ESI Environmental Solutions, Inc.

www.esi4u.com (410)-867-6262

Discovery Environmental Inspection Report

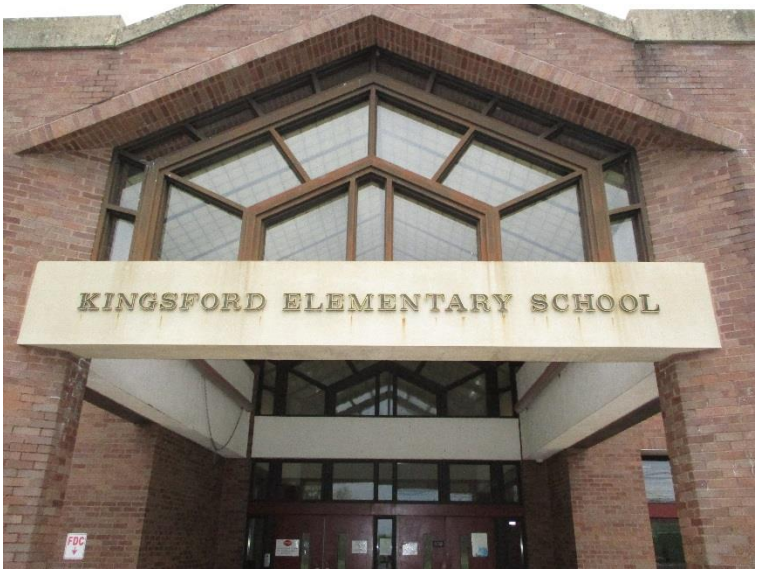
Project Contact Information

Alex Baylor Environmental Specialists Environmental Safety Office 13306 Old Marlboro Pike Upper Marlboro, MD 20772 301-952-6760 alex.baylor@pgcps.org	Kingsford Elementary School 86,814 Ft^2	Vinny Gigliotti Certified Indoor Environmentalist Environmental Solutions, Inc. 6114 Drum Point Rd Deale, MD 20751 410-867-6262 Vinny@esi4u.com

Property Location

1401 Enterprise Road, Mitchellville, MD 20721

Date of Inspection: 4/25/2019



Prepared By: Vinny Gigliotti & Ryan Fitzgerald

Certified Indoor Environmentalist (CIE)

Dear Mr. Baylor,

The results of the inspection and testing performed at Kingsford Elementary School are concluded, and the findings are enclosed. I want to thank you for allowing ESI the opportunity to service your indoor environmental needs. Included in this report are the observations, lab results, and recommendations from ESI's inspection and testing.

Background Information

The Prince Georges County Public School Environmental Team has taken a proactive approach in cleaning the above-mentioned school to ensure there are no health or environmental risks related to microbial and biological hazards. Historically elevated levels of humidity, condensation from pipes, periodic steam leaks and outdated HVAC systems, may have contributed to water damage ceiling tiles and colonization of mold spores in various area of the school.

Purpose

ESI was engaged to inspect the school in a random sufficient manner. Classrooms, administration offices, and common area building materials and contents, will be visually inspected for water damage and microbial growth.

In each location inspected, the indoor air quality will be tested for elevated levels of carbon dioxide and carbon monoxide, in addition to measuring the relative humidity and temperature. Microbial / biological hazards within the breathable air space will also be tested.

Based upon the visual assessment, instrument readings and lab results, ESI will determine if additional remediation in required.

Observations and instrument readings

The following table is designed for this project. Some of the fields may not be filled in due to not being applicable during the time of the inspection. You will notice either a 'YES' or 'NO' in the table. 'YES' indicates that mold and /or water damage was detected and 'NO' indicates it was not. If 'YES' is noted, remediation recommendation will be included for the area inspected. Please note that the cubic feet of air in the rooms inspected is an approximate number.

Location	IAQ Sample #	Swab	R/H	Temp	CO2	Co	Cubic feet of air.	
Classroom #102	2428521	No	38.3	69.4	600	000	10,260	
Inspected								
Ceiling Tiles	Walls	Teachers Desk	Children's Desk	Tables	Cabinets Shelving	Convector	HVAC Diffusors	Windows
2x4	CMU	0	0	8	2	0	4	6
Yes	No	N/A	N/A	No	No	N/A	No	No

Observation Notes

- Seven ceiling tiles were water stained.
- Rust was seen on one diffusor.
- Accumulations of dust were seen on the ceiling tiles around the diffusors.
- The indoor air quality should not pose environmental or exposure risks at these levels. The total spore count was 840 Count/M^3 and no elevated levels of Carbon monoxide or Carbon dioxide were detected.

Recommendations

- Remove and replace the water damaged ceiling tiles. The contaminated ceiling tiles should be placed in a sealed plastic bag for disposal.

Location	IAQ Sample #	Swab	R/H	Temp	CO2	Co	Cubic feet of air.	
Classroom #106	2428526	No	42.5	70.1	909	000	7,440	
Inspected								
Ceiling Tiles	Walls	Teachers Desk	Children's Desk	Tables	Cabinets Shelving	Convector	HVAC Diffusors	Windows
2x4	CMU	1	34	1	4	1	0	6
No	No	No	No	No	No	No	N/A	No

Inspected

- There was rust on the drop ceiling grid.
- The indoor air quality should not pose environmental or exposure risks at these levels. The total spore count was 720 Count/M^3 and no elevated levels of Carbon monoxide or Carbon dioxide were detected.

Recommendations

None

Location	IAQ Sample #	Swab	R/H	Temp	CO2	Co	Cubic feet of air.	
Classroom #111	**2433799**	No	46.9	64.4	615	000	10,850	
Inspected								
Ceiling Tiles	Walls	Teachers Desk	Children's Desk	Tables	Cabinets Shelving	Convector	HVAC Diffusors	Windows
2x4	CMU	0	1	15	7	1	0	6
Yes	No	N/A	No	No	No	No	N/A	No

Observation Notes

- Three ceiling tiles were water stained. Water staining was also on the wall near the damaged ceiling tiles.
- Water had been spilled on the floor and one table.
- The ceiling tiles were slightly sagging.
- The indoor air quality had slightly elevated levels of **Aspergillus/Penicillium** at **1,320** spores per cubic meter of air.

Recommendations

- Remove and replace the water damaged ceiling tiles. The contaminated ceiling tiles should be placed in a sealed plastic bag for disposal.
- Engage HEPA filtered air scrubber in this location for approximately 4-6 hours. Damp wipe all horizontal surfaces with an antimicrobial, then fog the breathable air space.
- The drop ceiling cavity should be further evaluated for water.

Location	IAQ Sample #	Swab	R/H	Temp	CO2	Co	Cubic feet of air.	
Classroom #118	2433784	No	45.1	69.6	725	000	9,240	
Inspected								
Ceiling Tiles	Walls	Teachers Desk	Children's Desk	Tables	Cabinets Shelving	Convector	HVAC Diffusors	Windows
2x4	CMU	1	2	0	4	1	0	1
Yes	No	No	No	N/A	No	No	N/A	No

Observation Notes

- Water staining was seen in the sink cabinetry.
- Two ceiling tiles were water stained.
- The indoor air quality should not pose environmental or exposure risks at these levels. The total spore count was 960 Count/M^3 and no elevated levels of Carbon monoxide or Carbon dioxide were detected.

Recommendations

- Remove and replace the water damaged ceiling tiles. The contaminated ceiling tiles should be placed in a sealed plastic bag for disposal.

Location	IAQ Sample #	Swab	R/H	Temp	CO2	Co	Cubic feet of air.	
Classroom #119	2433804	No	35.7	73.7	765	000	9,600	
Inspected								
Ceiling Tiles	Walls	Teachers Desk	Children's Desk	Tables	Cabinets Shelving	Convector	HVAC Diffusors	Windows
2x4	CMU	1	1	17	2	0	4	2
Yes	No	No	No	No	No	N/A	No	No

Observation Notes

- Three ceiling tiles were water stained.
- The ceiling tiles were slightly sagging.
- Accumulations of dust were seen on the ceiling tiles around the diffusors.
- The indoor air quality should not pose environmental or exposure risks at these levels. The total spore count was 40 Count/M^3 and no elevated levels of Carbon monoxide or Carbon dioxide were detected.

Recommendations

- Remove and replace the water damaged ceiling tiles. The contaminated ceiling tiles should be placed in a sealed plastic bag for disposal.

Location	IAQ Sample #	Swab	R/H	Temp	CO2	Co	Cubic feet of air.	
Classroom #122	2433814	No	42.0	71.9	**1,140**	000	7,680	
Inspected								
Ceiling Tiles	Walls	Teachers Desk	Children's Desk	Tables	Cabinets Shelving	Convector	HVAC Diffusors	Windows
2x4	CMU	1	26	4	4	1	0	6
Yes	No	No	No	No	No	No	N/A	No

Observation Notes

- The ceiling tiles were slightly sagging.
- There was rust on the drop ceiling grid throughout the room.
- The Carbon Dioxide CO2 level in this room was slightly elevated at 1,140 ppm. The CO2 level may have been slightly increased due to the students recently occupying the classroom.
- The indoor air quality should pose no health or environmental risk, as the spore count was 880 spores per cubic meter of air.

Recommendations

- To reduce Carbon dioxide (CO2) levels, increase air exchange within this classroom. Ventilating or circulating the air with a fan will also reduce Carbon dioxide (CO2) levels.

Location	IAQ Sample #	Swab	R/H	Temp	CO2	Co	Cubic feet of air.	
Classroom #127	2428501	No	43.9	71.0	**1,413**	000	7,290	
Inspected								
Ceiling Tiles	Walls	Teachers Desk	Children's Desk	Tables	Cabinets Shelving	Convector	HVAC Diffusors	Windows
2x4	CMU	1	26	3	3	1	0	6
Yes	No	No	No	No	No	No	N/A	No
Observation Notes								

- Two ceiling tiles were water stained.
- The ceiling tiles were slightly sagging.
- The Carbon Dioxide CO2 level in this room was elevated at 1,413 ppm. The CO2 level may have been slightly increased due to the students recently occupying the classroom.
- The indoor air quality should pose no health or environmental risk, as the spore count was 320 spores per cubic meter of air.

Recommendations

- Remove and replace the water damaged ceiling tiles. The contaminated ceiling tiles should be placed in a sealed plastic bag for disposal.
- To reduce Carbon dioxide (CO2) levels, increase air exchange within this classroom. Ventilating or circulating the air with a fan will also reduce Carbon dioxide (CO2) levels.

Location	IAQ Sample #	Swab	R/H	Temp	CO2	Co	Cubic feet of air.	
Classroom #139	2428511	No	38.6	69.4	520	000	7,440	
Inspected								
Ceiling Tiles	Walls	Teachers Desk	Children's Desk	Tables	Cabinets Shelving	Convector	HVAC Diffusors	Windows
2x4	CMU	1	0	8	6	1	0	6
No	No	No	N/A	No	No	No	N/A	No
Observation Notes								

- There was rust on the drop ceiling grid.
- The indoor air quality should not pose environmental or exposure risks at these levels. No airborne mold spores were detected, and no elevated levels of Carbon monoxide or Carbon dioxide were detected.

Recommendations

None

Location	IAQ Sample #	Swab	R/H	Temp	CO2	Co	Cubic feet of air.	
Workroom #2	2428516	No	39.9	67.8	626	000	6,080	
Inspected								
Ceiling Tiles	Walls	Teachers Desk	Children's Desk	Tables	Cabinets Shelving	Convector	HVAC Diffusors	Windows
2x4	CMU	1	4	6	2	0	4	9
No	No	No	No	No	No	N/A	No	No
Observation Notes								
• Accumulations of dust were seen on the ceiling tiles around the diffusors. • The indoor air quality should not pose environmental or exposure risks at these levels. The total spore count was 80 Count/M^3 and no elevated levels of Carbon monoxide or Carbon dioxide were detected.								
Recommendations								
None								

Interpretation of Lab Results

In the enclosed Air Cassette Analysis report, you will notice Fungal Identification, which is the species detected in the breathable airspace inside, and outside. The Raw count is the actual number of spores counted on the slide, and the Count/m3 are the spores per cubic meter of air. The other particles are non-living particles such as dander, mycelial fragments, pollens, etc.

In order for humans to be exposed indoors, fungal spores, fragments, or metabolites must be released into the air and inhaled, physically contacted (dermal exposure), or ingested. Whether symptoms develop in people exposed to fungi depends on the nature of the fungal material (e.g., allergenic, toxic, or infectious), the amount of exposure, and the susceptibility of exposed persons.

Susceptibility varies with genetic predisposition (e.g., allergic reactions do not always occur in all individuals), age, state of health, and concurrent exposures.

Lab Results

SanAir Technologies Laboratory

Name: Environmental Solutions, Inc
Address: 534-A Deale Road
Deale, MD 20751
Phone: 410-867-6262

Project Number: 1401 Enterprise Rd
P.O. Number:
Project Name: Kingsford ES
Collected Date: 4/25/2019
Received Date: 4/26/2019 9:15:00 AM

SanAir ID Number
19019892
FINAL REPORT
4/30/2019 11:56:50 AM

Analyst: Martin, Brice

Air Cassette Analysis

ND = None Detected. Blank spaces indicate no spores detected.

SanAir ID Number	19019892-001			19019892-002			19019892-003			19019892-004		
Analysis Using STL	107C			107C			107C			107C		
Sample Number	2428521			2428526			2433799			2433784		
Sample Identification	Classroom #102			Classroom #106			Classroom #111			Classroom #118		
Sample Type	Air Cassette - Micro-5			Air Cassette - Micro-5			Air Cassette - Micro-5			Air Cassette - Micro-5		
Volume	25 Liters			25 Liters			25 Liters			25 Liters		
Analytical Sensitivity	40 Count/M³			40 Count/M³			40 Count/M³			40 Count/M³		
Background Density	1+			2			1+			2		
Other	**Raw Count**	**Count/M³**	**%**	**Raw Count**	**Count/M³**	**%**	**Raw Count**	**Count/M³**	**%**	**Raw Count**	**Count/M³**	**%**
Dander	13	520	n/a	266	10640	n/a	12	480	n/a	95	3800	n/a
Fibers	1	40	n/a	7	280	n/a	2	80	n/a	1	40	n/a
Mycelial Fragments												
Pollen	1	40	n/a				5	200	n/a			
Fungal Identification	**Raw Count**	**Count/M³**	**%**	**Raw Count**	**Count/M³**	**%**	**Raw Count**	**Count/M³**	**%**	**Raw Count**	**Count/M³**	**%**
Ascospores	2	80	10	2	80	11	4	160	7	1	40	4
Aspergillus/Penicillium				5	200	28	33	1320	56	4	160	17
Basidiospores	12	480	57	3	120	17	7	280	12	11	440	46
Cladosporium species	6	240	29	5	200	28	11	440	19	8	320	33
Epicoccum species												
Non-specified spore							1	40	2			
Pithomyces species												
Scopulariopsis like							1	40	2			
Smuts/Myxomycetes	1	40	5	3	120	17	2	80	3			
TOTAL	**21**	**840**		**18**	**720**		**59**	**2360**		**24**	**960**	

Signature: Brice Martin Date: 4/29/2019 Reviewed: Johnathan Wilson Date: 4/30/2019

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Air Cassette Analysis

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SanAir ID Number	19019892-005			19019892-006			19019892-007			19019892-008		
Analysis Using STL	107C			107C			107C			107C		
Sample Number	2433804			2433814			2428501			2428511		
Sample Identification	Classroom #119			Classroom #122			Classroom #127			Classroom #139		
Sample Type	Air Cassette - Micro-5			Air Cassette - Micro-5			Air Cassette - Micro-5			Air Cassette - Micro-5		
Volume	25 Liters			25 Liters			25 Liters			25 Liters		
Analytical Sensitivity	40 Count/M³			40 Count/M³			40 Count/M³			40 Count/M³		
Background Density	1+			2+			2+			No Trace		
Other	**Raw Count**	**Count/M³**	**%**	**Raw Count**	**Count/M³**	**%**	**Raw Count**	**Count/M³**	**%**	**Raw Count**	**Count/M³**	**%**
Dander	16	640	n/a	357	14280	n/a	450	18000	n/a			
Fibers	3	120	n/a	7	280	n/a	8	320	n/a			
Mycelial Fragments	1	40	n/a				1	40	n/a			
Pollen				2	80	n/a						
Fungal Identification	**Raw Count**	**Count/M³**	**%**	**Raw Count**	**Count/M³**	**%**	**Raw Count**	**Count/M³**	**%**	**Raw Count**	**Count/M³**	**%**
Ascospores							1	40	13			
Aspergillus/Penicillium				2	80	9	1	40	13			
Basidiospores				2	80	9	1	40	13			
Cladosporium species				17	680	77	5	200	63			
Epicoccum species												
Non-specified spore												
Pithomyces species												
Scopulariopsis like												
Smuts/Myxomycetes	1	40	>99	1	40	5						
TOTAL	**1**	**40**		**22**	**880**		**8**	**320**				

Signature: Brice Martin Date: 4/29/2019 Reviewed: Johnathan Wilson Date: 4/30/2019

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Analyst: Martin, Brice

Air Cassette Analysis

ND = None Detected. Blank spaces indicate no spores detected.

SanAir ID Number	19019892-009			19019892-010				
Analysis Using STL	107C			107C				
Sample Number	2428516			2428506				
Sample Identification	Teachers Workroom #2			Outdoors				
Sample Type	Air Cassette - Micro-5			Air Cassette - Micro-5				
Volume	25 Liters			25 Liters				
Analytical Sensitivity	40 Count/M³			40 Count/M³				
Background Density	1+			1+				
Other	**Raw Count**	**Count/M³**	**%**	**Raw Count**	**Count/M³**	**%**		
Dander	34	1360	n/a	3	120	n/a		
Fibers	2	80	n/a					
Mycelial Fragments	1	40	n/a	2	80	n/a		
Pollen	1	40	n/a	5	200	n/a		
Fungal Identification	**Raw Count**	**Count/M³**	**%**	**Raw Count**	**Count/M³**	**%**		
Ascospores				8	320	17		
Aspergillus/Penicillium	1	40	50					
Basidiospores				33	1320	70		
Cladosporium species				3	120	6		
Epicoccum species				1	40	2		
Non-specified spore								
Pithomyces species	1	40	50					
Scopulariopsis like								
Smuts/Myxomycetes				2	80	4		
TOTAL	**2**	**80**		**47**	**1880**			

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Organism Descriptions

The descriptions of the organisms presented are derived from various reference materials. The laboratory report is based on the data derived from the samples submitted and no interpretation of the data, as to potential, or actual, health effects resulting from exposure to the numbers of organisms found, can be made by laboratory personnel. Any interpretation of the potential health effects of the presence of this organism must be made by qualified professional personnel with first hand knowledge of the sample site, and the problems associated with that site.

Dander - Comprised of human and/or animal skin cells. Counts may be higher in carpeted rooms and in rooms with more traffic.
Health Effects: May cause allergies.

Fibers - This category can include clothing, carpet, and insulation fibers.

Mycelial Fragments - A mycelium (plural = mycelia) is the "body" of a fungus. It is a collective term for hyphae (singular = hypha), which are the tubular units of the mycelium usually composed of chitin. The terms hyphae and mycelial fragments are used interchangeably. [This information was referenced from the mycology text "The Fifth Kingdom"]In some cases a fungal identification cannot be obtained due to lack of sporulation. Only the mycelial fragments are present, and cannot be identified without the distinguishing characteristics of the spores or the structures they grow from.
Health Effects: Allergic reactions may occur in the presence of spores (conidia) or mycelial/hyphal fragments.

Pollen - Produced by trees, flowers, weeds and grasses. The level of pollen production can depend on water availability, precipitation, temperature, and light. Pollen is usually dispersed by either insects or the wind.
Health Effects: Mostly effects the respiratory tract with hay fever symptoms but has also been shown to trigger asthma in some people.

Ascospores - From the fungal Subphylum Ascomycotina. Ascospores are ubiquitous in nature and are commonly found in the outdoor environment. This class contains the "sac fungi" and yeasts. Some ascospores can be identified by spore morphology, however; some care should be excercised with regard to specific identification. They are identified on tape lifts and non-viable analysis by the fact that they have no attachment scars and are sometimes enclosed in sheaths with or without sacs. Ascomycetes may develop both sexual and asexual stages. Rain and high humidity may help asci to release, and dispurse ascospores, which is why during these weather conditions there is a great increase in counts.
Health Effects: This group contains possible allergens.

Aspergillus/Penicillium - These spores are easily aerosolized. Only through the visualization of reproductive structures can the genera be distinguished. Also included in this group are the spores of the genera Acremonium, Phialophora, Verticillium, Paecilomyces, etc. Small, round spores of this group lack the necessary distinguishing characteristics when seen on non-viable examination.
Health Effects: Can cause a variety of symptoms including allergic reactions. Most symptoms occur if the individual is immunocompromised in some way (HIV, cancer, etc). Both Penicillium and Aspergillus spores share similar morphology on non-viable analysis and therefore are lumped together into the same group.

Basidiospores - From the Subphylum Basidiomycotina which contains the mushrooms, shelf fungi, and a variety of other macrofungi. They are saprophytes, ectomycorrhizal fungi or agents of wood rot, which may destroy the structure wood of buildings. It is extremely difficult to identify a specific genera of mushrooms by using standard culture plate techniques. Some basidiomycete spores can be identified by spore morphology; however, some care should be exercised with regard to specific identification. The release of basidiospores is dependant upon moisture, and they are dispersed by wind.
Health Effects: Many have the potential to produce a variety of toxins. Members of this group may trigger Type I and III fungal hypersensitivity reactions. Rarely reported as opportunistic pathogens.

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Organism Descriptions

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Cladosporium species - The most commonly identified outdoor fungus. The outdoor numbers are reduced in the winter and are often high in the summer. Often found indoors in numbers less than outdoor numbers. It is commonly found on the surface of fiberglass duct liner in the interior of supply ducts. A wide variety of plants are food sources for this fungus. It is found on dead plants, woody plants, food, straw, soil, paint and textiles. Often found in dirty refrigerators and especially in reservoirs where condensation is collected, on moist window frames it can easily be seen covering the whole painted area with a velvety olive green layer.
Health Effects: It is a common allergen. It can cause mycosis. Common cause of extrinsic asthma (immediate-type hypersensitivity: type I). Acute symptoms include edema and bronchiospasms, chronic cases may develop pulmonary emphysema. Illnesses caused by this genus can include phaeohyphomycosis, chromoblastomycosis, hay fever and common allergies.
References: Flannigan, Brian, Robert A. Samson, and J. David Miller, eds. Microorganisms in Home and Indoor Work Environments: Diversity, Health Impacts, Investigation, and Control. London and New York: Taylor & Francis, 2001.

Epicoccum species - It is found in plants, soil, grains, textiles, and paper products. Frequently isolated from air and occasionally occurs in house dust. Is a saprophyte and considered a weakly parasitic secondary invader of plants, moldy paper and textiles. Epicoccum is usually isolated with either Cladosporium species or Aureobasidium species.
Health Effects: A common allergen. It also has the potential to produce type I fungal hypersensitivity reactions.
References: Flannigan, Brian, Robert A. Samson, and J. David Miller, eds. Microorganisms in Home and Indoor Work Environments: Diversity, Health Impacts, Investigation, and Control. London and New York: Taylor & Francis, 2001.

Non-specified spore - This category is used for spore types without any differentiating characteristics for a more definitive classification.

Pithomyces species - Grows on dead grass in pastures and decaying plant material.
Health Effects: Causes facial eczema in ruminants.
References: St-Germain, Guy, and Richard Summerbell. Identifying Filamentous Fungi: A Clinical Laboratory Handbook. California: Star Publishing Co., 1996.

Scopulariopsis like - Scopulariopsis species are ubiquitous and can grow on a wide variety of materials including old carpets and water damaged wallpaper.

Smuts/Myxomycetes - Smuts and Myxomycetes are parasitic plant pathogens. They are typically grouped together due to their association with plants, the outdoors and because they share similar microscopic morphology.
Health Effects: Can produce type I fungal hypersensitivity reactions.
References: Martin, G.W., C.J. Alexopoulos, and M.L. Farr. The Genera of Myxomycetes. Iowa City, Iowa: University of Iowa Press, 1983.

Conclusions/Recommendations

The ceiling tiles in some of the classrooms throughout the school were sagging, indicating relative humidity concerns. ESI recommends monitoring the relative humidity during warm/humid summer months to prevent the ceiling tiles throughout the school from sagging. In addition, a few of the ceiling tiles were water stained and should be replaced.

The samples in this report indicate elevated levels of Aspergillus/Penicillium in the breathable airspace of Classroom #111. This classroom also had apparent water damage coming from the drop ceiling near the entry way. Further recommendations are listed above. No elevated airborne mold spores were detected in the other testing locations.

I hope you found our service beneficial. If you have any questions or concerns, please feel free to contact me at 410-867-6262.

Respectfully,

Vinny Gigliotti (CIE)
Environmental Solutions, Inc.

Industry References

Since the 1993 New York City Department of Health (NYCDOH) document (Assessment and remediation of *Stachybotrys Atra* in Indoor Environments) was produced, several other guidance documents have been written. This report was developed in accordance with and including:

- *Fungal Contamination in Buildings: A Guide to Recognition and Management* (Health Canada, 1995).
- *Control of Moisture Problems Affecting Biological Indoor Air Quality* (Flannigan and Morey, 1996).
- *Bioaerosols: Assessment and Control* (American Conference of Government Industrial Hygienists [ACGIH], 1999).
- *Guidelines on Assessment and Remediation of Fungi in Indoor Environments* (NYCDOH, 2000). [external link]
- *Mold Remediation in Schools and Commercial Buildings* (U.S. EPA, 2001).
- *Report of the Microbial Growth Task Force* (The American Industrial Hygiene Association, 2001).
- *Fungal Contamination: A manual for investigation, remediation and control (BECi) 2005*.
- *29 CFR 1910, Occupational Safety and Health Standards for General Industry, U.S. Department of Labor*
- Institute of Inspection, Cleaning and Restoration Certification Standard IICRC S520 *29 CFR 1926, Occupational Safety and Health Standards for the Construction Industry*, U.S. Department of Labor
- *40 CFR 61, National Emission Standards for Hazardous Air Pollutants (NESHAP), U.S. Environmental Protection Agency*
- *ACR 2006, Assessment, Cleaning and Restoration of HVAC Systems, National Air Duct Cleaners Association, 2006**
- *ASHRAE Standards 62.1 or 62.2*
- *ASTM D-1653, Standard Test Methods for Water Vapor Transmission of Organic Coating Films*
- *Bioaerosols: Assessment and Control,* American Conference of Governmental Industrial Hygienists, 1999
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