



August 19, 2019

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

RE: Microbial Investigation – Air Quality Sampling Addendum
Lehman Intermediate School
257 Timberwolf Court
Dingmans Ferry, Pennsylvania 18328
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 Library and Classrooms 104, 114, 118, 200, 205, 216, 218, 300, 303, and 315 located within the Lehman Intermediate School. This investigation is part of a biannual sampling plan in order to document air quality within the Lehman Intermediate 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.

Eleven (11) airborne fungal spore samples were collected from the Library and Classrooms 104, 114, 118, 200, 205, 216, 218, 300, 303, and 315 located within the Lehman Intermediate School. Laboratory analysis showed an elevated level of *Penicillium/Aspergillus* within Classrooms 218 and 315 as well as elevated total indoor fungal spore concentrations within Classroom 114.

Based upon the findings and laboratory results, further investigation of Classrooms 114, 218, and 315 was recommended to identify potential sources of water intrusion and assess if mold is actively proliferating within the space. The District stated that it would perform a thorough horizontal surface cleaning of each room completed with HEPA-vacuuming to address the elevated spore concentrations prior to the reinspection.

On August 16, 2019, Alyson Albertson returned to the school to investigate and resample Classrooms 114, 218, and 315. The parameters for the investigation included a visual inspection and the collection of one airborne fungal spore sample within the subject spaces.

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 following observations were made on August 16, 2019:

- Hillmann did observe suspect minor growth on pipe insulation above the suspended ceiling in Classroom 114.
- Hillmann was informed of a previous water loss in Classroom 218 from a toilet. Moisture readings collected from building materials in the vicinity of the water loss did not identify any materials wet above recommended levels.

Laboratory analysis showed total indoor fungal spore concentrations and individual fungal genera following the procedures implemented by the District 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, actions taken by the District have mitigated the elevated spore concentrations within the subject spaces. Hillmann recommends the following:

- The pipe insulation within Classroom 114 should be removed and replaced. Inspections of the plenum space above the suspended ceilings should be performed identify other pipe insulation that may have suspect growth.

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



Alyson Albertson, LEED Green Associate
Environmental Specialist

File: PH-0867
Enclosed: Laboratory Results

Date of Sampling: 08/16/2019
Date of Sample Receipt: 08/16/2019
Client: EAST STROUDSBURG AREA SCHOOL DISTRICT
 50 VINE STREET
 EAST STROUDSBURG, PA 18301

Job #: PH-0867
Order#: 0819226
#Received: 4



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

Attn:

Collection Site: LEHMAN INTERMEDIATE

Field Technician: Alyson Albertson
Date of Analysis: 08/16/2019
Date of Issue: 08/16/2019
Sampling Method: Air-O-Cell

SPODE TRAP REPORT: Method (Fungal Spore SOD)

Location:	Room 218			Room 315			Room114		
Lab ID#:	F49380			F49381			F49382		
Volume (Liters):	75			75			75		
Background Debris: *	Light			Light			Light		
	raw ct.	spores/m3	%**	raw ct.	spores/m3	%**	raw ct.	spores/m3	%**
Ascospores	1	61	9%						
Basidiospores	1	61	9%				3	180	42%
Cladosporium	3	180	27%	7	430	88%	1	61	14%
Coprinus							1	61	14%
Curvularia	1	61	9%						
Hyphal Fragments							1	61	14%
Myxo./Periconia/Rusts/Smuts							1	61	14%
Penicillium/Aspergillus	4	240	36%	1	61	12%			
Pithomyces	1	61	9%						
Total Spores/m3	660			490			420		
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.

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: _____

Angelo Tango Laboratory Manager #Analyzed: 4



Date of Sampling: 08/16/2019
Date of Sample Receipt: 08/16/2019
Client: EAST STROUDSBURG AREA SCHOOL DISTRICT
 50 VINE STREET
 EAST STROUDSBURG, PA 18301

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Attn:

Collection Site: LEHMAN INTERMEDIATE

Field Technician: Alyson Albertson
Date of Analysis: 08/16/2019
Date of Issue: 08/16/2019
Sampling Method: Air-O-Cell

SPODE TRAP REPORT: Method (Fungal Spore SOD)

Location:	Outside								
Lab ID#:	F49383								
Volume (Liters):	75								
Background Debris: *	Light								
	raw ct.	spores/m3	%**	raw ct.	spores/m3	%**	raw ct.	spores/m3	%**
Basidiospores	41	2,500	73%						
Cladosporium	13	790	23%						
Ganoderma	1	61	2%						
Penicillium/Aspergillus	1	61	2%						
Total Spores/m3	3,400								
Analytical Sensitivity ***	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.
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Signature:

Angelo Tango Laboratory Manager #Analyzed: 4



Fungal Spore Chain-of-Custody and Analysis Request Form

Date of Sampling: 8/16/19

Job #: PH-0867
Order #: 0819226

Date of Sample Receipt: _____

Client: East Stroudsburg Area School District

Location: Lehman Intermediate

Field Hygienist: Alyson Albertson (aalbertson@hillmannconsulting.com)



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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	5-7 day		
LI-01 <i>49320</i>	Air	0827	0832	15	15	75.0	Room 218			X					
LI-02 <i>31</i>		0841	0846				Room 315			X					
LI-03 <i>32</i>		0849	0854				Room 114			X					
LI-04 <i>43</i>		0858	0903				Outside			X					
LI-05 (AR)	 						Outside			X					

(AA)

Sampled By:		Transported By:		Received By:		Prepared By:		Analyzed By:	
Name: <u>Alyson Albertson</u>		Name: <u>Alyson Albertson</u>		Name: _____		Name: _____		Name: _____	
Signature: <i>[Signature]</i>		Signature: <i>[Signature]</i>		Signature: <i>[Signature]</i>		Signature: <i>[Signature]</i>		Signature: <i>[Signature]</i>	
Date: <u>8/16/19</u>		Date: <u>8/16/19</u>		Date: <u>11:00 8/16/19</u>		Date: _____		Date: <u>8/16/19</u>	