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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**  
Middle Smithfield Elementary School  
5180 Milford 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 Gym and Classrooms 28, 21, 100, 34, 111, 202, and 209 located within Middle Smithfield Elementary School. This investigation is part of a biannual sampling plan in order to document air quality within Middle Smithfield 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 Middle Smithfield 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 71.1°F and 34.5% respectively.

Eight (8) airborne fungal spore samples were collected from the Gym and Classrooms 28, 21, 100, 34, 111, 202, and 209 located within Middle Smithfield 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:

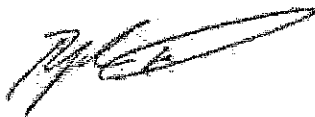
- Overall indoor/outdoor fungal genera identified are similar on the day of sampling. Raw spore counts less than ten (10) do not represent a statistically significant number. Therefore, the presence of one (1) spore of certain indicator genera (i.e. *Stachybotrys*) will not be grounds for failure.
- 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<sup>3</sup> of air. Exceptions will be made depending on conditions, fungal genera identified, and outlying factors.

## CONCLUSIONS & RECOMMENDATIONS

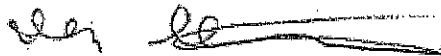
Based upon the findings and laboratory results, the subject spaces do not appear to be facilitating microbial growth at this time.

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#: 0419329  
 Client: EAST STROUDSBURG AREA SCHOOL #Received: 10



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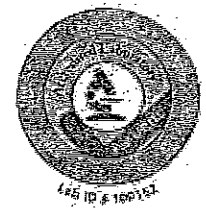
Attn:  
 Collection Site: MIDDLE SMITHFIELD ELEMENTARY SCHOOL  
 Field Technician: Ian Hinterleiter  
 Date of Analysis: 04/18/2019  
 Date of Issue: 04/19/2019  
 Sampling Method: Air-O-Cell

**SPORE TRAP REPORT: Method (Fungal Spore SOP)**

Location:	Gym			Room 100			Room 111		
Lab ID#:	F48107			F48108			F48109		
Volume (Liters):	75			75			75		
Background Debris: *	Light			Light			Light		
	raw ct.	spores/m3	%**	raw ct.	spores/m3	%**	raw ct.	spores/m3	%**
Basidiospores							1	64	100%
Cladosporium	2	130	50%						
Epicoccum	1	64	25%						
Penicillium/Aspergillus	1	64	25%						
<b>Total Spores/m3</b>	<b>260</b>			<b>No Spores Detected</b>			<b>64</b>		
<b>Analytical Sensitivity ***</b>	<b>64</b>			<b>64</b>			<b>64</b>		

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

Signature: Dylan Jaycox  
 Dylan Jaycox, Laboratory Director #Analyzed: 10



Date of Sampling: 04/17/2019 Job #: PH-0755  
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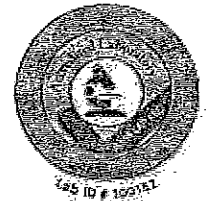
Field Technician: Ian Hinterleiter  
 Date of Analysis: 04/18/2019  
 Date of Issue: 04/19/2019  
 Sampling Method: Air-O-Cell

**SPORE TRAP REPORT: Method (Fungal Spore SOP)**

Location:	Room 202			Room 209			Room 21		
	raw ct.	spores/m3	%**	raw ct.	spores/m3	%**	raw ct.	spores/m3	%**
Lab ID#:	F48110			F48111			F48112		
Volume (Liters):	75			75			75		
Background Debris: *	Light			Light			Light		
Ascospores				1	64	14%			
Basidiospores				3	190	43%	2	130	67%
Cladosporium	1	64	33%						
Hyphal Fragments				1	64	14%			
Myxo./Periconia/Rusts/Smuts	1	64	33%						
Penicillium/Aspergillus	1	64	33%	1	64	14%	1	64	33%
Stachybotrys				1	64	14%			
Total Spores/m3	190			450			190		
Analytical Sensitivity ***	64			64			64		

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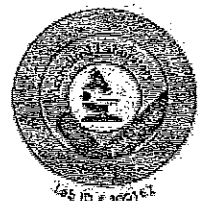
Field Technician: Ian Hinterleiter  
 Date of Analysis: 04/18/2019  
 Date of Issue: 04/19/2019  
 Sampling Method: Air-O-Cell

**SPORE TRAP REPORT: Method (Fungal Spore SOP)**

Location:	Room 28			Room 34			Outside		
Lab ID#:	F48113			F48114			F48115		
Volume (Liters):	75			75			75		
Background Debris: *	Light			Light			Light		
	raw ct.	spores/m3	%**	raw ct.	spores/m3	%**	raw ct.	spores/m3	%**
Ascospores	2	130	29%	2	130	16%	5	320	17%
Basidiospores	3	190	42%				23	1,500	80%
Cladosporium	1	64	14%	3	190	23%			
Hyphal Fragments				1	64	8%			
Penicillium/Aspergillus	1	64	14%	7	450	54%	1	64	3%
Total Spores/m3	450			830			1,900		
Analytical Sensitivity ***	64			64			64		

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Collection Site: MIDDLE SMITHFIELD ELEMENTARY SCHOOL

Field Technician: Ian Hinterleiter

Date of Analysis: 04/18/2019

Date of Issue: 04/19/2019

Sampling Method: Air-O-Cell

### SPORE TRAP REPORT: Method (Fungal Spore SOD)

Location:	Outside								
Lab ID#:	F48116								
Volume (Liters):	75								
Background Debris: *	Light								
	raw ct.	spores/m3	%**	raw ct.	spores/m3	%**	raw ct.	spores/m3	%**
Basidiospores	6	380	86%						
Penicillium/Aspergillus	1	64	14%						
Total Spores/m3	440								
Analytical Sensitivity ***	64								

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