15.06, which prohibits the discharge of toxic air pollutants to the extent that such emissions would unreasonably endanger human health.

Part C – Construction Conditions

- (1) Except as otherwise provided in this part, the Matthews Environmental Solutions, PowerPak II Plus, 175 pounds per hour, human crematory shall be constructed in accordance with specifications included in the incorporated applications and in accordance with the specifications provided by the vendor and manufacturer.

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- (2) The crematory shall be designed to limit particulate matter emissions to no more than 0.10 grains per standard cubic foot dry, adjusted to 12 percent carbon dioxide.
- (3) The crematory shall be equipped with a secondary combustion chamber capable of achieving a retention time of at least 1.0 second, and an operating temperature of at least 1600 °F.
- (4) The crematory shall be equipped with temperature sensors and recorders to continuously monitor and record the temperature of the secondary combustion chamber during operation.
- (5) The crematory shall be equipped with an opacity sensor interlocked with a control system that continuously monitors the stack gases for visible emissions during operation and adjusts cremation operations to prevent visible emissions from exiting the crematory stack.
- (6) The stack height of the crematory stack shall be at least 40 feet above the ground.
- (7) The crematory stack shall be equipped with sampling ports designed to provide access to stack gases in order to perform EPA or other Department approved stack emissions testing methods.

Part D – Operating and Monitoring Conditions

- (1) Except as otherwise provided in this part, the Matthews Environmental Solutions, PowerPak II Plus, 175 pounds per hour, human crematory authorized by this permit shall be operated in accordance with specifications included in the application and any operating procedures recommended by equipment vendors unless the Permittee obtains from the Department written authorization for alternative operating procedures.
- (2) The Permittee shall comply with the following premises-wide operational limitations unless the Permittee can demonstrate, to the satisfaction of the Department, that compliance with all applicable air quality regulations and standards can be achieved under other operational conditions:
 - (a) The Permittee shall only cremate human remains in the Matthews Environmental Solutions, PowerPak II Plus, 175 pounds per hour, crematory.

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- (b) The Permittee shall not cremate more than 2 human remains during any 8-hour period.
 - (c) The Permittee shall not combust any halogenated plastics, including polyvinyl chloride (PVC) body bags, PVC pipes, or perfluoroalkyl substance (PFAS) containing materials.
 - (d) The Permittee shall not combust any hazardous waste as defined in COMAR 26.13.02.03; hospital waste as defined in 40 CFR 60, Subpart Ec, medical/infectious waste as defined in 40 CFR 60, Subpart Ec; or municipal waste as defined in 40 CFR, Part 60, Subpart Eb.
 - (e) The Permittee shall comply with all crematory operation restrictions and requirements specified by the Maryland Department of Health in COMAR 10.29.18 and COMAR 10.29.19.
- (3) Prior to the initiation of cremation in the primary chamber, the secondary chamber shall be preheated until the gases leaving the secondary chamber attain a temperature of at least 1600 °F.
 - (4) While remains are being cremated, the secondary chamber temperature shall be maintained at 1600 °F or higher.
 - (5) While remains are cremated, the temperature of the flue gases at the outlet of the secondary combustion chamber shall be continuously monitored and recorded on a chart recorder or other continuous record keeping device. The records shall show the dates and times of all recorded temperature readings.
 - (6) The Permittee shall comply with the following local zoning conditions as specified by the Baltimore City Board of Municipal and Zoning Appeals (BMZA) unless the Permittee obtains approval from the BMZA to operate at other conditions:
 - (a) Only human remains from funeral homes owned, operated, or controlled by Vaughn Greene Funeral Services at this location or one of the following locations may be cremated on the premises:
 - (i) 8728 Liberty Road, Randallstown, Maryland 21133
 - (ii) 5151 Baltimore National Pike, Baltimore, Maryland 21229
 - (iii) 4101 Edmondson Avenue Baltimore, Maryland 21229;
 - (b) Vaughn Greene Funeral Services will remove all teeth containing mercury amalgams prior to cremation; and

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- (c) Vaughn Greene Funeral Services will comply with all applicable federal, state, and local laws.
- (7) The Permittee shall develop and maintain an Operations and Maintenance (O&M) Plan for the crematory, reviewed and approved by the Department, that incorporates all of the following:
- (a) Information that is sufficient to demonstrate that air emissions from the crematory can be expected to comply with all applicable regulatory requirements during periods of normal operation. Examples of types of information that could be included to support the required demonstrations would be design criteria, vendor specifications and performance guarantees, approved computer modeling studies, and results of testing programs in which approved test methods and procedures were utilized.
 - (b) Procedures that provide for proper operation and maintenance of the crematory and associated operating and monitoring equipment.
 - (c) Provisions for periodic monitoring of operating parameters as necessary to determine that the crematory is functioning properly.
 - (d) Descriptions of procedures to be followed and corrective actions to be taken when monitoring information indicates that the crematory is not functioning properly.
 - (e) Provisions for developing written or printable electronic records that will show whether prescribed operating, maintenance and monitoring procedures are consistently followed, and whether timely and appropriate corrective actions are taken when malfunctions occur.

Part E – Notification and Testing Requirements

- (1) Within 15 calendar days following initial startup, the Permittee shall submit written or electronic notification to the Department of the initial startup date of the crematory.
- (2) Within 120 days after initial startup, the Permittee shall conduct a modified EPA Method 9 opacity observation of the crematory stack to demonstrate compliance with the requirements of COMAR 26.11.08.04B, to assess the effectiveness of the crematory's opacity sensor, and to determine when operations require adjustments to ensure compliance.

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- (a) The opacity observation shall be conducted for a one-hour period while human remains are cremated.
 - (b) During the opacity observation, the Permittee shall make adjustments to the opacity sensor equipment and crematory operations as needed to ensure that visible emissions do not occur during normal operation.
 - (c) If visible emissions are observed during the opacity observation, the Permittee shall take corrective actions to bring the crematory into compliance.
 - (d) At least 30 days prior to conducting the modified Method 9 opacity observation, the Permittee shall notify the Department of the intended date of the observation to allow for an inspector to be present.
 - (e) Within 30 days after conducting a modified Method 9 opacity observation, the Permittee shall submit the results and a description of adjustments or corrective actions made during the observations to the Department.
- (3) Within 120 days after initial startup, the Permittee shall conduct performance tests on the crematory stack to determine emissions of particulate matter using EPA Method 5 and emissions of metals using EPA Method 29.
- (a) At least 30 days prior to the performance tests, the Permittee shall submit to the Department a test protocol for review and approval.
 - (b) Within 45 days following the performance tests, the Permittee shall submit to the Department the performance test results.
 - (c) The performance test results shall include a demonstration of compliance with applicable particulate matter and metal toxic air pollutant requirements.

Part F – Record Keeping and Reporting

- (1) The Permittee shall maintain for at least five (5) years, and shall make available to the Department upon request, records of the following information for the crematory:

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- (a) Charts or other continuous records of the flue gas temperature at the outlet of the secondary combustion chamber. The records must show the date and start time of each cremation.
 - (b) A log of the following information for each cremation performed:
 - (i) the date and start time of each cremation;
 - (ii) the approximate weight of each charge;
 - (iii) the duration of each cremation cycle;
 - (iv) description of remains, including place of origin and record of receipt demonstrating that only remains from funeral homes owned, operated, or controlled by Vaughn Greene Funeral Services, and accompanying materials to be cremated; and
 - (v) identification of materials removed from remains prior to cremation to comply with the requirements of Part D(2) and Part D(6) of this permit.
 - (c) Records of all maintenance performed on the crematory including the date and description of the maintenance performed and actions taken.
 - (d) A copy of the required Operations and Maintenance (O&M) Plan.
 - (e) Records of the results of all modified Method 9 opacity observations and Method 5 and Method 29 performance tests.
- (2) The Permittee shall maintain at the facility for at least five (5) years, and shall make available to the Department upon request, records necessary to support annual certifications of emissions and demonstrations of compliance for toxic air pollutants. Such records shall include, if applicable, the following:
- (a) mass emissions rates for each regulated pollutant, and the total mass emissions rate for all regulated pollutants for each registered source of emissions;
 - (b) accounts of the methods and assumptions used to quantify emissions;

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- (c) all operating data, including operating schedules and production data, that were used in determinations of emissions;
 - (d) amounts, types, and analyses of all fuels used;
 - (e) any records, the maintenance of which is required by this permit or by State or federal regulations, that pertain to the operation and maintenance of continuous emissions monitors, including:
 - (i) all emissions data generated by such monitors;
 - (ii) all monitor calibration data;
 - (iii) information regarding the percentage of time each monitor was available for service; and
 - (iv) information concerning any equipment malfunctions.
 - (f) information concerning operation, maintenance, and performance of air pollution control equipment and compliance monitoring equipment, including:
 - (i) identifications and descriptions of all such equipment;
 - (ii) operating schedules for each item of such equipment;
 - (iii) accounts of any significant maintenance performed;
 - (iv) accounts of all malfunctions and outages; and
 - (v) accounts of any episodes of reduced efficiency.
 - (g) limitations on source operation or any work practice standards that significantly affect emissions; and
 - (h) other relevant information as required by the Department.
- (3) The Permittee shall submit to the Department by April 1 of each year a certification of emissions for the previous calendar year. The certifications shall be prepared in accordance with requirements, as applicable, adopted under COMAR 26.11.01.05 – 1 and COMAR 26.11.02.19D.
- (a) Certifications of emissions shall be submitted on forms obtained from the Department.

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- (b) A certification of emissions shall include mass emissions rates for each regulated pollutant, and the total mass emissions rate for all regulated pollutants for each of the facility's registered sources of emissions.
- (c) The person responsible for a certification of emissions shall certify the submittal to the Department in the following manner:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

- (4) The Permittee shall submit to the Department by April 1 of each year a written certification of the results of an analysis of emissions of toxic air pollutants from the Permittee's facility during the previous calendar year. Such analysis shall include either:
 - (a) a statement that previously submitted compliance demonstrations for emissions of toxic air pollutants remain valid; or
 - (b) a revised compliance demonstration, developed in accordance with requirements included under COMAR 26.11.15 & 16, that accounts for changes in operations, analytical methods, emissions determinations, or other factors that have invalidated previous demonstrations.
- (5) The Permittee shall report, in accordance with requirements under COMAR 26.11.01.07, occurrences of excess emissions to the Compliance Program of the Air and Radiation Administration.

Part G – Temporary Permit-to-Operate Requirements

- (1) This permit-to-construct shall also serve as a temporary permit-to-operate that confers upon the Permittee authorization to operate the Matthews Environmental Solutions, PowerPak II Plus, 175 pounds per hour, human crematory for a period of up to 180 days after initiating operation of the crematory.

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- (2) During the effective period of the temporary permit-to-operate the Permittee shall operate the new installation as required by the applicable terms and conditions of this permit-to-construct, and in accordance with operating procedures and recommendations provided by equipment vendors.
- (3) During the effective period of the temporary permit-to-operate the Permittee shall comply with all required notification, opacity observation, and performance test requirements as specified in Part E of this permit.
- (4) The Permittee shall submit to the Department an application for a State permit-to-operate no later than 60 days prior to expiration of the effective period of the temporary permit-to-operate. With the application for a State permit-to-operate, the Permittee shall submit a proposed Operations and Maintenance Plan required by Part D(7) of this permit for review and approval by the Department.