HILLMANN
CONSULTING

May 8, 2019

Ms. Rebecca Lopez
East Stroudsburg Area School District
50 Vine Street
East Stroudsburg, Pennsylvania 18301

RE: Microbial Investigation – Air Quality Sampling
Resica Falls Elementary School
1 Gravel Ridge Road
East Stroudsburg, Pennsylvania 18302
Hillmann Project Number: PH-0755

Dear Ms. Lopez:

Thank you for retaining Hillmann Consulting, LLC (Hillmann) to address your environmental concerns. On April 17, 2019, Ian Hinterleiter conducted a Microbial Investigation and Air Quality Sampling of the Library, Cafeteria and Classrooms 15, 21, 27, 33, 44, and 38 located within Resica Falls Elementary School. This investigation is part of a biannual sampling plan in order to document air quality within Resica Falls Elementary School. The parameters for the investigation included a visual inspection and the collection of one airborne fungal spore sample within the subject spaces listed above.

Hillmann selected the sampling parameters based on consultations with the client (East Stroudsburg Area School District), the laboratory performing the analysis, and our in-house experts. The inspection was a general screening to randomly assess indoor airborne spore concentrations within the subject spaces.

Airborne fungal spores were collected by drawing air through an Air-O-Cell® cassette utilizing a Zefon BioPump. Samples were collected for a time period of five (5) minutes at a calibrated flow rate of 15 L/min yielding a total sample volume of 75 liters. These cassettes were then sent to an AIHA EMLAP accredited laboratory where fungal spores were identified by genera and concentration. Fungal spores are present in normal indoor settings. If found in excess amounts, these spores can produce allergy-like symptoms as well as asthmatic reactions in those who are sensitive to them. If the indoor samples are found to have a greater diversity of genera, and/or higher amounts of fungal spores than outdoor samples, it can be presumed that the subject space may be facilitating microbial growth.

OBSERVATIONS AND FINDINGS

Hillmann was met on site by facility personnel, who escorted Hillmann through the subject spaces to conduct airborne microbial quality assurance sampling.

The Resica Falls Elementary School is primarily composed of a combination of masonry block units and wallboard walls, carpet and vinyl tile flooring, and drop ceiling tiles. Hillmann not did observe water staining or visible microbial growth on accessible surfaces.

Average temperature and relative humidity readings were 70.1°F and 34.2% respectively.

Eight (8) airborne fungal spore samples were collected from the Library, Cafeteria and Classrooms 15, 21, 27, 33, 44, and 38 located within Resica Falls Elementary School. Laboratory analysis showed total indoor fungal spore concentrations and individual fungal genera were lower and/or comparable to the outdoor reference levels.

In the absence of health-based federal standards, Hillmann has adopted industry standard practice and recommended practices by the ACGIH to compare indoor/outdoor fungal concentrations. Samples are deemed "comparable" or "acceptable" when the following criteria are met:

- Overall indoor/outdoor fungal genera identified are similar on the day of sampling. Raw spore counts less than ten (10) do not represent a statistically significant number. Therefore, the presence of one (1) spore of certain indicator genera (i.e. *Stachybotrys*) will not be grounds for failure.
- Common outdoor genera identified indoors are similar to or less than outdoor concentrations.
- Common water intrusion indicator genera including but not limited to: *Penicillium/Aspergillus group*, *Chaetomium*, etc. are similar to outdoor concentrations and/or within one order of magnitude (10 times difference). Exceptions will be made depending on conditions, fungal genera identified, and outlying factors.
- Hillmann also recommends that common water intrusion indicator genera be below a level of 1,000 CFU/m^3 of air. Exceptions will be made depending on conditions, fungal genera identified, and outlying factors.

CONCLUSIONS & RECOMMENDATIONS

Based upon the findings and laboratory results, the subject spaces do not appear to be facilitating microbial growth at this time.

If you have any questions, or need additional information, please feel free to contact our office at (856) 581-9055.

Regards,
Hillmann Consulting, LLC

Rafael L. Torres, III
Director of Operations
Philadelphia Area Regional Office

Ian Hinterleiter
Industrial Hygienist

File: PH-0755
Enclosed: Laboratory Results

Date of Sampling: 04/17/2019 Job #: PH-0755
Date of Sample Receipt: 04/18/2019 Order#: 0419335
Client: EAST STROUDSBURG AREA SCHOOL DISTRICT #Received: 11
50 VINE STREET
EAST STROUDSBURG, PA 18301

Attn:

Collection Site: RESICA FALLS ELEMENTARY SCHOOL

Field Technician: Ian Hinterleiter
Date of Analysis: 04/19/2019
Date of Issue: 04/19/2019
Sampling Method: Air-O-Cell

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SPORE TRAP REPORT- Method (Fungal Spore SOP)

Location:	Library			Room 38			Room 44		
Lab ID#:	F48117			F48118			F48119		
Volume (Liters):	75			75			75		
Background Debris: *	Light			Light			Light		
	raw ct.	spores/m3	%**	raw ct.	spores/m3	%**	raw ct.	spores/m3	%**
Ascospores							2	120	25%
Basidiospores				2	120	22%	2	120	25%
Cladosporium	6	370	60%	2	120	22%			
Hyphal Fragments	1	61	10%	3	180	33%	1	61	13%
Myxo./Periconia/Rusts/Smuts	1	61	10%						
Penicillium/Aspergillus	2	120	20%	2	120	22%	3	180	37%
Total Spores/m3	**610**			**540**			**480**		
Analytical Sensitivity ***	**61**			**61**			**61**		

* Background debris may affect analysis of sample causing results to be reported lower than actually present in the air. Background debris are expressed qualitatively: heavy > medium > light.
** Percentages may not equal 100% due to rounding.
*** Analytical sensitivity is based on 1000X magnification and 15% of trace analyzed.
Samples arrived in acceptable condition unless otherwise noted.
Uncertainty of measurement available upon request.

Signature:

Angelo Tango Laboratory Manager #Analyzed: 11

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SPORE TRAP REPORT: Method (Fungal Spore SOP)

Location:	Room 15			Room 21			Room 27		
Lab ID#:	F48120			F48121			F48122		
Volume (Liters):	75			75			75		
Background Debris: *	Light			Light			Light		
	raw ct.	spores/m3	%**	raw ct.	spores/m3	%**	raw ct.	spores/m3	%**
Basidiospores	1	61	100%	1	61	20%	1	61	100%
Hyphal Fragments				1	61	20%			
Myxo./Periconia/Rusts/Smuts				1	61	20%			
Penicillium/Aspergillus				2	120	40%			
Total Spores/m3	61			300			61		
Analytical Sensitivity ***	61			61			61		

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SPORE TRAP REPORT: Method (Fungal Spore SOP)

Location:	Room 33			Pod Labeled 20			Cafeteria		
Lab ID#:	F48123			F48124			F48125		
Volume (Liters):	75			75			75		
Background Debris: *	Light			Light			Light		
	raw ct.	spores/m3	%**	raw ct.	spores/m3	%**	raw ct.	spores/m3	%**
Basidiospores	1	61	50%	1	61	50%			
Cladosporium							1	61	17%
Coprinus							1	61	17%
Hyphal Fragments	1	61	50%	1	61	50%	1	61	17%
Penicillium/Aspergillus							3	180	50%
Total Spores/m3	120			120			360		
Analytical Sensitivity ***	61			61			61		

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SPORE TRAP REPORT: Method (Fungal Spore SOP)

Location:	Outside			Outside					
Lab ID#:	F48126			F48127					
Volume (Liters):	75			75					
Background Debris: *	Light			Light					
	raw ct.	spores/m3	%**	raw ct.	spores/m3	%**	raw ct.	spores/m3	%**
Ascospores				4	240	22%			
Basidiospores	14	850	78%	11	670	61%			
Cladosporium	2	120	11%						
Coprinus				2	120	11%			
Penicillium/Aspergillus	2	120	11%	1	61	6%			
Total Spores/m3	1,100			1,100					
Analytical Sensitivity ***	61			61					

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This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by Hillmann Consulting, LLC.

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