



August 13, 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-0867

Dear Ms. Lopez:

Thank you for retaining Hillmann Consulting, LLC (Hillmann) to address your environmental concerns. On July 30, 2019, Ian Hinterleiter conducted a Microbial Investigation and Air Quality Sampling of the Cafeteria and Classrooms 12, 17, 37, 109, 201, 211, and 214 located within the Middle Smithfield Elementary School. This investigation is part of a biannual sampling plan in order to document air quality within the 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 73.2°F and 35.0% respectively.

Eight (8) airborne fungal spore samples were collected from the Cafeteria and Classrooms 12, 17, 37, 109, 201, 211, and 214 located within the 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/m³ 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-0867
Enclosed: Laboratory Results

Date of Sampling: 07/31/2019
Date of Sample Receipt: 07/31/2019
Client: EAST STROUDSBURG AREA SCHOOL DISTRICT
 50 VINE STREET
 EAST STROUDSBURG, PA 18301

Job #: PH-0867
Order#: 0819001
#Received: 10



HILLMANN CONSULTING, L.L.C.
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 PHONE: (908) 688-7800 FAX: (908) 686-2636
 www.hillmannconsulting.com

Attn:

Collection Site: MIDDLE SMITHFIELD ELEMENTARY/ EAST STROUDSBURG/ PA

Field Technician: Ian Hinterleiter

Date of Analysis: 07/31/2019

Date of Issue: 08/01/2019

Sampling Method: Air-O-Cell

SPODE TRAP REPORT: Method (Fungal Spore SOD)

Location:	Cafeteria			37			12		
Lab ID#:	F49053			F49054			F49055		
Volume (Liters):	75			75			75		
Background Debris: *	Light			Light			Light		
	raw ct.	spores/m3	%**	raw ct.	spores/m3	%**	raw ct.	spores/m3	%**
Ascospores							1	64	33%
Basidiospores							2	130	67%
Coprinus				1	64	100%			
Penicillium/Aspergillus	1	64	100%						
Total Spores/m3	64			64			190		
Analytical Sensitivity ***	64			64			64		

* 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, Laboratory Director #Analyzed: 10



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Date of Sample Receipt: 07/31/2019
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Attn:

Collection Site: MIDDLE SMITHFIELD ELEMENTARY/ EAST STROUDSBURG/ PA

Field Technician: Ian Hinterleiter

Date of Analysis: 07/31/2019

Date of Issue: 08/01/2019

Sampling Method: Air-O-Cell

SPODE TRAP REPORT: Method (Fungal Spore SOD)

Location:	17			201			211		
Lab ID#:	F49056			F49057			F49058		
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	25%				1	64	50%
Cladosporium	1	64	25%						
Myxo./Periconia/Rusts/Smuts	1	64	25%						
Penicillium/Aspergillus	1	64	25%				1	64	50%
Total Spores/m3	260			No Spores Detected			130		
Analytical Sensitivity ***	64			64			64		

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Collection Site: MIDDLE SMITHFIELD ELEMENTARY/ EAST STROUDSBURG/ PA
Field Technician: Ian Hinterleiter
Date of Analysis: 07/31/2019
Date of Issue: 08/01/2019
Sampling Method: Air-O-Cell

SPODE TRAP REPORT: Method (Fungal Spore SOD)

Location:	214			109			Outside		
Lab ID#:	F49059			F49060			F49061		
Volume (Liters):	75			75			75		
Background Debris: *	Light			Light			Light		
	raw ct.	spores/m3	%**	raw ct.	spores/m3	%**	raw ct.	spores/m3	%**
Alternaria							1	64	0%
Ascospores							6	380	2%
Basidiospores				1	64	100%	34	2,200	14%
Cladosporium							182	11,600	76%
Coprinus							2	130	1%
Curvularia							1	64	0%
Epicoccum							1	64	0%
Ganoderma							3	190	1%
Myxo./Periconia/Rusts/Smuts							4	260	2%
Penicillium/Aspergillus							3	190	1%
Pithomyces							1	64	0%
Total Spores/m3	No Spores Detected			64			15,200		
Analytical Sensitivity ***	64			64			64		

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Attn:
Collection Site: MIDDLE SMITHFIELD ELEMENTARY/ EAST STROUDSBURG/ PA
Field Technician: Ian Hinterleiter
Date of Analysis: 07/31/2019
Date of Issue: 08/01/2019
Sampling Method: Air-O-Cell

SPODE TRAP REPORT: Method (Fungal Spore SOD)

Location:	Outside								
Lab ID#:	F49062								
Volume (Liters):	75								
Background Debris: *	Light								
	raw ct.	spores/m3	%**	raw ct.	spores/m3	%**	raw ct.	spores/m3	%**
Alternaria	1	64	0%						
Ascospores	10	640	4%						
Basidiospores	71	4,500	29%						
Cladosporium	148	9,470	61%						
Curvularia	1	64	0%						
Ganoderma	6	380	2%						
Penicillium/Aspergillus	1	64	0%						
Pithomyces	3	190	1%						
Spegazzina	1	64	0%						
Xylariaceae	2	130	1%						
Total Spores/m3	15,600								
Analytical Sensitivity ***	64								

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Signature: 
 Dylan Jaycox, Laboratory Director #Analyzed: 10



Fungal Spore Chain-of-Custody and Analysis Request Form

Date of Sampling: 7/31/19

Job #: PH0867
Order #: 0819001

Date of Sample Receipt: _____

Client: East Meadowbury SP

Location: middle Smithfield elementary

Field Hygienist: Jen Hildebrand



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Sample ID Lab ID	Sample Type (Air, Bulk, Tape)	Air-Flow Time		Air-Flow Rate		Air Volume(L) or Area (in) ²	Sample Location Description	Turnaround Time					Comments
		Start	End	Start	End			3-6hr	8-12hr	24hr	48hr	72hr	
49053 IH 36	Air	1:39	1:43	15	15	75 L	02020212						
54 IH 37		1:45	1:50				37						
55 IH 38		1:53	1:58				12						
56 IH 39		2:00	2:05				17						
57 IH 40		2:08	2:13				201						
58 IH 41		2:18	2:20				211						
59 IH 42		2:22	2:27				214						
60 IH 43		2:30	2:35				109						
61 IH 44		2:40	2:45				outside						
62 IH 45		2:45	2:46				outside						

Sampled By:	Transported By:	Received By:	Prepared By:	Analyzed By:
Name: <u>Jen Hildebrand</u>		<u>900</u>	<u>[Signature]</u>	<u>[Signature]</u>
Signature: <u>[Signature]</u>				
Date:		<u>7-31-19</u>		<u>7/31/19</u>