

**ATTACHMENTS TO  
WAYS AND MEANS COMMITTEE LETTER  
10.25.2024**

Index

Enclosures to Ways and Means Committee Letter dated 10.25.2024

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00015	Vaughn Greene positive appeal to BMZA dated July 9, 2020
00016	Testimony of Vaughn Greene from Zoning Hearing before the Board of Municipal and Zoning Appeals (“BMZA”) held August 10, 2021
00054	Testimony of Vaughn Greene from Zoning Hearing before the BMZA held September 16, 2021
00068	Carla J. Kinslow, Ph.D., Director Toxicology and Food Safety for Rimkus Consulting Group, Inc. Thought Summary dated August 4, 2021
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00392	MDE Air and Radiation Administration Draft Permit-To-Construct Conditions
00404	Carla J. Kinslow, Ph.D., Director Toxicology and Food Safety for Rimkus Consulting Group, Inc. Fourth Supplemental Report and Summary of Observations dated October 22, 2024

**Timeline for Crematory to be located within existing Vaughn Greene Funeral Home  
4905 York Road, Baltimore, Maryland**

- 6/4/2020 Letter from Geoffrey Veale, Baltimore City Zoning Administrator, confirming property located in C-2 Commercial District and was authorized for use as a funeral home, which use included a crematory.
- 6/8/2020 Application for a Permit to Construct proposed crematorium filed by Vaughn Greene Funeral Services with Maryland Department of the Environment (MDE).
- 7/9/2020 Positive Appeal filed by Vaughn Greene Funeral Services with BMZA requesting the approval of crematorium as an expansion of existing conditional use for funeral home (approved in 2009). Appeal filed at the request of MDE for clarification of zoning approval.
- 11/2/2020 MDE Informational Meeting (virtual)
- 11/9/2020 MDE Informational Meeting at Vaughn Greene Funeral Services Chapel
- 8/10/2021 Evidentiary zoning hearing held before the BMZA
- 8/24/2021 Evidentiary zoning hearing held before the BMZA
- 9/16/2021 Evidentiary zoning hearing held before the BMZA
- 10/19/2021 BMZA deliberations
- 11/30/2021 BMZA deliberation, crematorium approved
- 1/4/2022 BMZA Resolution dated January 4, 2022, approving Petitioner s request to install crematorium in the existing funeral home subject to three conditions.
  - 1) Only human remains from funeral home s owned, operated or controlled by Vaughn Greene Funeral Services may be cremated on the premises; 2) Vaughn Greene Funeral Services will remove any and all teeth containing mercury, amalgams prior to cremation; and 3) Vaughn Greene Funeral Services will comply with all applicable Federal, State and local laws.

The BMZA emphasized that concerns regarding air pollution . . . will be addressed as part of the Appellant s air permit application process with the Maryland Department of the Environment ( MDE ), and MDE only will issue its permit after it determines that the crematorium will not produce air emissions that MDE considers dangerous.

The BMZA determined by competent evidence that the proposed crematorium will not have adverse effects above and beyond those inherently associated with crematoriums irrespective of its location within the zone because the funeral home stands in the same position as all other businesses on York Road that

contribute pollution in the community. The BMZA further found after a complete and comprehensive review of all of the evidence, the Board finds by competent evidence that the establishment, location, construction, maintenance and operation of the proposed crematorium would not be detrimental to or endanger the public health, safety or welfare; the proposed use is not precluded by any other law, including any applicable Urban Renewal Plan; this authorization is not contrary to the public interest; and this authorization and proposed use is in harmony with the purpose and intent of this Code.

- 1/4/2022 York Road Partnership appeals the Resolution of the BMZA to the Circuit Court for Baltimore City
- 7/12/2022 Hearing held on the Circuit Court appeal.
- 5/16/2023 Memorandum and Final Order issued by the Circuit Court for Baltimore City, Judge Fletcher-Hill, affirming the BMZA Resolution.
- 6/15/2023 Order of Circuit Court appealed to the Appellate Court of Maryland
- 12/13/2023 MDE informational meeting held at Govans Presbyterian Church
- 2/26/2024 Emergency Legislation, Senate Bill No. 893 submitted by State Senator Mary Washington (failed to make it out of senate committee) and House Bill No. 1374 submitted by Delegates Embry and Boyce (failed to make it out of house committee), and House Bill No. 0152, Study on Deathcare and Funeral Practices, submitted by Delegates Boyce, Hill, Martinez, Nawrocki, Pena-Melnyk and Szeliga (passed both chambers).
- 3/5/2024 Oral argument held before the Appellate Court of Maryland
- 7/2024 MDE issues tentative determination to issue the Permit to Construct, approving the installation of the proposed crematory at the Vaughn Greene Funeral Home subject to certain conditions after determining the proposed crematorium will comply with all applicable Federal and State Air Quality Control regulations.
- 7/18/2024 Order of Appellate Court of Maryland issued upholding Circuit Court Decision
- 8/7/2024 MDE public hearing regarding tentative determination to issue the Permit to Construct
- 10/1/2024 Councilman Conway introduces Council Bill No. 24-0599 before the Baltimore City Council
- 10/22/2024 MDE public comments period closes



June 04, 2020

Wright, Constable & Skeen, LLP  
c/o J. Neil Lanzi  
102 W. Pennsylvania Avenue, Suite 406  
Towson, MD 21204

Re: 4903-4907 York Road

Dear Mr. Lanzi:

This letter is in response to your zoning inquiry for the above referenced property.

Please be advised that the subject property is located in a C-2 Commercial District and authorized for use as funeral home in compliance with all applicable zoning regulations. Per Subsection 1-306(s)(2) of the Zoning Code, a funeral home use includes the use of the premises for a crematorium. The use as stated would be allowed in conjunction with the existing funeral home. Our records show no zoning violations with respect to this property.

Should you have any additional questions regarding this matter, please contact the Zoning Office at 410-396-4126.

Sincerely,

A handwritten signature in black ink, appearing to read "G. Veale".

Geoffrey Veale  
Zoning Administrator

MARYLAND DEPARTMENT OF THE ENVIRONMENT

1800 Washington Blvd • Baltimore, Maryland 21230  
(410) 537-3230 • 1-800-633-6101 • www.mde.state.md.us

Air and Radiation Management Administration • Air Quality Permits Program

APPLICATION FOR PROCESSING/MANUFACTURING EQUIPMENT

Permit to Construct  Registration Update  Initial Registration

<p><b>1A. Owner of Equipment/Company Name</b>  <u>Vaughn Greene Funeral Services P.A.</u>                  Mailing Address  <u>4905 York Rd</u>                  Street Address  <u>Baltimore</u> <u>Maryland</u> <u>21212</u>                  City State Zip                  Telephone Number                  (410) <u>433-7500</u>                  Signature  <u>Bill Miller</u>                  Print Name and Title <u>Bill Miller, Managing Member</u></p>	<p style="text-align: center;"><b>DO NOT WRITE IN THIS BLOCK</b></p> <p style="text-align: center;"><b>2. REGISTRATION NUMBER</b></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">County No.</td> <td style="text-align: center;">Premises No.</td> </tr> <tr> <td style="text-align: center;"> <table border="1" style="width: 100%; height: 20px;"> <tr> <td style="width: 50%; text-align: center;">1-2</td> <td style="width: 50%; text-align: center;">3-6</td> </tr> </table> </td> <td style="text-align: center;"> <table border="1" style="width: 100%; height: 20px;"> <tr> <td style="width: 25%;"></td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> </tr> </table> </td> </tr> <tr> <td style="text-align: center;">Registration Class</td> <td style="text-align: center;">Equipment No.</td> </tr> <tr> <td style="text-align: center;"> <table border="1" style="width: 100%; height: 20px;"> <tr> <td style="width: 50%; text-align: center;">7</td> <td style="width: 50%; text-align: center;">8-11</td> </tr> </table> </td> <td style="text-align: center;"> <table border="1" style="width: 100%; height: 20px;"> <tr> <td style="width: 25%;"></td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> </tr> </table> </td> </tr> <tr> <td style="text-align: center;">Data Year</td> <td style="text-align: center;">Application Date</td> </tr> <tr> <td style="text-align: center;"> <table border="1" style="width: 100%; height: 20px;"> <tr> <td style="width: 50%;"></td> <td style="width: 50%;"></td> </tr> </table> </td> <td style="text-align: center;"> <u>3/20/2020</u>                  Date             </td> </tr> </table>	County No.	Premises No.	<table border="1" style="width: 100%; height: 20px;"> <tr> <td style="width: 50%; text-align: center;">1-2</td> <td style="width: 50%; text-align: center;">3-6</td> </tr> </table>	1-2	3-6	<table border="1" style="width: 100%; height: 20px;"> <tr> <td style="width: 25%;"></td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> </tr> </table>					Registration Class	Equipment No.	<table border="1" style="width: 100%; height: 20px;"> <tr> <td style="width: 50%; text-align: center;">7</td> <td style="width: 50%; text-align: center;">8-11</td> </tr> </table>	7	8-11	<table border="1" style="width: 100%; height: 20px;"> <tr> <td style="width: 25%;"></td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> </tr> </table>					Data Year	Application Date	<table border="1" style="width: 100%; height: 20px;"> <tr> <td style="width: 50%;"></td> <td style="width: 50%;"></td> </tr> </table>			<u>3/20/2020</u> Date
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<p><b>1B. Equipment Location and Telephone Number (if different from above)</b>  <u>SAVE</u>                  Street Number and Street Name                  City/Town State Zip Telephone Number                  Premises Name (if different from above)</p>																											
<p><b>3. Status (A= New, B= Modification to Existing Equipment, C= Existing Equipment)</b></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Status</td> <td style="width: 25%; text-align: center;">New Construction Begun (MM/YY)</td> <td style="width: 25%; text-align: center;">New Construction Completed (MM/YY)</td> <td style="width: 25%; text-align: center;">Existing Initial Operation (MM/YY)</td> </tr> <tr> <td style="text-align: center;"> <table border="1" style="width: 100%; height: 20px;"> <tr> <td style="width: 100%; text-align: center;">A</td> </tr> </table>                 15             </td> <td style="text-align: center;"> <table border="1" style="width: 100%; height: 20px;"> <tr> <td style="width: 25%; text-align: center;">T</td> <td style="width: 25%; text-align: center;">B</td> <td style="width: 25%; text-align: center;">D</td> </tr> </table>                 16-19             </td> <td style="text-align: center;"> <table border="1" style="width: 100%; height: 20px;"> <tr> <td style="width: 25%; text-align: center;">T</td> <td style="width: 25%; text-align: center;">B</td> <td style="width: 25%; text-align: center;">D</td> </tr> </table>                 20-23             </td> <td style="text-align: center;"> <table border="1" style="width: 100%; height: 20px;"> <tr> <td style="width: 25%;"></td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> </tr> </table>                 20-23             </td> </tr> </table>		Status	New Construction Begun (MM/YY)	New Construction Completed (MM/YY)	Existing Initial Operation (MM/YY)	<table border="1" style="width: 100%; height: 20px;"> <tr> <td style="width: 100%; text-align: center;">A</td> </tr> </table> 15	A	<table border="1" style="width: 100%; height: 20px;"> <tr> <td style="width: 25%; text-align: center;">T</td> <td style="width: 25%; text-align: center;">B</td> <td style="width: 25%; text-align: center;">D</td> </tr> </table> 16-19	T	B	D	<table border="1" style="width: 100%; height: 20px;"> <tr> <td style="width: 25%; text-align: center;">T</td> <td style="width: 25%; text-align: center;">B</td> <td style="width: 25%; text-align: center;">D</td> </tr> </table> 20-23	T	B	D	<table border="1" style="width: 100%; height: 20px;"> <tr> <td style="width: 25%;"></td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> </tr> </table> 20-23											
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<p><b>4. Describe this Equipment: Make, Model, Features, Manufacturer (include Maximum Hourly Input Rate, etc.)</b>  <u>Matthews Environmental Solutions; PPII Plus (3.0 MMBTU/hr) / Multi-Chamber cremation unit to replace one existing unit</u></p>																											
<p><b>5. Workmen's Compensation Coverage</b> <u>WC 0000004630AP</u> <u>Aug 19, 2020</u>                  Binder/Policy Number Expiration Date                  Company <u>Harleysville Preferred Insurance Co.</u></p> <p><small>NOTE: Before a Permit to Construct may be issued by the Department, the applicant must provide the Department with proof of worker's compensation coverage as required under Section 1-202 of the Worker's Compensation Act.</small></p>																											
<p><b>6A. Number of Pieces of Identical Equipment Units to be Registered/Permitted at this Time</b> <u>1</u></p>																											
<p><b>6B. Number of Stack/Emission Points Associated with this Equipment</b> <u>1</u></p>																											

**7. Person Installing this Equipment (if different from Number 1 on Page 1)**

Name \_\_\_\_\_ Title \_\_\_\_\_  
 Company \_\_\_\_\_  
 Mailing Address/Street \_\_\_\_\_  
 City/Town \_\_\_\_\_ State \_\_\_\_\_ Telephone (\_\_\_\_) \_\_\_\_\_

**8. Major Activity, Product or Service of Company at this Location**

CREMATION OF HUMAN REMAINS

**9. Control Devices Associated with this Equipment**

None  
 24-0

Simple/Multiple Cyclone <input type="checkbox"/> 24-1	Spray/Adsorb Tower <input type="checkbox"/> 24-2	Venturi Scrubber <input type="checkbox"/> 24-3	Carbon Adsorber <input type="checkbox"/> 24-4	Electrostatic Precipitator <input type="checkbox"/> 24-5	Baghouse <input type="checkbox"/> 24-6	Thermal/Catalytic Afterburner <input type="checkbox"/> 24-7	Dry Scrubber <input type="checkbox"/> 24-8
--	---	---	--	---	--	--	---

Other  
 Describe \_\_\_\_\_  
 24-9

**10. Annual Fuel Consumption for this Equipment**

OIL-1000 GALLONS <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> 26-31	SULFUR % <input type="text"/> <input type="text"/> 32-33	GRADE <input type="text"/> 34	NATURAL GAS-1000 FT <sup>3</sup> <input type="text"/> <input type="text"/> 1 <input type="text"/> <input type="text"/> 1 <input type="text"/> <input type="text"/> 2 <input type="text"/> <input type="text"/> 3 <input type="text"/> <input type="text"/> 2 35-41	LP GAS-100 GALLONS <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> 42-45	GRADE <input type="text"/> 46-47
COAL- TONS <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> 48-52	SULFUR % <input type="text"/> <input type="text"/> 53-55	ASH% <input type="text"/> <input type="text"/> 56-58	WOOD-TONS <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> 59-63	MOISTURE % <input type="text"/> <input type="text"/> 64-65	

OTHER FUELS  ANNUAL AMOUNT CONSUMED (Specify Type) 66-1  
 OTHER FUEL  ANNUAL AMOUNT CONSUMED (Specify Type) 66-2  
 (Specify Units of Measure) (Specify Units of Measure)  
 1=Coke 2= COG 3=BFG 4=Other

**11. Operating Schedule (for this Equipment)**

Continuous Operation <input checked="" type="checkbox"/> 67-1	Batch Process <input type="checkbox"/> 67-2	Hours per Batch <input type="text"/> <input type="text"/> 68-69	Batch per Week <input type="text"/> 70-71	Hours per Day <input type="text"/> 1 <input type="text"/> 2 72	Days Per Week <input type="text"/> 6 73-75	Days per Year <input type="text"/> 3 <input type="text"/> 1 <input type="text"/> 2 76
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Seasonal Variation in Operation  
 No Variation  76  
 Winter Percent  77-78  
 Spring Percent  79-80  
 Summer Percent  81-82  
 Fall Percent  83-84  
 (Total Seasons= 100%)



12. Equivalent Stack Information- Is Exhaust through Doors, Windows, etc. Only? (Y/N)  N <sup>85</sup>

If not, then      Height Above Ground (FT)      Inside Diameter at Top (in)      Exit Temperature (°F)      Exit Velocity (FT/SEC)

86-88                                  89-91                                  92-95                                  96-98

**NOTE:**  
 Attach a block diagram of process/process line, indicating new equipment as reported on this form and all existing equipment, including control devices and emission points.

13. Input Materials (for this equipment only)  
 Is any of this data to be considered confidential?  N (Y or N)

	NAME	CAS NO. (IF APPLICABLE)	INPUT RATE		
			PER HOUR	UNITS	PER YEAR
1.	HUMAN REMAINS		175	lbs/hr	
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					

TOTAL

14. Output Materials (for this equipment)  
 Process/Product Stream

	NAME	CAS NO. (IF APPLICABLE)	OUTPUT RATE		
			PER HOUR	UNITS	PER YEAR
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					

TOTAL

15. Waste Streams- Solid and Liquid

	NAME	CAS NO. (IF APPLICABLE)	OUTPUT RATE		
			PER HOUR	UNITS	PER YEAR
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					

TOTAL

**16. Total Stack Emissions (for this equipment only) in Pounds Per Operating Day**

Particulate Matter <input type="text"/> <input type="text"/> 4 <input type="text"/> 9 <input type="text"/> 0 99-104	Oxides of Sulfur <input type="text"/> <input type="text"/> 2 <input type="text"/> 2 <input type="text"/> 8 105-110	Oxides of Nitrogen <input type="text"/> <input type="text"/> 3 <input type="text"/> 7 <input type="text"/> 4 111-116
Carbon Monoxide <input type="text"/> <input type="text"/> 3 <input type="text"/> 0 <input type="text"/> 9 177-122	Volatile Organic Compounds <input type="text"/> <input type="text"/> 0 <input type="text"/> 3 <input type="text"/> 1 123-128	PM-10 <input type="text"/> <input type="text"/> 4 <input type="text"/> 9 <input type="text"/> 0 129-134

**17. Total Fugitive Emissions (for this equipment only) in Pounds Per Operating Day**

Particulate Matter <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> 135-139	Oxides of Sulfur <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> 140-144	Oxides of Nitrogen <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> 145-149
Carbon Monoxide <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> 150-154	Volatile Organic Compounds <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> 155-159	PM-10 <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> 160-164

**Method Used to Determine Emissions (1= Estimate 2= Emission Factor 3= Stack Test 4= Other)**

TSP <input type="text"/> 2 <input type="text"/> 165	SOX <input type="text"/> 2 <input type="text"/> 166	NOX <input type="text"/> 2 <input type="text"/> 167	CO <input type="text"/> 2 <input type="text"/> 168	VOC <input type="text"/> 2 <input type="text"/> 169	PM10 <input type="text"/> 2 <input type="text"/> 170
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**AIR AND RADIATION MANAGEMENT ADMINISTRATION USE ONLY**

18. Date Rec'd. Local \_\_\_\_\_ Date Rec'd. State \_\_\_\_\_ Return to Local Jurisdiction  
 Date \_\_\_\_\_ By \_\_\_\_\_

Reviewed by Local Jurisdiction \_\_\_\_\_ Reviewed by State \_\_\_\_\_  
 Date \_\_\_\_\_ By \_\_\_\_\_ Date \_\_\_\_\_ By \_\_\_\_\_

19. Inventory Date \_\_\_\_\_ Month/Year \_\_\_\_\_ Equipment Code \_\_\_\_\_ SCC Code \_\_\_\_\_  
 171-174 175-177 178-185

20. Annual Operating Rate \_\_\_\_\_ Maximum Design Hourly Rate \_\_\_\_\_ Permit to Operate Month \_\_\_\_\_ Transaction Date (MM/DD/YR) \_\_\_\_\_  
 186-192 193-199 200-201 202-207

Staff Code \_\_\_\_\_ VOC Code \_\_\_\_\_ SIP Code \_\_\_\_\_ Regulation Code \_\_\_\_\_ Confidentiality \_\_\_\_\_  
 208-210 211 212 213 214 215-218 219

Point Description \_\_\_\_\_ Action \_\_\_\_\_  
 220-238 239  
 A: Add  
 C: Change

**MARYLAND DEPARTMENT OF THE ENVIRONMENT**  
 Air and Radiation Management Administration • Air Quality Permits Program  
 1800 Washington Boulevard • Baltimore, Maryland 21230  
 (410)537-3225 • 1-800-633-6101 • www.mde.maryland.gov

**FORM 5EP: Emission Point Data**

*Complete one (1) Form 5EP for EACH emission point (stack or fugitive emissions) related to the proposed installation.*

Applicant Name: Vaughn Greene Funeral Services

**1. Emission Point Identification Name/Number**

List the applicant assigned name/number for this emission point and use this value on the attached required plot plan:  
 Unit 01 (Power Pak II Plus, IE43-PPII Plus)

**2. Emission Point Description**

Describe the emission point including all associated equipment and control devices:  
 Matthews Environmental Solutions - Nat Gas Fired Multiple Chamber cremation unit. No Add On Control Device

**3. Emissions Schedule for the Emission Point**

Continuous or Intermittent (C/I)?	I	<b>Seasonal Variation</b> Check box if none: <input checked="" type="checkbox"/> Otherwise estimate seasonal variation:	
Minutes per hour:	60	Winter Percent	
Hours per day:	12	Spring Percent	
Days per week:	6	Summer Percent	
Weeks per year:	52	Fall Percent	

**4. Emission Point Information**

Height above ground (ft):	40	Length and width dimensions at top of rectangular stack (ft):	Length:	Width:
Height above structures (ft):				
Exit temperature (°F):	1100	Inside diameter at top of round stack (ft):		1.67
Exit velocity (ft/min):	1200	Distance from emission point to nearest property line (ft):		105
Exhaust gas volumetric flow rate (acfm):	2300	Building dimensions if emission point is located on building (ft)	Height 35.4375	Length 105 Width 58.5833

**5. Control Devices Associated with the Emission Point**

Identify each control device associated with the emission point and indicate the number of devices. A Form 6 is also required for each control device. If none check none:

<input checked="" type="checkbox"/> None	<input type="checkbox"/> Thermal Oxidizer	No. _____
<input type="checkbox"/> Baghouse	No. _____	<input type="checkbox"/> Regenerative
<input type="checkbox"/> Cyclone	No. _____	<input type="checkbox"/> Catalytic Oxidizer
<input type="checkbox"/> Elec. Precipitator (ESP)	No. _____	<input type="checkbox"/> Nitrogen Oxides Reduction
<input type="checkbox"/> Dust Suppression System	No. _____	<input type="checkbox"/> Selective <input type="checkbox"/> Catalytic
<input type="checkbox"/> Venturi Scrubber	No. _____	<input type="checkbox"/> Non-Selective <input type="checkbox"/> Non-Catalytic
<input type="checkbox"/> Spray Tower/Packed Bed	No. _____	<input type="checkbox"/> Other
<input type="checkbox"/> Carbon Adsorber	No. _____	Specify: _____
<input type="checkbox"/> Cartridge/Canister		
<input type="checkbox"/> Regenerative		

**FORM 5EP: Emission Point Data**

**6. Estimated Emissions from the Emission Point**

Criteria Pollutants	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
Particulate Matter (filterable as PM10)	0.40862	0.40862	4.9	0.7649
Particulate Matter (filterable as PM2.5)	0.40862	0.40862	4.9	0.7649
Particulate Matter (condensables)	0.40862	0.40862	4.9	0.7649
Volatile Organic Compounds (VOC)	0.02616	0.02616	0.31	0.0489
Oxides of Sulfur (SOx)	0.190	0.190	2.28	0.3554
Oxides of Nitrogen (NOx)	0.3115	0.3115	3.74	0.5831
Carbon Monoxide (CO)	0.25812	0.25812	3.09	0.4832
Lead (Pb)				
Greenhouse Gases (GHG)	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
Carbon Dioxide (CO <sub>2</sub> )				
Methane (CH <sub>4</sub> )				
Nitrous Oxide (N <sub>2</sub> O)				
Hydrofluorocarbons (HFCs)				
Perfluorocarbons (PFCs)				
Sulfur Hexafluoride (SF <sub>6</sub> )				
Total GHG (as CO <sub>2</sub> e)				
List individual federal Hazardous Air Pollutants (HAP) below:	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)

(Attach additional sheets as necessary.)

MARYLAND DEPARTMENT OF THE ENVIRONMENT

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Air and Radiation Management Administration • Air Quality Permits Program

SUMMARY OF DEMONSTRATIONS FOR MEETING THE AMBIENT IMPACT REQUIREMENT (26.11.15.05) AND THE T-BACT REQUIREMENT (26.11.15.06)

DO NOT WRITE IN THIS SPACE

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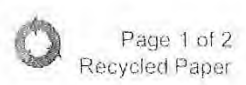
Company Name Vaughn Greene Funeral Services P.A.

- 1. Summary of T-BACT Demonstration: List all emission reduction options considered in determining T-BACT starting with the option that reduces emissions the most. Supporting documentation **must** be attached.

Emission Reduction Option	% Emission Reduction	COSTS	
		Capital	Annual Operating
1. > 1 Second retention time in Secondary Chamber @ 1600F	Unknown		
2. Temperature Monitor and Recorder	Unknown	3,000	100
3. No Burning of PVC plastic bags	Unknown		
4.			
5.			

- 2. Identify the emission reduction option selected as T-BACT and briefly explain why this is the best selection. Supporting documentation **must** be attached.

Form Number: 5A  
Revision Date: 09/27/2002  
TTY Users: 1-800-735-2258



3. List screening levels and highest estimated off-site concentrations ( $\mu\text{g}/\text{m}^3$ ) resulting from **premises-wide allowable emissions** (1) of each Toxic Air Pollutant that is covered by the regulations and discharged from the installation or source applying for the permit. See the General Instructions for more detail. Supporting documentation **must** be attached.

SEE DISPERSION MODEL ATTACHED

Toxic Air Pollutant	CAS Number	SCREENING LEVEL(S)			OFF-SITE CONCENTRATIONS		
		1-HR	8-HR	Annual	1-HR	8-HR	Annual
1 _____	_____	_____	_____	_____	_____	_____	_____
2 _____	_____	_____	_____	_____	_____	_____	_____
3 _____	_____	_____	_____	_____	_____	_____	_____
4 _____	_____	_____	_____	_____	_____	_____	_____
5 _____	_____	_____	_____	_____	_____	_____	_____
6 _____	_____	_____	_____	_____	_____	_____	_____
7 _____	_____	_____	_____	_____	_____	_____	_____
8 _____	_____	_____	_____	_____	_____	_____	_____
9 _____	_____	_____	_____	_____	_____	_____	_____
10 _____	_____	_____	_____	_____	_____	_____	_____
11 _____	_____	_____	_____	_____	_____	_____	_____
12 _____	_____	_____	_____	_____	_____	_____	_____
13 _____	_____	_____	_____	_____	_____	_____	_____
14 _____	_____	_____	_____	_____	_____	_____	_____
15 _____	_____	_____	_____	_____	_____	_____	_____
16 _____	_____	_____	_____	_____	_____	_____	_____

If unable to use a Screening Analysis, check the box and attach the Second Tier Analysis or Special Permit request to this form.

(1) **Premises** is defined as: "all the installations or other sources that are located on contiguous or adjacent properties and that are under the control of one person or under common control of a group of persons" (COMAR 26.11.15.01B(12)).

**Allowable Emissions** are defined as: "the maximum emissions a source or installation is capable of discharging after consideration of any physical or operational limitations required by this subtitle or by enforceable conditions included in an applicable air quality permit to construct, permit to operate, secretarial order, plan for compliance, consent agreement, or court order" (COMAR 26.11.15.01B(2)).

1920  
MAY 19 2020

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**FORM 5T: Toxic Air Pollutant (TAP) Emissions Summary and Compliance Demonstration**

Applicant Name: \_\_\_\_\_ **\*\*SEE TOXYTOOL RESULTS ATTACHED\*\***

**Step 1: Quantify premises-wide emissions of Toxic Air Pollutants (TAP) from new and existing installations in accordance with COMAR 26.11.15.04. Attach supporting documentation as necessary.**

Toxic Air Pollutant (TAP)	CAS Number	Class I or Class II?	Screening Levels ( $\mu\text{g}/\text{m}^3$ )			Estimated Premises Wide Emissions of TAP			
						Actual Total Existing TAP Emissions	Projected TAP Emissions from Proposed Installation	Premises Wide Total TAP Emissions	
			1-hour	8-hour	Annual	(lb/hr)	(lb/hr)	(lb/hr)	(lb/yr)
<i>ex. ethanol</i>	64175	II	18843	3769	N/A	0.60	0.15	0.75	1500
<i>ex. benzene</i>	71432	I	80	16	0.13	0.5	0.75	1.00	400

(attach additional sheets as necessary.)

**Note:** Screening levels can be obtained from the Department's website (<http://www.mde.maryland.gov>) or by calling the Department.

**Step 2: Determine which TAPs are exempt from further review. A TAP that meets either of the following Class I or Class II small quantity emitter exemptions is exempt from further TAP compliance demonstration requirements under Step 3 and Step 4.**

**Class II TAP Small Quantity Emitter Exemption Requirements (COMAR 26.11.15.03B(3)(a))**  
 A Class II TAP is exempt from Step 3 and Step 4 if the Class II TAP meets the following requirements: Premises wide emissions of the TAP shall not exceed 0.5 pounds per hour, and any applicable 1-hour or 8-hour screening level for the TAP must be greater than  $200 \mu\text{g}/\text{m}^3$ .

**Class I TAP Small Quantity Emitter Exemption Requirements (COMAR 26.11.15.03B(3)(b))**  
 A Class I TAP is exempt from Step 3 and Step 4 if the Class I TAP meets the following requirements: Premises wide emissions of the TAP shall not exceed 0.5 pounds per hour and 350 pounds per year, any applicable 1-hour or 8-hour screening level for the TAP must be greater than  $200 \mu\text{g}/\text{m}^3$ , and any applicable annual screening level for the TAP must be greater than  $1 \mu\text{g}/\text{m}^3$ .

**If a TAP meets either the Class I or Class II TAP Small Quantity Emitter Exemption Requirements, no further review under Step 3 and Step 4 are required for that specific TAP.**

11

**FORM 5T: Toxic Air Pollutant (TAP) Emissions Summary and Compliance Demonstration**

**Step 3: Best Available Control Technology for Toxics Requirement (T-BACT, COMAR 26.11.15.05)**

In the following table, list all TAP emission reduction options considered when determining T-BACT for the proposed installation. The options should be listed in order beginning with the most effective control strategy to the least effective strategy. Attach supporting documentation as necessary.

Target Pollutants	Emission Control Option	% Emission Reduction	Costs		T-BACT Option Selected? (yes/no)
			Capital	Annual Operating	
<i>ex. ethanol and benzene</i>	<i>Thermal Oxidizer</i>	<i>99</i>	<i>\$50,000</i>	<i>\$100,000</i>	<i>no</i>
<i>ex. ethanol and benzene</i>	<i>Low VOC materials</i>	<i>80</i>	<i>0</i>	<i>\$100,000</i>	<i>yes</i>

(attach additional sheets as necessary)

**Step 4: Demonstrating Compliance with the Ambient Impact Requirement (COMAR 26.11.15.06)**

Each TAP not exempt in Step 2 must be individually evaluated to determine that the emissions of the TAP will not adversely impact public health. The evaluation consists of a series of increasingly non-conservative (and increasingly rigorous) tests. Once a TAP passes a test in the evaluation, no further analysis is required for that TAP. "Demonstrating Compliance with the Ambient Impact Requirement under the Toxic Air Pollutant (TAP) Regulations (COMAR 26.11.15.06)" provides guidance on conducting the evaluation. Summarize your results in the following table. Attach supporting documentation as necessary.

Toxic Air Pollutant (TAP)	CAS Number	Screening Levels (µg/m <sup>3</sup> )			Premises Wide Total TAP Emissions		Allowable Emissions Rate (AER) per COMAR 26.11.15.02A		Off-site Concentrations per Screening Analysis (µg/m <sup>3</sup> )			Compliance Method Used?
		1-hour	8-hour	Annual	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	1-hour	8-hour	Annual	AER or Screen
<i>ex. ethanol</i>	<i>64175</i>	<i>18843</i>	<i>3769</i>	<i>N/A</i>	<i>0.75</i>	<i>1500</i>	<i>0.89</i>	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>	<i>AER</i>
<i>ex. benzene</i>	<i>71432</i>	<i>80</i>	<i>16</i>	<i>0.13</i>	<i>1.00</i>	<i>400</i>	<i>0.04</i>	<i>36.52</i>	<i>1.5</i>	<i>1.05</i>	<i>0.12</i>	<i>Screen</i>

(attach additional sheets as necessary)

If compliance with the ambient impact requirement cannot be met using the allowable emissions rate method or the screening analysis method, refined dispersion modeling techniques may be required. Please consult with the Department's Air Quality Permit Program prior to conducting dispersion modeling methods to demonstrate compliance.



## Calculation Of Emissions

### Estimated Emission Calculation

Mathews Environmental Solutions  
(previously Mathews Cremation Division)  
Crematory Incinerator Model IE43-PPII Plus

Total Incinerator Burn Capacity 175 lb/hr of remains (type 4) and associated containers (type 0)  
Flue gas flow rate = 1175 dscfm 12 Hours/Day X 6 Days/Week X 52 Weeks/Year  
( 100 % Excess Air) = 3744 Hours/Year

**Total Emission Rate = Incinerator Burn Rate X Emission Factor**

#### Sulfur Dioxide (SO<sub>2</sub>)

$$\begin{aligned} & \frac{175 \text{ lb/hr X } 2.17 \text{ lb/ton X } 1 \text{ ton}}{2000 \text{ lbs}} = 0.190 \text{ lb/hr} \\ & = 0.355446 \text{ TPY} \\ & \frac{0.189875 \text{ lb/hr X } 4.54\text{E}+05 \text{ mg/lb X } 1 \text{ ppmv}}{1175 \text{ dscfm X } 60 \text{ min/hr X } 0.0283 \text{ m}^3/\text{ft}^3 \text{ X } 2.61 \text{ mg/m}^3} = 16.55 \text{ ppmv} \end{aligned}$$

#### Nitrogen Oxide (NO<sub>x</sub> - as Nitrogen Dioxide)

$$\begin{aligned} & \frac{175 \text{ lb/hr X } 3.56 \text{ lb/ton X } 1 \text{ ton}}{2000 \text{ lbs}} = 0.3115 \text{ lb/hr} \\ & = 0.583128 \text{ TPY} \\ & \frac{0.3115 \text{ lb/hr X } 4.54\text{E}+05 \text{ mg/lb X } 1 \text{ ppmv}}{1175 \text{ dscfm X } 60 \text{ min/hr X } 0.028 \text{ m}^3/\text{ft}^3 \text{ X } 1.88 \text{ mg/m}^3} = 38.11 \text{ ppmv} \end{aligned}$$

#### Particulates (PM & PM<sub>10</sub>)

$$\begin{aligned} & \frac{175 \text{ lb/hr X } 4.67 \text{ lb/ton X } 1 \text{ ton}}{2000 \text{ lbs}} = 0.408625 \text{ lb/hr} \\ & = 0.764946 \text{ TPY} \\ & \frac{0.408625 \text{ lb/hr X } 7.00\text{E}+03 \text{ gr/lb X } 1 \text{ ppmv}}{1175 \text{ dscfm X } 60 \text{ min/hr}} = 0.04 \text{ gr/dscf} \end{aligned}$$

#### Carbon Monoxide (CO)

$$\begin{aligned} & \frac{175 \text{ lb/hr X } 2.95 \text{ lb/ton X } 1 \text{ ton}}{2000 \text{ lbs}} = 0.258125 \text{ lb/hr} \\ & = 0.48321 \text{ TPY} \\ & \frac{0.258125 \text{ lb/hr X } 4.54\text{E}+05 \text{ mg/lb X } 1 \text{ ppmv}}{1175 \text{ dscfm X } 60 \text{ min/hr X } 0.028 \text{ m}^3/\text{ft}^3 \text{ X } 1.14 \text{ mg/m}^3} = 52.08 \text{ ppmv} \end{aligned}$$

#### Hydrocarbons (TOC/VOC - methane)

$$\begin{aligned} & \frac{175 \text{ lb/hr X } 2.99\text{E}-01 \text{ lb/ton X } 1 \text{ ton}}{2000 \text{ lbs}} = 0.026163 \text{ lb/hr} \\ & = 0.048976 \text{ TPY} \\ & \frac{0.0261625 \text{ lb/hr X } 4.54\text{E}+05 \text{ mg/lb X } 1 \text{ ppmv}}{1175 \text{ dscfm X } 60 \text{ min/hr X } 0.0283 \text{ m}^3/\text{ft}^3 \text{ X } 0.65 \text{ mg/m}^3} = 9.16 \text{ ppmv} \end{aligned}$$

**Notes:**

1. Incinerator Emissions based on EPA emissions from Table 2.3-1 and 2.3-2 of AP-42 (5th Edition)
2. All conversion factors from AP-42 Appendix A.



MAYOR & CITY COUNCIL OF BALTIMORE  
 PERMITS & CODE ENFORCEMENT  
 BOARD OF MUNICIPAL AND ZONING APPEALS



NOTICE OF APPEAL  
 BMZ2021-00161

<b>PROPERTY ADDRESS</b> 4903-4905 YORK ROAD	<b>BLOCK LOT</b> 5180 002	<b>ZONING DISTRICT</b> C-2
<b>PROPERTY OWNER</b> M&G PROPERTY MANAGEMENT TWO L.L.C. 4905 YORK RD.	<b>APPELLANT</b>	<b>AGENT</b> J. NEIL LANZI, ATTY FOR APPLICANT 7 ST PAUL

AN APPEAL TO THE BOARD OF MUNICIPAL AND ZONING APPEALS IS HEREBY TAKEN FOR THE FOLLOWING REASON

INSTALL A CREMATORIUM IN EXISTING FEDERAL HOME, ADAPTATION TO EXISTING NONCONFORMING USE IN A DISTRICT UNDER SUBSECTIONS 10-301 AND 2-203 (C).

TYPE OF APPEAL

CONDITIONAL USE:	YES	VARIANCE: DETAIL ANALYSIS:	NO	NEGATIVE APPEAL:	NO
NONCONFORMING USE:	NO	VARIANCE: STANDARD ANALYSIS:	NO	SIGN ISSUE:	NO
		VARIANCE: NONPLANNING COMMENT:	NO		

ZONING CODE SECTION(S) APPEALED

10-301: As Listed in Table 10-301

APPEAL FEE:

Conditional Uses	1001-000000-5830-453900-	\$300.00
<b>Total:</b>		<b>\$300.00</b>

NOTICE OF APPEAL DATE: 7/9/2021

APPEAL INSTRUCTIONS

A REQUEST FOR AN APPEAL TO THE BOARD OF MUNICIPAL AND ZONING APPEALS IS NOT COMPLETE UNTIL A HEARING IS SCHEDULED. UPON RECEIPT OF THIS FORM, YOU MUST SCHEDULE A HEARING IN ROOM 1432. ADDITIONAL INFORMATION AND INSTRUCTION CAN BE FOUND IN THE RULES RELATIVE TO ZONING APPEALS. A COPY OF THESE RULES CAN BE OBTAINED AT [WWW.BALTIMOREHOUSING.ORG](http://WWW.BALTIMOREHOUSING.ORG).

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CITY OF BALTIMORE  
BOARD OF MUNICIPAL AND ZONING APPEALS

-----X  
IN RE: )  
)  
4903-4905 York Road )  
Docket Number: 2021-161 )  
-----X

(Virtual hearing)  
August 10, 2021

BEFORE: James Fields, Chairman  
Wilbur "Bill" Cunningham, Member  
Sabrina Johnson-Turner, Member  
Frank Bonaventure, Member  
Kathleen Byrne, Acting Executive Director  
Simon Penning, Acting Associate Counsel  
Martin French, Planning Department

A P P E A R A N C E S

Neil Lanzi for Petitioner  
Becky Witt for Opposition

Transcribed by:  
Free State reporting, Inc.

1 swear to tell the whole -- the truth, the whole truth,  
2 and nothing but the truth, and so we can just proceed in  
3 that manner, Mr. Lanzi. Go right ahead.

4 MR. LANZI: Go ahead. Okay. Mr. Greene.

5 I'm going to try to show this to the Board.

6 CHAIRMAN FIELDS: Okay.

7 (Whereupon,

8 VAUGHN GREENE

9 was called as a witness, and testified as follows:)

10 DIRECT EXAMINATION

11 BY MR. LANZI:

12 Q If you could just state your name and business  
13 address.

14 A My name is Vaughn Greene. In this particular  
15 instance, I'm operating out of 4905 York Road in  
16 Baltimore.

17 Q And are you one of the owners of M&G Property  
18 Management Two, the property owner; and, also, are you  
19 the founder of Vaughn Green's Funeral Services?

20 A Yes, I am.

21 Q Okay. And if you could just tell the Board

1 briefly how you got into this business.

2           A       I started working at a funeral home when I was  
3 15 years old. My grandfather was friends with a local  
4 funeral director, and he got me a job washing cars and  
5 maintaining the lot, and maintaining the lawn, and those  
6 types of things. I worked for him through high school,  
7 and once I graduated from high school -- I'm a Baltimore  
8 City product. I graduated from a Baltimore City school.  
9 Once I graduated from high school, I knew that funeral  
10 service was my calling. I feel it's a God ordained  
11 calling. And so I went to mortuary school. I got my  
12 degree in mortuary science. I went back to the funeral  
13 home where I worked as a youngster. I was promoted to  
14 manager. I worked at James Morton Funeral Home in west  
15 Baltimore for 15 years before I founded Vaughn Greene  
16 Funeral Services in 1996.

17                   The brand that we put out, the level of service  
18 that we put out, endeared us to the community. In nine  
19 short years, we expanded to four locations simply because  
20 of the popularity of the product that we put out. For 25  
21 years I've been a trusted community partner, and I take

1 great joy, and I take great pride in the ministry that I  
2 provide to the community that I serve.

3 Q Thank you.

4 MR. LANZI: I'm going to attempt to share some  
5 exhibits. Hopefully, I will able to do this.

6 Okay, first show Mr. Greene, this is a deed  
7 that's marked as Petitioner's Exhibit 4, and the deed is  
8 dated November 3, 2000.

9 (Whereupon, the document  
10 referred to as Petitioner  
11 Exhibit 4 was marked  
12 for identification.)

13 BY MR. LANZI:

14 Q Is this the deed that you all executed or, or  
15 when you purchased the property back in --

16 A It is.

17 Q -- 2000?

18 A It is.

19 Q Can you see?

20 A Yes.

21 Q Okay.

1           A     It is.

2           Q     All right.  And then if you would scroll down  
3 the deed, you would see -- I'm not sure if you can see it  
4 clearly.  You can see that it was -- the Board should  
5 also see that there was a prior deed when the Jenkins  
6 family owned it back in the early '60s; is that correct?

7           A     Correct.

8           Q     Okay.  And this deed --

9                 CHAIRMAN FIELDS:  Counsel, if you -- we're not  
10 seeing a deed, if you have intended for us to look at it.

11                MR. LANZI:  You're not seeing it?

12                CHAIRMAN FIELDS:  No.  No, we're not.  I will  
13 note that we do -- we have received the list of exhibits,  
14 and exhibits that you propose to submit or utilize in  
15 your presentation ahead of this hearing.

16                MR. LANZI:  Okay.  I'm not sure what's  
17 happened.

18                CHAIRMAN FIELDS:  Yeah.  In the event you're  
19 unable to work out the (indiscernible) to us.

20                MR. LANZI:  Okay.  Let me try this way.  I'm  
21 sorry.  I see what I did wrong.  Not sure why we -- so

1 we're not able to share the exhibit that we pre-filed.

2 Okay. We'll I'll continue on with him while I work with  
3 that.

4 MS. BYRNE: Mr. Lanzi, I'll see if I can try to  
5 pull it up, and go from there.

6 MR. LANZI: Okay.

7 MS. BYRNE: So I'll take the ball away, and you  
8 continue with testimony, but just recognizing that the  
9 Board has the exhibits.

10 MR. LANZI: Okay. All right. I will offer  
11 Exhibit 4. That was obtained from public records at  
12 Applicant's or Petitioner's Exhibit 4, if I could. I'm  
13 going to offer that into evidence.

14 CHAIRMAN FIELDS: It will be admitted.

15 MR. LANZI: Okay. Thank you.

16 (Whereupon, the document  
17 referred to as Petitioner  
18 Exhibit 4 was received  
19 in evidence.)

20 BY MR. LANZI:

21 Q All right, Mr. Greene, I was hoping to show



1 some photographs for the Board -- they can see them. So  
2 I'll refer the members of the Board to Exhibit 6, A  
3 through Y, which show the existing -- their existing  
4 funeral home, and you have the copies here that you can  
5 look at. Okay. (Indiscernible).

6 CHAIRMAN FIELDS: Okay.

7 (Whereupon, the documents  
8 referred to as Petitioner  
9 Exhibits 6A through 6Y were  
10 marked for identification.)

11 BY MR. LANZI:

12 Q Okay. So if you could just describe the, the  
13 structures that on the site briefly.

14 A Yeah. There's the main office, which is the  
15 4905 site. The main office has viewing rooms for the  
16 lower level. It has a courtesy lounge on the lower  
17 level. It has garage space, which we're attempting to --

18 Q We're going to, we're going to go online now.

19 MS. BYRNE: So Exhibit --

20 MR. LANZI: 6A through Y.

21 BY MR. LANZI:

1 Q Yeah. I need you to identify that exhibit. So  
2 if you could say I'm looking at --

3 A Sure.

4 Q -- Photograph 6A.

5 A The photo that's currently on the screen is the  
6 main office that I was describing. On the first level  
7 there are viewing rooms. There is an office area for the  
8 receptionist. There are lobby -- large lobby. There is  
9 a courtesy lounge, several waiting rooms, in addition to  
10 -- garage space. That's the first level. On the second  
11 level is office space. The third level of the building  
12 is not being used. And the lower level, which is the  
13 basement area, that area for the most part is being used  
14 for storage at this time.

15 Q Can you scroll to 6B, please.

16 A That is the --

17 MR. LANZI: Do I have the handle to move it?

18 MS. BYRNE: No. I'm moving it. So you just --

19 MR. LANZI: Okay.

20 MS. BYRNE: You just say next.

21 MR. LANZI: Yeah. Next. I'm not going to do

1 every photograph. We'll be here all night

2 MS. BYRNE: Okay.

3 MR. LANZI: Just --

4 THE WITNESS: Next is the -- there's a carport,  
5 which gives people entrance to the off-street parking.  
6 To the right of that, there's a chapel. The chapel seats  
7 about 175 persons. And in the back of the chapel, there  
8 is a repass area where families sometimes gather for a  
9 fellowship after the service is concluded.

10 BY MR. LANZI:

11 Q Okay. Next, please.

12 A And that is the carport. And right beside the  
13 vehicle is the garage that's going to be retrofitted.

14 Q I think the next picture will show that --

15 A If you can see that, yes. Right in front of  
16 that vehicle, which is the hearse, that's the area that's  
17 going to be retrofitted. If you notice, that area is not  
18 visible from York Road because it sits behind the  
19 building, and sits behind the post. So the -- anything  
20 outside of being on the funeral home property you won't  
21 have a visual of the particular site where the proposed

1 crematory is -- proposed retort is going to be placed.

2 Q So you're using the term report -- retort. For  
3 the Board's understanding is --

4 A Well --

5 Q -- to the back of the crematory?

6 A Yeah. Well, that's the -- I just want to make  
7 it clear that I am not building a building. I want to  
8 make it clear that I'm not expanding the footprint of the  
9 existing building. That what we're installing is going  
10 to be installed onsite in an existing space that we  
11 already have.

12 UNIDENTIFIED SPEAKER: (Indiscernible).

13 BY MR. LANZI:

14 Q If you could skip to Exhibit 6J, please.

15 A J. Okay.

16 MS. BYRNE: Is that J or --

17 MR. LANZI: Yeah.

18 MS. BYRNE: The rear.

19 BY MR. LANZI:

20 Q And what does that show?

21 A Again, that is the -- you see the same hearse

1 that's parked in front of the garage. And that building  
2 that's right there, that is the garage area. It is on  
3 the back end of the building and, again, it is not  
4 visible from York Road.

5 Q And if you could go to 6L.

6 A That is the opposite side of the garage. That  
7 is the side that faces -- well, actually, the avenue.  
8 But as you can see, there is no entrance on the garage  
9 area. So anything that's taking place will not be seen  
10 by the residents of Rossiter Avenue or the residents of  
11 York Road.

12 Q If you could go to 6N, please.

13 MS. BYRNE: There we go.

14 MR. LANZI: That's it.

15 THE WITNESS: That is the -- leaving off of the  
16 parking lot, that is an exit that empties onto Rossiter  
17 Avenue.

18 BY MR. LANZI:

19 Q And next, please.

20 A That's the existing parking. It's -- you can  
21 see it's well landscaped in terms of trees, and that's

1 for a reason again to sort of isolate the funeral home  
2 because (indiscernible) the persons that are parking the  
3 rear from the, from the community.

4 Q And if you could go to 6R.

5 A That is clean space to the right-hand side of  
6 the 4905 chapel, and that faces, that faces York Road.  
7 And, again, that's right there where that entrance is  
8 that empties out on Rossiter Avenue.

9 MR. LANZI: And I think that's enough of those  
10 photographs.

11 MS. BYRNE: Okay.

12 MR. LANZI: I'm going to introduce them through  
13 our -- the person who took them, which will be the next  
14 witness.

15 So thank you for -- at least, hopefully, that  
16 gives the Board Members an understanding of what the site  
17 looks like.

18 BY MR. LANZI:

19 Q Now, how do you -- handle requests from  
20 families for their loved ones to be cremated?

21 A As it stands right now, as when a family

1 entrusts their loved one to my care for cremation  
2 services, I have to outsource the decedent to a third  
3 party vendor. That third-party vendor is not located in  
4 the City. So the decedent has to be transported out of  
5 the City to the County to the crematory that handles  
6 those services. These are life-long City residents.  
7 These are persons that have in many instances been a part  
8 of the City all of their lives, and they have to be  
9 transported outside of the City for the services that  
10 they request.

11           In addition to that, and you almost hate to  
12 bring this point up because it's 2021, but most of the  
13 clients that I minister to are African-American, and I am  
14 taking revenue that I revenue that I receive from the  
15 minority community. I have to take it outside of the  
16 city where those residents live, and I have to support or  
17 supplement a non-minority business because there's only  
18 one minority crematory in Baltimore that's in west  
19 Baltimore. The majority of the crematories are not in  
20 communities of color. And, again, they are outside of  
21 the city where the people that call me to serve them

1 live. That's taxing for several reasons. One, I am the  
2 trusted community partner that the family decided to call  
3 when they needed these services. If they wanted to use a  
4 cremation vendor in Catonsville or outside of the city,  
5 they would have called those persons. They called me to  
6 minister to them in their season of need.

7           Me having to entrust them to a third party,  
8 this third party that I have to entrust them to, the  
9 family doesn't even know. So they have to go through the  
10 stress and anxiety of their family member being  
11 transported to a vendor that they're not even familiar  
12 with. And then I have to absorb the liability if there's  
13 an issue or something goes wrong. I can't contain or  
14 control my liability because if that third-party vendor  
15 has an accident, or if they do something that's  
16 unseemingly (verbatim), the liability is on Vaughn Greene  
17 Funeral Services because they trusted Vaughn Greene  
18 Funeral Services with their family member. Insurance  
19 rates are three times as high as my colleagues simply  
20 because insurance companies understand that cremation is  
21 a normal part of the funeral process. It is 50 percent



1 of the decisions that Marylanders make. 50 percent of  
2 the citizens of the State of Maryland choose cremation as  
3 the mode of disposition. In the United States of America  
4 it is over 50 percent. In some geographies it's as high  
5 as 70 and 80 percent. In my community right now it is  
6 running around 30 percent. This is not something I'm  
7 pushing, Neil. These are services that the community is  
8 requesting of me. These are services that the community  
9 is asking for. I'm simply trying to provide services  
10 that people need, and people are requesting of me without  
11 having to put them through the, the uncomfortable process  
12 of having their family member outsourced outside of the  
13 city where, where they live.

14           This has been especially challenging during  
15 Covid. Because people who have lived very public lives  
16 in some instances were forced to have services that were  
17 mineralized, especially in terms of family members that  
18 could participate. So the cremation rate increased  
19 dramatically. Not only did my business increase because  
20 so many people were passing from Covid, the rate of  
21 cremation increased significantly because people chose

1 that mode of disposition because they could not have the  
2 public service that they wanted.

3 I have to be very honest with you. It was a  
4 scary time for me. It was a scary time not only because  
5 I was going volumes that I was not used to doing, but it  
6 was a scary time because I have all these cremations that  
7 I had to source to some -- and I, and I had to basically  
8 depend on an outsource provided to make sure that I gave  
9 the families the services that they deserved. And,  
10 again, if he makes a mistake, it's 25 years of my brain,  
11 25 years of hard work, 25 years of everything that I've  
12 put into this work that will go down the drain. And I  
13 can serve a family perfectly, but if that crematory  
14 provider makes a mistake, I'm the one compromised. I  
15 have 25 years in this business. I am a trusted community  
16 partner. The family trusted me when they call for  
17 cremation services. I have a facility that is zoned to  
18 provide those services, and I would like to provide those  
19 services to the community without having to bill the  
20 people of my community for the cost of outsourcing those  
21 services. My facility is located in 21212, which in some

1 instances has some pockets that are economically  
2 challenged. Those persons need and deserve to be able to  
3 have affordable services in the community where they live  
4 as opposed to having the price of the service that they  
5 need increase simply because they have to pay third-party  
6 fees that other communities don't deal with.

7           If you go to communities outside of Baltimore  
8 City, you will see funeral homes that have crematories  
9 attached that are safely, competently, and professionally  
10 providing services to the community where they serve. I  
11 think you have an example of how many crematories  
12 they (verbatim) are. Mr. Lanzi --

13           Q     Yes.

14           A     -- that could be presented in the exhibits.  
15 But all those communities are serving their communities,  
16 again, competently and professionally. It is only in a  
17 community of color, it is only in Baltimore City, the  
18 largest city in the state that minority citizens are  
19 deprived of the services that they need. I would like to  
20 be able to provide those services to my constituents.

21           Q     You've participated in some of the required

1 meetings with MDE, and you recall being asked why won't  
2 you consider having a crematory located in an industrial  
3 park or one of your other locations. How do you respond  
4 to that?

5           A       This is a sensitive time for the families. I  
6 have a very attractive facility on York Road. I would  
7 not want to -- I would not want someone to transfer my  
8 family member to a cold, isolated industrial park to have  
9 those services provided. They should be provided both --  
10 I would like to be able to provide those services in a  
11 geography where people reside. And, again, it's the  
12 same, it's the same process. Many persons -- listen, I  
13 don't, I don't think that the Zoning Board is naive.  
14 Many persons are untrusting of certain processes. I've  
15 had persons stay at the cemetery and wait because they  
16 want to see the casket lowered because of rumors about  
17 what happens when the casket when you go to the cemetery.  
18 There are also the same rumors about cremation.

19                       And so some families say, listen, I want to go  
20 with you because I want to make sure that my family  
21 member is placed in the, in the place where the

1 disposition is going to take place. And I want to make  
2 sure that everything that we purchased is cremated along  
3 with my family member. I don't want to have to force  
4 them to drive to the industrial park, or to Catonsville,  
5 or to Glen Burnie in order to have the services that they  
6 need for their family members. I don't like to make --  
7 my responsibility is provide encouragement and comfort  
8 for the families that I serve. And I don't think in any  
9 way, shape or form taking a family member, a loved one,  
10 to an industrial park is comforting, encouraging, or is a  
11 good representation of the ministry that I provide to my  
12 community.

13 MR. LANZI: Ms. Byrne, if you could pull up  
14 Exhibit 14, which is the last exhibit.

15 MS. BYRNE: Sure.

16 MR. LANZI: And about two-thirds of the way  
17 though it will be some renderings, color renderings  
18 (indiscernible) front, side, rear.

19 MS. BYRNE: Exhibit 14.

20 MR. LANZI: 14. Should be right after --  
21 exhibit right before the one you have us.

1 MS. BYRNE: Okay.

2 (Whereupon, the document  
3 referred to as Petitioner  
4 Exhibit 14 was marked  
5 for identification.)

6 MR. LANZI: Now, see it's a colorized  
7 rendering?

8 MS. BYRNE: All right. Hold on one sec. Let  
9 me just -- I'm going to cross-reference with the packet  
10 that you gave me to get that. 13 --

11 MR. LANZI: Yeah. It's a PowerPoint. That's  
12 the PowerPoint certification that we --

13 MS. BYRNE: Okay. There we go.

14 MR. LANZI: Okay. So if you scroll down maybe  
15 five or six -- you'll see colorized renderings of what it  
16 will look like.

17 MS. BYRNE: Is this the --

18 MR. LANZI: If you can go to --

19 (Simultaneous comments.)

20 MR. LANZI: Okay, okay. It's the next one.

21 I'm sorry. You actually had it rendered side.

1 MS. BYRNE: Okay. That's rear --

2 MR. LANZI: Yeah. It's actually, keep going.

3 It's 3-D. It's a three-dimensional --

4 (Simultaneous comments.)

5 MS. BYRNE: -- the next page. So that's just,  
6 that's a rendering of what it will look like, and we have  
7 an architect that will be testifying, but I just wanted  
8 the Board to see that.

9 If you could then scroll back to Exhibit 7A  
10 through C.

11 (Whereupon, the documents  
12 referred to as Petitioner  
13 Exhibit 7A through 7C were  
14 marked for identification.)

15 MS. BYRNE: All right.

16 MR. LANZI: -- seven should be --

17 MS. BYRNE: Right after the --

18 (Simultaneous comments.)

19 MR. LANZI: Yeah.

20 MS. BYRNE: So this is --

21 MR. LANZI: Okay. That's beginning of five

1 (indiscernible) down. There are several pictures, and  
2 then there's a group of three. Okay.

3 MS. BYRNE: I'm going. Okay. Got you.

4 MR. LANZI: And while you're doing that, I'll  
5 ask Mr. Greene.

6 BY MR. LANZI:

7 Q You're familiar with the -- some of the stacks  
8 or facilities of other crematories?

9 A I am.

10 Q And this photograph I'm referring to, Exhibit  
11 7A, that was taken of the, of the Towson, the Ruck,  
12 Towson crematory up -- just up York Road; is that  
13 correct?

14 A Two or three miles up the street from me.

15 MR. LANZI: Can you scroll back? And we're  
16 doing one more. Okay.

17 BY MR. LANZI:

18 Q -- what that is? Do you have any idea?

19 A You're asking me?

20 Q Yeah.

21 A I have no idea.



1 Q Is that the sampling of what an older crematory  
2 looks like from --

3 A Right.

4 Q Okay.

5 A That's a very, that's a low stack.

6 Q Okay. And then we just showed you the  
7 rendering of what it -- what you all hope yours will like  
8 when it's -- it's approved and completed. Okay.

9 MR. LANZI: I would offer the photographs.  
10 Those photographs were done in the last few months, Your  
11 Honor, and accurately show the area.

12 CHAIRMAN FIELDS: Yes.

13 MR. LANZI: I'd offer Photographs 7A through C  
14 into evidence.

15 CHAIRMAN FIELDS: So admitted.

16 (Whereupon, the documents  
17 referred to as Petitioner  
18 Exhibits 7A through 7C were  
19 received in evidence.)

20 BY MR. LANZI:

21 Q All right, as far as responding to my question

1 about whether you're going to be in industrial park or  
2 where -- or how did you select this particular location  
3 out of your other locations?

4           A       Because this location was where most of the  
5 need was. I have a funeral home in Baltimore County. I  
6 have a funeral home in west Baltimore. But the majority  
7 of my cremations come out of 21212, which is the York  
8 Road, Govans community. Again, I as I shared, in many  
9 instances cremation is driven by economics in the  
10 African-American community. That is an area that in many  
11 instances are challenged when it comes to paying  
12 exorbitant fees for funeral services, which is why it  
13 hurts me to have to transfer those, those third-party  
14 fees, and have to bill my community for them.

15           Q       Your intention if the crematory is approved is  
16 to serve as only Vaughn Greene --

17           A       Vaughn Greene Funeral Service. Not be doing  
18 work for any other funeral homes; no (indiscernible)  
19 commercial or medical waste work.

20           Q       And will there be any new signage to advertise  
21 the cremations?

1           A       No new signage. The reality is that were it  
2 not for the fact that it's required to inform the  
3 community this would be operating, and the community  
4 would not even know it's there.

5           Q       And how did you arrive at selecting Matthews as  
6 the manufacturer of the crematory you propose?

7           A       We didn't. That was easy. Matthews is the  
8 market leader for equipment evolving around the cremation  
9 industry. They are known not only nationally, but  
10 internationally. They are probably one of the vendors of  
11 choice on a national level for this type of equipment. I  
12 knew that in serving my community, I knew I wanted the  
13 very best in terms of technology, the very best that was  
14 available. I knew that this company was known for that.  
15 They have a reputation for being the best out there, and  
16 that was why I sought them in reference to this project.

17          Q       And you're aware of the concerns that have been  
18 aired by community groups and various neighbors. And how  
19 do you respond to it, mainly health?

20          A       I respond by saying this. I've been a trusted  
21 community partner for over 25 years, and the community

1 has provided tremendous support for Vaughn Greene Funeral  
2 Services. That has been a partnership. I would never,  
3 ever, ever bring services to the people that I serve that  
4 were harmful. The reality is there is opposition, but  
5 there's also significant support. I have pastors who  
6 I've served, and I've served their communities, I've  
7 served their churches. I have letters where pastors  
8 representing over 20,000 people have called supporting  
9 having this service in the community. Over the 25 years  
10 that I've been in business, I've served over 18,000  
11 families, who have put their confidence and trust in me.  
12 300 families every year call me for cremation services.  
13 Those decedents have parents, sisters, brothers, friends,  
14 that by calling me for cremation suggests that they are  
15 supporting this process. You can't call me for  
16 cremation, and say you support cremation, but then say  
17 that I don't support it because I think it's harmful.  
18 The reality is there is more support for this project  
19 than there is, than there is opposition.

20 But that being said, I understand the  
21 community's concern. I want to provide them as much

1 information as I can so that they know that I would not  
2 bring anything harmful or hazardous to the community.  
3 And I want to be very frank. There is no moratorium on  
4 York Road for carbon-based businesses. So, I guess, what  
5 I'm saying is, is that it's proven that my facility is  
6 going to put less carbons in the atmosphere than, say, a  
7 restaurant or, say, a popular burger franchise that cooks  
8 food from six o'clock in the morning 'till midnight, but  
9 there is no opposition to those types of businesses. And  
10 so you -- if it's exclusively about health, then it  
11 should be a blanket situation where any businesses that  
12 emit carbons are vetted. It simply can't be because you  
13 cremating bodies is uncomfortable, or it's unattractive,  
14 or it's not a pretty sight.

15 I have a daughter, and a nephew, who are  
16 following me in this business. I would love to be able  
17 to live my -- leave my legacy in a position where they  
18 continue to serve the community safely and competently.  
19 I have been told by the persons that are putting the  
20 equipment together that there will be no odors; that  
21 there will be no, no fumes for the most part. Again,

1 this is the, the newest technology that is available in  
2 the industry, and I stress this. Cremation has been  
3 around since biblical times. It is being done safely all  
4 over the state. It shouldn't be a health issue simply  
5 because it's in the minority community. Because I am a  
6 minority provider, and I wouldn't do anything to hurt my  
7 people.

8 Q With regard to --

9 CHAIRMAN FIELDS: Mr. Greene, can I ask you a  
10 question?

11 THE WITNESS: Absolutely.

12 BY UNIDENTIFIED SPEAKER:

13 Q From the review of certain of the opposition,  
14 this location -- concern -- one of the major concerns  
15 that this location has a disproportionate population of  
16 folks who suffer from respiratory illness. That perhaps  
17 are not as healthy as folks in other communities. There  
18 was some support (indiscernible). Have you considered,  
19 one, do you have any response to that, or are you in  
20 agreement, or you disagree with that proposition?

21 A I have someone during the course of this

1 hearing that will be testifying to that, to what you just  
2 shared.

3 Q All right. And then kind of follow-up to that  
4 line of questioning, there's been concern, and it was in  
5 the Protestant's memorandum about concern about mercury  
6 dealing with dental fillings in the, in the mouths of the  
7 decedents. Will Vaughn Green have a policy with  
8 regarding -- I think it's -- the term is amalgams or  
9 dental fillings -- with regard to the removal prior to  
10 cremation?

11 A Absolutely. Pacemakers, fillings, those types  
12 of things will be removed before the cremation process  
13 takes place.

14 Q There's also some references in the  
15 opposition's position about the York Road Plan,  
16 sustainability plan. First let me ask you. You've been  
17 in business since 2000 -- roughly 2000 at this location,  
18 right?

19 A Yes, sir.

20 Q And it's your understanding the York Road Plan  
21 that was done four or five years ago; is that correct?

1           A       I just heard about it recently through going  
2 through this process, but prior to that, I hadn't heard  
3 anything about it.

4           Q       It was made up of a lot of businesses and  
5 residents in the York Road corridor.

6           A       Right.

7           Q       Were you ever asked to be a part of it, anyone  
8 in your organization?

9           A       Never.

10          Q       Okay. So now that you're familiar with the  
11 plan since it's been referenced, you familiar with some  
12 of the kind of the tenets or goals of the plan. Now  
13 you're familiar, can you talk about any of those goals?

14          Q       Yeah. And to me, I'm -- I don't see where I  
15 don't check all the boxes. It says the plan is to  
16 strengthen existing businesses. I've been there 21  
17 years. They said the plan is to increase diversity. I'm  
18 a minority businessman operating in that community. They  
19 said the plan is to needed and value added services to  
20 the community. A funeral home, and the services that a  
21 funeral home provides for services that are needed is



1 necessary in communities. Residents of Baltimore City  
2 shouldn't have to go to Glen Burnie to receive the  
3 services that they need. So I thought I, I checked most  
4 of the boxes. They said that having a relation --  
5 businesses that have a relationship with community. Just  
6 based on the letters of support from the churches and the  
7 pastors in the community, I have an -- a phenomenal  
8 relationship, and I have a, I have a history, and I have  
9 a reputation for giving, giving to community groups,  
10 giving to especially church groups, being supportive of  
11 summer camps, things associated with the faith community.  
12 I'm an ex-pastor. So I'm very supportive of things going  
13 on regarding the faith community. Most of the things  
14 that they said they are looking for in this community are  
15 services and things that I provided. So I'm a model  
16 citizen based on the, the outlook for York Road in terms  
17 of what they said that they're looking for.

18 I've made a great use of the space that I've  
19 purchased, not only as I, I remodeled that facility.  
20 We've put -- you can see the purchase price that's on the  
21 deed. We put another million dollars worth of

1 improvements in the building since over the last 21  
2 years.

3           They mentioned green space. I don't know any  
4 businesses on York Road that have more lawn or green  
5 space than my facility does.

6           So all the boxes that are referred to in  
7 reference to the community's plan, I check those.

8           Q     One other box I'll as you about.

9           A     Sure.

10          Q     Will there be some employment opportunities --

11          A     Absolutely.

12          Q     -- for the residents?

13          A     The people that I employ at Vaughn Greene  
14 Funeral Services, York Road location, are from east  
15 Baltimore. They're from that geography. The people that  
16 will be employed for the crematory will be from that  
17 geography.

18               MR. LANZI: All right, I want to -- we're not  
19 going to go through them because it's lack of time. But  
20 Exhibit 9, Ms. Byrne, was referred to earlier by  
21 Mr. Greene, which are the letters of support.

1 MS. BYRNE: Um-hmm.

2 (Whereupon, the document  
3 referred to as Petitioner  
4 Exhibit 9 was marked  
5 for identification.)

6 MR. LANZI: So those were the letters that we  
7 were discussing. Okay.

8 BY MR. LANZI:

9 Q I believe you summarized them, and they speak  
10 for themselves. But these are letters that were sent  
11 either to Secretary Grumbles, Secretary of the Department  
12 of Environment, or to whom it may concern, but they all  
13 deal with the crematory proposal; is that correct?

14 A Correct.

15 Q Okay. And they all support what you're  
16 proposing at this location. And these are the roughly  
17 20,000 citizens that are supporting what you do?

18 A They speak for the accommodations. They put  
19 their decision on church letterhead, and sent it in, and  
20 they are advocating for these services in the minority  
21 community because they know they don't exist in the

1 community where we live.

2 MR. LANZI: I'm going to offer the letters,  
3 Exhibit 9A through L into evidence.

4 (Whereupon, the documents  
5 referred to as Petitioner  
6 Exhibits 9A through 9L were  
7 marked for identification.)

8 CHAIRMAN FIELDS: So admitted.

9 (Whereupon, the documents  
10 referred to as Petitioner  
11 Exhibits 9A through 9L were  
12 received in evidence.)

13 MR. LANZI: And, Ms. Byrne, if you could turn  
14 to Exhibit 8, which is a photograph, right before the  
15 letters.

16 (Whereupon, the document  
17 referred to as Petitioner  
18 Exhibit 8 was marked  
19 for identification.)

20 BY MR. LANZI:

21 Q Can you see that, Mr. Greene, the -- if you

1 could just tell the Board what that, what that shows, and  
2 why we put it in?

3 A I'm just looking for -- okay. That is the  
4 Givnish Funeral Home on the left-hand side. That is the  
5 white building. Directly across from there you will see  
6 the trees, and directly across from that is a, a daycare.  
7 And that's in Levittown?

8 A Levittown, PA.

9 Q And you all do some business in Pennsylvania?

10 A We do.

11 Q Okay. And are you familiar with the -- this  
12 other funeral home on Belair Road, I believe, Lassahn?

13 A The Lassahn --

14 Q It's your understanding that's also next to a  
15 daycare?

16 A I'm not sure exactly what it's next to, but I  
17 know it's in a residential community.

18 MR. LANZI: Okay. All right. I think that is  
19 all I have for Mr. Greene unless the Board has any  
20 questions?

21 CHAIRMAN FIELDS: I do have a question. The

1 pictures you've just shown and what you referenced terms  
2 of Lassahn, I assume they operate crematoriums?

3 THE WITNESS: I'm sorry. Could you --

4 CHAIRMAN FIELDS: They operate crematoriums?  
5 Those funeral homes that you just showed in the photos?

6 THE WITNESS: Yes, yes, yes. The ones that I  
7 -- I don't know if they showed which is the only minority  
8 funeral home in Baltimore City, which is Joseph Brown,  
9 and they are located directly next to --

10 UNIDENTIFIED SPEAKER: Next to --

11 THE WITNESS: -- and directly across the street  
12 from residential housing. They have had no issues in  
13 terms of health challenges in the community. And it is a  
14 very densely populated African-American community similar  
15 to my location on York Road.

16 MR. LANZI: That would be Exhibit 11, and I  
17 believe it would be in the -- it's Exhibit 11. It's  
18 several pages long, but it should be in the first couple  
19 of pages.

20 (Whereupon, the document  
21 referred to as Petitioner

1 Exhibit 11 was marked  
2 for identification.)

3 CHAIRMAN FIELDS: Thank you.

4 MR. LANZI: Okay. I would offer Exhibit 8, and  
5 then I would -- that's the photograph of the back of the  
6 funeral home.

7 CHAIRMAN FIELDS: So admitted.

8 (Whereupon, the document  
9 referred to as Petitioner  
10 Exhibit 8 was received  
11 in evidence.)

12 MR. LANZI: Okay. Just quickly so we can show.  
13 Okay. There's the (indiscernible). If you could go  
14 forward. Okay. Continue. Next, next.

15 MS. BYRNE: Going forward or backwards?

16 MR. LANZI: Forward.

17 MS. BYRNE: Okay.

18 MR. LANZI: Okay. Continue. There should be  
19 some photograph after the number. There we go. Okay.  
20 That shows the neighborhood. Let me see if I can find  
21 it. Okay. Exhibit 11, which should be -- roughly I

1 think that's the only picture we have of it. So that's  
2 fine.

3 MS. BYRNE: Okay.

4 MR. LANZI: You have it in the file.

5 Okay. That's all I have for Mr. Greene. I'll  
6 call my next witness. It will be Dr. Kinslow. If you  
7 could have her admitted into the hearing.

8 MS. BYRNE: Sure. And what's Dr. Kinslow's  
9 first name?

10 MR. LANZI: Carla.

11 MS. BYRNE: Okay, Ms. Kinslow, you've been made  
12 a panelist, and you are unmuted. Ms. Kinslow.

13 MR. LANZI: She was on earlier.

14 MS. BYRNE: She is unmuted. Let's see.  
15 Ms. Kinslow, if you could put in the chat if you're  
16 having difficulties or if you are -- if you're in, in a  
17 call-in fashion as well.

18 MR. LANZI: I hear her.

19 THE WITNESS: Hello.

20 MS. BYRNE: Ms. Kinslow?

21 THE WITNESS: Yes. Hello.



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CITY OF BALTIMORE  
BOARD OF MUNICIPAL AND ZONING APPEALS

-----X  
IN RE: )  
 )  
4903-4905 York Road )  
Docket Number: 2021-161 )  
-----X

(Virtual hearing)  
September 16, 2021

BEFORE: James Fields, Chairman  
Wilbur "Bill" Cunningham, Member  
Sabrina Johnson-Turner, Member  
Frank Bonaventure, Member  
Kathleen Byrne, Acting Executive Director  
Simon Penning, Acting Associate Counsel  
Martin French, Planning Department

A P P E A R A N C E S

Neil Lanzi for Petitioner  
Becky Witt for Opposition

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1 the material certainly meet fire code, and are completely  
2 safe or that would never be approved otherwise. Just to  
3 save to have to call him back to ask him that one  
4 question.

5           And with that, I will turn to Mr. Greene, if  
6 he's, if he's there.

7           MR. GREENE: I am.

8           MR. LANZI: Okay. I guess his camera is not  
9 working.

10           UNIDENTIFIED SPEAKER: Right.

11 (Whereupon,

12                                   VAUGHN GREENE

13 was called as a witness, and testified as follows:)

14           BY MR. LANZI:

15           Q     Okay, Mr. Greene, one thing I wanted to clear  
16 up right away, if you don't mind, there was  
17 (indiscernible) just made that for the first time you  
18 were indicating that the -- the deceased would be coming  
19 not only from the York Road but also the other three  
20 locations. Isn't it a fact that you have been clear from  
21 the MDE informational meetings to the informal community

1 meetings, and your testimony that that was your  
2 intention?

3 A Correct.

4 Q Maybe it was confused. And your testimony was  
5 there would be no outside companies bringing deceased to  
6 your location for cremation?

7 A Correct.

8 Q Sorry for the longwinded question. Is that  
9 correct? You've been consistent that it's been --

10 A That's correct.

11 Q Okay. All right. I just wanted to straighten  
12 that out first. All right, Mr. Greene, you've heard  
13 testimony from the opposition on day two of the hearing  
14 and today with a constant use of the term incinerator or  
15 incineration, and how do you respond to that?

16 A I've tried to accept what's been said based on  
17 the information that has been put out there. Because  
18 some persons who are on the side of my opposition that's  
19 how they have presented what I'm proposing, that it's an  
20 incinerator. You have actually heard them testify that  
21 they've sent e-mails or they've gone door-to-door letting

1 people know that there is an incinerator coming to their  
2 community. To be totally honest with you, Neil, if I  
3 lived in the community, and somebody told me that there  
4 was a trash disposal business or an incinerator business  
5 coming, I may be slightly -- I may be opposed. But  
6 that's not what I do. Incinerators are for trash,  
7 garbage, refuse, things that don't have value, things  
8 that people no longer want, things that people don't want  
9 back. I'm not an incinerator. I'm not proposing to  
10 bring an incinerator there. Incinerators aren't even  
11 permitted in Baltimore City, but there are three  
12 crematories in Baltimore City, and that's simply because  
13 a crematory is not an incinerator because we don't  
14 cremate trash. I've never had a family come to me, and  
15 say please go and get my mother from Johns Hopkins  
16 Hospital, and (indiscernible). What I do provides not  
17 only value for the people that call my services, but I  
18 return value to them. You don't take trash on ninth hole  
19 on Mount Pleasant and Clifton Park and pour it out on the  
20 ninth green, and then celebrate it later. You don't do  
21 that with trash. You don't take trash to church, and

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1 bring people in to celebrate their life. You don't --  
2 it's depressing to hear what I'm proposing to do  
3 presented that way because I get back value to the people  
4 who call my services. People who call me for incinerator  
5 -- I mean for crematory services they don't call a trash  
6 disposal company for those types of services. They  
7 calling funeral home because it's a part of the funeral  
8 business. And to have my ministry described as an  
9 incinerator is -- it's insulting, but I'm not insulted by  
10 the community because I know they're simply responding to  
11 the misinformation that has been presented to them. And  
12 so I get it, but I hate the fact that, that my work, a  
13 lifetime of work, has been presented that way or  
14 misinterpreted or misrepresented that way. I'm not an  
15 incinerator.

16 Q Thank you, Mr. Greene. Now, you've also heard  
17 some statements over the first couple days of the hearing  
18 that you and your consultants, including myself, are all  
19 outsiders with no connections to the community. How do  
20 you respond?

21 A Neil, I was born in east Baltimore right off of

1 East North Avenue about a 12-minute drive from my, my  
2 York Road location. I am -- I'm involved on boards in  
3 east Baltimore. I support the Little Leagues. I support  
4 community events. I support community projects in east  
5 Baltimore. I am at my York Road location every day.  
6 Sometimes if you ask my spouse, I spend more time at work  
7 than I do at home. So to suggest that I'm an outsider in  
8 the community where I spend significant time serving, and  
9 not only serving but (indiscernible) into that community.  
10 I'm not an outsider to east Baltimore.

11 Q And when you say east Baltimore, you're  
12 including the York Road location as within that area as  
13 well, correct?

14 A Absolutely. And I grew up -- I was born and  
15 raised 12 minutes from my York Road location, right off  
16 of East North Avenue.

17 Q Got it. So with regard to the York Road plan,  
18 I believe the Senator mentioned, and there's some  
19 testimony from the other day, how does your business and  
20 your cremation plan, crematory plan fall within its  
21 goals?

1 MR. LANZI: Did we lose the connection? I  
2 think he's muted.

3 MS. BYRNE: Yeah. I can't mute or unmute. So  
4 something has happened on that on the other end.

5 MR. LANZI: I can check on that, make sure --

6 MS. BYRNE: Yeah. Make sure he's still a  
7 panelist, but the speaker button is on.

8 MR. LANZI: (Indiscernible) take care of it.

9 MS. BYRNE: Okay.

10 (Pause.)

11 MR. LANZI: Ms. Byrne, they are having  
12 technical difficulties. If you'd like to give me the  
13 call-in number, I'll have Mr. Greene call in.

14 MS. BYRNE: Sure. That makes sense.

15 MR. LANZI: Okay. I'm ready.

16 MS. BYRNE: That's something I need to find.

17 Hold on one second.

18 MR. LANZI: Okay.

19 MS. BYRNE: You would think I would have that  
20 handy -- my calendar. So the call-in number is  
21 (408) 418-9388.

1 MR. LANZI: (Indiscernible).

2 MS. BYRNE: I'm going to give you the access  
3 code (indiscernible) for it. It's 1798102147.

4 MR. LANZI: 1798102147?

5 MS. BYRNE: Correct.

6 MR. LANZI: Okay.

7 MS. BYRNE: And I will look for the next call-  
8 in user. All right, I think --

9 MR. LANZI: (Indiscernible) hear from him  
10 shortly.

11 MS. BYRNE: right. He should just pop up in  
12 order. Keeping my eyes open to the -- on the attendee  
13 list.

14 Here we go. The caller (indiscernible) number  
15 10, which I believe is him.

16 Mr. Greene.

17 THE WITNESS: Yeah.

18 MS. BYRNE: Excellent. Okay.

19 MR. LANZI: Great.

20 THE WITNESS: Apologize for the technical  
21 difficulties.



1 BY MR. LANZI:

2 Q Mr. Greene, can you hear me?

3 A I can hear you fine.

4 Q Great. So the last question I asked was what's  
5 your -- is it your understanding your business plan for  
6 the crematory falls within the goals of the York Road  
7 plan?

8 A To the letter. I think the things I've seen on  
9 the York Road plan concerns diversity and support for  
10 diversity of minority businesses. I certainly qualify.  
11 I provide a service that people are requesting. Again,  
12 please call and ask and request these services. If I  
13 can't provide the services that people ask me for, then I  
14 become irrelevant. So to suggest that you want to help  
15 businesses grow, but at the same time not allow me to  
16 provide the services that the community is asking me for  
17 so that I can remain competitive and relevant and  
18 continue to provide value to the community. I have a  
19 very nice facility that's well maintained. I have green  
20 space located at my facility. Everything that they said  
21 that they're looking for in terms of a business that

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1 reflects the York Road long-term vision, those are things  
2 that I provide.

3           Now, again, the fact that I am in the funeral  
4 business or the death care industry makes people  
5 uncomfortable, if we could drill down past those things  
6 in terms of the -- what I actually provide and what I  
7 actually present to the community, it's right in line  
8 with what they say they want for, for -- in terms of, in  
9 terms of (indiscernible) York Road Partnership. So I,  
10 yeah, I, I think I ring the bell in terms of the type of  
11 business, and the type of service I provide.

12           Q     Okay. Thank you. Next question. You heard  
13 the opposition's expert talk a lot about the trucks and  
14 the vehicles on York Road, the fast-food restaurants, the  
15 York Road plan, which we did talk about (indiscernible).  
16 They don't want any more potential pollution emitting  
17 businesses. Have you observed any new restaurants along  
18 York Road since the implementation of the York Road plan?

19           A     Yes, absolutely.

20           Q     Are you aware of any protests to those --

21           A     Not just one, but multiple restaurants. I

1 guess you can say (indiscernible) consider fast-food or  
2 -- but, yeah, multiple, multiple businesses, multiple  
3 restaurants that produce carbons and open (indiscernible)  
4 since I put my application in.

5 Q And you're aware there are other crematories in  
6 the City, and you recall those crematories having  
7 organized opposition or having articles in newspapers and  
8 legislative leaders speaking?

9 A Not that I'm aware of.

10 (Audio interference.)

11 A Mr. Brown is my colleague, and the persons that  
12 run the other two crematories in Baltimore, those are  
13 people that I attend association meetings with  
14 (indiscernible) conferences with. I've never had anyone  
15 tell me that they've gone through that I'm going through  
16 currently to provide the services that their community  
17 is asking them for, if that answers your question.

18 Q Yes. Now you've also heard testimony that the  
19 letters -- I think there were some charts shown -- that  
20 the letters that we submitted from the various pastors,  
21 the ministers in support of the crematory, those persons

1 have no ties to the Govans community. And how would you  
2 respond to that?

3       A       There is one letter that is from a church  
4 outside of east Baltimore, and that is because that's the  
5 church that I belong, and that's a letter of reference  
6 from my pastor. The other churches are located in east  
7 Baltimore. And then, secondly, all of those churches  
8 including the church that I'm a member of have members  
9 that live in 21212. So I'm not -- I -- if they're asking  
10 are all those churches located right there on York Road,  
11 no, but neither are the community associations that are  
12 opposing it. They're not necessarily located in my, in  
13 my immediate geography either. But the churches that  
14 have taken the time out to pen letters, and pen a  
15 recommendation are churches that are in the east  
16 Baltimore geography, and all of those churches have  
17 members that live in 21212.

18       Q       Okay. Thank you. Last question. There's some  
19 concerns about compliance with any type of restrictions  
20 that MDE may impose upon you. Would you and your  
21 company, your funeral home, be willing to comply or work

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1 with any limits, any conditions that MDE may place on the  
2 air quality permit if it is, in fact, issued?

3       A       Neil, absolutely. And, again, you and I and  
4 Mr. Miller, we've addressed this with the community  
5 before. I don't know if the members that represent the  
6 Zoning Board know this, but this is not the first time  
7 that we brought expert witnesses. We didn't just bring  
8 these people out to bring them before the Zoning Board.  
9 We brought them before the community during the community  
10 meetings so that they could ask question if they have  
11 concerns. The toxicologist that's testifying today,  
12 anybody that's testifying, has testified in front of the  
13 community, giving them an opportunity to ask questions.  
14 As a matter of fact, Senator Mary Washington chaired one  
15 of the meetings when we had persons that were available  
16 to answer questions. I've done -- I mean, we -- I think  
17 we've done everything that we know how to try to make the  
18 community comfortable with being able to provide in-house  
19 the services that the community is asking for. So to  
20 answer your question again, absolutely. Whatever I have  
21 to do. I want to be a good neighbor. And even though we

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1 might not be seeing eye-to-eye right now, you've heard  
2 the people testify to my character, and to the quality of  
3 service I provide, and the value that I've provided to  
4 the community over the last 21 years. These persons  
5 aren't my enemies. They're people that I worship with.  
6 They're families who I've served. Some of these people  
7 are friends.

8 MR. LANZI: Okay. Thank you. Thank you,  
9 Mr. Greene.

10 That's all I have for Mr. Greene, unless the  
11 Board has questions. I'll call -- are there any  
12 questions?

13 MEMBER CUNNINGHAM: None.

14 MR. LANZI: Okay. I would call Michael  
15 Tricoche next.

16 MS. BYRNE: I'm --

17 MR. TRICOCHÉ: Good afternoon everybody.

18 MS. BYRNE: I just muted Mr. Greene. So we're  
19 good.

20 MR. LANZI: Thank you.

21 (Whereupon,



Rimkus Consulting Group, Inc.  
12140 Wickchester Lane, Suite 300  
Houston, TX 77079  
Telephone: (713) 621-3550  
Certificate of Authorization No. F-1545  
Certification Expiration Date September 30, 2021

August 4, 2021

Mr. Neil Lanzi  
Wright, Constable & Skeen, L.L.P.  
102 West Pennsylvania Avenue, Suite 406  
Towson, MD 21204

Re: Rimkus Matter No: 100058997  
Subject: Thought Summary

Dear Mr. Lanzi:

Rimkus Consulting Group, Inc. (Rimkus) was retained by Wright, Constable & Skeen, L.L.P. to provide scientific technical support in a matter regarding modeled emissions from a proposed crematorium to be installed at the Vaughn Green Funeral Home (Vaughn Green) located at 4905 York Road in Baltimore City, Maryland. Specifically, Dr. Kinslow was asked to address questions from the surrounding community regarding potential human health impacts due to air emissions estimates that were part of the air permit submission to the Maryland Department of the Environment (MDE).

My name is Carla J. Kinslow, Ph.D., and I have spent my career as a research scientist for 31 years, primarily in the areas of microbiology, molecular biology, and environmental toxicology. I hold a Master's degree in biology, with a concentration in microbial molecular biology, from Michigan Technological University and a Doctoral degree in cell biology, with a concentration in environmental toxicology, from the University of Texas Medical Branch, Graduate School of Biomedical Sciences. My dissertation and subsequent publications included the evaluation of epidemiological data as it pertained to the genetic changes in a population. I am a full member of the Society of Toxicology, where I am vice-president of the Ethical, Legal, Forensics, and Societal Issues Leadership section. I am also a peer reviewer for three scientific journals: *Toxicology InVitro*, *Journal of Molecular Biomarkers & Diagnosis*, and *Pharmaceutical Sciences*. I am also a member of the editorial board for *Toxicology: Current Research*. I have authored and co-authored many scientific publications and have presented my research at national and international scientific meetings. My work has included investigating origins and human exposures to toxins and toxicants as well as assessing the causal relationships between disease and exposure based upon the dose-response relationship and the known toxicological

CC 00068

properties of the materials involved. I have completed over 220 environmental microbiology investigations using environmental data of populations, as well as individuals, and written as many reports. I spent 4 1/2 years as a senior toxicologist at the Texas Commission on Environmental Quality (TCEQ). While there, I authored greater than 150 documents that incorporated real-time and air modeling data as it may impact public health. I am routinely asked to interpret and evaluate the results of environmental and occupational exposures, particularly with respect to a substance's potential or causal relationship to toxicological impact on living organisms. As the Director of Toxicology and Food Safety, I have led teams of scientists, including epidemiologists, immunologists, physicians, and toxicologists. As part of my position, I routinely complete technical reviews of expert reports, including those covering the preceding fields of study. My academic training, master's degree, doctoral degree, work experience in microbiology and environmental toxicology, professional affiliations, and publications qualify me as an expert in toxicology with reference to sampling, interpreting data, and other relevant case materials, and offering opinions as to physiological and biochemical endpoints, as outlined in the Reference Manual for Scientific Evidence published by the Federal Judicial Center (Federal Judicial Center 2011). Appended for your information is a copy of my Curriculum Vitae.

I offer the following Thought Summary to a reasonable degree of scientific certainty in my fields of expertise, including toxicology, risk assessment, and related fields.

### Thought Summary

1. The community has voiced concern that the air emissions from the proposed crematorium will negatively impact the surrounding community. However, these concerns are not supported by the scientific literature or regulatory guidance.
2. Upon review of the conservatively estimated emissions, developed per the MDE guidance and presented in the permit application, the emissions are below the MDE regulatory threshold limit and are not expected to unreasonably endanger human health. Thus, they are compliant with the *Code of Maryland Regulations Section 26.11.15.06, Ambient Impact Requirement, subsection A(1)*.<sup>1</sup>
3. The screening values (threshold limits) used by the MDE in the permitting process are very conservative and are intended to protect the workers and the surrounding community.<sup>2</sup>

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<sup>1</sup> Matthews Environmental Solutions, permit application documents sent to Vaughn Green, February 21, 2020; Pg. 23 of 25

<sup>2</sup> Opinion by Harrell, J. Green, McDonald, and Watts, JJ., dissent, 2017.Maryland Department of the Environment -Regulatory Interpretation – COMAR 26.11.15.06, Where to measure ambient impacts for crematorium construction permit



4. Hot air emissions are released from the vent stack that will be emitting from a location that is above the rooftops and not at ground level. Thus, the emissions will rise up and mix with the ambient air via the wind, becoming more dispersed and further diluted. The emissions coming from the stack have been determined to be acceptable by the MDE, and releasing them high in the air allows for them to become even more dilute before possibly falling to breathing level. This is in comparison to car emissions that are released lower and are more readily available for inhalation by children and adults with potentially less opportunity for dilution prior to exposure.
5. Thus, if any portion of these emissions ever reaches ground level, it will be much more dilute and at a concentration that is less than many other types of common exposures, such as BBQing. These emissions impacts are more likely than not less than if one was grilling hamburgers.<sup>3,4</sup>
6. The community has voiced that information in a scientific publication by the Abell Foundation (LaFave, 2020)<sup>5</sup> supports that the addition of the crematorium would contribute to the pediatric asthma incidence disparity that exists in Baltimore City, relative to the rest of Maryland. Upon review of this report, Rimkus notes the following:
  - a. This report does not point to, investigate, or identify ambient (outside) air as a factor that would contribute to this disparity in Baltimore City. Each reference to an “environmental” source of pollution is associated with a reference to indoor environmental pollution sources as contributors to this disparity. The authors do not mention ambient air pollution as a differentiator of this disparity.
  - b. This report does not mention crematoriums and as such, does not relate them to contributing to asthma disparities.
  - c. This report was published by an independent foundation, The Abell Foundation, and not published in a peer-reviewed scientific journal.
7. A concern voiced by the community is smoke from the crematorium. Particulate matter (PM) is the visible component of smoke. According to the USEPA, Baltimore City ambient air has been in compliance with particulate matter (PM) standards for the Federal Standards since 2014. Being within compliance with MDE standards for the proposed emissions, the Agency has determined the emissions from the crematorium will not cause deterioration of air quality, in regard to particulate matter.
8. The community has voiced concern that the cremation of individuals that died of COVID-19 will spread the virus (SARS-CoV2) through the air. The SARS-CV2 and its

---

<sup>3</sup> <https://link.springer.com/article/10.1007/s11783-018-1024-0>

<sup>4</sup> <https://www.igair.com/us/blog/air-quality/your-backyard-barbecue-health-hazard>

<sup>5</sup> LaFave, S (2020). The unequal burden of pediatric asthma: a call for equity-driven, multimodal, public health approach to asthma in Baltimore. Abell Foundation, Volume 33, Number 7

variants will be completely destroyed under the extreme heat conditions of the cremation process. There is no chance that COVID-19 can be spread from cremation emissions of a COVID-19 victim.


9. Upon review of the permitting application requirements, MDE has as high or higher requirements for production of emission and human impact information to show environmental compliance with the air emissions program from the proposed crematory. This is in regard specifically to the additional calculations and modeling that show compliance with exposure impacts to the surrounding community. Many other states, including Texas, Kentucky, and Mississippi, do not require this level of proof for air permitting compliance in crematorium construction, yet Vaughn Green has produced these calculations and has shown that it is compliant with the MDE higher requirements.<sup>6,7,8</sup>

This report was prepared for the exclusive use of Wright, Constable & Skeen, L.L.P. and was not intended for any other purpose. Our report was based on the information available to us at this time. Should additional information become available, we reserve the right to determine the impact, if any, the new information may have on our opinions and conclusions and to revise our opinions and conclusions if necessary and warranted.

Thank you for allowing us to provide this service. If you have any questions or need additional assistance, please call.

Sincerely,  
Rimkus Consulting Group, Inc.

**Carla  
Kinslow**

 Digitally signed by: Carla Kinslow  
DN: CN = Carla Kinslow C = US O  
= Unaffiliated OU =  
A01410C00000170C9CF7081000  
00142  
Date: 2021.08.04 09:34:04 -08'00'

Carla J. Kinslow, Ph.D.  
Director Toxicology and Food Safety

Attachment: Curriculum Vitae

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<sup>6</sup> Kinslow phone interview with Texas Commission on Environmental Quality (TCEQ) air permitting division 8/4/2021 <https://www.tceq.texas.gov/permitting/air/permitbyrule/subchapter-v/pw/incinerators.html>

<sup>7</sup> Kinslow phone interview with Mr. Jaricus Whitlock, air section supervisor, of Mississippi Commission on Environmental Compliance 8/4/2021

<sup>8</sup> Kinslow phone interview with Mr. Zack Bitner, Combustion Section Supervisor, Kentucky Department of the Environment; <https://eec.ky.gov/Environmental-Protection/Air/Pages/Air-Permitting.aspx>

August 4, 2021  
Rimkus Matter No. 100058997

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## **Curriculum Vitae**



## Carla J. Kinslow, Ph.D.

Director, Toxicology and Food Safety Practice

### Background

Dr. Kinslow holds a doctorate in Biomedical Sciences, Cell Biology/Molecular Toxicology with over 31 years of biomedical, regulatory, and environmental experience.

She has expertise in inhalation and oral toxicology; derivation of regulatory screening values for oral and inhalation exposure, toxicogenomics; toxicological risk assessment and communication of such risk to diverse stakeholders; human health impacts analysis from emission events; air, soil, and water monitoring data; modeling data related to ambient air and drinking water quality; water contamination from oil and gas operations; and stakeholder communication.

She specializes in risk-based evaluation of air, soil, and groundwater toxicology under the USEPA, as well as state and federal guidelines. She has served as manager for various regulatory projects where she helped design and implement air monitoring networks, groundwater monitoring projects, and remediation scopes, with subsequent assessment and communication of such human health impacts based on collected data. She has extensive experience in the evaluation of drug and alcohol impairment and "DRAM" shop cases.

Dr. Kinslow also has extensive experience in the evaluation of pesticide/herbicide overspray cases as well as health risks based on genetic predisposition to disease from environmental, occupational, and pharmaceutical exposures. Notably, Dr. Kinslow is also an environmental microbiologist and regularly conducts indoor air quality mold investigations and beer contamination evaluations.

### Contact Information

(713) 621-3550

[ckinslow@rimkus.com](mailto:ckinslow@rimkus.com)

Eight Greenway Plaza,  
Suite 500  
Houston, TX 77046

650 N.E. Holladay Street,  
Suite 1600  
Portland, OR 97232

## Professional Engagements

### • Water

- Remediation Support – Drafted several Affected Property Assessment Reports (APARs) for submission to the Texas Commission on Environmental Quality (TCEQ), conducted fieldwork for soil and ground water sampling, and water well surveys.
- Drinking Water – Evaluation of monitoring data with regard to human impacts from chromium in public drinking water systems.

### • Risk Communication

- MTBE Ground Water Contamination – Texas, Community engagement about groundwater contamination as well as accidental releases from chemical plants.
- Hazard Assessments – Texas, Served as a regulatory and community liaison, which included a presentation to the La Porte, TX community regarding odor toxicology after a fatal release of methyl mercaptan.
- Hazard evaluation and toxicological impacts assessment of data gathered around oil and natural gas drilling facilities.
- Water/Air/Odors Education – Houston, Beaumont, TX, Conducted over 20 presentations for Community Advisory Panels (CAPs) across the Houston ship channel and Beaumont areas. Topics covered – accidental release of benzene in water and air, odors, and long-term air monitoring data.

### • Inhalation

- Indoor Air Contaminants – Alternative causation evaluation for workers compensation cases involving respiratory issues attributed to indoor air contaminants.
- Ambient air and pollution exposure risk assessment based on modeling data and known regulatory guidelines.
- Fabric Guard Spray – Evaluation of human impacts from accidental inhalation exposure of hydrocarbons and fluorocarbons from fabric guard spray.
- Workers Compensation – Alternative causation evaluation for workers compensation cases involving respiratory issues attributed to indoor air contaminants.
- Asphyxiation from gasoline fumes.
- Due Diligence/M&A Vapor Intrusion – Completed vapor intrusion assessments of a multi-use property and evaluated potential impacts of contamination of groundwater for future development. Human and ecological risk associated with reclaimed water.
- Evaluation of human health impacts based on ambient air data as well as modeled data.
- Designed ambient air monitor placement criteria for the TCEQ.

### • Alcohol/Drug

- Drug impairment evaluations in driving and workers compensation - marijuana, cocaine, alcohol, and prescription drugs.
- Evaluation of blood alcohol concentration (BAC) as it relates to impairment, both in the presence of and absent of other drugs, including cocaine and marijuana.

- Determination of possible impairment from alcohol before entry, at the point of sale, and after leaving an establishment (i.e., “DRAM shop” projects).
- Evaluation of possible contribution of marijuana and THC to driving impairment.
- Contribution of prescription opiates in causing death to an individual.
- **Beer Contamination - Microbiology**
  - Brewery contamination and trace-back investigation for initial insurance as well as subrogation claims.
- **Environmental Microbiology**
  - Human and Animal Food Investigation - Source trace-back in salmonella and E.coli contamination cases – identifying the environmental source of contaminated food.
  - Mold investigations and alternative causations relative to health complaint.
- **Other**
  - Herbicide/Pesticide Overspray – Evaluation of possible pesticide and herbicidal overspray for wheat and potato fields.
  - Benzene/Asbestos – Evaluation of molecular mechanisms responsible for predisposition to cancer from low-level exposure to benzene and asbestos.
  - Evaluation of human toxicity related to caustic injury.
- **Oil/Gas/Manufacturing**
  - Toxicological Risk and Human Impacts Assessment – Evaluation of modeling impacts from air emissions, review of accidental, industrial emissions data, and evaluation of possible human health impacts from the ingestion of groundwater contaminants.
  - Barnett Shale – Dallas/Ft. Worth, TX, Developed and implemented air monitor location criteria for the TCEQ Barnett Shale air monitoring program.
  - Manufacturing Facilities – Toxicological assessment of impacts from odorous manufacturing facilities including refineries, oil and animal rendering facilities, and landfills.
- **Regulatory**
  - Derivation of state-approved, human-health regulatory screening values using TCEQ and US Environmental Protection Agency (EPA)-specific guidance. These included a new cobalt screening value for soil and groundwater, which resulted in the TCEQ changing their regulatory guidance for cobalt.
  - Tox21 Guidance – Drafted state of science reports for benzene and asbestos based on new Tox21 guidance for the weight of evidence approach to literature search and documentation.
  - Texas Refinery QRA – Conducted reviews of quantitative risk assessment (QRA) from a refinery and completed state-specific QRAs under the Texas remediation program.
  - Toxicological review of literature related to antibacterial chemicals used in hand soap, focused on enhancing a clients' document submittal to the FDA.

- Regulatory Compliance – Texas, Conducted reviews of current toxicological screening values (air, water, soil) and reviewed literature; prepared summaries of current benzene, toluene, ethylbenzene, and xylene (BTEX) and carbon monoxide (CO) National Ambient Air Quality Standards (NAAQS) data.
- **Tobacco**
  - Tobacco Products – Developed mode of action summaries for ten tobacco products.
  - Industrial Hygiene – Conducted due diligence auditing for biomedical laboratories for mergers and acquisitions.

## Professional Experience

- **Rimkus Consulting Group, Inc.** **2016 – Present**
  - Director, Toxicology and Food Safety Practice  
Responsible for division oversight and technical support to the staff. Duties include the evaluation of human health impacts from drugs, chemical exposure in the environment or workplace, and brewery/beer contamination, as well as providing litigation, scientific liaison, or environmental regulatory toxicological support. Areas of expertise include inhalation toxicology, marijuana, remediation, pesticide/herbicide overspray, environmental microbiology, human health-based risk assessment, toxic mold, lung cancer, vapor intrusion, and odor issues.
- **Ramboll Environ, Inc.** **2013 – 2015**
  - Manager/Toxicologist – Health Science Division  
Responsible for providing senior toxicological support to the division. Duties included the evaluation of human health impacts from environmental chemical and pharmaceutical exposure, as well as litigation, scientific liaison, environmental regulatory toxicological support. Areas of expertise included inhalation toxicology, soil and water remediation assessment, risk assessment, toxic mold, lung cancer, vapor intrusion, and odor issues. Served as scientific liaison during public stakeholder meetings as well as conducted risk communication presentations to communities in the Houston area.
- **Brown and Caldwell** **2012 – 2013**
  - Senior Scientist/Toxicologist  
Responsible for providing senior technical and regulatory support for the company. Duties included the evaluation of human health impacts from environmental and pharmaceutical exposure, as well as litigation, scientific liaison, environmental regulatory toxicological support. Provided hazard and human health risk assessment, remediation, and compliance assistance for the company. Regulatory compliance included air permit impacts evaluation, evaluation of groundwater and soil data for human and ecological risk, document preparation according to TRRP (Texas) and NJDEP (New Jersey) regulatory requirements. Project management included managing unit closure and RCRA permitting projects.

- **TCEQ** **2008 – 2012**
  - Senior Toxicologist  
Responsible for providing senior toxicological support and guidance to other staff, specific to the TCEQ. Served as primary toxicologist for the Houston region and conducted numerous stakeholder presentations regarding environmental issues and activities of the TCEQ. Development of human health-protective inhalation values for use in regulatory compliance and permitting. Duties included deriving state-approved, human-health regulatory screening values using TCEQ and EPA-specific guidance, evaluating and designing toxicological studies that were implemented by the TCEQ. Additional responsibilities included acting as a liaison between the TCEQ and chemical trade groups, providing hazard evaluation and toxicological impacts assessment of data gathered around oil and natural gas drilling facilities, developing annual impacts assessment reports, reviewing air permits, and evaluating Qualitative Structure-Activity Relationships (QSAR) for toxicological endpoints. Served as mercury TMDL expert for the toxicology division during Texas government 2009 session.
  
- **Proctor and Gamble** **2006**
  - Intern  
Developed molecular assays to detect endocrine-disrupting chemicals in human prostate cells.
  
- **University of Texas Medical Branch** **2003 – 2008**
  - National Institute of Environmental Health Sciences (NIEHS) Pre-doctoral Fellow  
Doctoral studies related to molecular (inheritable) toxicological factors contributing to a predisposition for lung cancer in tobacco smokers. This included utilizing microbial cultures to manipulate genomes.
  
- **The Pronet Group, Inc.** **2001 – 2002**
  - Indoor Air Quality (IAQ) Consultant – Mold investigator  
Performed IAQ investigations in residential and commercial buildings, the majority of which were related to water intrusion and mold contamination. Conducted over 200 environmental investigations, collected over 1,000 surface and air samples for microbial contamination. Wrote and signed off on each investigative report and its respective scope of remediation. Provided litigation support.
  
- **Kinslow Consulting/National Loss Consultants** **1999 – 2001**
  - Indoor Air Quality Consultant  
Performed IAQ investigations in residential and commercial buildings, the majority of which were related to water intrusion and microbial contamination. Drafted the remediation scope(s) and completed follow-up clearance evaluations for these properties. Provided litigation support.



- **MD Anderson Cancer Center** **1999 – 2000**
  - Research Assistant II  
Performed molecular biology assays related to maintaining the viral vector core facility. This included using virus particles to infect bacterial cultures in order to package recombinant genomes.
  
- **Valentis, Inc.** **1998 – 1999**
  - Research Assistant/Scientist  
Performed molecular biology assays and plasmid construct designed for cancer gene therapy research. This included utilizing microbial cultures to manipulate human genes and genomes.
  
- **Michigan Technological University** **1993 – 1998**
  - Naval Research Fellow and Research Assistant – Phycology (Algae)  
Molecular biology of marine diatoms. Studied various marine and freshwater algae and bacteria, including their development and persistence in biofilms located on man-made objects. Developed novel culture methods as well as specific methods to study the genomes of algae in biofilms. Taught 100 and 200 level college laboratory classes in microbiology, botany, and phycology (algae).
  
- **Indiana University Southeast** **1989 – 1993**
  - Research and Laboratory Assistant/Full-Time Researcher  
Lead the laboratory and research assistants for the biology department; taught 100, 200, and 300 laboratories in botany, microbiology, molecular biology, and cell biology. Conducted research in water quality, microbial molecular biology, and botany.
  - Research Assistant  
Designed and taught several microbiology, molecular biology, and botany labs to college and graduate students. Supervised and taught several microbiology, molecular biology, and botany labs to college students.

## Education

- **Biomedical Sciences, Cell Biology/Molecular Toxicology, Ph.D.:** University of Texas Medical Branch (2008)
- **Molecular Phycology/Marine Ecology, M.S.:** Michigan Technological University (1997)
- **Biology, B.A.:** Indiana University Southeast (1992)
- **Memberships:** Society of Toxicology, Full Member; American Society of Microbiology, Premium Member; Regular Member, Society of Toxicology of Canada; University of Texas Medical Branch Alumni Committee, Member

## Continuing Education

- **OSHA:** OSHA refresher, TWIC card, 8 hrs. (2012, 2013, 2014, 2015); 40 hr. OSHA Training (2011)
- **TCEQ:** Expert witness training (2011); EPA Vapor Intrusion Training (2010)
- **Other:** Quantitative Structure Activity Relationships (QSAR) (2008-2012); Communications (2011); Management training (2011); TERA training – Child susceptibility in risk assessment seminar (2009); International REACH training (2009); Advanced Air Permitting (2008)

## Publications

- **“Regulatory regions responsive to oxidative stress in the promoter of the human DNA glycosylase gene NEIL2.”** *Mutagenesis*, 2010, Mar; 25(2):171-7
- **“Genetic determinant of NEIL2 transcription.”** Ph.D. Dissertation
- **“Single nucleotide polymorphisms 5' upstream the coding region of the NEIL2 gene influence gene transcription levels and alter levels of genetic damage.”** *Genes Chromosomes Cancer*, 2008 Nov; 47(11):923-32
- **“The L84F polymorphism in the O6-Methylguanine-DNA-Methyltransferase (MGMT) gene is associated with increased hypoxanthine phosphoribosyltransferase (HPRT) mutant frequency in lymphocytes of tobacco smokers.”** *Pharmacogenet. Genomics*, 2007 Sep; 17(9):743-53
- **“The L84F and the I143V polymorphisms in the O6-methylguanine-DNA-methyltransferase (MGMT) gene increase human sensitivity to the genotoxic effects of the tobacco-specific nitrosamine carcinogen NNK.”** *Pharmacogenet Genomics*, 2005 Aug. 15(8):571-8
- **“Molecular Biology of the marine diatom *Achnanthesis longipes*.”** Master's thesis, 1997

## Presentations

- **“What's Brewing in Your insurance claim.”** (in production) National Webinar, Beer contamination investigations, 2019
- **“Toxicology for Drug and Alcohol Cases and Issues of Impairment.”** National Webinar, Broadcast to 700 attendees representing the insurance and legal industries, Jan. 23, 2019
- **“What the Hex is Cr6?”** Evaluation of the toxicity screening values for hexavalent chromium (Cr6) across the U.S., EECHMA, Orlando, FL, 2018
- **“PFAS: Evolution from Emerging Contaminant to Frequent Headliner.”** Environmental Risk & Litigation Conference New York, NY 2018
- **“Forensic Toxicology for Drug and Alcohol Cases and Issues of Impairment.”** Continuing Education (CE) presentation for various clients. February 8, 2018, Houston, TX.
- **“Cerium oxide nanoparticle (nCe) use as a diesel fuel additive and the possible health impacts from its wide application in diesel fuel.”** AEHS Foundation: 27th Annual International Conference on Soil, Water, Energy, and Air, March 20-23, 2017, San Diego, CA.

- **“Cerium oxide nanoparticle (nCe) use as a diesel fuel additive.”** The Air and Water Management Association, Austin Chapter, Austin, TX, 2017
- **“Evaluating the Broadening Use of Prescription Marijuana Related to Workers' Compensation Claims.”** 2017 CLM Conference on Retail, Restaurant & Hospitality Conference (whitepaper), Gaylord, TX
- **“Evaluating the Broadening Use of Prescription Marijuana Related to Workers' Compensation Claims.”** CLM Conference on Retail, Restaurant & Hospitality Conference (white paper) 2017. **“Marijuana: determining impairment and its impact in the insurance industry.”** Webinar broadcast to ~500 listeners, 2017
- **“Marijuana and driving with medical marijuana.”** Willis Watson, Addison, TX, 2016
- **“Marijuana and Driving; Can a blood test really determine impairment?”** GEICO Insurance Company, Katy, TX, 2016
- **“Marijuana and Driving; Can a blood test really determine impairment?”** *DRI For the Defense* (whitepaper), 2016
- **“Evaluation of Benzene Fence line Monitoring Program in USEPA's Proposed Refinery Sector Rule.”** AWMA Hot Air Topics Annual Conference, Houston, TX, 2015
- **“Tools for successful stakeholder communications around hydraulic fracturing facilities.”** Gulf Coast AWMA conference, New Orleans, LA, 2015
- **“Health-based screening values for methyl mercaptan.”** La Porte, Texas Community Advisory Panel (presentation), La Porte, TX, 2015
- **“Toxicogenomics in Toxic Tort - Environmental and Occupational Exposure.”** HarrisMartin Law Symposium, Charleston, SC, 2014
- **“Hydraulic Fracturing – Tools for successful stakeholder engagement.”** Society of Petroleum Engineers Annual Meeting on Health and the Environment, Long Beach, CA, 2014
- **“Tools for successful stakeholder communications around hydraulic fracturing facilities.”** International Conference for the Society of Petroleum Engineers (whitepaper), 2014
- **“Hydraulic Fracturing – Tools for successful stakeholder engagement.”** Texas Association of Environmental Professionals Annual Meeting, Houston, TX, 2013
- 2013 Panelist, 2013 Annual Presidential Career Symposium, Houston, TX
- **“Consulting as a Toxicologist.”** University of Texas Medical Branch, Panelist and presentation, Galveston, TX, 2013
- **“Regulatory Toxicology.”** University of Texas Medical Branch, Galveston, TX, 2012
- **“Toxicology at TECQ.”** A series of presentations to various community groups in Houston/Galveston, TX area, 2012
- **“Acrylonitrile Development Support Document.”** TCEQ, 2012
- **“Developing Effects Screening Levels and Air Monitoring Comparison Values at the TCEQ and Trends in Texas Air Quality.”** Texas Association of Environmental Professionals annual meeting, Houston, TX, 2011

- **“Trends in Texas Air Quality: Atmospheric Chemistry and Air Quality in Texas: Challenges and Opportunities.”** Texas A&M University, College Station, TX, 2010
- **“Challenges in personalized medicine: Warfarin.”** Preventive medicine and community health seminar series, Galveston, TX, 2008
- **“Genetic determinants of NEIL2 transcription.”** The NIEHS Center in Environmental Toxicology Environmental Health Sciences Seminar Series, Galveston, TX, 2007
- **“Newly discovered promoter SNPs in the DNA repair gene, NEIL2, modulate gene expression.”** Preventive medicine and community health seminar series, Galveston, TX, 2007
- **“Advancing Toward In Vitro Toxicity Models - Evaluation of gene expression changes induced by androgen exposure in the human-derived CW22Rv1 cell line.”** Gulf Coast Society of Toxicology, Waco, TX, 2006
- **“A pharmacogenetic approach to anticoagulation treatment: the role of microsomal epoxide hydrolase.”** The Society of Toxicology annual meeting, San Diego, CA, 2006
- **“A pharmacogenomic approach to anticoagulation treatment.”** Gulf Coast Society of Toxicology, Austin, TX, 2005



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Certificate of Authorization No. F-1545  
Certification Expiration Date September 30, 2021

August 20, 2021

Mr. Neil Lanzi  
Wright, Constable & Skeen, L.L.P.  
102 West Pennsylvania Avenue, Suite 406  
Towson, MD 21204

Re: Rimkus Matter No: 100058997  
Subject: **Supplemental Thought Summary**

Dear Mr. Lanzi:

Rimkus Consulting Group, Inc. (Rimkus) was retained to provide a supplemental Thought Summary, specifically regarding comments made in the August 6, 2021, Community Law Center memorandum, "Re: BMZ 2021---161, 4903-05 York Road, OPPOSITION to proposed human crematorium"<sup>1</sup> (Memorandum). Specifically, Dr. Carla Kinslow was asked to review this memorandum and provide thoughts regarding scientific, toxicological, and regulatory issues discussed in this memorandum, relative to the proposed crematorium.

My name is Carla J. Kinslow, Ph.D., and I have spent my career as a research scientist for 31 years, primarily in the areas of microbiology, molecular biology, and environmental toxicology. I hold a Master's degree in biology, with a concentration in microbial molecular biology, from Michigan Technological University and a Doctoral degree in cell biology, with a concentration in environmental toxicology, from the University of Texas Medical Branch, Graduate School of Biomedical Sciences. My dissertation and subsequent publications included the evaluation of epidemiological data as it pertained to the genetic changes in a population. I am a full member of the Society of Toxicology, where I am vice-president of the Ethical, Legal, Forensics, and Societal Issues Leadership section. I am also a peer reviewer for three scientific journals: *Toxicology InVitro*, *Journal of Molecular Biomarkers & Diagnosis*, and *Pharmaceutical Sciences*. I am also a member of the editorial board for *Toxicology: Current Research*. I have authored and co-authored many scientific publications and

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<sup>1</sup> Witt, B.L. (August 6, 20201) Re: BMZ 2021---161, 4903-05 York Road, OPPOSITION to proposed human crematorium. Community Law Center.

have presented my research at national and international scientific meetings. My work has included investigating origins and human exposures to toxins and toxicants as well as assessing the causal relationships between disease and exposure based upon the dose-response relationship and the known toxicological properties of the materials involved. I have completed over 220 environmental microbiology investigations using environmental data of populations, as well as individuals, and written as many reports. I spent 4 1/2 years as a senior toxicologist at the Texas Commission on Environmental Quality (TCEQ). While there, I authored greater than 150 documents that incorporated real-time and air modeling data as it may impact public health. I am routinely asked to interpret and evaluate the results of environmental and occupational exposures, particularly with respect to a substance's potential or causal relationship to toxicological impact on living organisms. As the Director of Toxicology and Food Safety, I have led teams of scientists, including epidemiologists, immunologists, physicians, and toxicologists. As part of my position, I routinely complete technical reviews of expert reports, including those covering the preceding fields of study. My academic training, master's degree, doctoral degree, work experience in microbiology and environmental toxicology, professional affiliations, and publications qualify me as an expert in toxicology with reference to sampling, interpreting data and other relevant case materials, and offering opinions as to physiological and biochemical endpoints, as outlined in the Reference Manual for Scientific Evidence published by the Federal Judicial Center (Federal Judicial Center 2011). Appended for your information is a copy of my Curriculum Vitae.

I offer the following Thought Summary to a reasonable degree of scientific certainty in my fields of expertise, including toxicology, risk assessment, and related fields.

## **Supplemental Thought Summary – Response to Memorandum**

### **Kinslow Response to Pg. 1-2; I. (A)**

The proposed level of emissions and their modeled impacts to the community have been determined by the Maryland Department of Environment (MDE) to be below the screening levels, thus acceptable, and will not provide an unreasonable danger to human health.<sup>2</sup>

Importantly, MDE analyzes each facility individually and uses screening values that are "based on taking a safe worker exposure level and dividing it by 100 to protect against multiple sources and more sensitive individuals. For carcinogenic effects, a unit risk factor from EPA is usually used that would ensure that the maximum exposed individual would not have an increased cancer risk of 1 in 100,000."<sup>3</sup> The level for worker safety is developed by the National Institute for Occupational Safety and health and have been

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<sup>2</sup> MDE Air and Radiation Administration Application for a Permit to Construct, Docket #09-20.

<sup>3</sup> MDE air and radiation management administration, air quality permits program, guidance document: Maryland's toxic Air Pollutant (TAP) Regulations. 2016

derived using scientifically sound and critically reviewed methods.<sup>4</sup> These values are developed to consider exposure thresholds for healthy people working for 8 hours.<sup>5</sup> The MDE divides this value by 100 to be used in its screening values.

“A cancer risk level of 1-in-1 million implies that, if 1 million people are exposed to the same concentration of a pollutant continuously (24 hours per day) over 70 years (an assumed lifetime), one person would likely contract cancer from this exposure. This risk would be in addition to any cancer risk borne by a person not exposed to these air toxics.”<sup>6</sup>

**As such, these screening values are designed to consider multiple sources from existing businesses (such as restaurants) as well as protect the health of sensitive individuals that are present in the surrounding community, and the impacts that are below or meet these screening values will not uniquely, adversely impact the health of individuals in the surrounding community.**

#### **Kinslow Response to Pg. 2; I.(A)**

The memorandum states that “the proposed crematorium will emit 2.28 pounds per day of sulfur dioxide, 3.74 pounds per day of nitrogen oxides, 4.9 pounds per day of particulate matter, and 3.09 pounds per day of carbon monoxide.”

Upon review of the permit application, these estimates assume that the crematorium will be running 12 hours per day (hr/day) every day of the year.<sup>7</sup> Mr. Green has stated that the crematorium will not run daily and that they expect to run the crematorium on average approximately 4 hours/day on the days that they would use it.

Thus, the memorandum is misleading regarding the realistic amounts of daily emissions that will be produced. The memorandum also fails to note that the crematory will not be running every day.

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<sup>4</sup> <https://www.cdc.gov/niosh/npg/pgintrod.html>

<sup>5</sup> <https://www.cdc.gov/niosh/npg/pgintrod.html>

<sup>6</sup> <https://www.epa.gov/national-air-toxics-assessment/nata-frequent-questions#risk1>

<sup>7</sup> MDE Air and Radiation Administration Application for a Permit to Construct, Docket #09-20

A more realistic estimation of the amount (pounds per day (lb/day)) of emissions produced would be 1/3 of those stated in the memorandum:

Compound	12hr running in lb/day	4 hr running in lb/day (realistic)
SO2	2.28	0.76
NOx	3.7	1.2
PM	4.8	1.6
CO	3.12	1.04
Hydrocarb	0.312	0.104

**Table 1** - Comparable emissions in lb/day for a 12 and 4 hour running of the crematorium.

Relative Emissions

During the August 6, 2021, hearing, Dr. Kinslow made a comparison with the emissions of a Ford F150 truck and those of the crematorium. Upon review, those estimates were based on incorrect emissions data. Rimkus would like to clarify the comparison of emissions from the crematorium and that of other common emission sources.

The combustion products listed in the memorandum (sulfur dioxide, SO<sub>2</sub>; nitrogen oxides NO<sub>x</sub>; particulate matter, PM; carbon dioxide, CO, and Hydrocarbons) are emitted from any combustion sources, including industrial engines, cars, trucks, fireplaces, gas ovens, etc. There are constant levels of these compounds in the air, and they are ubiquitous. When compared to the rate (pounds per hour (lb/hr) stated in the permit application) of emissions from a common emission source, I found the following comparison:

Compound	Crematorium <sup>8</sup>	Industrial gasoline engine <sup>9,10</sup>
SO2	0.19 lb/hr	0.215 lb/hr (in SO <sub>x</sub> )
NOx	0.3115 lb/hr	4.73 lb/hr
PM	0.408 lb.hr	0.301 lb/hr (PM10)
CO	0.258 lb/hr	1.29 lb/hr

**Table 2** - Comparable rates of emissions.

<sup>8</sup> Taken directly from the permit application - MDE Air and Radiation Administration Application for a Permit to Construct, Docket #09-20

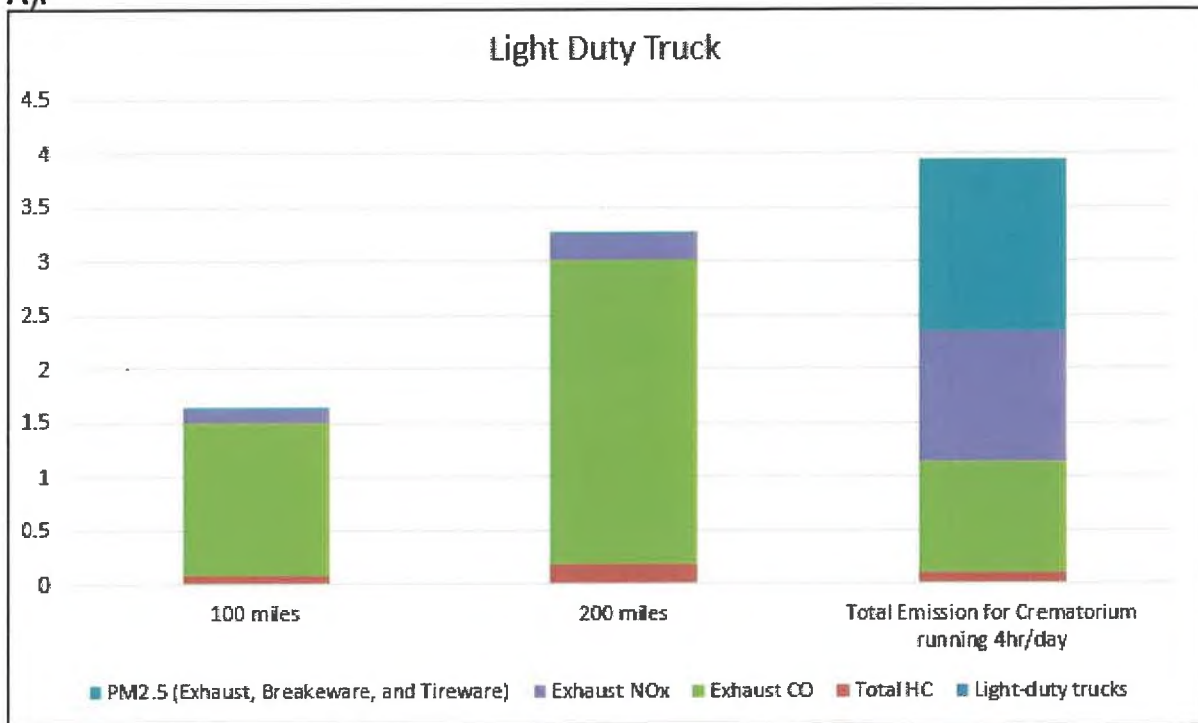
<sup>9</sup> <https://www3.epa.gov/ttnchie1/ap42/ch03/final/c03s03.pdf>

<sup>10</sup> Emission factors are based on those in Table 3.3-1. EMISSION FACTORS FOR UNCONTROLLED GASOLINE AND DIESEL INDUSTRIAL ENGINES, AP-42, Vol. I, 3.3: Gasoline and Diesel Industrial Engines



Thus, running a crematorium for about four hours is comparable to operating an industrial gasoline engine for one hour.

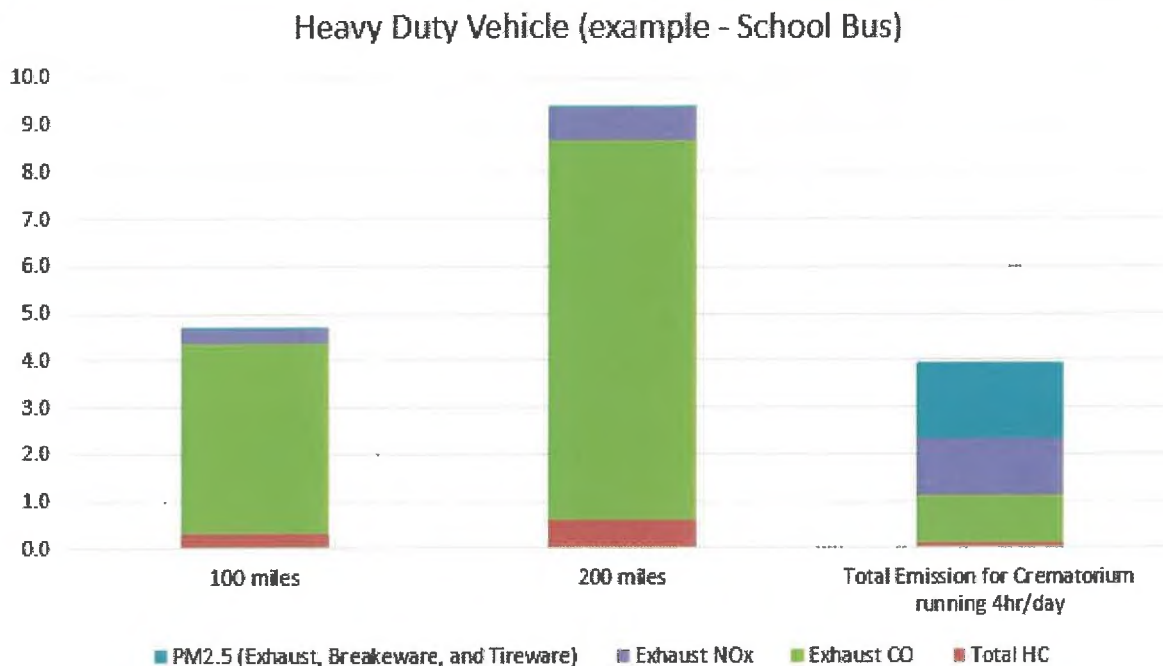
When compared to driving a light truck for 100 or 200 miles, CO and hydrocarbon emissions are about the same or lower for the crematorium, but the NOx and PM2.5 are higher.<sup>11</sup> **However, total emissions are very similar between driving a light truck (for example, a work truck) for 200 miles (~4 hours at an average speed of 50 miles per hour (mph) and running the crematorium for 4 hours. Figure 1, Attachment A).**



**Figure 1 - Relative emissions for a light-duty truck and the crematorium.**

When considering the total emissions for a heavy-duty vehicle (for example a school bus or a garbage truck), the total emissions for running the crematorium is much lower than driving a school bus for 100 miles (~2 hours at 50 mph).

<sup>11</sup> <https://www.bts.gov/content/estimated-national-average-vehicle-emissions-rates-vehicle-vehicle-type-using-gasoline-and-diesel>



**Figure 2** - Relative emissions for a heavy-duty vehicle (school bus) and the crematorium.

**Thus, comparing the crematorium emissions to the light-duty or heavy-duty truck (such as a school bus) emissions are about the same or lower on a per-use basis.**

For comparison's sake, according to the Office of Transportation, Baltimore County Public Schools operate 856 buses that travel 73,525 miles each day, putting out approximately  $(4.688 \text{ lb}/100 \text{ miles} * 735) = 3445 \text{ lb}$  of emissions/day.<sup>12</sup>

Thus, the emissions from the crematorium running for 4 hr/day is:

$(3.944/3445) = 0.001$  of the total emissions caused by only school buses that run each day in the county of Baltimore.

#### Health Effects and Meeting the Standards

All of the compounds listed in memorandum I. (A) are criteria pollutants that are emitted by any combustion source, including cars, trucks, gas ovens, furnaces, fireplaces, etc.<sup>13</sup> We are exposed to these all the time both indoors and outdoors. They are ubiquitous. Exposure to high levels of these compounds could increase a person's potential for an

<sup>12</sup>[http://bcpsbusinessservices.ss3.sharpschool.com/departments/business\\_services\\_operations/transportation](http://bcpsbusinessservices.ss3.sharpschool.com/departments/business_services_operations/transportation)

<sup>13</sup><https://www.epa.gov/criteria-air-pollutants>

adverse health event, but the US Environmental Protection Agency (USEPA) has set forth legally binding limits of these pollutants in the air under the Clean Air Act.<sup>14</sup>

These standards are developed by a team of dozens of scientists, including those at the USEPA as well as from industries who take part in reviewing hundreds of documents over several years, evaluating hazard, risk, and exposure. These documents include peer-reviewed scientific data from numerous areas of science, including epidemiology, toxicology, medicine, and many more. Scientifically valid methods that are described in the guidance documents that have been peer-reviewed and applied/updated over the years are then applied to derive a health-protective standard. The standard is set at a level such that the risk of adverse health effects would not be expected in no more than 1 out of 1 million people. The standard is published online by the USEPA at <https://www.epa.gov/criteria-air-pollutants>. By law, each standard is reviewed periodically to ensure that it represents the most up-to-date information and methods.

For example, the recently reviewed SO<sub>2</sub> standard took several years to develop the first version, then it took 10 years to update it.<sup>15</sup> The calculations used in these documents were established by scientists in and outside the USEPA and have gone through peer-review for the application of the derivation and method<sup>16</sup>.

#### USEPA Standards for These Pollutants are Protective of Sensitive Individuals

Both Primary and Secondary standards are developed. The "Primary standards provide public health protection, including protecting the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards provide public welfare protection, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings."<sup>17</sup>

#### The USEPA Constantly Monitors for These Pollutants

Furthermore, the USEPA and the MDE constantly monitor for these pollutants through an ambient air monitoring system. There are two air monitors in Baltimore City and four in the County of Baltimore.<sup>18</sup> Real-time data can be found on the USEPA Air Now website: <https://www.airnow.gov/?city=Baltimore&state=MD&country=USA>.

**The estimated emissions from the crematorium have been determined to be below these primary and secondary standards, and as such, are not expected to pose an excess health risk, even for sensitive individuals.**

<sup>14</sup> <https://www.epa.gov/criteria-air-pollutants>

<sup>15</sup> <https://www.epa.gov/so2-pollution/primary-national-ambient-air-quality-standard-naaqs-sulfur-dioxide#rule-summary>

<sup>16</sup> <https://www.epa.gov/so2-pollution/primary-national-ambient-air-quality-standard-naaqs-sulfur-dioxide#rule-summary>

<sup>17</sup> <https://www.epa.gov/criteria-air-pollutants/naaqs-table>

<sup>18</sup> <https://gispub.epa.gov/airnow/>

Page 3 of the Opposition Memorandum states that mercury emissions from cremated dental amalgams are a public health concern. Mr. Green stated that company policy will be to remove the dental fillings prior to cremation. Thus, this is misleading and not based on accurate information.

Furthermore, the Memorandum discusses “mercury” universally when there is a stark difference in the potential human toxicity of elemental mercury; that is, contained in dental fillings and would be emitted from the cremation of a body, and methylmercury, which is several times more toxic and will not be emitted from the crematorium.

Briefly, elemental mercury is the mercury that has been safely used in thermometers and dental fillings for decades.<sup>19</sup> Elemental mercury has relatively low toxicity, and exposure is only a concern when elemental mercury vapor is inhaled at very high levels. Crematoriums have not been associated in the scientific literature with the production of high concentrations of mercury vapor that would immediately impact the surrounding communities.

Methylmercury is formed when elemental mercury in the atmosphere is taken up by organisms, such as algae. The algae change the elemental mercury into methylmercury in a biochemical process. When small fish eat the algae, it bioaccumulates the methylmercury in the fish tissue. When bigger fish eat the smaller fish, it is, again, bioaccumulated and not eliminated. This results in a cascade of substantial methylmercury concentration in some of the larger fish that we may eat. According to the USEPA:

*“Exposure to methylmercury most commonly occurs when people eat kinds of fish and shellfish that have high levels of methylmercury in their tissues. Almost all people have at least small amounts of methylmercury in their bodies, reflecting the widespread presence of methylmercury in the environment.”<sup>20</sup>*

Therefore, there are dietary warnings set out by the US Food and Drug Administration (USFDA) regarding the amount of certain larger fish we should eat such as swordfish and shark, specifically for pregnant women, breastfeeding mothers, and young children.<sup>21</sup>

*“By following these 3 recommendations for selecting and eating fish or shellfish, women and young children will receive the benefits of eating fish and shellfish and be confident that they have reduced their exposure to the harmful effects of mercury.”*

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<sup>19</sup> <https://www.epa.gov/mercury/mercury-dental-amalgam>

<sup>20</sup> <https://www.epa.gov/mercury/health-effects-exposures-mercury#methyl>

<sup>21</sup> <https://www.fda.gov/food/metals-and-your-food/fdaepa-2004-advice-what-you-need-know-about-mercury-fish-and-shellfish>

*1. Do not eat Shark, Swordfish, King Mackerel, or Tilefish because they contain high levels of mercury.*

*2. Eat up to 12 ounces (2 average meals) a week of a variety of fish and shellfish that are lower in mercury.*

*Five of the most commonly eaten fish that are low in mercury are shrimp, canned light tuna, salmon, pollock, and catfish.*

*Another commonly eaten fish, albacore ("white") tuna has more mercury than canned light tuna. So, when choosing your two meals of fish and shellfish, you may eat up to 6 ounces (one average meal) of albacore tuna per week.<sup>22</sup>*

The Memorandums statement that there are no safe limits of mercury exposure is not correct and misleading. As stated above by the USEPA, "Almost all people have at least small amounts of methylmercury in their bodies, reflecting the widespread presence of methylmercury in the environment". The USEPA has elemental and methylmercury exposure thresholds of  $3 \times 10^{-4}$  mg/m<sup>3</sup> and in the air for elemental and  $1 \times 10^{-4}$  mg/kg oral exposure for methylmercury.<sup>23</sup>

**The Memorandums categorization of mercury from the crematorium as directly harmful to the surrounding community ignores the fact that the dental fillings will be removed, is not supported by the scientific evidence, misrepresents the known, primary pathway of mercury toxicity, and is misleading to the readers of the memorandum.**

#### **Kinslow Response to Pg. 4 I.(C)(1)**

As discussed above, there is no evidence that the addition of the crematorium would harm public health, welfare, or the quality of life of the surrounding community. The Memorandum does not provide solid scientific evidence that emissions from the crematorium will harm community health in any way.

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<sup>22</sup><https://www.fda.gov/food/metals-and-your-food/fdaepa-2004-advice-what-you-need-know-about-mercury-fish-and-shellfish>

<sup>23</sup> [https://cfpub.epa.gov/ncea/iris2/chemicalLanding.cfm?substance\\_nmbr=370](https://cfpub.epa.gov/ncea/iris2/chemicalLanding.cfm?substance_nmbr=370)

### **Kinslow Response to Pg. 5 I, (C)(2)**

The Memorandum suggests that the crematorium will violate the Baltimore City Sustainability Plan (Plan) with regard to the Climate and Resilience: Clean Air section (pg 89-91 of the Plan).

The section points to ozone and particulate matter as important ambient air issues in the city, and they point to tighter controls on large emission sources such as power generators and exposure to constant vehicle emissions as contributing to periods of poor air quality.

The crematorium will not be a major source of air pollution in the city and, by falling well below the emissions limits, will not adversely impact the surrounding community.

The authors of the Plan point to indoor air quality as a factor for asthma disparity, supporting the findings in the Abell study (2021).<sup>24</sup> They also associate areas with the highest asthma prevalence as those exposed to air pollution coming from proximity to busy roadway emissions.

Busy roadways are a constant, 24-hour/7-day-a-week contribution to compounds into the atmosphere. Conversely, the proposed crematorium will only run 1/6 of a day and not every day. Thus, this is not a relative comparison.

This section also points to these concerns being an issue in “air quality hot spots”, which are Curtis Bay and Brooklyn, located in South Baltimore. These areas of the county are home to heavy industrial areas, the Port of Baltimore, and coal-fired power plants.

The Vaughn Green crematorium will be located 9 miles north of these neighborhoods and not in an industrial area or adjacent to these heavy pollution sources.

### **Furthermore, Vaughn Green’s implementation of the crematorium is in line with the actions that are recommended to increase air quality as proposed in the Plan:**

Strategy 1. Action 1 – “Encourage state of the art pollution controls”. The unit that Mr. Green will be using is a state-of-the-art unit that is very efficient and where there will be alarms set to manage/mitigate smoke production. The permit application indicates that the emissions are well below any requirement for other pollution controls and represent a minor pollution source. The crematorium is not the same as a major source, such as a power generating plant.

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<sup>24</sup> LaFave, S (2020). The unequal burden of pediatric asthma: a call for equity-driven, multimodal, public health approach to asthma in Baltimore. Abell Foundation, Volume 33, Number 7

Actions 2 and 4 – “Work with federal, state, and regional agencies to reduce toxic air emissions from transportation, especially reducing pollution from freight vehicles.” “Enact and enforce strong anti-idling regulations for commercial cars, buses, and trucks.” The ability to use the crematorium on site will reduce the vehicle emissions caused by transporting the body, and the family members, to another facility for cremation across the city.

Action 3 – This action relates to reducing diesel emissions from the Port of Baltimore, and the crematorium is powered by natural gas; thus, the crematorium is consistent with this action item.

Strategy 2 – These actions relate to monitoring and reporting air quality and do not relate to Vaughn Green’s normal operations.

Strategy 3 – These actions relate to improvement in individual indoor air quality, which is outside of Vaughn Green’s control or responsibility.

#### **Kinslow Response to Pg. 6 I.(F)(1and2)**

As discussed above, the impacts are below the MDE screening values.

Furthermore, the emissions point is 40 feet from the surface of the ground. Thus, these emissions, which have been determined safe for the community, will be diluted even further once they are in the ambient air, rising due to the heat associated with the cremation. Further dilution will occur as wind moves and dilutes the emissions. Notably, these emissions will be emitted above the rooftops and not at ground level.<sup>25</sup> This is compared with vehicle emissions that are released at ground level, with closer proximity to the human breathing zone, specifically for children.

There is no evidence to support the statement that the crematorium will adversely impact the health of people in the locations discussed in this section.

#### **Kinslow Response to Pg. 7 II (A)**

There is no scientific evidence that supports the idea that that the presence of Vaughn Green’s proposed crematorium creates a new “significant air pollution” source in the surrounding community.

#### **Kinslow Response to Pg. 7 II (B)**

The authors use the CDC PLACES database to support their statement that the location surrounding the Vaughn Green funeral home is “particular” in that it has “people with existing significant health outcomes”.

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<sup>25</sup> MDE Air and Radiation Administration Application for a Permit to Construct, Docket #09-20

Importantly, the output from this database is based on modeled data and does not count people who actually have a particular disease or illness in that area:

“PLACES provides model-based population-level analysis and community estimates to all counties, places (incorporated and census designated places), census tracts, and ZIP Code Tabulation Areas”.

The Memorandum provides a screenshot from the CDC PLACES database for Adult Asthma prevalence by census district (Exhibit 2, of the memo).

Per the Abell study, there is a disparity in asthma prevalence in Baltimore City, relative to the rest of Maryland, the Vaughn Green funeral home. According to this study, a key factor in this disparity is due to indoor allergens (such as tobacco smoke) and not outdoor air quality. Crematoriums have not been identified as a factor in the literature that would increase the overall community asthma rate. The emissions from the crematorium do not exceed screening values that are protective of these sensitive groups.

Exhibit 3 of the memo is used to suggest that this area has a relatively higher incidence of Chronic Obstructive Pulmonary Disease (COPD). According to the American Thoracic Society, COPD is a complex disease and can be caused by tobacco smoke as well as occupational exposures to high concentrations of dust, chemicals, and indoor and outdoor air pollution such as wood smoke and biomass fuels. Some people get COPD without any exposure to these things as well, so genetics is thought to play a significant part in the disease.<sup>26</sup>

As demonstrated by the emissions calculations and supported by the regulatory acceptance of these calculations, the Vaughn Green crematorium is not a source of high emissions. As such, these emissions are not predicted to cause COPD in the community.

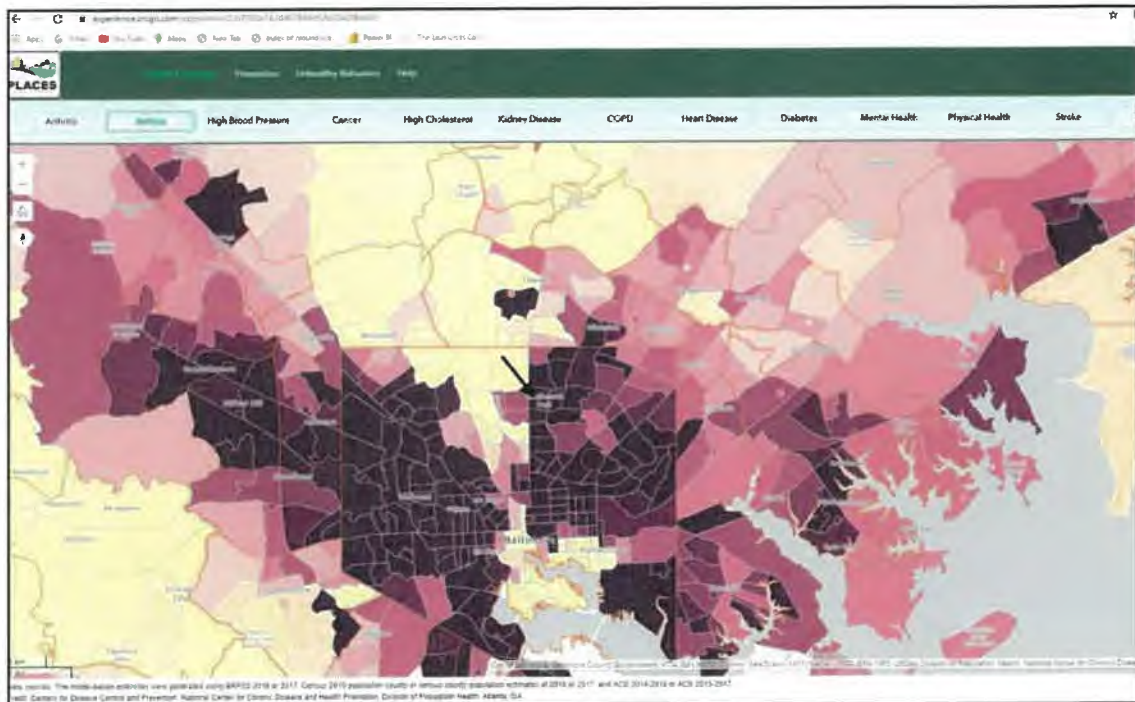
Similarly, Heart disease is not expected to be caused by the emissions produced by Vaughn Green (Exhibit 4).

Upon review of the images provided as evidence in Exhibits 2 through 4, the images provided are close-up views of the area and suggest that this community is unique in Baltimore. However, when one produces images of the entire Baltimore area using this same website (PLACES), one can see that there are other communities in the surrounding area and throughout the state that have similar or worse results predicted. This suggests that there are more widespread or global issues regarding adverse health outcomes that are influencing these communities across the state and is not a unique result for the community surrounding the Vaughn Green funeral home.

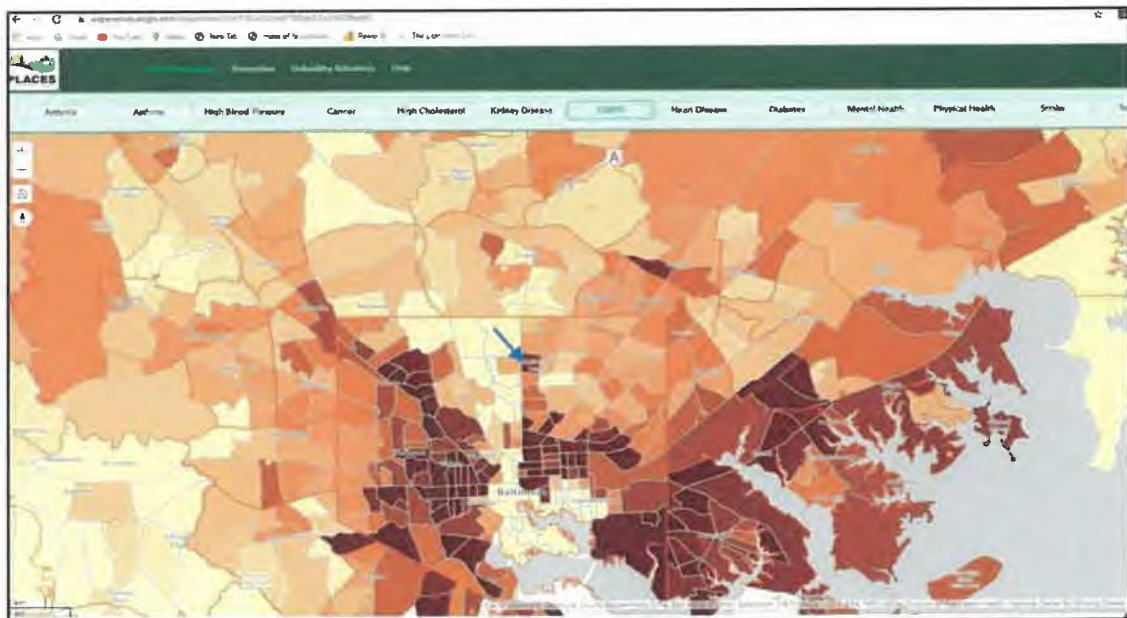
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<sup>26</sup> <https://www.thoracic.org/patients/patient-resources/resources/copd-intro.pdf>

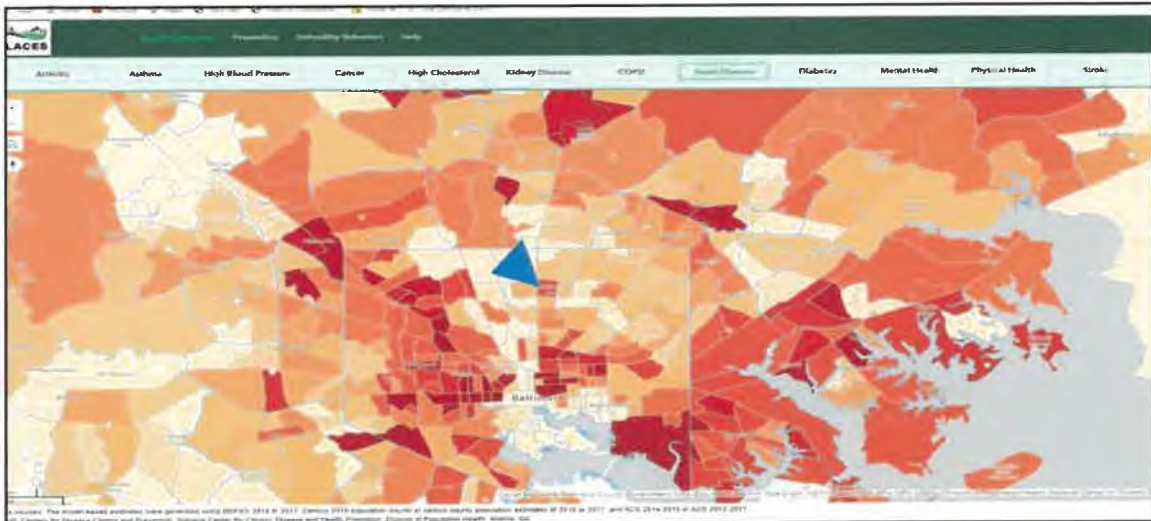




**Figure 3** - PLACES data for Asthma prevalence in the Baltimore area (arrow= approximate location of Vaughn Green Funeral Home).



**Figure 4** - PLACES data for COPD prevalence in the Baltimore area (blue arrow= approximate location of the Vaughn Green Funeral Home).



**Figure 5** - PLACES data for Heart Disease prevalence in the Baltimore area (blue arrow= approximate location of Vaughn Green Funeral Home).

This report was prepared for the exclusive use of Wright, Constable & Skeen, L.L.P. and was not intended for any other purpose. Our report was based on the information available to us at this time. Should additional information become available, we reserve the right to determine the impact, if any, the new information may have on our opinions and conclusions and to revise our opinions and conclusions if necessary and warranted.

Thank you for allowing us to provide this service. If you have any questions or need additional assistance, please call.

Sincerely,  
Rimkus Consulting Group, Inc.

**Carla Kinslow**  
Digitally signed by: Carla Kinslow  
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Carla J. Kinslow, Ph.D.  
Director Toxicology and Food Safety

Attachments: Relative Emissions Estimates, Curriculum Vitae

## Relative Emissions Estimates

2018	Total emissions lb/mile*	in	100 miles	200 miles (4 hr at 50 mi/hr)	Crematorium running 4hr/day in lb/day#
<b>Light-duty trucks</b>					
Total HC	0.0009		0.0920	0.1839	0.1040
Exhaust CO	0.0142		1.4186	2.8371	1.0400
Exhaust NOx	0.0012		0.1173	0.2345	1.2000
PM2.5 (Exhaust, Breakware, and Tireware)	0.0000		0.0022	0.0044	1.6000
<b>Total emissions</b>			<b>1.6300</b>	<b>3.2600</b>	<b>3.9440</b>
<b>Heavy-duty vehicles (school bus or garbage truck)</b>					
Total HC	0.0030		0.3025	0.6050	0.1040
Exhaust CO	0.0405		4.0495	8.0991	1.0400
Exhaust NOx	0.0033		0.3278	0.6556	1.2000
PM2.5 (Exhaust, Breakware, and Tireware)	0.0001		0.0081	0.0163	1.6000
<b>Total emissions</b>			<b>4.6880</b>	<b>9.3760</b>	<b>3.9440</b>
* 1 gram =0.0022 lb; #SO2 values were not provided for vehicles					

August 20, 2021  
Rimkus Matter No. 100058997

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## **Curriculum Vitae**



## Carla J. Kinslow, Ph.D.

Director, Toxicology and Food Safety Practice

### Background

Dr. Kinslow holds a doctorate in Biomedical Sciences, Cell Biology/Molecular Toxicology with over 31 years of biomedical, regulatory, and environmental experience.

She has expertise in inhalation and oral toxicology; derivation of regulatory screening values for oral and inhalation exposure, toxicogenomics; toxicological risk assessment and communication of such risk to diverse stakeholders; human health impacts analysis from emission events; air, soil, and water monitoring data; modeling data related to ambient air and drinking water quality; water contamination from oil and gas operations; and stakeholder communication.

She specializes in risk-based evaluation of air, soil, and groundwater toxicology under the USEPA, as well as state and federal guidelines. She has served as manager for various regulatory projects where she helped design and implement air monitoring networks, groundwater monitoring projects, and remediation scopes, with subsequent assessment and communication of such human health impacts based on collected data. She has extensive experience in the evaluation of drug and alcohol impairment and "DRAM" shop cases.

Dr. Kinslow also has extensive experience in the evaluation of pesticide/herbicide overspray cases as well as health risks based on genetic predisposition to disease from environmental, occupational, and pharmaceutical exposures. Notably, Dr. Kinslow is also an environmental microbiologist and regularly conducts indoor air quality mold investigations and beer contamination evaluations.

### Contact Information

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## Professional Engagements

### • Water

- Remediation Support – Drafted several Affected Property Assessment Reports (APARs) for submission to the Texas Commission on Environmental Quality (TCEQ), conducted fieldwork for soil and ground water sampling, and water well surveys.
- Drinking Water – Evaluation of monitoring data with regard to human impacts from chromium in public drinking water systems.

### • Risk Communication

- MTBE Ground Water Contamination – Texas, Community engagement about groundwater contamination as well as accidental releases from chemical plants.
- Hazard Assessments – Texas, Served as a regulatory and community liaison, which included a presentation to the La Porte, TX community regarding odor toxicology after a fatal release of methyl mercaptan.
- Hazard evaluation and toxicological impacts assessment of data gathered around oil and natural gas drilling facilities.
- Water/Air/Odors Education – Houston, Beaumont, TX, Conducted over 20 presentations for Community Advisory Panels (CAPs) across the Houston ship channel and Beaumont areas. Topics covered – accidental release of benzene in water and air, odors, and long-term air monitoring data.

### • Inhalation

- Indoor Air Contaminants – Alternative causation evaluation for workers compensation cases involving respiratory issues attributed to indoor air contaminants.
- Ambient air and pollution exposure risk assessment based on modeling data and known regulatory guidelines.
- Fabric Guard Spray – Evaluation of human impacts from accidental inhalation exposure of hydrocarbons and fluorocarbons from fabric guard spray.
- Workers Compensation – Alternative causation evaluation for workers compensation cases involving respiratory issues attributed to indoor air contaminants.
- Asphyxiation from gasoline fumes.
- Due Diligence/M&A Vapor Intrusion – Completed vapor intrusion assessments of a multi-use property and evaluated potential impacts of contamination of groundwater for future development. Human and ecological risk associated with reclaimed water.
- Evaluation of human health impacts based on ambient air data as well as modeled data.
- Designed ambient air monitor placement criteria for the TCEQ.

### • Alcohol/Drug

- Drug impairment evaluations in driving and workers compensation - marijuana, cocaine, alcohol, and prescription drugs.
- Evaluation of blood alcohol concentration (BAC) as it relates to impairment, both in the presence of and absent of other drugs, including cocaine and marijuana.

- Determination of possible impairment from alcohol before entry, at the point of sale, and after leaving an establishment (i.e., “DRAM shop” projects).
- Evaluation of possible contribution of marijuana and THC to driving impairment.
- Contribution of prescription opiates in causing death to an individual.
- **Beer Contamination - Microbiology**
  - Brewery contamination and trace-back investigation for initial insurance as well as subrogation claims.
- **Environmental Microbiology**
  - Human and Animal Food Investigation - Source trace-back in salmonella and E.coli contamination cases – identifying the environmental source of contaminated food.
  - Mold investigations and alternative causations relative to health complaint.
- **Other**
  - Herbicide/Pesticide Overspray – Evaluation of possible pesticide and herbicidal overspray for wheat and potato fields.
  - Benzene/Asbestos – Evaluation of molecular mechanisms responsible for predisposition to cancer from low-level exposure to benzene and asbestos.
  - Evaluation of human toxicity related to caustic injury.
- **Oil/Gas/Manufacturing**
  - Toxicological Risk and Human Impacts Assessment – Evaluation of modeling impacts from air emissions, review of accidental, industrial emissions data, and evaluation of possible human health impacts from the ingestion of groundwater contaminants.
  - Barnett Shale – Dallas/Ft. Worth, TX, Developed and implemented air monitor location criteria for the TCEQ Barnett Shale air monitoring program.
  - Manufacturing Facilities – Toxicological assessment of impacts from odorous manufacturing facilities including refineries, oil and animal rendering facilities, and landfills.
- **Regulatory**
  - Derivation of state-approved, human-health regulatory screening values using TCEQ and US Environmental Protection Agency (EPA)-specific guidance. These included a new cobalt screening value for soil and groundwater, which resulted in the TCEQ changing their regulatory guidance for cobalt.
  - Tox21 Guidance – Drafted state of science reports for benzene and asbestos based on new Tox21 guidance for the weight of evidence approach to literature search and documentation.
  - Texas Refinery QRA – Conducted reviews of quantitative risk assessment (QRA) from a refinery and completed state-specific QRAs under the Texas remediation program.
  - Toxicological review of literature related to antibacterial chemicals used in hand soap, focused on enhancing a clients' document submittal to the FDA.

- Regulatory Compliance – Texas, Conducted reviews of current toxicological screening values (air, water, soil) and reviewed literature; prepared summaries of current benzene, toluene, ethylbenzene, and xylene (BTEX) and carbon monoxide (CO) National Ambient Air Quality Standards (NAAQS) data.
- **Tobacco**
  - Tobacco Products – Developed mode of action summaries for ten tobacco products.
  - Industrial Hygiene – Conducted due diligence auditing for biomedical laboratories for mergers and acquisitions.

## Professional Experience

- **Rimkus Consulting Group, Inc.** **2016 – Present**
  - Director, Toxicology and Food Safety Practice  
Responsible for division oversight and technical support to the staff. Duties include the evaluation of human health impacts from drugs, chemical exposure in the environment or workplace, and brewery/beer contamination, as well as providing litigation, scientific liaison, or environmental regulatory toxicological support. Areas of expertise include inhalation toxicology, marijuana, remediation, pesticide/herbicide overspray, environmental microbiology, human health-based risk assessment, toxic mold, lung cancer, vapor intrusion, and odor issues.
- **Ramboll Environ, Inc.** **2013 – 2015**
  - Manager/Toxicologist – Health Science Division  
Responsible for providing senior toxicological support to the division. Duties included the evaluation of human health impacts from environmental chemical and pharmaceutical exposure, as well as litigation, scientific liaison, environmental regulatory toxicological support. Areas of expertise included inhalation toxicology, soil and water remediation assessment, risk assessment, toxic mold, lung cancer, vapor intrusion, and odor issues. Served as scientific liaison during public stakeholder meetings as well as conducted risk communication presentations to communities in the Houston area.
- **Brown and Caldwell** **2012 – 2013**
  - Senior Scientist/Toxicologist  
Responsible for providing senior technical and regulatory support for the company. Duties included the evaluation of human health impacts from environmental and pharmaceutical exposure, as well as litigation, scientific liaison, environmental regulatory toxicological support. Provided hazard and human health risk assessment, remediation, and compliance assistance for the company. Regulatory compliance included air permit impacts evaluation, evaluation of groundwater and soil data for human and ecological risk, document preparation according to TRRP (Texas) and NJDEP (New Jersey) regulatory requirements. Project management included managing unit closure and RCRA permitting projects.



- **TCEQ** **2008 – 2012**
  - Senior Toxicologist  
Responsible for providing senior toxicological support and guidance to other staff, specific to the TCEQ. Served as primary toxicologist for the Houston region and conducted numerous stakeholder presentations regarding environmental issues and activities of the TCEQ. Development of human health-protective inhalation values for use in regulatory compliance and permitting. Duties included deriving state-approved, human-health regulatory screening values using TCEQ and EPA-specific guidance, evaluating and designing toxicological studies that were implemented by the TCEQ. Additional responsibilities included acting as a liaison between the TCEQ and chemical trade groups, providing hazard evaluation and toxicological impacts assessment of data gathered around oil and natural gas drilling facilities, developing annual impacts assessment reports, reviewing air permits, and evaluating Qualitative Structure-Activity Relationships (QSAR) for toxicological endpoints. Served as mercury TMDL expert for the toxicology division during Texas government 2009 session.
  
- **Proctor and Gamble** **2006**
  - Intern  
Developed molecular assays to detect endocrine-disrupting chemicals in human prostate cells.
  
- **University of Texas Medical Branch** **2003 – 2008**
  - National Institute of Environmental Health Sciences (NIEHS) Pre-doctoral Fellow  
Doctoral studies related to molecular (inheritable) toxicological factors contributing to a predisposition for lung cancer in tobacco smokers. This included utilizing microbial cultures to manipulate genomes.
  
- **The Pronet Group, Inc.** **2001 – 2002**
  - Indoor Air Quality (IAQ) Consultant – Mold investigator  
Performed IAQ investigations in residential and commercial buildings, the majority of which were related to water intrusion and mold contamination. Conducted over 200 environmental investigations, collected over 1,000 surface and air samples for microbial contamination. Wrote and signed off on each investigative report and its respective scope of remediation. Provided litigation support.
  
- **Kinslow Consulting/National Loss Consultants** **1999 – 2001**
  - Indoor Air Quality Consultant  
Performed IAQ investigations in residential and commercial buildings, the majority of which were related to water intrusion and microbial contamination. Drafted the remediation scope(s) and completed follow-up clearance evaluations for these properties. Provided litigation support.

- **MD Anderson Cancer Center** **1999 – 2000**
  - Research Assistant II  
Performed molecular biology assays related to maintaining the viral vector core facility. This included using virus particles to infect bacterial cultures in order to package recombinant genomes.
  
- **Valentis, Inc.** **1998 – 1999**
  - Research Assistant/Scientist  
Performed molecular biology assays and plasmid construct designed for cancer gene therapy research. This included utilizing microbial cultures to manipulate human genes and genomes.
  
- **Michigan Technological University** **1993 – 1998**
  - Naval Research Fellow and Research Assistant – Phycology (Algae)  
Molecular biology of marine diatoms. Studied various marine and freshwater algae and bacteria, including their development and persistence in biofilms located on man-made objects. Developed novel culture methods as well as specific methods to study the genomes of algae in biofilms. Taught 100 and 200 level college laboratory classes in microbiology, botany, and phycology (algae).
  
- **Indiana University Southeast** **1989 – 1993**
  - Research and Laboratory Assistant/Full-Time Researcher  
Lead the laboratory and research assistants for the biology department; taught 100, 200, and 300 laboratories in botany, microbiology, molecular biology, and cell biology. Conducted research in water quality, microbial molecular biology, and botany.
  - Research Assistant  
Designed and taught several microbiology, molecular biology, and botany labs to college and graduate students. Supervised and taught several microbiology, molecular biology, and botany labs to college students.

## Education

- **Biomedical Sciences, Cell Biology/Molecular Toxicology, Ph.D.:** University of Texas Medical Branch (2008)
- **Molecular Phycology/Marine Ecology, M.S.:** Michigan Technological University (1997)
- **Biology, B.A.:** Indiana University Southeast (1992)
- **Memberships:** Society of Toxicology, Full Member; American Society of Microbiology, Premium Member; Regular Member, Society of Toxicology of Canada; University of Texas Medical Branch Alumni Committee, Member

## Continuing Education

- **OSHA:** OSHA refresher, TWIC card, 8 hrs. (2012, 2013, 2014, 2015); 40 hr. OSHA Training (2011)
- **TCEQ:** Expert witness training (2011); EPA Vapor Intrusion Training (2010)
- **Other:** Quantitative Structure Activity Relationships (QSAR) (2008-2012); Communications (2011); Management training (2011); TERA training – Child susceptibility in risk assessment seminar (2009); International REACH training (2009); Advanced Air Permitting (2008)

## Publications

- **“Regulatory regions responsive to oxidative stress in the promoter of the human DNA glycosylase gene NEIL2.”** *Mutagenesis*, 2010, Mar; 25(2):171-7
- **“Genetic determinant of NEIL2 transcription.”** Ph.D. Dissertation
- **“Single nucleotide polymorphisms 5' upstream the coding region of the NEIL2 gene influence gene transcription levels and alter levels of genetic damage.”** *Genes Chromosomes Cancer*, 2008 Nov;47(11):923-32
- **“The L84F polymorphism in the O6-Methylguanine-DNA-Methyltransferase (MGMT) gene is associated with increased hypoxanthine phosphoribosyltransferase (HPRT) mutant frequency in lymphocytes of tobacco smokers.”** *Pharmacogenet. Genomics*, 2007 Sep;17(9):743-53
- **“The L84F and the I143V polymorphisms in the O6-methylguanine-DNA-methyltransferase (MGMT) gene increase human sensitivity to the genotoxic effects of the tobacco-specific nitrosamine carcinogen NNK.”** *Pharmacogenet Genomics*, 2005 Aug. 15(8):571-8
- **“Molecular Biology of the marine diatom *Achnanthes longipes*.”** Master’s thesis, 1997

## Presentations

- **“What’s Brewing in Your insurance claim.”** (in production) National Webinar, Beer contamination investigations, 2019
- **“Toxicology for Drug and Alcohol Cases and Issues of Impairment.”** National Webinar, Broadcast to 700 attendees representing the insurance and legal industries, Jan. 23, 2019
- **“What the Hex is Cr6?”** Evaluation of the toxicity screening values for hexavalent chromium (Cr6) across the U.S., EECHMA, Orlando, FL, 2018
- **“PFAS: Evolution from Emerging Contaminant to Frequent Headliner.”** Environmental Risk & Litigation Conference New York, NY 2018
- **“Forensic Toxicology for Drug and Alcohol Cases and Issues of Impairment.”** Continuing Education (CE) presentation for various clients. February 8, 2018, Houston, TX.
- **“Cerium oxide nanoparticle (nCe) use as a diesel fuel additive and the possible health impacts from its wide application in diesel fuel.”** AEHS Foundation: 27th Annual International Conference on Soil, Water, Energy, and Air, March 20-23, 2017, San Diego, CA.

- **“Cerium oxide nanoparticle (nCe) use as a diesel fuel additive.”** The Air and Water Management Association, Austin Chapter, Austin, TX, 2017
- **“Evaluating the Broadening Use of Prescription Marijuana Related to Workers' Compensation Claims.”** 2017 CLM Conference on Retail, Restaurant & Hospitality Conference (whitepaper), Gaylord, TX
- **“Evaluating the Broadening Use of Prescription Marijuana Related to Workers' Compensation Claims.”** CLM Conference on Retail, Restaurant & Hospitality Conference (white paper) 2017. **“Marijuana: determining impairment and its impact in the insurance industry.”** Webinar broadcast to ~500 listeners, 2017
- **“Marijuana and driving with medical marijuana.”** Willis Watson, Addison, TX, 2016
- **“Marijuana and Driving; Can a blood test really determine impairment?”** GEICO Insurance Company, Katy, TX, 2016
- **“Marijuana and Driving; Can a blood test really determine impairment?”** *DRI For the Defense* (whitepaper), 2016
- **“Evaluation of Benzene Fence line Monitoring Program in USEPA's Proposed Refinery Sector Rule.”** AWMA Hot Air Topics Annual Conference, Houston, TX, 2015
- **“Tools for successful stakeholder communications around hydraulic fracturing facilities.”** Gulf Coast AWMA conference, New Orleans, LA, 2015
- **“Health-based screening values for methyl mercaptan.”** La Porte, Texas Community Advisory Panel (presentation), La Porte, TX, 2015
- **“Toxicogenomics in Toxic Tort - Environmental and Occupational Exposure.”** HarrisMartin Law Symposium, Charleston, SC, 2014
- **“Hydraulic Fracturing – Tools for successful stakeholder engagement.”** Society of Petroleum Engineers Annual Meeting on Health and the Environment, Long Beach, CA, 2014
- **“Tools for successful stakeholder communications around hydraulic fracturing facilities.”** International Conference for the Society of Petroleum Engineers (whitepaper), 2014
- **“Hydraulic Fracturing – Tools for successful stakeholder engagement.”** Texas Association of Environmental Professionals Annual Meeting, Houston, TX, 2013
- 2013 Panelist, 2013 Annual Presidential Career Symposium, Houston, TX
- **“Consulting as a Toxicologist.”** University of Texas Medical Branch, Panelist and presentation, Galveston, TX, 2013
- **“Regulatory Toxicology.”** University of Texas Medical Branch, Galveston, TX, 2012
- **“Toxicology at TECQ.”** A series of presentations to various community groups in Houston/Galveston, TX area, 2012
- **“Acrylonitrile Development Support Document.”** TCEQ, 2012
- **“Developing Effects Screening Levels and Air Monitoring Comparison Values at the TCEQ and Trends in Texas Air Quality.”** Texas Association of Environmental Professionals annual meeting, Houston, TX, 2011

- **“Trends in Texas Air Quality: Atmospheric Chemistry and Air Quality in Texas: Challenges and Opportunities.”** Texas A&M University, College Station, TX, 2010
- **“Challenges in personalized medicine: Warfarin.”** Preventive medicine and community health seminar series, Galveston, TX, 2008
- **“Genetic determinants of NEIL2 transcription.”** The NIEHS Center in Environmental Toxicology Environmental Health Sciences Seminar Series, Galveston, TX, 2007
- **“Newly discovered promoter SNPs in the DNA repair gene, NEIL2, modulate gene expression.”** Preventive medicine and community health seminar series, Galveston, TX, 2007
- **“Advancing Toward In Vitro Toxicity Models - Evaluation of gene expression changes induced by androgen exposure in the human-derived CW22Rv1 cell line.”** Gulf Coast Society of Toxicology, Waco, TX, 2006
- **“A pharmacogenetic approach to anticoagulation treatment: the role of microsomal epoxide hydrolase.”** The Society of Toxicology annual meeting, San Diego, CA, 2006
- **“A pharmacogenomic approach to anticoagulation treatment.”** Gulf Coast Society of Toxicology, Austin, TX, 2005



Rimkus Consulting Group, Inc.  
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Telephone: (713) 621-3550  
Certificate of Authorization No. F-1545  
Certification Expiration Date September 30, 2022

September 15, 2021

Mr. Neil Lanzi  
Wright, Constable & Skeen, L.L.P.  
102 West Pennsylvania Avenue, Suite 406  
Towson, MD 21204

Re: Rimkus Matter No: 100058997  
**Subject: Second Supplemental Report of Findings**

Dear Mr. Lanzi:

Rimkus Consulting Group, Inc. was retained to review information related to environmental toxicology that was provided during the August 24, 2021, Baltimore City Board of Municipal and Zoning Appeals Hearing. Specifically, Dr. Kinslow was asked to provide further thoughts regarding the comments provided by the opposition to the proposed crematorium at the Vaughn Green Funeral Home (Vaughn Green) located at 4905 York Road in Baltimore, Maryland.

### **Supplemental Thoughts, Continued**

The overarching question that the Board is being asked to consider is if the crematorium air emissions will put the surrounding community in unreasonable danger.

The answer is that all the air emissions modeling data indicate that the proposed crematorium will be well below the state and federal allowable limits; thus, will not result in ambient air concentrations that will adversely impact the health of the surrounding community. In being compliant with the primary National Ambient Air Quality Standards (NAAQS) as well as those set by the Maryland Department of Environment (MDE), the public health is protected, including the health of sensitive populations.<sup>1</sup>

These air quality standards mitigate disease risk by mitigating exposure. The lower the exposure or exposure potential, the lower the risk of disease. There are two ways that

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<sup>1</sup> <https://www.epa.gov/criteria-air-pollutants/naaqs-table>

these standards mitigate exposure: by limiting the amount a facility can emit (permit review) and by ensuring compliance through actions from the MDE such as air monitoring. These two actions work together to reduce air pollution. Thus, a reduction in overall air pollution is an indication that the standard is working to reduce exposure; thus, the potential burden of disease reduced.

State and national air data indicate that there has been a constant reduction in the particulate matter at 2.5 microns in diameter (PM2.5) at the Oldtown Fire Station monitor in Baltimore City before and since the current PM2.5 NAAQS has been implemented. National and international data indicates this same decreasing trend throughout Maryland, and the nation since the current NAAQS has been implemented in 2012. Furthermore, Oldtown Fire Station monitor, located in an area that arguably has more potential PM2.5 burden than that of York Road, has been below the United States, Canadian and World Health Organization (WHO) PM2.5 air standards and guidelines since 2018. Taken together, the permitting data, the monitoring data, the decades of science that have gone into the NAAQS, and the reported decrease in PM2.5 values well established in the scientific literature clearly indicate the current NAAQS is reducing exposure and PM2.5 burden. Thus, the standard is doing what it is designed to do--reducing exposure to PM2.5 and, as such, is protective of community health.

#### **Take Home Points:**

- a. This is a "minor" emission source and is not expected to put the community's health in unreasonable danger.<sup>2</sup> Other sources in this category in Maryland include BBQ restaurants, gas stations, and dry cleaners.<sup>3</sup>
- b. Vaughn Green has met or exceeded the state regulatory requirements regarding emissions for this piece of equipment. These account for multiple sources and consider sensitive groups.
- c. In addition, Vaughn Green has listened to the community and will remove dental amalgams to effectively eliminate community concern for mercury emissions from fillings.
- d. The observation that the annual PM2.5 values at the nearest ambient air monitor have exceeded the NAAQS standard for at least 10 years and have progressively dropped to values well below the NAAQS (12 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ )) throughout a time when numerous air permits were reviewed and implemented is an indication that the current NAAQS PM2.5

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<sup>2</sup> USEPA, FACT SHEET: New Source Review (NSR): <https://www.epa.gov/sites/default/files/2015-12/documents/nsrbasicsfactsheet103106.pdf>

<sup>3</sup>

<https://mde.maryland.gov/programs/Permits/AirManagementPermits/Pages/AirQualityGeneralPermit.aspx>

standard is working to reduce the particulate matter (PM) burden of the people of Baltimore City, thus protective of their health.

- e. Building of this crematorium will be in line with environmental goals set forth in the Baltimore City Sustainability Plan with regard to the Climate and Resilience: Clean Air section in that it will reduce car traffic, including idling, and it will use natural gas.

### **Addressing Opposition Comments and Presentation**

1. During the presentation on August 24, 2021, the opposition agreed that there is no scientific air data to support that there is any current health concern regarding PM<sub>2.5</sub> in the community located within the vicinity of Vaughn Green. We agree with this assessment.
2. The opposition agreed that the PM<sub>2.5</sub> monitor located in Oldtown at the Oldtown Fire Station, 1100 Hillen Street, is in compliance with the United States Environmental Protection Agency (USEPA) NAAQS for PM.<sup>4</sup> By design and intent, the USEPA places ambient air monitors in areas to support human health objectives and in locations with a high potential for gathering meaningful data about air quality.<sup>5</sup>
  - a. This monitor is located near several major PM<sub>2.5</sub> sources, including several major highways, the port, and near an industrial area of Baltimore City. As such, this monitor represents a significant PM<sub>2.5</sub> burden.<sup>6</sup> This is in contrast with the residential area where Vaughn Green is located. Even with being surrounding by these major and continual PM<sub>2.5</sub> sources, the PM<sub>2.5</sub> readings from this monitor have been in compliance and trending down with the NAAQS since at least 2011. The emissions from a minor PM source that is in compliance, such as the Vaughn Green crematory should not reverse this trend.
3. The opposition suggested that the traffic along York road is a reason why the permit should not be allowed. The traffic along this road decreased by ~6000 cars per day between 2010 and 2018, and it is on a downward trend;<sup>7</sup> same for the area roads surrounding Vaughn Green. Furthermore, the EPA (as the MDE is not in charge of changing mobile emission standards) has continued to implement stricter standards for car emissions, so the emissions from vehicles are becoming less and less.

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<https://epa.maps.arcgis.com/apps/webappviewer/index.html?id=5f239fd3e72f424f98ef3d5def547eb5&extent=-146.2334,13.1913,-46.3896,56.5319>

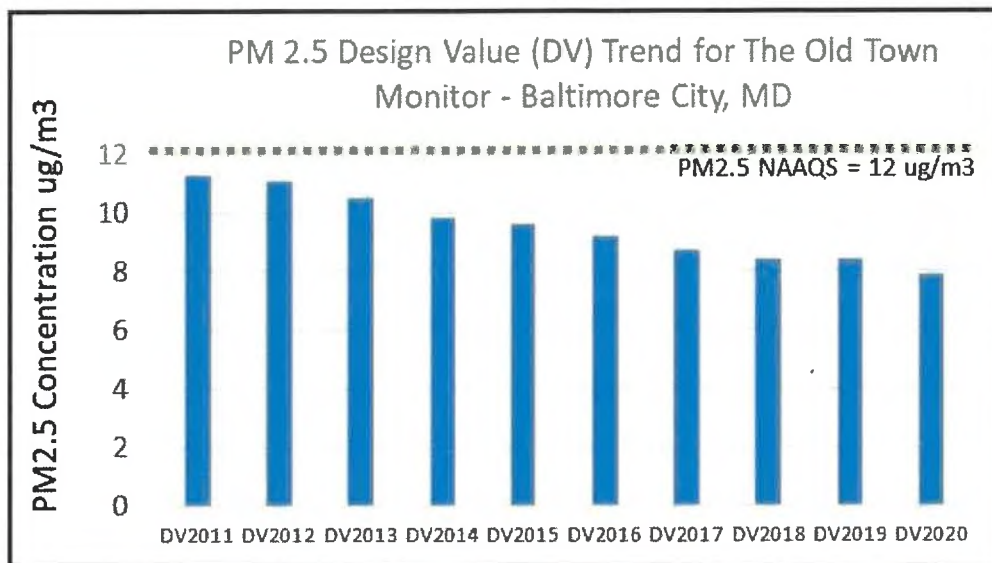
<sup>5</sup> <https://www.epa.gov/sites/default/files/2015-12/documents/nsrbasicsfactsheet103106.pdf>

<sup>6</sup> <https://www.epa.gov/air-trends/air-quality-design-values#map>

<sup>7</sup> <https://bmc.maps.arcgis.com/apps/opsdashboard/index.html#/ab9bdcdc10ed4a0ebb0e6606c7f696f1>



- a. The opposition provided calculations for emissions during idling yet did not provide the source for the rate of emissions. An older car/truck or a diesel truck/car will emit much more than a newer vehicle. Furthermore, the Oldtown Fire Station monitor is immediately adjacent to the emissions from the fire trucks as well as several roads that have as much or more road traffic load than that of York Road, yet the monitor is still in compliance..<sup>8,9</sup>
4. The opposition suggested the current PM<sub>2.5</sub> NAAQS is not protective of health. The Oldtown Fire station monitor has been gathering PM since at least 2011, and it has not had a design value (DV) that exceeded the 2012 NAAQS since then.<sup>10</sup> Yearly DV data has steadily dropped since 2011, from 11.3 µg/m<sup>3</sup> in 2011 to 7.9 µg/m<sup>3</sup> in 2020.<sup>11</sup> Trend data is seen in **Figure 1**, below:



**Figure 1** - PM<sub>2.5</sub> design values for the old town monitor – Baltimore City, Maryland.

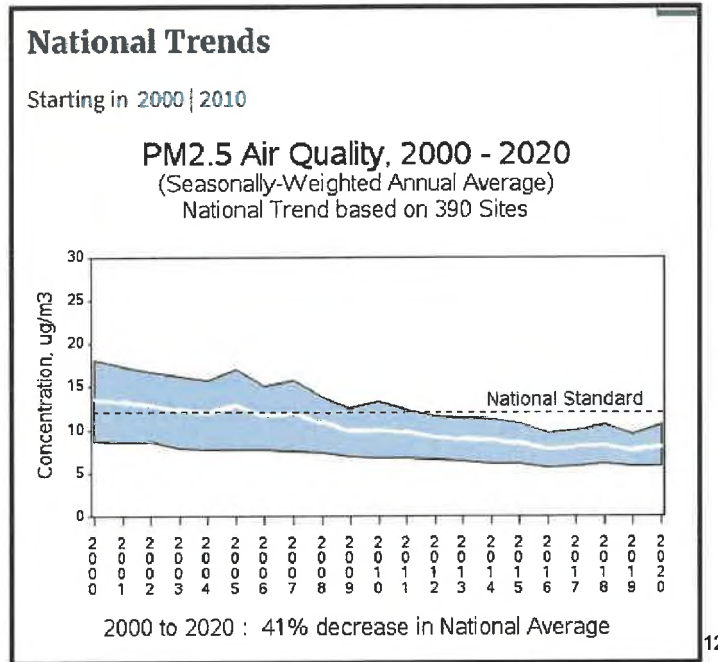
5. This downward trend is consistent nationwide as well, with a 41 percent (%) drop in the past 20 years to an average that is below the NAAQS:

<sup>8</sup> <https://bmc.maps.arcgis.com/apps/opstdashboard/index.html#/ab9bdcde10ed4a0ebb0e6606c7f696f1>

<sup>9</sup> The surrounding roads have between 12,800 and 25,700 cars traveling on it per day as of 2018. The opposition stated that York road had 19,734 cars/day.

<sup>10</sup> A design value is a statistic that describes the air quality status of a given location relative to the level of the National Ambient Air Quality Standards (NAAQS). Design values for PM<sub>2.5</sub> are numbers that are calculated from three years of data gathered at a particular monitoring site. If a design value is greater than the associated standard, the monitor is said to "fail the attainment test". The annual standard for PM<sub>2.5</sub> is 12.0 µg/m<sup>3</sup> and the twenty-four hour standard is 35 µg/m<sup>3</sup>

<sup>11</sup> <https://www.epa.gov/air-trends/air-quality-design-values#map>



**Figure 2 – National PM2.5 Trends**

6. ***The observation that the annual PM2.5 measurements have progressively dropped to values well below the NAAQS (12  $\mu\text{g}/\text{m}^3$ ) throughout a time when numerous air permits were reviewed and implemented is an indication that the NAAQS PM standard is working to reduce the PM burden of the people of Baltimore City and across the nation; thus, it is protective of their health through reducing exposure.***
  - a. Furthermore, the entire state of Maryland is in attainment for PM2.5, and one should not ignore that the current PM NAAQS was developed over decades, through proven methods and sound science.
7. The opposition referenced the 2017 State of the Global Air Report issued by the Health Effects Institute.<sup>13</sup> This report was updated in 2019, and the updated report indicates that the US has made the most striking reduction in the number of people living in areas with PM2.5 values above the more stringent World Health Organization (WHO) guideline of 10  $\mu\text{g}/\text{m}^3$ , from 50% in 1990 to 3% 2017.<sup>14</sup>
  - a. According to this report, the most striking change was from 2010 to 2017, where it dropped from 40% to 3%. *Thus, the largest change in measured PM2.5 in the*

<sup>12</sup> <https://www.epa.gov/air-trends/particulate-matter-pm25-trends>

<sup>13</sup> <https://www.stateofglobalair.org/about>

<sup>14</sup> [https://www.stateofglobalair.org/sites/default/files/soga\\_2019\\_report.pdf](https://www.stateofglobalair.org/sites/default/files/soga_2019_report.pdf)

*United States occurred during the time when permits were being implemented under the current PM2.5 NAAQS. This supports the current NAAQS is protective of the public and reduces the burden of potential disease caused by PM2.5.*

8. When comparing the US PM2.5 NAAQS to other standards, we see that the WHO guideline is 10 µg/m<sup>3</sup>, and The Canadian Ambient Air Quality Standard for PM2.5 is 8.8 µg/m<sup>3</sup><sup>15</sup>

- a. Notably, The Old Town fire station Monitor is currently reading 7.9 µg/m<sup>3</sup>.

*The Old Town Monitor, with relatively more potential major PM sources, is still below the more stringent WHO PM2.5 guideline and Canadian PM2.5 standard of 10 µg/m<sup>3</sup> and 8.8 µg/m<sup>3</sup>, respectively.*

9. The opposition suggests that the PM2.5 standard may be changed in the future. The EPA stated that the final re-review of the PM2.5 standard will be available in 2023 (2 years from today).<sup>16</sup> The Old Town Fire Station Monitor is in attainment with a current reading of 7.9 µg/m<sup>3</sup>. Thus, for it to be out of attainment, the NAAQS standard would have to be cut by over 25% and below the WHO guideline and the Canadian standard.

10. The Abell study is a non-peer-reviewed body of work supported by the Abell Foundation and published by the Abell Foundation. Dr. Kinslow's comments regarding this study during the August 10<sup>th</sup> hearing were clearly regarding the environmental triggers that this study points to regarding the disparity of asthma prevalence between Baltimore City and the rest of Maryland. There is a clear intent in the study to focus on understanding this disparity. None of their proposed "promising approaches" that they recommend in this study involve ambient air. Thus, her comments were and remain accurate.

- a. There may be the same constituents inside as outside, but there is a stark difference between exposure within the confines of a property and that of the ambient environment; specifically, the ample opportunity for dilution in the outside environment.

Taken together, the data supports that the NAAQS PM2.5 standard is doing what it is intended to do--protecting public health through the reduction of exposure to this hazard. The monitoring data indicates that the Baltimore City area has been compliant with NAAQS PM2.5 for over 10 years and does not indicate excessive values, even in an area where PM2.5 burden is relatively high. The crematorium is considered a minor

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<sup>15</sup> <https://ccme.ca/en/air-quality-report>

<sup>16</sup> <https://www.epa.gov/newsreleases/epa-reexamine-health-standards-harmful-soot-previous-administration-left-unchanged>

source, such as a dry cleaner or BBQ restaurant, and when in compliance will not cause deterioration of the air quality in the area. In being compliant with the primary NAAQS, the public health is protected, including the health of sensitive populations.<sup>17</sup>

This document was prepared for the exclusive use of Wright, Constable & Skeen, L.L.P. and was not intended for any other purpose. Our document was based on the information available to us at this time. Should additional information become available, we reserve the right to determine the impact, if any, the new information may have on our opinions and conclusions and to revise our opinions and conclusions if necessary and warranted.

Thank you for allowing us to provide this service. If you have any questions or need additional assistance, please call.

Sincerely,  
Rimkus Consulting Group, Inc.

**Carla Kinslow**

Digitally signed by: Carla Kinslow  
DN: CN = Carla Kinslow C = US O =  
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Date: 2021.09.15 07:23:54 -08'00'

Carla J. Kinslow, Ph.D.  
Director Toxicology and Food Safety

Attachment: Curriculum Vitae

<sup>17</sup> <https://www.epa.gov/criteria-air-pollutants/naaqs-table>

September 15, 2021  
Rimkus Matter No. 100058997

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## **Curriculum Vitae**



## Carla J. Kinslow, Ph.D.

Director, Toxicology and Food Safety Practice

### Background

Dr. Kinslow holds a doctorate in Biomedical Sciences, Cell Biology/Molecular Toxicology with over 31 years of biomedical, regulatory, and environmental experience.

She has expertise in inhalation and oral toxicology; derivation of regulatory screening values for oral and inhalation exposure, toxicogenomics; toxicological risk assessment and communication of such risk to diverse stakeholders; human health impacts analysis from emission events; air, soil, and water monitoring data; modeling data related to ambient air and drinking water quality; water contamination from oil and gas operations; and stakeholder communication.

She specializes in risk-based evaluation of air, soil, and groundwater toxicology under the USEPA, as well as state and federal guidelines. She has served as manager for various regulatory projects where she helped design and implement air monitoring networks, groundwater monitoring projects, and remediation scopes, with subsequent assessment and communication of such human health impacts based on collected data. She has extensive experience in the evaluation of drug and alcohol impairment and “DRAM” shop cases.

Dr. Kinslow also has extensive experience in the evaluation of pesticide/herbicide overspray cases as well as health risks based on genetic predisposition to disease from environmental, occupational, and pharmaceutical exposures. Notably, Dr. Kinslow is also an environmental microbiologist and regularly conducts indoor air quality mold investigations and beer contamination evaluations.

### Contact Information

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Suite 1600  
Portland, OR 97232

## Professional Engagements

### • Water

- Remediation Support – Drafted several Affected Property Assessment Reports (APARs) for submission to the Texas Commission on Environmental Quality (TCEQ), conducted fieldwork for soil and ground water sampling, and water well surveys.
- Drinking Water – Evaluation of monitoring data with regard to human impacts from chromium in public drinking water systems.

### • Risk Communication

- MTBE Ground Water Contamination – Texas, Community engagement about groundwater contamination as well as accidental releases from chemical plants.
- Hazard Assessments – Texas, Served as a regulatory and community liaison, which included a presentation to the La Porte, TX community regarding odor toxicology after a fatal release of methyl mercaptan.
- Hazard evaluation and toxicological impacts assessment of data gathered around oil and natural gas drilling facilities.
- Water/Air/Odors Education – Houston, Beaumont, TX, Conducted over 20 presentations for Community Advisory Panels (CAPs) across the Houston ship channel and Beaumont areas. Topics covered – accidental release of benzene in water and air, odors, and long-term air monitoring data.

### • Inhalation

- Indoor Air Contaminants – Alternative causation evaluation for workers compensation cases involving respiratory issues attributed to indoor air contaminants.
- Ambient air and pollution exposure risk assessment based on modeling data and known regulatory guidelines.
- Fabric Guard Spray – Evaluation of human impacts from accidental inhalation exposure of hydrocarbons and fluorocarbons from fabric guard spray.
- Workers Compensation – Alternative causation evaluation for workers compensation cases involving respiratory issues attributed to indoor air contaminants.
- Asphyxiation from gasoline fumes.
- Due Diligence/M&A Vapor Intrusion – Completed vapor intrusion assessments of a multi-use property and evaluated potential impacts of contamination of groundwater for future development. Human and ecological risk associated with reclaimed water.
- Evaluation of human health impacts based on ambient air data as well as modeled data.
- Designed ambient air monitor placement criteria for the TCEQ.

### • Alcohol/Drug

- Drug impairment evaluations in driving and workers compensation - marijuana, cocaine, alcohol, and prescription drugs.
- Evaluation of blood alcohol concentration (BAC) as it relates to impairment, both in the presence of and absent of other drugs, including cocaine and marijuana.

- Determination of possible impairment from alcohol before entry, at the point of sale, and after leaving an establishment (i.e., “DRAM shop” projects).
- Evaluation of possible contribution of marijuana and THC to driving impairment.
- Contribution of prescription opiates in causing death to an individual.
- **Beer Contamination - Microbiology**
  - Brewery contamination and trace-back investigation for initial insurance as well as subrogation claims.
- **Environmental Microbiology**
  - Human and Animal Food Investigation - Source trace-back in salmonella and E.coli contamination cases – identifying the environmental source of contaminated food.
  - Mold investigations and alternative causations relative to health complaint.
- **Other**
  - Herbicide/Pesticide Overspray – Evaluation of possible pesticide and herbicidal overspray for wheat and potato fields.
  - Benzene/Asbestos – Evaluation of molecular mechanisms responsible for predisposition to cancer from low-level exposure to benzene and asbestos.
  - Evaluation of human toxicity related to caustic injury.
- **Oil/Gas/Manufacturing**
  - Toxicological Risk and Human Impacts Assessment – Evaluation of modeling impacts from air emissions, review of accidental, industrial emissions data, and evaluation of possible human health impacts from the ingestion of groundwater contaminants.
  - Barnett Shale – Dallas/Ft. Worth, TX, Developed and implemented air monitor location criteria for the TCEQ Barnett Shale air monitoring program.
  - Manufacturing Facilities – Toxicological assessment of impacts from odorous manufacturing facilities including refineries, oil and animal rendering facilities, and landfills.
- **Regulatory**
  - Derivation of state-approved, human-health regulatory screening values using TCEQ and US Environmental Protection Agency (EPA)-specific guidance. These included a new cobalt screening value for soil and groundwater, which resulted in the TCEQ changing their regulatory guidance for cobalt.
  - Tox21 Guidance – Drafted state of science reports for benzene and asbestos based on new Tox21 guidance for the weight of evidence approach to literature search and documentation.
  - Texas Refinery QRA – Conducted reviews of quantitative risk assessment (QRA) from a refinery and completed state-specific QRAs under the Texas remediation program.
  - Toxicological review of literature related to antibacterial chemicals used in hand soap, focused on enhancing a clients’ document submittal to the FDA.



- Regulatory Compliance – Texas, Conducted reviews of current toxicological screening values (air, water, soil) and reviewed literature; prepared summaries of current benzene, toluene, ethylbenzene, and xylene (BTEX) and carbon monoxide (CO) National Ambient Air Quality Standards (NAAQS) data.
- **Tobacco**
  - Tobacco Products – Developed mode of action summaries for ten tobacco products.
  - Industrial Hygiene – Conducted due diligence auditing for biomedical laboratories for mergers and acquisitions.

## Professional Experience

- **Rimkus Consulting Group, Inc.** **2016 – Present**
  - Director, Toxicology and Food Safety Practice  
Responsible for division oversight and technical support to the staff. Duties include the evaluation of human health impacts from drugs, chemical exposure in the environment or workplace, and brewery/beer contamination, as well as providing litigation, scientific liaison, or environmental regulatory toxicological support. Areas of expertise include inhalation toxicology, marijuana, remediation, pesticide/herbicide overspray, environmental microbiology, human health-based risk assessment, toxic mold, lung cancer, vapor intrusion, and odor issues.
- **Ramboll Environ, Inc.** **2013 – 2015**
  - Manager/Toxicologist – Health Science Division  
Responsible for providing senior toxicological support to the division. Duties included the evaluation of human health impacts from environmental chemical and pharmaceutical exposure, as well as litigation, scientific liaison, environmental regulatory toxicological support. Areas of expertise included inhalation toxicology, soil and water remediation assessment, risk assessment, toxic mold, lung cancer, vapor intrusion, and odor issues. Served as scientific liaison during public stakeholder meetings as well as conducted risk communication presentations to communities in the Houston area.
- **Brown and Caldwell** **2012 – 2013**
  - Senior Scientist/Toxicologist  
Responsible for providing senior technical and regulatory support for the company. Duties included the evaluation of human health impacts from environmental and pharmaceutical exposure, as well as litigation, scientific liaison, environmental regulatory toxicological support. Provided hazard and human health risk assessment, remediation, and compliance assistance for the company. Regulatory compliance included air permit impacts evaluation, evaluation of groundwater and soil data for human and ecological risk, document preparation according to TRRP (Texas) and NJDEP (New Jersey) regulatory requirements. Project management included managing unit closure and RCRA permitting projects.

- **TCEQ** **2008 – 2012**
  - Senior Toxicologist  
Responsible for providing senior toxicological support and guidance to other staff, specific to the TCEQ. Served as primary toxicologist for the Houston region and conducted numerous stakeholder presentations regarding environmental issues and activities of the TCEQ. Development of human health-protective inhalation values for use in regulatory compliance and permitting. Duties included deriving state-approved, human-health regulatory screening values using TCEQ and EPA-specific guidance, evaluating and designing toxicological studies that were implemented by the TCEQ. Additional responsibilities included acting as a liaison between the TCEQ and chemical trade groups, providing hazard evaluation and toxicological impacts assessment of data gathered around oil and natural gas drilling facilities, developing annual impacts assessment reports, reviewing air permits, and evaluating Qualitative Structure-Activity Relationships (QSAR) for toxicological endpoints. Served as mercury TMDL expert for the toxicology division during Texas government 2009 session.
  
- **Proctor and Gamble** **2006**
  - Intern  
Developed molecular assays to detect endocrine-disrupting chemicals in human prostate cells.
  
- **University of Texas Medical Branch** **2003 – 2008**
  - National Institute of Environmental Health Sciences (NIEHS) Pre-doctoral Fellow  
Doctoral studies related to molecular (inheritable) toxicological factors contributing to a predisposition for lung cancer in tobacco smokers. This included utilizing microbial cultures to manipulate genomes.
  
- **The Pronet Group, Inc.** **2001 – 2002**
  - Indoor Air Quality (IAQ) Consultant – Mold investigator  
Performed IAQ investigations in residential and commercial buildings, the majority of which were related to water intrusion and mold contamination. Conducted over 200 environmental investigations, collected over 1,000 surface and air samples for microbial contamination. Wrote and signed off on each investigative report and its respective scope of remediation. Provided litigation support.
  
- **Kinslow Consulting/National Loss Consultants** **1999 – 2001**
  - Indoor Air Quality Consultant  
Performed IAQ investigations in residential and commercial buildings, the majority of which were related to water intrusion and microbial contamination. Drafted the remediation scope(s) and completed follow-up clearance evaluations for these properties. Provided litigation support.

- **MD Anderson Cancer Center** **1999 – 2000**
  - Research Assistant II  
Performed molecular biology assays related to maintaining the viral vector core facility. This included using virus particles to infect bacterial cultures in order to package recombinant genomes.
  
- **Valentis, Inc.** **1998 – 1999**
  - Research Assistant/Scientist  
Performed molecular biology assays and plasmid construct designed for cancer gene therapy research. This included utilizing microbial cultures to manipulate human genes and genomes.
  
- **Michigan Technological University** **1993 – 1998**
  - Naval Research Fellow and Research Assistant – Phycology (Algae)  
Molecular biology of marine diatoms. Studied various marine and freshwater algae and bacteria, including their development and persistence in biofilms located on man-made objects. Developed novel culture methods as well as specific methods to study the genomes of algae in biofilms. Taught 100 and 200 level college laboratory classes in microbiology, botany, and phycology (algae).
  
- **Indiana University Southeast** **1989 – 1993**
  - Research and Laboratory Assistant/Full-Time Researcher  
Lead the laboratory and research assistants for the biology department; taught 100, 200, and 300 laboratories in botany, microbiology, molecular biology, and cell biology. Conducted research in water quality, microbial molecular biology, and botany.
  - Research Assistant  
Designed and taught several microbiology, molecular biology, and botany labs to college and graduate students. Supervised and taught several microbiology, molecular biology, and botany labs to college students.

## Education

- **Biomedical Sciences, Cell Biology/Molecular Toxicology, Ph.D.:** University of Texas Medical Branch (2008)
- **Molecular Phycology/Marine Ecology, M.S.:** Michigan Technological University (1997)
- **Biology, B.A.:** Indiana University Southeast (1992)
- **Memberships:** Society of Toxicology, Full Member; American Society of Microbiology, Premium Member; Regular Member, Society of Toxicology of Canada; University of Texas Medical Branch Alumni Committee, Member

## Continuing Education

- **OSHA:** OSHA refresher, TWIC card, 8 hrs. (2012, 2013, 2014, 2015); 40 hr. OSHA Training (2011)
- **TCEQ:** Expert witness training (2011); EPA Vapor Intrusion Training (2010)
- **Other:** Quantitative Structure Activity Relationships (QSAR) (2008-2012); Communications (2011); Management training (2011); TERA training – Child susceptibility in risk assessment seminar (2009); International REACH training (2009); Advanced Air Permitting (2008)

## Publications

- **“Regulatory regions responsive to oxidative stress in the promoter of the human DNA glycosylase gene NEIL2.”** *Mutagenesis*, 2010, Mar; 25(2):171-7
- **“Genetic determinant of NEIL2 transcription.”** Ph.D. Dissertation
- **“Single nucleotide polymorphisms 5' upstream the coding region of the NEIL2 gene influence gene transcription levels and alter levels of genetic damage.”** *Genes Chromosomes Cancer*, 2008 Nov;47(11):923-32
- **“The L84F polymorphism in the O6-Methylguanine-DNA-Methyltransferase (MGMT) gene is associated with increased hypoxanthine phosphoribosyltransferase (HPRT) mutant frequency in lymphocytes of tobacco smokers.”** *Pharmacogenet. Genomics*, 2007 Sep;17(9):743-53
- **“The L84F and the I143V polymorphisms in the O6-methylguanine-DNA-methyltransferase (MGMT) gene increase human sensitivity to the genotoxic effects of the tobacco-specific nitrosamine carcinogen NNK.”** *Pharmacogenet Genomics*, 2005 Aug. 15(8):571-8
- **“Molecular Biology of the marine diatom *Achnanthes longipes*.”** Master's thesis, 1997

## Presentations

- **“What's Brewing in Your insurance claim.”** (in production) National Webinar, Beer contamination investigations, 2019
- **“Toxicology for Drug and Alcohol Cases and Issues of Impairment.”** National Webinar, Broadcast to 700 attendees representing the insurance and legal industries, Jan. 23, 2019
- **“What the Hex is Cr6?”** Evaluation of the toxicity screening values for hexavalent chromium (Cr6) across the U.S., EECHMA, Orlando, FL, 2018
- **“PFAS: Evolution from Emerging Contaminant to Frequent Headliner.”** Environmental Risk & Litigation Conference New York, NY 2018
- **“Forensic Toxicology for Drug and Alcohol Cases and Issues of Impairment.”** Continuing Education (CE) presentation for various clients. February 8, 2018, Houston, TX.
- **“Cerium oxide nanoparticle (nCe) use as a diesel fuel additive and the possible health impacts from its wide application in diesel fuel.”** AEHS Foundation: 27th Annual International Conference on Soil, Water, Energy, and Air, March 20-23, 2017, San Diego, CA.

- **“Cerium oxide nanoparticle (nCe) use as a diesel fuel additive.”** The Air and Water Management Association, Austin Chapter, Austin, TX, 2017
- **“Evaluating the Broadening Use of Prescription Marijuana Related to Workers' Compensation Claims.”** 2017 CLM Conference on Retail, Restaurant & Hospitality Conference (whitepaper), Gaylord, TX
- **“Evaluating the Broadening Use of Prescription Marijuana Related to Workers' Compensation Claims.”** CLM Conference on Retail, Restaurant & Hospitality Conference (white paper) 2017. **“Marijuana: determining impairment and its impact in the insurance industry.”** Webinar broadcast to ~500 listeners, 2017
- **“Marijuana and driving with medical marijuana.”** Willis Watson, Addison, TX, 2016
- **“Marijuana and Driving; Can a blood test really determine impairment?”** GEICO Insurance Company, Katy, TX, 2016
- **“Marijuana and Driving; Can a blood test really determine impairment?”** *DRI For the Defense* (whitepaper), 2016
- **“Evaluation of Benzene Fence line Monitoring Program in USEPA’s Proposed Refinery Sector Rule.”** AWMA Hot Air Topics Annual Conference, Houston, TX, 2015
- **“Tools for successful stakeholder communications around hydraulic fracturing facilities.”** Gulf Coast AWMA conference, New Orleans, LA, 2015
- **“Health-based screening values for methyl mercaptan.”** La Porte, Texas Community Advisory Panel (presentation), La Porte, TX, 2015
- **“Toxicogenomics in Toxic Tort - Environmental and Occupational Exposure.”** HarrisMartin Law Symposium, Charleston, SC, 2014
- **“Hydraulic Fracturing – Tools for successful stakeholder engagement.”** Society of Petroleum Engineers Annual Meeting on Health and the Environment, Long Beach, CA, 2014
- **“Tools for successful stakeholder communications around hydraulic fracturing facilities.”** International Conference for the Society of Petroleum Engineers (whitepaper), 2014
- **“Hydraulic Fracturing – Tools for successful stakeholder engagement.”** Texas Association of Environmental Professionals Annual Meeting, Houston, TX, 2013
- 2013 Panelist, 2013 Annual Presidential Career Symposium, Houston, TX
- **“Consulting as a Toxicologist.”** University of Texas Medical Branch, Panelist and presentation, Galveston, TX, 2013
- **“Regulatory Toxicology.”** University of Texas Medical Branch, Galveston, TX, 2012
- **“Toxicology at TECQ.”** A series of presentations to various community groups in Houston/Galveston, TX area, 2012
- **“Acrylonitrile Development Support Document.”** TCEQ, 2012
- **“Developing Effects Screening Levels and Air Monitoring Comparison Values at the TCEQ and Trends in Texas Air Quality.”** Texas Association of Environmental Professionals annual meeting, Houston, TX, 2011

- **“Trends in Texas Air Quality: Atmospheric Chemistry and Air Quality in Texas: Challenges and Opportunities.”** Texas A&M University, College Station, TX, 2010
- **“Challenges in personalized medicine: Warfarin.”** Preventive medicine and community health seminar series, Galveston, TX, 2008
- **“Genetic determinants of NEIL2 transcription.”** The NIEHS Center in Environmental Toxicology Environmental Health Sciences Seminar Series, Galveston, TX, 2007
- **“Newly discovered promoter SNPs in the DNA repair gene, NEIL2, modulate gene expression.”** Preventive medicine and community health seminar series, Galveston, TX, 2007
- **“Advancing Toward In Vitro Toxicity Models - Evaluation of gene expression changes induced by androgen exposure in the human-derived CW22Rv1 cell line.”** Gulf Coast Society of Toxicology, Waco, TX, 2006
- **“A pharmacogenetic approach to anticoagulation treatment: the role of microsomal epoxide hydrolase.”** The Society of Toxicology annual meeting, San Diego, CA, 2006
- **“A pharmacogenomic approach to anticoagulation treatment.”** Gulf Coast Society of Toxicology, Austin, TX, 2005



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Certificate of Authorization No. F-1545  
Certification Expiration Date: September 30, 2024

August 6, 2024

Mr. Neil Lanzi  
Wright, Constable & Skeen, LLP  
102 West Pennsylvania Avenue, Suite 406  
Towson, MD 21204

Re: Rimkus Matter No: 100058997  
**Subject: Third Supplemental and Update of Thought Summaries**

Dear Mr. Lanzi:

Rimkus was retained to review, and update where indicated, the information related to environmental toxicology that was provided in the Thought Summary and two Supplemental Thought Summaries provided by Dr. Carla Kinslow, Director of Toxicology and Food Safety at Rimkus. These three Summaries were issued on August 4, 2021, August 20, 2021, and September 15, 2021, respectively. These Summaries provide scientific technical support in a matter regarding modeled air emissions from a crematorium proposed to be installed at the Vaughn Greene Funeral Home (Vaughn Greene) located at 4905 York Road in Baltimore City, Maryland.

As this matter is still pending and it has been 3 years since the issuance of the last Summary, there has been additional information provided involving this permit, specifically an Environmental Justice (EJ) assessment. Therefore, I thought it pertinent to review and update these Summaries for any air monitoring data trends or other information provided since the issuance of the prior Summaries.

I offer the following Third Supplemental and Update of Thought Summaries to a reasonable degree of scientific certainty in my fields of expertise, including toxicology, risk assessment, and related fields.

CC 00124

## Third Supplemental and Update of Thought Summaries

1. Upon review of the conservatively estimated emissions, developed per the Maryland Department of the Environment (MDE) guidance and presented in the permit application, the emissions are below the MDE regulatory threshold limit and are not expected to unreasonably endanger human health. Thus, they are compliant with the *Code of Maryland Regulations Section 26.11.15.06, Ambient Impact Requirement, subsection A(1)*.<sup>1</sup>
2. In addition to the conservative assumptions inherent in the thresholds to which the modeled emissions are compared, the modeled estimate assumes constant maximum emission from the beginning to the end of operating the crematory. However, actual emissions during each cremation vary throughout. Thus, by assuming maximum emissions throughout the entirety of the operation, Vaughn Greene has conservatively overestimated the total emissions during each cremation. Even with this overestimation, the modeled emissions are below the threshold of concern for health impacts. Thus, this overestimation provides a level of confidence that the air emissions from the crematory will not impact the community.
3. Furthermore, there is an assumption that the machine will be available to run each day of the year. However, there will be days and times of the year when it will not be available, such as during maintenance. This provides a more transparent understanding of the numerous levels of conservatism in the modeling so that the health of the community, including vulnerable populations, is being considered.
4. MDE has placed a rate limit of two cremations per 8 hours (hr). A limit on the rate of cremations mitigates the potential for high peak emissions during the day.
5. Beginning in 2022, MDE implemented new Environmental Justice (“EJ”) assessment tools for the permitting process that have resulted in additional permitting requirements for this crematory. Stack testing is one of these requirements, which will provide actual emissions data to verify compliance with the permit. This assessment is a strong indication that compliance with MDE permit requirements will result in no adverse impact on the community.
6. This new EJ process and updated regulations illustrate MDE’s commitment to using new methods and technologies to ensure community well-being. This assessment is not required universally across the US states and shows that MDE is leading an effort to ensure fairness to all the state’s communities in their permitting process. This new and proactive process contradicts the opposition’s assertion that the MDE methods are “outdated.”

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<sup>1</sup> Matthews Environmental Solutions, permit application documents sent to Vaughn Greene, February 21, 2020; Pg. 23 of 25



7. An updated evaluation of the traffic congestion and number of cars traveling daily in the area of the proposed crematory indicate the area roads around the proposed crematory are not areas of high congestion and that the number of cars along York Road is either staying the same or lower than in years past. This supports my previous conclusions regarding traffic in the area of Vaughn Greene.
8. In 2023, the Environmental Protection Agency (EPA) lowered the annual PM<sub>2.5</sub> National Ambient Air Quality Standard (NAAQS) from 12 ug/m<sup>3</sup> (milligrams per cubic meter of air) to 9 ug/m<sup>3</sup>. The most recent PM<sub>2.5</sub> design value for air monitoring data from the Old Town monitor indicates that the design value has been below the new standard from 2019-2021 (the most recently published design value data). Additional monitoring from the other, currently active PM<sub>2.5</sub> monitors in the Baltimore area indicates that the design value is currently below the new NAAQS 9ug/m<sup>3</sup> standard.
9. Taken together, the modeled Vaughn Greene human health impacts from the crematorium have been shown to be below Federal and State levels of concern and, as an additional level of caution, Vaughn Greene will lower their emissions even further by being in compliance with the additional requirements as a result of the EJ assessment. Thus, the facility has been determined both through compliance with state and federal air impact standards as well as through an EJ assessment that it will not negatively impact community health.
10. These permitting requirements also address each of the communities' concerns, including monitoring, stack testing, and reporting for actual emissions, no visible smoke, EJ consideration for the community, and eliminating mercury emissions as a concern.

## Discussion

### Background and Intent of this Summary

In 2022, the MDE required an Environmental Justice assessment for issuance of the permit. This has resulted in additional pollution mitigation requirements as part of the new permit.<sup>2</sup>

In 2021, I provided three reports that included the evaluation of the trends in air quality in the Baltimore City area. Upon review of those reports, I would like to update the data presented regarding the air quality trends and the trends relative to a new regulatory guidance value for particulate matter at 2.5 micrograms (PM<sub>2.5</sub>) published by the U.S. EPA.<sup>3</sup> As this was after the issuance of my last Thought Summary, I thought it is pertinent

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<sup>2</sup> Maryland Department of the Environment Air and Radiation Administration Application for a Permit to Construct, Supplement B to Docket #09-20

<sup>3</sup> <https://www.epa.gov/pm-pollution/national-ambient-air-quality-standards-naaqs-pm>

to provide comments regarding the PM<sub>2.5</sub> trends found in Baltimore City relative to this new, lower standard.

Since the issuance of my last report, some additional issues have been raised by the opposition to the permit, specifically, the conservativeness of the MDE air impacts assessment, the impacts from mobile emissions, and the transparency of my statements regarding air quality trends. I will address these issues as well as comments in the following discussion.

**MDE’s use of the Environmental Justice (EJ) Screening Tool and the resultant additional air emission mitigation requirements set forth in the permit illustrates MDE’s commitment to ensuring the surrounding community is not adversely impacted by the crematory**

In 2022, the Maryland Legislature enacted HB 1200/Ch. 588 (effective October 1, 2022), which required the MDE to assess EJ issues in the permitting process. As this legislation was passed after the issuance of my last report in 2021 and it impacted the permit, I would like to discuss the new requirements for the crematory permit which further protects the community.

Furthermore, as this legislation was passed after the issuance of my last report in 2021 and it impacted the permit, I would like to discuss the new requirements for the crematory permit which further protects the community.

MDE completed an EJ assessment for the census tract that the potential emissions from the crematory may impact. The goal of the assessment is to assess if equal protection is being applied to all communities across the state of Maryland.<sup>4</sup> The resultant EJ Score is calculated for the census tract in which the project is located using the Maryland EJ Screening Tool.<sup>5</sup> The Screening Tool is used to consider several EJ-related factors to calculate a score, specifically:

“This score considers three demographic indicators, minority population above 50%, poverty rate above 25% and limited English proficiency above 15%, to identify underserved communities, and multiple environmental health indicators to identify overburdened communities.”<sup>6</sup>

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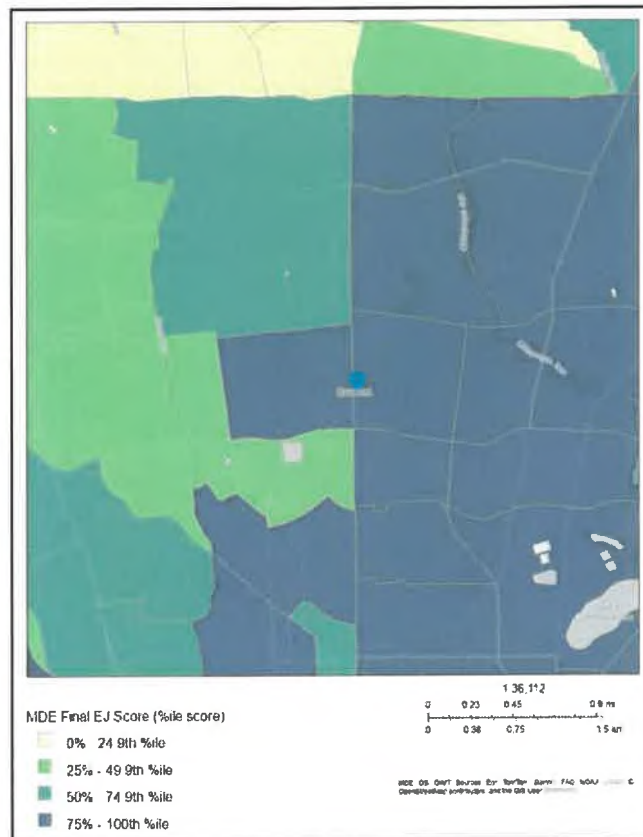
<sup>4</sup> Maryland Department of the Environment Air and Radiation Administration Application for a Permit to Construct, Supplement B to Docket #09-20

<sup>5</sup> Maryland Department of the Environment Air and Radiation Administration Application for a Permit to Construct, Supplement B to Docket #09-20

<sup>6</sup> Maryland Department of the Environment Air and Radiation Administration Application for a Permit to Construct, Supplement B to Docket #09-20

The resultant score is used to help determine which communities may need additional consideration so that community health is not negatively impacted by a new source located in the community.<sup>7</sup>

The EJ score for the census tract where Vaughn Greene will be located is 95 percent (%) and is based on a state-wide assessment.<sup>8</sup> Per the assessment, this census tract lies within an area of similar EJ scores (**Figure 1**).



**Figure 1** – Final EJ score for Vaughn Greene’s census tract and those surrounding that of the proposed crematory. Excerpt from - Maryland Department of the Environment Air and Radiation Administration Application for a Permit to Construct, Supplement B to Docket #09-20.

The EJ Score is an overall evaluation that includes pollution burden, as well as three demographic indicators of minority population above 50%, poverty rate above 25%, and limited English proficiency above 15%.<sup>9</sup> The final EJ Score represents a state-wide

<sup>7</sup> Maryland Department of the Environment Air and Radiation Administration Application for a Permit to Construct, Supplement B to Docket #09-20

<sup>8</sup> Maryland Department of the Environment Air and Radiation Administration Application for a Permit to Construct, Supplement B to Docket #09-20

<sup>9</sup> Maryland Department of the Environment Air and Radiation Administration Application for a Permit to Construct, Supplement B to Docket #09-20

percentile. Thus, there are several factors that would increase or decrease these scores, such as a change in the pollution burden, population demographics, changes in poverty rate, and increased English proficiency. Vaughn Greene has no control over most of the aspects of these scores. The only factor that the crematory might impact this score might possibly be the pollution burden.

*Additional compliance requirements for the crematory to ensure equal protection across the community*

As previously addressed, the projected emissions from the crematory in question meet the MDE and EPA standards. In order to address possible additional EJ burden from pollution, however, the MDE has required a number of protective measures to further ensure compliance with applicable air quality standards be set in the permit. The full list is below:

“A requirement that the crematory 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.

A requirement to develop and maintain an Operations and Maintenance Plan approved by the Department. A properly operated and maintained crematory will not result in smoke, odors, or excess emissions.

A requirement to comply with all local zoning conditions as specified by the Baltimore City Board of Municipal and Zoning Appeals (BMZA) limiting the type of human remains that can be processed in the crematory unit to only those remains owned, operated, or controlled by Vaughn Greene Funeral Services, P.A. and only human remains that have had all teeth containing mercury amalgams removed.

A requirement to conduct a Method 9 opacity observation for a modified period of one hour during a cremation to assess the effectiveness of the crematory's opacity sensor and to determine when operations require adjustments to ensure compliance with applicable visible emissions standards.

A requirement to conduct stack emissions testing to demonstrate compliance with applicable particulate matter and metal toxic air pollutant standards. In lieu of stack testing, the Applicant may provide a stack testing report demonstrating compliance that was conducted within the last five years by a third party stack testing company on an identical crematory unit.”<sup>10</sup>

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<sup>10</sup> Maryland Department of the Environment Air and Radiation Administration Application for a Permit to Construct, Supplement B to Docket #09-20

**The MDE permitting requirements for the Vaughn Greene crematory addresses the concerns posed by the opposition.**

Stack testing is a measure of the **actual** emissions

One concern that has been voiced by opposition is that there will be higher emissions than expected. Also, there is no measure of the emissions that come out of the stack.

This permit requirement clearly addresses those concerns.<sup>11</sup>

The MDE has required Vaughn Greene to conduct stack emissions testing. This type of testing is conducted periodically by an outside contractor to ensure that the **actual** emissions do not exceed those that were modeled in the permit. This is not something that will be conducted by Vaughn Greene as it requires specific training and equipment, thus Vaughn Greene will not have an influence on the results. The results are then provided to the MDE for compliance review.

The permit requires the crematory to run properly, not to create smoke, odors, or excess emissions. This is mitigated using opacity observation and an opacity sensor.

Concerns raised by the opposition in statements regarding this permit include that the crematory will cause visible emissions and monitoring.<sup>12</sup>

These concerns are addressed in the permit.<sup>13</sup>

In the testimony from the manufacturer, the crematory will have a pollution monitoring system that would “safeguard against potential pollution”<sup>14</sup> He further stated, “And it's designed to take corrective action automatically without the need for any manual adjustment. And it should be noted any state that you're in, any cremator violation is always made of public record...”<sup>15</sup>

Thus, the crematory should not produce visible emissions and if so, they will be reported.

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<sup>11</sup> Maryland Department of the Environment Air and Radiation Administration Application for a Permit to Construct, Supplement B to Docket #09-20

<sup>12</sup> City of Baltimore Board of Municipal and Zoning Appeals, In RE: 4903-4905 York Road. Docket No. 2021-161, Virtual hearing, August 24, 2021. Pg 22, 123.

<sup>13</sup> Maryland Department of the Environment Air and Radiation Administration Application for a Permit to Construct, Supplement B to Docket #09-20

<sup>14</sup> City of Baltimore Board of Municipal and Zoning Appeals, In RE: 4903-4905 York Road. Docket No. 2021-161, Virtual hearing, August 24, 2021. Pg 23

<sup>15</sup> Virtual hearing, August 24, 2021. Pg 22, 123.

<sup>15</sup> City of Baltimore Board of Municipal and Zoning Appeals, In RE: 4903-4905 York Road. Docket No. 2021-161, Virtual hearing, August 24, 2021. Pg 22

MDE requires the permit submitter to assume the maximum and worst-case emissions throughout each operation, which over-estimates actual annual emissions per cremation due to inherent operating conditions and does not consider annual shut-downs for maintenance.

When considering a cremation, it is important to understand that maximum potential emissions are not occurring throughout the operation time for each cremation.<sup>16</sup> The maximum potential emissions are not happening during the whole cremation process. There are specific times for preheating the unit (body not inside machine), cremation of the body, cool down for the machine, and removal of the cremated remains.<sup>17</sup> Based on this, the potential maximum emissions will not occur continuously over the time of the cremation.

In the present case, there is also a limit on the rate of cremation. The current permit limits the operation of the crematory to two human remains during any 8-hr period.<sup>18</sup> This is an additional level of conservatism and would help mitigate any short-term, high-peak emissions from the crematory.

The calculations assume the maximum and worst-case emissions for the crematory. The results of those estimates indicate that the crematory will be well below allowable limits. Specifically, it is not predicted to impact any Air Toxic Regulatory values or impact the NAAQS air monitoring trends discussed above.<sup>19</sup> Furthermore, even though mercury amalgams are required to be removed as part of this permit, the MDE conservatively assumed that the body still had mercury. The modeled emissions are still below a level of concern.

An additional layer of conservatism in the calculations is that they assume the machine is available for cremation throughout the year. However, the manufacturer recommends that the machine have annual maintenance and it would not be available for cremations during the maintenance time.<sup>20</sup>

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<sup>16</sup> Testimony from Michael Tricochet, Maryland Department of the Environment Air and Radiation Administration Application for a Permit to Construct, Supplement B to Docket #09-20

<sup>17</sup> City of Baltimore Board of Municipal and Zoning Appeals, In RE: 4903-4905 York Road. Docket No. 2021-161, Virtual hearing, September 16, 2021. Pg 49-50.

<sup>18</sup> Maryland Department of the Environment Air and Radiation Administration Application for a Permit to Construct, Supplement B to Docket #09-20

<sup>19</sup> Maryland Department of the Environment Air and Radiation Administration Application for a Permit to Construct, Supplement B to Docket #09-20

<sup>20</sup> City of Baltimore Board of Municipal and Zoning Appeals, In RE: 4903-4905 York Road. Docket No. 2021-161, Virtual hearing, September 16, 2021. Pg 59.

### Concern Regarding Asthma

City Councilmember Mr. Mark Conway testified that he was concerned about, “increased rates of respiratory illness such as asthma” and that concern was a “deal breaker” for him.<sup>21</sup>

As discussed in my first report (August 4, 2021), the Abell Foundation study indicated asthma risk in Baltimore City was related to indoor sources.<sup>22</sup>

Furthermore, there are two conservative methods that the MDE has applied to address health concerns such as asthma, evaluation of air modeling emissions, and the EJ assessment. Modeling requires the maximum potential air impacts to be modeled and compared to highly conservative screening values, which have resulted in values that are well below a level of health concern. As discussed in my previous reports, there are conservative assumptions placed in the development of these threshold values so that there is a margin of safety to protect the community.<sup>23</sup>

The MDE has also proactively considered EJ issues and added five requirements, including testing of the actual emissions from the crematorium to verify compliance such that the community’s health is not adversely impacted.

Through these efforts, the MDE has extended additional levels of evaluation, and these impacts are not expected to adversely impact the health of the community, including asthma prevalence related to ambient air.

### Concern Regarding Mercury

Maryland State Senator Mary Washington testified in opposition to the permit application and mentioned that the permit would have a significant impact on public health, with specific concerns about mercury exposure and neurotoxicity.<sup>24</sup> Both the MDE’s impacts assessment and the EJ assessment have determined that compliance with the permit will not result in adversely impacting the health of the community.

In addition to the comments I made discerning the different types of mercury and that the elemental mercury that may be emitted has a lower toxicity than the methyl mercury which is not emitted, MDE has taken an additional step to model mercury emissions even though as part of their permit, the mercury amalgams will be removed. Even when considering that mercury is still in the body upon cremation, the estimates are below a level of concern.

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<sup>21</sup> In the Matter of the Petition of the York Road Partnership, et. al., Unreported in the Appellate Court of Maryland, No. 861 September Term, 2023. Filed July 18, 2024. Pg 12-13.

<sup>22</sup> Rimkus Thought Summary, August 4, 2021.

<sup>23</sup> Rimkus Summaries August 4, 2021; August 20, 2021; September 15, 2021

<sup>24</sup> In the Matter of the Petition of the York Road Partnership, et. al., Unreported in the Appellate Court of Maryland, No. 861 September Term, 2023. Filed July 18, 2024. Pg.14

**Additional support to indicate that the MDE and EPA values represent values that are safe for the community, even high-risk groups**

The MDE updates the screening values, based on new scientific information and regulatory guidance.

The screening values that MDE uses for thresholds of concern are updated periodically as the scientific information changes per COMAR 26.11.16.03.<sup>25</sup> As such, the MDE has updated these regulations.

MDE has higher health-related standards for air permitting

Upon review of the permitting application requirements, MDE has as high or higher requirements for the production of emission and human impact information to show environmental compliance with the air emissions program from the proposed crematory. This is in regard specifically to the additional calculations and modeling that show compliance with exposure impacts to the surrounding community. Many other states do not require this level of analysis for air permitting compliance in crematorium construction, yet Vaughn Greene has produced these calculations and has shown that it is compliant with the MDE higher requirements.<sup>26,27,28</sup>

Upon review of the conservatively estimated emissions, developed per the MDE guidance and presented in the permit application, the emissions are below the MDE regulatory threshold limit and are not expected to unreasonably endanger human health. Thus, they are compliant with the *Code of Maryland Regulations Section 26.11.15.06, Ambient Impact Requirement, subsection A(1)*.<sup>29</sup>

- a. In being compliant with this standard, the applicant had demonstrated that the emissions will not unreasonably endanger human health because of potential toxic health effects, including carcinogenic effects.<sup>30</sup>

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<https://mde.maryland.gov/programs/permits/airmanagementpermits/pages/toxicairpollutantregulationdocuments.aspx>

<sup>26</sup> Kinslow phone interview with Texas Commission on Environmental Quality (TCEQ) air permitting division 8/4/2021 [https://www.tceq.texas.gov/permitting/air/permitbyrule/subchapter-v/pw\\_incinerators.html](https://www.tceq.texas.gov/permitting/air/permitbyrule/subchapter-v/pw_incinerators.html)

<sup>27</sup> Kinslow phone interview with Mr. Jaricus Whitlock, air section supervisor, of Mississippi Commission on Environmental Compliance 8/4/2021

<sup>28</sup> Kinslow phone interview with Mr. Zack Bitner, Combustion Section Supervisor, Kentucky Department of the Environment; <https://eec.ky.gov/Environmental-Protection/Air/Pages/Air-Permitting.aspx>

<sup>29</sup> Matthews Environmental Solutions, permit application documents sent to Vaughn Greene, February 21, 2020; Pg. 23 of 25

<sup>30</sup> *Code of Maryland Regulations Section 26.11.16.02,, Demonstrating Compliance with COMAR 26.11.15.06.*



- b. In being compliant with this standard, the applicant had demonstrated that their permit will protect the public health.<sup>31</sup>
- c. By being compliant with the acceptable ambient level (AAL), the applicant has demonstrated the concentration of the toxic air pollutant in the atmosphere will provide a margin of safety to protect public health from toxic, noncarcinogenic effects that may be caused by the air pollutant and are used to evaluate the air quality impacts of all premises within a 3.1-mile radius.<sup>32</sup>

The screening values (threshold limits) used by the MDE in the permitting process are very conservative and are intended to protect the workers and the surrounding community.<sup>33</sup>

### **Continued decrease in PM2.5 design values at the Old Town and other EPA Monitors**

In 2021, I reviewed the PM<sub>2.5</sub> Design Values for the Old Town Monitor, indicating a continued downward trend to 7.9 ug/m<sup>3</sup> in 2020.<sup>34</sup>, <sup>35</sup> Upon updating this data, I found that the trend remained steady, with a 2021 design value of 7.9 ug/m<sup>3</sup> (**Figure 2**, below).<sup>36</sup>

In 2021, the Annual NAAQS threshold for PM<sub>2.5</sub> was 12 ug/m<sup>3</sup>. In 2023, this standard was updated and finalized on May 6, 2024, to 9 ug/m<sup>3</sup>.<sup>37</sup> Upon review of the most recent PM<sub>2.5</sub> design values, the data indicate that the design value has been below the new standard from 2019-2021 (the most recently published design value data).

In 2023 statements, the opposition noted that the EPA changed its air quality standards but did not review the monitoring data for the available monitors.<sup>38</sup> As discussed above, the monitoring data of the closest monitor in Old Town, which, as discussed in Rimkus' previous reports lies in an area with several major and mobile sources, indicates compliance with the new standard. As such, the opposition's statements are unfounded.

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<sup>31</sup> *Code of Maryland Regulations Section 26.11.20, Reopening Part 70 Permits*

<sup>32</sup> *Code of Maryland Regulations Section 26.11.15.01, B(1), Definitions*

<sup>33</sup> *Kor-Ko Ltd. v. Maryland Department of the Environment*, 451 Md. 401, 420 (2017).

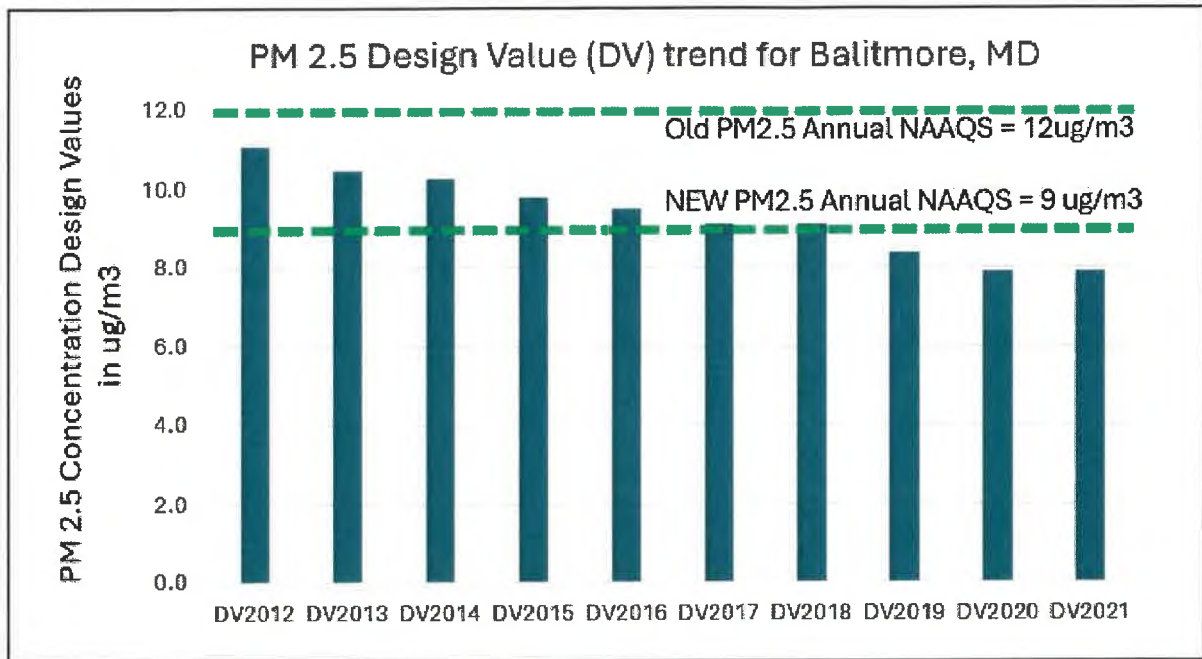
<sup>34</sup> Rimkus second Supplemental Report of findings, September 15, 2021

<sup>35</sup> A design value is a statistic that describes the air quality status of a given location relative to the level of the National Ambient Air Quality Standards (NAAQS). Design values for PM<sub>2.5</sub> are numbers that are calculated from three years of data gathered at a particular monitoring site. If a design value is greater than the associated standard, the monitor is said to "fail the attainment test". The annual standard for PM<sub>2.5</sub> is 12.0 µg/m<sup>3</sup> and the twenty-four hour standard is 35 µg/m<sup>3</sup>

<sup>36</sup> <https://www.epa.gov/air-trends/air-quality-design-values#dvtool>

<sup>37</sup> <https://www.federalregister.gov/d/2024-02637>

<sup>38</sup> In the matter of the petition of the York Road Partnership, et. al., Unreported in the Appellate Court of Maryland, No. 861 September Term, 2023. Filed July 18, 2024. Pg. 12

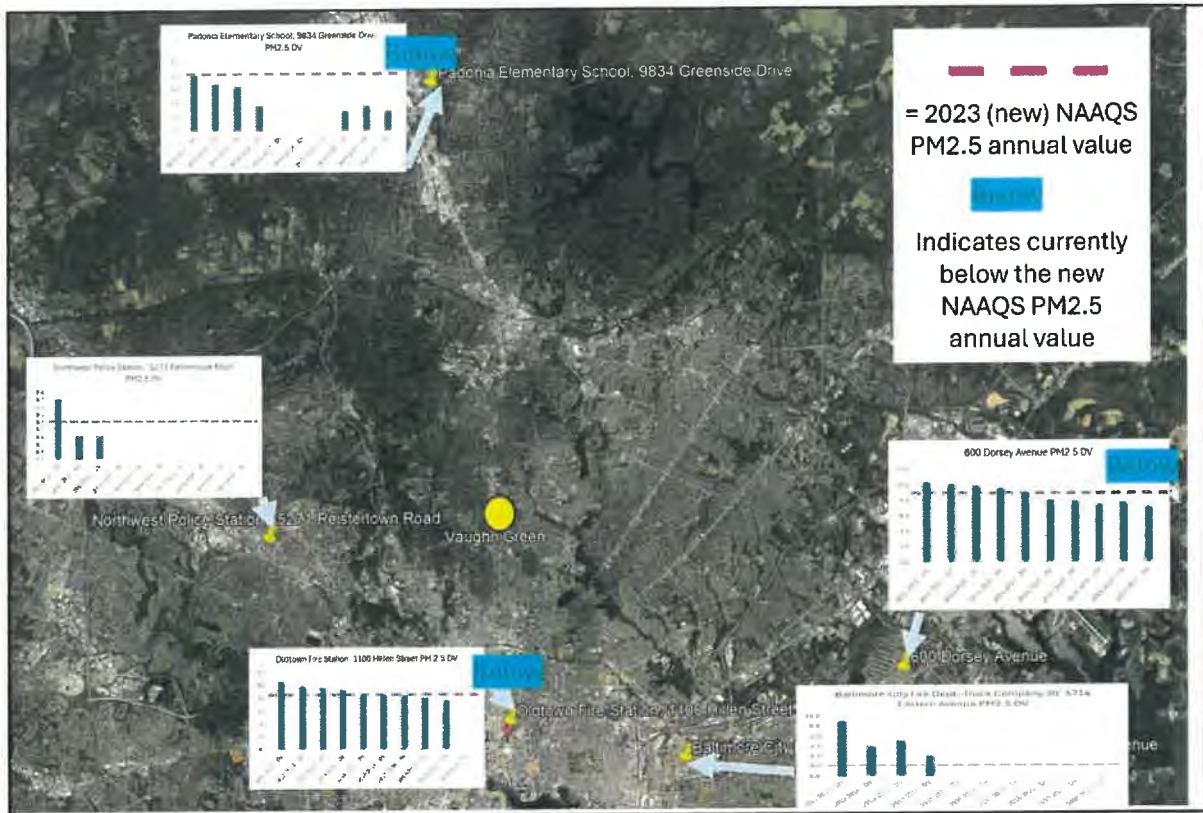


**Figure 2** – Updated PM<sub>2.5</sub> design values for the Old Town Monitor.

To further provide transparency in the air monitoring trends for the whole Baltimore region, I have provided the design value( DV) for all the monitors located in the Baltimore area in **Figure 3**.<sup>39</sup>

Notably, these stations are grossly distributed around the location of the Vaughn Greene Funeral home. I have provided the PM<sub>2.5</sub> monitoring values for all monitors that have been in service since 2011. The Northwest Police Station and the Baltimore City Fire Department-Truck Company station were taken out of service in 2016 and 2017, respectfully, thus they do not have current data. The Old Town monitor data extends until 2022, which represents part of the time of consideration for this permit. For the other stations that have data up to 2022, all the PM<sub>2.5</sub> annual readings have been and currently are below the new NAAQS standard of 9 ug/m<sup>3</sup>.

<sup>39</sup> <https://www.epa.gov/air-trends/air-quality-design-values#map>



**Figure 3 – PM2.5 design values for monitors in the Baltimore area.**

These data support the continuing trend of decreased PM<sub>2.5</sub> throughout the Baltimore City area.

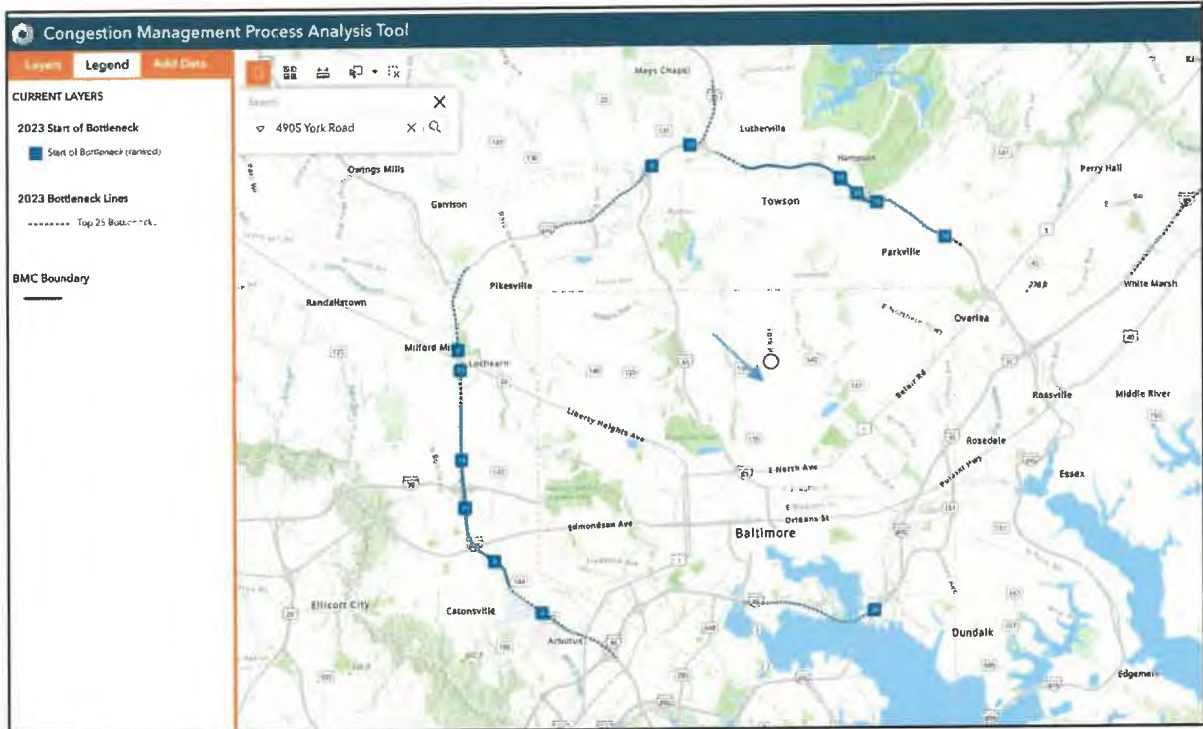
### **Assessment of Mobile Sources in the Area of the New Crematory**

The opposition to the permit has indicated that mobile sources such as passenger cars, trucks, and other vehicles might impact the air quality along the roads near the location of the proposed crematory.<sup>40</sup> Thus, I used data and tools from the Maryland Department of Transportation and State Highway Administration to further evaluate this concern.

#### *Congestion management process analysis/tool*

When evaluating the congestion of the area, the proposed crematorium will not be in a highly congested area of the city. **Figure 4** shows the top 25 bottlenecks in Baltimore City from the Baltimore Metropolitan Council Congestion Management Process Analysis Tool. There are no areas of congestion shown near the proposed crematory location (blue arrow).

<sup>40</sup> In the matter of the petition of the York Road Partnership, et. al., Unreported in the Appellate Court of Maryland, No. 861 September Term, 2023. Filed July 18, 2024. Pg. 11



**Figure 4** – Results for the top 25 bottlenecks in Baltimore City from the Baltimore Metropolitan Council Congestion Management Process Analysis Tool.<sup>41</sup> The circle and blue arrow represent the location of the proposed crematory.

Traffic in the area surrounding the proposed crematory has been decreasing in the past 8 years

In 2021 I reviewed the Traffic Count Locations in the Baltimore Region from 2010-2018.<sup>42</sup> This assessment indicated that traffic along York Road between the intersection of Rossiter Avenue and Radnor Avenue indicated that the traffic concentration decreased by 6,000 cars per day between 2010 and 2018.<sup>43</sup> For that report, 2018 data was the most recent data available.

Upon review of this information in 2024, there has been a continued steady decrease in traffic along York Road from 2013 until 2020, and then a slight increase over 2020 in

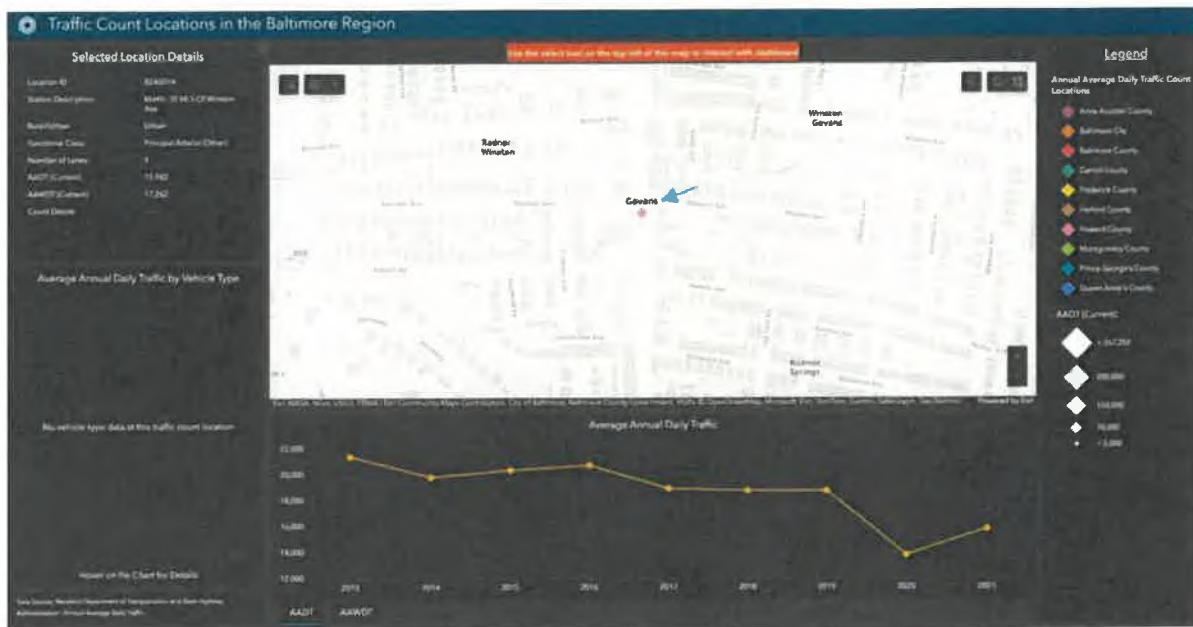
<sup>41</sup>

<https://experience.arcgis.com/experience/f9473095b9564bcaa357688cc59c943f/page/Page/?views=Legend>

<sup>42</sup> Rimkus second Supplemental Report of findings, September 15, 2021

<sup>43</sup> Rimkus second Supplemental Report of findings, September 15, 2021

2021.<sup>44, 45</sup> (Figure 5). The total decrease in number of cars per day in this area between 2013 and 2021 is 5,591 fewer cars per day.<sup>46</sup>



**Figure 5** – Average annual Daily Traffic trends on York Road between Oakland Avenue and Willow Avenue (2013-2021). Data Source: Maryland Department of Transportation and State Highway Administration. The Vaughn Greene Funeral Home is located by the blue arrow.

Taken together, the data clearly shows that the area roads around the proposed crematory are not areas of high congestion and that the number of cars along York Road is either staying the same or lower than in years past.

This report was prepared for the exclusive use of Wright, Constable & Skeen, LLP and was not intended for any other purpose. Our report was based on the information available to us at this time. The opinions and conclusions herein are based on sufficient facts or data; they are the product of our analysis utilizing reliable, generally accepted principles and methods in our applicable professional field; and they reflect a reliable application of these principles and methods to the facts of this matter. Should additional information become available, we reserve the right to determine the impact, if any, the new information may have on our opinions and conclusions and to revise our opinions and conclusions if necessary and warranted.

<sup>44</sup> Data Source: Maryland Department of Transportation and State Highway Administration - Annual Average Daily Traffic; <https://bmc.maps.arcgis.com/apps/dashboards/95b90bda95ac4dab83dadb8befd2f44>

<sup>45</sup> <https://data-maryland.opendata.arcgis.com/datasets/mdot-sha-annual-average-daily-traffic-aadt-locations/explore?location=39.347331%2C-76.606632%2C16.03>

<sup>46</sup> Data Source: Maryland Department of Transportation and State Highway Administration - Annual Average Daily Traffic; <https://bmc.maps.arcgis.com/apps/dashboards/95b90bda95ac4dab83dadb8befd2f44>

Thank you for allowing us to provide this service. If you have any questions or need additional assistance, please call.

Sincerely,  
Rimkus

**Carla  
Kinslow**

Digitally signed by: Carla Kinslow  
DN: CN = Carla Kinslow C = US  
O = Unaffiliated  
Date: 2024.08.06 13:01:41 -  
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Carla Kinslow, Ph.D.  
Director Toxicology and Food Safety

Attachment: Curriculum Vitae

# Curriculum Vitae

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## Carla J. Kinslow, Ph.D.

she/her/hers

Director, Toxicology and Food Safety Practice

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Houston, TX 77079  
650 N.E. Holladay Street, Suite 1600  
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[ckinslow@rimkus.com](mailto:ckinslow@rimkus.com)

## Background

Dr. Carla Kinslow holds a doctorate in Biomedical Sciences, Cell Biology/Molecular Toxicology with over 31 years of biomedical, regulatory, and environmental experience.

She has expertise in inhalation and oral toxicology; derivation of regulatory screening values for oral and inhalation exposure, toxicogenomics; toxicological risk assessment and communication of such risk to diverse stakeholders; human health impacts analysis from emission events; air, soil, and water monitoring data; modeling data related to ambient air and drinking water quality; water contamination from oil and gas operations; and stakeholder communication.

She specializes in risk-based evaluation of air, soil, and groundwater toxicology under the USEPA, as well as state and federal guidelines. She has served as manager for various regulatory projects where she helped design and implement air monitoring networks, groundwater monitoring projects, and remediation scopes, with subsequent assessment and communication of such human health impacts based on collected data. She has extensive experience in the evaluation of drug and alcohol impairment and "DRAM" shop cases.

Dr. Kinslow also has extensive experience in the evaluation of pesticide/herbicide overspray cases as well as health risks based on genetic predisposition to disease from environmental, occupational, and pharmaceutical exposures. Notably, Dr. Kinslow is also an environmental microbiologist and regularly conducts indoor air quality mold investigations and beer contamination evaluations.

## Professional Engagements

### • Water

- Remediation Support – Drafted several Affected Property Assessment Reports (APARs) for submission to the Texas Commission on Environmental Quality (TCEQ), conducted fieldwork for soil and groundwater sampling, and water well surveys.



- Drinking Water – Evaluation of monitoring data with regard to human impacts from chromium in public drinking water systems.
- **Risk Communication**
  - MTBE Ground Water Contamination – Texas, Community engagement about groundwater contamination as well as accidental releases from chemical plants.
  - Hazard Assessments – Texas, Served as a regulatory and community liaison, which included a presentation to the La Porte, TX community regarding odor toxicology after a fatal release of methyl mercaptan.
  - Hazard evaluation and toxicological impacts assessment of data gathered around oil and natural gas drilling facilities.
  - Water/Air/Odors Education – Houston, Beaumont, TX, Conducted over 20 presentations for Community Advisory Panels (CAPs) across the Houston ship channel and Beaumont areas. Topics covered – accidental release of benzene in water and air, odors, and long-term air monitoring data.
- **Inhalation**
  - Indoor Air Contaminants – Alternative causation evaluation for workers compensation cases involving respiratory issues attributed to indoor air contaminants.
  - Ambient air and pollution exposure risk assessment based on modeling data and known regulatory guidelines.
  - Fabric Guard Spray – Evaluation of human impacts from accidental inhalation exposure of hydrocarbons and fluorocarbons from fabric guard spray.
  - Workers Compensation – Alternative causation evaluation for workers compensation cases involving respiratory issues attributed to indoor air contaminants.
  - Asphyxiation from gasoline fumes.
  - Due Diligence/M&A Vapor Intrusion – Completed vapor intrusion assessments of a multi-use property and evaluated potential impacts of contamination of groundwater for future development. Human and ecological risk associated with reclaimed water.
  - Evaluation of human health impacts based on ambient air data as well as modeled data.
  - Designed ambient air monitor placement criteria for the TCEQ.
- **Alcohol/Drug**
  - Drug impairment evaluations in driving and workers compensation - marijuana, cocaine, alcohol, and prescription drugs.
  - Evaluation of blood alcohol concentration (BAC) as it relates to impairment, both in the presence of and absent of other drugs, including cocaine and marijuana.
  - Determination of possible impairment from alcohol before entry, at the point of sale, and after leaving an establishment (i.e., “DRAM shop” projects).
  - Evaluation of possible contribution of marijuana and THC to driving impairment.
  - Contribution of prescription opiates in causing death to an individual.
- **Beer Contamination - Microbiology**
  - Brewery contamination and trace-back investigation for initial insurance as well as subrogation claims.
- **Environmental Microbiology**
  - Human and Animal Food Investigation - Source trace-back in salmonella and E.coli contamination cases – identifying the environmental source of contaminated food.
  - Mold investigations and alternative causations relative to health complaints.

- **Other**
  - Herbicide/Pesticide Overspray – Evaluation of possible pesticide and herbicidal overspray for wheat and potato fields.
  - Benzene/Asbestos – Evaluation of molecular mechanisms responsible for predisposition to cancer from low-level exposure to benzene and asbestos.
  - Evaluation of human toxicity related to caustic injury.
- **Oil/Gas/Manufacturing**
  - Toxicological Risk and Human Impacts Assessment – Evaluation of modeling impacts from air emissions, review of accidental, industrial emissions data, and evaluation of possible human health impacts from the ingestion of groundwater contaminants.
  - Barnett Shale – Dallas/Ft. Worth, TX, Developed and implemented air monitor location criteria for the TCEQ Barnett Shale air monitoring program.
  - Manufacturing Facilities – Toxicological assessment of impacts from odorous manufacturing facilities including refineries, oil and animal rendering facilities, and landfills.
- **Regulatory**
  - Derivation of state-approved, human-health regulatory screening values using TCEQ and US Environmental Protection Agency (EPA)-specific guidance. These included a new cobalt screening value for soil and groundwater, which resulted in the TCEQ changing its regulatory guidance for cobalt.
  - Tox21 Guidance – Drafted state of science reports for benzene and asbestos-based on new Tox21 guidance for the weight of evidence approach to literature search and documentation.
  - Texas Refinery QRA – Conducted reviews of quantitative risk assessment (QRA) from a refinery and completed state-specific QRAs under the Texas remediation program.
  - Toxicological review of literature related to antibacterial chemicals used in hand soap focused on enhancing a clients' document submittal to the FDA.
  - Regulatory Compliance – Texas, Conducted reviews of current toxicological screening values (air, water, soil) and reviewed literature; prepared summaries of current benzene, toluene, ethylbenzene, and xylene (BTEX) and carbon monoxide (CO) National Ambient Air Quality Standards (NAAQS) data.
- **Tobacco**
  - Tobacco Products – Developed mode of action summaries for ten tobacco products.
  - Industrial Hygiene – Conducted due diligence auditing for biomedical laboratories for mergers and acquisitions.

## Professional Experience

- **Rimkus** **2016 – Present**
  - Director, Toxicology and Food Safety Practice  
Responsible for division oversight and technical support to the staff. Duties include the evaluation of human health impacts from drugs, chemical exposure in the environment or workplace, and brewery/beer contamination, as well as providing litigation, scientific liaison, or environmental regulatory toxicological support. Areas of expertise include inhalation toxicology, marijuana, remediation, pesticide/herbicide overspray, environmental microbiology, human health-based risk assessment, toxic mold, lung cancer, vapor intrusion, and odor issues.
- **Ramboll Environ, Inc.** **2013 – 2015**
  - Manager/Toxicologist – Health Science Division

Responsible for providing senior toxicological support to the division. Duties included the evaluation of human health impacts from environmental chemical and pharmaceutical exposure, as well as litigation, scientific liaison, environmental regulatory toxicological support. Areas of expertise included inhalation toxicology, soil and water remediation assessment, risk assessment, toxic mold, lung cancer, vapor intrusion, and odor issues. Served as scientific liaison during public stakeholder meetings as well as conducted risk communication presentations to communities in the Houston area.

- Brown and Caldwell** **2012 – 2013**

  - Senior Scientist/Toxicologist

Responsible for providing senior technical and regulatory support for the company. Duties included the evaluation of human health impacts from environmental and pharmaceutical exposure, as well as litigation, scientific liaison, environmental regulatory toxicological support. Provided hazard and human health risk assessment, remediation, and compliance assistance for the company. Regulatory compliance included air permit impacts evaluation, evaluation of groundwater and soil data for human and ecological risk, document preparation according to TRRP (Texas) and NJDEP (New Jersey) regulatory requirements. Project management included managing unit closure and RCRA permitting projects.
  
- TCEQ** **2008 – 2012**

  - Senior Toxicologist

Responsible for providing senior toxicological support and guidance to other staff, specific to the TCEQ. Served as primary toxicologist for the Houston region and conducted numerous stakeholder presentations regarding environmental issues and activities of the TCEQ. Development of human health-protective inhalation values for use in regulatory compliance and permitting. Duties included deriving state-approved, human-health regulatory screening values using TCEQ and EPA-specific guidance, evaluating and designing toxicological studies that were implemented by the TCEQ. Additional responsibilities included acting as a liaison between the TCEQ and chemical trade groups, providing hazard evaluation and toxicological impacts assessment of data gathered around oil and natural gas drilling facilities, developing annual impacts assessment reports, reviewing air permits, and evaluating Qualitative Structure-Activity Relationships (QSAR) for toxicological endpoints. Served as mercury TMDL expert for the toxicology division during Texas government 2009 session.
  
- Proctor and Gamble** **2006**

  - Intern

Developed molecular assays to detect endocrine-disrupting chemicals in human prostate cells.
  
- University of Texas Medical Branch** **2003 – 2008**

  - National Institute of Environmental Health Sciences (NIEHS) Pre-doctoral Fellow

Doctoral studies related to molecular (inheritable) toxicological factors contributing to a predisposition for lung cancer in tobacco smokers. This included utilizing microbial cultures to manipulate genomes.
  
- The Pronet Group, Inc.** **2001 – 2002**

  - Indoor Air Quality Consultant

Performed IAQ investigations in residential and commercial buildings, the majority of which were related to water intrusion and microbial contamination. Drafted the remediation scope(s) and completed follow-up clearance evaluations for these properties. Provided litigation support.
  
- MD Anderson Cancer Center** **1999 – 2000**

  - Research Assistant II

Performed molecular biology assays related to maintaining the viral vector core facility. This included using virus particles to infect bacterial cultures in order to package recombinant genomes.

- **Valentis, Inc.** **1998 – 1999**
  - Research Assistant/Scientist  
Performed molecular biology assays and plasmid construct designed for cancer gene therapy research. This included utilizing microbial cultures to manipulate human genes and genomes.
  
- **Michigan Technological University** **1993 – 1998**
  - Naval Research Fellow and Research Assistant – Phycology (Algae)  
Molecular biology of marine diatoms. Studied various marine and freshwater algae and bacteria, including their development and persistence in biofilms located on man-made objects. Developed novel culture methods as well as specific methods to study the genomes of algae in biofilms. Taught 100 and 200 level college laboratory classes in microbiology, botany, and phycology (algae).
  
- **Indiana University Southeast** **1989 – 1993**
  - Research and Laboratory Assistant/Full-Time Researcher  
Designed and taught several microbiology, molecular biology, and botany labs to college and graduate students. Supervised and taught several microbiology, molecular biology, and botany labs to college students.
  
  - Research Assistant  
Designed and taught several microbiology, molecular biology, and botany labs to college and graduate students. Supervised and taught several microbiology, molecular biology, and botany labs to college students.

## Education and Certifications

- **Biomedical Sciences, Cell Biology/Molecular Toxicology, Ph.D.:** Biomedical Sciences, Cell Biology/Molecular Toxicology, Ph.D.: University of Texas Medical Branch (2008)
- **Molecular Phycology/Marine Ecology, M.S.:** Michigan Technological University (1997)
- **Biology, B.A.:** Indiana University Southeast (1992)
- **Society of Toxicology:** Full Member
- **American Society of Microbiology:** Premium Member
- **Society of Toxicology of Canada:** Regular Member
- **University of Texas Medical Branch Alumni Committee:** Member

## Continuing Education

- **OSHA and related Training:** HSA refresher, TWIC card, 8 hrs. (2012, 2013, 2014, 2015); 40 hr. OSHA Training (2011)
- **TCEQ:** Expert witness training (2011); EPA Vapor Intrusion Training (2010)
- **Other Courses:** Quantitative Structure Activity Relationships (QSAR) (2008-2012); Communications (2011); Management training (2011); TERA training – Child susceptibility in risk assessment seminar (2009); International REACH training (2009); Advanced Air Permitting (2008)

## Publications

- **“Beyond Science and Decisions: From Problem Formulation to Dose-Response Report from Workshop**

- IV", Toxicology Excellence for Risk Assessment (TERA), published 2022.
- **"Regulatory regions responsive to oxidative stress in the promoter of the human DNA glycosylase gene NEIL2,"** Mutagenesis, 2010, Mar; 25(2):171-7.
- **"Genetic determinant of NEIL2 transcription,"** Ph.D. Dissertation.
- **"Single nucleotide polymorphisms 5' upstream the coding region of the NEIL2 gene influence gene transcription levels and alter levels of genetic damage,"** Genes Chromosomes Cancer, 2008 Nov;47(11):923-32.
- **"The L84F polymorphism in the O6-Methylguanine-DNA-Methyltransferase (MGMT) gene is associated with increased hypoxanthine phosphoribosyltransferase (HPRT) mutant frequency in lymphocytes of tobacco smokers,"** Pharmacogenet. Genomics, 2007 Sep;17(9):743-53.
- **"The L84F and the I143V polymorphisms in the O6-methylguanine-DNA-methyltransferase (MGMT) gene increase human sensitivity to the genotoxic effects of the tobacco-specific nitrosamine carcinogen NNK,"** Pharmacogenet Genomics, 2005 Aug. 15(8):571-8.
- **"Molecular Biology of the marine diatom Achnanthesis longipes,"** Master's thesis, 1997.

## Presentations

- **"What's Brewing in Your insurance claim,"** (in production) National Webinar, Beer contamination investigations, 2019.
- **"Toxicology for Drug and Alcohol Cases and Issues of Impairment,"** National Webinar, Broadcast to 700 attendees representing the insurance and legal industries, Jan. 23, 2019.
- **"What the Hex is Cr6,"** National Webinar, Broadcast to 700 attendees representing the insurance and legal industries, Jan. 23, 2019.
- **"What the Hex is Cr6,"** Evaluation of the toxicity screening values for hexavalent chromium (Cr6) across the U.S., EECMA, Orlando, FL, 2018.
- **"PFAS: Evolution from Emerging Contaminant to Frequent Headliner,"** Environmental Risk & Litigation Conference New York, NY 2018.
- **"Forensic Toxicology for Drug and Alcohol Cases and Issues of Impairment,"** Continuing Education (CE) presentation for various clients. February 8, 2018, Houston, TX.
- **"Cerium oxide nanoparticle (nCe) use as a diesel fuel additive and the possible health impacts from its wide application in diesel fuel,"** AEHS Foundation: 27th Annual International Conference on Soil, Water, Energy, and Air, March 20-23, 2017, San Diego, CA.
- **"Cerium oxide nanoparticle (nCe) use as a diesel fuel additive,"** The Air and Water Management Association, Austin Chapter, Austin, TX, 2017.
- **"Evaluating the Broadening Use of Prescription Marijuana Related to Workers' Compensation Claims,"** 2017 CLM Conference on Retail, Restaurant & Hospitality Conference (whitepaper), Gaylord, TX.
- **"Evaluating the Broadening Use of Prescription Marijuana Related to Workers' Compensation Claims,"** CLM Conference on Retail, Restaurant & Hospitality Conference (white paper) 2017.
- **"Marijuana: determining impairment and its impact in the insurance industry,"** Webinar broadcast to ~500 listeners, 2017.
- **"Marijuana and driving with medical marijuana,"** Willis Watson, Addison, TX, 2016.
- **"Marijuana and Driving; Can a blood test really determine impairment,"** GEICO Insurance Company, Katy, TX, 2016.
- **"Marijuana and Driving; Can a blood test really determine impairment,"** DRI For the Defense (whitepaper), 2016.
- **"Evaluation of Benzene Fence line Monitoring Program in USEPA's Proposed Refinery Sector Rule,"**

- AWMA Hot Air Topics Annual Conference, Houston, TX, 2015.
- **“Tools for successful stakeholder communications around hydraulic fracturing facilities,”** Gulf Coast AWMA conference, New Orleans, LA, 2015.
  - **“Health-based screening values for methyl mercaptan,”** La Porte, Texas Community Advisory Panel (presentation), La Porte, TX, 2015.
  - **“Toxicogenomics in Toxic Tort - Environmental and Occupational Exposure,”** HarrisMartin Law Symposium, Charleston, SC, 2014.
  - **“Hydraulic Fracturing – Tools for successful stakeholder engagement,”** Society of Petroleum Engineers Annual Meeting on Health and the Environment, Long Beach, CA, 2014.
  - **“Tools for successful stakeholder communications around hydraulic fracturing facilities,”** International Conference for the Society of Petroleum Engineers (whitepaper), 2014.
  - **“Hydraulic Fracturing – Tools for successful stakeholder engagement,”** Texas Association of Environmental Professionals Annual Meeting, Houston, TX, 2013.
  - **“2013 Panelist,”** 2013 Annual Presidential Career Symposium, Houston, TX.
  - **“Consulting as a Toxicologist,”** University of Texas Medical Branch, Panelist and presentation, Galveston, TX, 2013.
  - **“Regulatory Toxicology,”** University of Texas Medical Branch, Galveston, TX, 2012.
  - **“Toxicology at TCEQ,”** A series of presentations to various community groups in Houston/Galveston, TX area, 2012.
  - **“Acrylonitrile Development Support Document,”** TCEQ, 2012.
  - **“Developing Effects Screening Levels and Air Monitoring Comparison Values at the TCEQ and Trends in Texas Air Quality,”** Texas Association of Environmental Professionals annual meeting, Houston, TX, 2011.
  - **“Trends in Texas Air Quality: Atmospheric Chemistry and Air Quality in Texas: Challenges and Opportunities,”** Texas A&M University, College Station, TX, 2010.
  - **“Challenges in personalized medicine: Warfarin,”** Preventive medicine and community health seminar series, Galveston, TX, 2008.
  - **“Genetic determinants of NEIL2 transcription,”** The NIEHS Center in Environmental Toxicology Environmental Health Sciences Seminar Series, Galveston, TX, 2007.
  - **“Newly discovered promoter SNPs in the DNA repair gene, NEIL2, modulate gene expression,”** Preventive medicine and community health seminar series, Galveston, TX, 2007.
  - **“Advancing Toward In Vitro Toxicity Models - Evaluation of gene expression changes induced by androgen exposure in the human-derived CW22Rv1 cell line,”** Gulf Coast Society of Toxicology, Waco, TX, 2006.
  - **“A pharmacogenetic approach to anticoagulation treatment: the role of microsomal epoxide hydrolase,”** The Society of Toxicology annual meeting, San Diego, CA, 2006.
  - **“A pharmacogenomic approach to anticoagulation treatment,”** Gulf Coast Society of Toxicology, Austin, TX, 2005.

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CITY OF BALTIMORE  
BOARD OF MUNICIPAL AND ZONING APPEALS

-----X  
IN RE: )  
 )  
4903-4905 York Road )  
Docket Number: 2021-161 )  
-----X

(Virtual hearing)  
August 10, 2021

BEFORE: James Fields, Chairman  
Wilbur "Bill" Cunningham, Member  
Sabrina Johnson-Turner, Member  
Frank Bonaventure, Member  
Kathleen Byrne, Acting Executive Director  
Simon Penning, Acting Associate Counsel  
Martin French, Planning Department

A P P E A R A N C E S

Neil Lanzi for Petitioner  
Becky Witt for Opposition

Transcribed by:  
Free State reporting, Inc.

1 think that's the only picture we have of it. So that's  
2 fine.

3 MS. BYRNE: Okay.

4 MR. LANZI: You have it in the file.

5 Okay. That's all I have for Mr. Greene. I'll  
6 call my next witness. It will be Dr. Kinslow. If you  
7 could have her admitted into the hearing.

8 MS. BYRNE: Sure. And what's Dr. Kinslow's  
9 first name?

10 MR. LANZI: Carla.

11 MS. BYRNE: Okay, Ms. Kinslow, you've been made  
12 a panelist, and you are unmuted. Ms. Kinslow.

13 MR. LANZI: She was on earlier.

14 MS. BYRNE: She is unmuted. Let's see.  
15 Ms. Kinslow, if you could put in the chat if you're  
16 having difficulties or if you are -- if you're in, in a  
17 call-in fashion as well.

18 MR. LANZI: I hear her.

19 THE WITNESS: Hello.

20 MS. BYRNE: Ms. Kinslow?

21 THE WITNESS: Yes. Hello.



1 MS. BYRNE: There you go.

2 THE WITNESS: All right. All right. Thank you  
3 very much. And I do apologize. I was in call-in mode.  
4 (Whereupon,

5 CARLA KINSLOW  
6 was called as a witness, and testified as follows:)

7 DIRECT EXAMINATION

8 BY MR. LANZI:

9 Q Dr. Kinslow, I want to first introduce you. If  
10 you could state your name and your -- the business you're  
11 with.

12 A Yes. My name is Dr. Carla Kinslow. I'm the  
13 Director of Toxicology and Food Safety for Rimkus  
14 Consulting.

15 MR. LANZI: And I'm going to proffer  
16 Dr. Kinslow's CV, which is part of Exhibit 3. I will  
17 proffer all the experts CVs that are part of Exhibit 3  
18 into evidence.

19 (Whereupon, the document  
20 referred to as Petitioner  
21 Exhibit 3 was marked

1 for identification.)

2 BY MR. LANZI:

3 Q But if you could just briefly tell the Board  
4 what you do, and your background as to why you're  
5 testifying today.

6 A So I'm a PhD toxicologist. I have a PhD in  
7 biomedical sciences, with a (indiscernible) and  
8 inhalation toxicology. I have an extensive background in  
9 understanding and evaluating human exposure to inhalation  
10 toxicants. Within that background, I've spent several  
11 years with the Texas Commission on Environmental Quality  
12 where I reviewed over 100 air permit applications for  
13 human health impacts, and developed human protective --  
14 or health protective human threshold values used in the  
15 permitting process. I also reviewed and provided  
16 critical technical and scientific comments on the EPA,  
17 National Air -- Ambient Air Quality Standards that are  
18 referenced here, and as well as other pollutants;  
19 threshold values for other pollutants provided by the  
20 EPA.

21 I am a full member of the Society of

1 Toxicology, as well as the Society of Microbiology --I'm  
2 a microbiologist as well -- where I'm -- in the Society  
3 of Toxicology, I'm a vice president of Ethical, Legal,  
4 Forensic, and Societal Issue Leadership Section. I'm a  
5 peer reviewer for three scientific journals; *Toxicology*  
6 *In Vitro*; *Journal of (indiscernible) Diagnosis*; and  
7 *Pharmaceutical Sciences*. I'm a member of the Editorial  
8 Board of Toxicology Current Research.

9 Q Thanks, Dr. Kinslow.

10 MR. LANZI: I would offer for the Board  
11 Dr. Kinslow as an expert in the field of toxicology.

12 CHAIRMAN FIELDS: She's admitted.

13 MR. LANZI: Thank you.

14 BY MR. LANZI:

15 Q All right, Dr. Kinslow, if you could address  
16 for the Board, I believe you heard the question from the  
17 one Board Member with regard to the health concerns. If  
18 you could address the concerns of the community to the  
19 emissions from a crematorium.

20 A Sure. Thank you very much. And thank you -- I  
21 want to thank the Board for giving us the opportunity of

1 time, and your consideration in this matter. So I had  
2 the opportunity to provide (indiscernible) summary  
3 regarding this issue, and that's included in the packet  
4 that Mr. Lanzi has provided to you. In that  
5 (indiscernible) summary, the community has voiced  
6 concerns about the air emissions from the proposed  
7 crematorium, and that they -- concern that they're going  
8 to negatively impact the surrounding community.

9 (Indiscernible) these concerns are -- supported  
10 by the scientific literature or regulatory guidance.

11 Upon review of the extensive permitting that --  
12 permitting documents that they have provided here, that  
13 were developed per the Maryland Department of Environment  
14 guidance, and presented as a permit application, these  
15 emissions are below the MDE, Maryland Department of  
16 Environmental regulatory threshold limits, and are not  
17 expected to be unreasonably -- to unreasonably endanger  
18 human health.

19 So the screening values that are used in this  
20 permit application are used by MDE, and are very  
21 conservative. They're intended to protect the workers,

1 and the surrounding communities.

2           So when the permit application was created, one  
3 of the requirements in this application is to tell the  
4 MDE what you're going to be emitting and how much. And  
5 (what that does is (indiscernible) a layer of  
6 transparency, and that layer of transparency provides the  
7 information for MDE to make that decision based on good  
8 scientific, and scientifically supported information and  
9 data.

10           Importantly here in this case we have this  
11 crematory that is going to be cremating bodies. And as  
12 the image of the, the modified crematorium, you can see  
13 the stack, that 3-D rendered image that you saw earlier.  
14 That stack is 40 feet up in the air. So these high --  
15 emissions are going to be released from that vent stack,  
16 and getting from locations that's above the rooftops.  
17 And as soon as it's emitted, it's going to be  
18 (indiscernible) in the air. Now, remember these  
19 emissions that are immediately coming out of that vent  
20 stack have been approved by MDE as below MDE thresholds,  
21 well below those. And they're just going to be emitted

1 from the stack, and it's going to be mixed with the air  
2 and diluted even further.

3           So if those emissions eventually fall to the  
4 breathing level, they will be even further diluted than  
5 what is being represented in this permit.

6           So this is different than, say, ground level  
7 emissions from car or trucks that are let immediately out  
8 at ground level very close to where someone might be  
9 inhaling them.

10           So next thing is that the community voiced that  
11 information from a recent scientific publication by the  
12 (indiscernible) Foundation supports that the addition of  
13 the crematorium would contribute to pediatric asthma  
14 incident disparity. And the fact is that, yes,  
15 Baltimore, Baltimore City has a disparity in the number  
16 of asthma-related issues related to that of the rest of  
17 the State. And what that study does -- it's a good study  
18 -- what it does is it identifies what are the key factors  
19 in the disparity. And they identify several things,  
20 including what they call environmental issues. Every  
21 time in this, the study, that they refer to environmental

1 issues is indoor environmental issues. At no point, at  
2 no point in the study do they talk about ambient air  
3 issues. At no point in the study do they talk about  
4 ambient air issues or crematoriums as creating this  
5 disparity. And I believe that Mr. Fields, what you were  
6 referring to is this disparity.

7           So that helps us understand that this disparity  
8 is -- according to this report, is focused on something  
9 else other than ambient air emissions.

10           Another concern that this community has is  
11 smoke from the crematorium. Particulate matter, PM, is a  
12 visible component of smoke. And according to the US EPA,  
13 Baltimore City ambient air has been in compliance with  
14 particulate matter standards that are set by the US EPA.  
15 And remember those federal standards are law. They are  
16 legally enforceable. And the federal -- it has met  
17 federal standards for particulate matter since 2014. And  
18 being within compliance with the MDE's standards for  
19 these proposed emissions, the agency has determined that  
20 emissions from the crematorium will not cause  
21 deterioration of air quality in regards to particulate

1 matter. The community also voiced a concern that  
2 (indiscernible) Covid-19 will spread the virus SARS-CoV-2  
3 through the air. SARS-CoV and its variance, including  
4 the Delta variance, will be completely destroyed under  
5 the extreme heat conditions of the cremation process.  
6 There is no chance that Covid-19 can be spread from  
7 cremation of a human being, and the cremation emissions  
8 of Covid-19 -- of a Covid-19 victim. Excuse me.

9           And upon review of this permitting application  
10 and their requirements, I think it's important to note  
11 that Maryland has as high or higher requirements for the  
12 production of emission and human impact information to  
13 show that they are being compliant with environmental  
14 standards; to show that transparency is very important  
15 for MDE. And so this is in regard specifically to the  
16 additional calculations and modeling that they have  
17 provided to show compliance with exposure impacts to the  
18 surrounding community.

19           Many other states, including Texas, Kentucky,  
20 Mississippi, do not require this level of proof in air  
21 permitting compliance. They don't require modeling



1 necessarily. Only if this much for -- a more significant  
2 number of cremations is going on. And, yet, Vaughn  
3 Greene has produced these calculations, and has shown  
4 that it is compliant with the MDE higher requirements.

5 Q Go ahead. Go ahead.

6 A I was going on to address the comments that I  
7 received last night in the memorandum.

8 Q Before you do that, before you do that --

9 A Yes, sir.

10 Q -- just to make sure I heard correctly because  
11 some of your testimony is kind of cutting out just a  
12 little bit. I just want to be clear when you talked  
13 about the Abel report that the causes that were listed  
14 are from interior versus exterior, correct?

15 A Yes. Correct.

16 Q Okay. Because --

17 A Yes. In the Abel report they talk about  
18 environmental sources, and every single one of those  
19 references to environmental sources as it pertains to  
20 disparity is -- are indoor sources. We're talking  
21 tobacco smoke. They mentioned tobacco smoke, dust. They

1 talk about allergens. Even fireplaces or gas ovens are  
2 all sources for aggravation of asthma, and their source  
3 from indoors.

4 MR. LANZI: I would like to offer Dr. Kinslow's  
5 report, which you just summarized, as Petitioner's  
6 Exhibit 10 into evidence.

7 (Whereupon, the document  
8 referred to as Petitioner  
9 Exhibit 10 was marked  
10 for identification.)

11 CHAIRMAN FIELDS: So admitted.

12 (Whereupon, the document  
13 referred to as Petitioner  
14 Exhibit 10 was received  
15 in evidence.)

16 CHAIRMAN FIELDS: May I ask a question of  
17 Dr. Kinslow?

18 MR. LANZI: Sure.

19 CHAIRMAN FIELDS: Dr. Kinslow, whether or not  
20 the disparities arise as a consequence of indoor  
21 pollutants or exterior pollutants, does the addition of a

1 crematorium and pollutants emitted from it nevertheless  
2 pose a health risk to a population that has a higher,  
3 greater proportion of folks who are compromised -- their  
4 health is compromised due to their environment?

5 THE WITNESS: That's a great question. And  
6 what I'm going to point to is that these impacts, the  
7 what's going to be created by the crematorium, are below  
8 the, below the human health threshold values that you  
9 would expect an increased risk of an adverse effect. So  
10 I'd like to talk about those values for a second.  
11 Because I've -- I derived those values. I do that for a  
12 living, and I did it for years, and I've been trained --  
13 EPA and other types of world health organizations or  
14 other methodologies that are scientifically proven to  
15 show that the values that you are deriving, and you use  
16 the permitting process or and -- even in monitoring, that  
17 they are health protective. And what we do is we  
18 evaluate numerous, numerous articles. And by law, each  
19 one of these criteria pollutants that are listed here in  
20 this memo, SO2, NOx PM, carbon monoxide, each one of  
21 those have to be re-reviewed by law periodically. SO2

1 has been most recently reviewed in 2017. And when we do  
2 that, we look at the value that has been shown in the  
3 scientific literature that causes harm. Then we add  
4 numerous, several fold -- we're talking between 10 to  
5 1,000 fold lower threshold values -- usually closer to  
6 1,000 fold lower threshold values before we allow that to  
7 be a new standard. And it's thousands -- sorry -- it's  
8 hundreds of different documents. It is several years.  
9 For example, the SO2 derivation was really quite quick.  
10 It was only seven years it took them, and these are teams  
11 of EPA toxicologists, epidemiologists, and other  
12 scientists that are evaluating this. Dozens of  
13 scientists look at each one of these. I was one of those  
14 scientists that when I worked at -- worked in Texas, I  
15 reviewed the carbon monoxides, the SO2 and the NOx as  
16 well as the particulate matter NAAQS derivations. And we  
17 were (indiscernible). We were harsh, and we wanted to  
18 make sure it was representative, and it would protect the  
19 people of our state.

20                   And so that's what these values are. And,  
21 importantly, I want you to understand that when we add

1 these conservative factors what are called sometimes  
2 margins of safety, we're there -- they're there to also  
3 consider those people who are most vulnerable, the high  
4 risk people. Because we want a value -- as a regulatory  
5 scientist, you don't want a value that your monitor says,  
6 oh, right now that's when somebody is going to get hurt.  
7 We want a value that's low enough to give us time to make  
8 changes so that someone doesn't get hurt. So it's  
9 important that when we look at, and we say that, look at  
10 these values and this modeling, and we say that, yes,  
11 it's below that threshold. This isn't just a number  
12 someone's picked out of a book. This isn't a number that  
13 they're -- they have a rodent or look at a Petri dish.  
14 These are numbers that have been derived using good  
15 science that have established that it -- they can't --  
16 they create (indiscernible) protective values.

17 Does that help? I hope that is helpful.

18 CHAIRMAN FIELDS: It does. Thank you. Thank  
19 you for that clarification. Appreciate it.

20 THE WITNESS: Is there another question I can  
21 address right now?

1 BY MR. LANZI:

2 Q Dr. Kinslow, if you could turn to address the  
3 memorandum in opposition. I believe you had a chance to  
4 review it last night. We just got it. And if you could  
5 respond.

6 A Yes. I would like to do that. And if anyone  
7 does have any questions, just ask them during my -- as  
8 I'm talking. I'll be more than happy to -- so don't be  
9 shy. I'm here to answer your questions. So, first of  
10 all, when I looked at -- and I do apologize. I just got  
11 this last night. And so I do apologize if there are some  
12 things that I'm missing here. But the first thing that  
13 I, I looked at was Section A, and it starts with location  
14 maintenance, operation of the crematorium, and it's -- it  
15 is -- it voices concern regarding the emissions proposed  
16 from the crematorium. And under Section A1, they  
17 actually -- they've (indiscernible) that their  
18 crematorium will emit 2.28 pounds per day of sulfur  
19 dioxide, 3.74 pounds per day of nitrous -- nitrogen  
20 oxide, 4.9 pounds per day of particulate matter, and  
21 3.12 pounds per day of carbon monoxide.

1           So one thing I wanted to make clear here is  
2 that they're assuming that the Vaughn Greene facility  
3 will be running 12 hours per day. However, it's my  
4 understanding that it will be running closer to four  
5 hours per day, and not every single day.

6           So it's a statement I want the Board to  
7 understand that this overstates the pounds per day  
8 emissions. So, in fact, what is closer to the amount of  
9 emissions that would be produced in -- on a day that they  
10 choose to cremate someone, and assuming that that's  
11 approximately four hours long, that it's closer -- so S02  
12 in here it says 2.28. It's really about a third of that  
13 is more realistic to what's going to happen. So it's  
14 really closer to 0.76 pounds per day. For NOx or N-O-x,  
15 which is nitrogen oxide, instead of 3.7, it's really  
16 closer to 1.2. For particulate matter, instead of 4.8,  
17 it's really closer to 1.6. And for carbon monoxide 3.12,  
18 it's closer to 1.04.

19           Another thing I want to talk about before --

20           CHAIRMAN FIELDS: Can I interrupt Ms. Kinslow?

21           THE WITNESS: Sure.

1 CHAIRMAN FIELDS: That assumption may be  
2 because it seems that that's what the application states,  
3 the MDE. Emissions schedule for -- the emission point.

4 THE WITNESS: Um-hmm.

5 CHAIRMAN FIELDS: Let's see, Form  
6 (indiscernible) Emission Point Data. I'm looking at  
7 number three, and you can correct me if I'm wrong, but it  
8 says continuous or intermittent -- minutes per hour 60  
9 hours per day, 12 days per week, 6, weeks per year 52.  
10 Am I reading that correctly?

11 THE WITNESS: I don't have that in front of me.  
12 (Indiscernible) my calculations for the emissions.

13 CHAIRMAN FIELDS: Okay.

14 THE WITNESS: And, yeah, is that where we're  
15 at?

16 MR. LANZI: I would address that we will have  
17 someone with Matthews, who could address that issue.  
18 When it was -- when the application was filed, it was to  
19 be filed as maximum to make sure that it would comply  
20 with the State regulations. We just wanted to make sure  
21 that we were comparing apples to apples, which was the



1 distinction (indiscernible) was showing. But we will  
2 have someone address your question.

3 CHAIRMAN FIELDS: Okay.

4 THE WITNESS: Thank you. And, actually, now  
5 that we're on this, in the application, and actually in  
6 the memorandum, the memorandum, page 13 of the memorandum  
7 that was provided last night, it has that sheet, the  
8 calculation of emissions. And in that calculation of  
9 emissions, Matthews has cited an actual emission rate.  
10 And what that means is how much of each one of these  
11 compounds are going to be emitted per hour. And you can  
12 see where it says sulfur dioxide. And if you go all the  
13 way to the right, it says 0.19 pounds per hour, and  
14 that's (indiscernible), right? And that's how they --  
15 and if you do by 12, 12 hours, you get 2.28, and that's  
16 pretty simple math. I times it by 4, and I got 0.76, and  
17 that's really where I got that, and to give you a  
18 different. But what I also wanted to show you was I  
19 looked at these rates of emissions. I thought, well, how  
20 could I understand this from something that I'm more  
21 familiar with? And I have an F150 truck. I said, well,

1 how about a gasoline powered F150 truck? And I looked up  
2 the 2021, 430 horsepower F150 gas truck, and I said,  
3 okay, well how much is that? So for the compound SO<sub>2</sub>,  
4 you can see here, like I said, it's estimated to emit  
5 0.19 pounds per hour. F150 truck is -- that would be  
6 running at the same time so pounds per hour is 0.215. So  
7 a little bit more, but about the same. NO<sub>x</sub>, you can see  
8 the next one is 0.3115 pounds per hour for NO<sub>x</sub>. An F150  
9 has over 10 times that rate, 4.73 pounds per hour.  
10 Particulate matter, 0.4. For F150 truck it's a little  
11 better, 0.3. Again, possible. And (indiscernible) also  
12 was only PM 10 where this particular (indiscernible) PM  
13 10. So you would expect to see a little bit higher.  
14 Carbon monoxide is -- the crematorium 0.258. Where the  
15 F150 gas truck is higher about 5 times at 1.29 pounds per  
16 hour.

17           So to give you guys something relative to think  
18 about as far as emissions go.

19           The next issue that they bring up in the  
20 memorandum, they're talking about the different -- and  
21 I'm still in A1, by the way. They mention silver

1 dioxide, nitrogen oxide, particulate matter, and carbon  
2 monoxide, and they talk about the health effects. And  
3 it's true that exposure to too high of a concentration of  
4 these compounds can increase your risk for health  
5 effects. That's why we have the EPA having legal rules  
6 to control these. And they also have legal rules around  
7 other things as well. And -- with regard to the  
8 environment. But this has to do specifically with  
9 ambient air quality standards.

10           And so and that's why I want to reinforce that  
11 the emissions have been determined by the MDE to be below  
12 these thresholds of concern. So these criteria  
13 pollutants are emitted from any emissions -- any  
14 combustion emission source; cars, trucks, gas ovens,  
15 furnace, fireplace, et cetera. We are exposed to these  
16 all the time indoors and outdoors. They are ubiquitous.  
17 But too much of anything has the potential to increase  
18 the risk for adverse effect.

19           And when we're looking at these individual  
20 compounds, I think I've already mentioned SO<sub>2</sub>, and how  
21 much review went into identifying these threshold values.

1 It's the same for both the particulates, the NOx, the  
2 carbon monoxide. I've read that carbon monoxide health  
3 effects review, and that was a book. It was hundreds of  
4 pages long. And, like I said, it takes years before we  
5 (indiscernible) as possible.

6 Mercury emissions is also, is also mentioned  
7 here. As Mr. Greene stated, their intent will be  
8 removing the mercury from the teeth such at that they --  
9 this is a, this is a moot point at this point. But I do  
10 want to mention to you guys, and just kind of help  
11 everybody understand why we're concerned about this, and  
12 just in general, and help everybody understand the  
13 difference in the types of mercury emissions.

14 So mercury, I think everybody agrees, that  
15 mercury is not good for you. Mercury in the form of  
16 amalgams are a type of mercury. It's called elemental  
17 mercury. And that elemental mercury is -- I've got  
18 dental amalgams right now, okay, that have mercury in  
19 them, all right. And the reason that I don't have  
20 neurological issues from that is because they're held  
21 there in elemental mercury. Exposure to elemental

1 mercury is far less toxic than that of the methylmercury,  
2 which is very toxic. So the mercury environmental cycle  
3 is that mercury is emitted from coal fired power plants,  
4 the mining industry, and possibly a little bit from  
5 crematoriums. It gets up into the atmosphere, the  
6 elemental mercury does, and then it falls down to the  
7 ground eventually. It is taken up usually by algae,  
8 which creates what's called methylmercury. Methylmercury  
9 is the type of mercury that is the most toxic.

10           In this memo, they do not discern the  
11 difference between elemental mercury and methylmercury,  
12 and they clump it all together. However, even in the  
13 documents that they review, and that they reference, it's  
14 clearly defined the difference between methylmercury and  
15 elemental mercury. And in that document, in that peer  
16 review document, they talk about this formation. It's  
17 called bioaccumulation. And essentially the elemental  
18 mercury that comes out isn't highly toxic until it goes  
19 through this bioaccumulation stage where the algae that  
20 has turned elemental mercury into methylmercury is taken  
21 up by fish. Then the little fish are eaten by the big

1 fish. The big fish eat (indiscernible) fish. By the  
2 time it enters into our bodies they have bioaccumulated  
3 methylmercury. Large fish. And if you ever go to a  
4 restaurant, you shouldn't eat too much swordfish. You  
5 shouldn't eat too much whale, especially Orca. You  
6 shouldn't eat some tuna, actually, because they have high  
7 concentrations of methylmercury due to they are a huge  
8 fish that have eaten a bunch of little fishes, and have  
9 bioaccumulated.

10           The EPA has stated that methylmercury is highly  
11 toxic, and a highly toxic compound, and it's a form of  
12 mercury people in the United States encounter most  
13 frequently. Almost all people in the world have at least  
14 trace amounts of methylmercury in their bodies,  
15 reflecting its prevalence in the environment. However,  
16 most people have mercury levels in their body below the  
17 level associated with possible health effects. Nearly  
18 all methylmercury exposures in the United States occur  
19 through eating fish and shellfish that contain higher  
20 levels of methylmercury. Thus, by the authors of this  
21 memo referring to all mercury in this article as in the

1 form of dental amalgams, the memorandum is misleading,  
2 and potentially hazard -- representing the potential  
3 hazard with regard to concern for the community as -- and  
4 as such is misleading to the reader with respect to  
5 mercury exposure and health-related concerns from a  
6 crematorium.

7           They -- I'm sorry? Okay.

8           BY MR. LANZI:

9           Q     Go ahead.

10          A     Okay. They also make another misleading, and  
11 wrong, flat-out wrong statement. They state that public  
12 health officials agree that mercury is highly toxic, and  
13 that there is no known safe level of exposure. In fact,  
14 the EPA has methylmercury as well as elemental mercury  
15 exposure thresholds that they have derived.  
16 Specifically, 3 times 10 to the negative 4 milligrams per  
17 meter cubed in the air for elemental; and then 1 times 10  
18 to the negative 4 milligrams per kilogram for oral  
19 exposure to methylmercury.

20           The last point I'm going to make here, I think,  
21 is Exhibit 2, 3, 4. And I think this kind of goes back

1 to Mr. Fields' question. So these images -- and let's  
2 look at Exhibit 2, 3, and 4. They are based on a CDC  
3 modeling program, and -- called PLACES. And this  
4 database is, is used in order to provide modeled based  
5 population analysis and community estimates to the  
6 counties, counties, places, census tracks, and ZIP codes  
7 tabulation areas. This does not represent  
8 questionnaires. This does not represent actual  
9 identified individuals, who you go out to their house and  
10 say, hey, do you have asthma? Do you have heart  
11 conditions? Do you have this thing? These are modeled  
12 data. Another thing when I went into this study,  
13 specifically with regard to Exhibit 2 -- well, one thing  
14 I want to say about model data. As scientists and  
15 epidemiologists and toxicologists, we like to look --  
16 start with modeled data. Modeled data --

17 MS. BYRNE: Ms. Kinslow, can I make a -- I just  
18 want to make a point. I know -- I believe you're  
19 referring to the document that was submitted by the  
20 opposition?

21



1 CHAIRMAN FIELDS: Yeah. It looks like the  
2 opposition exhibits.

3 MS. BYRNE: Right.

4 CHAIRMAN FIELDS: 2, 3, 4.

5 (Simultaneous comments.)

6 MS. BYRNE: All right. Yeah, just -- I mean, I  
7 know you're referring to them. They are just -- I just  
8 want to make it aware that it's not on the screen.  
9 That's all.

10 THE WITNESS: Oh, okay.

11 MS. BYRNE: It's not an issue, but I just want  
12 to make that clear to everyone. Just we've got a few  
13 messages in the, in the chat. But it's -- I just want to  
14 make it clear the document you're referring to.

15 THE WITNESS: Okay. Thank you very much.  
16 Appreciate that.

17 So Exhibit 2, the CDC -- was based on the CDC  
18 PLACES database evaluation for asthma. And it's clear  
19 from the Abel study that we talked before that there is  
20 an asthma disparity. And then also according to the --  
21 again, going to the Abel study that this disparity is due

1 specifically to several factors including indoor  
2 allergens such as tobacco smoke. And crematoriums have  
3 not been identified as a factor in the literature that  
4 would increase overall community asthma rates.

5           Exhibit 3 of this memo states that the relative  
6 higher -- higher level of COPD, and that's chronic  
7 obstructive pulmonary disease. And according to the  
8 American Thoracic Society, COPD is a complex disease, and  
9 can be caused by primarily tobacco smoke as well as  
10 occupational exposures to high concentrations of dust,  
11 chemicals, and indoor and outdoor pollutions.  
12 Specifically, such as wood smoke and biomass fuels, which  
13 are very high exposures to these chemicals, particulates.  
14 Some people get COPD without any exposure to any of these  
15 things as well. So genetics is known to play a big part  
16 in COPD.

17           As demonstrated by the emissions calculations,  
18 and supported by the regulatory acceptance of these  
19 calculations that are demonstrated by Vaughn Greene shows  
20 that it's not a source of high emissions; and, as such,  
21

1 these emissions are not predicted to cause COPD in this  
2 community.

3           Similarly, heart disease is not expected to  
4 cause -- be a cause or be caused by the emissions  
5 produced by Vaughn Greene.

6           The last point I want to make is when you go  
7 into the site, and you look at these images, the website  
8 -- really great. It shows us this really great map, and  
9 these ZIP code tracks. And if you pull back from the  
10 Vaughn Greene area, and you look at all of Baltimore  
11 City, and also the rest of the State, you see that these  
12 colors and these incidence rates that are projected for  
13 asthma, COPD, and heart disease are not necessarily  
14 unique to just the area near Vaughn Greene's facility.  
15 There's areas across the State that have the same  
16 incidence or higher incidence of these issues. So it  
17 indicates that these issues are, are a broader issue, and  
18 not only localized in the State to this area near Vaughn  
19 Greene's facility.

20           And I think that concludes --

21           BY MR. LANZI:

1 Q I have two questions, Dr. Kinslow, real quick.  
2 I believe you said when doing the evaluation to come up  
3 with standards the EPA, MDE, they do consider the most  
4 vulnerable citizens when coming up with the regulations;  
5 is that correct?

6 A Yes, they do.

7 Q Okay.

8 A They consider high risk groups.

9 Q And the second question is do the regulations  
10 in themselves, if you were to either meet or be below,  
11 does that indicate that the emissions are not hazardous  
12 to your health?

13 A That's correct. Don't increase -- there's no  
14 an increased risk for adverse effect.

15 MR. LANZI: Okay. Thank you. That's all I  
16 have of Dr. Kinslow. Any questions of the Board?

17 CHAIRMAN FIELDS: There are no questions of the  
18 Board, but in terms of how this flow is going, I don't  
19 know if the opposition's counsel would be seeking to  
20 examine the expert.

21

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CITY OF BALTIMORE  
BOARD OF MUNICIPAL AND ZONING APPEALS

-----X  
IN RE: )  
 )  
4903-4905 York Road )  
Docket Number: 2021-161 )  
-----X

(Virtual hearing)  
September 16, 2021

BEFORE: James Fields, Chairman  
Wilbur "Bill" Cunningham, Member  
Sabrina Johnson-Turner, Member  
Frank Bonaventure, Member  
Kathleen Byrne, Acting Executive Director  
Simon Penning, Acting Associate Counsel  
Martin French, Planning Department

A P P E A R A N C E S

Neil Lanzi for Petitioner  
Becky Witt for Opposition

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1 you said?

2 MR. LANZI: Yes. Yes.

3 MS. BYRNE: Okay. All right. Ms. Kinslow, you  
4 can go ahead and unmute and turn your camera on.

5 (Whereupon,

6 LISA KINSLOW

7 was called as a witness, and testified as follows:)

8 THE WITNESS: Hello.

9 BY MR. LANZI:

10 Q Hi, Dr. Kinslow.

11 A Hello.

12 MR. LANZI: I'll just again remind the Board  
13 that Dr. Kinslow was accepted previously as an expert,  
14 and I would like to offer Exhibit 17, which is the Second  
15 Supplemental Report of Findings as Petitioner's last  
16 exhibit.

17 CHAIRMAN FIELDS: So admitted.

18 MR. LANZI: Thank you.

19 (Whereupon, the document  
20 referred to as Petitioner  
21 Exhibit 17 was received

1 in evidence.)

2 DIRECT EXAMINATION

3 BY MR. LANZI:

4 Q All right, Dr. Kinslow, you have been -- were  
5 you listening to testimony of day two of the hearing?

6 A Yes, I was.

7 Q Okay. So in order to save time, and  
8 (indiscernible) answer a bunch of questions, I'm just  
9 going to ask you if you -- how you'd like to respond or  
10 how you would respond which I believe much of it is in  
11 Exhibit 17, but if you want to summarize what you wrote  
12 feel free.

13 A Sure. So I'm just going to talk about what I  
14 wrote in my, my most recent report to the Board. And it  
15 seems to me that the overreaching question that the Board  
16 is being asked to consider is if this crematorium's air  
17 emissions will put the surrounding community in  
18 unreasonable danger? The an answer is, is that all the  
19 air emission modeling data indicates that the proposed  
20 crematorium will be well below the state and federal  
21 allowable limits thus will not result in ambient air

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1 concentrations that will adversely impact the health of  
2 the surrounding community.

3           And being compliant with the National Ambient  
4 Air Quality Standards, the NAAQS, as well as those set  
5 out by the Maryland Department of Environment, MDE, the  
6 public health is protected, including the health  
7 (indiscernible).

8           Now let's talk about those air standards  
9 because the opposition had a lot of comments about those  
10 air standards. These air quality standards mitigate risk  
11 by mitigating exposure. That's how risk works. You have  
12 a hazard, and you have exposure, and then the combination  
13 of those two is what causes a potential increased risk.

14           So if you eliminate a hazard or if you  
15 eliminate the exposure, then you reduce or you eliminate  
16 that risk.

17           So the lower the exposure the lower the  
18 potential for risk of disease. There are two ways that  
19 the regulations, the standards mitigate exposure. One,  
20 by eliminating the amount of (indiscernible), i.e., the  
21 permit review process, and by ensuring compliance through

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1 actions from the MDE such as we were just talking about,  
2 the auditing process, and as well as air monitoring, and  
3 we talked about that or the opposition talked about that  
4 in our last meeting, and we're going to be touching on  
5 that as well.

6           Now, these two actions work together to reduce  
7 air pollution. Thus, a reduction in overall air  
8 pollution is an indication that the standard is working  
9 to reduce the exposure that's a potential burden of  
10 disease. The state and national air data indicate that  
11 there has been a constant reduction in the particulate  
12 matter 2.5, PM 2.5 at the Old Town Fire Station monitor  
13 in Baltimore City before and since the current 2.5 NAAQS  
14 that was discussed at length in the past hearing has been  
15 implemented. National and international data indicates  
16 that the same decreasing trend throughout Maryland and  
17 the nation since the current NAAQS has been implemented  
18 in 2012. Furthermore, the Old Town Fire Station Monitor  
19 located in an area that is arguably -- has had arguably  
20 more potential PM 2.5 burden than the York Road location  
21 has been below United States -- United States NAAQS for

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1 10 years, and (indiscernible) the World Health  
2 Organization's standards and guidelines of 2018.  
3 (Indiscernible) the permitting data, the monitoring data,  
4 the decades of (indiscernible) that have gone into the  
5 NAAQS, and the report of decrease in the 2.5 values have  
6 well established -- that are well established in the  
7 scientific literature clearly indicate that the current  
8 NAAQS is reducing exposure to the PM 2.5 burden. That's  
9 the standard doing what it's designed to do, reducing  
10 exposure to PM 2.5; and, as such, it is protective of the  
11 community.

12           Some take home points I wanted to reiterate.  
13 Number one. The crematory is a minor emission source,  
14 and is not expected to put the community's health in  
15 unreasonable danger. Other sources in this category in  
16 Maryland include barbecue restaurants, gas stations, dry  
17 cleaners. Vaughn Greene has never exceeded the state  
18 regulatory requirements regarding emissions for this  
19 piece of equipment. These account for multiple sources  
20 and considered sensitive groups. In addition, Vaughn  
21 Greene has listened to the community, and will restrict

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1 dental amalgams to effectively eliminate the community  
2 concern for mercury emissions from fillings.

3           The observation that the annual PM 2.5 value at  
4 the nearest ambient air monitor have exceeded the NAAQS  
5 standard for 10 years, and have progressively dropped to  
6 values well below the NAAQS throughout this time when  
7 numerous air permits and numerous businesses have been  
8 built, and we have increases in population that -- where  
9 all that is still happening that this reduction is an  
10 indication that the current NAAQS 2.5 PM standard is  
11 working to reduce the particulate matter burden and for  
12 the people of Baltimore City thus is protective of their  
13 health.

14           This crematorium will be in line with  
15 environmental goals set forth in the Baltimore City  
16 Sustainability Plan with regard to climate and resilience  
17 (indiscernible), and that it will reduce car traffic,  
18 including idling, and will be using natural gas.

19           Addressing the opposition's comments  
20 specifically to the -- comments in their presentation.  
21 During the presentation on August 24th, the opposition

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1 agreed actually that there's no scientific data, air  
2 data, to support that there's any health concern  
3 currently in the community in the vicinity of the Vaughn  
4 Greene Funeral Home.

5           The opposition also agreed that the PM 2.5  
6 monitor in Old Town at the Old Town Fire Station, 1100  
7 Hillen Street, is in compliance with the United States  
8 Environmental Protection Agency NAAQS PM. And by design  
9 and intent the US EPA ambient air monitors are placed in  
10 areas to support human health objectives, and in  
11 locations with a high potential for gathering meaningful  
12 data about air quality. This monitor specifically is  
13 located near several major PM 2.5 sources. You can't  
14 discount this data. And these sources include major  
15 highways, the port, and it's near an industrial area of  
16 Baltimore City. As such, the monitor represents a  
17 significant 2.5 burden. This is in contrast with the  
18 residential area where Vaughn Greene is located. And  
19 even with being surrounded by these major continual 2.5  
20 sources, the PM 2.5 readings from this monitor have been  
21 in compliance and trending down with the NAAQS since at

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1 least 2011. The emissions from the monitor PM source  
2 that is in compliance such as -- such as the Vaughn  
3 Greene Crematory should not reverse this trend.

4           The opposition suggested that the traffic along  
5 York Road is a reason why the permit should not be  
6 allowed. The traffic along the road decreased by 6,000  
7 cars per day between 2010, 2018, and is on a downward  
8 trend. Same for the area roads surrounding Vaughn  
9 Greene. Furthermore, the EPA -- the MDE is not in charge  
10 of changing mobile emission standards. The EPA has  
11 continued to implement stricter standards for car  
12 emissions. So these emissions from vehicles are becoming  
13 less and less.

14           The opposition provided calculations for  
15 emissions during idling, yet did not provide a source of  
16 greater emissions. It would be nice to know that because  
17 older vehicles emit more in general. Furthermore, when  
18 we talk about that Old Town monitor, and we talk about  
19 vehicle emissions, the fire station monitor is  
20 immediately adjacent to these emissions from the fire  
21 trucks, as well as several of the roads that, that have

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1 as much or more road traffic load than that of York Road;  
2 yet the monitor is still in compliance.

3           The opposition suggests that (indiscernible) is  
4 not protective of health. The Old Town Fire Station  
5 monitor has been gathering data since 2011, and has not,  
6 as I've said, has not exceeded the 2012 NAAQS since then.  
7 The data right now is at 7.9 micrograms per meter cube,  
8 and has completely downward trend every year since at  
9 least 2011. And this downward -- and with regard to the  
10 NAAQS, the downward trend is consistent nation-wide.  
11 Because the NAAQS, remember, is applied nation-wide with  
12 a 41 percent drop in the past 20 years to an average  
13 that's below the NAAQS across the nation. The  
14 observation that the annual PM 2.5 measurement in  
15 Baltimore and in Maryland, across the nation where the  
16 NAAQS is being applied throughout the time when numerous  
17 air permits were reviewed and implemented is an  
18 indication that the PM 2.5 standard is working to reduce  
19 the PM burden of the people of Baltimore City and across  
20 the nation. Thus, is protective of their health through  
21 reducing exposure.

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1           Furthermore, the State of Baltimore (verbatim)  
2 (indiscernible) for PM 2.5, and one shouldn't ignore the  
3 current PM NAAQS was developed over decades through  
4 proven methods of science.

5           CHAIRMAN FIELDS: Dr. Kinslow, sorry to  
6 interrupt. What is the basis for the conclusion, for the  
7 statement that there's been a consistent downward trend  
8 from 2011 to today? For example, what data or measure  
9 are we looking at real time to obtain that information  
10 for the local area?

11           THE WITNESS: So we've got the Old Town  
12 monitor.

13           CHAIRMAN FIELDS: Right.

14           THE WITNESS: Right. So and that's what I'm  
15 talking about.

16           CHAIRMAN FIELDS: Okay.

17           THE WITNESS: And in my report I've got the  
18 reference there. It's from the EPA. It's the EPA  
19 website for monitors. And you can go there yourself, and  
20 you can -- it's got a great map. It's an interactive  
21 map, and you can go in, and you can identify Baltimore

1 City, and you can literally click on it, and you can look  
2 at the design values for -- and the current monitoring  
3 values for that location.

4 CHAIRMAN FIELDS: And is it updated annual  
5 every year?

6 THE WITNESS: Actually, you -- yes. It's  
7 definitely updated every year. There is a part -- now,  
8 the AQI and other schools that the EPA has provide a  
9 daily evaluation and even predictions of their air  
10 quality. Then so there's, there's opportunities to get  
11 more recent data than just annual.

12 CHAIRMAN FIELDS: Okay.

13 THE WITNESS: Okay.

14 CHAIRMAN FIELDS: Thank you.

15 THE WITNESS: Yes. I'm sorry. The MDE also  
16 has a link to the EPA site, and then the MDE has  
17 information about that as well.

18 CHAIRMAN FIELDS: Very well. Thank you.

19 THE WITNESS: Sure.

20 The opposition referenced the 2017 state of  
21 global air report issued by the Health Effects Institute.



1 So this report is updated yearly, and the -- although the  
2 2020, I couldn't pull it up. It doesn't -- it's not  
3 posted, I don't believe. But the 2019 was available, and  
4 what was nice about that was it indicated that the United  
5 States had made the most striking reductions across the  
6 countries that they evaluated, and with the number of  
7 people that were living in the PM 2.5 value areas that  
8 were above the more stringent World Health Organization  
9 value of 10 microns for meter cube. And so the United  
10 States went from 50 percent in 1990 to 3 percent in 2017.  
11 The most striking difference here was between 2010 to  
12 2017. The current NAAQS was established in 2012. And we  
13 went from 40 percent to 3 percent of people that were in  
14 the United States that were living in PM 2.5 above the  
15 more stringent World Health Organization value. And  
16 importantly that  
17 3 percent doesn't include Baltimore City because  
18 Baltimore City, remember, is at 7.9 percent, which is  
19 below that. So they're not within that 3 percent that  
20 still remains the -- above the 2.5 value. I'm sorry.  
21 Above the World Health Organization's PM 2.5 standard.

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1           Now, so this is all during a time when, again,  
2 the country is booming. We had businesses growing. We  
3 have permits being reviewed. We have more and more  
4 businesses and people in these areas. So even though all  
5 this is happening, we were still seeing a downward trend  
6 of PM 2.5.

7           Now, comparing the US PM NAAQS to other  
8 standards, I looked at several, and the ones that we like  
9 to -- as toxicologists, we like to look at World Health  
10 Organization, and we also look at places that are close  
11 to us that we have a lot of confidence in, in their  
12 science. And one of them is Canada. And Canada has  
13 produced a more recent, a 2020 PM 2.5 standard for  
14 Canada, and it is actually 8.8. Notably, Baltimore City  
15 is still below even the Canadian most recent PM 2.5  
16 value, and has been since 2018. Okay. So the opposition  
17 -- so we're still in compliance even with more strict  
18 standards. The opposition suggests that the PM 2.5  
19 standard may be changed in the future. The EPA stated in  
20 the -- that the final re-review that they mentioned  
21 towards the end would be available in 2023. So two years

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1 from now is when we all know what the -- that evaluation  
2 will look like, and what their conclusions might be.  
3 It's been my experience working with the EPA for over --  
4 for almost five years that once they have that reassessed  
5 it will take another period of time conservatively about  
6 a year before they make a decision on the values.  
7 Regarding the PM 2.5 2012 decision, we were arguing and  
8 discussing that as early as at least 2008 when I joined  
9 the Protection Commission on Environmental Quality. And  
10 so that discussion those arguments continue on, and  
11 that's very common for the toxicologists,  
12 environmentalists, and environmental scientists to  
13 discuss these NAAQS on a continual basis.

14           So the Old Town Fire Station monitor is  
15 attainment right now. And so for it to be out of  
16 attainment it would have to -- you would have to drop a  
17 NAAQS by 25 percent, which would be below the World  
18 Health Organization's guidelines as well as the Canadian  
19 guidelines.

20           The last point here before summing up, the Abel  
21 study is a non-preview study -- I'm sorry -- body of work

1 that was supported by the Abel Foundation, and published  
2 by the Abel Foundation. My comments regarding the study  
3 during the August 10th hearing were clearly regarding the  
4 environmental triggers that the study points to regarding  
5 disparity of asthma prevalence between Baltimore City and  
6 the rest of Maryland. There is a clear intent in this  
7 body of work to focus on understanding this disparity.  
8 None of the proposed promising approaches that they  
9 recommend in the study involve ambient air. Thus, my  
10 comments were and remain accurate.

11           So taken together, the data supports that the  
12 NAAQS 2.5 standard is doing what it's intended to do  
13 protecting public health through the reduction of  
14 exposure to hazards, and that's what the permitting that  
15 we're talking about that's what it's based on as  
16 Mr. Tricoche mentioned, and that's what MDE is going to  
17 be looking at along with the rest of their data. The  
18 monitoring data indicates that the Baltimore City area  
19 has been compliant with NAAQS for over 10 years, and does  
20 not indicate excessive values even in an area where  
21 the PM 2.5 burden is relatively high. The crematorium is

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1 considered a minor source such as a dry cleaner, barbecue  
2 restaurant, and when in compliance will not cause  
3 deterioration of the air quality in the area. And being  
4 compliant with the primary NAAQS the public health is  
5 protected, including the health of sensitive populations.  
6 And that ends my --

7 BY MR. LANZI:

8 Q (Indiscernible). I have a few questions  
9 follow-up. All right. So if I heard you correctly as  
10 you just reported, the -- there will be no negative  
11 health consequences from the crematory at this location  
12 as long as the cremation equipment is operating properly  
13 and is in compliance with the MDE permit; is that  
14 correct?

15 A As long as it's in compliance with the permit,  
16 yes.

17 Q Okay. Now, I also wanted to confirm what you  
18 said previously that it would be your opinion that the  
19 adverse effects -- or let me start off with this. You  
20 may or may not have heard me talk about the standard I  
21 believe I did with Mr. Doak. We talk about the standards

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1 that the Board has to consider when making its decision  
2 regarding the crematory, and the standards have to do  
3 with conditional use, which is why we're, why we're here.  
4 And conditional use, conditional use, conditional uses  
5 have inherent adverse effects, and so but they're been  
6 approved by the legislators. So my question is, is it  
7 your opinion that any inherent adverse effects from this  
8 crematory they would not be above and beyond or unique to  
9 this neighborhood based on the data and information that  
10 you have?

11 A That is correct. It would not be.

12 Q Okay. And that would be going back to your  
13 first day of testimony when you kind of extrapolated the  
14 map of the protestant's exhibit showing different areas  
15 of vulnerable citizens in the state. Is that -- my  
16 recollection correct?

17 A That's part of it, yes.

18 Q Okay. And if I also heard you correctly, would  
19 it be your opinion that the MDE guidelines are designed  
20 to protect the health of citizens?

21 A Yes.

1 Q Okay. And if the air quality permit is issued  
2 -- strike that, strike that.

3 MR. LANZI: Unless you have anything else or  
4 the Board has any questions of you, that would be --

5 MEMBER CUNNINGHAM: I have a couple question.  
6 I have a couple questions. Ms. Kinslow, where did you  
7 get your information on decrease in traffic? Was it from  
8 our DOT?

9 THE WITNESS: I've got it referenced in my  
10 report. It was a Maryland state agency. I'll have to  
11 look at that.

12 MEMBER CUNNINGHAM: State of Maryland?  
13 (Indiscernible).

14 THE WITNESS: I've got it in there.

15 MEMBER CUNNINGHAM: You deal with air issues,  
16 air quality issues, right?

17 THE WITNESS: I'm sorry. It is the BMZ.

18 MEMBER CUNNINGHAM: The what?

19 THE WITNESS: The -- I'll -- it's -- I'll --  
20 it's in the response. I'll find it in there. It's just  
21 in very little letters. So I'll find it for you,

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1 Mr. Cunningham.

2 MEMBER CUNNINGHAM: Thank you. So you deal  
3 with -- you're an expert in air quality issues, right?

4 THE WITNESS: I'm a toxicologist, an  
5 environmental toxicologist, yes.

6 MEMBER CUNNINGHAM: Okay. Do you monitor,  
7 like, large incinerators?

8 THE WITNESS: I personally don't. That's not  
9 part of my, my job. No. I evaluate the data from  
10 monitoring data, yeah, monitors and monitoring data with  
11 regard to potential for human health effects.

12 MEMBER CUNNINGHAM: Okay. Thank you.

13 THE WITNESS: Yeah.

14 MEMBER CUNNINGHAM: Ms. Byrne, were the other  
15 three crematoria in Baltimore City permitted under the  
16 old Code or the new Code?

17 MS. BYRNE: I'll have to look at that. I  
18 believe the -- Mr. Lanzi, correct me if I'm wrong -- I  
19 believe it was Serenity was one crematorium, and the  
20 other one was Greater Baltimore Crematory.

21 MR. LANZI: I have, I have them down as, as



# POWERPAK II PLUS

## HUMAN CREMATION SYSTEM



PowerPak II PLUS shown with optional EX-1 Design Upgrade, and remote operation via included Android tablet

### KEY FEATURES

Designed for up to 6 Cremations Per Day

100 minutes or Less Cremation Time

Secondary Chamber Volume: 96 Cu. Ft.

Oversize 43" Door For Maximum Load Capacity

The Future Of Cremation

**M** Matthews<sup>®</sup>  
ENVIRONMENTAL SOLUTIONS

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## HIGH TECH PRODUCTIVITY

The PowerPak II PLUS delivers industry-leading technology and the extra capacity you need to grow your business. Featuring a larger secondary chamber and faster cremation times than our basic cremation system, the PowerPak II PLUS is perfect for businesses that perform up to 6 cremations per day.

### READY TO GO

The PowerPak II PLUS arrives at your doorstep ready to go. It comes pre-wired, pre-piped, and pre-tested. All you have to do is unload it, connect it to gas and electricity, and attach the exhaust stack. As always, our team is available to help you prepare your site so installation is quick and easy.

## POWERPAK II SPECIFICATIONS

Overall Height:	9' (2.74 m)
Overall Width:	7' (2.13 m) with side-mounted control panel 5' 9" (1.75 m) with remote-mounted control panel
Overall Length:	14' 11" (4.55 m)
Weight:	28,000 lb. (12,700.58 kg)
Fuel:	Natural or L.P. Gas (Oil available)
Electrical:	230 volts, 1-phase/3-phase 

### CUSTOM DESIGN UPGRADE

The PowerPak II PLUS is available with the EX-1 Design Upgrade to provide a sleek and streamlined appearance for witnessed cremations. This custom design offers a custom paint color of your choice on the front facade complete with a lighted hood with your logo.

### ENERGY EFFICIENCY

The PowerPak II PLUS utilizes advanced combustion technology, making it the cleanest-burning cremator available on the market.

### OPERATOR SAFETY

We're serious about safety. That's why our cremators are tested and listed by Underwriter's Laboratories (UL).

### STAINLESS STEEL STACK

Non-Corrosive, with 4½" refractory lining for strength, durability and facility safety.

### EMISSION MONITORING SYSTEM

Advanced oxygen-based combustion controls deliver superior environmental results.

### MPYRE® 3 OPERATING CONTROLS

Fully automated operating system with live operating graphics, accessible through onboard console or wireless devices.

### OVERSIZE LOADING DOOR

43" wide for larger cases. Automatic, self-locking, self-sealing, pressurized door system to control oxygen and maximize combustion.

### SMOKE-BUSTER™ SYSTEM

Largest secondary combustion chamber in its class - 125 cu. ft. - for complete combustion of smoke and odor.

### AIR-COOLED SIDE PANELS

Operational safety of the equipment to protect both your staff and the facility.

### ACOUSTIC SIDE CABINET

Noise isolation technology and improved insulation for quiet operation without disturbing services in adjacent rooms.

\*Power Pak II shown with standard facade design.

## MPYRE® 3 ADVANCED CREMATION CONTROL SYSTEM

### Simple Up Front — because it's powerful behind the scenes

The simple, cremation-tracker home screen tells operators everything they need to know, while MPYRE's advanced environmental logic handles the rest. The result is more productivity with less training.

It lets operators focus on what really counts — getting cremations done. While MPYRE automatically delivers faster, safer, greener results for your business.

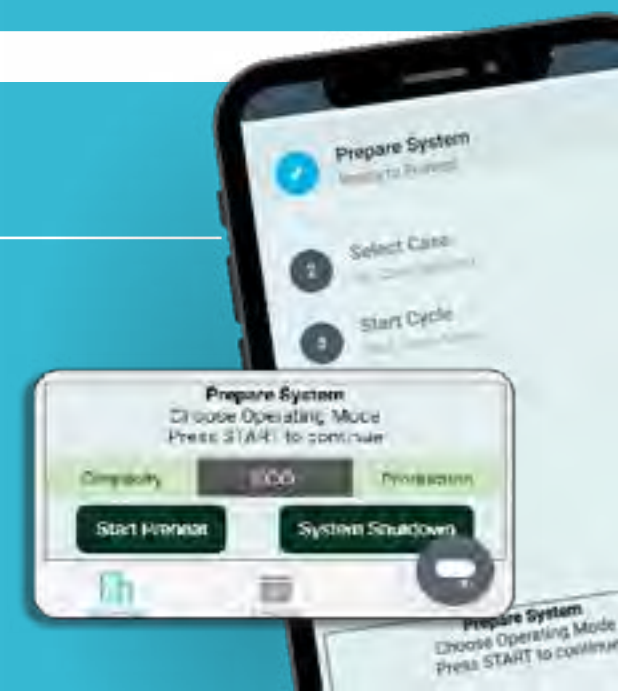
### Choose Your Operating Mode: Different Priorities for Different Days

MPYRE® 3 is smart enough to work the way that you do, with three operating modes, tailored to what you need:

**ECO MODE** - keeps fuel usage and greenhouse gas emissions as low as possible, but still gives you great productivity

**PRODUCTION MODE** - when you need maximum speed and throughput, this lets you run faster and get more work done in less time

**SIMPLICITY MODE** - a perfect solution for slow days or special situations - you can load the body into a cool machine and start the process from there. The system automatically preheats, starts the cremation and cools down. It's a safer option for witness cremations and large bodies, as well.



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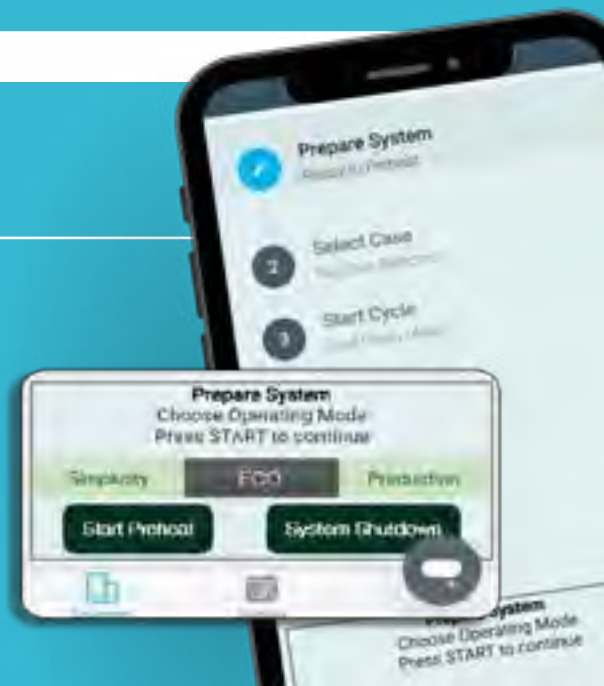
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## SPECIFICATIONS- Model Power-Pak II Plus

1. Equipment Type..... Model Power-Pak II Plus
  - A. Model No. .... IE43-PPII Plus
  - B. Underwriters Laboratories Listing and File No. .. 87E8; MH14647
  
2. Dimensions
  - A. Footprint ..... 12' – 9 ½" x 5' - 9" (3.9 m x 1.8 m)
  - B. Maximum Length..... 14' – 10 ½" (4.53 m)
  - C. Maximum Width ..... 6' -10" (2.08 m)
  - D. Maximum Height ..... 9' (2.74 m)
  - E. Chamber Loading Opening ..... 30 ¾" H x 43 ½" W (781 mm x 1105 mm)
  
3. Weight ..... 28,000 lbs. (12,700 kg)
  
4. Utility/Air Requirements
  - A. Gross Gas Input, Natural or LP Gas..... 3,000,000 BTU/hr. (3,165,168 kJ/h)
  
  - Running Gas Pressure, LP or Natural Gas ..... 11 inches (279.4 mm) water column or greater
  - B. Electrical Supply..... 230 volt, 3Ø or 1Ø, 50/60 hz (others available)
  - C. Air Supply..... 2,500 cfm (70.8 standard m<sup>3</sup>/min)
  
5. Incineration Capacity ..... 175 lbs./hr. (79 kg/h)
  
6. Typical Loading Capacity of Waste Types..... 750 lbs. (340.2 kg)
  
7. Construction and Safety Standards..... Incineration Institute of America, Underwriters Laboratories, Canadian Standards Association
  
8. Steel Structure Construction
  - A. Frame ..... 2" (51 mm) square tubing
  - B. Front/Rear Plates ..... 3/8" (9.5 mm) plate
  - C. Floor Plates..... 3/16" (5 mm) plate
  - D. Outer Side Casing..... 12 gauge (3 mm) plate
  - E. Inner Side Casing..... 12 gauge (3 mm) plate
  
9. Stack Construction
  - A. Inner Wall..... 4 1/2" (110 mm) insulating firebrick or castable
  - B. Outer Wall..... 12 gauge (3 mm) sheet, Stainless Steel, welded seams (unlined stack available)
  
10. Draft Nozzle Construction ..... Schedule 40 Stainless Steel pipe with welded connections
  
11. Main Chamber Door Construction
  - A. Steel Shell..... 3/16" (5 mm) steel, welded with reinforcement
  - B. Outer Refractory..... 1" (25 mm) insulating block
  - C. Inner Refractory ..... 4½" (110 mm) insulating firebrick

**SPECIFICATIONS- Model Power-Pak II Plus**

- 12. Primary Chamber Wall Construction
  - A. Outer Casing Wall ..... 12 gauge (3 mm) sheet
  - B. Inner Frame/Air Compartment..... 2" (51 mm) air compartment
  - C. Inner Casing Wall..... 12 gauge (3 mm) sheet
  - D. Outer Refractory Wall..... 5" (127 mm) insulating block
  - E. Inner Refractory Wall ..... 4½" (114 mm) firebrick
  
- 13. Secondary Chamber Wall Construction
  - A. Outer Casing Wall ..... 12 gauge (3 mm) sheet
  - B. Inner Frame/Air Compartment..... 2" (51 mm) air compartment
  - C. Inner Casing Wall..... 12 gauge (3 mm) sheet
  - D. Outer Refractory Wall..... 6" (152 mm) insulating block
  - E. Inner Refractory Wall ..... 4½" (114 mm) firebrick
  
- 14. Refractory Temperature Ratings
  - A. Standard Firebrick..... 3,100° F. (1704° C)
  - B. Insulating Firebrick..... 2,600° F. (1427° C)
  - C. Castable Refractory (Hearth)..... 2,550° F. (1399° C)
  - D. Castable Refractory ..... 3,100° F. (1704° C)
  - E. Insulating Block..... 1,900° F. (1038° C)
  - F. Bonding Mortar ..... 3,200° F. (1760° C)
  
- 15. Chamber Volumes (not including external flues, stacks or chimneys)
  - A. Primary Chamber ..... 70 cubic feet (2.12 m<sup>3</sup>)
  - B. Secondary Chamber ..... 96 cubic feet (2.72 m<sup>3</sup>)
  
- 16. Emission Control Features
  - A. Secondary Chamber with Afterburner ..... Included
  - B. Opacity Monitor and Controller with Visual and Audible Alarms ..... Included
  - C. Auxiliary Air Control System ..... Included
  - D. Microprocessor Temperature Control System .... Included
  
- 17. Operating Temperatures
  - A. Primary Chamber ..... 32° F. - 1,800° F. (0° C - 982° C)
  - B. Secondary Chamber ..... 1,400° F. - 1,800° F. (760°C - 982°C )  
(as required by Env. agency)
  
- 18. Secondary Chamber Retention Time ..... > 1 second
  
- 19. Ash Removal ..... Door functions as a heat shield. Sweep out beneath front door into hopper that fills collection pan.

SPECIFICATIONS- Model Power-Pak II Plus

- 20. Safety Interlocks
  - A. High Gas Pressure..... Optional
  - B. Low Gas Pressure..... Optional
  - C. Blower Air Pressure ..... Included
  - D. Door Position ..... Included
  - E. Opacity..... Included
  - F. Motor Starter Function..... Included
  - G. Chamber Temperature ..... Included
  - H. Motor Overload ..... Included
  - I. Flame Quality..... Included
  - J. Burner Safe Start ..... Included
  - K. Cremation Burner/Door Interlock..... Available upon Env. Agency requirements
  
- 21. Burner Description ..... The nozzle mix burners used on this cremation equipment are industrial quality and designed for incinerator use.
  
- 22. Ultraviolet Flame Detection ..... Ultraviolet flame detection has proven to be the most reliable means of flame safety. The system is completely sealed in a quartz capsule to eliminate problems, caused by moisture and dust created in the cremation process, which effect flame rod detectors.
  
- 23. Operating Panel indicators
  - A. Safe Run..... Included
  - B. Door Closed..... Included
  - C. Pollution Alarm..... Included
  - D. Afterburner On (Secondary Burner)..... Included
  - E. Cremation Burner On ..... Included
  - F. Low Fire Cremation Burner On..... Included
  - G. Afterburner (Secondary Burner) Reset ..... Included
  - H. Cremation Burner Reset..... Included
  - I. Hearth Air..... Included
  - J. Throat Air Off ..... Included

SPECIFICATIONS- Model Power-Pak II Plus

- 24. Automatic Timer Functions
  - A. Master Cycle ..... Included
  - B. Afterburner (Secondary Burner) ..... Included
  - C. Cremation Burner ..... Included
  - D. Low Fire Cremation Burner ..... Included
  - E. Hearth Air ..... Included
  - F. Throat Air ..... Included
  - G. Pollution Monitoring ..... Included
  - H. Afterburner (Secondary Burner) Prepurge ..... Included
  - I. Cremation Burner Prepurge ..... Included
  - J. Cool Down ..... Included
  
- 25. Exterior Finish
  - A. Primer ..... 2 coats rust inhibiting
  - B. Finish ..... 2 coats textured finish
  
- 26. Start-Up and Training..... Startup of cremation equipment and training of operators to properly operate and maintain the equipment is performed on-site under actual operating conditions. Included is a comprehensive owner's manual, with details on the equipment, its components and proper operation.
  
- 27. Environmental Submittals ..... Complete technical portion of state environmental permits. Engineering calculations, technical data, existing stack test results and equipment blueprints provided.

August 2, 2024

To whom it may concern,

Matthews Environmental Solutions is part of Matthews International, a publicly traded US company. Our commitment to excellence spans over 60 years, along with Industrial Equipment and Engineering & ALL Crematory in the design, manufacture and installation of combustion systems for a broad range of industries. We are recognized as the world leader in cremation equipment, with over 4,500 installations throughout the United States and 50 other countries. Our designs have been granted US patents and have been adopted as industry standards for quality, performance, and safety.

Our state of the art cremators comply with the most stringent environmental standards imposed by governmental agencies world-wide. Our cremation units are designed taking into consideration operator safety and designed in such a manner that the products of combustion from the pathological waste being cremated, which includes human remains, pet remains, tissues, etc; prevents excess of emissions from being produced by accomplishing complete and safe combustion. The cremators we manufacture are Underwriters Laboratories (UL) certified, confirming maximum safety of both equipment and personnel. Our cremation units are also equipped with an Opacity Monitoring System, that allows the cremator to take corrective action automatically and immediately should there be any excess opacity detected to ensure proper combustion of the exhaust gases that would be discharged from the stack.

Sincerely,



Michael Tricoche  
Engineer  
Enclosures

Matthews Environmental Solutions

2045 Sprint Boulevard | Apopka, Florida 32703

O: 407-886-5533 | F: 407-886-5990 | [www.matthewsenvironmentalsolutions.com](http://www.matthewsenvironmentalsolutions.com)



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CITY OF BALTIMORE  
BOARD OF MUNICIPAL AND ZONING APPEALS

-----X  
IN RE: )  
)  
4903-4905 York Road )  
Docket Number: 2021-161 )  
-----X

(Virtual hearing)  
August 24, 2021

BEFORE: James Fields, Chairman  
Wilbur "Bill" Cunningham, Member  
Sabrina Johnson-Turner, Member  
Frank Bonaventure, Member  
Kathleen Byrne, Acting Executive Director  
Simon Penning, Acting Associate Counsel  
Martin French, Planning Department

A P P E A R A N C E S

Neil Lanzi for Petitioner  
Becky Witt for Opposition

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1 bell in there or not.

2 THE WITNESS: No, there's not. That's a  
3 simulated bell. No. That is where -- actually, where  
4 the flue runs from the crematorium.

5 MEMBER CUNNINGHAM: That's what I figured.

6 THE WITNESS: Yes, sir.

7 MEMBER CUNNINGHAM: Thank you

8 CHAIRMAN FIELDS: Thank you for your testimony.

9 MR. LANZI: Thank you, Mr. Beims.

10 (Witness excused.)

11 MR. LANZI: And, Ms. Byrne, the next witness  
12 would be Jeffrey Barron.

13 MS. BYRNE: Okay. All right. Mr. Barron, you  
14 are now a -- should be a panelist. And you're -- you go  
15 ahead, and try to unmute yourself.

16 THE WITNESS: Okay. We good?

17 MS. BYRNE: Um-hmm.

18 THE WITNESS: All right.

19 (Whereupon,

20 JEFF BARRON

21 was called as a witness, and testified as follows:)

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DIRECT EXAMINATION

BY MR. LANZI:

Q Mr. Barron.

A Good afternoon.

Q If you'd state your, your name, and your current position.

A Sure. My name is Jeff Barron. I'm a representative. I work for the company Matthews International in the Environmental Solutions Division, which is the Crematory Division of the company.

Q And you've been involved in this particular project for Vaughn Greene Funeral Home in Baltimore?

A Since it started, correct.

Q Okay. Could you -- or how long have you been doing this for Matthews?

A Well, I was in the -- I was the Mid-Atlantic representative for the last five years.

Q So you've traveled up and down the East Coast?

A Correct. From Kentucky, West Virginia, Virginia, Maryland, Delaware, New Jersey. I (indiscernible) represent Alabama, Georgia, and Florida.

1 Q So with your experience in obtaining approvals  
2 for crematoriums in these different states, is there a  
3 difference with the way Maryland, or how long Maryland  
4 takes to approve the crematoriums compared to the other  
5 states?

6 A There sure is, yeah. Maryland is easily the  
7 most stringent and thorough regulatory body with the, the  
8 DEP for sure. Standard timeframe on the -- on an  
9 approval is 8 to 9 months, where most neighboring states  
10 you're talking anywhere from 60 days to maybe tops 5  
11 months.

12 Q And this one was filed June of 2020; is that  
13 correct?

14 A That sounds about right, yes.

15 MR. LANZI: Okay. Ms. Byrne, could we refer to  
16 that PowerPoint exhibit again, number 14?

17 MS. BYRNE: Where would you like to go?

18 MR. LANZI: Okay. Just go a little bit past  
19 that, and you'll see -- right there.

20 BY MR. LANZI:

21 Q Can you describe the equipment, its features,

1 technology for the Board?

2           A       Sure.  So the picture that you see here is just  
3 sort of a cutout so you can see the internal features of  
4 the same model that is being proposed today, which is  
5 what we call a PowerPak II PLUS.  And what you're looking  
6 at there is sort of the way that products of combustion  
7 travel through the machine.  And the reason why we show  
8 this in a lot of our literature is -- this is also used  
9 in training -- is to show how these machines actually  
10 operate, and how you load a case into the loading door,  
11 which you see on the front there, on the front right of  
12 the, of the image.  When that is lit, and there's  
13 combustion, of course, there's products of combustion,  
14 and the -- as long as your time and temperature and  
15 turbulence are correct, then they're going -- those  
16 products of combustion should cycle through that unit  
17 through that throat area in the back.  So you'll see  
18 there's an opening in the back wall of that rendering  
19 where the red arrows are pointing, and then they go down,  
20 and they come back towards the front, and they circle  
21 around the unit.  The whole process there is designed to

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1 recombust, tumble, recombust, tumble all those products  
2 of combustion so that, as you see, the blue arrow --  
3 going out the flue, they have been cleaned so that there  
4 are no visual emissions, and no odor coming after the  
5 successful cremation is complete.

6 Q Describe the safety features, if you would,  
7 briefly, to the Board.

8 A Sure. Well, every one of our machines is --  
9 has what we call a pollution monitoring system that would  
10 automatically supervise -- and it's done through a method  
11 of anticipation for environmental control to safeguard  
12 against potential pollution. And it's designed to take  
13 corrective action automatically without the need for any  
14 manual adjustment. And it should be noted any state that  
15 you're in, any cremator violation is always made of  
16 public record anyway.

17 Q Is there monitoring in addition to the onsite  
18 personnel?

19 A Sure. Yeah. So the -- there's several  
20 different control systems that you use to operate the  
21 machine. And the one that we are proposing here uses

1 what we call our Empire Control System. And this unit  
2 would be connected through the Internet to our control  
3 system -- in Apopka, Florida, which is just a suburb  
4 north of Orlando, where we have 24 hours a day, 7 days a  
5 week coverage, by trained technicians. So any time there  
6 is the potential for an event, we have the machine being  
7 monitored where alarms are set for not just the  
8 operators, not just for management at the funeral home  
9 and crematory, but also for our technicians. We're the  
10 only company in the world that can actually go in  
11 remotely, and make adjustments to the air, and the gas  
12 mixtures, to be able to take corrective action, not just  
13 to, not just to help the environment but, also, to help  
14 for a more efficient cremation for the operator of the  
15 machine.

16 Q And (indiscernible) understanding the equipment  
17 is inspected, or that's a requirement, an annual  
18 inspection?

19 A Sure. We -- yeah. There will be several times  
20 that -- Matthews is the largest service provider in the  
21 world, not just the largest manufacturer. In fact, we do

1 more service work in a month than anyone else combined on  
2 the planet earth. And this machine will be visited many,  
3 many times during its lifetime, including what we would  
4 do as an annual preventative maintenance inspection. And  
5 that's an annual inspection that takes about four hours  
6 to complete. We have the machine shut down for 48 hours  
7 prior to these inspection. We go in. We open up all of  
8 the, the (indiscernible) chamber panels underneath the  
9 floor, inspect the refractory, clean the unit out. We go  
10 up on top, and we have a 35 point checklist where we  
11 check the gas pressure, and the air pressure. We check  
12 to make sure all the electric is working. And then we  
13 provide a written report with photos, and any  
14 recommendations we may have so that they can be kept on  
15 record at the funeral home. And that's done annually.

16 Q Mr. Barron, is it your understanding the  
17 application was filed with the State of Maryland,  
18 Department of Environment, as if it would run or operate  
19 12 hours a day, 7 days a week?

20 A Yes, of course, yes. Whenever we are going to  
21 enter an application for environmental permitting, no



1 matter what state we're required to do this in, we're  
2 always going to err on the side of caution, and give you  
3 the maximum amount of run time, the maximum amount of  
4 output. Because we know, even at those levels, that the  
5 emissions are so far below what would be allowable that  
6 we -- there should be no question that this is safe for  
7 the environment, and for the, for the community it's in.

8 Q I'm not sure if you heard from day one of this  
9 hearing, it's your understanding from Dr. Kinslow and  
10 Mr. Greene, in fact, the crematorium would be operated up  
11 to four hours a day, and not necessarily up every -- even  
12 every day. Is that your understanding?

13 A That's my understanding, yes.

14 Q And the -- you indicated you've installed these  
15 or helped the company install these throughout the  
16 different states. Are they typically in, like, warehouse  
17 areas, or are in neighbors like Vaughn Greene Funeral  
18 Home is located?

19 A Over 70 percent of all cremation equipment is  
20 -- that's sold today is installed in funeral home that  
21 are located in either residential communities, or what

1 they would call light commercial areas. The reason for  
2 that is that funeral homes are there to serve the  
3 community, and it can be quite a hardship for those that  
4 need to -- if their loved one wishes to be cremated, and  
5 they can't take care of it in their own communities. It  
6 can be very difficult to sometimes find a place to do  
7 that, especially if you have to move away from your  
8 family funeral home that you've used over the years, for  
9 sure.

10 MR. LANZI: Okay. Thank you very much.

11 THE WITNESS: You're welcome.

12 MR. LANZI: Unless the Board has questions,  
13 I'll go to my next witness.

14 MEMBER CUNNINGHAM: What crematorium does the  
15 Applicant presently use?

16 THE WITNESS: Is that a question for me?

17 MEMBER CUNNINGHAM: I don't know. Somebody.

18 MR. LANZI: Yeah. I think that would be for  
19 Mr. Greene to answer. We can do that no rebuttal.

20 MEMBER JOHNSON-TURNER: They said -- he said  
21 last -- he said two weeks ago one in Catonsville, and

1 (indiscernible) have one somewhere else, but the one in  
2 Catonsville is the one I remember.

3 MR. LANZI: I remember he said it was about a  
4 45-minute drive offsite.

5 THE WITNESS: Yeah. I can say that it's, it's  
6 difficult sometimes for the people in the community, not  
7 just from the logistics of it, but it's also, I think, a  
8 difficult thing for the funeral home as well because when  
9 you're asking a business owner to use his competitor to  
10 perform his business, and not only that, but you're  
11 taking somebody's loved one, dropping them off, and  
12 waiting for a call to tell you that they're done. You've  
13 lost control over your chain of custody, and that can be  
14 a problem from a liability standpoint. In fact, it's  
15 probably the number one liability in the funeral home  
16 that has a crematorium today is chain of custody.

17 MR. LANZI: Thank you.

18 (Witness excused.)

19 MR. LANZI: Unless the Board has anything  
20 else, I'm going to call Richard King.

21 MS. BYRNE: Mr. King.

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CITY OF BALTIMORE  
BOARD OF MUNICIPAL AND ZONING APPEALS

-----X  
IN RE: )  
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4903-4905 York Road )  
Docket Number: 2021-161 )  
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(Virtual hearing)  
September 16, 2021

BEFORE: James Fields, Chairman  
Wilbur "Bill" Cunningham, Member  
Sabrina Johnson-Turner, Member  
Frank Bonaventure, Member  
Kathleen Byrne, Acting Executive Director  
Simon Penning, Acting Associate Counsel  
Martin French, Planning Department

A P P E A R A N C E S

Neil Lanzi for Petitioner  
Becky Witt for Opposition

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1 MICHAEL TRICOCHE

2 was called as a witness, and testified as follows:)

3 DIRECT EXAMINATION

4 BY MR. LANZI:

5 Q Mr. Tricoche, and hopefully I'm saying your  
6 name correctly. I have trouble for some reason.

7 A Yeah, you are, you are.

8 Q Thank you. Could you briefly give your  
9 background for the Board, your expertise?

10 A Yes, sir. I work for a Matthews Environmental  
11 Solutions. I am an electrical engineer for them, and  
12 I've been with the company for 11 years.

13 Q When did you get your engineering degree?

14 A I got it in the year 2000 from the University  
15 of Puerto Rico.

16 MR. LANZI: I'm going to offer Mr. Tricoche as  
17 an expert electrical engineer. I don't believe his  
18 resume was in the package that we submitted, Exhibit 3.

19 CHAIRMAN FIELDS: Okay. So admitted.

20 BY MR. LANZI:

21 Q Mr. Tricoche, did you assist Vaughn Greene with

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1 their air quality permit application?

2 A Yes, sir.

3 Q And you're aware there's some concern by the  
4 community, I think it was even raised again today, that  
5 the air quality permit application lists that the machine  
6 will run for 12 hours a day, 6 days a week. Can you  
7 explain how the application process works?

8 A Yes. I am aware. So the -- first of all to  
9 answer your question about the 12 hours a day, 6 days a  
10 week, the cremation unit or a cremation unit does not run  
11 continuously. It is really an intermittent use. What  
12 that means is that the cremation process is one body at a  
13 time. You have a body to cremate. You turn on the  
14 machine to preheat the machine. Then once it's  
15 preheated, you insert the particular body to be cremated.  
16 The cremation process unfolds. And the nonce the  
17 cremation time for that particular body ends, all of the  
18 burners of the machine will turn off completely, and the  
19 unit will go into its cooling mode to be able to remove  
20 the cremated remains out of the machine. And once that  
21 cooling time has expired, the machine will shut off

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1 completely, meaning that it's not in operation. That way  
2 the operator -- the remains can be removed from the  
3 machine. And then if there is another body to be  
4 cremated, then at that point the machine will be turned  
5 on again, and it will go through the process again. So  
6 the machine does not -- once it turns on it doesn't run  
7 continuously for X amount of time. It is an on-off  
8 somewhat process, right.

9           So the -- when it comes to the (indiscernible)  
10 process, one of my responsibilities at Matthews is that I  
11 assist all of our customers from all over the United  
12 States in providing the application forms and clinical  
13 information so that they can apply for the air permit for  
14 a cremation unit. Any facility that would like to  
15 install a cremation unit, they need to apply with the  
16 local environmental agency for an air permit.

17           So when it comes to MDE the way the process --  
18 the way that they do the process -- and it's the same  
19 process for all customers in -- all our customers in  
20 Maryland, including Vaughn Greene. The first thing is  
21 that there's a particular set of forms that the MDE has

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1 advised to be used in order to apply for a cremation  
2 unit, right. And cremation units are used solely and  
3 only for pathological waste type four, which in other  
4 words is only for human and/or pet remains. That's what  
5 pathological waste implies.

6           So the application forms, what we do is that we  
7 assist in providing the technical information we will go  
8 into the forms, and provide a supplemental technical  
9 information that the MDE is going to, is going to need to  
10 do their, their review an analysis. So once we do that,  
11 we mail the application forms to the customer, and then  
12 they would have to file that completion and just by  
13 putting the information on their business, contact  
14 information, and signatures. And once they do that, and  
15 provide the (indiscernible) that MDE might provide like  
16 (indiscernible) letters or (indiscernible) plans, or  
17 things like that that is particular to their business,  
18 that with the technical information that we provided of  
19 the machine, that would be submitted by the customer, in  
20 this case Vaughn Greene submitted all of that packet to  
21 the MDE. If MDE, once they receive it and they review

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1 that documentation, if they deem it complete, then they  
2 will continue with the approval process, review and  
3 approval process of the, of the forms and information,  
4 and which includes public meetings. And that's where we  
5 are kind of sitting now, right, in the public meeting  
6 process.

7           So the MDE does have the application forms from  
8 Vaughn Greene. They have (indiscernible) complete, and  
9 they started already their review process, and that's  
10 where we are. Hopefully, all that information kind of  
11 answers your question, sir.

12           Q       Just to follow-up a little bit. So the  
13 application that was actually filed does indicate it is  
14 for the cremation of human remains, correct? There is  
15 not going to be any animals --

16           A       Yes, sir. Yes, sir. In one of the line items  
17 of the forms it asks what is the type of service that  
18 the, that the facility will do or that the customer will  
19 do, and we emphasize that it is cremation of human  
20 remains. Yes, sir. Yes, sir.

21           Q       And you mentioned we're kind of in the public

1 meeting stage, but did in fact MDE already  
2 (indiscernible) already had their informational meetings  
3 with the community or everyone who was interested over  
4 the winter; isn't that correct?

5 A Yes, sir.

6 Q And they would not have proceeded by, I guess,  
7 last June when the application was filed without a zoning  
8 approval letter; is that correct?

9 A That is correct.

10 Q Okay. So that zoning approval letter was  
11 provided in Petitioner's Exhibit 14. Although we're here  
12 to get additional zoning approval before the Board. Okay.  
13 Make sure I'm clear. So the application, is that more to  
14 give MDE a kind of a concept when they say 12 hours? I  
15 mean, what does MDE ultimately typically do as far as any  
16 type of conditions or hours or whatever it is that they  
17 would (indiscernible)? How does that work?

18 A Yes, sir. So the hours of operation is -- one  
19 of the line items on the application forms it lists how  
20 many -- what would be the hours, the (indiscernible)  
21 hours of operation of the, of the facility. And that

1 usually is -- it's used in order to be able to calculate  
2 potential emission potential to emit of the -- of the  
3 machine. That does not mean that the machine will run 12  
4 hours a day continuously because the machine doesn't do  
5 that. You don't do that with cremation units like I  
6 mentioned earlier. But the hours of operation are stated  
7 in the application forms. It's just so that we can be  
8 able to provide some potential to make calculations of  
9 emissions that the MDE is going to use for their  
10 analysis.

11 Q What's an example of what MDE typically would  
12 do as far as the hours or conditions that they, they  
13 might -- how many cremations in a day are given --

14 A Yes, sir. So all that information will be in  
15 the, in the approved air permit. So once MDE does the  
16 review, all their review and all the analysis of all the  
17 technical information for that particular customer, so  
18 they would in the air permit there would be conditions  
19 that they would say how many cremations they -- the  
20 customers would have to do in an eight-hour day or in a  
21 year. So the MDE, for example, the MDE could say after

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1 they do analysis that the business would be, would be  
2 limited to do, for example, four cremations in an eight-  
3 hour day. And because it's in the air permit, that is  
4 something that the customer would have to comply with.

5           So anything that the MDE establishes as a  
6 condition or a requirement in the air permit those are  
7 things that the customer would have to comply with in  
8 order to operate the cremation unit.

9           Q       And example in addition to the condition you  
10 just mentioned, do they sometimes -- or do they typically  
11 order the removal of any types of plastics? We've  
12 already heard Mr. Greene testify that they're going to  
13 remove all amalgams before cremation. Are you familiar  
14 with some of the other conditions they might order?

15           A       Some of the conditions would include that they  
16 will specify that the machine would have to be used only  
17 for human, for human cremation. It cannot be used for  
18 anything else. They would -- it would mention about some  
19 monitory requirements. They would have to -- they would  
20 say about the temperature that the (indiscernible) would  
21 need to run during the cremation process. They will talk

1 about plastic should not be placed inside the cremation  
2 unit, cannot be cremated in the machine. So the MDE has  
3 -- they very -- they do a really in-depth analysis or  
4 review of the application forms, and all of that is shown  
5 in the, in the air permit. Like one of my co-workers  
6 Jeff Barron mentioned, that Maryland is one of, one of  
7 the states that really takes a lot of pride in reviewing  
8 and doing one of the -- they're really stringent in the  
9 requirements, and they've very concerned about the  
10 environment. So and that is shown in the air permit that  
11 they tend to provide.

12 Q And it's your understanding the MDE follows the  
13 EPA guidelines?

14 A Yes, sir.

15 Q Now, can you explain for the Board the  
16 dispersement modeling with regard to what MDE asks for in  
17 an application?

18 A Yes. One of the technical documents that the  
19 MDE requires for their analysis is that they have a  
20 spreadsheet that MDE created that calculates potential to  
21 emit for different -- for various pollutants, and one of

1 them is mercury. And in order -- it's called a toxic  
2 tool, and that is created by MDE. In order for that  
3 toxic tool to calculate the potential to emit, you have  
4 to provide a -- some type of dispersement model. The  
5 dispersement model would -- it would take information  
6 like the proposed stack height of the machine. It will  
7 ask for building dimensions and other type of  
8 information. And then the result of that dispersion  
9 model will give you a (indiscernible) concentration at a  
10 certain point. MDE has advised that that concentration  
11 is placed or is inserted into the toxi-tool (ph.)  
12 spreadsheet that MDE created, and then that concentration  
13 or that spreadsheet will auto populate what would be the  
14 potential emission by those pollutants, and if it will  
15 pass spreadsheet. If it shows where it failed, you have  
16 to redo the dispersion model until the concentration  
17 meets or complies with MDE requirements, which makes the  
18 toxi-tool pass. And that information was provided with  
19 the application forms to MDE. If the MDE doesn't have or  
20 the application form doesn't have that information, MDE  
21 will absolutely review the application forms, and they

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1 will ask for you to provide that.

2 Q Your company will be dealing with MDE when it  
3 comes to any more information that's needed; is that  
4 correct?

5 A Yes. Yes. If the MDE contacts any of our  
6 customers, and or if they would have contacted Vaughn  
7 Greene we always ask Vaughn Greene to kind of relay that  
8 message to us so, right, so that we can provide the  
9 proper assistance.

10 Q But right now we're in a hold pattern with MDE  
11 pending the outcome of the Zoning Code. Is that your  
12 understanding?

13 A I'm sorry, sir?

14 Q Right now MDE is in a hold pattern. They have  
15 not gotten back to you or Vaughn Greene --

16 A That is correct.

17 Q -- the zoning --

18 A That is correct.

19 Q Okay. I just want to make sure. See if  
20 there's anything else. Okay. You've heard some  
21 testimony that, I guess, with the heat the machine

1 generates that could result in wear and tear. And how  
2 does Matthews handle that issue?

3           A       Well, when it comes to wear and tear of the  
4 machine, we, we recommend our customers to perform an  
5 annual maintenance of the unit, and that's -- that annual  
6 maintenance is done by our technicians. When the  
7 customer kind of calls us and says, hey, it's time for a  
8 maintenance, our technicians will go to the site. We'll  
9 inspect the machine top to bottom, and then they will  
10 file a report of the, of things that need to be  
11 addressed, and then the customer would have to make sure  
12 that the machine is well maintained and operated  
13 annually. So when the machine is operated properly  
14 (indiscernible) this will help in the longevity of the  
15 unit. Will keep the unit in proper operating condition,  
16 and will definitely allow the unit to function safely as  
17 per MDE requirements and guidelines.

18           MR. LANZI: I think that's all. I think that's  
19 all I have for Mr. Tricoche unless the Board has any  
20 questions?

21           MEMBER CUNNINGHAM: Yeah, I have a question.



1 Does the MDE consider proximity of the unit to existing  
2 residences?

3 THE WITNESS: Mr. Cunningham, I really am not  
4 sure. I would have to review the conditions of the  
5 permit or the MDE regulations. Probably that would be  
6 something that the MDE would have to confirm for you, but  
7 at this point, I am not sure.

8 MEMBER CUNNINGHAM: Could you try to do that,  
9 and have Mr. Lanzi forward that information to us?

10 THE WITNESS: Yes, sir, yeah.

11 MEMBER CUNNINGHAM: And, Mr. Lanzi, you said  
12 -- let me see, how did you put it? You said that for the  
13 MDE application you had -- preliminary zoning approval,  
14 and you're back now for additional zoning consideration,  
15 I think. What does that mean?

16 MR. LANZI: Well, I think the point I'm trying  
17 to make is MDE would not have begun the process without  
18 zoning approval. The letter from Geoffrey Veale, zoning  
19 administrator, was determined to be sufficient that  
20 crematory is part of a funeral home. Therefore, it was  
21 allowed. So MDE processed the application, air quality

1 permit application at its community meetings. An issue  
2 was raised by opposition a few months ago to -- actually,  
3 a letter was written to Geoffrey Veale. I discussed with  
4 Geoffrey Veale and the client what steps we should take.  
5 I don't know whether Mr. Veale was going to respond or  
6 not, but my client determined (indiscernible) resolve  
7 this issue rather than hold up MDE from any further --  
8 and basically MDE wanted to see further review, which is  
9 why we filed an appeal with your -- with the Board.

10 MEMBER CUNNINGHAM: So this whole process  
11 starts with a letter from Mr. Veale?

12 MR. LANZI: Yes. Or we could have had a  
13 hearing, if we determined it was necessary. But at the  
14 time of the application we did not believe it was  
15 necessary nor did the Zoning Office. It wasn't until --

16 MEMBER CUNNINGHAM: You could have had a  
17 hearing with whom?

18 MR. LANZI: You. We could have filed positive  
19 appeal, I guess, a year ago June, but MDE asked for some  
20 type of letter from the zoning in order to process the  
21 application. We obtained that letter based on the

1 zoning, the definition, and the use. That was deemed  
2 sufficient by MDE to proceed. And then a few months ago,  
3 I guess, upon inquiries from the opposition, MDE wanted  
4 further information from the Zoning Office, and at that  
5 point we decided to just go ahead and file our positive  
6 appeal, and that's why we're here today.

7 MEMBER CUNNINGHAM: Ms. Byrne, could you get  
8 that letter from Mr. Veale for us, please?

9 MS. BYRNE: I sure can.

10 MEMBER CUNNINGHAM: Thank you.

11 MR. LANZI: Anything else?

12 CHAIRMAN FIELDS: I have a question for your  
13 witness.

14 So your testimony discussed various aspects of  
15 a permitting process, and what may result in the ultimate  
16 issuance of a permit. But once a permit is issued and  
17 the crematorium is operational, what mechanism, if any,  
18 exists to monitor what the emissions actually are from  
19 that site?

20 THE WITNESS: Very good question. So the  
21 machine, the machine has -- installed on the opacity

1 monitoring system. What that does is that it monitors  
2 continuously while the machine is in operation the  
3 opacity of the exhaust gases or whatever, or whatever is  
4 flowing through the stack. How that works is that  
5 there's two, there's two pieces to this system. There's  
6 the -- a light transmitter, and there's a receiver on  
7 opposite side of the stack. So the -- there's no -- the  
8 way that the exhaust gases are opaque it means that  
9 there's an issue going on on the machine. But if the  
10 emissions are clear, then the machine continues  
11 operating. So I'm just going to put an example for you,  
12 Mr. Fields. So the machine is operating, and the exhaust  
13 gases are clear, and there's no problem because the  
14 opacity monitoring system is on, and it's always  
15 operating while the machine is on. If there is some type  
16 of issue that the -- gases become opaque, the light that  
17 is being transmitted to -- from the transmitter to the  
18 receiver is going to be blocked, and that is going to  
19 tell the machine, hey, there is a problem, and the  
20 machine automatically will go into an alarm mode. In  
21 that alarm mode several things are going to be -- are

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1 going to turn off on the machine, which is it's going to  
2 help slow down the cremation. And this alarm mode lasts  
3 for three minutes. The chamber where the combustion of  
4 the gases happens, which is the secondary chamber, is  
5 still going to be maintained at the operating temperature  
6 that MDE requires to be, but the -- several things in the  
7 cremation chamber are going to be turned off so to slow  
8 down the cremation which -- and with that, with the  
9 secondary chamber working with the correct temperature  
10 will be able to correct the exhaust gas (indiscernible).  
11 And then for three minutes it will go -- it will be in  
12 that state. And then when the opacity monitoring system  
13 detects that the exhaust gases are not opaque, then the  
14 machine will after the three minutes if it's okay the  
15 machine will continue operation. But if at the end of  
16 those first three minutes the opacity monitoring system  
17 still sees that the exhaust gases are still opaque, it  
18 will add another three minutes until the problem, the  
19 situation is corrected. I want to say that the opacity,  
20 the MDE acknowledges in the air permit a specific  
21 percentage of opacity that the machine will need to

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1 comply with, and that opacity monitoring system at the  
2 time of commissioning, our technicians will calibrate the  
3 opacity system to that percentage that the MDE would  
4 require.

5 CHAIRMAN FIELDS: Thank you. So it seems to  
6 have a basically a self-regulating component to it?

7 THE WITNESS: Yes, sir. Yes, sir.

8 CHAIRMAN FIELDS: And with regard to the  
9 performance of the operation of the machine, are those --  
10 does MDE require that those records be provided to it at  
11 any point to provide confirmation of the operational  
12 success of the machine?

13 THE WITNESS: I do not recall verbatim what the  
14 requirement says in the permit, but kind of remembering  
15 of what other permits from all -- from other companies  
16 that we have in Maryland they do have monitoring  
17 requirements and recordkeeping. And, obviously, anything  
18 that the MDE (indiscernible) in the air permit the  
19 customer will need to comply. So if there's -- I don't,  
20 I don't remember the verbatim the language that they use,  
21 but if a, if a requirement, condition says something like

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1 you need to monitor the opacity, and you have to do  
2 manual recording by (indiscernible), and at any point we  
3 should be able to ask you for those records you should  
4 have them handy. It's not verbatim, but it would be  
5 something like that to provide that information, and the  
6 MDE will be able to put that in the permit.

7 CHAIRMAN FIELDS: Thank you.

8 MEMBER CUNNINGHAM: I have another question.  
9 Does the BRESKO incinerator have devices too what you  
10 just described?

11 THE WITNESS: I'm sorry, sir. The who  
12 incinerator? I'm sorry.

13 MEMBER CUNNINGHAM: The BRESKO incinerator, the  
14 city trash burning incinerator.

15 THE WITNESS: I'm not sure because they're not  
16 one of -- that's not one of our machines. So I can't  
17 really answer that question.

18 MEMBER CUNNINGHAM: Would that be typical of  
19 what you'd see with any incinerator?

20 THE WITNESS: When it comes to cremation units,  
21 all of our cremation units would have it, but I cannot

1 talk about (indiscernible) because that's not something  
2 that we built.

3 MEMBER CUNNINGHAM: I just thought I'd mention  
4 -- you might know. But thank you.

5 THE WITNESS: Yes, sir.

6 CHAIRMAN FIELDS: I have an additional question  
7 as a result of that question (indiscernible) say that the  
8 MDE conducts an annual inspection or requires an annual  
9 inspection?

10 THE WITNESS: I'll have to verify the condition  
11 of the permits. At this moment, I do not -- but I can  
12 verify the conditions of the air permit if they do.

13 MR. LANZI: I will proffer to the Board based  
14 on my communications with MDE that they do require an  
15 annual inspection at minimum, and also that as part of  
16 the submittal they did want to know the distance between  
17 the crematory and the closest residence. And if you --

18 CHAIRMAN FIELDS: Thank you.

19 MR. LANZI: -- see Exhibit 14, you'll see some  
20 charts, which show the location of the crematory, and  
21 then with rings around it where the closest residences



1 are. That's my understanding from the process with MDE.  
2 And, also, I think there was a question who is kind of  
3 governing this? I believe there (indiscernible)  
4 overseeing board, whether it's the Board of Mortuaries.  
5 I can certainly provide that in my memo to the Board so  
6 that you have that additional information.

7 CHAIRMAN FIELDS: Thank you.

8 MR. LANZI: That's all I have unless there's  
9 -- of him unless there's more from the Board.

10 CHAIRMAN FIELDS: Thank you.

11 MR. LANZI: All right. Next I will call  
12 Dr. Kinslow.

13 THE WITNESS: Thank you everybody.

14 CHAIRMAN FIELDS: Thank you, sir.

15 (Witness excused.)

16 MS. BYRNE: Mr. Lanzi, I don't think we can  
17 -- I think we've lost you for a moment.

18 MR. LANZI: Okay. How about now?

19 MS. BYRNE: I hear you, yes.

20 MR. LANZI: Okay.

21 MS. BYRNE: And it's Ms. Kinslow, is that who

1 public health. So we'll start with Lisa Polyak, if she  
2 is --

3 MS. BYRNE: Yep. She's been made a panelist,  
4 and I just unmuted her.

5 MS. WITT: Great. And she has some slides that  
6 she wants to share. So if you --

7 MS. BYRNE: Okay.

8 MS. WITT: -- could give her that ability, that  
9 would be great.

10 CHAIRMAN FIELDS: Hold on. There's a lot of --  
11 let's try again.

12 (Whereupon,

13 LISA POLYAK

14 was called as a witness, and testified as follows:)

15 DIRECT EXAMINATION

16 BY MS. WITT:

17 Q So, Ms. Polyak, could you introduce yourself to  
18 the Board, and describe your (indiscernible) to this  
19 application?

20 A Yeah. Can you, can you see the slide that I'm  
21 sharing?

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1 CHAIRMAN FIELDS: We can.

2 THE WITNESS: And can you see me? Is that  
3 okay?

4 MS. WITT: Yeah.

5 (Simultaneous comments.)

6 THE WITNESS: Oh, my god. Amazing, right, when  
7 it works. Okay. Hi, there. Thank you, thank you to the  
8 Zoning Board for your time today. My name is Lisa  
9 Polyak, and I'm an environmental engineer. And in my day  
10 job, I work for the Army Public Health Center at Aberdeen  
11 Proving Ground. But I'm here today in a private  
12 capacity. I'm not in any way representing anything on  
13 behalf of the Army or the Army Medical Department.

14 But I want to let you know that for the last 30  
15 years I've served as an in-house environmental health  
16 consultant for the Army and the Department of Defense on  
17 air quality on population health issues in the United  
18 States, and around the world wherever U.S. troops are  
19 based. So that's a little bit about me.

20 MS. WITT: So I was just going to say that  
21 Ms. Polyak's resume is -- has been submitted to the Board

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1 as Exhibit 19.

2 (Whereupon, the document  
3 referred to as Opposition  
4 Exhibit 19 was marked  
5 for identification.)

6 MS. WITT: So you should have that -- the Board  
7 should have that in front of you. And I'd like to offer  
8 Ms. Polyak as an expert witness in the field of air  
9 quality and public health and environmental engineering.

10 CHAIRMAN FIELDS: So admitted.

11 MS. WITT: And then so she has a presentation  
12 that she'd like to present, and I'll let her go ahead,  
13 and present that with minimal interrupt from me.

14 CHAIRMAN FIELDS: Very well.

15 THE WITNESS: Okay. Should I, should I  
16 proceed?

17 MS. WITT: Yes.

18 THE WITNESS: Okay. If at any time anybody has  
19 any questions or if I'm not being clear, please stop me.  
20 Because I don't want to just ramble on unnecessarily,  
21 especially if I'm sort of making your eyes glaze over for

1 anything. I can move on.

2 All right. So what I wanted to do though in  
3 this first slide is to give you an outline of what I'm  
4 going to talk about here today. I'm going to talk about  
5 the inventory of sources, of air pollution sources that I  
6 found in the little two-block radius around York Road  
7 where the Vaughn Greene Funeral Home is located. I want  
8 to talk to you about pollution monitors in Baltimore  
9 City; specifically, monitors for particulate matter. How  
10 air quality standards are set. Some of the negative  
11 health consequences associated with exposure to fine  
12 particulate matter, which is also known as PM 2.5. I'm  
13 going to use those terms interchangeably, PM 2.5 and  
14 particulate matter. I'm going to talk about some of the  
15 population health indicators that we have for Baltimore  
16 City about how healthy our citizens are in the area. And  
17 then I'm going to follow with a little bit of  
18 conversation about what a crematorium is, what kinds of  
19 emissions are produced, about the draft permit  
20 application that Vaughn Greene has prepared, and where  
21 the air pollution from the crematorium might go.

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1 All right. So that's just sort of a little  
2 roadmap to what we're going to discuss.

3 All right. So the second slide that I want to  
4 have for you is just a list of all of the emission  
5 sources that I was able to see just from a, sort of a  
6 bird's-eye view walking the four-block length between  
7 Cold Spring Lane on the south, up York Road, to Winston  
8 Avenue on the north. And when I did that, I was looking  
9 at just the, just the things that are currently in place  
10 in the two-block radius around the Vaughn Greene Funeral  
11 Home. And what I came across was a postal service  
12 station that is right across the street. It has lots of  
13 customer traffic, and several dozen postal vehicles.  
14 There's two fast-food restaurants in the neighborhood  
15 right across the street. One is a Popeyes that has a  
16 single drive-through lane that's open 13 hours a day.  
17 And north of that is a McDonald's with two drive-through  
18 lanes that operate 15 hours a day.

19 There are two gasoline service stations on  
20 either end. One is a Marathon that has 10 gasoline  
21 pumps; and the other is Sunoco on the south at Cold

1 Spring Lane, that has eight pumps.

2           There were two MTA bus stops, and we found out  
3 that the MTA Red Line has 206 buses every day that  
4 traverse York Road up and down, and stop at the two  
5 stations. I also found out the daily vehicle traffic on  
6 York Road because the Maryland Department of  
7 Transportation monitors traffic flow at the intersection  
8 of Winston Avenue and York Road, and that on average  
9 19,734 vehicles travel York Road at that intersection  
10 every day of the year. And this data was taken from  
11 February of 2020.

12           Also, I found that York Road is a truck route,  
13 which means that it allows not just passenger cars, but  
14 things like light duty, mixed duty, and diesel trucks to  
15 pass. And we know that on average between 15 and 18  
16 percent of the traffic that occurs on the artery spokes  
17 around, around Baltimore within the Beltway, is truck  
18 traffic.

19           And then on either end of that two-block radius  
20 is bracketed the intersection with a traffic light.  
21 There's one at Winston Avenue, and there's one at Cold

1 Spring Lane.

2           But I bring this to your attention because all  
3 these things that I just described are emission sources.  
4 They are sources of air pollution. And the pictures on  
5 this page sort of represent each of those kinds of  
6 sources, and what they all have in common is that they're  
7 combustion sources just like the crematorium that Vaughn  
8 Greene wants to add to the funeral home. And all of  
9 these sources are known as what's called mobile sources;  
10 things like cars, trucks, buses. And they distinguish  
11 them from stationary sources like power plants or  
12 factories or incinerators.

13           Now, according to a 2019 report from the Union  
14 of Concerned Scientists, Maryland has the nation's second  
15 worst pollution, air pollution, from cars, trucks, and  
16 buses, coming second only to New York State. And the  
17 Maryland Department of Environment does regulate air  
18 pollution sources around the State, and they have 41  
19 separate air quality regulations. But among those 40  
20 regulations, only two address mobile sources.

21           So there is a bit of a gap in Maryland

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1 Department -- environmental awareness and oversight of  
2 sources and equipment that contributed to air pollution  
3 from local sources. And Maryland Department of the  
4 Environment only issues permits to stationary sources.  
5 Mobile sources are largely allowed to proliferate without  
6 any kind of scrutiny or control in the same way that  
7 stationary sources do because they have to get permits.

8           So the pollutants that I've mentioned here, the  
9 combustion emissions include things like nitrogen oxide,  
10 carbon oxide. I won't read the list for you because you  
11 can see it for yourself. But the one pollutant that  
12 we're going to talk a lot about today is particulate  
13 matter, and I've highlighted that in yellow because  
14 particulate matter is one of the largest types of  
15 emissions that are formed during combustion, and it's  
16 also one that, according to the permit application, is  
17 produced in greatest abundance from the crematorium that  
18 Vaughn Greene wants to install at the funeral home.

19           So Maryland Department of the Environment is  
20 aware of the air pollution and health burden created by  
21 mobile sources. And one way they are managing this is

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1 with an anti-idling campaign, and this is, this is like  
2 an outtake from one of the flyers that they distribute to  
3 the public to make them aware of the problems associated  
4 with idling. Part of the campaign is letting people know  
5 that there is a regulation in the State of Maryland that  
6 says that you're not legally allowed to idle a vehicle,  
7 either a motor vehicle, gasoline powered, or diesel  
8 powered for longer than five minutes. And Maryland isn't  
9 alone in their concern for vehicle emissions. Over 30  
10 states have some type of anti-idling regulations  
11 throughout the United States.

12 I just want to quickly draw your attention to  
13 some of the things on this slide that highlight the  
14 health risks associated with, with vehicle idling, and  
15 this is in their own words. They talk about things like  
16 cancer, respiratory issues, reproductive effects, birth  
17 defects. Down here, they say exposure to vehicle exhaust  
18 increases the risk of death from heart and lung disease  
19 (indiscernible) outcomes associated with (indiscernible)  
20 emissions. But over here, I circled something that I  
21 want to -- that sort of caught my eye; I hadn't been

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1 aware of. And there is now the Department of the  
2 Environment tells us that over the course of a year, one  
3 car, just one car idling for five minutes a day can emit  
4 as many as 25 pounds of harmful air pollutants. And this  
5 fact sort of made me curious about how much air pollution  
6 might be emitted in the York Road corridor near the  
7 funeral home. So I did a little calculation, and I did  
8 it based on the data that I sort of showed you on that  
9 second slide about the traffic through-cuts on York Road.  
10 So according to --

11 MEMBER JOHNSON-TURNER: Can I interrupt you for  
12 just a second? There is a -- on my view, anyway, there's  
13 like a gray box (indiscernible) and at the top. Do you  
14 know what that might be, or if you can move it?

15 THE WITNESS: This participants can now see  
16 what you're sharing? That box?

17 MEMBER JOHNSON-TURNER: There's a box, yeah, at  
18 the top of the screen, and then there's another one on  
19 the right-hand. I don't know what that is but --

20 THE WITNESS: I don't see that on my screen.

21 MEMBER JOHNSON-TURNER: Okay.

1 MS. BYRNE: You might -- so it probably appears  
2 great to us because it's a message for Ms. Polyak. But  
3 if you hit -- is there a way you can hit okay or  
4 something like that on the box that says -- where it says  
5 okay that we're sharing your screen, we can see your  
6 screen?

7 THE WITNESS: Hang on. I don't --

8 MS. BYRNE: Well, you might be able to drag it  
9 to the corner.

10 THE WITNESS: I can't touch it. I can see it,  
11 but it's at the top of my screen, but I can't --

12 (Simultaneous comments.)

13 MS. BYRNE: Can you try -- will you try  
14 minimizing your window, and opening it back up also?

15 THE WITNESS: All right. How's that?

16 MS. BYRNE: That got rid of one of them.

17 MEMBER JOHNSON-TURNER: There's still one on  
18 the, the right-hand side.

19 THE WITNESS: This?

20 MEMBER JOHNSON-TURNER: Yes.

21 THE WITNESS: Oh, there you go. Oh, that's --

1 (Simultaneous comments.)

2 MS. BYRNE: Yeah, move us out of the way, move  
3 us all the way out of the way. You can minimize our  
4 faces, yeah.

5 THE WITNESS: Okay. Oh, sorry about that. I  
6 don't -- I'm afraid to close you out, but I'll just put  
7 you over there. Okay. How's that? Sorry. What do I  
8 know? All right.

9 Okay. So this is that calculation I was  
10 telling you about. So I got some data about the traffic  
11 through-cuts. 19,734 vehicles a day at York Road,  
12 Winston Avenue from February of 2020. And based on that  
13 emissions factor on that previous slide, I calculated  
14 what the emissions would be just from the vehicles that  
15 travel every single day up and down York Road. And this  
16 is what I came out with. It sort of shocked me that just  
17 this one source of emissions associated with idling at  
18 the traffic light appears to create over 50,000 pounds of  
19 harmful air pollutant, and this doesn't include the air  
20 pollution produced at the fast-food drive-throughs or the  
21 gas stations or the post office or the concentrations of

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1 these pollutants in other -- in the other sources that  
2 we've mentioned (indiscernible) York Road.

3           So what do these emissions mean for outdoor air  
4 quality, or the concentrations of these pollutants in the  
5 air that we breathe? Well, I'm going to focus on  
6 particulate matter pollution, as I mentioned earlier, and  
7 I want to draw your attention to some of the monitoring  
8 stations in the, in the City. So the reason I'm focusing  
9 on particulate matter is because it's associated with the  
10 worst health effects of all the air pollutants that are  
11 subject to national standards. And according to  
12 calculations in the permit application prepared by Vaughn  
13 Greene, it's the pollutant that's produced in the  
14 greatest abundance by the crematorium. PM 2.5  
15 (indiscernible) particles are so dangerous because they  
16 defeat the body's natural defenses by getting caught in  
17 the mucus of your nose or throat or being coughed up or  
18 being sneezed away. They get stuck in the lowest reaches  
19 of your lungs, in the terminal air sacs known as alveoli.  
20 It can even cross the gas exchange membranes in those  
21 terminal air sacs, and end up in your bloodstream.

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1 Now, the only official --

2 CHAIRMAN FIELDS: How much particulate matter  
3 is required to do those things you just described?

4 THE WITNESS: Well, different levels, and  
5 that's -- we're going to talk about that in a second, if  
6 that's okay.

7 So the only official PM 2.5 monitoring station  
8 in Baltimore City is on Monument Avenue -- excuse me --  
9 is on Monument Street in the City, and it's a little over  
10 three and a half miles south of the Vaughn Greene Funeral  
11 Home. And according to EPA, this monitor is what is  
12 known as a middle scale monitor, which is considered to  
13 be representative of emissions at a distance of 100 to  
14 500 meters, which is approximately best case about a  
15 third of a mile. So this monitoring station, although  
16 this is what's used to characterize the emissions in the  
17 City, and it's the only monitor that we have, it's really  
18 not in any way representative of what's going on up here  
19 in the neighborhood where Vaughn Greene Funeral Home is  
20 located.

21 So Dr. Kinslow, the toxicologist, who was

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1 testifying the other day, asserted that since Baltimore  
2 is officially in compliance with the fine particulate  
3 matter standard, that there's no additional risk to  
4 citizens in this area. And I would suggest that since  
5 there are no monitors in the area where the Vaughn Greene  
6 Funeral Home is located, we really don't know much about  
7 the air quality in the neighborhood; and, certainly, we  
8 don't know anything about the level of fine particulate  
9 matter pollution in the neighborhood.

10 CHAIRMAN FIELDS: So she can't prove that it's  
11 -- so your -- based on your testimony, Dr. Kinslow's  
12 report is not supportive of Baltimore actually being in  
13 compliance or within a certain acceptable level of air  
14 quality. By the same token, can you prove that it's  
15 outside?

16 THE WITNESS: Well, what I would say is -- I  
17 mean, being in compliance with the rule at that monitor  
18 may be accurate, but we -- it doesn't tell us anything  
19 about what might be going on at other parts of the city.  
20 Now you can see that there's these little green boxes  
21 that there are some things that citizens are sort of

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1 taking matters into their own hands, and purchasing these  
2 low-cost sensors. They're a couple hundred bucks, and  
3 they're very easy to operate. So that they get more  
4 localized information about the levels of fine  
5 particulate in their communities. And some of them may  
6 be higher or lower than what goes on at this official  
7 monitor, which is what the data that's used to determine  
8 compliance with the federal standards or the state -- the  
9 standard at the Maryland Department of Environment. So  
10 you're right. I can't say anything really about what  
11 the concentration is except that this monitor that says  
12 that we're in compliance with the standards really  
13 doesn't tell us anything about what's going on in the  
14 York Road corridor.

15 CHAIRMAN FIELDS: Okay. Thanks.

16 THE WITNESS: So Dr. Kinslow also went to some  
17 length to assert that the current federal air quality  
18 standards that are published by EPA and adopted by  
19 Maryland are fully protective of human health and welfare  
20 with a margin of safety for sensitive individuals. So if  
21 air quality is meeting standards, then citizens should be

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1 protected from negative health problems due to poor air  
2 quality, and that's definitely what is supposed to happen  
3 according to the mandates of the Clean Air Act.

4           But let's take a look about what happens in  
5 practice. So I put two charts on this page, on this  
6 slide, to show how EPA has published and adjusted  
7 particulate matter standards over the last 50 years. In  
8 the beginning, scientists knew that particles affected  
9 human health in some way, and so EPA at first regulated  
10 all particles known as total suspended particulate. And  
11 that's these -- the green columns. And you'll see I've  
12 got these two charts. One represents the standard for  
13 short-term exposures, 24 hours; and this chart represents  
14 the standards that were published for long-term or  
15 chronic exposure. It's an annual standard.

16           Okay. So first off, EPA said, okay, we know  
17 some particles affect health. We're not sure which ones.  
18 We're going to set the standard at 260 for 24 hours, and  
19 we're going to regulate all particles. But after 16  
20 years or so, studies were done, science evolved, and EPA  
21 realized that only some kind of particles actually got

1 into the human respiratory system, and these particles  
2 were known as PM 10. That's the yellow columns that you  
3 see in both charts. PM 10, 10, the number after PM  
4 represents the size more or less of the particles. It's  
5 called the aerodynamic diameter, which is not exactly the  
6 measured size, but for purposes of the conversation, it  
7 does have to do with the size of the particle.

8           So they abandoned the total particulate  
9 regulations, and they published regulations for PM 10.  
10 And after another decade, scientific studies revealed  
11 that it's really smaller particles, these PM 2.5  
12 particles, that you can see with the red columns that  
13 defeat the protective defenses in your respiratory  
14 system, and get lodged in the deepest recesses of your  
15 lungs.

16           Over time, EPA realized that the original  
17 threshold that they had established for PM 2.5 wasn't  
18 protective enough, and so they lowered the standard, the  
19 numeric values, and they did that in 2006, you can see  
20 here, and then in 2012.

21           So we see that because of the advancements of

1 science and medicine, EPA has changed air quality  
2 standards to reflect the kinds of particles that affect  
3 human health, and the threshold at which they affect  
4 human health over time whenever science and medicine  
5 advance to let us know that we have more information  
6 about how those standards should be adjusted. But one  
7 thing that's -- the most important thing about this slide  
8 that I want you to take away is that since 2012 the  
9 standards have not been adjusted. Nothing has changed  
10 about these standards since 2012.

11 CHAIRMAN FIELDS: When do you expect the next  
12 change to occur from the EPA --

13 THE WITNESS: Thank you for asking that. I'm  
14 getting to that. So why hasn't anything changed since  
15 2012? Good question. So the Clean Air Act mandates that  
16 EPA must reevaluate national air quality standards every  
17 five years to ensure that they continue to be protective  
18 of human health based on the latest available medicine  
19 and science, and they make this evaluation by compiling a  
20 report called an Integrated Science Assessment. And the  
21 latest Integrated Science Assessment for particulate

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1 matter was published in 2019. It's nearly 2,000 pages  
2 long, and if you dropped it on your foot, you'd probably  
3 break a couple of toes.

4           Okay. So what I have up here on the slide are  
5 some of the findings that were in that 2019 Integrated  
6 Science Assessment as they pertain to particulate matter  
7 about the health effects that would be considered causal  
8 or likely to be causal. And here we have the short-term,  
9 the health effects that could happen after exposure from  
10 days to weeks; and over here we have some of the long-  
11 term effects that would happen after exposure for months  
12 to years. And it's been (indiscernible) for decades that  
13 exposure to fine particles leads to heart and lung  
14 diseases like asthma or chronic obstructive pulmonary  
15 disease or heart attacks and strokes. But new evidence  
16 in this Integrated Science Assessment from 2019 showed  
17 that fine particles are implicated in things like  
18 diabetes, low birth weight, pre-term birth, and cognitive  
19 impairment, things like early Alzheimer's. And this is,  
20 this is like the most -- maybe the most important part of  
21 this is that despite the recommendation of internal EPA

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1 scientists to lower both the short-term and the long-term  
2 PM 2.5 standard, the EPA administrator overruled them,  
3 and decided to retain the 2012 standard. And EPA, the  
4 past administration EPA, made the final determination in  
5 December 2020, after the election, and probably imagined  
6 that the standards would not be reevaluated again for  
7 another five years. But the decision that they had made  
8 not to alter the standards was so controversial that look  
9 what happened this summer in June. The failure of the  
10 prior EPA administration to change the PM 2.5 standards  
11 based on the weight of evidence in that 2019 Integrated  
12 Science Assessment was deemed to be a significant fact in  
13 EPA's mandate to protect human health. EPA stated that  
14 the current PM standards may not be adequate to protect  
15 public health and welfare. And the implication here is  
16 that even if the area where we live right now is  
17 complying with the 2012 standards, it may not be properly  
18 protective of human health based on current scientific  
19 knowledge.

20                   And I want to draw your attention to some other  
21 things that the science and medical community has become

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1 aware of since 2012.

2           Take a quick sip of water.

3           Okay. So this organization that's affiliated  
4 with the World Health Organization is known as the  
5 International Agency for Research on Cancer, and their  
6 job is to look at chemicals, and decide whether or not  
7 these chemicals may be considered carcinogenic to human  
8 health. And in 2014, they determined that among all the  
9 chemicals that are out there that diesel engine exhaust  
10 is a human carcinogen. And then in 2016, they determined  
11 that particulate matter in outdoor air pollution is also  
12 a group one human carcinogen. This is all stuff that  
13 happened after the 2012 standard was published.

14           Look what else happens in 2012. Here is  
15 mortality data that was published by the Health Effects  
16 Institute in their annual publication called *State of*  
17 *Global Air*. And you'll see on the left these different  
18 countries, and on the bottom different years from 1990 up  
19 through 2015. And the data on this chart are the number  
20 of excess deaths that happen every year in those  
21 countries that's attributable to particulate matter. And

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1 what I've circled here for you on the chart, is the  
2 United States in 2015, and the number of excess deaths  
3 that have happened in 2015 due to exposure fine  
4 particulate matter. 88,400 death, excess deaths, are  
5 believed to have occurred because of exposure to fine  
6 particulate matter leading to health outcomes like,  
7 perhaps, lung cancer or COPD or heart attacks or strokes.

8           So 88,000 sounds like a big number. It's not  
9 as big a number as what's happening in some other  
10 countries, but it happened in our country even with the  
11 health standards as protective as they are, or at least  
12 at the levels as they were promulgated in 2012, right.  
13 So what does 88,000 deaths mean in the context of other  
14 important public health concerns that environmental and  
15 health communities are worried about, and trying to  
16 educate about citizens in the United States? So I want  
17 to bring your attention to this slide. It gives us a  
18 sense of context about what does it mean to have 88,000  
19 additional deaths due to particulate matter. Well, these  
20 are all things that we know draw a lot of attention from  
21 the public health community. It shows the annual excess

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1 deaths attributed to important public health issues that  
2 get lots of resources, and lots of attention in the  
3 United States, to help people either modify their  
4 behavior or modify their exposure. Drunk driving we see  
5 about 11,000 deaths in 2017. Second-hand smoke, 14,000  
6 deaths on an annual basis. Drug overdose deaths in 2017,  
7 including drug overdose during the height of the opioid  
8 epidemic, created 70,000 additional deaths in that year.  
9 But look at how many deaths are associated with fine  
10 particulate matter in 2015. 88,400 deaths, excess  
11 deaths. And that's more than any of the other issues on  
12 this page that I'm sure many people are, are aware of,  
13 but very few people are aware of the health effects  
14 associated with exposure to fine particulate matter.  
15 And, in fact, in 2018, the head of the World Health  
16 Organization said that no one rich or poor can escape air  
17 pollution. It is a silent public health emergency.

18 CHAIRMAN FIELDS: Am I reading this slide  
19 correctly? When the particulate matter 2.5 exposure is  
20 from a series of events, factories, cars? Not just  
21 crematoriums, right?

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1 THE WITNESS: Correct. All of those different  
2 sources combined. Yeah. The point being is that there's  
3 already an existing burden of PM 2.5 in our communities  
4 without adding one more thing to them that's creating the  
5 burden of this excess mortality that is reported in the  
6 Health Effects Institute report.

7 CHAIRMAN FIELDS: Okay.

8 THE WITNESS: And so -- sorry. Go ahead. Any  
9 questions?

10 CHAIRMAN FIELDS: No. I'm good.

11 THE WITNESS: Okay. So I wanted to just try  
12 your patience for just one more minute about a more  
13 important and more recent important public health issue,  
14 public health emergency. In spring of 2020, researchers  
15 from the Harvard School of Public Health looked at the  
16 relationship between neighborhoods that had five chronic  
17 levels of fine particulate matter, and mortality  
18 associated with the Covid-19 pandemic.

19 So I want to tell you on the left here this  
20 map, this map is showing you the concentration of fine  
21 particulate matter in counties around the United States

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1 with blue being counties that have less particulate  
2 matter, and brown being counties that have higher  
3 concentrations of fine particulate matter. That's what  
4 this map is on the left. And on the right, we have a map  
5 showing the mortality levels in counties around the  
6 United States up through June of 2020. And you can see  
7 just by eyeballing it that there seems to be higher  
8 levels of fine particulate matter on the East Coast, and  
9 in sort of in this industrial area right here.  
10 Similarly, you see high levels of mortality on the East  
11 Coast and in the Mid-Atlantic on this map over here. And  
12 I'm just paraphrasing what the researchers found, but in  
13 a nutshell they said that there is a statistically  
14 significant relationship between communities that have  
15 chronic exposure to particulate matter, even at levels  
16 below the standards, and the mortality rates for Covid-  
17 19. And, in fact, I pulled out two quotes from the study  
18 here that I felt were important. Counties with just a  
19 single microgram increase in the annual average fine  
20 particulate matter concentration had an 11 percent  
21 increase in the Covid-19 mortality rate. And counties

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1 with more black residents had a much higher Covid  
2 mortality rate. The numbers, the specific numbers  
3 associated with that were for counties that had a -- an  
4 up to a 14 percent greater population of black residents  
5 had a 49 percent higher mortality rate.

6 So you can see in communities of color this  
7 burden is disproportionately shared relative to  
8 communities that are not people of color.

9 Okay. So we've looked at some of the health  
10 effects of PM 2.5, but what do we know about the citizens  
11 of Baltimore, their health status, and what it might mean  
12 for them to be subjected to these air pollutants? So  
13 this is an annual report that's prepared by the Robert  
14 Wood Johnson Foundation. It's called the *County Health*  
15 *Rankings and Roadmaps*, and it evaluates health status at  
16 the county level for counties and jurisdictions in states  
17 all throughout the United States, and it ranks them  
18 according to several sort of buckets of information.  
19 And one bucket is what's called health outcome. Health  
20 outcomes are things like quality of life, health status,  
21 birth weight, and also health factors. Health factors

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1 are things like smoking status, obesity, what -- how  
2 educated folks are, whether or not they have jobs, and  
3 environmental factors like air quality or water quality.  
4 And I'm just going to give you the nutshell here. You  
5 can see that I've highlighted. So Baltimore City is  
6 ranked among the least healthy counties in Maryland for  
7 health outcomes and health factors. And, in fact, it's  
8 not just ranked among the lowest, it's dead last. Among  
9 the 24 jurisdictions that were evaluated in the State of  
10 Maryland, Baltimore City has the worst health outcome and  
11 the lowest health factors. And I wanted to tease out  
12 just one of these factors because I thought it was  
13 relevant to our conversation today, and that's the one on  
14 air pollutants particulate matter. And what we see here  
15 is that compared to the other jurisdictions, the 24  
16 jurisdictions, Baltimore City is tied for second worst  
17 when it comes to exposures of fine particulate matter,  
18 and this is according to the most recent report that the  
19 Robert Wood Johnson Foundation puts out.

20           So we've looked at existing exposures in the  
21 neighborhood around the funeral home, and there seems

1 like there's quite a few existing sources. Even though  
2 they're mobile sources, but they produce combustion  
3 emissions, which are similar to the combustion emissions  
4 that the crematorium are going to produce. We found that  
5 there's really no data about air pollutions from north  
6 Baltimore, and certainly none in the neighborhood where  
7 the Vaughn Greene Funeral Home is located. We found that  
8 EPA thinks that the current PM standards are not  
9 sufficiently protective of public health, and that the  
10 citizens of Baltimore already have poor health, and high  
11 air pollution exposures relative to the other areas of  
12 Maryland.

13 All right. So I'm just going to sum that up,  
14 and then move on to our -- the last few things that I  
15 want to bring to your attention.

16 I want to talk for a minute about what is a  
17 crematorium. So I put two -- these two photos side-by-  
18 side, and one is a crematorium, and one is an  
19 incinerator. Can you tell which is which? Not a  
20 rhetorical question. I'll take answers, if you have  
21 them.

1           CHAIRMAN FIELDS: I'll let you tell us. Go  
2 ahead.

3           THE WITNESS: Okay. Well, it's sort of a trick  
4 question because they're both incinerators. The photo on  
5 the right is that (indiscernible) portrait of the  
6 crematorium that you saw, I think, either Matthews  
7 Environmental or somebody just posted it. It's the one  
8 that Vaughn Greene intends to purchase from Matthews  
9 Environmental. But a crematorium is really just an  
10 incinerator for human remains, plus whatever else goes  
11 into the fire box. The reason that we know a crematorium  
12 is an crematorium is because it possesses the exact same  
13 attributes as an incinerator. It has primary and  
14 secondary burners. It has a primary and secondary  
15 chamber. It has a refractory, supplemental fuel source,  
16 by temperature combustion, and an exhaust stack. And in  
17 its specification sheet for the PowerPAK II Plus, that  
18 Vaughn Greene just told us that they intend to purchase,  
19 Matthews Environmental cites the incineration capacity of  
20 the unit at 175 pounds per hour. Incinerators are one of  
21 the most highly regulated sources of air emissions

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1 because their potential to emit what is known hazardous  
2 air pollutants. And these aren't the pollutants that I  
3 listed at the beginning of my presentation, like nitrogen  
4 oxide or carbon oxide. These are pollutants that are  
5 extremely toxic in very small amounts, and have the  
6 ability to gravely harm human health usually through  
7 cancer. Chemicals like benzene or asbestos or dioxin or  
8 formaldehyde. So when the last amendment to the Clean  
9 Air Act were issued in 1990, the EPA set aside an entire  
10 title to address air pollution from hazardous air  
11 pollutants, including and especially from incinerators.

12 All right. Now, Mr. Greene, Mr. Vaughn Greene,  
13 in his testimony cited that he intended to purchase an  
14 incinerator from Matthews Environmental because they're  
15 the leader in cremation equipment, and they have a  
16 reputation for being best in their field. And, in fact,  
17 that's exactly what's stated on the Matthews  
18 Environmental website. Their logo, and this is a  
19 statement, actually, that appears on their website. It  
20 says Matthews is the acknowledged global leader in  
21 cremation equipment with more than 5,000 cremators

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1 installed worldwide. Matthews gave Vaughn Greene a lot  
2 of information on the operation and the specifications of  
3 their incinerator, but they didn't give them any  
4 information on the air pollution emissions that come from  
5 the incinerator. If Matthews has sold 5,000 of these  
6 units, why don't they furnish their clients with  
7 measurements showing exactly what kind and what amount of  
8 pollution is produced by the equipment? It was a  
9 surprise to me, frankly, that Matthews didn't provide  
10 this data because it means that their clients are left to  
11 have to estimate their air pollution emissions in order  
12 to get a permit to operate the incinerator, and that's  
13 exactly what Vaughn Greene had to do. They had to  
14 estimate their air pollutants emissions using factors  
15 from EPA.

16           So this slide is a little busy, and I apologize  
17 for that up front, but I wanted to sort of give you some  
18 information about what's in the application, and where it  
19 came from. So at the top of the slide above this dotted  
20 line you can see a screenshot of Vaughn Greene  
21 calculations estimating particle emissions from the

1 incinerator on the permit application, and I've circled  
2 the emissions factor that they're using here. I believe  
3 it reads 4.67 pounds of particulate matter per ton of  
4 waste was consumed. And below the dotted line is a  
5 screenshot showing the document where the PM emission  
6 factors came from. It came from an EPA reference known  
7 as AP 42, and you can see that the emission factor came  
8 from a table that offers emission rates for medical waste  
9 incinerators. So here again we have information  
10 demonstrating that the emissions from the crematorium are  
11 interchangeable with those produced by a medical waste  
12 incinerator. And I think that it's really important for  
13 the Board to be aware that a crematorium is really just a  
14 specialized incinerator.

15           During Mr. Doak's testimony on August 10th, he  
16 was the -- I believe he was the property line surveyor --  
17 Mr. Lanzi asked him a key question, and this was the  
18 question that he asked him. He said, in your expert  
19 opinion, would approval of the crematorium be in harmony  
20 with the purpose and intent of the Baltimore City Zoning  
21 Code? And Mr. Doak replied, he says, I think so.

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1 Funeral homes have always been put in neighborhoods. But  
2 the question is, is the crematorium in harmony with the  
3 purpose and intent of the Zoning Code? And I think that  
4 there might be a question of harmony, and I want to bring  
5 it to your attention. It's clear that a certain section,  
6 Section 1-302(s)(2) of the Code permits a crematorium to  
7 be co-located with a funeral home. However, there's  
8 another section, Section 1-218(b)(2), that prohibits  
9 incinerators in all zoning districts of Baltimore City.  
10 And, further, there's another section in the General  
11 Provisions -- the section citation is 1-204(b) -- and  
12 that provision states that when there's a conflict  
13 between two provisions of the Code, the more restrictive  
14 provision will prevail.

15           So I think that it's an open question about  
16 whether the use of crematoriums inside the City limits is  
17 really in harmony with the Baltimore City Zoning Code.  
18 Because the Code contemplated that incinerators were of  
19 such grave concern that they were prohibited in their  
20 entirety inside the City limits.

21           Okay. I want to pivot -- I only have a couple

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1 slides left here. I realize I've been talking for a long  
2 time. So thank you for your indulgence.

3 I just want to mention a couple of things  
4 quickly about the permit to construct -- the draft  
5 application that they -- that Vaughn Greene has prepared.  
6 So in his testimony on August 10th, Mr. Lanzi, the lawyer  
7 from Wright, Constable and Skeen, stated Maryland  
8 Department of the Environment will not allow filing of  
9 the application for an air permit until we have zoning  
10 approval. And I bring this up because I want to be clear  
11 to the Zoning Board that if this is true, there's now ay  
12 that Maryland Department of the Environment could have  
13 offered any opinion or approval on the intention to  
14 install an incinerator at the Vaughn Greene Funeral Home.  
15 And this is important because it calls into question  
16 several assertions made by Dr. Kinslow, the toxicologist,  
17 in her testimony on August 10th. In that testimony,  
18 Dr. Kinslow stated that on multiple occasions Maryland  
19 Department of the Environment had rendered a judgment on  
20 the Vaughn Greene incinerator, and she said these things,  
21 and these are direct quotes from her testimony. She

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1 said, and I quote, Maryland Department of the Environment  
2 has determined that emissions from the crematorium will  
3 not cause deterioration of air quality, end quote. She  
4 said further, again quote, emissions have been determined  
5 by MDE to be below threshold of concern. Neither of  
6 these assertions could be true if Maryland Department of  
7 the Environment hasn't acted on the permit application  
8 from Vaughn Greene.

9 CHAIRMAN FIELDS: Do you think she might have  
10 been referring to what the MDE standards are also --

11 THE WITNESS: I --

12 CHAIRMAN FIELDS: Let me finish. Also looking  
13 at what the proposed emissions are as presented in the  
14 application, and concluding that if these are the  
15 emissions from the proposed crematorium they're within  
16 MDE standards, accepted standards. (Indiscernible)  
17 conclusion by doing that?

18 THE WITNESS: I can't imagine. I don't know  
19 what was in the mind of Dr. Kinslow when she spoke. I  
20 only know what she said. But I know for a fact that we  
21 don't know how Maryland Department of the Environment is

1 going to act on this application because they haven't  
2 done so yet. And asserting differently, I mean, maybe  
3 she meant something other than what she said, but I can  
4 only go by what she said.

5 CHAIRMAN FIELDS: Okay.

6 THE WITNESS: Okay. At various points in the  
7 testimony, Mr. Greene stated that it was his intention  
8 that he would not accept human remains from other funeral  
9 home, although he didn't say anything about whether or  
10 not he would be accepting cremation business from his  
11 other funeral homes. I think he did say something about  
12 third-party funeral homes that, like, that were other  
13 businesses. But Mr. Greene owns three other funeral  
14 homes in the Baltimore area, and he did say that the York  
15 Road one, I believe, is where he has -- he does his most  
16 business. He didn't say anything about whether or not he  
17 intended to accept cremation business from those other  
18 three funeral homes, and I thought that that might be  
19 something that might be important.

20 And he also said that dental fillings and  
21 pacemakers would be removed. Dr. Kinslow said that the

1 permit over estimates the emissions from the incinerator  
2 because it would never be operated at the capacity that  
3 was cited in the application. And I have no doubt that  
4 when they said these things that that was their belief or  
5 intention at the time of testimony. But the reality is  
6 that once a permit is issued anything that is not  
7 expressly prohibited or limited is allowed. So  
8 notwithstanding someone's intention, they would be  
9 perfectly within their legal rights not to have to remove  
10 things like dental amalgams or implants or jewelry or  
11 other metal, plastic, synthetic personal objects prior to  
12 incineration unless the permit explicitly prohibited it.  
13 And if the permit doesn't prohibit that, that means all  
14 those things go into the firebox, and all those  
15 emissions, heavy metals, plastics, polyaromatic  
16 hydrocarbons, that goes all up the stack out into the air  
17 and into the community.

18           With respect to hours of operation in their  
19 draft application, they asserted that they would like to  
20 operate or have the right to operate up to 12 hours a  
21 day, 6 days a week, 52 weeks a year. And if that's what

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1 the permit allows, that's what they're allowed to do. So  
2 speculation about what they might do or what you think  
3 they can do that's -- I don't know how helpful that is  
4 when the permit would, in fact, permit you legally to do  
5 those things. And so the community should have full  
6 knowledge of the emissions that would occur, if you  
7 decided to operate well within the legality of your own  
8 permit. As far as accepting human remains from other  
9 funeral homes, I thought that what Mr. Greene said was a  
10 good thing that his intention is that he wouldn't -- he  
11 doesn't plan to accept cremation business from other  
12 places, but we don't know how things might change for him  
13 or his business. I mean, maybe, maybe he'll feel like he  
14 needs to do that in order to maintain financial  
15 viability. And if the permit doesn't prohibit it, he  
16 would be entirely within his right to accept that  
17 business.

18           And, further, we would want to know for certain  
19 about what kind of waste is going to be allowed to be  
20 accepted in that, in that incinerator because in the  
21 application it specifies two different kinds of waste;



1 what's known as a type zero waste, and a type four waste.  
2 Type four waste is pathological waste, which is basically  
3 human remains. But type zero waste is just general  
4 refuse. Doesn't say anything about the split or the, or  
5 the amount of the percentage that is allowed to be put  
6 into the crematorium of pathological waste versus, versus  
7 just general trash.

8           And, finally, this is kind of small potatoes,  
9 but I did want to bring to the Board's attention that I  
10 think that I saw a deficiency in the cremator mass  
11 balance that was provided by Matthews Environmental. In  
12 their specifications, they state that the heat input, the  
13 supplemental fuel that they need to get -- to burn the  
14 human remains (indiscernible) they have to use natural  
15 gas -- that the capacity of the unit is 3 million Btu per  
16 hour heat input. But in their calculations, they only  
17 put the count of 2.2 million Btu per hour heat input. I  
18 don't know if this was an oversight. Maybe I got it  
19 wrong, but I just wanted to bring it to the Board's  
20 attention.

21           And last slide here almost -- second to last

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1 slide. I just want to talk about the dispersion model  
2 projects that appear in the permit application. So  
3 Vaughn Greene ran the model to determine where the  
4 maximum concentration of emissions would occur in outdoor  
5 air after they were released from the incinerator  
6 exhaust, exhaust stack. And according to those model  
7 calculations in the Vaughn Greene permit application, the  
8 highest concentration of toxic emissions produced by the  
9 incinerator occur at about 110 feet, and that -- and at a  
10 receptor that was established at ground level. This was  
11 their model. They ran the model. They determined where  
12 the receptors were. They set it at ground level. And I  
13 want to emphasize this because Dr. Kinslow in her  
14 testimony sort of suggested that emissions that were  
15 being released out of a 40-foot stack would somehow be  
16 diluted and dispersed away from the homes that surrounded  
17 the incinerator site. And, yet, according to model  
18 calculations in the permit application, the highest  
19 concentration of air pollution emissions from the  
20 incinerator occurs at a radius of 108 feet for receptors  
21 that are set at ground level.

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1           So there will be some exposure for people who  
2 live and work in the neighborhood. And I've included a  
3 map here that I took from, I guess, the PowerPoint  
4 presentation that the Vaughn Greene team prepared, and  
5 what you see here is 50-foot concentric rings that move  
6 out from here where the incinerator exhaust stack will  
7 be, and then here's 50 feet. This is 100 feet, and this  
8 is 150 feet. And so this map shows that there are no  
9 homes up to 150 feet radius from the incinerator, but  
10 there are homes beginning at 200 feet from the  
11 incinerator. And I ran the dispersion model myself, the  
12 screen three dispersion model that's available for free  
13 at the EPA website to see what the ground level  
14 concentration would be for receptors at 200 feet, at 250  
15 feet, and at 300 feet. And what I found was that more  
16 than 50 percent of the maximum concentration of air  
17 pollutants was still in the air at ground level for homes  
18 that are in the 200- and 300-foot increment from the  
19 incinerator. Residential homes within 200 feet of the  
20 incinerator exhaust stack still have up to seven percent  
21 of the maximum concentration of toxicants.

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1 All right, last slide. In summary, this is  
2 what I want you to take away. Lots of air pollution  
3 already on the York Road corridor near the Vaughn Greene  
4 Funeral Home, and it's due to things that are combustion  
5 exhaust emissions, but mostly due to mobile sources. So  
6 there's already -- there's pretty, a pretty good slug of  
7 air pollution that's happening in that neighborhood.

8 We really don't have any data on air pollution  
9 levels or PM 2.5 levels in north Baltimore because  
10 there's monitors up there. We found that the standards  
11 change over time because science and medicine give us  
12 information that let us know that the standard should be  
13 changed to be more protective of human health. And the  
14 current standards are under review because the existing  
15 EPA administration feels like they might not be  
16 sufficiently protective. There are lots of human health  
17 impacts right now from PM 2.5 pollution in Baltimore City  
18 even at levels below standards.

19 We know from many, many reports, I just cited  
20 one that Baltimore City population health indicators are  
21 among the worst in Maryland. I want you to know that the

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1 crematorium really is just an incinerator. It's a  
2 specialized kind of incinerator. You've heard of things  
3 like a solid waste incinerator, hazardous waste  
4 incinerator, a medical waste incinerator. This is just a  
5 human remains incinerator. And incinerators are a source  
6 of some of the most toxic air pollutants in the  
7 atmosphere, including PM 2.5.

8           And the question that I would like to leave for  
9 the Board, and I'll thank you for your indulgence in all  
10 this time that I've spent with you, is this piece of  
11 equipment at this moment in time really in the best  
12 interest of the public health, the safety, and general  
13 welfare of the Govans community?

14           Thank you.

15           CHAIRMAN FIELDS: I have a question for you.

16           THE WITNESS: Certainly.

17           CHAIRMAN FIELDS: You testified about the  
18 standards for MDE, and how they may not be appropriate  
19 (indiscernible). When you've handled compliance work and  
20 environmental health assessments for the Army and  
21 Department of Defense at Aberdeen, did you conduct that

1 compliance against various standards that were issued by  
2 the EPA?

3           THE WITNESS: So I don't just do work at  
4 Aberdeen Proving Ground. My office just happens to be at  
5 Aberdeen Proving Ground. But, yes, I have done air  
6 quality compliance work including emission inventories,  
7 dispersion modeling, compliance assessments,  
8 environmental audits to federal and state and local  
9 regulations all over the United States including in  
10 Maryland for air pollution sources that the Army  
11 possesses, and already possesses quite a few air  
12 pollution sources. Some of you might know of them. But  
13 they possess, just like every other industry, things like  
14 boilers, generators, incinerators, paint booths, fuel  
15 service stations. So I'm intimately familiar with how  
16 these regulations are applied; and I, myself, have  
17 actually done air monitoring studies. I've done like an  
18 18-month study of ambient air quality. I did it in the  
19 Marshall Islands to characterize the emissions that were  
20 associated with some military sources that were located  
21 in the Marshall Islands. So, yes, I mean, if you have a

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1 question about those things, I think I can probably --

2           CHAIRMAN FIELDS: (Indiscernible) the question  
3 is you assessed those compliance standards and whatever  
4 your (indiscernible) were, I guess (indiscernible) right,  
5 as opposed to what they probably should be? You  
6 understand my point? If EPA had a regulation issued in  
7 2015 as to (indiscernible) the compliance standard  
8 (indiscernible), and you assessed a particular pollution  
9 or pollutant against that standard, but you have  
10 information that EPA is still undergoing work to get it  
11 right in 2017, would you still be applying it against  
12 that standard, EPA standard even though you have  
13 information that really you think requires a more  
14 stringent baseline?

15           THE WITNESS: I'm not sure I fully understand  
16 the question, but let me, let me see if I --

17           CHAIRMAN FIELDS: Let me try to clarify it  
18 before you go on.

19           THE WITNESS: Okay.

20           CHAIRMAN FIELDS: You testified earlier about  
21 MDE standards and (indiscernible) changed in 2012.

1 There's (indiscernible) that has come to light that  
2 suggests that maybe they should be (indiscernible) in  
3 particular is probably worse than we know because the  
4 standards haven't changed, right?

5 THE WITNESS: Yeah, yeah, correct.

6 CHAIRMAN FIELDS: Would you then agree or would  
7 you say that the standard issued by the EPA, whether it's  
8 due to the last administration or whatever those  
9 standards ought to be changed as well based on science  
10 that has taken place since the last standards were  
11 established?

12 THE WITNESS: Yes. And that's not my opinion.  
13 That's the opinion of the Integrated Science Assessment.  
14 I mean, that's, that's like a compendium of all the  
15 science that is available at this moment in time. And  
16 then beyond that report, which is just a state of the  
17 science, there's no opinion in there, there's something  
18 called, I think it's called the Policy Analysis that EPA  
19 puts out that is the opinion of internal EPA scientists,  
20 and that's several hundred pages long, and they said in  
21 the -- I'm not answering your question. Sorry.

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1           CHAIRMAN FIELDS: Well, what you  
2 (indiscernible) answer is shorter than what I'm getting.  
3 The more you do if you have an EPA standard that you  
4 assess (indiscernible) -- wait a minute. Do you say that  
5 these are inconclusive because the compendium of thought  
6 out there is that these aren't the appropriate standards?  
7 (Indiscernible).

8           THE WITNESS: Well, I think it's a different  
9 question for the Maryland Department of Environment than  
10 it is for you, for the Zoning Board. And I don't mean  
11 you personally. I mean the Zoning Board.

12           CHAIRMAN FIELDS: (Indiscernible) before me  
13 (indiscernible).

14           THE WITNESS: Like the Maryland Department of  
15 the Environment can only evaluate compliance with the  
16 standards as they're published. You're in or you're out.  
17 You're either compliant or you don't -- complying. And  
18 like I said, if it's not prohibited, it's permitted. But  
19 I think your charge is different. You're looking at a  
20 broader welfare question. You're not --

21           CHAIRMAN FIELDS: (Indiscernible).

1 THE WITNESS: Yes.

2 CHAIRMAN FIELDS: I understand (indiscernible).

3 THE WITNESS: Okay.

4 CHAIRMAN FIELDS: (Indiscernible) question.

5 THE WITNESS: All right. I'm sorry. I  
6 apologize if I'm not understanding. I do want to answer  
7 your question.

8 CHAIRMAN FIELDS: I think you understand. My  
9 question is, do you apply it against the standards that  
10 you have or do you withhold findings based on additional  
11 science that might render a different standard down the  
12 road? In your work with the EPA again applying the EPA  
13 standards. You have a standard that you have to meet.

14 THE WITNESS: Correct.

15 CHAIRMAN FIELDS: Based on the published  
16 standard, right?

17 THE WITNESS: Yes.

18 CHAIRMAN FIELDS: Okay. That's what you did in  
19 your work?

20 THE WITNESS: In the past, yes.

21 CHAIRMAN FIELDS: (Indiscernible) my question.

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1 THE WITNESS: Okay. Again, I apologize for not

2 --

3 CHAIRMAN FIELDS: No apology necessary. I got  
4 it.

5 THE WITNESS: Okay.

6 MS. WITT: Okay. So I do have one question for  
7 Ms. Polyak, if I can hop in here. So many of the  
8 neighbors who are going to testify today have lived in  
9 the neighborhood for years, maybe their whole life, and  
10 they intend to stay, and live here for many more years.  
11 So they're concerned about long-term effects. So can you  
12 talk a little bit more about the long-term operation of  
13 incinerators? Do they tend to emit more over time or  
14 become less efficient over time?

15 THE WITNESS: Sure. That's an important  
16 question, and I apologize that I didn't, I didn't address  
17 that more clearly in my presentation.

18 So let me just say that, again, this is my  
19 experience having looked at incinerators like in the  
20 military community things like veterinary medical waste  
21 incinerator, solid waste incinerators. Even if an

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1 incinerator operates relatively well at the beginning of  
2 its tenure, incinerators tend to degrade very quickly, if  
3 they're not operated and maintained exactly according to  
4 manufacturer instructions. As an example, failing to  
5 achieve and maintain the necessary high temperatures in  
6 the different chambers causes combustion to be much less  
7 efficient, and we're talking about temperatures like in  
8 the order of 1600 degrees Fahrenheit in the secondary  
9 chamber, and I think as much as 1800 degrees in the  
10 primary. If you don't maintain those temperatures,  
11 you'll produce toxic hydrocarbons known as products of  
12 incomplete combustion. And having plastic in the chamber  
13 creates acid gases, which over time will eat away at the  
14 interior surfaces of the incinerator, and lead to less  
15 efficient combustion. Having an incinerator also is  
16 always a temptation to use it to dispose of materials for  
17 which it may not have been designed, and when that  
18 happens, incinerators can quickly devolve into backyard  
19 burn barrels if all of the operation and maintenance  
20 obligations aren't strictly observed.

21 Even in the best of circumstances, most

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1 incinerators end up failing, and needing significant  
2 maintenance and repairs. I don't think it's an accident  
3 that Matthews Environmental told us a few minutes ago  
4 that in addition to selling the most incinerators they're  
5 responsible for the maintenance of more incinerators than  
6 anybody in the United States because to keep them  
7 operating at the high heat and the acid gases, that takes  
8 a big toll on nearly every kind of material that's used  
9 in the incinerator. The telltale signs that an  
10 incinerator isn't operating properly is when coalesce or  
11 burn spot appears on the exhaust stack column, which we  
12 won't be able to see now because, again, I just heard in  
13 the testimony that they put a bell tower around the  
14 exhaust stack, which I don't really understand because  
15 the temperatures at the exhaust stack are supposed to be  
16 like 1100 degrees Fahrenheit. I can't imagine what that  
17 bell tower must be made of, but it does worry me a little  
18 bit that they might -- it might impair the cooling of  
19 the, of the exhaust stack, but maybe they took that into  
20 account.

21 In any case, I just, I guess the good -- a good

1 question to be thinking about is will Vaughn Greene have  
2 the sufficient resources and expertise and intention to  
3 ensure that the incinerator operates efficiently from the  
4 standpoint of emission control over the long term? I  
5 don't know. It does take a lot of attention, a lot of  
6 care to keep them operating properly. At least that's my  
7 experience.

8 MS. WITT: Do any other Board Members have any  
9 questions for, for this witness before I let her go?

10 UNIDENTIFIED SPEAKER: I don't.

11 MEMBER CUNNINGHAM: I don't.

12 MEMBER JOHNSON-TURNER: I don't.

13 MS. WITT: Okay. I think the next person --  
14 thank you so much, Ms. Polyak.

15 (Witness excused.)

16 MS. WITT: The next person is Councilman  
17 Conway, if he's, if he's on.

18 MS. BYRNE: I see him on here. Shift  
19 Ms. Polyak, and add Councilman Conway as a panelist.

20 All right, Councilman Conway, you are unmuted.

21 (Whereupon,

\*\*\*\*\*

IN THE MATTER OF THE PETITION  
OF: M&G PROPERTY  
MANAGEMENT TWO, LLC

Baltimore City Board of Municipal  
& Zoning Appeals

4903 AND 4907 YORK RD, 505 AND  
507 ROSSITER AVE.  
(BLOCK 5180, LOTS 002, 004, 006,  
007)



Kathleen Byrne  
Acting Executive Director  
417 E. Fayette Street, Room 922  
Baltimore, MD 21202  
Phone: 410-396-4301

Appeal No. 2021-161  
Hearing Date: August 10, 2021

\*\*\*\*\*

**RESOLUTION**

This matter comes before the Baltimore City Board of Municipal & Zoning Appeals (“Board”) on appeal from the Zoning Administrator denying the application of M&G Property Management Two, LLC (“Appellant”) to install a crematorium in an existing funeral home at 4903 and 4907 York Road (“Property”), which requires a modification of an existing conditional use, originally granted by the Board in 2009.

**OVERVIEW**

Appellant filed this appeal on July 9, 2021, and the matter first appeared for a public hearing on August 10, 2021. To accommodate the large number of exhibits and testimony from both the Appellant and Opposition, the Board scheduled two additional hearings, that were held on August 29, 2021 and September 16, 2021. At the conclusion of testimony on September 16, 2021, the Board requested both the Appellant and Opposition to submit legal memoranda outlining their arguments. On October 19, 2021, the Board, by a vote of 3 to 1, granted Appellant’s request to modify its existing conditional use, to allow for the addition of a crematorium to its funeral home. Prior to imposing any conditions on the crematorium use, the Board requested the parties to meet and determine what, if any, conditions could be mutually agreed upon. During its General Meeting on November 30, 2021, the Board added three specific conditions to Appellant’s conditional use.

**FACTS**

The Property is located on the southeast corner of the intersection between York Road and Rossiter Avenue. The Property is zoned C-2 and is located within the York Road Community Strategic Neighborhood Action Plan area and Winston-Govans community. The Property is an irregular corner lot and comprises approximately 58,000 square feet of land area. The Property is improved with a funeral home, mortuary, and church—originally constructed in 1947. More specifically, the existing facilities include a two-story masonry funeral parlor, church, and office, with a 116-space surface parking lot.

The Board gave conditional approval to use the Property (consolidated with the erstwhile 505-507 Rossiter Avenue) as a funeral home and church in 2009. This use has continued, and now the Appellant proposes adding a crematorium at the rear of the existing larger funeral home

building. The bulk of the crematorium would be accommodated within the footprint of an existing one-story garage and storage building.

Appellant filed this appeal to the Board on July 9, 2021 and first appeared for a public hearing on August 10, 2021. Due to the large volume of exhibits and voluminous testimony related to this appeal, two additional hearings were held on August 29, 2021 and September 16, 2021. Becky Witt, an attorney from the Community Law Center, represented the York Road Partnership, a membership network of community organizations and nonprofit partners along the York Road corridor, which opposed the proposed crematorium. In addition, many members of the public testified in opposition to the proposed crematorium and the Board's file contains numerous letters in opposition. Opposition included letters and testimony from Council Member Mark Conway, Delegate Maggie McIntosh, and Senator Mary Washington. Board staff and the Planning Department prepared a memorandum evaluating the appeal.

The Appellant, Vaughn Green testified to the history and operation of the existing funeral home and the increased need for crematory services in the Baltimore area. Along with the submission of many documents, the Appellant also provided testimony from a land use expert, appraiser, architect, air quality toxicologist, engineer, and a representative from the crematorium's manufacturer.

The Opposition testified that the location, maintenance, and operation of a crematorium would be: 1) detrimental to and endanger the public health, safety, and welfare; 2) contrary to the public interest; 3) not in harmony with the purpose and intent of the Zoning Code— and thus, in violation of Article 32, §5-406. The Opposition offered testimony from their own air quality expert. In addition, the Opposition likened the operation of the crematorium to that of an incinerator and alleged that such a use, as defined in the Zoning Code, would be prohibited.

The Board heard lengthy testimony from both the Opposition and the Appellant, including from multiple air quality experts. During testimony, both parties conceded that the crematorium would produce some emissions, though they disagreed to what degree, as well as what the overall impact would be on nearby residents. In addition, witnesses for the Opposition testified to the elevated risks of asthma, heart disease, and chronic lung disease experienced by members of the Winston-Govans community.

Following the presentation of all evidence, counsel for the Appellant and the Opposition were asked to submit briefs to the Board, laying out their arguments for or against the approval of the conditional use. In addition, the Board asked both parties to attempt to reach a compromise, and possibly execute a Memorandum of Understanding, which would impose conditions upon the Appellant regarding the operation of the crematorium; in exchange, the community would support Appellant's project.

Parties were given several weeks to try to come to an agreement and to submit their briefs to the Board. On November 30, 2021, the Board met to deliberate on this matter, and following deliberations, the Board voted to approve this appeal by a vote of three to one, subject to its conditions.



### **DISCUSSION**

Appellant proposes to install a crematorium in an existing funeral home. Under Article 32 §1-306(s), a “funeral home” is an establishment for preparing deceased individuals for burial *or cremation* and for conducting rituals before burial *or cremation* (emphasis added). The definition specifically states that funeral homes include both chapels for viewing the deceased and conducting rituals, *as well as crematoriums* (emphasis added). Under Table 10-301, “Funeral Homes” are listed as a conditional use in a C-2 Zoning District.

As the Property received conditional use authorization in 2009 from the Board, and that use has since continued, the only question before the Board is whether to grant Appellant’s request to expand upon its existing conditional use, by allowing the construction and operation of a crematorium. Under Article 32, §2-203(j), all variances and conditional uses granted before June 5, 2017 remain effective. Further, any subsequent change to a conditional use, including any addition, expansion, or structural alteration, is subject to the procedures and requirements imposed by this Code on conditional uses. The Board may approve conditional uses under the standards set forth by ZC §§5-405 and 5-406.

### **CONDITIONAL USE: FUNERAL HOME WITH CREMATORIUM**

Under ZC §5-406, the Board of Municipal and Zoning Appeals may not approve a conditional use unless, after public notice and hearing and on consideration of the standards required by this subtitle, it finds that: (1) the establishment, location, construction, maintenance, or operation of the conditional use would not be detrimental to or endanger the public health, safety, or welfare; (2) the use would not be precluded by any other law, including an applicable Urban Renewal Plan; (3) the authorization would not be contrary to the public interest; and (4) the authorization would be in harmony with the purpose and intent of this Code. Further, under state law, conditional uses are “presumed valid uses” of land but are subject to that presumption being rebutted by credible evidence indicating that “the proposed use has adverse effects above and beyond those inherently associated with such a [conditional use] irrespective of its location within the zone.” *Schultz v. Pritts*, 291 Md. 1, 22-23 (1981). See also *Attar v. DMS Tollgate, LLC*, 451 Md. 272, 286-287 (2017).

Opponents’ argument is two-fold: first, that the emissions on their own are demonstrably hazardous, and second, that the population that lives near the proposed human crematorium already suffers from poor air quality and poor public health and is therefore at an elevated risk of harm from increased air emissions. However, the Board did not hear any credible evidence from the Opposition to suggest that the crematorium’s emissions would be above and beyond those normally associated with such a use within a C-2 district. Indeed, the opposition conceded that other nearby businesses, such as Popeyes and McDonald’s, already produce a significant amount of air emissions. In addition, the Board heard testimony on the impact on air emissions from vehicle traffic on York Road.

Based on the evidence before it, the Board finds that while the crematorium will add to overall emissions within the zone; however, it does not find that those emissions will be above and beyond those associated with other similar uses. The Board finds that to allow fast-food restaurants and other polluting businesses to continue to operate in the area, while restricting Appellant’s use of its property would not be in harmony with the purpose and intent of Article 32. Indeed, the scope of commercial activity supported in the C-2 Zoning District is intended for

areas of small to medium-scale commercial use, typically located along urban corridors, such as the York Road Corridor, *see Article 32, §10-204.*

The Board also recognizes the community's objections and concerns regarding air pollution and public health. However, testimony leads the Board to conclude that these concerns will be addressed as part of the Appellant's air permit application process with the Maryland Department of the Environment ("MDE"). Until MDE issues a permit, the Appellant may not provide any cremation services. The Board heard testimony from expert witnesses that MDE only will issue its permit after it determines that the crematorium will not produce air emissions that MDE considers dangerous. Indeed, the Board does not wish to substitute its own judgment for that of a state agency tasked with protecting the health and safety of its citizens by regulating air pollution.

In addition to its public health arguments, the Opposition also argues the Board is precluded from granting the Appellant's request by another law—the Zoning Code itself. The Opposition states that the Zoning Code contains a contradiction—by allowing crematoriums while prohibiting incinerators within City limits. Due to this contradiction, Appellant argues the more restrictive provision of the Code should govern, and the crematorium should not be allowed, *see Article 32 §1-204, Rules of Interpretation, Conflicting Provisions.*

Article 32, §1-218(b)(2) lists incinerators as a prohibited use, citywide, and further defines incinerators as "a combustion unit that uses controlled flame combustion for the thermal destruction of solid waste, including municipal waste, industrial waste, hazardous waste, special medical waste, or sewage sludge." Appellant argues that the definition of incinerator includes crematorium. However, to find with the Opposition, the Board must also find that human remains fall under the definition of solid waste. The Board is not persuaded by this argument and thus finds that the Zoning Code does not contain a contradiction and therefore, the use is not precluded by any law, including any applicable Urban Renewal Plan.

As a further guide to its decision on the facts of each case under ZC §5-406(b), the Board of Municipal and Zoning Appeals must consider the following, where appropriate: (1) the nature of the proposed site, including its size and shape and the proposed size, shape, and arrangement of structures; (2) the resulting traffic patterns and adequacy of proposed off-street parking and loading; (3) *the nature of the surrounding area and the extent to which the proposed use might impair its present and future development*; (4) *the proximity of dwellings, churches, schools, public structures, and other places of public gathering*; (5) accessibility of the premises for emergency vehicles; (6) accessibility of light and air to the premises and to the property in the vicinity; (7) the type and location of adequate utilities, access roads, drainage, and other necessary facilities that have been or will be provided; (8) the preservation of cultural and historic landmarks and structures; (9) *the character of the neighborhood*; (10) the provisions of the City's Comprehensive Master Plan; (11) the provisions of any applicable Urban Renewal Plan; (12) *all applicable standards and requirements of this Code*; (13) *the intent and purpose of this Code*; and (14) *any other matters considered to be in the interest of the general welfare* (emphasis added).

After a complete and comprehensive review of all the evidence, the Board finds by competent evidence that the proposed crematorium will not have adverse effects above and beyond those inherently associated with crematoriums irrespective of its location within the zone

because the funeral home stands in the same position as all other businesses on York Road that contribute pollution in the community.

The Board finds that the funeral home is located along a busy commercial strip along the York Road Corridor. Any future development in the area would be impacted by the entire corridor, not just the funeral home and its cremation services. Further, the Opposition did not provide any credible evidence that the proposed crematorium would impact nearby home values or cause harm to any nearby community gathering areas. Indeed, the Board heard credible testimony that the Appellant would be providing a much-needed service and that the Appellant, Vaughn Green Funeral Homes, is regarded as a good actor by the community.

Finally, the Opposition points to the York Road Corridor Vision and Action Plan as evidence that a human crematorium is incompatible with the character of the neighborhood. However, that Plan lists the area where the funeral home is located as "a hub for Baltimore City community services, worship services, private medical services and...commercial services." Therefore, the Board does not find that the proposed use would be out of character from what is described in the Plan.

#### CONCLUSION

The Board reviewed the file and evidence submitted in support of this application as well as any testimony or evidence offered in opposition and evaluated the request to install a crematorium in an existing funeral home at this location with the conditional use standards provided under Article 32 and Maryland law. After a complete and comprehensive review of all the evidence, the Board finds by competent evidence that the establishment, location, construction, maintenance, and operation of the proposed crematorium would not be detrimental to or endanger the public health, safety, or welfare; the proposed use is not precluded by any other law, including any applicable Urban Renewal Plan; this authorization is not contrary to the public interest; and this authorization and proposed use is in harmony with the purpose and intent of this Code. In consideration of these standards including those imposed by ZC §5-406(b), and on review of the file, testimony, and evidence submitted in support of this conditional use application, the Board finds by competent evidence that Appellant's request meets the requirements of Article 32, the Zoning Code of the City of Baltimore.

While the Board finds that the Opposition fails to meet the burden under the *Shultz* standards for rebutting the presumption of validity, it does recognize the community's interest in clean air. Consequently, prior to deliberations, the Board asked both parties to come up with a set of conditions that they would be willing to agree to, which would allow Vaughn Greene to operate its crematorium, while providing some additional assurances to the Community. Prior to deliberating, the Board was presented by a set of conditions provided by the community and agreed to by Vaughn Green, which are hereby incorporated into this resolution.

Under ZC §5-405(a)(1), before approving any conditional use, the Board of Municipal and Zoning Appeals may impose on the establishment, location, construction, maintenance, or operation of the conditional use any condition, restriction, or limitation that it considers necessary for the protection of the public interest. Under ZC §5-405(a)(2), any condition imposed must be reasonably related and roughly proportional to the expected impact of the conditional use. Under ZC §5-405(b), failure to comply with any condition, restriction, or limitation imposed: (1) constitutes a violation of the Code; and (2) in addition to any other civil

or criminal remedy or enforcement procedure, is grounds for modification, suspension, or revocation of the conditional use.

For the reasons set forth above, and after giving public notice, reviewing the zoning records, holding a public hearing, considering all data submitted, and by authority of Ords. 16-581 and 17-015, enacted and corrected effective June 5, 2017, known as Article 32 Zoning,

IT IS this 4<sup>th</sup> day of January, 2022, by the Baltimore City Board of Municipal and Zoning Appeals, hereby

**RESOLVED**, that Petitioner's request to install a crematorium in an existing funeral home is **GRANTED**, on the **CONDITIONS** that:

- (1) Only human remains from funeral homes owned, operated, or controlled by Vaughn Greene Funeral Services may be cremated on the premises;
- (2) Vaughn Greene Funeral Services will remove any and all teeth containing mercury amalgams prior to cremation; and
- (3) Vaughn Greene Funeral Services will comply with all applicable federal, state, and local laws.

DO NOT START WORK OR USE THE PROPERTY UNTIL YOU OBTAIN A BUILDING OR A USE & OCCUPANCY PERMIT FROM THE DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT. YOU HAVE **ONE YEAR** FROM THE DATE OF THIS RESOLUTION TO OBTAIN A BUILDING PERMIT OR A USE & OCCUPANCY PERMIT.

  
Kathleen Byrne  
Acting Executive Director



**PETITION OF THE YORK ROAD  
PARTNERSHIP, *et al.***

**FOR JUDICIAL REVIEW OF THE  
DECISION OF THE BALTIMORE CITY  
BOARD OF MUNICIPAL AND ZONING  
APPEALS**

**IN THE MATTER OF THE PETITION  
OF M&G PROPERTY MANAGEMENT  
TWO, LLC**

**Appeal No. 2021-161**

**IN THE**

**CIRCUIT COURT**

**FOR**

**BALTIMORE CITY**

**Case No. 24-C-22-000610**

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**FINAL ORDER**

Petitioners The York Road Partnership, Winston-Govans Neighborhood Improvement Association, Radnor-Winston Improvement Association, Cindy Camp, and Moira Horowitz filed a Petition for Judicial Review (Paper No. 1) seeking judicial review of a decision of the Baltimore City Board of Municipal and Zoning Appeals (“BMZA”) dated January 4, 2022. The BMZA approved with conditions the application of M&G Property Management Two, LLC to install a crematorium in an existing funeral home at 4903-4905 York Road in Baltimore, Maryland. The funeral home is operated by Vaughn C. Greene Funeral Services, P.A.

The Administrative Record has been filed with the Court (Paper No. 6). Petitioners filed their Brief in Support of Overturning the Resolution of the Baltimore City Board of Municipal & Zoning Appeals in the Case of M&G Property Management Two, LLC (Paper No. 10). Opposition memoranda were filed by both the Mayor and City Council of Baltimore (Paper No. 1/2) and M&G Property Management Two, LLC (Paper No. 10/1). Petitioners filed a reply memorandum (Paper No. 1/3). The Court conducted a hearing on July 12, 2022 by remote electronic means pursuant to Maryland Rule 2-802. All parties appeared by counsel.

For the reasons stated in the accompanying Memorandum Opinion, it is this 16th day of May, 2023, by the Circuit Court for Baltimore City hereby **ORDERED** that the decision of the Baltimore City Board of Municipal and Zoning Appeals dated January 4, 2022 is **AFFIRMED**.

It is further **ORDERED** that Petitioners shall pay the costs of this action.

***Judge Fletcher-Hill's signature appears on  
the original document in the court file.***

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Judge Lawrence P. Fletcher-Hill

**PETITION OF THE YORK ROAD  
PARTNERSHIP, *et al.***

**FOR JUDICIAL REVIEW OF THE  
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**MEMORANDUM OPINION**

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## Procedural History and Facts

Respondent M&G Property Management Two, LLC (“M&G”) owns real property in Baltimore on the southeast corner of the intersection of York Road and Rossiter Avenue, designated as 4903-4905 York Road (“the Property”).<sup>1</sup> Vaughn C. Greene Funeral Services, P.A. (“Greene Funeral Services”) operates a funeral home on the property. M&G bought the Property in 2000, but a funeral home had been operated on the Property for decades before then by the Jenkins family. Greene Funeral Services has operated the funeral home on the Property since 2000. In 2008, the BMZA approved Greene Funeral Services’ continued operation of its funeral home on the Property as a conditional use as part of approval of the consolidation of four parcels and certain changes in the site plan. A.R. Item 2.t.<sup>2</sup>

Most of the Property is in a narrow C-2 Zoning District along York Road. Baltimore City Zoning Map (available at <https://cityview.baltimorecity.gov/cityview21/?theme0=Zoning&place=null>) (last viewed May 15, 2023). The C-2 designation is for a “Community Commercial Zoning District.” Baltimore City Code, Art. 32, § 6-205. “The C-2 Community Commercial Zoning District is intended for areas of small to medium-scale commercial use, typically located along urban corridors, that are designed to accommodate pedestrians and, in some instances, automobiles.” *Id.* § 10-204(a). Part of the parking lot of the Property lies in an adjacent residential zone; that use was permitted by variance as part of the 2008 zoning approval for the Property. A.R. Item 2.t. In the immediate vicinity, there are R-3,

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<sup>1</sup> The addresses 4907 York Road and 505-507 Rossiter Avenue are also associated with the Property at different points in the Administrative Record.

<sup>2</sup> As described below, the Administrative Record, apart from the hearing transcripts, is organized in an index with ten headings and lettered items under each heading. The Court will cite the Administrative Record using “A.R.” and the number and letter designation for each item.



R-4, and R-6 Zoning Districts bordering the C-2 Zoning District. Baltimore City Zoning Map (available at <https://cityview.baltimorecity.gov/cityview21/?theme0=Zoning&place=null>) (last viewed May 15, 2023). The Winston-Govans neighborhood is to the east of the Property; the Radnor-Winston neighborhood is across York Road and to the west.

In 2020, M&G and Greene Funeral Services proposed to install a crematorium at the Property as part of its funeral services. In a June 4, 2020 letter, Baltimore Zoning Administrator Geoffrey Veale responded to an inquiry from M&G's counsel:

Please be advised that the subject property is located in a C-2 Commercial District and authorized for use as funeral home in compliance with all applicable zoning regulations. Per Subsection 1-306(s)(2) of the Zoning Code, a funeral home use includes the use of the premises for a crematorium. The use as stated would be allowed in conjunction with the existing funeral home. Our records show no violations with respect to this property.

A.R. Item 3.b (last page). At the same time, Greene Funeral Services applied to the Maryland Department of the Environment ("MDE") for an air quality permit for the proposed crematorium. During the MDE's review process, the MDE apparently raised concern about the sufficiency of the Zoning Administrator's approval. As a result, on July 9, 2021, M&G filed a "Positive Appeal" to the BMZA. A positive appeal may be either an applicant's appeal from the Zoning Administrator's disapproval of a permit application or an application that has "been referred to the Board by the Zoning Administrator." BMZA Rules B.2 (available at <https://www.baltimorecity.gov/sites/default/files/BMZA%20Rules%20-%20current.pdf>) (last viewed May 15, 2023).

The BMZA conducted a public evidentiary hearing on August 10, August 24, and September 16, 2021. The Board deliberated in a public session on October 19, 2021 and voted 3-1 to approve M&G's application. The Board directed the parties to try to develop agreed

conditions for the approval. The parties did not reach an agreement, and the Board deliberated on the conditions in another public session on November 30, 2021. The Board adopted three conditions. The Board's final decision is contained in Resolution dated January 4, 2022.

Petitioners timely filed their Petition in this Court on February 2, 2022.

The BMZA has filed the Administrative Record of the proceedings before it. The Record includes separate transcripts of the proceedings on August 10, 2021, August 24, 2021, September 16, 2021, October 19, 2021, and November 30, 2021. The BMZA has also provided a five-page Record Index with the following sections:

1. BMZA File (12 items)
2. Appellant's (M&G's) Exhibits & Memoranda (20 items)
3. Opposition's Exhibits & Memoranda (13 items)
4. Letters in Opposition – Individuals, listed alphabetically (97 items)
5. Letters in Opposition – Organizations, listed alphabetically (13 items)
6. Letters in Opposition – Representatives (two items)
7. Petition in Opposition signed by 182 individuals (one item)
8. Letter in Support/Letter Requesting Postponement (two items)
9. Correspondence (13 items)
10. Resolution dated January 4, 2022

Although well organized, the Administrative Record is not separately and continuously paginated. The Court will cite items according to this Record Index, including the letter designations for items within each of these headings. Many of the copies are poor quality, but the Court has been able to read them sufficiently for review.

As the applicant and appellant, M&G offered testimony from the following witnesses:

Vaughn C. Greene, M&G and Greene Funeral Services  
Carla Kinslow, Ph.D., toxicologist, Rimkus Consulting Group, Inc.  
Bruce E. Doak, surveyor, Bruce E. Doak Consulting, LLC  
William Douglas Beims, architect, Castles & Cottages  
Jeff Barron, Matthews International Corporation

Richard O. King, Sr., appraiser, Richard O. King, Sr. &  
Associates, Inc.  
Michael Tricoche, Matthew International Corporation

Vaughn Greene testified that he is an owner of M&G and the founder of Greene Funeral Services. Tr. (8/10/21) at 14. Greene Funeral Services now has four locations in the Baltimore area. *Id.* at 15. Mr. Greene's company primarily serves the African-American community. *Id.* at 25. When a family wants the body of a loved one to be cremated, his company currently must send the body to a third party outside Baltimore. *Id.* at 24-25. He wants to be able to offer cremation services to those families requesting them and to be able to perform those services locally and within his company's control. *Id.* at 24-31. Most of the requests for cremation services from the four Greene Funeral Services locations come from the York Road location. *Id.* at 36. The York Road crematorium would serve all the Greene Funeral Services locations but would not perform cremations for other funeral homes.<sup>3</sup> *Id.*

The York Road location consists of several buildings. The crematorium would be installed within the footprint of an existing garage attached to one of the buildings. *Id.* at 22, 85-88. A new sloped roof would be built on that part of the building, and the exhaust for the crematorium would be through a forty-foot tall exhaust flue enclosed in a bell tower-like structure to disguise it. Tr. (8/24/21) at 15-18. The new exhaust tower would be approximately the same height as two existing chimneys on the attached main building. *Id.*

The proposed crematorium equipment would be manufactured by Matthews International Corporation. Tr. (8/24/21) at 19-21. The machine is designed with automated monitoring of the combustion process. *Id.* at 20-22. The emissions pass through stages designed to eliminate

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<sup>3</sup> Mr. Greene's initial testimony that this crematorium would serve all of the Greene Funeral Services locations was perhaps not entirely clear. On rebuttal, Mr. Greene stated that he had explained this consistently in community meetings. Tr. (9/16/21) at 35-36.

odors and any visual emissions before being exhausted into the air. *Id.* The manufacturer offers a system of remote technical monitoring of the machine and annual inspections. *Id.* at 22-24. Most cremation equipment today is installed within local funeral homes rather than in separate facilities. *Id.* at 25-26.

Property Surveyor Bruce Doak, advanced as a land use expert, described a site plan he prepared and various photographs of the area. Tr. (8/10/21) at 80-87. The proposed project will involve very few changes to the site. *Id.* at 85. He described the neighborhood as having diverse uses, including both single-family and rowhouse residential areas, retail uses including restaurants, governmental uses, and churches. *Id.* at 88. He offered his opinion that the proposed crematorium would be consistent with the current use of the property and would not have any adverse impact on the neighboring areas or on the public interest. *Id.* at 89-99. William D. Beims, the architect who designed the modifications to the building that would house the crematorium, described the proposed addition of a steep sloping roof to that section of the building and the construction of a structure with a “bell tower look” to disguise the exhaust flue. Tr. (8/24/21) at 15-17.

M&G presented the testimony of a real estate appraiser, Richard King. Tr. (8/24/21) at 30-31. He studied property values in the vicinity of three locations in Baltimore City where there are existing crematoria. *Id.* at 33-34. Mr. King simply looked at assessed values in a four-year period before and after construction of the crematoria. *Id.* at 34-44. He concluded that there was a slight drop in residential property values around one of the locations and increases in the property values near the other two locations. *Id.* Mr. King also looked at nine other locations in Maryland outside of Baltimore City where there are funeral homes with crematoria

in proximity to residential neighborhoods. *Id.* at 45-49. He did not do any property value analysis for those locations. *Id.*

Carla Kinslow, Ph.D., is a doctoral-level toxicologist employed by Rimkus Consulting Group, Inc. Item 2.c. The BMZA accepted her as an expert in toxicology. Tr. (8/10/21) at 53. She testified and also provided three written reports: an initial “Thought Summary,” dated August 4, 2021, Item 2.j; a “Supplemental Thought Summary,” dated August 20, 2021, Item 2.o; and a “Second Supplemental Report of Findings,” dated September 15, 2021, Item 2.q.

Dr. Kinslow testified that the crematorium emissions would have to satisfy MDE’s permitting thresholds, which she characterized as “very conservative” and designed to protect workers and the surrounding community. Tr. (8/10/21) at 54-55. She noted that the federal standards for each type of air pollutant are reviewed periodically, with sulfur dioxide reviewed most recently in 2017. *Id.* at 61-62. The standards are set ten to one thousand fold below levels shown to cause harm to be more protective. *Id.* at 62-63. Those standards take account of health hazards to at-risk or vulnerable populations. *Id.* at 78. The permitting process is predicated on the expected emissions at the point of release at the top of the exhaust stack, but that will be forty feet in the air and will allow dilution of concentrations before the pollutants reach ground level where they can be inhaled. *Id.* at 55-56. This contrasts with ground-level sources of emissions such as cars and trucks. *Id.* at 56.

Dr. Kinslow also noted that the MDE permit application is based on assumed operation of the crematorium twelve hours each day. *Id.* at 65. Her understanding is Greene Funeral Services is more likely to operate the crematorium only four hours per day and probably not every day, so the actual emissions are likely to be about one third of the amounts stated in the MDE permit application. *Id.* Jeff Barron, a representative of Matthews International Corp., the

manufacturer of the proposed crematorium equipment, confirmed that the manufacturer defaults to the maximum run time of twelve hours per day, seven days per week in environmental permit applications. Tr. (8/24/21) at 25-26.<sup>4</sup> Michael Tricoche, an electrical engineer with Matthews International Corp. who was involved in preparing the permit application to the MDE, further confirmed the limited operations. Tr. (9/16/21) at 48-56. Mr. Tricoche testified that the cremation process by its nature is intermittent; the machine goes out of operation after each body is cremated to allow cooling and recovery of the ashes from that body. *Id.* at 49-50.

Dr. Kinslow sought to provide a reference point for the expected emissions from the proposed crematorium. Based on four hours of operation rather than twelve hours, she reduced the expected emissions by a factor of three to 0.76 lbs./day of sulfur dioxide (SO<sub>2</sub>), 1.2 lbs./day of nitrogen oxides (NO<sub>x</sub>), 1.6 lbs./day of fine particulate matter (PM<sub>2.5</sub>), and 1.04 lbs./day of carbon monoxide (CO). Tr. (8/10/21) at 65, 67. She compared this to the emissions from a 430 horsepower, gasoline-powered Ford F-150 truck running for one hour, which she opined would produce 0.215 lbs. SO<sub>2</sub>, 4.73 lbs. NO<sub>x</sub>, 0.3 lbs. PM, and 1.29 lbs. CO. In her second written submission, her August 20, 2021 Supplemental Thought Summary, Dr. Kinslow acknowledged as error in the comparison she gave in her testimony and revised it to the following values:

<b>Compound</b>	<b>Crematorium</b>	<b>Industrial gasoline engine</b>
SO <sub>2</sub>	0.19 lb/hr	0.215 lb/hr (in SO <sub>x</sub> )
NO <sub>x</sub>	0.3115 lb/hr	4.73 lb/hr
PM	0.408 lb/hr	0.301 lb/hr (PM 10)
CO	0.258 lb/hr	1.29 lb/hr

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<sup>4</sup> Mr. Barron stated maximum operation of twelve hours per day, seven days per week. Tr. (8/24/21) at 25. In fact, the MDE permit application is based on twelve hours per day, six days per week. MDE Permit Application (Item 3.b).

Item 2.o at p. 4. She then wrote, apparently incorrectly: “Thus, running a crematorium for about *four hours* is comparable to operating an industrial gasoline engine for *one hour*.” *Id.* at p. 5 (emphasis added). Based on her chart, the correct comparison is one hour to one hour of operation, not four hours to one hour. Based on her values, the emissions of a crematorium would be somewhat higher for particulate matter (with the crematorium also emitting finer particulate matter), slightly lower for sulfur dioxide, and significantly lower for nitrogen oxides and carbon monoxide.

Dr. Kinslow sought to address the opponents’ argument based on an Abell Foundation report that Baltimore has high asthma rates. She testified that the environmental factors identified in the report all relate to indoor air quality, not outdoor ambient air quality. Tr. (8/10/21) at 56-57, 59-60. Dr. Kinslow stated that concerns about visible smoke from the crematorium are unfounded because Baltimore as a whole has been in compliance with federal particulate matter standards since 2014, and the crematorium would have to meet those standards to be permitted. *Id.* at 57-58. Dr. Kinslow opined that the cremation of the bodies of persons who died of COVID-19 could not possibly spread SARS-CoV-2 through the air because the high temperatures used in cremation destroy the virus. *Id.* at 58.

Dr. Kinslow disputed the opponents’ concerns about mercury exposure. First, she noted Greene Funeral Services’ plan to remove teeth with mercury fillings from bodies to be cremated to avoid this risk. *Id.* at 70. Second, she testified that the opponents fail to distinguish between elemental mercury and methylmercury. *Id.* at 70-73. Some dental fillings contain elemental mercury, but elemental mercury is “far less toxic” than methylmercury. *Id.* at 70-71. Methylmercury is “highly toxic.” *Id.* at 72. The “mercury environmental cycle” involves mercury being emitted “from coal fired power plants, the mining industry, and possibly a little

bit from crematoriums.” *Id.* at 71. That elemental mercury falls to the ground and is taken up by algae, which create methylmercury. *Id.* The algae is consumed by small fish, which in turn are eaten by larger fish, which eventually may be consumed by humans. *Id.* at 71-72. This is the process of bioaccumulation. *Id.* Dr. Kinslow described the opponents’ failure to distinguish the forms of environmental mercury as “misleading” and said the opponents were “flat-out wrong” in asserting that there are no known safe levels of exposure to mercury. *Id.* at 73.

Finally, Dr. Kinslow testified that the PLACES report from the Centers for Disease Control used by the opponents to show a higher incidence of certain health problems in the neighborhood around the proposed crematorium is based on modeling of data, not questionnaires or more direct data. *Id.* at 73-74. Dr. Kinslow repeated her testimony that the increased instance of asthma was attributed primarily to indoor air quality issues, and she testified that the proposed crematorium would not contribute to higher incidence of either chronic obstructive pulmonary disease or heart disease. *Id.* at 75-77. She also stated that the higher incidence of these health issues was not limited to this particular neighborhood but also exists in other areas of Maryland. *Id.* at 77.

Greene Funeral Services recalled Dr. Kinslow on a subsequent day of the hearing<sup>5</sup> to testify that the air quality monitoring site at the Old Town Fire Station in Baltimore is located in an area with “more potential PM 2.5 burden than the York Road location” and “near several major PM 2.5 sources.” Tr. (9/16/21) at 72-73, 75. That monitoring site has shown a decrease in fine particulate matter (PM<sub>2.5</sub>) since implementation of the current National Ambient Air Quality Standards (NAAQS) for PM<sub>2.5</sub> in 2012. *Id.* at 72-73, 75-77. She also testified that the air quality

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<sup>5</sup> On this later day, Dr. Carla Kinslow was incorrectly identified in the transcript as “Lisa Kinslow.” Tr. (9/16/21) at 69.



measured at the Old Town Fire Station monitor would be compliant even with the more stringent PM<sub>2.5</sub> standard adopted by Canada in 2020. *Id.* at 79-82.

At the BMZA hearing, the application was opposed by the York Road Partnership, Inc., a network of community organizations and other non-profit partners along the York Road corridor. Numerous other organizations and individuals either testified or stated their opposition in writing. The York Road Partnership presented the following witnesses:

Lisa Polyak, environmental engineer  
City Councilmember Mark Conway, 4th District  
Jackie Whitfield Williams, resident  
Anne Lansey, resident and representative of the Kimberly Road  
Neighborhood Association  
Chris Forrest, resident and president of both the Winston-Govans  
Neighborhood Improvement Association and the York Road  
Partnership  
Annick Barber, resident and representative of the Radnor-Winston  
Improvement Association  
Moira Horowitz, resident  
Cindy Camp, resident  
State Senator Mary Washington, 43rd District  
Jeffrey Tompkins, resident  
Jonathan Merch, resident  
Laine Scott-Nelson, resident  
Leila Kohler-Fruch, resident  
Dan Pontious, resident and president of the Radnor-Winston  
Improvement Association

Lisa Polyak is an environmental engineer with particular experience with air quality effects on population health issues. *Tr.* (8/24/21) at 55. She works at the Army Public Health Center at Aberdeen Proving Ground but testified in this matter purely in a private capacity. *Id.* Ms. Polyak started her testimony with an inventory of air pollution sources within two blocks of the property at issue on York Road, from Cold Spring Lane to the south to Winston Avenue to the north. *Id.* at 58. These emission sources include customer and postal vehicles at the U.S. Postal Office across the street; two fast-food restaurants with drive-through lanes operating

thirteen and fifteen hours per day; two gasoline service stations with eight and ten pumps; and two MTA bus stops on a route with 206 buses per day. *Id.* at 58-59. She obtained Maryland Department of Transportation data indicating an average of 19,734 vehicles per day on York Road as of February 2020. *Id.* at 59. York Road is a designated truck route, and 15-18% of the traffic on arterial routes inside the Baltimore beltway is truck traffic. *Id.* There are two traffic lights at Cold Spring Lane and Winston Avenue intersections, causing vehicles to stop and idle at those intersections. *Id.* at 59-60.

These vehicle sources of emissions are mobile sources. *Id.* at 60. The Maryland Department of the Environment does not require permits for mobile sources of emissions, and only two of the MDE's 41 air quality regulations address mobile sources. *Id.* at 60-61. Ms. Polyak identified some of the health risks the MDE associates with vehicle idling: cancer, respiratory issues, reproductive effects, birth defects, and increased mortality due to heart and lung disease. *Id.* at 62. She said she would focus on fine particulate matter – PM<sub>2.5</sub> – which is more harmful because of its ability to travel deeper into the lungs and even to cross the gas-exchange membranes into the bloodstream. *Id.* at 61, 66. Ms. Polyak made a calculation that the average of 19,734 daily vehicles on York Road, idling at the intersections, would produce over 50,000 pounds of air pollution per year. *Id.* at 65.

Ms. Polyak testified there is only one air quality monitoring station in Baltimore City, on Monument Street, about 3.5 miles south of the York Road site.<sup>6</sup> *Id.* at 67. She stated, “it’s really not in any way representative of what’s going on up here in the neighborhood where Vaughn Greene Funeral Home is located.” *Id.*

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<sup>6</sup> She appears to have been referring to the same monitoring station that Dr. Kinslow identified as being at the Old Town Fire Station at 1100 Hillen Road. The Old Town Fire Station is approximately at the intersection of Hillen Road and Monument Street.

Ms. Polyak reviewed the EPA's history of refining its air quality standards for particulate matter, including adopting specific and then more stringent requirements for fine particulate matter, PM<sub>2.5</sub>. *Id.* at 70-72. She argued that the EPA PM<sub>2.5</sub> standards last updated in 2012 are now out-of-date because the EPA administrator during the Trump administration overruled changes to the standard recommended in the EPA's own 2019 Integrated Science Assessment. *Id.* at 72-74. She also pointed to other scientific studies since 2012 identifying health risks associated with fine particulate matter, including mortality data published by the Health Effects Institute that show more than 88,000 excess deaths in 2015 in the United States due to exposure to fine particulate matter. *Id.* at 75-77. She also cited recent data from the Harvard School of Public Health showing an association between communities with high levels of exposure to fine particulate matter and mortality rates for Covid-19. *Id.* at 78-80.

Ms. Polyak offered excerpts from a report by the Robert Wood Johnson Foundation to show that Baltimore City ranks last among all Maryland jurisdictions for both health outcomes and health factors. *Id.* 80-81. Baltimore City is tied for second worst for exposure to fine particulate matter. *Id.* at 81.

Ms. Polyak asserted that "a crematorium is really just an incinerator for human remains, plus whatever else goes into the fire box." *Id.* at 83. The cremation equipment that Greene Funeral Services proposes to purchase has all the features of an incinerator. *Id.* Incinerators are one of the most highly regulated air emission sources because of their potential to emit "pollutants that are extremely toxic in very small amounts." *Id.* at 83-84. She stated her surprise that the manufacturer of the equipment, Matthews International Corp., does not provide information on the expected emissions from its equipment. *Id.* at 84-85. Instead, Greene Funeral Services had to derive estimates from other sources, including EPA data on the

emissions from medical waste incinerators. *Id.* at 85-86. From this, she emphasized that “a crematorium is really just a specialized incinerator.” *Id.* at 86. She then argued the opponents’ primary legal issue: that a crematorium is an incinerator and incinerators are no longer permitted in Baltimore City under the Zoning Code. *Id.* at 86-87.

Ms. Polyak argued that Dr. Kinslow was mistaken in asserting that MDE had approved the crematorium’s emissions as within applicable standards because MDE permit approval could not be made until Greene Funeral Services obtained zoning approval. *Id.* at 88-90. She questioned whether Greene Funeral Services would cremate bodies at this location from all of its funeral homes. *Id.* at 90. On a later hearing date, she testified that Mr. Greene stated at another community meeting that he would use this crematorium for bodies from other Greene Funeral Services locations. Tr. (9/16/21) at 28-29. She also questioned whether voluntary limitations by Greene Funeral Services – for shorter hours of operation and for removal of mercury tooth fillings and other materials – would be enforceable if general zoning approval is granted. *Id.* at 90-93. Finally, she noted that the applicant’s own dispersion model in its MDE permit application shows highest ground-level concentrations at a radius of about 110 feet, a distance that would include people who work and live in the surrounding area. Tr. (8/24/21) at 94-95.

Ms. Polyak summarized:

In summary, this is what I want you to take away. Lots of air pollution already on the York Road corridor near the Vaughn Greene Funeral Home, and it’s due to things that are combustion exhaust emissions, but mostly due to mobile sources. So there’s already – there’s pretty, a pretty good slug of air pollution that’s happening in that neighborhood.

We really don’t have any data on air pollution levels or PM 2.5 levels in north Baltimore because there’s monitors up there.<sup>7</sup>

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<sup>7</sup> There likely is a transcription error here because Ms. Polyak testified there is no monitor measuring the air quality in this specific area.

We found that the standards change over time because science and medicine give us information that let us know that the standard should be changed to be more protective of human health. And the current standards are under review because the existing EPA administration feels like they may not be sufficiently protective. There are lots of human health impacts right now from PM 2.5 pollution in Baltimore City even at levels below standards.

We know from many, many reports, I just cited one that Baltimore City population health indicators are among the worst in Maryland. I want you to know that the crematorium really is just an incinerator. It's a specialized kind of incinerator. You've heard of things like a solid waste incinerator, a medical waste incinerator. This is just a human remains incinerator. And incinerators are a source of some of the most toxic air pollutants in the atmosphere, including PM 2.5.

And the question I would like to leave for the Board, and I'll thank you for your indulgence in all this time that I've spent with you, is this piece of equipment at this moment in time really in the best interest of the public health, the safety, and general welfare of the Govans community?

*Id.* at 96-97.

The Board heard in opposition from City Councilmember Mark Conway, in whose district the Property is located. *Id.* at 107-11. He praised Mr. Greene for use and maintenance of the Property but could not “justify continuing to add additional, additional pollution in [an] already bad area when it comes to air pollution.” *Id.* at 108. State Senator Mary Washington also testified against the proposal and “in support of the numerous adjacent communities.” Tr. (9/16/21) at 13-14. She presented the question as both a public health issue and an environmental justice issue. *Id.* at 13-20. A staff member for Delegate Maggie McIntosh also indicated that Delegate McIntosh could not attend but joins Senator Washington in opposition to the proposal. *Id.* at 22.

The York Road Partnership presented several residents as witnesses as part of its opposition. Jackie Whitfield Williams, a lifelong resident of the area, testified: “I am not against

cremation, but I am against an incinerator in the midst of our neighborhood.” Tr. (8/24/21) at 112-18. Anne Lansey, a resident since the 1950s, testified in opposition for herself and the Kimberly Road Neighborhood Association. *Id.* at 119-21. Chris Forrest, President of the Winston-Govans Neighborhood Improvement Association and the York Road Partnership, testified that “the incinerator in a dense community area is not viewed as an asset by the community.” *Id.* at 121-26. Annick Barker testified that she and her family live across York Road and half a block from the Vaughn Greene Funeral Home. *Id.* at 126-27. She has serious concerns about the health effects of “an industrial incinerator with no external pollution controls.” *Id.* at 127-32. Moira Horowitz, a resident in the immediate area, testified to her concerns about existing pollution in the area and the effect a crematorium would have on attracting people. *Id.* at 132-34. Cindy Camp, who lives in a large house with many family members within sight of the Vaughn Greene Funeral Home, spoke eloquently about her perception and the perception of others of “[a] bunch of white people in a room making decisions for a predominantly black community.” *Id.* at 134-39.

The Board also heard from a number of residents and interested persons not directly affiliated with the York Road Partnership. Jeffrey Tompkins spoke in opposition to the proposal. Tr. (9/16/21) at 22-23. Jonathan Merch, a neighbor, also registered his opposition. *Id.* at 23. Laine Scott-Nelson, a nearby resident and nurse practitioner, stated that she and her family might leave the neighborhood if the crematorium were permitted. *Id.* at 24-25. Leila Kohler-Fruch spoke in opposition, highlighting her concerns about mercury emissions. *Id.* at 26-27. Dan Pontious, President of the Radnor-Winston Improvement Association, noted the opposition of that organization. *Id.* at 31.

In addition to the opponents speaking at the hearings, the Board received and included in the Administrative Record more than 100 letters or email messages in opposition to the proposal and a petition in opposition with almost 200 signatures. Some of the testimony, letters/emails, and petition signatories overlap.

After its three days of hearings, the BMZA met to deliberate on October 19, 2021. The Board members discussed the opponents' legal argument that the proposed crematorium is an incinerator prohibited by the City Zoning Code in Baltimore and all of the Zoning Code factors applicable to conditional use approval. Following discussion, the Board voted three to one to approve the conditional use application. Tr. (10/19/21) at 23. The Board decided to ask the parties to attempt to reach agreement on possible conditions that might be imposed on the approval, *id.* at 23-25, and adjourned until November 30, 2021 to permit those discussions.

The parties did not reach agreement on any proposed conditions on approval. On November 30, 2021, the Board had before it a letter dated November 24, 2021 from counsel for Greene Funeral Services, a letter dated November 29, 2021 from counsel for the York Road Partnership, and email messages related to those letters. After further discussion, the Board adopted three conditions that it subsequently incorporated into its Resolution.

The Board stated its decision in its Resolution dated January 4, 2022 and appearing at the end of the Administrative Record. The Board summarized its proceedings.<sup>8</sup> Resolution at 1-2. The Board identified both the “[l]imited criteria for denying” a conditional use application and the “[r]equired considerations” provided in Baltimore City Code, Art. 32, § 5-406. Resolution at 3, 4. The Board also cited the standard for consideration of conditional use approval articulated

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<sup>8</sup> The Board stated that its second hearing date was August 29, 2021, but the transcript indicates that hearing day was on August 24, 2021.

in *Schultz v. Pritts*, 291 Md. 1 (1981). The Board recognized the opponents' legal argument that it was "precluded from granting the Appellant's request" because the crematorium is a prohibited "incinerator" under § 1-218(b)(2) of the City Zoning Code, now codified at Baltimore City Code, Art. 32, § 1-209(b)(2). Resolution at 4. The Board rejected that interpretation of the definition of an "incinerator" because it was not persuaded "that human remains fall under the definition of solid waste." *Id.*

The Board stated specific findings based on Petitioners' contentions:

Opponents' argument is two-fold: first, that the emissions on their own are demonstrably hazardous, and second, that the population that lives near the proposed human crematorium already suffers from poor air quality and poor public health and is therefore at an elevated risk of harm from increased air emissions. However, the Board did not hear any credible evidence from the Opposition to suggest that the crematorium's emissions would be above and beyond those normally associated with such a use within a C-2 district. Indeed, the opposition conceded that other nearby businesses, such as Popeyes and McDonald's, already produce a significant amount of air emissions. In addition, the Board heard testimony on the impact on air emissions from vehicle traffic on York Road.

Based on the evidence before it, the Board finds that while the crematorium will add to overall emissions within the zone; however, it does not find that those emissions will be above and beyond those associated with other similar uses. The Board finds that to allow fast-food restaurants and other polluting businesses to continue to operate in the area, while restricting Appellant's use of its property would not be in harmony with the purpose and intent of Article 32. Indeed, the scope of commercial activity supported in the C-2 Zoning District is intended for areas of small to medium-scale commercial use, typically located along urban corridors, such as the York Road Corridor, *see Article 32, §10-204.*

*Id.* at 3-4. The Board made the following additional findings:

After a complete and comprehensive review of all the evidence, the Board finds by competent evidence that the proposed crematorium will not have adverse effects above and beyond those inherently associated with crematoriums irrespective of its location



within the zone because the funeral home stands in the same position as all other businesses on York Road that contribute pollution in the community.

The Board finds that the funeral home is located along a busy commercial strip along the York Road Corridor. Any future development in the area would be impacted by the entire corridor, not just the funeral home and its cremation services. Further the Opposition did not provide any credible evidence that the proposed crematorium would impact nearby home values or cause harm to any nearby community gathering areas. Indeed, the Board heard credible testimony that Appellant would be providing a much-needed service and that the Appellant, Vaughn Greene Funeral Homes, is regarded as a good actor by the community.

Finally, the Opposition points to the York Road Corridor Vision and Action Plan as evidence that a human crematorium is incompatible with the character of the neighborhood. However, the Plan lists the area where the funeral home is located as “a hub for Baltimore City community services, worship services, private medical services and . . . commercial services.” Therefore, the Board does not find that the proposed use would be out of character from what is described in the Plan.

*Id.* at 4-5. Based on these findings and this discussion, the Board stated the following conclusions:

After a complete and comprehensive review of all the evidence, the Board finds by competent evidence that the establishment, location, construction, maintenance, and operation of the proposed crematorium would not be detrimental to or endanger the public health, safety, or welfare; the proposed use is not precluded by any other law, including any applicable Urban Renewal Plan; this authorization is not contrary to the public interest; and this authorization and proposed use is in harmony with the purpose and intent of this Code. In consideration of these standards including those imposed by ZC §5-406(b), and on review of the file, testimony, and evidence submitted in support of this conditional use application, the Board finds by competent evidence that Appellant’s request meets the requirements of Article 32, the Zoning Code of the City of Baltimore.

*Id.* at 5. The Board imposed the following conditions under the authority of § 5-405 of the City Zoning Code, finding that the conditions are “reasonably related and roughly proportional to the

expected impact of the conditional use” and that they will be enforceable as violations of the City Zoning Code:

- (1) Only human remains from funeral homes owned, operated, or controlled by Vaughn Greene Funeral Services may be cremated on the premises;
- (2) Vaughn Greene Funeral Services will remove any and all teeth containing mercury amalgams prior to cremation; and
- (3) Vaughn Greene Funeral Services will comply with all applicable federal, state, and local laws.

*Id.* at 5, 6.

### **Discussion**

“A court’s role in reviewing an administrative agency adjudicatory decision is narrow . . . .” *Maryland Aviation Admin. v. Noland*, 386 Md. 556, 571 (2005) (quoting *Board of Physician Quality Assurance v. Banks*, 354 Md. 59, 67 (1999)). “[J]udicial review of an administrative agency action ‘is limited to determining if there is substantial evidence in the record as a whole to support the agency’s findings and conclusions, and to determine if the administrative decision is premised upon an erroneous conclusion of law.’” *Bd. of Liquor License Commissioners for Baltimore City v. Kougl*, 451 Md. 507, 513 (2017) (quoting *United Parcel Serv., Inc. v. People’s Counsel for Balt. Cnty.*, 336 Md. 569, 577 (1994)). The Court reviews the agency’s legal conclusions with some measure of deference to the agency’s construction of the provisions it administers, *Marzullo v. Kahl*, 366 Md. 158, 173 (2001),<sup>9</sup> but “if

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<sup>9</sup> Petitioners argue that the Board’s interpretation of the City Zoning Code is not entitled to deference because the Board is a quasi-adjudicatory body, not the body entrusted with administration of the Zoning Code. The Court disagrees. The conditional use at issue in this action is one that specifically requires the Board’s approval. Baltimore City Code, Art. 32, § 1-205(b) and Table 10-301. Greene Funeral Services apparently took its “positive appeal” to the Board precisely for this reason. Thus, the Board is the administering agency of the Code for

an agency’s conclusion is based on an error of law, it will not be upheld.” *Id.* at 514. Under the substantial evidence standard, a court must “defer to the regulatory body’s fact-finding and inferences, provided they are supported by evidence which a reasonable person could accept as adequately supporting a conclusion.” *Kenwood Gardens Condominiums, Inc. v. Whalen Properties, LLC*, 449 Md. 313, 325 (2016). In the zoning context, this means that the outcome “is ‘fairly debatable,’ that is, [the] determination is based upon evidence from which reasonable persons could come to different conclusions.” *White v. North*, 356 Md. 31, 44 (1999) (internal quotation omitted).

**A.**

The Baltimore City Zoning Code defines “funeral home” to mean “an establishment for preparing deceased individuals for burial or cremation and for conducting rituals before burial or cremation.” Baltimore City Code, Art. 32, § 1-306(s)(1). The Zoning Code specifies that a “funeral home” includes: “(i) chapels for viewing a deceased and for conducting rituals; and (ii) a crematorium.” *Id.* § 1-306(s)(2). The Code does not provide any separate definition of “crematorium.” Thus, operating a crematorium is permitted as part of the permitted use of any funeral home. Among the different types of commercial zones in the City, funeral homes are a conditional use requiring BMZA approval in a C-2 district, and they are permitted uses without any special approval in C-3 and C-4 districts. *Id.* § 1-205(b) and Table 10-301. They are also permitted in all four subdistricts of the Port Covington District. *Id.* Table 12-1302.

The Baltimore City Zoning Code classifies “incinerators” as a use that is “prohibited in all zoning districts of the City.” Baltimore City Code, Art. 32, § 1-209(b)(2). “Incinerator” is

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purposes of this approval. The issue of deference has little role in the Court’s decision, however, because this Court agrees with the Board’s legal interpretation even without deferring to it.

defined as “a combustion unit that uses controlled flame combustion for the thermal destruction of solid waste, including municipal waste, industrial waste, hazardous waste, special medical waste, or sewage sludge.” *Id.* § 1-307(s)(1).

Petitioners argue that a crematorium is a specialized type of incinerator. According to Petitioners, because all incinerators are now forbidden in Baltimore, all crematoriums also are prohibited as a matter of law. Petitioners contend the Board therefore erred as a matter of law in even considering approval of Greene Funeral Services’ application to construct a crematorium at its location on York Road.

The Court accepts Petitioners’ premise that a crematorium functionally is a type of incinerator. Petitioners provide dictionary definitions of a “crematorium” or “crematory” as “an establishment or structure in which the bodies of the dead are cremated” (<https://www.merriam-webster.com/dictionary/crematorium>) (last viewed May 8, 2023) and of “to cremate” as “to reduce (a dead body) to mostly tiny bits of bones resembling ash through exposure to flame and intense heat followed by pulverization of bone fragments” (<https://www.merriam-webster.com/dictionary/cremate>) (last viewed May 8, 2023). These are consistent with the Maryland statutory definitions of “Crematory” as “a building, portion of a building, or structure that houses the necessary appliances and facilities for cremation,” and “Cremation” as “the process of reducing human remains to bone fragments through intense heat and evaporation, including any mechanical or thermal process.” Md. Code, Bus. Reg. § 5-101(e) and (f); Md. Code, Health Occ. § 7-101(h) and (i). Although not cited by Petitioners, another Maryland statute defines “Cremation” as “the disposition of a dead human body by means of incineration.” Md. Code, Health-Gen. § 5-508(c).

Petitioners also invoke State environmental and health regulations to support their argument that a crematorium is an “incinerator” of “special medical waste.” The parallels are not persuasive. Most fundamentally, the Baltimore City Zoning Code and Maryland State regulations are not part of the same regulatory scheme, so they cannot be interpreted as a consistent whole. In addition, they regulate different interests. The Court accepts Petitioners’ argument that the Maryland Department of the Environment regulates crematoria as a type of incinerator – “Crematory incinerators,” COMAR 26.11.08.03.C(2) – but the structure of those regulations is more complicated than Petitioners acknowledge. The MDE incinerator regulations define “Crematory” as “a furnace where a human or animal corpse is burned . . . .” *Id.* 26.11.08.01.B(9-1). “Special medical waste” is defined to include “hospital, medical, and infectious waste.” *Id.* 26.11.08.01.B(57)(b). “Hospital waste” in turn is defined to *exclude* human remains destined for crematories: “‘Hospital waste’ does not include human corpses, remains, and anatomical parts that are intended for interment or cremation.” *Id.* 26.11.08.01.B(19)(b). The formulation, “hospital, medical, and infectious waste,” is important because the designation “HMIWI” for “Hospital, medical and infectious waste incinerator” is used throughout the incinerator regulations to describe a particular type of incinerator. *Id.* 26.11.08.01.B(18). An HMIWI is “a special medical waste incinerator that combusts any amount of hospital, medical, and infectious waste.” *Id.* “Municipal waste combustors” or “MWCs” are the other primary type of incinerators designated in a similar way in the incinerator regulations. *See id.* 26.11.08.01.B(45). Thus, although human remains might generally fit the description of medical waste, these regulations evince a purpose to treat them differently based on the intended disposition of those remains. When they are “intended for interment or

cremation,” they are excluded from classification as “hospital waste,” and that exclusion most likely means that crematoria are excluded from being regulated as HMIWIs.<sup>10</sup>

In their reply memorandum, Petitioners point out that this exclusion of “human corpses, remains, and anatomical parts that are intended for interment or cremation” is an exclusion only from “Hospital waste” in COMAR 26.11.08.01.B(19)(b). The definition of “Special medical waste” used in another COMAR chapter includes “anatomical material,” which in turn includes “human or animal body parts, including tissues and organs.” *Id.* 26.13.11.02.B(1) and B(11). It is not the Court’s purpose to parse the precise treatment of human bodies in the MDE regulations, though there is no indication that MDE would compel different treatment of a “human corpse[ ] . . . intended for interment or cremation” based on whether that body comes from a hospital or from some other source, such as from a nursing home. State law regulates the safe handling and disposition of all human bodies. Md. Code, Health-Gen. §§ 5-513 and 5-514.

Petitioners also cite State health regulations that define “Special medical waste” to include “Anatomical material,” *id.* 10.06.06.02.B(22), and “Anatomical material” to mean “human or animal body parts, including tissues and organs,” *id.* 10.06.06.02.B(1). Petitioners do not cite the definition, but those same health regulations define “Cremation” as “the incineration of human or animal remains.” *Id.* 10.06.06.02.B(7). In light of the separate definitions included in the MDE regulations on incinerators, these regulations have even less significance for this action.

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<sup>10</sup> The Court writes “most likely” because the explicit exclusion is from “hospital waste,” which may be recognition that hospitals handle bodies being transferred to funeral homes differently than other human material that may be disposed of in other ways. There is no need for the Court to resolve this regulatory issue in this action.

In the MDE regulations, the significant differences in scale of incinerators regulated by the MDE is also noteworthy. The MDE regulations define three sizes of HMIWIs. A “Small HMIWI” has a burning capacity of 200 pounds per hour or less, *id.* 26.11.08.01.B(55)(a); a “Medium HMIWI” has a capacity of 200-500 pounds per hour, *id.* 26.11.08.01.B(34)(a); and a “Large HMIWI” has a capacity of more than 500 pounds per hour, *id.* 26.11.08.01.B(25)(a). A “Small MWC,” by comparison, has a burning capacity of 35-250 tons per day, *id.* 26.11.08.01.B(55-1), and a “Large MWC” can burn more than 250 tons of municipal waste per day, *id.* 26.11.08.01.B(26). With a rated capacity of 175 pounds per hour, the proposed crematorium would be a small HMIWI, if it were an HMIWI, and there plainly are vastly larger incinerators subject to air quality regulation.

Returning to the Baltimore City Zoning Code provisions directly at issue, the Court disagrees with Petitioners’ contention that the Baltimore City Zoning Code necessarily treats every crematorium as a prohibited incinerator. The Court concludes instead that the Board was correct in interpreting the Zoning Code to harmonize the specific approval of crematoria, on the one hand, with the general prohibition on incinerators, on the other hand. This construction honors three fundamental principles of statutory construction. First, statutes must be construed “as a whole, so that all provisions are considered together and, to the extent, possible, reconciled and harmonized.” *Chicago Title Ins. Co. v. Mary B.*, 190 Md. App. 305, 315 (2010). The City Council included in its Zoning Code both a general prohibition of incinerators and specific permission for funeral homes to have crematoria. Both of those aspects of the statutory scheme should be honored, if possible.

Second, “absent a clear indication to the contrary, a statute, if reasonably possible, is to be read so that no word, clause, sentence or phrase is rendered surplusage, superfluous,

meaningless, or nugatory.” *Mgmt. Pers. Servs., Inc. v. Sandefur*, 300 Md. 332, 341 (1984). This canon is particularly important here. Petitioners’ construction of the term “incinerator,” coupled with the general prohibition of incinerators, would render nugatory in its entirety the explicit inclusion of crematoria in the permitted uses of a funeral home. That result is to be avoided unless the avoidance would do violence to the legislative body’s purpose. In contrast, the Board’s interpretation gives meaning both to the permission to have crematoria as a permitted feature of funeral homes and to the broader disapproval of large-scale incinerators.

Third, “[i]t is well settled that when two statutes, one general and one specific, are found to conflict, the specific statute will be regarded as an exception to the general statute.” *Maryland-Nat’l Cap. Park & Plan. Comm’n v. Anderson*, 395 Md. 172, 194 (2006) (quoting *State v. Ghajari*, 346 Md. 101, 116 (1997), and quoted in *Dixon v. Dep’t of Pub. Safety & Corr. Servs.*, 175 Md. App. 384, 421 (2007)); see also *Clarksville Residents Against Mortuary Def. Fund, Inc. v. Donaldson Properties*, 453 Md. 516, 538 (2017). Treating crematoria as a permitted exception to the general prohibition of incinerators in the City is entirely consistent with the City Council’s overall purpose to limit waste incinerators while allowing a type of incinerator with very special features. Our society attaches complex and varied cultural norms to death rituals, including the disposition of human remains. That can be seen in this record with Mr. Greene’s testimony about the importance of trust in his profession and the sensitivity that families have over transporting the body of a loved one to another location for cremation. He sharply resisted being associated with waste disposal businesses: “But that’s not what I do. Incinerators are for trash, garbage, refuse, things that don’t have value, things that people no longer want, things that people don’t want back. I’m not an incinerator.” Tr. (9/16, 2021) at 37. Of course, Mr. Greene’s own image of his business does not determine the interpretation of the



Zoning Code, but it reflects at least two important distinctions between waste incinerators and crematoria. As a component of the funeral process, a crematorium puts special emphasis on the disposition of one body at a time and on the recovery and careful preservation of the ashes. Thus, Mr. Greene is certainly correct that his customers generally attach significant value to those ashes even if that value is largely emotional or symbolic.

Functionally, a crematorium is an incinerator, but it is unlike most incinerators of “solid waste” that have the primary purpose of expeditiously rendering unwanted waste into ash that is inert and of much smaller volume for disposal. In addition, the special features of crematoria create a natural limitation on their operation. As the evidence showed, because only one body is cremated at a time, the volume of each load is limited and the machine is not run continuously. Instead, it is cycled off after each cremation to permit cooling and recovery of the remains for the family. These special features lend support to a construction of the Zoning Code that recognizes that the City Council simultaneously meant to limit industrial-scale waste incinerators in the City while also permitting the specialized and much more limited functioning of crematoria ancillary to funeral home businesses.

Petitioners argue that § 1-203(b) of the Zoning Code itself dictates resolution of any conflict between the general prohibition on incinerators and the specific permission for crematoria in favor of the prohibition. That section provides:

If any condition or requirement imposed by this Code is either more or less restrictive than a comparable condition or requirement imposed by any other provision of this Code or of any other law, rule, or regulation of any kind, including an applicable Urban Renewal Plan, the condition or requirement that is the more restrictive governs.

Baltimore City Code, Art. 32, § 1-203(b). The Court finds this provision inapplicable in this context. As discussed above, general rules of statutory construction seek to avoid interpretations

that produce illogical conflicts. With the application of those rules of construction, there is no conflict in the Zoning Code on this issue because the prohibition on incinerators does not apply to override the explicit permission given for establishment of crematoria as a feature of a funeral home. There is no occasion to apply § 1-203(b) because the application here is governed solely by the definition of “funeral home” in § 1-306(s) and the permission to operate funeral homes in C-2 Zoning Districts as a conditional use.

The Court concludes that the Board was correct in its interpretation of the Zoning Code as preserving both the general prohibition on incinerators and the specific permission for funeral homes to have crematoria.

**B.**

Petitioners advance five additional arguments, which the Court paraphrases in part:

2. The Board erred in finding and had insufficient evidence to find “that the proposed crematorium at the proposed location would create no adverse effects above and beyond what would be expected of a crematorium in the C-2 Zoning District”;
3. The Board could not support “its assumption that the air pollutants resulting from cremated bodies are not substantively different from existing forms of air pollution at the proposed location”;
4. The Board failed “to consider the adverse effects of the proposed conditional use on the public health of the surrounding residential community and [erred] in deferring the public health determination to the [MDE]; and [had insufficient] evidentiary support for its limited findings that air emissions from the crematorium would not impact public health”;
5. “Given the degraded health of the neighborhood residents of the proposed location,” the Board failed “to consider the particular adverse effects that the proposed use would have at the particular location”; and

6. The Board failed “to provide an evidentiary basis to support allowing the importation of bodies for cremation from funeral homes located outside the community.”

Pets.’ Memo. at 2-3. These separate claims may be considered together under the broader question whether the Board’s conclusion “that the proposed crematorium at the proposed location would create no adverse effects above and beyond what would be expected of a crematorium in [a] C-2 Zoning District” is supported by substantial evidence in the Administrative Record.

*Schultz v. Pritts*, 291 Md. 1 (1981), is considered the “seminal” or “bellwether” case on conditional uses or special exceptions in Maryland zoning law. *Clarksville Residents Against Mortuary Def. Fund, Inc. v. Donaldson Properties*, 453 Md. 516, 540 (2017). A conditional use designation “delegates to an administrative board a limited authority to allow enumerated uses which the legislature has determined to be permissible absent any fact or circumstance negating the presumption. The duties given the Board are to judge whether the neighboring properties in the general neighborhood would be adversely affected and whether the use in the particular case is in harmony with the general purpose and intent of the plan.” *Schultz*, 291 Md. at 11. “A special exception is presumed to be in the interest of the general welfare, and therefore a special exception enjoys a presumption of validity.” *Attar v. DMS Tollgate, LLC*, 451 Md. 272, 285 (2017).

Because the applicable legislative body has already made a judgment that the conditional use ordinarily is compatible with the type of district where it is conditionally permitted, disapproval is appropriate only where there is evidence of “an adverse effect upon adjoining and surrounding properties *unique and different* from the adverse effect that would otherwise result from the development of such a special exception use located anywhere within the zone.”

*Schultz*, 291 Md. at 15 (emphasis added). “[T]he appropriate standard to be used in determining whether a requested special exception use would have an adverse effect and, therefore, should be denied is whether there are facts and circumstances that show that the particular use proposed at the particular location proposed would have any adverse effects *above and beyond* those inherently associated with such a special exception use irrespective of its location within the zone.” *Id.* at 22-23 (emphasis added). The analysis “is focused entirely on the neighborhood involved in each case.” *People’s Counsel for Baltimore Cnty. v. Loyola Coll. in Maryland*, 406 Md. 54, 102 (2008). Neither the applicant nor the zoning authority is required to look comparatively for other locations where the proposed conditional use might have less adverse effects. *Id.*

The Baltimore City Zoning Code reflects this standard in its statement of purpose specifically applicable to conditional uses:

This Code is based on the division of the City into districts, in which the uses of land and structures and the bulk and location of structures in relation to the land are substantially uniform. Certain uses exist, however, that, because of their unique characteristics, cannot properly be classified in any particular district without consideration, in each case, of the impact of those uses on neighboring land and of the public need for the particular use at the particular location. These uses, referred to as conditional uses, may only be approved as specified in this subtitle.

Baltimore City Code, Art. 32, § 5-401(a). “*Schultz* and its progeny established that if a conditional use applicant demonstrates compliance with the prescribed standards and requirements set forth in the relevant statute or regulation, then there is a presumption that the use is in the interest of the general welfare, a presumption that may only be overcome by probative evidence of unique adverse effects. Absent such probative evidence, it is arbitrary,

capricious, and illegal for the Board to deny the conditional use application.” *Clarksville Residents Against Mortuary Def. Fund, Inc.*, 453 Md. at 543.

Citing *Mills v. Godlove*, 200 Md. App. 213 (2011), and other cases, Petitioners argue that the Board did not include in its Resolution sufficient discussion of the evidence presented to permit review of the Board’s conclusion that the *Schultz* standard and the City Zoning Code requirements for conditional use approval were satisfied. The Court concludes that the passages of the Resolution quoted above contain more than sufficient explanation of the Board’s findings and reasoning for this Court to understand and to review the basis for the BMZA’s decision.

All of Petitioners’ specific arguments relate to the emissions that would be produced by the proposed crematorium and the effect those emissions would or would not have on air quality in the area and therefore on the health of residents living in the area. Both Greene Funeral Services and Petitioners presented expert testimony on air quality and health effects to the Board. Interestingly, however, there were few, if any, scientific disagreements between the testimony of Dr. Kinslow and Ms. Polyak. Both identified or acknowledged sources of air pollution along the York Road corridor. The primary source is vehicle emissions from traffic on York Road. Those emissions are increased by several businesses in the immediate area that attract additional vehicles and result in vehicle idling: two fast food restaurants with drive-through lanes, two gasoline service stations, and a post office. Vehicle idling also is increased by the presence of two traffic lights at nearby intersections and bus stops along York Road. The proposed crematorium would be a stationary source of emissions, but there was little evidence about other stationary emission sources, such as the cooking operations of the fast food restaurants or the collective effects of residential sources like furnaces, fireplaces, and outdoor grills.

Both expert witnesses agreed that there is little air quality data for the immediate vicinity of the proposed crematorium because the only permanent air quality monitoring station in Baltimore City is several miles away, at the Old Town Fire Station. Petitioners fault Dr. Kinslow for relying on data from that monitoring station, but it is simply the best or only air quality data available. Dr. Kinslow did not claim that the data provided an actual measurement of the air quality at the York Road location. Petitioners assert that Ms. Polyak provided “far more relevant data . . . establishing that there are already tens of thousands of pounds of harmful particulate matter emitted within the two-block radius around the proposed siting of the crematorium,” Pets.’ Memo. at 20, but Ms. Polyak’s “data” was only her estimate of emissions from traffic and other sources, not a scientific measurement of actual air quality. With respect to actual measurements of air quality, Ms. Polyak argued that the existing air quality standards may be in need of revision, especially for fine particulate matter, but she did not dispute the evidence that the air quality measured at the Old Town Fire Station monitoring station is within the currently applicable standards and indeed that air quality at that station has been on an improving trend in recent years. Ms. Polyak also did not testify that operation of the proposed crematorium would produce emissions exceeding those existing standards either at the Old Town monitoring station or even along York Road.

Perhaps of greatest significance is the unchallenged evidence of the minor magnitude of emissions that would be produced by the proposed crematorium. It is undisputed that Greene Funeral Services must obtain an environmental permit from the Maryland Department of the Environment and that MDE has not yet taken final action on that permit application. The application itself is premised on estimated emissions from operations for twelve hours each day, six days each week. Greene Funeral Services presented clear testimony that the crematorium

would not operate close to that duration, and the restriction by the Board to cremation of bodies only from Vaughn Greene facilities reinforces that limitation. It is also inherent in the nature of the cremation operation, which requires cooling and recovery of ashes after each body is cremated. With these limitations in mind, Dr. Kinslow made an estimate for comparison purposes. Although there are some problems with her statements, she generally testified that the expected emissions per hour from the crematorium are similar to the emissions per hour from a single gasoline-powered pickup truck. Ms. Polyak and Petitioners did not refute that basic comparison.

Petitioners argue that the Board “ignore[ed] that emissions from crematoria differ from emissions from restaurants and vehicles as crematoria emissions include toxins such as ‘arsenic, beryllium, cadmium, hydrogen chloride, mercury, thallium, dioxins, and furans.’” *Pets.’ Memo.* at 21. This statement distorts the Administrative Record. Petitioners’ immediate citation is to Item 3.b in the Administrative Record, which is Greene Funeral Services’ permit application to the MDE. Petitioners characterize this document as containing “pollutant emissions stipulated to in MDE Air and Radiation Administration Application for a Permit to Construct, submitted by Vaughn Greene Funeral Services, P.A.” *Id.* (emphasis omitted). The Court cannot find any reference to “arsenic, beryllium, cadmium, hydrogen chloride, mercury, thallium, dioxins, and furans” in that application. The “Form 5T: Toxic Air Pollutant (TAP) Emissions Summary and Compliance Demonstration” refers to “ex. ethanol” and “ex. benzene.” A.R. Item 3.b at pp. 11-12. In the next two sentences of their memorandum, Petitioners assert that “crematoria air emissions are unique and dangerous,” citing Ms. Polyak’s testimony. *Pets.’ Memo.* at 21. The cited testimony, however, refers to incinerators broadly, not to crematoria specifically:

Incinerators are one of the most highly regulated sources of air emissions because their potential to emit what is known as

hazardous air pollutants. And these aren't the pollutants that I listed at the beginning of my presentation, like nitrogen oxide and carbon oxide. These are pollutants that are extremely toxic in very small amounts, and have the ability to gravely harm human health usually through cancer. Chemicals like benzene or asbestos or dioxin or formaldehyde. So when the last amendment to the Clean Air Act were issued in 1990, the EPA set aside an entire title to address air pollution from hazardous air pollutants, including and especially from incinerators.

Tr. (8/24/21) at 83-84. Several pages later, Ms. Polyak discussed her concerns with crematoria more specifically, but in that testimony she related the possible release of toxins to the burning of dental amalgams and items other than human remains:

And [Mr. Greene] also said that dental fillings and pacemakers would be removed. Dr. Kinslow said that the permit over estimates the emissions from the incinerator because it would never be operated at the capacity that was cited in the application. And I have no doubt that when they said these things that that was their belief or intention at the time of testimony. But the reality is that once a permit is issued anything that is not expressly prohibited or limited is allowed. So notwithstanding someone's intention, they would be perfectly within their legal rights not to have to remove things like dental amalgams or implants or jewelry or other metal, plastic, synthetic personal objects prior to incineration unless the permit explicitly prohibited it. And if the permit doesn't prohibit that, that means all those things go into the firebox, and all those emissions, heavy metals, plastics, polyaromatic hydrocarbons, that goes all up the stack out into the air and into the community.

*Id.* at 90-91. A more accurate characterization of Ms. Polyak's testimony is that incinerators generally have the potential to emit these types of toxic pollutants and that a crematorium might have such emissions if materials other than the body are included in the cremation process. Petitioners' arguments thus amplify the risks without specific factual support by not distinguishing between large-scale and general purpose municipal waste incinerators and small-scale, specialized crematoria.



On the specific issue of potential mercury emissions, Greene Funeral Services promised at the hearing that it will remove all teeth containing mercury amalgams from bodies before cremation. The Board made this a binding condition of its approval. In addition, Dr. Kinslow testified, without rebuttal, that the greater threat to human health from mercury emissions arises from methylmercury, not the elemental mercury that is contained in dental fillings. That testimony is partially reassuring. It suggests that any elemental mercury that is emitted is not as directly harmful, although Dr. Kinslow tended to minimize that fact that such emissions would still contribute to the presence of mercury that can be converted to methylmercury through the food chain and ultimate absorption by humans.

There is thus substantial evidence in the Administrative Record to support the conclusion that a crematorium is a minor source of air emissions. To the extent a crematorium has any likelihood of emitting toxic substances unlike those emitted by vehicle engines, that potential is very low. Most important for this action, those features for this proposed crematorium are typical or inherent for any crematorium. By allowing crematoria as a permitted feature of funeral homes and then making funeral homes permitted of right in some zoning districts and a conditional use in C-2 districts, the City Council has already made a legislative judgment that these levels and types of emissions are not inconsistent with those districts, absent unusual circumstances. Greene Funeral Services established that its proposed crematorium will be typical of other crematoria, and Petitioners failed to introduce evidence to contradict that fact.

The Board accepted Dr. Kinslow's testimony that the MDE's regulation of the crematorium through its permitting process – including the regulation of any potential toxic emissions – was sufficient to prevent any unacceptable risk of harm to human health. Petitioners argue both that this was an abdication by the Board of its separate zoning responsibility and that

this reliance focuses only on the emissions and not on their effects on the surrounding community. On the first point, there is no indication that the Board failed to exercise its judgment as the zoning authority because the crematorium requires a permit from the MDE. Rather, the Board appropriately relied on the environmental expertise of the MDE in evaluating whether the expected emissions would or would not pose a health risk to the community. The Board also appropriately accepted Dr. Kinslow's testimony that the EPA and MDE standards take into account vulnerable populations with increased health risks. On the second point, the Board clearly recognized the potential connection between air emissions and health effects in the community. The record cannot fairly be read to suggest that the Board members relied only on an abstraction of air emissions having no relation to conditions on the ground in the neighborhood.

Petitioners argue that this site for a crematorium will be unique or unusual because of its proximity to homes at which residents will be exposed to emissions from the crematorium. The setting, however, is typical of C-2 zoning districts. Those districts are "typically located along urban corridors," Baltimore City Code, Art. 32, § 10-204(a), and urban corridors often run through or between residential areas. Thus, there is nothing unusual about the proximity of the commercial businesses in this C-2 district to residential neighborhoods. This is an inherent feature or risk that the City Council presumably understood when it made funeral homes with crematoria a conditional use in C-2 districts.

Petitioners presented evidence that Baltimore City generally has poor health measures compared with other Maryland jurisdictions and that some of the neighborhoods along the York Road corridor may have more health problems. Petitioners also presented evidence that those neighborhoods include significant African-American populations, though there was little basis in

the evidence to compare the racial composition of these neighborhoods to other specific areas of Baltimore City. Vaughn Greene himself is African-American, and he identifies strongly with serving individuals in that community. Dr. Kinslow disputed to some extent whether generally adverse health conditions in the specific neighborhoods or in Baltimore City more generally could be attributed to ambient outdoor air quality as opposed to indoor air quality. More important, Petitioners' evidence was insufficient to show that the vulnerability of residents in these neighborhoods is unique or unusual compared to any other area of Baltimore. Comparison to other jurisdictions in the State is not a comparison the BMZA is authorized or required to make.

Considered as a whole, Petitioners' evidence failed to establish any significant increase in risk to human health from emissions produced during the limited operation of the proposed crematorium. The Board correctly reposed confidence in the fact that the crematorium must be reviewed and permitted by the MDE. No one wants additional pollution, even in minor quantities, and it is understandable that residents in proximity to a significant thoroughfare already feel burdened by emissions from passing vehicles, but Petitioners' arguments did not rebut Greene Funeral Services' showing that the adverse effects will not be "above and beyond" what would be expected from a similar source in any other C-2 district in the City. The Board applied the correct standard, and its decision is supported by ample evidence that satisfies the substantial evidence standard.

### **Conclusion**

For all these reasons, the Court concludes that the Board did not err as a matter of law and that its decision that the proposed crematorium will not have adverse effects at this location above and beyond the effects inherent in the operation of a crematorium is supported by

substantial evidence in the Administrative Record. The Court therefore will affirm the Board's approval of Greene Funeral Services' application for conditional use approval.

***Judge Fletcher-Hill's signature appears on the original document in the court file.***

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Judge Lawrence P. Fletcher-Hill

Circuit Court for Baltimore City  
Case No. 24-C-22-000610

UNREPORTED  
IN THE APPELLATE COURT  
OF MARYLAND\*

No. 861

September Term, 2023

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IN THE MATTER OF THE PETITION OF  
THE YORK ROAD PARTNERSHIP, ET AL.

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Graeff,  
Berger,  
Albright,

JJ.

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Opinion by Graeff, J.

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Filed: July 18, 2024

\*This is an unreported opinion. This opinion may not be cited as precedent within the rule of stare decisis. It may be cited for persuasive value only if the citation conforms to Md. Rule 1-104(a)(2)(B).

CC 00338

This appeal arises from a decision of the Baltimore City Board of Municipal Zoning and Appeals (the “Board”), approving the application filed by M&G Property Management Two, LLC (“M&G”), appellee, for authorization to install a crematorium in a funeral home pursuant to Baltimore City’s Zoning Code. The Board approved M&G’s request to modify the existing conditional use granted for the funeral home in 2009. Appellants, The York Road Partnership, et al., filed a petition for judicial review in the Circuit Court for Baltimore City, which affirmed the decision of the Board.

On appeal, appellants present the following questions for this Court’s review, which we have modified slightly, as follows:

1. Did the Board err as a matter of law in concluding that crematoria are not incinerators under Baltimore City Code, Zoning (“Zoning Code” or “ZC”), Article 32 § 1-209(b)(2), and therefore, fail to properly apply the tie-breaking provision found in § 1-203(b), which dictates that a more restrictive provision applies?
2. Did the Board improperly abdicate its duties under ZC §§ 5-404(a) and 5-406 to evaluate the impact of the conditional use on the health of the community to the Maryland Department of the Environment?
3. Did the Board fail to properly interpret and apply the standard outlined in *Schultz v. Pritts*, 291 Md. 1 (1981)?

For the reasons set forth below, we shall affirm the judgment of the circuit court.

## **FACTUAL AND PROCEDURAL BACKGROUND**

### **I.**

#### **The Property**

M&G is the owner of real property located in Baltimore City on the Southeast corner of York Road and Rossiter Avenue (the “Property”). Most of the property is located in a

Commercial C-2 Zoning District, a district “intended for areas of small to medium-scale commercial use, typically located along urban corridors, that are designed to accommodate pedestrians and, in some instances, automobiles.” ZC § 10-204(a).<sup>1</sup>

M&G acquired the Property in 2000. Vaughn C. Greene Funeral Services, P.A. (“Greene Funeral Services”) operates the funeral home. The prior owners also operated a funeral home on the property, and a funeral home has been in continuous use there since the 1960s. In 2009, the Board granted a conditional use approval for the funeral home to make improvements to the Property, including adding a fence and off-street parking. The Property has been used as a funeral home since that time.

## II.

### **Crematorium Proposal**

On March 20, 2020, Greene Funeral Services applied to the Maryland Department of the Environment (“MDE”) for a permit to construct a human crematory on the Property. The Code of Maryland Regulations (“COMAR”) requires a person desiring to operate a crematorium to first obtain a State permit to operate. *See* COMAR 26.11.02.13(A). In its application, Greene Funeral Services noted that the equipment to be installed was a Matthews Environmental Solutions PPII Plus (3.0 MMBTU/hr) / Multi-Chamber Cremation Unit. As part of its application, an Estimated Emission Calculation document

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<sup>1</sup> In 2022, the Baltimore City Council amended Article 32 of the City’s Zoning Code. *See* Balt. City Ord. 22-181 (Dec. 22, 2022). The amendments did not make substantive changes as relevant to the issues before us. In land use cases, we apply the law as it is in effect on appeal. *See Layton v. Howard Cnty. Bd. of Appeals*, 399 Md. 36, 65 (2007). Accordingly, references in this opinion are to the current Zoning Code.

identified the cremation unit as a “crematory Incinerator Model IE43-PPII Plus.” The application included required emissions related reports to comply with federal and state regulations.

The MDE asked for a letter “from the zoning” Board to process the application. M&G obtained a letter from the Zoning Administrator stating that “the subject property is located in a C-2 Commercial District and authorized for use as a funeral home.” The MDE deemed that sufficient to proceed until there was opposition presented. The MDE then requested further information from the zoning office, and M&G then decided to file a positive appeal.<sup>2</sup>

On July 9, 2021, M&G filed a Notice of Appeal with the Board, seeking approval to modify its present conditional use by installing a crematorium on the Property. M&G proposed placing the crematorium within an existing one-story garage and storage building located on the Property. The local community strongly opposed M&G’s proposal. As a result, the Board scheduled multiple hearings to hear testimony from M&G and opponents to the crematorium.

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<sup>2</sup> Rules of the Baltimore City Board of Municipal and Zoning Appeals (“BMZA Rules”) state that “[a]ppeals on applications for permits that have been disapproved and applications which have been referred to the Board by the Zoning Administrator shall be known as ‘Positive Appeals.’” BMZA Rules B.2. Available at, <https://perma.cc/WQ8X-7JJQ>.



**III.**

**Board of Municipal and Zoning Appeals Public Hearings**

**A.**

**August 10, 2021**

On August 10, 2021, the Board held its first public hearing on M&G’s proposal.<sup>3</sup> Counsel for M&G and Greene Funeral Services called several witnesses to testify regarding M&G’s proposal to expand its current conditional use by adding a crematorium to its property. The witnesses testified to a variety of matters related to M&G’s proposal, including environmental and health impacts, and the evaluation criteria that the Board is required to use when approving a conditional use. *See* ZC § 5-406.

Vaughn Greene testified that he was a part-owner of M&G and the founder of Greene Funeral Services. Mr. Greene founded his business in 1996, and by 2005, he had expanded it to four locations in the Baltimore area. He testified “to the history and operation of the existing funeral home and the increased need for crematory services in the Baltimore area.” He explained that, when families entrust their loved ones to his care for cremation services, he must “outsource the decedent to a third party vendor” located outside of Baltimore City. He wanted to provide his clients, who primarily were African-American, with affordable services in the community where they lived, without having to pay increased third-party fees. Most of Mr. Greene’s cremation requests came from the

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<sup>3</sup> To accommodate the large number of exhibits and testimony from M&G and others, the Board scheduled two additional hearings, which were held on August 24, 2021, and September 16, 2021.

Govans community, and he selected the York Road location for the proposed crematorium “[b]ecause [that] location was where most of the need was.”

Dr. Carla Kinslow, a toxicologist with a Ph.D. in biomedical sciences and the Director of Toxicology and Food Safety for Rimkus Consulting, was accepted as an expert in the field of toxicology. Dr. Kinslow testified regarding the health concerns raised by the community with respect to M&G’s application to install a crematorium as a conditional use. She stated that the proposed air emissions presented in M&G’s application were below the “MDE regulatory threshold limits,” and these values were below the threshold values that would have an increased risk of an adverse effect, even for a population whose health is compromised. The proposed air emissions could not be “expected to . . . unreasonably endanger human health.” Moreover, the emissions would be released from a vent stack 40 feet above the ground, where they would mix with the surrounding air, and they would be further diluted as they mixed with the air before falling to breathing level. Dr. Kinslow distinguished the proposed emissions from “ground level emissions,” i.e., cars or trucks, that are “very close to where someone might be inhaling them.”

Dr. Kinslow then addressed community concerns related to disparate rates of pediatric asthma. She stated that, although Baltimore City does have “a disparity in the number of asthma-related issues” when compared to the rest of Maryland, the study cited by opponents to M&G’s application related to indoor environmental issues. That study did not address “ambient air issues or crematoriums” as a causative factor in the asthma-related disparity in Baltimore City; instead, the report focused on “indoor allergens such as tobacco

smoke.” Dr. Kinslow testified that “crematoriums have not been identified as a factor in the literature that would increase overall community asthma rates.” Nor would their emissions be predicted to cause COPD in the community.

Dr. Kinslow testified regarding fears related to the spread of COVID-19 through the air, stating that the virus and any variants would “be completely destroyed under the extreme heat conditions of the cremation process.” She stated that there was “no chance that COVID-19 [could] be spread from cremation of a human being.”

Dr. Kinslow also addressed concerns related to smoke being emitted from the proposed crematorium. She stated that particulate matter is the visible component of smoke, and “Baltimore City ambient air has been in compliance with particulate matter standards that are set by the [Environmental Protection Agency].” The proposed crematorium emissions also were in compliance with MDE standards, and the MDE had determined that emissions from the crematorium would not cause a detriment to the air quality with respect to particulate matter.

Dr. Kinslow then addressed stated concerns that the crematorium would “emit 2.28 pounds per day of sulfur dioxide, 3.74 pounds per day of . . . nitrogen oxide, 4.9 pounds per day of particulate matter, and 3.12 pounds per day of carbon monoxide.” She noted that these numbers assumed that Greene Funeral Services would be operating 12 hours a day, but it actually would be operating the crematory “closer to four hours per day, and not every single day.” Accordingly, the numbers provided to the Board “overstate[d] the pounds per day emissions.” Dr. Kinslow opined that the number of emissions produced in

one day would be approximately one-third of those presented to the Board, e.g., 0.76 pounds of sulfur dioxide, 1.2 pounds of nitrogen oxide, 1.6 pounds of particulate matter, and 1.04 pounds of carbon monoxide. She conceded that exposure in high concentration of these compounds could increase risk for adverse health effects, but the MDE has rules regarding emissions, and the ones involved here would have been determined by the MDE to be below “[the] thresholds of concern.”

With respect to the community’s health concerns related to mercury emission exposure, Dr. Kinslow testified that some of the statements in appellants’ report were misleading or “flat-out wrong,” and most people have some amount of methyl mercury in their body from having mercury fillings, eating fish, or other environmental exposure. Nevertheless, it was a “moot point” because Mr. Greene had committed to removing mercury from teeth, prior to cremation. Dr. Kinslow concluded her testimony by noting that both the EPA and MDE consider vulnerable citizens and high-risk groups when generating threshold limits related to emissions and their hazardous effects. She agreed that emissions that meet or are below regulations are not hazardous to a person’s health, again noting that the proposed crematorium would result in no increased risk for adverse effect.

Bruce Doak, a licensed property surveyor, testified as a land use expert. He was responsible for preparing the site plan that M&G submitted with its application. The Property was located in a mixed-use area consisting of residential (both single-family and row homes), retail, and commercial properties. The crematory would change very little

with respect to the Property because Greene Funeral Services would be utilizing an existing garage to house the crematory. He noted that the Board previously approved the conditional use funeral home, and based on his knowledge, the proposed crematorium was allowed under the definition of a funeral home under the Zoning Code.

With respect to standards the Board was required to consider under ZC § 5-406, Mr. Doak testified that, in his opinion, a crematorium would not “be detrimental to or endanger the public health, safety, or general welfare of [the] community.” In his expert opinion, a crematorium would not be contrary to the public’s interest, and the addition of a crematorium would be in harmony with the purpose and intent of the Zoning Code because “funeral homes have always been put in neighborhoods.” Because a crematorium is part of a funeral home, it “fits right into the intent of the Zoning Regulations.” The crematorium would not alter the essential character of the neighborhood.

Mr. Doak opined that a crematorium on-site would result in less traffic because Greene Funeral Services would no longer have to transport the deceased to and from an offsite location to facilitate cremation and services. The crematorium would allow Greene Funeral Services to provide all of the necessary services in-house. Addressing accessibility for emergency vehicles, Mr. Doak stated that “[t]here will be nothing occurring there with [a] crematorium that’s not already occurring.” Mr. Doak testified that the crematorium would not impair the present or future development of the area, noting that “most people are not even going to know that . . . a crematorium is offered at Vaughn Greene until they either hear about it or they need it.” He stated that “the only thing that’s going to change

is loss of the garage doors, and a few windows and doors changed out, and a . . . [smokestack] that looks in keeping with the building.” The crematorium would “not have an adverse impact” on adjoining properties, including “churches, schools, public structures or gathering places.” There would be no impact on the accessibility to light and air, and the crematorium would have no negative impact on utilities, access roads, or drainage because the Property would utilize existing infrastructure to operate. Mr. Doak did not believe that a crematorium would have a negative impact on the preservation of cultural and historical landmarks or structures in the community. In his expert opinion, the proposed crematorium would satisfy the standards and requirements of the Zoning Code, as well as its intent and purpose.

**B.**

**August 24, 2021**

On August 24, 2021, the second day of hearings, M&G and Greene Funeral Services called several witnesses to testify regarding M&G’s proposal to expand its conditional use authorization by adding a crematorium to its property. Jeff Barron, an employee in the Crematory Division of Matthews International, testified that he had been involved with M&G’s application from the start. Mr. Barron stated that Maryland was “easily the most stringent and thorough regulatory body” among various states with respect to obtaining approvals for crematoriums. M&G’s proposal was for what his company referred to as a “PowerPak II PLUS,” which contained controls to “safeguard against potential pollution,”

including an internet-connected “pollution monitoring system” that allows for offsite monitoring.

With respect to projected emissions, Mr. Barron testified that M&G’s application to the MDE specified that the crematorium “would run or operate 12 hours a day, 7 days a week” because it is common practice to “err on the side of caution,” and give “the maximum amount of run time” because, even at those levels, “the emissions are so far below what would be allowable . . . there should be no question that [it] is safe for the environment” and the community.

Richard King was accepted as an expert appraiser in the real estate business. He was familiar with the Property and M&G’s conditional use application. To address community concerns with respect to the proposed crematorium’s impact on real-estate values, Mr. King conducted a study to determine what effect, if any, crematoria in Baltimore City had on property values. Based on MDE records, there were only three other crematories located in Baltimore City. Looking at property values in those areas in the four years “after [a] crematory was constructed,” Mr. King concluded that average real-estate values went up following construction.<sup>4</sup>

Becky Witt, on behalf of the Community Law Center, stated that she opposed M&G’s “application for an incinerator so close to a residential neighborhood.” As further discussed, *infra*, she noted that the Board would have the opportunity to hear from people

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<sup>4</sup> Mr. King noted one exception in which the average property value decreased from \$36,778 to \$34,781.

who live in Baltimore City and “understand and know the neighborhood that [would] be affected” by adding a crematory in the neighborhood.

Lisa Polyak, an environmental engineer, was accepted as an expert in the field of air quality and public health and environmental engineering. Ms. Polyak testified that, based on her personal observations, she was able to identify several emission sources in the area surrounding the Property, including a post office across the street with “several dozen postal vehicles” and “lots of customer traffic,” as well as two fast-food restaurants, both which operated drive-through lanes. There were several additional sources of emissions within a two-block radius surrounding the Property, including two gas stations with a combined 18 gas pumps, and two MTA bus stops, one of which received 206 buses each day. Based on Maryland Department of Transportation data, approximately “19,734 vehicles travel York Road at that intersection every day of the year.” She also noted that York Road is a truck route, which allows “not just passenger cars, but things like light duty, mixed duty, and diesel trucks to pass.” Ms. Polyak testified that these sources of emissions are “called mobile sources” and can be distinguished from “stationary sources like power plants or factories or incinerators.” She estimated that emissions from just the vehicles on the road amounted to more than “50,000 pounds of harmful air pollutant,” although she did not testify whether the estimated emissions exceeded regulatory thresholds. She also stated that the MDE “only issues permits to stationary sources,” and mobile sources are “allowed to proliferate without any kind of scrutiny or control in the same way that stationary sources do because [stationary sources] have to get permits.”



With respect to particulate matter, which is the “pollutant [ ] produced in the greatest abundance by the crematorium,” Ms. Polyak testified that PM 2.5 particles are dangerous because they defeat the body’s defense mechanisms by getting caught in the mucus of a person’s nose or throat and can end up in a person’s bloodstream. Regarding Dr. Kinslow’s testimony that, there was “no additional risk to citizens,” because Baltimore was “in compliance with the fine particulate matter standard,” Ms. Polyak made two points. First, she stated that the only official PM 2.5 monitoring station in Baltimore City was three and a half miles away from the Property, so it did not represent “what’s going on” with the air quality where the Property was located. Second, the EPA has changed air quality standards as science advances, and there have been controversial decisions regarding these standards. Thus, even if the area complied with the 2012 standards in effect at the time, those standards “may not be properly protective of human health, based on current scientific knowledge.” Ms. Polyak then pointed to a study showing a “statistically significant relationship between communities that have chronic exposure to particulate matter, even at levels below the standards.” Ms. Polyak testified that a “crematorium is really just an incinerator for human remains,” asserting that crematorium emissions are “interchangeable with those produced by a medical waste incinerator.”

City Councilmember Mark Conway testified that a major consideration with respect to M&G’s application was environmental concerns. He stated: “I can’t really justify continuing to add . . . additional pollution in [an] already bad area when it comes to air pollution.” Councilmember Conway recognized that Greene Funeral Services was “a

valued part of the community,” but he stated that “the location and the health risks” associated with the proposed crematorium, including “increased rates of respiratory illness such as asthma,” were “deal breakers for [him].” In his view, a crematorium was not “in the best interest of the community.”

The York Road Partnership presented several witnesses in opposition to M&G’s application. Jackie Williams testified: “I am not against cremation, but I am against an incinerator in the midst of our neighborhood.” Anne Lansey testified that she completed a survey of the Kimberly Road Neighborhood Association, and “all of [the] neighbors . . . are adamantly opposed to the building of a crematorium.” As a child, Ms. Lansey was asthmatic and moved away. When she returned to Baltimore 13 years later, her “health problems reoccurred.” Chris Forrest, the president of the Winston-Govans Neighborhood Association, testified that an “incinerator in a dense community area is not viewed as an asset.” Although there was a benefit to the City for a crematorium, the community he represented “requested that Vaughn Greene seek another location.”

Annick Barker testified that she had “serious concerns about the impact of a crematorium,” which she equated to “an industrial incinerator with no external pollution controls.” She noted concerns related to children in the community who have asthma and the risks associated with “adding more pollution to [an] already stressed area.” Moira Horowitz testified that she planned to live in the area for the remainder of her life, but she did not “want to do [so] with a crematorium at the end of the street.” Cindy Camp testified that she lived in a large home with 11 family members residing there, and that her

“grandson [ ] has chronic asthma.” Her brother suffered from chronic bronchitis. She opposed a crematorium in her back yard because she did not want the “pollutants in [her] neighborhood to cause [her] to lose another loved one.”<sup>5</sup>

**C.**

**September 16, 2021**

On September 16, 2021, the Board held its final public hearing on M&G’s proposal. Several witnesses testified in opposition, and counsel for M&G called Mr. Greene, Dr. Kinslow, and Michael Tricoche, a representative from Matthews Environmental Solutions, to rebut or clarify testimony taken during previous hearings.

Maryland State Senator Mary Washington testified in opposition to M&G’s application, stating that the proposed “site would have significant impact on public health, business, and the residential and economic community.” She noted the city’s “absolute prohibition against incineration within city limits” and stated: “Crematoriums are incinerators for human remains.” Senator Washington expressed concerns with respect to placing another source of pollution in the community, particularly with respect to mercury and neurotoxic effects on “children with developing nervous systems.” Although she “value[d] the presence of Vaughn Greene Funeral Homes,” they had another location in a less densely populated area where they could consider placing the crematorium. Jeffrey

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<sup>5</sup> William Douglas Beims, admitted as an architect, also testified generally to his role in preparing the architectural design plans related to M&G’s proposal.

Tompkins, Jonathan Merch, Laine Scott-Nelson, and Leila Kohler-Fruch, members of the community, each testified in opposition to M&G's application.

Mr. Greene testified again on rebuttal. He acknowledged that incinerators were not permitted in Baltimore City, but he stated that there were three crematories in Baltimore City, and "a crematory is not an incinerator because we don't cremate trash." He stated:

What I do provides not only value for the people that call my services, but I return value to them. You don't take trash on [the] ninth hole on Mount Pleasant and Clifton Park and pour it out on the ninth green, and then celebrate it later. You don't do that with trash. You don't take trash to church, and bring people in to celebrate their life.

Mr. Greene testified that it was insulting to refer to his lifetime of work as an incinerator, a trash disposal company.

Mr. Greene spent significant time serving the community, supporting little leagues and other community events and projects. He believed his business for the crematory fell within the goals of the "York Road plan," noting that he was a minority business owner providing a service that people requested. Mr. Greene wanted to be a good neighbor and give value. He stated that he would comply with any limits or conditions that MDE placed on his air quality permit, if issued.

Michael Tricoche, an electrical engineer for Matthews Environmental Solutions, was admitted as an expert in electrical engineering. He noted that, although the air quality permit application here indicated a crematory operating 12 hours a day, 6 days a week, the "unit does not run continuously." Cremation is an intermittent process that involves preheating of the machine, loading the machine with a body, the cremation time, cooling

time, and then removal of the remains. The process is repeated for each body cremated in the machine. Listing twelve hours per day on the air quality permit application to the MDE was to allow MDE “to calculate potential emission[s] . . . of the machine,” but “[t]hat does not mean the machine will run 12 hours a day continuously because the machine doesn’t do that.”

Mr. Tricoche explained that the exhaust gases from the machine are monitored continuously. If the monitoring system detects an issue, an alarm is activated and certain components of the machine are systematically shut-down, while others are “maintained at the operating temperature” required by the MDE. He stated that the crematory that M&G is seeking approval for has a “self-regulation component,” which ensures the emissions are within MDE specified opacity levels.

Dr. Kinslow testified again, noting that the critical question that the Board was being asked to consider was whether “this crematorium’s air emissions will put the surrounding community in unreasonable danger?” She stated that the answer was no, explaining:

[A]ll the air emission modeling data indicates that the proposed crematorium will be well below the state and federal allowable limits [and therefore], will not result in ambient air concentrations that will adversely impact the health of the surrounding community.

And being compliant with the National Ambient Air Quality Standards, the NAAQS, as well as those set out by the Maryland Department of Environment, MDE, the public health is protected.

Dr. Kinslow stated that the “crematory is a minor emission source, and [it] is not expected to put the community’s health in unreasonable danger.” Mr. Greene had agreed to “restrict

dental amalgams” to eliminate community concerns regarding mercury emissions from fillings.

Addressing the opposition, Dr. Kinslow noted that Ms. Polyak agreed that there was “no scientific data, air data, to support that there’s any health concern currently in the community in the vicinity of the Vaughn Greene Funeral Home.” She also noted Ms. Polyak’s agreement that the nearest PM 2.5 monitor was in compliance with EPA NAAQS PM standards. Dr. Kinslow reiterated that the MDE guidelines are designed to protect the health of citizens.

**D.**

**October 19, 2021, Deliberations**

On October 19, 2021, the Board held the first of two days of deliberations on M&G’s application. It started deliberations by discussing the terms “incinerator” and “funeral home.” The Board then turned to the limited criteria for denial under ZC § 5-406 of the Zoning Code. The Board first concluded that under ZC § 5-406(b)(2), there was no urban renewal plan at issue in M&G’s application. It then addressed whether the general prohibition on incinerators under ZC § 1-209(b) was applicable. It concluded that a crematory is not an incinerator under the Zoning Code, and the city council did not intend “to include crematorium within the definition of an incinerator.”

The Board then addressed whether its authorization of M&G’s application would be contrary to the public interest or detrimental to the public health and welfare. The Chairman of the Board noted, and other members agreed, that there was a need for the

crematorium, and it was in the public interest to have it in the community. The Chairman stated that M&G satisfied its burden to show that the use of the Property for a crematorium would be in “harmony . . . with the purpose and intent” of the Zoning Code.

The Board then turned its attention to ZC § 5-406(b)(1), addressing whether the “establishment of the location, construction, maintenance, [or] operation of the conditional use would not be detrimental to or endanger the public health, safety, or welfare.” One member of the Board stated that this was “the hard one.” The Chairman noted that M&G established that the proposed crematorium was “within the guidelines established by the MDE,” and these guidelines protect “the State’s most vulnerable citizens,” such as Baltimore City residents with a weakened health status.

Referencing Ms. Polyak’s testimony, the Chairman noted that, although MDE’s guidelines may be reviewed in the future, no action had been taken yet to “invalidate the standards that the MDE has established.” He questioned whether the Board was “in a position to second-guess the MDE in establishing th[e] guidelines,” questioning how the Board could conclude that the operation of the crematorium was unsafe if the proposed emissions were within the guidelines. The other members agreed, and by a vote of four to one, the Board approved the conditional use to operate the crematorium, with conditions to be determined after giving the parties an opportunity to create a list of conditions acceptable to both parties.

**E.**

**November 30, 2021, Deliberations**

On November 30, 2021, the Board met for its final deliberations. The Chairman began by noting that the parties had not come to an agreement on conditions with respect to M&G's operation of the crematorium. He reiterated the Board's prior ruling that "Vaughn Greene meets the standards for approval," and it had granted approval for the crematorium. The Chairman noted that the Board had received four requests from the community, and a response from M&G's attorney. The Chairman stated: "[W]e wanted to give the parties an opportunity to come together and see what they could agree upon . . . . But they haven't, . . . gotten there." Following a brief discussion, and based on M&G's letter and "parameters that [Mr. Greene] agreed to do," the Board placed the following conditions on M&G's application:

- (1) Only human remains from funeral homes owned, operated, or controlled by Vaughn Greene Funeral Services may be cremated on the premises;
- (2) Vaughn Greene Funeral Services will remove any and all teeth containing mercury amalgams prior to cremation; and
- (3) Vaughn Greene Funeral Services will comply with all applicable federal, state, and local laws.

**F.**

**Board Decision**

On January 4, 2022, the Board issued a Resolution granting M&G's request as a modification to its existing conditional use, subject to the conditions noted above. In support of its decision, the Board set forth the following findings of fact:



The Appellant, Vaughn Green[e] testified to the history and operation of the existing funeral home and the increased need for crematory services in the Baltimore area. Along with the submission of many documents, the Appellant also provided testimony from a land use expert, appraiser, architect, air quality toxicologist, engineer, and a representative from the crematorium's manufacturer.

The Opposition testified that the location, maintenance, and operation of a crematorium would be: 1) detrimental to and endanger the public health, safety, and welfare; 2) contrary to the public interest; 3) not in harmony with the purpose and intent of the Zoning Code—and thus, in violation of article 32, § 5-406. The Opposition offered testimony from their own air quality expert. In addition, the Opposition likened the operation of the crematorium to that of an incinerator and alleged that such a use, as defined in the Zoning Code, would be prohibited.

The Board heard lengthy testimony from both the Opposition and the Appellant, including from multiple air quality experts. During testimony, both parties conceded that the crematorium would produce some emissions, though they disagreed to what degree, as well as what the overall impact would be on nearby residents. In addition, witnesses for the Opposition testified to the elevated risks of asthma, heart disease, and chronic lung disease experienced by members of the Winston-Govans community.

The Board explained that, under ZC § 1-306(u), “a funeral home is an establishment for preparing deceased individuals for burial *or cremation* and for conducting rituals before burial *or cremation*.” (Emphasis added). It noted that “funeral homes” are permitted as a conditional use in a C-2 Zoning District under the Zoning Code. Under the Zoning Code, any conditional use granted prior to 2017 remains effective, and in 2009, it had issued a conditional use authorization. It noted its authority to approve conditional uses “under the standards set for by [ZC] §§ 5-405 and 5-406.”

With respect to ZC § 5-406(a), conditional use approval standards, the Board concluded, in relevant part, as follows:

Based on the evidence before it, the Board finds that while the crematorium will add to overall emissions within the zone; however, it does not find that those emissions will be above and beyond those associated with other similar uses. The Board finds that to allow fast-food restaurants and other polluting businesses to continue to operate in the area, while restricting Appellant's use of its property would not be in harmony with the purpose and intent of Article 32. Indeed, the scope of commercial activity supported in the C-2 Zoning District is intended for areas of small to medium-scale commercial use, typically located along urban corridors, such as the York Road Corridor, *see Article 32, § 10-204*.

The Board also recognizes the community's objections and concerns regarding air pollution and public health. However, testimony leads the Board to conclude that these concerns will be addressed as part of the Appellant's air permit application process with the Maryland Department of the Environment ("MDE"). Until MDE issues a permit, the Appellant may not provide any cremation services. The Board heard testimony from expert witnesses that MDE only will issue its permit after it determines that the crematorium will not produce air emissions that MDE considers dangerous. Indeed, the Board does not wish to substitute its own judgment for that of a state agency tasked with protecting the health and safety of its citizens by regulation air pollution.

The Board also made conclusions of law with respect to ZC § 1-204(b), which states, in relevant part:

If any condition or requirement imposed by this Code is either more or less restrictive than a comparable condition or requirement imposed by any other provision of this Code or of any other law, rule, or regulation of any kind, including an applicable Urban Renewal Plan, the condition or requirement that is more restrictive governs.

The Board noted that the Zoning Code prohibits the use of incinerators, but to adopt the Opposition's view that incinerators include crematoria would require the Board to "find that human remains fall under the definition of solid waste." It concluded that human remains are not "solid waste," and the "Zoning Code does not contain a contradiction."

Accordingly, the Board found that the use of a crematorium “is not precluded by any law, including any applicable Urban Renewal Plan.”

The Board then addressed the factors set forth in ZC § 5-406(a). It stated that, based on its comprehensive review of the evidence, “the proposed crematorium will not have adverse effects above and beyond those inherently associated with crematoriums irrespective of its location within the zone because the funeral home stands in the same position as all other businesses on York Road that contribute pollution in the community.” The Board found that Greene Funeral Services’ funeral home was “located along a busy commercial strip along the York Road Corridor,” and “[a]ny future development in the area would be impacted by the entire corridor, not just the funeral home and its cremation services.” The Board noted that those opposed to the proposed crematorium did not provide credible evidence that its presence “would impact nearby home values or cause harm to . . . nearby community gathering areas.” Instead, the Board found credible the testimony that a crematorium would provide “a much-needed service” to the community, and its proposed use was not out of character from what was described in the York Road Corridor Vision and Action Plan.

In its conclusion, the Board noted the following:

After a complete and comprehensive review of all the evidence, the Board finds by competent evidence that the establishment, location, construction, maintenance, and operation of the proposed crematorium would not be detrimental to or endanger the public health, safety, or welfare; the proposed use is not precluded by any other law, including any applicable Urban Renewal Plan; this authorization is not contrary to the public interest; and this authorization and proposed use is in harmony with the purpose and intent of this Code. In consideration of these standards[,] including those imposed

by [ZC § 5-406(b)], and on review of the file, testimony, and evidence submitted in support of this conditional use application, the Board finds by competent evidence that [M&G's] request meets the requirements of Article 32, the Zoning Code of the City of Baltimore.

The Board stated that appellants failed to meet their “burden under the *Schultz* standards for rebutting the presumption of validity.” It recognized the community’s interest in clean air, and it had “asked both parties to come up with a set of conditions that they would be willing to agree to, which would allow Vaughn Greene to operate its crematorium, while providing some additional assurances to the Community.” As indicated, the Board had been presented with a set of conditions, which were incorporated within its resolution.

On January 4, 2022, appellants filed a petition in the Circuit Court for Baltimore City seeking judicial review of the Board’s decision. On July 12, 2022, the court held a remote hearing. On May 16, 2022, in a lengthy Memorandum and Opinion, the circuit court summarized the procedural history and facts associated with M&G’s application and the community’s opposition thereto. The court first explained that crematoria are permitted as conditional use as part of a funeral home, and it concluded generally that a “crematorium functionally is a type of incinerator.” It noted, however, that the Board correctly interpreted the Zoning Code “to harmonize the specific approval of crematoria, on the one hand, with the general prohibition on incinerators, on the other hand.” The court credited Mr. Greene’s testimony that people “generally attach significant value to [cremated] ashes even [where] that value is largely emotional or symbolic.” It concluded that the “special features [of crematoria] lend support to a construction of the Zoning Code that recognizes that the City Council simultaneously meant to limit industrial-scale solid waste incinerators in the

City while also permitting the specialized and much more limited functioning of crematoria ancillary to funeral home businesses.”

With respect to Baltimore City’s general prohibition on incinerators, the court stated that the provision was “inapplicable” in the context of this matter. It stated that the provision did not apply “because the prohibition on incinerators does not apply to override the explicit permission given for establishment of crematoria as a feature of a funeral home.” The court concluded that the Board “did not err as a matter of law[,] and that its decision that the proposed crematorium will not have adverse effects at this location above and beyond the effects inherent in the operation of a crematorium [was] supported by substantial evidence in the [record].” Accordingly, the court affirmed the Board’s decision.

This timely appeal followed.

### **STANDARD OF REVIEW**

We recently explained the standard of review of an administrative agency’s zoning decision as follows:

When reviewing a decision by an administrative agency, this Court “looks through” the decision of the circuit court, applying the same standards of review to determine whether the agency itself erred. *Brandywine Senior Living at Potomac LLC v. Paul*, 237 Md. App. 195, 210, 184 A.3d 48 (2018). “We are limited to evaluating whether there is substantial evidence in the record as a whole to support the agency’s findings and conclusions and to determining whether the administrative decision is premised upon an erroneous conclusion of law.” *Id.* (citing *Halici v. City of Gaithersburg*, 180 Md. App. 238, 248 949 A.2d 85 (2008)). “In this context, substantial evidence, as the test for reviewing factual findings of administrative agencies, has been defined as such relevant evidence as a reasonable mind might accept as adequate to support a conclusion.” *Piney Orchard Cmty. Ass’n v. Md. Dep’t of Env’t*, 231 Md. App. 80, 91–92, 149 A.3d 1175 (2016) (quoting *Tomlinson v. BLK York LLC*, 219 Md. App. 606, 614, 101 A.3d 539

(2014)). “Furthermore, not only is the province of the agency to resolve conflicting evidence, but where inconsistent inferences from the same evidence can be drawn, it is for the agency to draw the inferences.” *Brandywine Senior Living at Potomac LLC, supra*, 237 Md. App. at 211, 184 A.3d 48 (quoting *Pollock v. Patuxent Inst. Bd. of Rev.*, 374 Md. 463, 477, 823 A.2d 626 (2003)).

*In re Homick*, 256 Md. App. 297, 307–08 (2022).

“Although this Court defers to the factual findings of agencies, we review their decision regarding matters of law *de novo*, while still proving a degree of deference on some legal issues in accordance with the position of the agency.” *Id.* at 308. “Thus, an administrative agency’s interpretation and application of the statute which the agency administers should ordinarily be given considerable weight by reviewing courts.” *Id.* (quoting *Willow Grove Citizens Ass’n v. Cnty. Council of Prince George’s Cnty.*, 235 Md. App. 162, 168–69 (2017)).

## DISCUSSION

Appellants contend that the Board erred in approving M&G’s conditional use request for several reasons. First, they argue that the use is precluded by another law, i.e., ZC § 1-209(b)(2), which “prohibits incinerators citywide.” They assert that a crematorium is an incinerator. Acknowledging that crematoria are authorized as conditional uses, they argue that the Zoning Code’s “tie-breaking provision” controls and the most restrictive provision, precluding incinerators and therefore crematoriums, controls. Second, appellants assert that the Board failed to evaluate the impact of the conditional use on the health of the community, and instead shifted responsibility in that regard to the MDE. Third, appellants contend that the Board erroneously applied *Schultz*, by neglecting to

provide a location-specific analysis, improperly weighing the potential for adverse effects against the limited benefits to the community and failing to follow its legal obligations to consider the intent of the Zoning Code. Before addressing appellants' contentions, we discuss the provisions of the Zoning Code at issue here.

## I.

### Applicable Code

On December 5, 2016, the Baltimore City Council enacted TransForm Baltimore, a comprehensive zoning ordinance with the express purpose of “establishing a new Zoning Code for Baltimore City.” Balt. City Ord. 16-581 (Dec. 5, 2016). TransForm Baltimore (the “Zoning Code”) “was [the] first comprehensive rezoning plan” enacted in Baltimore City “since 1971.” *Floyd v. Balt. City Council*, 241 Md. App. 199, 203 (2019). The City Council of Baltimore enacted the Zoning Code to serve the following purposes:

(1) to execute the powers and duties vested in the City of Baltimore by the State Land Use Article; (2) to promote and protect public health, welfare, and quality of life for current and future generations; (3) to ensure that the visions set forth in the City’s Comprehensive Master Plan are implemented by land use regulations consistent with the goals set forth; (4) to promote the principles and standards enacted in the Baltimore City Sustainability Plan; (5) to protect the physical environment and public natural resources for all residents; (6) to preserve and enhance the value of structures, communities, and neighborhoods; (7) to preserve, protect, and promote the City’s employment base; and (8) to provide oversight and planning to sustain the healthy growth of the City’s employment centers.

ZC § 2-101.

To carry out its purpose, the legislature divided Baltimore City into various zoning districts, e.g., open-space and environmental districts, detached and semi-detached

residential districts, rowhouse and multi-family residential districts, commercial districts, industrial districts, and special purpose districts. *See* ZC §§ 6-201–207. Each category of districts contains sub-districts. *Id.* Relevant here, the stated purpose under the Zoning Code’s “Commercial Districts” title “is to set out the use regulations . . . for Commercial Zoning Districts.” ZC § 10-101. Within the Zoning Code’s commercial districts there are seven sub-districts. *See* ZC § 6-205. “The C-2 Community Commercial Zoning District is intended for areas of small to medium-scale commercial use, typically located along urban corridors, that are designed to accommodate pedestrians and, in some instances, automobiles.” ZC § 10-204(a). C-2 District standards exist to: “(1) ensure compatibility among neighboring residential, commercial, and entertainment uses; (2) maintain the proper scale of commercial use; and (3) maintain a balance between high traffic volume and pedestrian circulation.” ZC § 10-204(b)(1)–(3).

Within each of the zoning districts, the Zoning Code provides for “permitted” and “conditional” uses. *See* ZC, Table 10-301 (*Commercial Districts—Permitted and Conditional Uses*). A “permitted” use is “allowed in a zoning district without the need for special administrative review and approval, as long as it conforms to all the applicable requirements and standards of th[e] Code.” ZC § 1-314(l).

“A conditional use allows a particular use on a property that is not granted to a property owner by right.” *Brandywine Senior Living at Potomac LLC v. Paul*, 237 Md. App. 195, 210, *cert. denied*, 460 Md. 21 (2018). It “is a valid zoning mechanism that delegates to an administrative Board limited authority to allow enumerated uses which the



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legislature has determined to be permissible absent any fact or circumstance negating the presumption.” *Mayor and Council of Rockville v. Rylyns Enters., Inc.*, 372 Md. 514, 541–42 (2002) (quoting *Schultz*, 291 Md. at 11). A conditional use is presumed to be “in the interest of the general welfare, and therefore, valid.” *Clarksville Residents Against Mortuary Def. Fund, Inc. v. Donaldson Props.*, 453 Md. 516, 540 (2017) (quoting *Anderson v. Sawyer*, 23 Md. App. 612, 617 (1974)).

Under the Zoning Code, a “funeral home” is designated as a “conditional use” in a C-2 District, subject to approval by the Board. *See* ZC, Table 10-301 (“Funeral Home”).<sup>6</sup> The Zoning Code defines “funeral home” as “an establishment for preparing deceased individuals for burial or cremation and for conducting rituals before burial or cremation.” ZC § 1-306(u)(1). Crematoria are included within the definitions of “funeral home,” ZC § 1-306(u)(2)(ii), and “cemetery.” *See* ZC §§ 1-303(u)(2)(i).

The Board may not approve a conditional use unless it finds that:

- (1) the establishment, location, construction, maintenance, or operation of the conditional use . . . would not be detrimental to or endanger the public health, safety, or welfare;
- (2) the use . . . would not be precluded by any other law, including an applicable Urban Renewal Plan;
- (3) the authorization would not be contrary to the public interest; and
- (4) the authorization would be in harmony with the purpose and intent of this Code.

ZC § 5-406(b).

With that background in mind, we address appellants’ contentions.

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<sup>6</sup> A conditional use requiring approval by the Board of Municipal and Zoning Appeals is designated in ZC, Table 10-301 by the symbol “CB.” *See* ZC § 1-205(b)(1)(ii).

## II.

### **Crematorium / Incinerator**

Appellants contend that the Board erred in granting M&G’s conditional use for a crematorium because it is precluded by another law. They assert that, by “it’s plain and ordinary meaning, a crematorium is an incinerator,” and ZC § 1-209(b)(2) bans incinerators within city limits. Because there is a conflict between the ban on incinerators in the city and “Table 10-301 (which conditionally allows funeral homes, defined by § 1-306(u)(2)(ii) to include crematoria, in C-2 districts),” appellants argue that the Board failed to apply ZC § 1-203(b), which requires that, in the event of conflicting provisions, the most restrictive provision—the city’s ban on incinerators—governs.<sup>7</sup> Accordingly, appellants argue that crematoria are not allowed within city limits.

Appellees contend that “the plain and unambiguous language of” ZC § 1-306(s) and Table 10-301 “reflects the legislative intent that crematoriums are allowed as conditional uses in C-2 (community commercial) zoning districts.” They assert that there is no conflict with the provision prohibiting incinerators in the city because a crematorium is not an incinerator. In that regard, they note that ZC § 1-307(s)(1) defines incinerator as a

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<sup>7</sup> ZC § 1-203(b) states, in relevant part:

If any condition or requirement imposed by this Code is either more or less restrictive than a comparable condition or requirement imposed by any other provision of this Code or of any other law, rule, or regulation of any kind, including an applicable Urban Renewal Plan, the condition or requirement that is the more restrictive governs.

combustion unit that provides for “thermal destruction of solid waste,” but “the focus of cremation is the thermal destruction of ‘deceased individuals,’ not solid waste.”

In assessing the parties’ claims, we must apply well-settled rules of statutory construction. “The cardinal rule of statutory interpretation is to ascertain and effectuate the actual intent of the [legislative body] in enacting the law under consideration.” *Cherry v. Mayor and City Council of Balt. City*, 475 Md. 565, 597 (2021) (quoting *In re Collins*, 468 Md. 672, 689 (2020)) (alteration in original). “A court’s primary goal in interpreting statutory language is to discern the legislative purpose, the ends to be accomplished, or the evils to be remedied by the statutory provision under scrutiny.” *Lockshin v. Semsker*, 412 Md. 257, 274 (2010). *Accord Cherry*, 475 Md. at 597. “If the statutory language ‘is unambiguous and clearly consistent with the statute’s apparent purpose, our inquiry as to legislative intent ends ordinarily and we apply the statute as written, without resort to other rules of construction.’” *Cherry*, 475 Md. at 597 (quoting *Lockshin*, 412 Md. at 275). We do not, however, “analyze statutory language in a vacuum.” *Collins*, 468 Md. 689–90. *Accord Cherry*, 475 Md. at 597. Instead, “statutory language must be viewed within the context of the statutory scheme to which it belongs, considering the purpose, aim, or policy of the Legislature in enacting the statute.” *Collins*, 468 Md. at 690 (internal quotation marks and citation omitted). *Accord Cherry*, 475 Md. at 597.

With respect to an appellate Court’s interpretation of the legislative intent of a statute, the Supreme Court has stated:

We presume that the legislature “intends its enactments to work together as a consistent and harmonious body of law, and, thus, we seek to reconcile and

harmonize the parts of a statute to the extent possible consistent with the statute’s object and scope.” [Collins, 468 Md. at 690] (internal quotation marks and citation omitted); see also *Whiting-Turner Contracting Co. v. Fitzpatrick*, 366 Md. 295, 302–03, 783 A.2d 667 (2001) (“[W]hen interpreting any statute, the statute as a whole must be construed, interpreting each provision of the statute in the context of the entire statutory scheme.”). Where statutory language is ambiguous and thus subject to more than one reasonable interpretation, or where the language is unambiguous when read in isolation, but ambiguous when considered in the context of a larger statutory scheme, “a court must resolve the ambiguity by searching for legislative intent in other indicia, including the history of the legislation or other relevant sources intrinsic and extrinsic to the legislative process. In resolving ambiguities, a court considers the structure of the statute, how it relates to other laws, its general purpose, and the relative rationality and legal effect of various competing constructions.” *Lockshin*, 412 Md. at 276, 987 A.2d 18 (citations omitted).

*Cherry*, 475 Md. at 597–98.

“We construe local ordinances and charters under the same canons of statutory construction as we apply to statutes.” *Id.* at 598. “The plain language of the local ordinance is the primary source of legislative intent.” *Id.* Accord *O’Connor v. Balt. Cnty.*, 382 Md. 102, 113 (2004). “In determining the legislative intent of a local ordinance, we assign the words of the ordinance ‘their ordinary and natural meaning and avoid adding or deleting words to impose a meaning inconsistent with the plain language’ of the measure.” *Id.* at 598 (quoting *120 W. Fayette St., LLLP v. Mayor and City Council of Balt. City*, 413 Md. 309, 413 (2010)). “Moreover ‘a court must read the language of the charter or ordinance in context and in relation to all of its provisions.’” *Id.* (quoting *Howard Rsch. Dev. Corp. v. Concerned Citizens for the Columbia Concept*, 297 Md. 357, 364 (1983)).

We begin our analysis by noting that a funeral home, with a crematorium, is authorized as a conditional use. See ZC, Table 10-301 (listing “funeral home” as a

conditional use in a C-2 District); ZC § 1-306(u)(1) (“‘Funeral home’ means an establishment for preparing deceased individuals for burial or cremation.”); ZC § 1-306(u)(2)(ii) (Funeral home includes a crematorium.). Appellants do not take issue with that fact. The issue raised by appellants is whether a crematorium, despite these provisions, is actually an incinerator, which is a prohibited use pursuant to ZC § 1-209.<sup>8</sup>

The term “crematorium” is not defined in the Zoning Code. The Zoning Code provides: “Terms not defined in this Code are to be interpreted in accord with their ordinarily accepted meanings, as their context implies.” ZC § 1-206.

This Court has noted that, “[i]n determining the plain meaning of statutory language, reference to dictionaries is appropriate.” *Mungo v. State*, 258 Md. App. 332, 365 (2023) (quoting *In re Abhishek I.*, 255 Md. App. 464, 473 (2022)), *cert. denied*, 486 Md. 158 (2023). *Merriam-Webster Dictionary* defines the term “crematorium” as “an establishment or structure in which the bodies of the dead are cremated.” *Crematorium*, Merriam-Webster, <https://www.merriam-webster.com/dictionary/crematorium> (last visited July 15, 2024). Cremation has been defined as “the process of reducing a dead body to mostly tiny bits of bone resembling ash that involves exposing the body to flame and intense heat followed by pulverization of bone fragments.” *Cremation*, Merriam-Webster, <https://www.merriam-webster.com/dictionary/cremation> (last visited July 15, 2024). *Accord* Md. Code Ann., Health – General (“HG”) § 5-508(c) (2023 Repl. Vol.)

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<sup>8</sup> Under the Zoning Code, the use of an incinerator is “prohibited in all zoning districts of the City.” ZC § 1-209(b)(2).

(“Cremation’ means the disposition of a dead human body by means of incineration.”). *See also* COMAR 26.11.8.01(B)(9-1) (Defining a “crematory” as “a furnace where a human . . . is burned.”). Thus, we interpret the word crematorium in the Zoning Code as a place, such as a funeral home, where a dead body is cremated.

We turn next to the term incinerator. As indicated, we look at the language of the ordinance to determine the legislature’s intent. *Cherry*, 475 Md. at 598. An incinerator is defined as “a combustion unit that uses controlled flame combustion for the thermal destruction of solid waste, including municipal waste, industrial waste, hazardous waste, special medical waste, or sewage sludge.” ZC § 1-307(s)(1). The terms “solid waste,” “municipal waste,” “industrial waste,” “hazardous waste,” “special medical waste,” and “sewage sludge” are not defined in the Zoning Code. *See* ZC §§ 1-301 thru 1-315.

Solid waste is defined, however, in Baltimore City’s Sanitation Article (the “Sanitation Article”). *See Cherry*, 475 Md. at 598 (“In resolving ambiguities, a court considers the structure of the statute, how it relates to other laws, its general purpose, and the relative rationality and legal effect of various competing constructions.”) (quoting *Lockshin*, 412 Md. at 276). The Sanitation Article defines “solid waste” as: “garbage, rubbish refuse, hazardous waste, asbestos, medical waste, rubble, incinerator ash, ash, trash, and other material generated by commercial, industrial, institutional, and residential establishments.” Balt. City Code, Sanitation, Art. 23 § 11-1(i)(1) (2020).

Looking at the definitions of the terms, we agree with the Board that the city council did not intend “to include crematorium within the definition of an incinerator.” Cremated

human remains are not solid waste; they are not garbage or trash. The Board properly determined that a crematorium was not precluded by the ban on incinerators.

### III.

#### **Abdication of Duty**

Appellants contend that the Board erred as a matter of law when it “improperly abdicated its duties to the MDE.” They assert that the Board failed to evaluate the impact of the conditional use on the health of the community and instead shifted responsibility in that regard to the MDE. This contention is based on the following portion of the Board’s resolution:

The Board also recognizes the community’s objections and concerns regarding air pollution and public health. However, testimony leads the Board to conclude that these concerns will be addressed as part of the Appellant’s air permit application process with the Maryland Department of the Environment (“MDE”). Until MDE issues a permit, the Appellant may not provide any cremation services. The Board heard testimony from expert witnesses that MDE only will issue its permit after it determines that the crematorium will not produce air emissions that MDE considers dangerous. Indeed, the Board does not wish to substitute its own judgment for that of a state agency tasked with protecting the health and safety of its citizens by regulating air pollution.

Appellants argue that it is the Board’s duty to evaluate the impact of emissions to neighboring properties, a finding that is not the responsibility of the MDE. They assert that the “MDE reviews only the emissions of a proposed installation; it is insensitive to the overall air pollution in a community,” and the Board erred in shifting its responsibility.

Appellees disagree. They argue that the Board considered the evidence and the “public health issues related to the crematorium’s emissions,” and it rejected appellants’

contentions, separate from relying on the MDE's future review of M&G's application. They assert that the Board considered Dr. Kinslow's testimony, which "indicate[d] that emissions of the proposed crematorium [would] be well below the MDE and federal allowable limits[,] and that the public health would be protected by compliance with MDE standards and federal standards." Appellees contend that the "Board not only considered this evidence independent of any action that MDE would take but considered and required that the crematorium operated in compliance with applicable state and federal law."

At the outset, we note that, crematoriums must have a State issued permit to operate. *See* Md. Code Ann., Environment ("EN") § 2-401 (2013 Repl. Vol.); COMAR 26.11.02.13(A)(1). "Before accepting an application for a permit," the MDE must ensure that the "proposal has been approved by the local jurisdiction for all zoning and land use requirements." EN § 2-404(b)(1). "Taken together, these provisions indicate a clear intent on the part of the General Assembly to locate environmental permitting with the MDE, and zoning with local government." *Md. Reclamation Assocs., Inc. v. Harford Cnty.*, 414 Md. 1, 40 (2010). "There is no reasonable way to construe these provisions of the Maryland Code as doing anything other than complementing local government's role in planning and zoning." *Id.*

During deliberations, the Board discussed the testimony that the MDE guidelines protected vulnerable citizens, that the Board was not "in a position to second-guess the MDE in establishing [emission] guidelines," and that, if it were to grant M&G's application, the grant "would be approved expressly contingent upon being in accordance



with the MDE guidelines.” In its decision, the Board stated that concerns regarding air pollution and public health would be addressed by the MDE as part of the air permit application process, and crematory services could not be provided until MDE issued a permit. The Board’s decision in this regard, conditioning its approval on M&G’s compliance with MDE regulations, was consistent with its obligation to ensure that the crematorium be operated within applicable state regulations.

Moreover, the record demonstrates that the Board independently satisfied its obligation to consider whether M&G’s conditional use application would be detrimental to or endanger the public health, safety, or welfare as part of its role in planning and zoning. First, the Board recognized Dr. Kinslow’s testimony that M&G’s proposed crematorium was “within the guidelines established by the MDE,” and that those guidelines are designed to protect “the State’s most vulnerable citizens.” The Board concluded that, after “a complete and comprehensive review of all the evidence,” M&G’s proposed crematorium “would not be detrimental to or endanger the public health, safety or welfare.” The contention that the Board abdicated its authority to address the concerns regarding air pollution on health in the community is without merit.

#### IV.

#### **Application of the *Schultz* Test**

Appellants next contend that the Board erroneously applied *Schultz* by neglecting to provide a location-specific analysis, improperly weighing the potential for adverse effects against the limited benefits to the community, and failing to follow its legal

obligations to consider the intent of the Zoning Code. They assert that “[t]he adverse effects of a crematorium within such close proximity to residences, schools, and community gardens far outweighs the benefits of moving cremation services in-house.”

Appellees contend that M&G presented substantial evidence to meet its burden of proof under *Schultz* and ZC § 5-406(b), and appellants failed to present credible evidence of unique adverse effects. They assert that the Board credited Dr. Kinslow’s testimony on the potential public health issues and properly found that appellants “did not present ‘credible evidence . . . that the crematorium’s emissions would be above and beyond those normally associated with such a use in a C-2 district.’”

In addressing those issues, we look to the standard set forth in *Schultz*, which “is widely considered to be the bellwether case regarding conditional uses and special exceptions in the [S]tate of Maryland.” *Clarksville*, 453 Md. at 540.<sup>9</sup> In that case, the Court explained that, when the legislative body has made a judgment that a use is conditionally permitted, there is a presumption of validity, and the use should be denied only where there is evidence of “an adverse effect upon adjoining and surrounding properties unique and different from the adverse effect that would otherwise result from the development of such a special exception use located anywhere within the zone.” *Schultz*, 291 Md. at 15. *Accord People’s Counsel for Balt. Cnty. v. Loyola College in Maryland*, 406 Md. 54, 84 (2008) (“The conditional use or special exception is part of the

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<sup>9</sup> The terms “special exception use” and “conditional use” are understood in “Maryland land use law to be interchangeable.” *Montgomery Cnty. v. Butler*, 417 Md. 271, 275 n.1 (2010). *Accord Schultz v. Pritts*, 291 Md. 1, 3 n.1 (1981).

comprehensive zoning plan sharing the presumption that, as such, it is in the interest of the general welfare, and therefore, valid.”) (quoting *Anderson*, 23 Md. App. at 617). “If [the applicant] shows to the satisfaction of the Board that the proposed use would be conducted without real detriment to the neighborhood and would not actually adversely affect the public interest, [it] has met [its] burden.” *Schultz*, 291 Md. at 11. As the Supreme Court of Maryland has explained:

*Schultz* and its progeny established that if a conditional use applicant demonstrates compliance with the prescribed standards and requirements set forth in the relevant statute or regulation, then there is a presumption that the use is in the interest of the general welfare, a presumption that may only be overcome by probative evidence of unique adverse effects. Absent such probative evidence, it is arbitrary, capricious, and illegal for the Board to deny the conditional use application. See *Schultz*, 291 Md. at 15, 22–23, 432 A.2d at 1327, 1331 (citations omitted).

*Clarksville*, 453 Md. at 543.

As indicated, *supra*, in Part I, a crematorium is permitted as a conditional use of funeral homes in C-2 Districts under the Zoning Code. See ZC, Table 10-301 (“Funeral Home”). Thus, use as a crematorium “is part of the comprehensive zoning plan sharing the presumption that, as such, it is in the interest of the general welfare, and therefore valid.” *Clarksville*, 453 Md. at 541 (quoting *Anderson*, 23 Md. App. at 617). *Accord In re Homick*, 256 Md. App. at 319.

Appellants contend that the Board erred in its analysis of the crematorium’s adverse effects on the community. ZC 5-406(b) provides that the Board may not approve a conditional use unless it finds that: (1) the conditional use “would not be detrimental to or endanger the public health, safety, or welfare”; (2) the use is not prohibited under any other

law, including a relevant Urban Renewal Plan; (3) the use is not “contrary to the public interest”; and (4) “authorization would be in harmony with the purpose and intent of [the] Code.” We have already disposed of the argument that the use is prohibited under another law (the law prohibiting incinerators). We now address whether a crematorium use would be “detrimental to or endanger the public health, safety, or welfare” or “contrary to the public interest.”

Appellants contend that there was insufficient “evidence to refute the Community’s contention that the installation of a crematorium in this neighborhood is incrementally detrimental to the safety and welfare of its residents because of the *unique attributes of this location and its population*,” including that children and older adults who live within 150 feet from the proposed crematorium, and that there were schools within a quarter mile of the proposed use. The Board found, however, that M&G’s proposed crematorium would “not have adverse effects above and beyond those inherently associated with crematoriums.” This conclusion is adequately supported by the testimony of Dr. Kinslow and Ms. Polyak. Dr. Kinslow testified that emissions from “the proposed crematorium w[ould] be well below the state and federal allowable limits” and “w[ould] not result in ambient air concentrations that w[ould] adversely impact the health of the surrounding community.” She stated that readings from the nearest ambient air pollution monitor “ha[d] progressively dropped to values well below [National Ambient Air Quality Standards],” despite an increase in commercial business and population increases in the

surrounding area.<sup>10</sup> She testified that the proposed crematorium “is a minor emission source” and could not be “expected to put the community’s health in unreasonable danger.” Dr. Kinslow equated the emissions to other minor sources such as dry cleaners and barbecue restaurants.

Although Ms. Polyak testified in opposition, the Board stated that it “did not hear any credible evidence from [her] to suggest that the crematorium’s emissions would be above and beyond those normally associated with such a use within a C-2 district.” Ms. Polyak conceded that, if the air quality is meeting standards published by the EPA and adopted by Maryland, “then citizens should be protected from negative health problems due to poor air quality.”

Appellants contend further that “the Board failed to consider the cumulative impact of the unique types of emissions caused by crematoriums on the already poor air quality and health outcomes of the surrounding neighborhoods.” They argue that “the cumulative effect of the additional and unique pollution of a human incinerator to a historically disadvantaged neighborhood replete with health issues would present uniquely adverse effects not in harmony with the general purpose and intent of the [Zoning] Code.” They contend that, when considering issues of public health, safety, welfare, and the public

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<sup>10</sup> Dr. Kinslow’s testimony addressed the Board’s obligation to consider Baltimore City’s 2019 Sustainability Plan (the “Plan”) as part of the Zoning Article’s general intent. *See* ZC § 2-101. The Plan directs agencies to “[a]ssess and monitor how air quality varies across the city to identify neighborhoods in greatest need of improvement, and increase community awareness of how air quality impacts the health of children, the elderly, low income communities, and communities of color.”

interest, the Board must consider “the principles and standards enacted in the Baltimore City Sustainability Plan.”

Appellees contend that the Board is not required to contemplate the “cumulative effect of additional, similar source[s] of emissions” when considering a conditional use application. Instead, they argue, “disapproval is appropriate only where there is evidence of an adverse effect upon adjoining and surrounding properties unique and different from the adverse effect that would otherwise result from such a special exception.”

At the outset, we note that one of the many purposes of the Zoning Code is “to promote the principles and standards enacted in the Baltimore City Sustainability Plan.” ZC § 2-101(4).<sup>11</sup> With respect to the Plan’s Clean Air goals, the plan seeks to expand access for Baltimore City residents to “breathe clean air.”

As indicated, Dr. Kinslow provided uncontroverted testimony that “all [of] the air emission modeling data indicates that the proposed crematorium will be well below the state and federal allowable limits,” and therefore, it “will not result in ambient air concentrations that will adversely impact the health of the surrounding community.” She also testified that “state and national air [quality] data indicate that there has been a constant reduction in particulate matter . . . at the Old Town Fire Station monitor in Baltimore City.” Dr. Kinslow stated that M&G’s proposed crematorium would “be in line with

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<sup>11</sup> On March 18, 2019, the Baltimore City Council approved the 2019 Baltimore Sustainability Plan. *See* BALT. CITY OFFICE OF SUSTAINABILITY, 2019 BALTIMORE SUSTAINABILITY PLAN (2019), available at <https://perma.cc/5S93-8KJA>.

environmental goals set forth in the Baltimore City Sustainability Plan with regard to climate resilience.”

The Board further found credible the testimony that the funeral home “would be providing a much-needed service,” and it found that “restricting [M&G’s] use of its property would not be in harmony with the purpose and intent of Article 32.” As the circuit court correctly noted:

By allowing crematoria as a permitted feature of funeral homes and then making funeral homes permitted of right in some zoning districts and a conditional use in C-2 districts, the City Council has already made a legislative judgment that these levels and types of emissions are not inconsistent with those districts, absent unusual circumstances.

Mem. Op. at 35. The Board added conditions to the approval to address the communities’ needs, including the condition that the funeral home remove any teeth containing mercury amalgams prior to cremation.

Based on our review of Board’s decision and the record before it, we cannot conclude that the Board erred in granting M&G’s conditional use application. Accordingly, we will affirm the judgment of the circuit court affirming the Board’s decision.

**JUDGMENT OF THE CIRCUIT COURT  
FOR BALTIMORE CITY AFFIRMED.  
COSTS TO BE PAID BY APPELLANTS.**

**MARYLAND DEPARTMENT OF ENVIRONMENT  
AIR AND RADIATION ADMINISTRATION**

**FACT SHEET AND TENTATIVE DETERMINATION  
VAUGHN GREENE FUNERAL SERVICES, P.A.**

**PROPOSED INSTALLATION OF ONE (1) HUMAN CREMATORY**

**I. INTRODUCTION**

The Maryland Department of the Environment (the "Department") received an application from Vaughn Greene Funeral Services, P.A. (the "Applicant") on June 8, 2020 for a Permit to Construct for the installation of one (1) new Matthews Environmental Solutions PowerPak II Plus human crematory. The proposed installation will be located at 4905 York Road, Baltimore, Maryland 21212.

A notice was placed in The Baltimore Sun on October 20, 2020 and again on October 26, 2020 announcing scheduled virtual and in-person informational meetings to discuss the application for a Permit to Construct. The virtual informational meeting was held at 7 pm on November 2, 2020. The in-person informational meeting was held at the Chapel at Vaughn Greene Funeral Services, P.A. at 7 pm on November 9, 2020. As required by law, all public notices were also provided to elected officials in all State, county, and municipality legislative districts located within a one-mile radius of the facility's property boundary.

Following the informational meetings, the Department received a large volume of letters and e-mails expressing concern about the proposed project from surrounding neighborhood associations including, but not limited to, Woodbourne-McCabe, Guilford, Rosebank, Bellona, Brackenridge, Lake Evesham, and Radnor-Winston (including Winston-Govans). An additional virtual community meeting with association leaders and local elected officials was held on June 3, 2021.

Community associations challenged the zoning approval received by Vaughn Greene Funeral Services for the installation of a human crematory. On January 4, 2022, the Baltimore City Board of Municipal and Zoning Appeals (BMZA) granted approval for Vaughn Greene Funeral Services, P.A. to install a crematory and on May 16, 2023, the Baltimore City Circuit Court upheld the BMZA zoning decision.

On December 13, 2023, a community meeting was scheduled to provide the public with an update on the status of the air quality permit to construct application submitted by Vaughn Greene. The in-person meeting was held at 7 pm at Sharp Hall at Govans Presbyterian Church, 5828 York Road, Baltimore, Maryland 21212.

The Department has reviewed the application and has made a tentative determination that the proposed facility is expected to comply with all applicable air quality regulations. An in-person public hearing has been scheduled for August 6, 2024 at 5:30 p.m. at the Huber Memorial Church, 5700 Loch Raven Boulevard, Baltimore MD 21239 to provide interested parties with an opportunity to comment on the Department's tentative determination and draft permit conditions, and/or to present other pertinent concerns about the proposed facility.



Notices concerning the date, time and location of the public hearings will be published in the legal section of a newspaper with circulation in general area of the proposed facility and posted on the Department website at <https://mde.maryland.gov/vaughn-greene>. Interested parties may also submit written comments.

If the Department does not receive any comments that are adverse to the tentative determination, the tentative determination will automatically become a final determination. If adverse comments are received, the Department will review the comments, and will then make a final determination with regard to issuance or denial of the permit. A formal response to comments document will be prepared and published with the final determination. A notice of final determination will be published in a newspaper of general circulation in the affected area and posted on the Department website at <https://mde.maryland.gov/vaughn-greene>. The final determination may be subject to judicial review pursuant to Section 1-601 of the Environment Article, Annotated Code of Maryland. Notices will also be sent out to all state and local elected officials in the district where the source is located, state and local elected officials in districts within 1-mile of the source, and all who are considered interested parties by virtue of their participation in past public meetings or who have asked the Department to be listed as an interested party.

## **II. CURRENT STATUS AND PROPOSED INSTALLATION**

### **A. Current Status**

Vaughn Greene Funeral Services, P.A. currently operates a funeral home located at 4905 York Road in Baltimore, Maryland 21212. This location is in Area III as defined in the Code of Maryland Regulations (“COMAR”) 26.11.01.03C.

### **B. Proposed Installation**

Vaughn Greene Funeral Services, P.A. is proposing to install one (1) new Matthews Environmental Solutions PowerPak II Plus, 175 pounds per hour, human crematory in an existing structure at their facility.

The human crematory will be equipped with a secondary combustion chamber capable of meeting at least a 1.0 second retention time and a minimum operating temperature of 1600 °F. The crematory must be equipped with temperature sensors and monitors to continuously measure and record the temperature of the secondary combustion chamber. Exhaust gases must be vented out of a stack at a height of at least 40 feet from the ground to ensure proper dispersion of exhaust gases.

The human crematory will also 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.

### III. APPLICABLE REGULATIONS

The proposed installation is subject to all applicable Federal and State air quality control regulations, including, but not limited to the following:

- (a) COMAR 26.11.01.07C, which requires that the Permittee report to the Department occurrences of excess emissions.
- (b) 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.
- (c) COMAR 26.11.02.09, which requires a permit to construct for all sources of air pollution, including installations and air pollution control equipment, except as listed in COMAR 26.11.02.10.
- (d) 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.
- (e) 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 the submittals.
- (f) 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.
- (g) COMAR 26.11.08.01B(9-1) – a “Crematory” means a furnace where a human or animal corpse is burned with:
  - (1) The container or bag in which the human or animal corpse is placed or transported; and
  - (2) The animal bedding, if applicable.
- (h) COMAR 26.11.08.04B, which prohibits visible emissions other than uncombined water.

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.
- (i) 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.
  - (j) 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.
  - (k) COMAR 26.11.15.06, which prohibits the discharge of toxic air pollutants to the extent that such emissions would unreasonably endanger human health.

#### **IV. GENERAL AIR QUALITY**

The U.S. Environmental Protection Agency (EPA) has established primary and secondary National Ambient Air Quality Standards (NAAQS) for six (6) criteria pollutants, i.e., sulfur dioxide, particulate matter, carbon monoxide, nitrogen dioxide, ozone, and lead. The primary standards were established to protect public health, and the secondary standards were developed to protect against non-health effects such as damage to property and vegetation.

The Department utilizes a statewide air monitoring network, operated in accordance with EPA guidelines, to measure the concentrations of criteria pollutants in Maryland’s ambient air. The measurements are used to project statewide ambient air quality, and currently indicate that Baltimore City complies with the NAAQS for sulfur dioxide, particulate matter, carbon monoxide, nitrogen dioxide, and lead.

For several decades, ground-level ozone presented a problem for the entire Baltimore metropolitan area. In 2023, for the first time in over 30 years, Maryland measured ozone at levels that complied with the federal ambient air quality standard. Maintaining that status is an on-going endeavor. The primary contributors to the formation of ozone are emissions of oxides of nitrogen, primarily from combustion equipment, including large power plants west of Maryland, and emissions of volatile organic compounds (VOC) such as paint solvents and gasoline vapors. Small combustion sources, collectively, also contribute to ozone formation. In this regard, while the federal Clean Air Act (and state regulatory requirements that flow from that Act) does not prohibit new or modified small pollution sources from being constructed, such sources may need to meet pollution control requirements established to reasonably control emissions through the use of applicable equipment technology.

With regard to toxic air pollutants (TAPs), screening levels (i.e., acceptable ambient concentrations for toxic air pollutants) are generally established at 1/100 of allowed worker exposure levels (TLVs)<sup>1</sup>. The Department has also developed additional screening levels for carcinogenic compounds. The additional screening levels are established such that continuous exposure to the subject TAP at the screening level for a period of 70 years is expected to cause an increase in lifetime cancer risk of no more than 1 in 100,000.

## **V. ENVIRONMENTAL JUSTICE ANALYSIS**

The concept behind the term environmental justice (EJ) is that regardless of race, color, national origin, or income, all Maryland residents and communities should have an equal opportunity to enjoy an enhanced quality of life. How to assess whether equal protection is being applied is the challenge.

Communities surrounded by a disproportionate number of polluting facilities puts residents at a higher risk for health problems from environmental exposures. Extensive research has documented that health disparities exist between demographic groups in the United States, such as differences in mortality and morbidity associated with factors that include race/ethnicity, income, and educational attainment. It is important that residents who may be adversely affected by a proposed source be aware of the current environmental issues in their community in order to have meaningful involvement in the permitting process. Resources may be available from government and private entities to ensure that community health is not negatively impacted by a new source located in the community.

The Maryland General Assembly passed HB 1200, effective October 1, 2022, as Chapter 588 of the Laws of 2022, which amends the requirements of specific sections of Title 1 of the Environment Article related to the processing of permit applications. The law enhances the efforts that MDE is already doing to incorporate diversity, equity and inclusion into our mission to help overburdened and underserved communities with environmental issues. In accordance with the requirements of HB 1200/Ch. 588 of 2022, the an environmental justice (EJ) Score was determined for the census tract in which the proposed source is located using the Maryland EJ Screening Tool. The EJ Score, expressed as a statewide percentile, was shown to be 95%. This score considers three demographic indicators, minority population above 50%, poverty rate above 25% and limited English proficiency above 15%, to identify underserved communities. Multiple environmental health indicators are used to identify overburdened communities.

An EJ Score of 95% indicates that the proposed installation would be located in an area that is disproportionately impacted by environmental and public health hazards resulting in a higher risk of health problems from environmental exposures.

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<sup>1</sup> TLVs are threshold limit values (exposure limits) established for toxic materials by the American Conference of Governmental Industrial Hygienists (ACGIH). Some TLVs are established for short-term exposure (TLV – STEL), and some are established for longer-term exposure (TLV – TWA), where TWA is an acronym for time-weight average.

As a result, the Department has included a number of additional protective measures in the draft air quality permit to construct for the proposed crematory to further ensure compliance with applicable air quality standards. In addition to minimum retention time, temperature, and stack height requirements to ensure complete combustion of human remains and proper dispersion of combustion gases, the draft permit for Vaughn Greene Funeral Services, P.A. includes the following:

- (1) A requirement that the crematory 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.
- (2) A requirement to develop and maintain an Operations and Maintenance Plan approved by the Department. A properly operated and maintained crematory will not result in smoke, odors, or excess emissions.
- (3) A requirement to comply with all local zoning conditions as specified by the Baltimore City Board of Municipal and Zoning Appeals (BMZA) limiting the type of human remains that can be processed in the crematory unit to only those remains owned, operated, or controlled by Vaughn Greene Funeral Services, P.A. and only human remains that have had all teeth containing mercury amalgams removed.
- (4) A requirement to conduct a Method 9 opacity observation for a modified period of one hour during a cremation to assess the effectiveness the crematory's opacity sensor and to determine when operations require adjustments to ensure compliance with applicable visible emissions standards.
- (5) A requirement to conduct stack emissions testing to demonstrate compliance with applicable particulate matter and metal toxic air pollutant standards. In lieu of stack testing, the Applicant may provide a stack testing report demonstrating compliance that was conducted within the last five years by a third party stack testing company on an identical crematory unit.

## **VI. COMPLIANCE DEMONSTRATION AND ANALYSIS**

The proposed installation must comply with all State imposed emissions limitations and screening levels, as well as the NAAQS. The Department has conducted an engineering and air quality review of the application. A detailed summary of methods used in analysis is included in the attached Appendix.

**A. Estimated Emissions** - The maximum emissions of criteria pollutants and volatile organic compounds from the proposed installation, are listed in Table I. Criteria pollutant and volatile organic compound emissions occur from the combustion of natural gas in the burners used to heat the crematory. These emissions are also emitted from the cremation process itself. Worst case criteria pollutant emissions from the crematory are well below major source emissions thresholds applicable in Baltimore City.

- B. Compliance with National Ambient Air Quality Standards** – The maximum ground level concentrations for the criteria pollutants regulated under the Clean Air Act by the NAAQS—particulate matter, sulfur dioxide, oxides of nitrogen, and carbon monoxide based on the emissions from the proposed installation are listed in column 2 of Table II. The combined impact of the proposed installation, and the ambient background concentration for each pollutant shown in column 3 of Table II, is less than the NAAQS for each pollutant shown in column 4. Emissions of oxides of nitrogen and volatile organic compounds from the proposed crematory are each less than 1 ton per year, much less than the federal major source threshold of 25 tons per year. Emissions from the proposed crematory will not significantly impact the local ground level ozone concentration. Ground level ozone concentrations are most influenced by regional emissions of ozone precursor emissions from sources throughout much of Maryland and large emission sources, such as power plants located in other states that are west and northwest of Maryland.
- C. Compliance with Air Toxics Regulations** – The premises wide toxic air pollutants of concern that would be emitted from this facility are listed in column 1 of Table III. The predicted maximum off-site ambient concentrations of these toxic air pollutants are shown in column 4 of Table III, and in each case the maximum concentration is less than the corresponding screening level for the toxic air pollutant shown in column 3.

Although all mercury amalgams will be required to be removed from human remains prior to cremation, the Department has conservatively assumed each cremation still contains mercury as a worst-case operating scenario. This significantly limits the amount of cremations the facility can conduct in any 8-hour period and annually.

In order to maintain compliance with Maryland's toxic air pollutant ambient impact requirements, Vaughn Greene Funeral Services, P.A. must comply with the following premises wide operational limits:

- (a) The Permittee shall only cremate human remains in the Matthews Environmental Solutions, PowerPak II Plus, 175 pounds per hour, crematory.
- (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 or PVC pipes.
- (d) The Permittee shall not combust any hazardous waste, or hospital, medical, and infectious waste as defined in COMAR 26.11.08.01B(18).

## **VI. TENTATIVE DETERMINATION**

Based on the above information, the Department has concluded that the proposed installation will comply with all applicable Federal and State air quality control requirements. In accordance with Section 1-604 of the Environment Article, Annotated Code of Maryland, the Department has made a tentative determination to issue the Permit to Construct.

**TABLE I  
PROJECTED MAXIMUM EMISSIONS FROM THE PROPOSED INSTALLATION**

POLLUTANT	PROJECTED MAXIMUM EMISSIONS		MAJOR SOURCE THRESHOLD
	(lbs/day)	(tons/year)	(tons/year)
Oxides of Nitrogen (NO <sub>x</sub> ) (includes Nitrogen Dioxide – NO <sub>2</sub> )	2.9	0.5	25
Carbon Monoxide (CO)	2.4	0.4	100
Sulfur Dioxide (SO <sub>2</sub> )	1.0	0.2	100
Total Particulate Matter (PM) (includes PM-10 and PM-2.5)	1.5	0.3	100
Volatile Organic Compounds (VOC)	1.4	0.3	25

**TABLE II  
PROJECTED IMPACT OF EMISSIONS OF CRITERIA POLLUTANTS FROM THE  
PROPOSED INSTALLATION ON AMBIENT AIR QUALITY**

POLLUTANTS	MAXIMUM OFF-SITE GROUND LEVEL CONCENTRATIONS CAUSED BY EMISSIONS FROM PROPOSED PROCESS (µg/m <sup>3</sup> )	BACKGROUND AMBIENT AIR CONCENTRATIONS (µg/m <sup>3</sup> )	NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS) (µg/m <sup>3</sup> )
Nitrogen Dioxide (NO <sub>2</sub> )	annual avg → 0.8	annual avg → 17	annual avg → 100
Carbon Monoxide (CO)	1-hour max → 7.8 8-hour max → 5.4	1-hour max. → 2177 8-hour max. → 1489	1-hour max. → 40,000 8-hour max. → 10,000
Sulfur Dioxide (SO <sub>2</sub> )	24-hour max → 1.3 annual avg → 0.3	24-hour max → 4.2 annual avg → 0.8	24-hour max → 366 annual avg → 78.5
Particulate Matter (PM <sub>10</sub> )	24-hour max → 1.8	24-hour max → 23	24-hour max → 150
Particulate Matter (PM <sub>2.5</sub> )	24-hour max → 1.2 annual avg → 0.2	24-hour max → 24 annual avg → 7	24-hour max → 35 annual avg → 12

**TABLE III  
PREDICTED MAXIMUM OFF-SITE AMBIENT CONCENTRATIONS FOR  
TOXIC AIR POLLUTANTS EMITTED FROM THE FACILITY**

<b>Toxic Air Pollutant</b>	<b>PROJECTED WORST-CASE FACILITY-WIDE EMISSIONS (lbs/hr)</b>	<b>SCREENING LEVELS (<math>\mu\text{g}/\text{m}^3</math>)</b>	<b>PREDICTED MAXIMUM OFF-SITE GROUND LEVEL CONCENTRATIONS (<math>\mu\text{g}/\text{m}^3</math>)</b>
Acenaphthene (CAS No. 83329)	0.0000001	20.3 (8-hr)	0.000002 (8-hr)
Acenaphthylene (CAS No. 208968)	0.0000007	24.6 (8-hr)	0.000009 (8-hr)
Acetaldehyde (CAS No. 75070)	0.0001	450 (1-hr) 2300 (8-hr) 5 (annual)	0.01 (1-hr) 0.002 (8-hr) 0.0002 (annual)
Anthracene (CAS No. 120127)	0.0000003	20 (8-hr)	0.000004 (8-hr)
Antimony (CAS No. 7440360)	0.00003	5 (8-hr)	0.0004 (8-hr)
Arsenic (CAS No. 7440382)	0.00006	0.1 (8-hr) 0.002 (annual)	0.0008 (8-hr) 0.0001 (annual)
Barium (CAS No. 7440393)	0.00003	5 (8-hr)	0.0004 (8-hr)
Benzo (g,h,i) perylene (CAS No. 191242)	0.00000004	20 (8-hr)	0.0000006 (8-hr)
Beryllium (CAS No. 7440417)	0.000003	0.0005 (8-hr) 0.004 (annual)	0.00004 (8-hr) 0.000004 (8-hr)
Cadmium (CAS No. 7440439)	0.0002	0.02 (8-hr) 0.006 (annual)	0.003 (8-hr) 0.0003 (annual)
Chromium (CAS No. 7440473)	0.00003	5 (8-hr)	0.0004 (8-hr)
Chromium VI (CAS No. 18540299)	0.00001	0.01 (8-hr) 0.0008 (annual)	0.0002 (8-hr) 0.00002 (annual)
Cobalt (CAS No. 7440484)	0.00001	0.2 (8-hr)	0.0002 (8-hr)
Copper (CAS No. 7440508)	0.00003	2 (8-hr)	0.0004 (8-hr)
Fluoranthene (CAS No. 206440)	0.0000002	82 (8-hr)	0.000003 (8-hr)
Fluorene (CAS No. 86737)	0.000006	20 (8-hr)	0.0000004 (8-hr)
Formaldehyde (CAS No. 50000)	0.00003	20.3 (8-hr) 0.8 (annual)	0.0005 (8-hr) 0.00005 (annual)
Hydrogen Chloride (CAS No. 7647010)	0.3	29.8 (1-hr) 165 (8-hr)	23.4 (1-hr) 4 (8-hr)
Hydrogen Fluoride (CAS No. 7664393)	0.001	16.4 (1-hr) 4.1 (8-hr)	0.09(1-hr) 0.02 (8-hr)
Lead (CAS No. 7439921)	0.002	0.5 (8-hr)	0.02 (8-hr)
Mercury (CAS No. 7439976)	0.00002	0.1 (8-hr)	0.07 (8-hr)
Molybdenum (CAS No. 7439987)	0.0002	5 (8-hr)	0.0002 (8-hr)
Naphthalene (CAS No. 91203)	0.00007	786 (1-hr) 524 (8-hr)	0.005 (1-hr) 0.0009 (8-hr)
Nickel (CAS No. 7440020)	0.00004	1 (8-hr)	0.0005 (8-hr)



<b>Toxic Air Pollutant</b>	<b>PROJECTED WORST-CASE FACILITY-WIDE EMISSIONS (lbs/hr)</b>	<b>SCREENING LEVELS (<math>\mu\text{g}/\text{m}^3</math>)</b>	<b>PREDICTED MAXIMUM OFF-SITE GROUND LEVEL CONCENTRATIONS (<math>\mu\text{g}/\text{m}^3</math>)</b>
Phenanthrene (CAS No. 85018)	0.000002	9.8 (8-hr)	0.00003 (8-hr)
Pyrene (CAS No. 129000)	0.0000002	20 (8-hr)	0.000002 (8-hr)
Selenium (CAS No. 7782492)	0.00004	2 (8-hr)	0.0006 (8-hr)
Silver (CAS No. 7440224)	0.000007	0.1 (8-hr)	0.0001 (8-hr)
Thallium (CAS No. 7440280)	0.00009	0.2 (8-hr)	0.001 (8-hr)
Vanadium (CAS No. 7440622)	0.00006	0.5 (8-hr)	0.0008(8-hr)
Zinc (CAS No. 7440666)	0.0004	1000 (1-hr) 500 (8-hr)	0.03 (1-hr) 0.006 (8-hr)
Total Dioxins and Furans (CAS No. 174016)	0.000000001	0.0008 (8-hr)	0.00000002 (8-hr)

## APPENDIX

### EMISSIONS METHODOLOGY FOR TABLE I PROJECTED MAXIMUM EMISSIONS FROM THE PROPOSED INSTALLATION

#### Combustion Emissions from Natural Gas Fired Burners

U.S. EPA approved AP-42 emissions factors, Table 1.4-1 and Table 1.4-1, for natural gas combustion were used to calculate worst-case emissions from the burners. Total maximum rated heat input for the burners is 2.2 million Btu per hour.

#### Combustion Emissions from the Cremation Process

For emissions from the cremation process, the most conservative emissions factors were used from the following sources:

1. The U.S. EPA's 2020 National Emissions Inventory Technical Support Document for Cremation for emissions of total particulate matter.
2. The Bay Area Air Quality Management District, Engineering Division – Permit Manual, pages 203-206, for emissions of oxides of nitrogen.
3. U.S. EPA WebFIRE approved emissions factors for cremation for emissions of oxides of sulfur, carbon monoxide, and volatile organic compounds.

### MODELING METHODOLOGY FOR TABLE II PROJECTED IMPACT OF EMISSIONS OF CRITERIA POLLUTANTS FROM THE PROPOSED INSTALLATION ON AMBIENT AIR QUALITY

The U.S. EPA's SCREEN3 computer model, which provides conservative estimations concerning the impact of pollutants on ambient air quality, was used to predict the maximum concentration of each pollutant listed in Table II beyond the facility's nearest property boundary. As 2023 complete monitoring data is not yet finalized, background ambient concentrations from 2022 were obtained from the Department's air quality network as follows:

NO<sub>2</sub> and PM<sub>10</sub> and PM<sub>2.5</sub> → Lake Montebello Air Monitoring Station, 3900 Hillen Road, Baltimore City

CO and SO<sub>2</sub> → Essex Monitoring Station, 600 Dorsey Avenue, Baltimore County

### EMISSIONS AND MODELING METHODOLOGY FOR TABLE III PREDICTED MAXIMUM OFF-SITE AMBIENT CONCENTRATIONS FOR TOXIC AIR POLLUTANTS EMITTED FROM THE FACILITY

The values in Table III represent maximum facility-wide emissions of toxic air pollutants during any 1-hour period of facility operation. For emissions of toxic air pollutants that would be emitted from the cremation process, the most conservative emissions factors were used from the following sources:

1. The U.S. EPA's 2020 National Emissions Inventory Technical Support Document for Cremation for emissions of acenaphthylene, arsenic, benzo (g,h,i) perylene, cadmium, chromium (VI), cobalt, hydrogen chloride, and naphthalene.
2. The Bay Area Air Quality Management District, Engineering Division – Permit Manual, pages 203-206, for emissions of acetaldehyde and formaldehyde.
3. The Bay Area Air Quality Management District, Engineering Division – Addendum to Mercury Emissions from Cremation of Human Remains, for emissions of mercury.

The U.S. EPA's SCREEN3 computer model was used to predict the maximum concentration of each toxic air pollutant listed in Table III beyond the facility's nearest property boundary. This concentration was then compared to the Department's air toxics screening levels for each toxic air pollutant.

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- Part B – Applicable Regulations
- Part C – Construction Conditions
- Part D – Operating and Monitoring Conditions
- Part E – Notification and Testing Requirements
- Part F – Record Keeping and Reporting Requirements
- Part G – Temporary Permit-To-Operate Requirements

This permit covers the following registered installations:

<b>ARA Registration No.</b>	<b>Description</b>	<b>Installation Date</b>
510-3791-1-0478	Matthews Environmental Solutions PowerPak II Plus, 175 pounds per hour, human crematory	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 or PVC pipes.
  - (d) The Permittee shall not combust any hazardous waste, or hospital, medical, and infectious waste as defined in COMAR 26.11.08.01B(18).
- (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 may be cremated on the premises;
    - (b) Vaughn Greene Funeral Services will remove all teeth containing mercury amalgams prior to cremation; and
    - (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:



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- (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.
  - (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.

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- (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 (as PM-10) 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) In lieu of conducting performance tests, the Permittee may submit Method 5 and Method 29 performance test results conducted within the last five years by a third-party stack testing company on an identical crematory unit.
  - (d) 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;
  - (c) all operating data, including operating schedules and production data, that were used in determinations of emissions;

**VAUGHN GREENE FUNERAL SERVICES, P.A.**  
**PERMIT-TO-CONSTRUCT CONDITIONS**  
**PERMIT No. 510-3791-1-0478**

- (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.

**VAUGHN GREENE FUNERAL SERVICES, P.A.**  
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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.

**VAUGHN GREENE FUNERAL SERVICES, P.A.**  
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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.



12140 Wickchester Lane, Suite 300  
Houston, TX 77079  
(713) 621-3550  
Certificate of Authorization No. F-1545  
Certification Expiration Date: September 30, 2025

October 22, 2024

Neil Lanzi  
Wright, Constable & Skeen, L.L.P.  
102 West Pennsylvania Avenue, Suite 406  
Towson, MD 21204

Re: Rimkus Matter No: 100058997  
Subject: **Supplemental Report 4 - Summary of Observations**

Dear Mr. Lanzi:

Rimkus was retained to review, and update where indicated, the information related to environmental toxicology that was provided in the Thought Summary and three Supplemental Thought Summaries provided by Dr. Carla Kinslow, Director of Toxicology and Food Safety at Rimkus. These four Summaries were issued on August 4, 2021; August 20, 2021; September 15, 2021; and August 6, 2024, respectively.<sup>1,2,3,4</sup>

These Summaries provide scientific technical support in a matter regarding modeled air emissions from a crematorium proposed to be installed at the Vaughn Greene Funeral Home (Vaughn Greene) located at 4905 York Road in Baltimore City, Maryland.

In response to your request for a summary of observations from these reports, I have provided the following Summary of Observations.

I offer the following Fourth Supplemental and Summary of Observations to a reasonable degree of scientific certainty in my fields of expertise, including toxicology, risk assessment, and related fields.

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<sup>1</sup> C. Kinslow, Rimkus' Thought Summary August 4, 2021.

<sup>2</sup> C. Kinslow, Rimkus' Supplemental Thought Summary, August 20, 2021.

<sup>3</sup> C. Kinslow, Rimkus' Second Supplemental Report of Findings, September 15, 2021.

<sup>4</sup> C. Kinslow, Rimkus' Third Supplemental and Update of Thought Summaries, August 6, 2024.

## Summary of Observations

In the previously published reports, I have shown through sound scientific reasoning, supported by peer-reviewed literature and several years of regulatory data, that each of the accusations set forth by the opposition is baseless. The following is a short summary of these conclusions:

- The crematory air emissions are not expected to unreasonably endanger the community.<sup>5</sup>
- These emissions are expected to be well below all applicable regulatory health-based thresholds.<sup>6</sup>
- Vaughn Greene does not engage in “crematory recycling”.
- Building this crematorium will be in line with environmental goals set forth in the Baltimore City Sustainability Plan regarding the Climate and Resilience.<sup>7</sup>
- The Maryland Department of the Environment (MDE) uses very conservative and health-protective threshold values in their assessments that are designed to protect the community, even sensitive groups.<sup>8, 9</sup>
  - This further bolsters the confidence that these emissions will not unreasonably endanger the community.<sup>10</sup>
- There is no scientifically sound information that would support that the emissions from the crematorium would contribute to pediatric asthma, allow for the spread of COVID, put mercury into the air, reduce the air quality in the area, or be an increased health risk to the neighboring community.<sup>11, 12</sup>
  - The opposition to the permit has made several public statements that mischaracterize the emissions of the crematorium relative to potential harm. They have not shown any plausible causal link from these emissions to health concerns.<sup>13</sup> As such, their allegations are baseless.

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<sup>5</sup> C. Kinslow, Rimkus’ Thought Summary August 4, 2021.

<sup>6</sup> C. Kinslow, Rimkus’ Thought Summary August 4, 2021.

<sup>7</sup> C. Kinslow, Rimkus’ Second Supplemental Report of Findings, September 15, 2021.

<sup>8</sup> C. Kinslow, Rimkus’ Thought Summary August 4, 2021.

<sup>9</sup> C. Kinslow, Rimkus’ Second Supplemental Report of Findings, September 15, 2021.

<sup>10</sup> C. Kinslow, Rimkus’ Thought Summary August 4, 2021.

<sup>11</sup> C. Kinslow, Rimkus’ Second Supplemental Report of Findings, September 15, 2021.

<sup>12</sup> C. Kinslow, Rimkus’ Thought Summary August 4, 2021.

<sup>13</sup> Council Member Conway Press Conference, September 30, 2024.



- The opposition to the permit has indicated that there have been numerous crematoriums that have been permitted in Maryland.<sup>14</sup> Importantly, even though crematoriums have continued to be permitted, the particulate matter (PM) values have continuously dropped.<sup>15</sup>
  - This indicates that MDE’s permitting process is an effective tool at protecting the people of Maryland. By using this permitting process, crematoriums are not adversely impacting the air of Maryland, even though the numbers of crematoriums have increased.
- The opposition has suggested that the default value used in estimating air emissions is “out of date” yet fails to show that the default value is not protective of the community. Thus, these statements are empty, baseless, and void of any scientific justification or support.
- The data clearly show that the PM concentrations have decreased in the ambient air while this default value was used for air permitting. The fact that the PM concentrations continue to fall while the same default values and processes are being used indicates that these methods are working to reduce the air pollution in Baltimore City. These values have dropped so much that the PM values are even below the new lower threshold value set by the EPA.<sup>16</sup>
- The MDE has applied several of its tools to ensure that the permit for the Vaughn Greene crematorium is safe for the community.
  - These tools include additional permit requirements, which add layers of caution and ensure that the emissions are below a health concern. They have also included review public comments and an Environmental Justice (EJ) assessment.
  - These requirements considered EJ considerations and included limits on the rate of cremations, added stack testing, not allowing visible smoke, reporting actual emission, and added the recordkeeping for these additions—additional costs and burdens that Vaughn Greene readily accepted.<sup>17</sup>

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<sup>14</sup> Maryland Department of the Environment Air and Radiation Administration, Public Hearing Notice of Tentative Determination Concerning Air Quality Permit Application, Vaughn Green Funeral Services, PA, August 7, 2024.

<sup>15</sup> C. Kinslow, Rimkus’ Second Supplemental Report of Findings, September 15, 2021.

<sup>16</sup> C. Kinslow, Rimkus’ Third Supplemental and Update of Thought Summaries, August 6, 2024.

<sup>17</sup> C. Kinslow, Rimkus’ Third Supplemental and Update of Thought Summaries, August 6, 2024.

- The crematory is designed and used solely for the burning of human remains. This is not a hazardous waste incinerator.<sup>18,19</sup> By limiting the material burned to only human remains, the emissions are more predictable. Introduced sources of mercury fillings and pacemakers will be removed prior to cremation.
  - Thus, any suggestion that the types of emissions coming from the crematory are the same as those of a hazardous solid waste incinerator is misleading to the public and not supported by scientific data.
  - A hazardous waste incinerator and a crematory are not comparable in size or types of source emissions.
- The opposition has not shown that any neighboring backyard will be exposed to emissions from the crematory that will exceed any health concern.
- The opposition has made several public statements that allege that the permit for the crematorium will be harmful, but at no time have they provided any scientific evidence to support these statements. Thus, they are mischaracterizing the emissions of the crematorium relative to potential harm. They have not shown any plausible causal link from these emissions to health concerns.<sup>20</sup> As such, their allegations are baseless.

This report was prepared for the exclusive use of Wright, Constable & Skeen, L.L.P. and is not intended for any other purpose. Our report was based on the information available to us at this time. The opinions and conclusions herein are based on sufficient facts or data; they are the product of our analysis utilizing reliable, generally accepted principles and methods in our applicable professional field; and they reflect a reliable application of these principles and methods to the facts of this matter. Should additional information become available, we reserve the right to determine the impact, if any, the new information may have on our opinions and conclusions and to revise our opinions and conclusions if necessary and warranted.

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<sup>18</sup> [https://www.epa.gov/system/files/documents/2024-05/62.1\\_0.pdf](https://www.epa.gov/system/files/documents/2024-05/62.1_0.pdf)

<sup>19</sup> [https://www.epa.gov/sites/default/files/2015-04/documents/a\\_citizens\\_guide\\_to\\_incineration.pdf](https://www.epa.gov/sites/default/files/2015-04/documents/a_citizens_guide_to_incineration.pdf)

<sup>20</sup> Council Member Conway Press Conference, September 30, 2024.

Thank you for allowing us to provide this service. If you have any questions or need additional service, please call.

Sincerely,  
Rimkus

<b>Carla Kinslow</b>	Digitally signed by: Carla Kinslow DN: CN = Carla Kinslow C = US O = Unaffiliated Date: 2024.10.22 14:08:09 - 08'00'
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Carla Kinslow, Ph.D.  
Director, Toxicology and Food Safety

Attachment: Curriculum Vitae

# Curriculum Vitae

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## **Carla J. Kinslow, Ph.D.**

she/her/hers

Director, Toxicology and Food Safety Practice

12140 Wickchester Lane, Suite 300  
Houston, TX 77079  
650 N.E. Holladay Street, Suite 1600  
Portland, OR 97232



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[ckinslow@rimkus.com](mailto:ckinslow@rimkus.com)

## **Background**

Dr. Carla Kinslow holds a doctorate in Biomedical Sciences, Cell Biology/Molecular Toxicology with over 31 years of biomedical, regulatory, and environmental experience.

She has expertise in inhalation and oral toxicology; derivation of regulatory screening values for oral and inhalation exposure, toxicogenomics; toxicological risk assessment and communication of such risk to diverse stakeholders; human health impacts analysis from emission events; air, soil, and water monitoring data; modeling data related to ambient air and drinking water quality; water contamination from oil and gas operations; and stakeholder communication.

She specializes in risk-based evaluation of air, soil, and groundwater toxicology under the USEPA, as well as state and federal guidelines. She has served as manager for various regulatory projects where she helped design and implement air monitoring networks, groundwater monitoring projects, and remediation scopes, with subsequent assessment and communication of such human health impacts based on collected data. She has extensive experience in the evaluation of drug and alcohol impairment and “DRAM” shop cases.

Dr. Kinslow also has extensive experience in the evaluation of pesticide/herbicide overspray cases as well as health risks based on genetic predisposition to disease from environmental, occupational, and pharmaceutical exposures. Notably, Dr. Kinslow is also an environmental microbiologist and regularly conducts indoor air quality mold investigations and beer contamination evaluations.

## **Professional Engagements**

### **• Water**

- Remediation Support – Drafted several Affected Property Assessment Reports (APARs) for submission to the Texas Commission on Environmental Quality (TCEQ), conducted fieldwork for soil and groundwater sampling, and water well surveys.

- Drinking Water – Evaluation of monitoring data with regard to human impacts from chromium in public drinking water systems.
- **Risk Communication**
  - MTBE Ground Water Contamination – Texas, Community engagement about groundwater contamination as well as accidental releases from chemical plants.
  - Hazard Assessments – Texas, Served as a regulatory and community liaison, which included a presentation to the La Porte, TX community regarding odor toxicology after a fatal release of methyl mercaptan.
  - Hazard evaluation and toxicological impacts assessment of data gathered around oil and natural gas drilling facilities.
  - Water/Air/Odors Education – Houston, Beaumont, TX, Conducted over 20 presentations for Community Advisory Panels (CAPs) across the Houston ship channel and Beaumont areas. Topics covered – accidental release of benzene in water and air, odors, and long-term air monitoring data.
- **Inhalation**
  - Indoor Air Contaminants – Alternative causation evaluation for workers compensation cases involving respiratory issues attributed to indoor air contaminants.
  - Ambient air and pollution exposure risk assessment based on modeling data and known regulatory guidelines.
  - Fabric Guard Spray – Evaluation of human impacts from accidental inhalation exposure of hydrocarbons and fluorocarbons from fabric guard spray.
  - Workers Compensation – Alternative causation evaluation for workers compensation cases involving respiratory issues attributed to indoor air contaminants.
  - Asphyxiation from gasoline fumes.
  - Due Diligence/M&A Vapor Intrusion – Completed vapor intrusion assessments of a multi-use property and evaluated potential impacts of contamination of groundwater for future development. Human and ecological risk associated with reclaimed water.
  - Evaluation of human health impacts based on ambient air data as well as modeled data.
  - Designed ambient air monitor placement criteria for the TCEQ.
- **Alcohol/Drug**
  - Drug impairment evaluations in driving and workers compensation - marijuana, cocaine, alcohol, and prescription drugs.
  - Evaluation of blood alcohol concentration (BAC) as it relates to impairment, both in the presence of and absent of other drugs, including cocaine and marijuana.
  - Determination of possible impairment from alcohol before entry, at the point of sale, and after leaving an establishment (i.e., “DRAM shop” projects).
  - Evaluation of possible contribution of marijuana and THC to driving impairment.
  - Contribution of prescription opiates in causing death to an individual.
- **Beer Contamination - Microbiology**
  - Brewery contamination and trace-back investigation for initial insurance as well as subrogation claims.
- **Environmental Microbiology**
  - Human and Animal Food Investigation - Source trace-back in salmonella and E.coli contamination cases – identifying the environmental source of contaminated food.

- Mold investigations and alternative causations relative to health complaints.
- **Other**
  - Herbicide/Pesticide Overspray – Evaluation of possible pesticide and herbicidal overspray for wheat and potato fields.
  - Benzene/Asbestos – Evaluation of molecular mechanisms responsible for predisposition to cancer from low-level exposure to benzene and asbestos.
  - Evaluation of human toxicity related to caustic injury.
- **Oil/Gas/Manufacturing**
  - Toxicological Risk and Human Impacts Assessment – Evaluation of modeling impacts from air emissions, review of accidental, industrial emissions data, and evaluation of possible human health impacts from the ingestion of groundwater contaminants.
  - Barnett Shale – Dallas/Ft. Worth, TX, Developed and implemented air monitor location criteria for the TCEQ Barnett Shale air monitoring program.
  - Manufacturing Facilities – Toxicological assessment of impacts from odorous manufacturing facilities including refineries, oil and animal rendering facilities, and landfills.
- **Regulatory**
  - Derivation of state-approved, human-health regulatory screening values using TCEQ and US Environmental Protection Agency (EPA)-specific guidance. These included a new cobalt screening value for soil and groundwater, which resulted in the TCEQ changing its regulatory guidance for cobalt.
  - Tox21 Guidance – Drafted state of science reports for benzene and asbestos-based on new Tox21 guidance for the weight of evidence approach to literature search and documentation.
  - Texas Refinery QRA – Conducted reviews of quantitative risk assessment (QRA) from a refinery and completed state-specific QRAs under the Texas remediation program.
  - Toxicological review of literature related to antibacterial chemicals used in hand soap focused on enhancing a clients' document submittal to the FDA.
  - Regulatory Compliance – Texas, Conducted reviews of current toxicological screening values (air, water, soil) and reviewed literature; prepared summaries of current benzene, toluene, ethylbenzene, and xylene (BTEX) and carbon monoxide (CO) National Ambient Air Quality Standards (NAAQS) data.
- **Tobacco**
  - Tobacco Products – Developed mode of action summaries for ten tobacco products.
  - Industrial Hygiene – Conducted due diligence auditing for biomedical laboratories for mergers and acquisitions.

## Professional Experience

- **Rimkus** **2016 – Present**
  - **Director, Toxicology and Food Safety Practice**  
Responsible for division oversight and technical support to the staff. Duties include the evaluation of human health impacts from drugs, chemical exposure in the environment or workplace, and brewery/beer contamination, as well as providing litigation, scientific liaison, or environmental regulatory toxicological support. Areas of expertise include inhalation toxicology, marijuana, remediation, pesticide/herbicide overspray, environmental microbiology, human health-based risk assessment, toxic mold, lung cancer, vapor intrusion, and odor issues.

- **Ramboll Environ, Inc.** **2013 – 2015**

  - **Manager/Toxicologist – Health Science Division**  
Responsible for providing senior toxicological support to the division. Duties included the evaluation of human health impacts from environmental chemical and pharmaceutical exposure, as well as litigation, scientific liaison, environmental regulatory toxicological support. Areas of expertise included inhalation toxicology, soil and water remediation assessment, risk assessment, toxic mold, lung cancer, vapor intrusion, and odor issues. Served as scientific liaison during public stakeholder meetings as well as conducted risk communication presentations to communities in the Houston area.
  
- **Brown and Caldwell** **2012 – 2013**

  - **Senior Scientist/Toxicologist**  
Responsible for providing senior technical and regulatory support for the company. Duties included the evaluation of human health impacts from environmental and pharmaceutical exposure, as well as litigation, scientific liaison, environmental regulatory toxicological support. Provided hazard and human health risk assessment, remediation, and compliance assistance for the company. Regulatory compliance included air permit impacts evaluation, evaluation of groundwater and soil data for human and ecological risk, document preparation according to TRRP (Texas) and NJDEP (New Jersey) regulatory requirements. Project management included managing unit closure and RCRA permitting projects.
  
- **TCEQ** **2008 – 2012**

  - **Senior Toxicologist**  
Responsible for providing senior toxicological support and guidance to other staff, specific to the TCEQ. Served as primary toxicologist for the Houston region and conducted numerous stakeholder presentations regarding environmental issues and activities of the TCEQ. Development of human health-protective inhalation values for use in regulatory compliance and permitting. Duties included deriving state-approved, human-health regulatory screening values using TCEQ and EPA-specific guidance, evaluating and designing toxicological studies that were implemented by the TCEQ. Additional responsibilities included acting as a liaison between the TCEQ and chemical trade groups, providing hazard evaluation and toxicological impacts assessment of data gathered around oil and natural gas drilling facilities, developing annual impacts assessment reports, reviewing air permits, and evaluating Qualitative Structure-Activity Relationships (QSAR) for toxicological endpoints. Served as mercury TMDL expert for the toxicology division during Texas government 2009 session.
  
- **Proctor and Gamble** **2006**

  - **Intern**  
Developed molecular assays to detect endocrine-disrupting chemicals in human prostate cells.
  
- **University of Texas Medical Branch** **2003 – 2008**

  - **National Institute of Environmental Health Sciences (NIEHS) Pre-doctoral Fellow**  
Doctoral studies related to molecular (inherited) toxicological factors contributing to a predisposition for lung cancer in tobacco smokers. This included utilizing microbial cultures to manipulate genomes.
  
- **The Pronet Group, Inc.** **2001 – 2002**

  - **Indoor Air Quality Consultant**  
Performed IAQ investigations in residential and commercial buildings, the majority of which were related to water intrusion and microbial contamination. Drafted the remediation scope(s) and completed follow-up clearance evaluations for these properties. Provided litigation support.



- **MD Anderson Cancer Center** **1999 – 2000**
  - Research Assistant II  
Performed molecular biology assays related to maintaining the viral vector core facility. This included using virus particles to infect bacterial cultures in order to package recombinant genomes.
  
- **Valentis, Inc.** **1998 – 1999**
  - Research Assistant/Scientist  
Performed molecular biology assays and plasmid construct designed for cancer gene therapy research. This included utilizing microbial cultures to manipulate human genes and genomes.
  
- **Michigan Technological University** **1993 – 1998**
  - Naval Research Fellow and Research Assistant – Phycology (Algae)  
Molecular biology of marine diatoms. Studied various marine and freshwater algae and bacteria, including their development and persistence in biofilms located on man-made objects. Developed novel culture methods as well as specific methods to study the genomes of algae in biofilms. Taught 100 and 200 level college laboratory classes in microbiology, botany, and phycology (algae).
  
- **Indiana University Southeast** **1989 – 1993**
  - Research and Laboratory Assistant/Full-Time Researcher  
Designed and taught several microbiology, molecular biology, and botany labs to college and graduate students. Supervised and taught several microbiology, molecular biology, and botany labs to college students.
  
  - Research Assistant  
Designed and taught several microbiology, molecular biology, and botany labs to college and graduate students. Supervised and taught several microbiology, molecular biology, and botany labs to college students.

## Education and Certifications

- **Biomedical Sciences, Cell Biology/Molecular Toxicology, Ph.D.:** Biomedical Sciences, Cell Biology/Molecular Toxicology, Ph.D.: University of Texas Medical Branch (2008)
- **Molecular Phycology/Marine Ecology, M.S.:** Michigan Technological University (1997)
- **Biology, B.A.:** Indiana University Southeast (1992)
- **Society of Toxicology:** Full Member
- **American Society of Microbiology:** Premium Member
- **Society of Toxicology of Canada:** Regular Member
- **University of Texas Medical Branch Alumni Committee:** Member

## Continuing Education

- **OSHA and related Training:** HSA refresher, TWIC card, 8 hrs. (2012, 2013, 2014, 2015); 40 hr. OSHA Training (2011)
- **TCEQ:** Expert witness training (2011); EPA Vapor Intrusion Training (2010)
- **Other Courses:** Quantitative Structure Activity Relationships (QSAR) (2008-2012); Communications (2011); Management training (2011); TERA training – Child susceptibility in risk assessment seminar (2009); International REACH training (2009); Advanced Air Permitting (2008)

## Publications

- **“Beyond Science and Decisions: From Problem Formulation to Dose-Response Report from Workshop IV”**, Toxicology Excellence for Risk Assessment (TERA), published 2022.
- **“Regulatory regions responsive to oxidative stress in the promoter of the human DNA glycosylase gene NEIL2,”** Mutagenesis, 2010, Mar; 25(2):171-7.
- **“Genetic determinant of NEIL2 transcription,”** Ph.D. Dissertation.
- **“Single nucleotide polymorphisms 5’ upstream the coding region of the NEIL2 gene influence gene transcription levels and alter levels of genetic damage,”** Genes Chromosomes Cancer, 2008 Nov;47(11):923-32.
- **“The L84F polymorphism in the O6-Methylguanine-DNA-Methyltransferase (MGMT) gene is associated with increased hypoxanthine phosphoribosyltransferase (HPRT) mutant frequency in lymphocytes of tobacco smokers,”** Pharmacogenet. Genomics, 2007 Sep;17(9):743-53.
- **“The L84F and the I143V polymorphisms in the O6-methylguanine-DNA-methyltransferase (MGMT) gene increase human sensitivity to the genotoxic effects of the tobacco-specific nitrosamine carcinogen NNK,”** Pharmacogenet Genomics, 2005 Aug. 15(8):571-8.
- **“Molecular Biology of the marine diatom Achnanthesis longipes,”** Master’s thesis, 1997.

## Presentations

- **“What’s Brewing in Your insurance claim,”** (in production) National Webinar, Beer contamination investigations, 2019.
- **“Toxicology for Drug and Alcohol Cases and Issues of Impairment,”** National Webinar, Broadcast to 700 attendees representing the insurance and legal industries, Jan. 23, 2019.
- **“What the Hex is Cr6,”** National Webinar, Broadcast to 700 attendees representing the insurance and legal industries, Jan. 23, 2019.
- **“What the Hex is Cr6,”** Evaluation of the toxicity screening values for hexavalent chromium (Cr6) across the U.S., EECHMA, Orlando, FL, 2018.
- **“PFAS: Evolution from Emerging Contaminant to Frequent Headliner,”** Environmental Risk & Litigation Conference New York, NY 2018.
- **“Forensic Toxicology for Drug and Alcohol Cases and Issues of Impairment,”** Continuing Education (CE) presentation for various clients. February 8, 2018, Houston, TX.
- **“Cerium oxide nanoparticle (nCe) use as a diesel fuel additive and the possible health impacts from its wide application in diesel fuel,”** AEHS Foundation: 27th Annual International Conference on Soil, Water, Energy, and Air, March 20-23, 2017, San Diego, CA.
- **“Cerium oxide nanoparticle (nCe) use as a diesel fuel additive,”** The Air and Water Management Association, Austin Chapter, Austin, TX, 2017.
- **“Evaluating the Broadening Use of Prescription Marijuana Related to Workers’ Compensation Claims,”** 2017 CLM Conference on Retail, Restaurant & Hospitality Conference (whitepaper), Gaylord, TX.
- **“Evaluating the Broadening Use of Prescription Marijuana Related to Workers’ Compensation Claims,”** CLM Conference on Retail, Restaurant & Hospitality Conference (white paper) 2017.
- **“Marijuana: determining impairment and its impact in the insurance industry,”** Webinar broadcast to ~500 listeners, 2017.
- **“Marijuana and driving with medical marijuana,”** Willis Watson, Addison, TX, 2016.
- **“Marijuana and Driving; Can a blood test really determine impairment,”** GEICO Insurance Company, Katy, TX, 2016.

- **“Marijuana and Driving; Can a blood test really determine impairment,”** DRI For the Defense (whitepaper), 2016.
- **“Evaluation of Benzene Fence line Monitoring Program in USEPA’s Proposed Refinery Sector Rule,”** AWMA Hot Air Topics Annual Conference, Houston, TX, 2015.
- **“Tools for successful stakeholder communications around hydraulic fracturing facilities,”** Gulf Coast AWMA conference, New Orleans, LA, 2015.
- **“Health-based screening values for methyl mercaptan,”** La Porte, Texas Community Advisory Panel (presentation), La Porte, TX, 2015.
- **“Toxicogenomics in Toxic Tort - Environmental and Occupational Exposure,”** HarrisMartin Law Symposium, Charleston, SC, 2014.
- **“Hydraulic Fracturing – Tools for successful stakeholder engagement,”** Society of Petroleum Engineers Annual Meeting on Health and the Environment, Long Beach, CA, 2014.
- **“Tools for successful stakeholder communications around hydraulic fracturing facilities,”** International Conference for the Society of Petroleum Engineers (whitepaper), 2014.
- **“Hydraulic Fracturing – Tools for successful stakeholder engagement,”** Texas Association of Environmental Professionals Annual Meeting, Houston, TX, 2013.
- **“2013 Panelist,”** 2013 Annual Presidential Career Symposium, Houston, TX.
- **“Consulting as a Toxicologist,”** University of Texas Medical Branch, Panelist and presentation, Galveston, TX, 2013.
- **“Regulatory Toxicology,”** University of Texas Medical Branch, Galveston, TX, 2012.
- **“Toxicology at TECQ,”** A series of presentations to various community groups in Houston/Galveston, TX area, 2012.
- **“Acrylonitrile Development Support Document,”** TCEQ, 2012.
- **“Developing Effects Screening Levels and Air Monitoring Comparison Values at the TCEQ and Trends in Texas Air Quality,”** Texas Association of Environmental Professionals annual meeting, Houston, TX, 2011.
- **“Trends in Texas Air Quality: Atmospheric Chemistry and Air Quality in Texas: Challenges and Opportunities,”** Texas A&M University, College Station, TX, 2010.
- **“Challenges in personalized medicine: Warfarin,”** Preventive medicine and community health seminar series, Galveston, TX, 2008.
- **“Genetic determinants of NEIL2 transcription,”** The NIEHS Center in Environmental Toxicology Environmental Health Sciences Seminar Series, Galveston, TX, 2007.
- **“Newly discovered promoter SNPs in the DNA repair gene, NEIL2, modulate gene expression,”** Preventive medicine and community health seminar series, Galveston, TX, 2007.
- **“Advancing Toward In Vitro Toxicity Models - Evaluation of gene expression changes induced by androgen exposure in the human-derived CW22Rv1 cell line,”** Gulf Coast Society of Toxicology, Waco, TX, 2006.
- **“A pharmacogenetic approach to anticoagulation treatment: the role of microsomal epoxide hydrolase,”** The Society of Toxicology annual meeting, San Diego, CA, 2006.
- **“A pharmacogenomic approach to anticoagulation treatment,”** Gulf Coast Society of Toxicology, Austin, TX, 2005.