Environmental Consultants and Engineers
1818 New York Avenue Suite 217
Washington, DC 20002
www.globalincusa.net

March 1, 2021

Prince Georges County
Environmental Safety Office
13306 Old Marlboro Pike
Upper Marlboro, MD 20772

Attention: Mr. Alex Baylor

RE: Indoor Air Quality Screening Report

Global Project Number: 20-064
School: Rosaryville Elementary School

Dear Mr. Baylor,

On January 25, 2021, Global Inc.'s (GLOBAL) team of Industrial Hygienists under the supervision of Certified Industrial Hygienist, Dr. Channa Bambaradeniya, conducted an Indoor Air Quality Screening at Rosaryville Elementary School located at 9925 Rosaryville Rd, Upper Marlboro, MD 20772.

Methodology

The IAQ evaluation included a visual assessment, sampling for non-viable mold spores in air, and measurement of comfort parameters (temperature, humidity, carbon dioxide, and carbon monoxide) in randomly selected representative locations within the building. GLOBAL's inspector conducted a walkthrough with Prince Georges County Public School (PGCPS) personnel present. Rooms were selected in a random manner throughout the building so as to prevent sampling bias.

During the visual assessment of representative locations, and when noted, GLOBAL documented those areas with suspected mold growth, water intrusions, and wet conditions that have the potential to lead to mold growth. GLOBAL also noted any unusual odors. At least one microbial air sample was collected for every 10,000 Square Feet (SF) of space in the building and the analytical results for the interior spaces were compared to an outdoor (ambient) sample collected on the same day.

Microbial samples (including a field blank for quality control) were delivered under strict chain-of-custody procedures were to Hayes Microbial Consulting - an AIHA EMPAT-certified laboratory in Midlothian, Virginia for analysis by microscopy. The sample chain-of-custody and laboratory report is attached.

Observations

The general observations in the seven indoor locations inspected are summarized in Table 1 below:

Table 1: Observations

Location	Observations
Teacher Lounge	No issues
Room 329	No issues
Room 300	No issues
Room 312	No issues
Room 220	No issues
Multipurpose Room	No issues
Room 236	No issues

Comfort Parameter Measurements and Mold-in-Air Sample Results

The comfort parameter measurements and status of fungal ecology is summarized in Table 2 and Table 3.

Temperature

The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) have published recommendations for year-round acceptable temperatures in Standard 55-2016 (*Thermal Environmental Conditions for Human Occupancy*). The winter comfort range is 68 to 75°F and the summer comfort range is 73 to 79°F. It is important to note that ASHRAE standards are intended as a suggested guideline as opposed to a regulation. The indoor temperature readings of room 300, and room 312 were below the ASHRAE Standard for winter.

Relative Humidity (RH)

Relative humidity is a key factor for mold growth. Mold has the potential of growing on suitable surfaces with humidity levels above 60%. ASHRAE standard 62.1-2013 (*Ventilation for Acceptable Indoor Air Quality*) recommends a maximum indoor relative humidity of 65% to preclude the likelihood of condensation on cool surfaces encouraging mold growth. All the indoor relative humidity readings were below the maximum ASHRAE recommended level of 65%.

Carbon Monoxide

Carbon monoxide (CO) is a colorless and odorless gas that is produced by the incomplete combustion of carbon-containing fuels. Oil, gasoline, diesel fuels, wood, coke, and coal are the

major sources of CO. All registered CO concentrations were below the EPA National Ambient Air Quality Standard (NAAQS) of 9 ppm.

Carbon Dioxide

Under conditions of maximum occupancy, ASHRAE Standard 62.1-2013, Appendix C, infers that the acceptable carbon dioxide upper limit is the prevailing outdoor carbon dioxide concentration plus 700 parts per million (ppm). On January 25, 2021, the outdoor (ambient) carbon dioxide concentration was approximately 398 ppm so indoor concentrations should not exceed approximately 1098 ppm (700 + 398). All indoor carbon dioxide measurements were within the ASHRAE standards.

Mold-in-Air Samples

There are no definitive regulations or standardized guidelines for addressing airborne mold in an indoor setting. If building systems (ventilation, envelope) are functioning properly, the indoor fungal ecology profile should be consistent with what is encountered outdoors and the spore concentrations should be below the ambient levels. Laboratory analytical results are attached at the end of this report.

The analytical results of indoor air samples collected on January 25, 2021 from Multipurpose room and room 236 indicate elevated presence of *Aspergillus/Penicillium* and room 315, 329 and Multipurpose room indicates elevated presence of *Cladosporium*. The horizontal surfaces of the above location were thoroughly recleaned, and air scrubbers with HEPA filters were operated for 24-36 hours. Subsequently, they were reinspected on February 15th and 20th, 2021, and the analytical results of air samples collected indicated normal fungal ecology. Laboratory analytical results are attached at the end of this report.

GLOBAL
Environmental Consultants and Engineers
1818 New York Avenue Suite 217
Washington, DC 20002
www.globalincusa.net

Table 2: Air Quality Results (Inspected on January 25, 2021)

Sample Location	Temp ^{0}F	RH%	CO ppm	CO2 ppm	Normal Fungal Ecology?
Standards	**ASHRAE 68 to 75°F**	**ASHRAE <65%**	**NAAQS <9**	**ASHRAE 1098**	
Ambient	34.0	59	0	398	Yes
Teacher Lounge	74.1	44.2	0	425	No
Room 329	70.5	39.7	0	404	No
Room 300	65.8	39.4	0	437	Yes
Room 312	64.1	40.2	0	409	Yes
Room 220	70.3	48.2	0	416	Yes
Multipurpose Room	71.8	42.0	0	404	No
Room 236	70.2	48	0	406	No

Table 3: Air Quality Results (Inspected on February 15, 2021 & February 20, 2021)

Sample Location	Temp ^{0}F	RH%	CO ppm	CO2 ppm	Normal Fungal Ecology?
Standards	**ASHRAE 68 to 75°F**	**ASHRAE <65%**	**NAAQS <9**	**ASHRAE 1126**	
Ambient	62	36	0	426	Yes
Teacher Lounge	71	30	0	457	Yes
Room 329	72	27	0	447	Yes
Multipurpose Room (2/15/2021)	52	37	0	603	No
Multipurpose Room (2/20/2021)	60	25	0	455	Yes
Room 236	75	25	0	434	Yes

Environmental Consultants and Engineers
1818 New York Avenue Suite 217
Washington, DC 20002
www.globalincusa.net

Conclusions and Recommendations

The indoor temperature readings of room 300, and room 312 were below the ASHRAE Standard. The indoor temperature should be maintained at the ASHRAE recommended range for general comfort.

The indoor mold samples collected from Multipurpose room, room 236, room 315, 329 on January 25, 2021 indicated elevated presence of mold spores, while the other mold sample was found to have a normal fungal ecology for an indoor environment. The above locations were thoroughly recleaned and resampled on February 15th and 20th, 2021, and the analytical results indicated normal fungal ecology.

It has been our pleasure to conduct these IAQ Screening services for the Prince Georges County Public School system. If you have any questions, please feel free to contact us.

Regards,

Channa Bambaradeniya, Ph.D., CIH, CSP, CHMM
Certified Industrial Hygienist
Global, Inc.
Mobile: 443-691-0455

Environmental Consultants and Engineers
1818 New York Avenue Suite 217
Washington, DC 20002
www.globalincusa.net

ATTACHMENT I

Air Sample Analytical Results and Chain-Of-Custody Form

HAYES MICROBIAL CONSULTING

#21003030

Analysis Report prepared for

Global, Inc.

1818 New York Ave.
Suite 217
Washington, DC, 20002

Phone: **(443) 691-0455**

BB203
Indoor Air Quality Assessment
PGCPS Rosaryville ES

Collected: **January 25, 2021**
Received: **January 27, 2021**
Reported: **January 27, 2021**

We would like to thank you for trusting Hayes Microbial for your analytical needs!
We received 8 samples by FedEx in good condition for this project on January 27th, 2021.

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. This report may not be duplicated, except in full, without the written consent of Hayes Microbial Consulting, LLC..

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.

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

EPA Laboratory ID: VA01419

Lab ID: #188863

DPH License: #PH-0198

Judi Darnell
Global, Inc.
1818 New York Ave. Suite 217
Washington, DC, 20002
(443) 691-0455

BB203
Indoor Air Quality Assessment
PGCPS Rosaryville ES

#21003030

Spore Trap
SOP - HMC#101

Sample Number	1	RES-0125-01		2	RES-0125-02		3	RES-0125-03		4	RES-0125-04	
Sample Name	**Ambient Outdoors**			**Room 315 - Teacher's Lounge**			**Room 329**			**Room 300**		
Sample Volume	75.00 liter			75.00 liter			75.00 liter			75.00 liter		
Reporting Limit	13 spores/m³			13 spores/m³			13 spores/m³			13 spores/m³		
Background	2			2			2			2		
Fragments	ND			80/m³			13/m³			ND		
Organism	**Raw Count**	**Count / m³**	**% of Total**	**Raw Count**	**Count / m³**	**% of Total**	**Raw Count**	**Count / m³**	**% of Total**	**Raw Count**	**Count / m³**	**% of Total**
Alternaria												
Ascospores	2	27	14.3%									
Aspergillus|Penicillium	6	80	42.9%	7	93	6.2%						
Basidiospores	1	13	7.1%									
Bipolaris|Drechslera												
Chaetomium												
Cladosporium	4	53	28.6%	106	1413	93.8%	20	267	100.0%	3	40	100.0%
Curvularia												
Epicoccum												
Fusarium												
Memnoniella												
Myxomycetes	1	13	7.1%									
Pithomyces												
Stachybotrys												
Stemphylium												
Torula												
Ulocladium												
Total	14	186	100%	113	1506	100%	20	267	100%	3	40	100%

Water Damage Indicator | Common Allergen | Slightly Higher than Baseline | Significantly Higher than Baseline | Ratio Abnormality

Collected: **Jan 25, 2021** Received: **Jan 27, 2021** Reported: **Jan 27, 2021**

Project Analyst: Shareef Abdelgadir, MS — Date: **01 - 27 - 2021**

Reviewed By: Steve Hayes, BSMT — Date: **01 - 27 - 2021**

HAYES MICROBIAL CONSULTING
3005 East Boundary Terrace, Suite F. Midlothian, VA. 23112 (804) 562-3435 contact@hayesmicrobial.com

Judi Darnell
Global, Inc.
1818 New York Ave. Suite 217
Washington, DC, 20002
(443) 691-0455

BB203
Indoor Air Quality Assessment
PGCPS Rosaryville ES

#21003030

Spore Trap
SOP - HMC#101

Sample Number	5	RES-0125-05		6	RES-0125-06		7	RES-0125-07		8	RES-0125-08	
Sample Name	**Room 312**			**Room 220**			**Multi-Purpose Room**			**Room 236**		
Sample Volume	75.00 liter			75.00 liter			75.00 liter			75.00 liter		
Reporting Limit	13 spores/m^3			13 spores/m^3			13 spores/m^3			13 spores/m^3		
Background	2			2			2			2		
Fragments	ND			ND			27/m^3			ND		
Organism	**Raw Count**	**Count / m^3**	**% of Total**	**Raw Count**	**Count / m^3**	**% of Total**	**Raw Count**	**Count / m^3**	**% of Total**	**Raw Count**	**Count / m^3**	**% of Total**
Alternaria												
Ascospores				2	27	66.7%						
Aspergillus|Penicillium							1652	22027	94.6%	52	693	91.2%
Basidiospores												
Bipolaris|Drechslera												
Chaetomium												
Cladosporium	3	40	75.0%				91	1213	5.2%	5	67	8.8%
Curvularia												
Epicoccum				1	13	33.3%						
Fusarium												
Memnoniella												
Myxomycetes	1	13	25.0%				4	53	<1%			
Pithomyces												
Stachybotrys												
Stemphylium												
Torula												
Ulocladium												
Total	4	53	100%	3	40	100%	1747	23293	100%	57	760	100%

Water Damage Indicator | Common Allergen | Slightly Higher than Baseline | Significantly Higher than Baseline | Ratio Abnormality

Collected: **Jan 25, 2021** Received: **Jan 27, 2021** Reported: **Jan 27, 2021**

HAYES MICROBIAL CONSULTING

Project Analyst: Shareef Abdelgadir, MS — Date: **01 - 27 - 2021**

Reviewed By: Steve Hayes, BSMT — Date: **01 - 27 - 2021**

3005 East Boundary Terrace, Suite F. Midlothian, VA. 23112 (804) 562-3435 contact@hayesmicrobial.com

Judi Darnell
Global, Inc.
1818 New York Ave. Suite 217
Washington, DC, 20002
(443) 691-0455

BB203
Indoor Air Quality Assessment
PGCPS Rosaryville ES

#21003030

Spore Trap Information

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: **NBD:** No background detected due to possible pump or cassette malfunction. Recollect sample. (Field Blanks will display NBD) **1 :** <5% of field occluded. No spores will be uncountable. **2 :** 5-25% of field occluded. **3 :** 25-75% of field occluded. **4 :** 75-90% of field occluded. **5 :** >90% of field occluded. Suggested recollection of sample.
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 Common Allergen Slightly Higher than Baseline Significantly Higher than Baseline Ratio Abnormality	**Blue:** These molds are commonly seen in conditions of prolonged water intrusion and usually indicate a problem. **Green:** Although all molds are potential allergens, these are the most common allergens that may be found indoors. **Orange:** The spore count is slightly higher than the outside count and may or may not indicate a source of contamination. **Red:** The spore count is significantly higher than the baseline count and probably indicates a source of contamination. **Violet:** The types of spores found indoors should be similar to the ones that were identified in the baseline sample. Significant increases (more than 25%) in the ratio of a particular spore type may indicate the presence of abnormal levels of mold, even if the total number of spores of that type is lower in the indoor environment than it was outdoors.
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.

Judi Darnell
Global, Inc.
1818 New York Ave. Suite 217
Washington, DC, 20002
(443) 691-0455

Organism Descriptions

Ascospores

Habitat: A large group consisting of more than 3000 species of fungi. Common plant pathogens and outdoor numbers become very high following rain. Most of the genera are indistinguishable by spore trap analysis and are combined on the report.

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. Are able to grow well indoors on a wide variety of substrates.

Effects: This group contains common allergens and many can cause hypersensitivity pneumonitis. They may cause extrinsic asthma, and many are opportunistic pathogens. Many species produce mycotoxins which may be associated with disease in humans and other animals. Toxin production is dependent on the species, the food source, competition with other organisms, and other environmental conditions.

Basidiospores

Habitat: A common group of Fungi that includes the mushrooms and bracket fungi. They are saprophytes and plant pathogens. In wet conditions they can cause structural damage to buildings.

Effects: Common allergens and are also associated with hypersensitivity pneumonitis.

Cladosporium

Habitat: One of the most common genera worldwide. Found in soil and plant debris and on the leaf surfaces of living plants. The outdoor numbers are lower in the winter and often relatively high in the summer, especially in high humidity. The outdoor numbers often spike in the late afternoon and evening. Indoors, it can be found growing on textiles, wood, sheetrock, moist window sills and in HVAC supply ducts.

Effects: A common allergen, producing more than 10 allergenic antigens and a common cause of hypersensitivity pneumonitis.

Epicoccum

Habitat: It is found in soil and plant litter and is a plant pathogen. It can grow indoors on a variety of substrates, including paper and textiles and is commonly found on wet drywall.

Effects: It is a common allergen. No cases of infection have been reported in humans.

Myxomycetes

Habitat: Found on decaying plant material and as a plant pathogen.

Effects: Some allergenic properties reported, but generally pose no health concerns to humans.

HAYES
MICROBIAL CONSULTING

Company: Global Inc
Address: 1818 New York Ave NE Suite 217
Washington DC 20002

N
SHIP: FEDEX - BOX SO
DATE: 01-27-2021
8160 4410 5575

MOLD
21003030

Job Number: BB203	Job Name: Indoor Air Quality Assessment- PGCPS Rosaryville ES
Collector: JUDI DARNELL	Mobile: 443-691-0455 / Email: Channab@globalincusa.net
Date Collected: 01/25/21	Note:

Analysis Type		Analysis Description	Turnaround	Accepted Media Types
Spore Trap	S	Identification & Enumeration of Fungal Spores	24 Hour	Air Cassettes, Impact Slides
	S+	Spore Trap Analysis with Dander, Fiber, and Pollen counts	24 Hour	Air Cassettes, Impact Slides
Direct ID	D	ID & Semi-Quantative Enumeration of spores and mycelium	24 Hour	Bio-Tape, Tape, Swab, Bulk, Agar Plate
	D+	Direct Analysis with Fully Quantitative spore count	24 Hour	Bio-Tape, Tape, Swab, Bulk, Agar Plate
Culture	C1	Identification & Enumeration of Mold only	7 Day	Air Plate, Agar Plate, Swab, Bulk
	C2	Identification & Enumeration of Bacteria only	4 Day	Air Plate, Agar Plate, Swab, Bulk
	C3	Identification & Enumeration of Mold and Bacteria	7 Day	Air Plate, Agar Plate, Swab, Bulk
	C5	Coliform Screen for Sewage Bacteria	2 Day	Agar Plate, Swab, Bulk
Particle	TPA	Total Particulate Analysis, ID & Count (Does Not Include Mold)	24 Hour	Air Cassettes, Impact Slides, Bio-Tape

#	Number	Sample	Analysis	Volume	Notes
1	RES-0125-01	AMBIENT-OUTDOORS	S	75L	
2	RES-0125-02	ROOM 326-TEACHER'S LOUNGE	S	75L	
3	RES-0125-03	ROOM 329	S	75L	
4	RES-0125-04	ROOM 300	S	75L	
5	RES-0125-05	ROOM 312	S	75L	
6	RES-0125-06	ROOM 220	S	75L	
7	RES-0125-07	MULTI-PURPOSE ROOM 136	S	75L	
8	RES-0125-08	ROOM 236	S	75L	
9					
10					
11					
12					
13					
14					
15					
16					

Released by: Judi Darnell Date: 1/25/21 Received By: Date: 1.27.21

HAYES MICROBIAL CONSULTING

#21005155

Analysis Report prepared for

Global, Inc.

1818 New York Ave.
Suite 217
Washington, DC, 20002

Phone: **(443) 691-0455**

20-064
IAQ 0 Rosaryville ES
9925 Rosaryville Rd
Upper Marlboro, MD 20772

Collected: **February 15, 2021**
Received: **February 16, 2021**
Reported: **February 16, 2021**

We would like to thank you for trusting Hayes Microbial for your analytical needs!
We received 5 samples by FedEx in good condition for this project on February 16th, 2021.

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. This report may not be duplicated, except in full, without the written consent of Hayes Microbial Consulting, LLC..

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.

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

EPA Laboratory ID: VA01419

Lab ID: #188863

DPH License: #PH-0198

Channa Bambaradeniya
Global, Inc.
1818 New York Ave. Suite 217
Washington, DC, 20002
(443) 691-0455

20-064
IAQ 0 Rosaryville ES
9925 Rosaryville Rd
Upper Marlboro, MD 20772

#21005155

Spore Trap
SOP - HMC#101

Sample Number	1	RVES-021521-01		2	RVES-021521-02		3	RVES-021521-03		4	RVES-021521-04	
Sample Name	**Ambient**			**Mulitpurpose**			**Room 236**			**Teachers Lounge**		
Sample Volume	75.00 liter			75.00 liter			75.00 liter			75.00 liter		
Reporting Limit	13 spores/m^3			13 spores/m^3			13 spores/m^3			13 spores/m^3		
Background	2			2			2			2		
Fragments	ND			ND			ND			ND		
Organism	**Raw Count**	**Count / m^3**	**% of Total**	**Raw Count**	**Count / m^3**	**% of Total**	**Raw Count**	**Count / m^3**	**% of Total**	**Raw Count**	**Count / m^3**	**% of Total**
Alternaria												
Ascospores	3	40	25.0%							2	27	100.0%
Aspergillus|Penicillium	6	80	50.0%	25	333	64.1%	1	13	25.0%			
Basidiospores	1	13	8.3%									
Bipolaris|Drechslera												
Chaetomium												
Cladosporium	2	27	16.7%	13	173	33.3%	3	40	75.0%			
Curvularia												
Epicoccum				1	13	2.6%						
Fusarium												
Memnoniella												
Myxomycetes												
Pithomyces												
Stachybotrys												
Stemphylium												
Torula												
Ulocladium												
Total	12	160	100%	39	519	100%	4	53	100%	2	27	100%

Water Damage Indicator | Common Allergen | Slightly Higher than Baseline | Significantly Higher than Baseline | Ratio Abnormality

Collected: **Feb 15, 2021** Received: **Feb 16, 2021** Reported: **Feb 16, 2021**

HAYES MICROBIAL CONSULTING

Project Analyst: Shareef Abdelgadir, MS — Date: **02 - 16 - 2021**

Reviewed By: Ramesh Poluri, PhD — Date: **02 - 16 - 2021**

3005 East Boundary Terrace, Suite F. Midlothian, VA. 23112 (804) 562-3435 contact@hayesmicrobial.com

Channa Bambaradeniya
Global, Inc.
1818 New York Ave. Suite 217
Washington, DC, 20002
(443) 691-0455

20-064
IAQ 0 Rosaryville ES
9925 Rosaryville Rd
Upper Marlboro, MD 20772

#21005155

Spore Trap
SOP - HMC#101

Sample Number	5	RVES-021521-05
Sample Name	**Room 329**	
Sample Volume	75.00 liter	
Reporting Limit	13 spores/m^3	
Background	2	
Fragments	ND	

Organism	Raw Count	Count / m^3	% of Total
Alternaria			
Ascospores	1	13	33.3%
Aspergillus|Penicillium			
Basidiospores			
Bipolaris|Drechslera			
Chaetomium			
Cladosporium	2	27	66.7%
Curvularia			
Epicoccum			
Fusarium			
Memnoniella			
Myxomycetes			
Pithomyces			
Stachybotrys			
Stemphylium			
Torula			
Ulocladium			
Total	3	40	100%

Water Damage Indicator | Common Allergen | Slightly Higher than Baseline | Significantly Higher than Baseline | Ratio Abnormality

Collected: **Feb 15, 2021** Received: **Feb 16, 2021** Reported: **Feb 16, 2021**

HAYES MICROBIAL CONSULTING

Project Analyst: Shareef Abdelgadir, MS — Date: **02 - 16 - 2021**

Reviewed By: Ramesh Poluri, PhD — Date: **02 - 16 - 2021**

3005 East Boundary Terrace, Suite F. Midlothian, VA. 23112 (804) 562-3435 contact@hayesmicrobial.com

Channa Bambaradeniya
Global, Inc.
1818 New York Ave. Suite 217
Washington, DC, 20002
(443) 691-0455

20-064
IAQ 0 Rosaryville ES
9925 Rosaryville Rd
Upper Marlboro, MD 20772

#21005155

Spore Trap Information

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: **NBD:** No background detected due to possible pump or cassette malfunction. Recollect sample. (Field Blanks will display NBD) **1 :** <5% of field occluded. No spores will be uncountable. **2 :** 5-25% of field occluded. **3 :** 25-75% of field occluded. **4 :** 75-90% of field occluded. **5 :** >90% of field occluded. Suggested recollection of sample.
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 Common Allergen Slightly Higher than Baseline Significantly Higher than Baseline Ratio Abnormality	**Blue:** These molds are commonly seen in conditions of prolonged water intrusion and usually indicate a problem. **Green:** Although all molds are potential allergens, these are the most common allergens that may be found indoors. **Orange:** The spore count is slightly higher than the outside count and may or may not indicate a source of contamination. **Red:** The spore count is significantly higher than the baseline count and probably indicates a source of contamination. **Violet:** The types of spores found indoors should be similar to the ones that were identified in the baseline sample. Significant increases (more than 25%) in the ratio of a particular spore type may indicate the presence of abnormal levels of mold, even if the total number of spores of that type is lower in the indoor environment than it was outdoors.
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.

Channa Bambaradeniya
Global, Inc.
1818 New York Ave. Suite 217
Washington, DC, 20002
(443) 691-0455

20-064
IAQ 0 Rosaryville ES
9925 Rosaryville Rd
Upper Marlboro, MD 20772

#21005155

Organism Descriptions

Ascospores	**Habitat:**	A large group consisting of more than 3000 species of fungi. Common plant pathogens and outdoor numbers become very high following rain. Most of the genera are indistinguishable by spore trap analysis and are combined on the report.
	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. Are able to grow well indoors on a wide variety of substrates.
	Effects:	This group contains common allergens and many can cause hypersensitivity pneumonitis. They may cause extrinsic asthma, and many are opportunistic pathogens. Many species produce mycotoxins which may be associated with disease in humans and other animals. Toxin production is dependent on the species, the food source, competition with other organisms, and other environmental conditions.
Basidiospores	**Habitat:**	A common group of Fungi that includes the mushrooms and bracket fungi. They are saprophytes and plant pathogens. In wet conditions they can cause structural damage to buildings.
	Effects:	Common allergens and are also associated with hypersensitivity pneumonitis.
Cladosporium	**Habitat:**	One of the most common genera worldwide. Found in soil and plant debris and on the leaf surfaces of living plants. The outdoor numbers are lower in the winter and often relatively high in the summer, especially in high humidity. The outdoor numbers often spike in the late afternoon and evening. Indoors, it can be found growing on textiles, wood, sheetrock, moist window sills and in HVAC supply ducts.
	Effects:	A common allergen, producing more than 10 allergenic antigens and a common cause of hypersensitivity pneumonitis.
Epicoccum	**Habitat:**	It is found in soil and plant litter and is a plant pathogen. It can grow indoors on a variety of substrates, including paper and textiles and is commonly found on wet drywall.
	Effects:	It is a common allergen. No cases of infection have been reported in humans.

HAYES
MICROBIAL CONSULTING

Company: Global Inc
Address: 1818 New York Ave NE Suite 217
Washington DC 20002

P
SHIP: FEDEX - BOX SO
DATE: 02-16-2021
8160 4411 5635

MOLD
21005155

Job Number: 20-064	Job Name: IAQ-RosaryVille ES 9925 RosaryVille Rd, Upper Marlboro MD 20772
Collector: Shane Prabuddha	Mobile: 443-691-0455 Email: channab@globalincusa.net
Date Collected: 02/15/2021	Note:

Analysis Type		Analysis Description	Turnaround	Accepted Media Types
Spore Trap	S	Identification & Enumeration of Fungal Spores	24 Hour	Air Cassettes, Impact Slides
	S+	Spore Trap Analysis with Dander, Fiber, and Pollen counts	24 Hour	Air Cassettes, Impact Slides
Direct ID	D	ID & Semi-Quantative Enumeration of spores and mycelium	24 Hour	Bio-Tape, Tape, Swab, Bulk, Agar Plate
	D+	Direct Analysis with Fully Quantitative spore count	24 Hour	Bio-Tape, Tape, Swab, Bulk, Agar Plate
Culture	C1	Identification & Enumeration of Mold only	7 Day	Air Plate, Agar Plate, Swab, Bulk
	C2	Identification & Enumeration of Bacteria only	4 Day	Air Plate, Agar Plate, Swab, Bulk
	C3	Identification & Enumeration of Mold and Bacteria	7 Day	Air Plate, Agar Plate, Swab, Bulk
	C5	Coliform Screen for Sewage Bacteria	2 Day	Agar Plate, Swab, Bulk
Particle	TPA	Total Particulate Analysis, ID & Count (Does Not Include Mold)	24 Hour	Air Cassettes, Impact Slides, Bio-Tape

#	Number	Sample	Analysis	Volume	Notes
1	RVES-021521-01	Ambient	s	75L	T: 62 RH: 36 CO2: 426 CO: 0
2	RVES-021521-02	Multipurpose	s	75L	T: 52 RH: 37 CO2: 603 CO: 0
3	RVES-021521-03	Room 236	s	75L	T: 75 RH: 25 CO2: 434 CO: 0
4	RVES-021521-04	Teachers Lounge	s	75L	T: 71 RH: 30 CO2: 457 CO: 0
5	RVES-021521-05	Room 329	s	75L	T: 72 RH: 27 CO2: 447 CO: 0
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					

Released by: Shane Prabuddha	Date: 02/15/2021	Received By: CAP	Date: 2/16/21

HAYES MICROBIAL CONSULTING

#21006576

Analysis Report prepared for

Global, Inc.

1818 New York Ave.
Suite 217
Washington, DC, 20002

Phone: **(443) 691-0455**

20-064
IAQ Reinspection
Rosaryville ES
9925 Rosaryville Rd.
Upper Marlboro, MD 20772

Collected: **February 20, 2021**
Received: **March 1, 2021**
Reported: **March 1, 2021**

We would like to thank you for trusting Hayes Microbial for your analytical needs!
We received 2 samples by FedEx in good condition for this project on March 1st, 2021.

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. This report may not be duplicated, except in full, without the written consent of Hayes Microbial Consulting, LLC..

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.

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

EPA Laboratory ID: VA01419

Lab ID: #188863

DPH License: #PH-0198

Shane Prabuddha
Global, Inc.
1818 New York Ave. Suite 217
Washington, DC, 20002
(443) 691-0455

20-064
IAQ Reinspection
Rosaryville ES
9925 Rosaryville Rd.
Upper Marlboro, MD 20772

#21006576

Spore Trap
SOP - HMC#101

Sample Number	1	01	2	02
Sample Name	**Ambient**		**Multipurpose Room**	
Sample Volume	75.00 liter		75.00 liter	
Reporting Limit	13 spores/m^3		13 spores/m^3	
Background	2		2	
Fragments	ND		ND	

Organism	Raw Count	Count / m^3	% of Total	Raw Count	Count / m^3	% of Total
Alternaria						
Ascospores	5	67	83.3%	1	13	33.3%
Aspergillus|Penicillium				2	27	66.7%
Basidiospores	1	13	16.7%			
Bipolaris|Drechslera						
Chaetomium						
Cladosporium						
Curvularia						
Epicoccum						
Fusarium						
Memnoniella						
Myxomycetes						
Pithomyces						
Stachybotrys						
Stemphylium						
Torula						
Ulocladium						
Total	6	80	100%	3	40	100%

Water Damage Indicator | Common Allergen | Slightly Higher than Baseline | Significantly Higher than Baseline | Ratio Abnormality

Collected: **Feb 20, 2021** Received: **Mar 1, 2021** Reported: **Mar 1, 2021**

HAYES MICROBIAL CONSULTING

Project Analyst: Ramesh Poluri, PhD P. Ramesh Date: **03 - 01 - 2021**

Reviewed By: Steve Hayes, BSMT Stephen N. Hayes Date: **03 - 01 - 2021**

Shane Prabuddha
Global, Inc.
1818 New York Ave. Suite 217
Washington, DC, 20002
(443) 691-0455

20-064
IAQ Reinspection
Rosaryville ES
9925 Rosaryville Rd.
Upper Marlboro, MD 20772

#21006576

Spore Trap Information

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: **NBD:** No background detected due to possible pump or cassette malfunction. Recollect sample. (Field Blanks will display NBD) **1 :** <5% of field occluded. No spores will be uncountable. **2 :** 5-25% of field occluded. **3 :** 25-75% of field occluded. **4 :** 75-90% of field occluded. **5 :** >90% of field occluded. Suggested recollection of sample.
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 Common Allergen Slightly Higher than Baseline Significantly Higher than Baseline Ratio Abnormality	**Blue:** These molds are commonly seen in conditions of prolonged water intrusion and usually indicate a problem. **Green:** Although all molds are potential allergens, these are the most common allergens that may be found indoors. **Orange:** The spore count is slightly higher than the outside count and may or may not indicate a source of contamination. **Red:** The spore count is significantly higher than the baseline count and probably indicates a source of contamination. **Violet:** The types of spores found indoors should be similar to the ones that were identified in the baseline sample. Significant increases (more than 25%) in the ratio of a particular spore type may indicate the presence of abnormal levels of mold, even if the total number of spores of that type is lower in the indoor environment than it was outdoors.
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.

Shane Prabuddha
Global, Inc.
1818 New York Ave. Suite 217
Washington, DC, 20002
(443) 691-0455

20-064
IAQ Reinspection
Rosaryville ES
9925 Rosaryville Rd.
Upper Marlboro, MD 20772

#21006576

Organism Descriptions

Ascospores	**Habitat:**	A large group consisting of more than 3000 species of fungi. Common plant pathogens and outdoor numbers become very high following rain. Most of the genera are indistinguishable by spore trap analysis and are combined on the report.
	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. Are able to grow well indoors on a wide variety of substrates.
	Effects:	This group contains common allergens and many can cause hypersensitivity pneumonitis. They may cause extrinsic asthma, and many are opportunistic pathogens. Many species produce mycotoxins which may be associated with disease in humans and other animals. Toxin production is dependent on the species, the food source, competition with other organisms, and other environmental conditions.
Basidiospores	**Habitat:**	A common group of Fungi that includes the mushrooms and bracket fungi. They are saprophytes and plant pathogens. In wet conditions they can cause structural damage to buildings.
	Effects:	Common allergens and are also associated with hypersensitivity pneumonitis.

HAYES
MICROBIAL CONSULTING

Company: Global Inc
Address: 1818 New York Ave NE Suite 217
Washington DC 20002

P
SHIP: FEDEX - BOX SO
DATE: 03-01-2021
8160 4411 5624

MOLD
21006576

Job Number: 20-064	Job Name: IAQ Reinspection Rosaryville ES (9925 Rosaryville Rd, Upper Marlboro, MD 20772)
Collector: Shane Prabuddha	Mobile: 443-691-0455 / Email: Channab@globalincusa.net
Date Collected: 2/20/2021	Note:

Analysis Type		Analysis Description	Turnaround	Accepted Media Types
Spore Trap	S	Identification & Enumeration of Fungal Spores	24 Hour X	Air Cassettes, Impact Slides
	S+	Spore Trap Analysis with Dander, Fiber, and Pollen counts	24 Hour	Air Cassettes, Impact Slides
Direct ID	D	ID & Semi-Quantative Enumeration of spores and mycelium	24 Hour	Bio-Tape, Tape, Swab, Bulk, Agar Plate
	D+	Direct Analysis with Fully Quantitative spore count	24 Hour	Bio-Tape, Tape, Swab, Bulk, Agar Plate
Culture	C1	Identification & Enumeration of Mold only	7 Day	Air Plate, Agar Plate, Swab, Bulk
	C2	Identification & Enumeration of Bacteria only	4 Day	Air Plate, Agar Plate, Swab, Bulk
	C3	Identification & Enumeration of Mold and Bacteria	7 Day	Air Plate, Agar Plate, Swab, Bulk
	C5	Coliform Screen for Sewage Bacteria	2 Day	Agar Plate, Swab, Bulk
Particle	TPA	Total Particulate Analysis, ID & Count (Does Not Include Mold)	24 Hour	Air Cassettes, Impact Slides, Bio-Tape

#	Number	Sample	Analysis	Volume	Notes
1	01	Ambient	S	75L	T: 27 RH: 12 CO2: 588 CO: 0
2	02	Mutipurpose Room	S	75L	T: 60 RH: 25 CO2: 455 CO: 0
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					

Released by: Shane Prabuddha	Date: 02/20/2021	Received By: CLP	Date: 3/1/21