

Paul Matuszko Environmental Consulting 79 Cedar Street Walpole, MA 02081 (617) 893-4476 www.pmecsolutions.com

## Quarterly Microbial IAQ Assessment Report #2

**Conducted At** 

## Hobomock Elementary School 81 Learning Lanes Pembroke, MA 02359

February, 2025

Prepared For:

Ms. Erin Obey Superintendent of Schools Pembroke Public Schools 72 Pilgrim Road Pembroke, MA 02339

Paul Matury to

**Report Prepared By:** 

Paul Matuszko, CIH Paul Matuszko Environmental Consulting 79 Cedar Street Walpole, MA 02081

Report Date:

February 24, 2025

PMEC Project #:

25-114



February 24, 2025

Ms. Erin Obey Superintendent of Schools Pembroke Public Schools 72 Pilgrim Road Pembroke, MA 02339

#### RE: Quarterly Microbial (Mold) IAQ Sampling Report #2 for Hobomock Elementary School 81 Learning Lane, Pembroke, MA PMEC Project #24-163.1

Dear Ms. Obey:

Paul Matuszko Environmental Consulting (**PMEC**) is pleased to submit the enclosed report for the quarterly microbial (mold) indoor air quality (IAQ) sampling session conducted at the Hobomock Elementary School, 81 Learning Lane, Pembroke, Massachusetts. PMEC conducted the sampling within the school on February 13, 2025. Nine (9) total air samples were collected for microbial laboratory analysis.

This limited microbial assessment report has been prepared for the exclusive use of The Pembroke Public Schools.

#### **Certification:**

PMEC certifies that the results and findings provided herein for the Hobomock Elementary School building have been reviewed for accuracy, content, regulatory compliance and quality of presentation.

Should you have any questions regarding this report, please do not hesitate to contact me at (617) 893-4476. Thank you for providing PMEC with the opportunity to provide our services to the Pembroke Public Schools for this project.

Respectively submitted;

Paul Matury to

Paul Matuszko, CIH, CIEC Project Manager CIH - Certified Industrial Hygienist (American Board of Industrial Hygiene #9236 CP) CIEC - Certified Indoor Environmental Consultant (American Council for Accredited Certification)





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#### Quarterly Microbial IAQ Sampling Report Session #2 For Hobomock Elementary School 81 Learning Lanes Pembroke, MA

February, 2025

#### 1.0 Introduction

- A. Paul Matuszko Environmental Consulting (*PMEC*) is pleased to submit this report for the quarterly microbial sampling assessment (#2) conducted at the Hobomock Elementary School, 81 Learning Lane, Pembroke, Massachusetts. PMEC was retained by the Pembroke Public Schools to conduct the general air sampling and a general inspection for water and microbial growth within the school building. The microbial spore trap air sampling was conducted by PMEC on February 13, 2025. The quarterly sampling session was performed to assess existing spore levels in compliance with the on-going school system indoor air quality (IAQ) program. A summary of the sampling locations and methods, analysis methods and results are outlined within the report.
- B. PMEC was assisted by Pembroke Public Schools Superintendent and maintenance/custodial personnel during the air sampling. Member(s) of the Pembroke Teachers Association (PTA) Union were present during the sampling to confirm the locations and sampling methods used. The sampling was conducted to determine existing airborne microbial spore levels in representative areas of each section or wing of the school building.
- C. During sampling, PMEC conducted a general visual inspection of representative room surfaces. Additionally, measurements baseline indoor temperature and humidity levels were collected. PMEC noted any areas or locations with atypical conditions. The following report summarizes the findings of the assessment, analysis results, and general recommendations.

#### 2.0 Scope of Work

- A. The indoor air quality (IAQ) assessment was conducted in accordance with the following tasks:
  - 1. General inspection of the representative areas for visible water damaged materials and mold growth in the rooms being sampled.
  - Conduct representative bioaerosol (microbial) spore trap air sampling for airborne mold (fungal) analysis in designated and representative locations. Eight (8) interior samples and one (1) comparison sample were collected during the February 13, 2025 after school hours site visit (~3:30-5:00 pm).
    - Sampling locations were selected at the request of the PTA for the Music room, library, gym atrium, and SPED classroom #275.
  - 3. Prepare a detailed report detailing the findings of the assessment and sampling data.

#### 3.0 Air Quality Measurements

A. A direct reading, thermohygrometer (Fluke Model 971) was used to collect representative temperature and relative humidity (ratio of water vapor in air) measurements.

- B. ASHRAE recommends that occupied indoor temperatures be maintained between approximately ~68°F-74°F in winter months and 72°F-80°F during the summer months. Relative humidity (RH%) is a measurement of water vapor in the air. RH% levels should be kept between 30-60 percent year-round for optimal thermal comfort. High levels of indoor relative humidity (>60%) may be perceived as "sticky" and will promote the microbial growth (fungal/mold). Low levels of RH% below 20% can cause drying of the eyes, skin, and sinus tissue (mucous membranes).
- C. Recommended season levels are:

•	Temperature (Temp.):	Recommended Winter Range:	~68-74 °F
	(degrees Fahrenheit °F)	Recommended Summer:	~72-80 °F
•	Relative Humidity (RH%)	Recommended Range:	between 30%-60%; (<50% goal)

D. The measurement results on the assessment date are provided in Table 1 below:

Table 1           Baseline Air Quality Measurements											
Location	Temperature	Relative Humidity %	Comments								
Classroom # 105	68.8 °F	37.3%	Stained ceiling tile back left corner								
Classroom #160	70.5 °F	37.1%	-								
Hallway at Room #130 (outside girl's room)	70.8 °F	33.3%	No odor present								
Classroom #220	72.5 °F	30.4%	-								
SPED Classroom #275	76.2 °F	28.7%	Warmer interior core room								
Music Room	73.5 °F	32.4%	No odor present								
Gym Atrium (entrance lobby)	69.8 °F	35.9%	No odor present								
Inside vestibule of Gym entrance	40.6 °F	54.7%	Comparison sample. Snow cover on ground								
Library – right side	73.0 °F	30.6 %	No odor present								

#### E. Discussion

1. Temperature were typical for a school building during the mid-winter season. Relative humidity levels were within recommended levels for the winter season. RH% will be lower in warmer rooms such as SPED #275. However, the temperatures are typical of occupied buildings during a dry winter day.

#### 4.0 Mold Sampling and Analysis Methods

A. PMEC collected "spore trap" air samples for mold spore analysis using air-o-cell<sup>®</sup> brand sampling cassettes. Eight (8) indoor samples and one (1) outdoor (vestibule) comparison sample were collected for analysis. A calibrated, battery operated Zefon IAQ 15 sampling pump was used to draw air onto the sample cassette's adhesive slide. PMEC collected the samples at 15 liters of air per minute (LPM) for a five (5) minute sample duration for a total sample collection volume of 75 liters of air. Samples are collected in the middle or back side of each room at an approximate height of four feet high. The airborne aerosols (mold, particulates, pollen, etc.) are trapped on the filter media slide for direct microscopic examination.

- B. The samples were collected on February 13, 2025 at approximately 3::30 pm 5:00 pm. Ambient conditions were cool (~39-40° F) and clear with snow cover on exterior surfaces. Indoor conditions were typical of the season.
- C. The samples were sent via chain of custody by Fed Ex to Hayes Microbial Laboratory (Hayes), located in Midlothian, Virginia. Hayes Laboratory is accredited by the American Industrial Hygiene Association (AIHA) for mold and bacteria identification and analysis (AIHA EMPAT Laboratory Accreditation ID # 188863).
- D. Results are reported as Total Fungi Counts in spores per cubic meter of air (**C**/**m**<sup>3</sup>). The samples were analyzed for both non-viable and viable fungi by direct analysis optical microscopy. A summary of analysis criteria of spore trap and direct identification analysis is provided in the lab analysis sheets. The sample results are provided as Attachment B to this report.

#### 5.0 Laboratory Analysis Results

A. The results of the February 13, 2025 spore trap air sampling are presented in Table 2 below.

	Table 2 Spore Trap Air Sample Analysis Results February 21, 2025 Quarterly IAQ Sampling Session #2										
Sample #	Sample Location	Total Fungi (C/m <sup>3</sup> )	Specific Species & levels of note	Comments							
3961 2261 (01)	Classroom 105	13 C/m <sup>3</sup>	Ascospores – 13 C/m <sup>3</sup>	Very low and acceptable							
3961 2263 (02)	Classroom #160	143 C/m <sup>3</sup>	Aspergillus/Penicillium -130 C/m³ Bipolaris / Drechslera – 13 C/m³	Low and acceptable							
3961 2275 (03)	Hallway near #130	13 C/m <sup>3</sup>	Ascospores – 13 C/m <sup>3</sup>	Very low and acceptable							
3961 2273 (04)	Classroom #220	27 C/m <sup>3</sup>	Ascospores – 27 C/m <sup>3</sup>	Very low and acceptable							
3961 2259 (05)	SPED Classroom #275	13 C/m <sup>3</sup>	Ascospores – 13 C/m <sup>3</sup>	Very low and acceptable							
3911 3613 (06)	Music Room	26 C/m <sup>3</sup>	Ascospores – 13 C/m³ Cladosporium – 13 C/m³	Very low and acceptable							
39611 3649 (07)	<b>Gym Atrium</b> (entrance lobby)	26 C/m <sup>3</sup>	Ascospores – 13 C/m³ Basidiospores – 13 C/m³	Very low and acceptable							
3961 2262 (08)	Vestibule entrance at Gym entrance (comparison sample)	27 C/m <sup>3</sup>	Ascospores – 27 C/m <sup>3</sup>	Typical winter level with snow cover on ground							
3961 2283 (09)	Library – At right side tables	13 C/m <sup>3</sup>	Ascospores – 13 C/m <sup>3</sup>	Very low and acceptable							

Notes: - Additional information on species types are provided in the Laboratory Analysis results.

- C/m<sup>3</sup> = spore counts per cubic meter of air

- <sup>-</sup> Samples collected in middle or back middle of room unless noted
- Results in **Bold** (if present) = species or levels of concern.

#### 6.0 Discussion of Analysis Results

- A. The analysis results for the February 13, 2025 sampling session indicate very low and acceptable airborne spore levels. The species identified in these rooms are typically found indoors at low levels and are not a cause for concern.
- B. The indoor sample species identified are similar to the species present on the vestibule comparison sample analysis. The current airborne spore levels on the sampling date are not representative of an amplified airborne spore condition in the locations sampled.
- C. Low levels of aspergillus/penicillium (Asp/Pen) species were identified in Classroom 160. The presence of Asp/Pen spores were not identified in other locations. However, the levels identified are currently low at the time of sampling. Their presence is noted but are not considered to be elevated or a cause for concern at this time.
- D. The results are typical for the mid-winter season with snow cover on exterior surfaces which results in limited to no exterior spore levels.

#### 7.0 Background Mold Information

- A. Currently, there are no standards or regulations to indicate acceptable numerical levels of airborne fungal spores derived from indoor environments. Results are also assessed for specific target species that may induce allergic reactions. Specific species are reviewed for their known potential to cause allergic reactions or as an indicator of potential water damage and moisture issues. In general, indoor mold levels should be equivalent to or lower than outdoor levels or non-complaint areas with similar types and percentages of mold species. Please note that airborne mold spores are present in most indoor environments at low levels.
- B. There are no regulations for acceptable levels of mold in the indoor environment; therefore, exact numerical limits are not supported at this time. Specific fungal species of concern are recommended to have much lower levels in the indoor environment. Existing conditions and symptoms are unique to each season, building and occupant. Airborne mold spore levels may vary greatly by location, time of day and weather conditions. However, health impacts cannot be predicted based on this information; individuals experience varying levels of allergic and non-allergic response to mold. Controlling moisture, in each form, is critical to the prevention of indoor mold growth issues.

#### 8.0 Summary Conclusions

- A. The February 13, 2025 laboratory analysis results for sampling session #2 indicate that the airborne mold spore levels in the locations sampled were low and acceptable. The analyses did not identify any areas with elevated levels that would indicate an amplification of mold spores. The levels indicate a Level 1 condition (normal indoor fungal ecology) as defined by the Institute of Inspection, Cleaning, and Restoration Certification (IICRC).
- B. Relative humidity levels were generally within recommended levels (>30%) during the sampling period. These levels are typical for the winter season with dry conditions.

#### 9.0 Limitations

A. The assessment provided herein is based on the professional judgment of PMEC using approved industry standards and guidelines. Not all areas of the school building were accessed for inspection during the representative general spore trap air sampling. Assessment findings are based on the investigator's careful consideration of field observations and interpretation of analysis results in

accordance with industry standards, including, but not limited to, IICRC S520 guidelines for Condition 1 – normal fungal ecology, 2008 AIHA (Green Book) publication "Recognition, Evaluation, and Control of Indoor Mold", and the ACGIH 1999 book "Bioaerosols – Assessment and Control".

B. The analysis results are only representative of the conditions of the date and time of sample collection and are considered a "snapshot in time". PMEC's results and discussion listed herein represent the conditions present at the time of inspection and sampling.

#### ATTACHMENTS

Attachment A – Sampling Floor Plan (1 page) Attachment B – Hayes Microbial – February 13, 2025 Sample Analysis Results (pages 1-6) Attachment A

Sample Location Floor Plan



## Attachment B

Laboratory Analysis Results

Hayes Microbial – February 20, 2025 Sampling Session #2 (pages 1-6)



## #25007143

Analysis Report prepared for

# Paul Matuszko Environmental Consulting

79 Cedar Street Walpole, MA 02081

Phone: (617) 893-4476

**25-114** Hobomock Elem. School 81 Learning Ln. Pembroke, MA

Collected: February 13, 2025 Received: February 17, 2025 Reported: February 17, 2025



EPA Laboratory ID: VA01419

We would like to thank you for trusting Hayes Microbial for your analytical needs! We received 9 samples by FedEx in good condition for this project on February 17th, 2025.

The results in this analysis pertain only to this job, collected on the stated date, and should not be used in the interpretation of any other job. Information supplied by the customer can affect the validity of results. These results apply only to the samples as received. This report may not be duplicated, except in full, without the written consent of Hayes Microbial Consulting, LLC.

All information provided to Hayes Microbial is confidential information relating to our customers and their clients. We will not disclose, copy, or distribute any information verbally or written, except to those designated by the customer(s). We take confidentiality very seriously. No changes to the distribution list will be made without the express consent of the customer.

This laboratory bears no responsibility for sample collection activities, analytical method limitations, or your use of the test results. Interpretation and use of test results are your responsibility. Any reference to health effects or interpretation of mold levels is strictly the opinion of Hayes Microbial. In no event, shall Hayes Microbial or any of its employees be liable for lost profits or any special, incidental or consequential damages arising out of the use of these test results.

Stephen N. Hayes

Steve Hayes, BSMT(ASCP) Laboratory Director Hayes Microbial Consulting, LLC.





Lab ID: #188863



DPH License: #PH-0198

3005 East Boundary Terrace, Suite F. Midlothian, VA. 23112

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### Paul Matuszko Paul Matuszko Environmental Consulting

79 Cedar Street

Walpole, MA 02081

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## #25007143

# SOP - HMC#101

Sample Number*	1	3961	2261	2	3961	2263	3	3 3961 2275		4	4 3961 2273		
Sample Name*	CI	assroom 10	5	Cl	assroom 16	0	Hallway Near 130			Classroom 220		0	
Sample Volume*		75 L			75 L			75 L		75 L			
Reporting Limit		13 spores/m <sup>3</sup>	}		13 spores/m <sup>3</sup>			13 spores/m <sup>3</sup>	}	13 spores/m <sup>3</sup>			
Background		2			2			2			2		
Fragments		ND			ND			ND			ND		
Organism	Raw Count	Count / m <sup>3</sup>	% of Total	Raw Count	Count / m <sup>3</sup>	% of Total	Raw Count	Count / m <sup>3</sup>	% of Total	Raw Count	Count / m <sup>3</sup>	% of Total	
Alternaria													
Ascospores	1	13	100.0%				1	13	100.0%	2	27	100.0%	
Aspergillus Penicillium				10	130	90.9%							
Basidiospores													
Bipolaris Drechslera				1	13	9.1%							
Chaetomium													
Cladosporium													
Curvularia													
Epicoccum													
Fusarium													
Memnoniella													
Myxomycetes													
Pithomyces													
Stachybotrys													
Stemphylium													
Torula													
Ulocladium													
Total	1	13	100%	11	143	100%	1	13	100%	2	27	100%	
Water Damage Indicato	r	Commo	on Allergen										
* indicates data provided by the cust	omer	Collected Eab 1	2 2025	Boog	ived: Ech 17 2	125	Reported:	Eab 17 2025					
		Deviced A	5, 2025	nece		Deter	neponed.	10011,2023	A		<b>D</b> .		
	EJ	Project Analyst:	P. D	amas	an	Date:	Reviewe		Hopkan 1	1 bour		2025	
MICROBIAL CC	NSULTING	Ramesh Poluri,		Chine	22	02 - 17 - 202	Steve H	ayes, BSMT 📈	reprint /	. rugis	02-17	- 2025	
		3005 East Bo	oundary Terra	ce, Suite F. Mic	llothian, VA. 2	3112	(804) 562-343	35 con	tact@hayesm	nicrobíal.com		Page: <b>2</b> of <b>6</b>	

### Paul Matuszko Paul Matuszko Environmental Consulting

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Walpole, MA 02081

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## #25007143

# SOP - HMC#101

Sample Name*         SPED Room 275         Music Room         Gym Atrium         Gym Entrance Vestibule - Sample Volume*         Gym Entrance Vestibule - 75 L         75 L         <	Sample Number*	5	3961	2259	6	3911	3613	7	3911	3649	8	3961	2262
Sample Volumet Reporting Limit Background Cragments         75 L 13 spores/m <sup>2</sup> 75 L 13 spores/m <sup>2</sup> 75 L 13 spores/m <sup>2</sup> 75 L 13 spores/m <sup>2</sup> Reporting Limit Background Cragments         ND         ND         ND         ND         ND         ND         ND           Rew Count Atternaria Ascospores         1         13 100.0%         1         13 13         50.0%         2         2         2           Rew Count Atternaria Ascospores         1         13 100.0%         1         13 50.0%         1         13 50.0%         2         27 100.0%           Baddidospores Bipolaris/Dechslera Chaetonium Curvularia         1         13 13 50.0%         1         13 50.0%         2         27 100.0%           Fritowers         1         13 50.0%         2         2         7         10.0%           Baddidosporta Chaetonium Curvularia         1         13 50.0%         2         2         1         13 50.0%           Brownoitella Myromycetes Stackybotrys Stemplylum Total         1         13 100%         2         2         1         13 50.0%         2         2         100%           Myromycetes Stackybotrys Stemplylum Libiddatur         1         13 100%         2         2         1         1         2         2 <td>Sample Name*</td> <td>SP</td> <td>ED Room 2</td> <td>75</td> <td>Γ</td> <td>Ausic Room</td> <td></td> <td colspan="3">Gym Atrium</td> <td colspan="2">Gym Entrance Vestil Comparison</td> <td>ibule -</td>	Sample Name*	SP	ED Room 2	75	Γ	Ausic Room		Gym Atrium			Gym Entrance Vestil Comparison		ibule -
Reporting Limit Background         13 spores/m <sup>3</sup> 2         13 spores/m <sup>3</sup> 3         3	Sample Volume*		75 L			75 L			75 L				
Background Fragments         2         2         2         2         ND           Raw Count         ND         ND<	Reporting Limit		13 spores/m <sup>3</sup>	3		13 spores/m <sup>3</sup>			13 spores/m <sup>3</sup>		13 spores/m <sup>3</sup>		
Friggments         ND	Background		2			2			2			2	
Organism         Raw Count         Count / m³         % of Total         Raw Count         Raw Count         Count / m³         % of Total         Raw Count	Fragments		ND			ND			ND			ND	
Alternaria Ascospores         I         I3         100.0%         I         I3         50.0%         I3         I3         13         13         13         13 <t< td=""><td>Organism</td><td>Raw Count</td><td>Count / m<sup>3</sup></td><td>% of Total</td><td>Raw Count</td><td>Count / m<sup>3</sup></td><td>% of Total</td><td>Raw Count</td><td>Count / m<sup>3</sup></td><td>% of Total</td><td>Raw Count</td><td>Count / m<sup>3</sup></td><td>% of Total</td></t<>	Organism	Raw Count	Count / m <sup>3</sup>	% of Total	Raw Count	Count / m <sup>3</sup>	% of Total	Raw Count	Count / m <sup>3</sup>	% of Total	Raw Count	Count / m <sup>3</sup>	% of Total
Ascospores       1       13       100.0%       1       13       50.0%       1       13       50.0%       2       27       100.0%         Aspergillus/Pencillum       Image: Control of the second secon	Alternaria												
Aspergillus/Periodilium       Image: Control of the cont	Ascospores	1	13	100.0%	1	13	50.0%	1	13	50.0%	2	27	100.0%
Basidiospores         I         <	Aspergillus Penicillium												
Bipolaris Drechslera       Image: Chaetomium       Image: Chaetomium <td< td=""><td>Basidiospores</td><td></td><td></td><td></td><td></td><td></td><td></td><td>1</td><td>13</td><td>50.0%</td><td></td><td></td><td></td></td<>	Basidiospores							1	13	50.0%			
Chaetomium       Image: Chaetomium <thimage: chaetomium<="" th="">       Image: Cha</thimage:>	Bipolaris Drechslera												
Cladosporium       Image: Cladosporium	Chaetomium												
Curvularia	Cladosporium				1	13	50.0%						
Epicoccum       Image: Control of the second s	Curvularia												
Fusarium       Memonoiella       Memonoiella       Mononiella       Mononiella <td>Epicoccum</td> <td></td>	Epicoccum												
Memonoiella       Image: Stachybotys       Image: Stachybot	Fusarium												
Myxomycetes       Image: Stachybotys       Image: Stachybot	Memnoniella												
Pithomyces       Image: Stachybotrys         Stachybotrys       Image: Stachybotrys         Stemphylium       Image: Stachybotrys         Torula       Image: Stachybotrys         Ulocladium       Image: Stachybotrys         Image: Stachybotrys       Image: Stachybotrys         Image: Stachyb	Myxomycetes												
Stachybotrys	Pithomyces												
Stemphylium       Image: Stemphyli	Stachybotrys												
Torula       Image: Indicator indindicator indicator indicator indicator ind	Stemphylium												
Ulocladium       Image: Second S	Torula												
Image Indicator       Common Allergen         * indicates data provided by the customer       Collected: Feb 13, 2025         Received: Feb 17, 2025       Received: Feb 17, 2025         Project Analyst:       Project Analyst:         Amesh Poluri, PhD       Project Analyst:         Bamesh Poluri, PhD	Ulocladium												
Image: Indicator       Image: Indicator <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>													
Image Indicator       Common Allergen         * indicates data provided by the customer       Common Allergen         * indicates data provided by the customer       Collected: Feb 13, 2025       Received: Feb 17, 2025         Project Analyst:       Project Analyst:       Project Analyst:         Ramesh Poluri, PhD       Project Analyst:       Date:         3005 East Boundary Terrace Suite E Midlothian VA 23112       (804) 562:3435       contact/@havesmicrofial.com													
Image Indicator       Common Allergen         * indicates data provided by the customer       Collected: Feb 13, 2025       Received: Feb 17, 2025       Reported: Feb 17, 2025       Reported: Feb 17, 2025       Date: Steve Hayes, BSMT       Steve Hayes, BSMT       Date: Steve Hayes, BSMT       Date: Steve Hayes, BSMT       Steve Hayes, BSMT       Date: Steve Hayes, BSMT       Steve Hayes, BSMT       Date: Steve Hayes, BSMT       Steve Hayes, BSMT       Steve Hayes, BSMT       Steve Hayes, BSMT       Steve													
Total       1       13       100%       2       26       100%       2       26       100%       2       27       100%         Water Damage Indicator       Common Allergen         * indicates data provided by the customer       Collected: Feb 13, 2025       Received: Feb 17, 2025       Reported: Feb 17, 2025       Reported: Feb 17, 2025       Reviewed By:       Date:       Reviewed By:       Date:       Date:       Reviewed By:       Step Internation       Date:       Date:       Date:       Date:       Reviewed By:       Step Internation       Date:													
Water Damage Indicator       Common Allergen         * indicates data provided by the customer       Collected: Feb 13, 2025       Received: Feb 17, 2025       Reported: Feb 17, 2025         CDI CLECTER LANALYSE       Project Analyst: Ramesh Poluri, PhD       Project Analyst: Ramesh Poluri, PhD       Date: 02 - 17 - 2025       Reviewed By: Steve Hayes, BSMT       Step Inter The I	Total	1	13	100%	2	26	100%	2	26	100%	2	27	100%
* indicates data provided by the customer Collected: Feb 13, 2025 Received: Feb 17, 2025 Reported: Feb 17, 2025 Project Analyst: Ramesh Poluri, PhD P. Ramesh Date: Ramesh Poluri, PhD P. Ramesh Date: Ramesh Poluri, PhD P. Ramesh Date: 02 - 17 - 2025 Steve Hayes, BSMT Stephen N. Hogys Date: 02 - 17 - 2025 Contact@hayesmicrobial.com Page: 3 of 6	Water Damage Indicato	r	Commo	on Allergen									
Project Analyst:       Project Analyst:       Date:       Reviewed By:       Date:	* indicates data provided by the cust	omer	Collected: Feb 1	13, 2025	Rec	eived: Feb 17, 2	025	Reported:	Feb 17, 2025				
Ramesh Poluri, PhD       Ramesh MicroBial CONSULTING       Ramesh Poluri, PhD       Ramesh MicroBial Consult       O2 - 17 - 2025       Steve Hayes, BSMT       Stephen 11.       August       O2 - 17 - 2025         3005       East Boundary Terrace Suite E Midlothian VA 23112       (804) 562-3435       contact@bayesmicroBial.com       D2 - 17 - 2025	ΠΗΔΥ	<b>FS</b>	Project Analyst:	0		1	Date:	Reviewe	ed By:	0, 1	0 11	Date:	
MICROBIAL CONSULTING 3005 East Boundary Terrace Suite E Midlothian VA 23112 (804) 562-3435 contact@havesmicrobial.com			Ramesh Poluri,	PhD P. R	ame	Khy	02 - 17 - 202	25 Steve H	ayes, BSMT 🏒	tephen 7	1. Aayes	02 - 17	- 2025
		NSULTING	3005 Fast Bo	oundary Terra	ce. Suite E. Mi	dlothian VA 2	3112	(804) 562-343	35 con	tact@havesm	nicrobial.com		Page 3 of 6

#### Paul Matuszko Paul Matuszko Environmental Consulting 79 Cedar Street

Walpole, MA 02081

(617) 893-4476

SOP - HMC#101

Sample Number*	9	3961	2283									
Sample Name*	Libr	ary Right S	ide									
Sample Volume*		75 L					-					
Reporting Limit		13 spores/m <sup>3</sup>	}									
Background		2										
Fragments		ND										
Organism	Raw Count	Count / m <sup>3</sup>	% of Total									
Alternaria	-											
Ascospores	1	13	100.0%									
Aspergillus Penicillium												
Basidiospores												
Bipolaris Drechslera												
Chaetomium												
Cladosporium												
Curvularia												
Epicoccum												
Fusarium												
Memnoniella												
Myxomycetes												
Pithomyces												
Stachybotrys							_					
Stemphylium												
Torula												
Ulocladium												
										_		
							_			_		
Total	1	13	100%									
Water Damage Indicato	r	Commo	on Allergen									
* indicates data provided by the cust	tomer	Collected: Feb 1	3, 2025	Rec	eived: Feb 17,	2025	Reported	Feb 17, 2025				
	<b>ES</b>	Project Analyst: Ramesh Poluri,	PhD P. K	Came	Shy	Date: <b>02 - 17 - 20</b>	Review 25 Steve F	ed By: łayes, BSMT 🏒	Stephen 7	n. Hayes	Date: 02 - 1	7 - 2025

3005 East Boundary Terrace, Suite F. Midlothian, VA. 23112

(804) 562-3435

contact@hayesmicrobial.com

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Paul Matuszko	25-114
Paul Matuszko Environmental Consulting	Hobomock Elem. School
79 Cedar Street	81 Learning Ln.
Walpole, MA 02081	Pembroke, MA
(617) 893-4476	

Reporting Limit	The Reporting Limit is the lowest number of spores that can be detected based on the total volume of the sample collected and the percentage of the slide that is counted. At Hayes Microbial, 100% of the slide is read so the LOD is based solely on the total volume. Raw spore counts that exceed 500 spores will be estimated.
Blanks	Results have not been corrected for field or laboratory blanks.
Background	The Background is the amount of debris that is present in the sample. This debris consists of skin cells, dirt, dust, pollen, drywall dust and other organic and non-organic matter. As the background density increases, the likelihood of spores, especially small spores such as those of Aspergillus and Penicillium may be obscured. The background is rated on a scale of 1 to 5 and each level is determined as follows:
	<ul> <li>NBD: No background detected due to possible pump or cassette malfunction. Recollect sample. (Field Blanks will display NBD)</li> <li>1 : &lt;5% of field occluded. No spores will be uncountable.</li> <li>2 : 5-25% of field occluded.</li> <li>3 : 25-75% of field occluded.</li> <li>4 : 75-90% of field occluded.</li> <li>5 : &gt;90% of field occluded. Suggested recollection of sample.</li> </ul>
Fragments	Fragments are small pieces of fungal mycelium or spores. They are not identifiable as to type and when present in very large numbers, may indicate the presence of mold amplification.
Control Comparisons	There are no national standards for the numbers of fungal spores that may be present in the indoor environment. As a general rule and guideline that is widely accepted in the indoor air quality field, the numbers and types of spores that are present in the indoor environment should not exceed those that are present outdoors at any given time. There will always be some mold spores present in "normal" indoor environments. The purpose of sampling and counting spores is to help determine whether an abnormal condition exists within the indoor environment and if it does, to help pinpoint the area of contamination. Spore counts should not be used as the sole determining factor of mold contamination. There are many factors that can cause anomalies in the comparison of indoor and outdoor samples due to the dynamic nature of both of those environments.
Water Damage Indicator	Blue: These molds are commonly seen in conditions of prolonged water intrusion and usually indicate a problem.
Common Allergen	Green: Although all molds are potential allergens, these are the most common allergens that may be found indoors.
Color Coding	Fungi that are present in indoor samples at levels lower than 200 per cubic meter are not color coded on the report, unless they are one of the water damage indicators.
Significant Figures	Raw counts and column totals may reflect more than 2 significant figures, but results should only be considered significant to 2 figures.



Paul Matuszko Paul Matuszko Environmental Consulting		nsulting 25-114 Hobomock Elem. School	#25007143
Walpole, MA 02081 (617) 893-4476		Pembroke, MA	Analyte Descriptions
Ascospores	Habitat:	A large group consisting of more than 3000 species of fungi. Common plant pathogens and outdoor numbers rain. Most of the genera are indistinguishable by spore trap analysis and are combined on the report.	become very high following
	Health Effects:	Health affects are poorly studied, but many are likely to be allergenic.	
Aspergillus Penicillium	Habitat:	The most common fungi isolated from the environment. Very common in soil and on decaying plant material. <i>I</i> on a wide variety of substrates.	Are able to grow well indoors
	Health Effects:	This group contains common allergens and many can cause hypersensitivity pneumonitis. They may cause ex opportunistic pathogens. Many species produce mycotoxins which may be associated with disease in humans production is dependent on the species, the food source, competition with other organisms, and other environ	trinsic asthma, and many are s and other animals. Toxin Imental conditions.
Basidiospores	Habitat:	A common group of Fungi that includes the mushrooms and bracket fungi. They are saprophytes and plant pa they can cause structural damage to buildings.	athogens. In wet conditions
	Health Effects:	Common allergens and are also associated with hypersensitivity pneumonitis.	
Bipolaris Drechslera	Habitat:	They are found in soil and as plant pathogens. Can grow indoors on a variety of substrates.	
	Health Effects:	They may be allergenic and are very commonly involved in allergic fungal sinusitis. They are opportunistic patl infect healthy individuals, causing keratitis, sinusitis and osteomyelitis.	nogens but occasionally
Cladosporium	Habitat:	One of the most common genera worldwide. Found in soil and plant debris and on the leaf surfaces of living p are lower in the winter and often relatively high in the summer, especially in high humidity. The outdoor numbe afternoon and evening. Indoors, it can be found growing on textiles, wood, sheetrock, moist window sills and i	lants. The outdoor numbers ers often spike in the late n HVAC supply ducts.
	Health Effects:	A common allergen, producing more than 10 allergenic antigens and a common cause of hypersensitivity pneu	umonitis.





Paul Matuszko Environmental Consulting 79 Cedar Street Walpole, MA 02081

Pembroke Public Schools







Job Number: 25-	·114		Job Name: Hobomock Elem School			<u> </u>	af glang gang berne (sink) in were seen als die seen were sterre were		
Collector: Paul M	latuszko		81 Learning Lanes			Mo	bile: 6178	3934476	Email: pmatuszko@pmecsolutions.
Date Collected: 2	2/13/25		Feilidi Oke, FIA			No	ter rain, 3	9°F *70	6, Backgroundairsampling
Analysis Tyr	pe		Analysis Description			Т	urnaround		Accepted Media Types
Spore Trap	S	Identification	۱ & Enumeration of Fungal Spores			24	Hour	Air Casset	tes, Impact Slides
	S+	Spore Trap A	nalysis with Dander, Fiber, and Pollen counts			24	Hour	Air Casset	tes, Impact Slides
Direct ID	D	ID & Semi-Qu	antative Enumeration of spores and mycelium			24	Hour	Bio-Tape,	Tape, Swab, Bulk, Agar Plate
	D+	Direct Analy	sis with Fully Quantitative spore count		_	24	Hour	Bio-Tape,	Tape, Swab, Bulk, Agar Plate
Culture	C1	Identification	& Enumeration of Mold only			7 D	ay	Air Plate,	Agar Plate, Swab, Bulk
	C2	Identificatio	& Enumeration of Bacteria only			4 D	ау	Air Plate, /	Agar Plate, Swab, Bulk
	C3	Identification	& Enumeration of Mold and Bacteria			7 D	ау	Air Plate,	Agar Plate, Swab, Bulk
	C5	Coliform Scr	een for Sewage Bacteria		_	2 D	ay	Agar Plate	e, Swab, Bulk
Particle	TPA	Total Particu	late Analysis, ID & Count (Does Not Include Mold)			24	Hour	Air Casset	tes, Impact Slides, Bio-Tape
# Num	ber		Sample		Analysis		Volume		Notes
3961 20	261	Clas	5room 105		5		75L	Sminp	15CPM
2 396/22	63	c/uss	room 160		1		)		· · · ·
3 3461 2	475	Hall	WAY NEAR 130						
4 396/ 22	73	clas	5100m 220						
5 3961 2	259	SPE	0 Acom # 275				_		Corpet
6 3911 3	613	Mu	sic Room		_	_			· .
7 3911 3	649	Gyn	n Atriun						
8 396/ 2	262	64-	n Entrance Vestibulz - Compariso	in					SNOW COVERON 91
9 39612	283	Libr	ary- right side	e	1		+	T	0
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11			а. С						
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15									
16		-							
Released by:	nM	Tusta	Date: 2/19/25 Recei	ved By	y:		_	n	An Date 17
yes Microbial Consulti	ng, LLC.	3005 East Bound	ary Terrace, Suite F. Midlothian, VA. 23112 (804) 5	62-343	5 con	tact@	nayesmicrobia	il.com	Form #20, Rev.4, March 26, 202

Chain of Custody