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	Thurgood Marshall Middle School 120,192 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

4909 Brinkley Road, Temple Hills, MD 20748

Date of Inspection 2/27/2019

Prepared By: Vinny Gigliotti

Certified Indoor Environmentalist (CIE)

Dear Mr. Baylor,

The results of the inspection and testing performed at Thurgood Marshall Middle 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 Historically elevated levels of humidity, condensation from pipes, periodic steam leaks and outdated HVAC systems, may have contributed to water damage ceiling tiles and colonization of mold spores in various area of the school.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 visible 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.	
Family Room	2377988	N/A	13.3	72.1	357	000	9,900	
Inspected								
Ceiling Tiles	Walls	Teachers Desk	Children's Desk	Tables	Cabinets Shelving	Convector	HVAC Diffusors	Windows
2x4	Pegboard	3	0	6	6	1	0	12
Yes	No	No	N/A	No	No	No	N/A	No

Observation Notes

- Nine ceiling tiles were water stained, along the exterior wall.
- The indoor air quality should pose no health or environmental risk, as no airborne mold spores were detected during the time of the inspection.

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.	
Teachers' Lounge	2377988	N/A	12.0	80.4	401	000	3,200 (Does not include offset rooms)	
Inspected								
Ceiling Tiles	Walls	Teachers Desk	Children's Desk	Tables	Cabinets Shelving	Convector	HVAC Diffusors	Windows
2x4	CMU	0	0	4	3	4	3	6
Yes	No	N/A	N/A	No	**Yes**	No	**Yes**	No

Inspected

- There were discolorations and dust on the diffusors and ceiling tiles surrounding the diffusors. This includes in the left and right offset rooms.
- One ceiling tile was water stained in the main area of the lounge.
- Two ceiling tiles were water stained in the left offset room.
- Three ceiling tiles were water stained in the right offset room.
- Water stains and suspected microbial growth were seen in the sink cabinetry.
- The indoor air quality should pose no health or environmental risk, as no airborne mold spores were detected during the time of the inspection.

Recommendations

- Remove and replace the water damaged ceiling tiles. The contaminated ceiling tiles should be placed in a sealed plastic bag for disposal.
- HEPA vacuum, then damp-wipe the sink cabinetry with an anti-microbial agent to remove water staining and suspected microbial contamination.
- Clean diffusors with an antimicrobial to remove dust and discolorations.

Location	IAQ Sample #	Swab	R/H	Temp	CO2	Co	Cubic feet of air.	
203	2377993	N/A	12.2	73.9	477	000	7,540	
Inspected								
Ceiling Tiles	Walls	Teachers Desk	Children's Desk	Tables	Cabinets Shelving	Convector	HVAC Diffusors	Windows
2x4	CMU	1	0	12	2	1	0	8
No	No	No	N/A	No	No	No	N/A	No

Observation Notes

- There were NO signs of mold growth or elevated levels of moisture detected within this location.
- The remediation and cleaning efforts were completed successfully, and the indoor air quality should pose no health or environmental risk, as the total spore count was 40 spores per cubic meter of air.

Recommendations

None

Location	IAQ Sample #	Swab	R/H	Temp	CO2	Co	Cubic feet of air.	
216	2377998	N/A	14.8	69.8	541	000	8,700	
Inspected								
Ceiling Tiles	Walls	Teachers Desk	Children's Desk	Tables	Cabinets Shelving	Convector	HVAC Diffusors	Windows
2x4	CMU	1	36	2	5	1	0	8
Yes	No	No	No	No	No	No	N/A	No

Observation Notes

- Light accumulations of dust on the return register.
- Ten ceiling tiles were water stained.
- The indoor air quality should pose no health or environmental risk, as the spore count was 40 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.

Location	IAQ Sample #	Swab	R/H	Temp	CO2	Co	Cubic feet of air.	
209	2377968	No	16.4	74.6	584	000	7,500	
Inspected								
Ceiling Tiles	Walls	Teachers Desk	Children's Desk	Tables	Cabinets Shelving	Convector	HVAC Diffusors	Windows
2x4	CMU	1	17	2	4	1	0	6
No	No	No	No	No	No	Rust	N/A	No
Observation Notes								
• Heavy accumulations of dust and debris in the window A/C unit. • The indoor air quality should pose no health or environmental risk, as the spore count was 80 spores per cubic meter of air.								
Recommendations								
None								

Location	IAQ Sample #	Swab	R/H	Temp	CO2	Co	Cubic feet of air.	
219	2377973	N/A	17.0	72.8	898	000	9,000	
Inspected								
Ceiling Tiles	Walls	Teachers Desk	Children's Desk	Tables	Cabinets Shelving	Convector	HVAC Diffusors	Windows
2x4	CMU	1	12	0	6	1	0	8
Yes	No	No	No	N/A	No	No	N/A	No
Observation Notes								
• Five ceiling tiles were water stained. • The indoor air quality should pose no health or environmental risk, as the spore count was 40 spores per cubic meter of air. • Please note, the sink cabinetry could not be fully assessed, as the students were using the sink during the time of the inspection.								
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.	
126	2377992	N/A	11.7	77.3	443	000	8,640 (Right side of room)	
Inspected								
Ceiling Tiles	Walls	Teachers Desk	Children's Desk	Tables	Cabinets Shelving	Convector	HVAC Diffusors	Windows
2x4	CMU	2	1	1	4	0	0	6
Yes	No	No	No	No	No	N/A	N/A	No

Observation Notes

- Water spotting and discolorations were seen on several ceiling tiles throughout both sides of the room.
- The indoor air quality should pose no health or environmental risk, as the spore count was 40 spores per cubic meter of air.
- It was noted during the inspection that the teacher occupying the right side of the room is experiencing allergic reactions. The room was separated by a wall divider. The air sample was taken from the right side of the room.

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.	
124	2377997	N/A	15.4	73.7	384	000	10,200	
Inspected								
Ceiling Tiles	Walls	Teachers Desk	Children's Desk	Tables	Cabinets Shelving	Convector	HVAC Diffusors	Windows
2x4	CMU	1	0	18	8	1	0	8
Yes	No	No	N/A	No	No	No	N/A	No

Observation Notes

- Water spotting and discolorations were seen on several ceiling tiles.
- Water staining and suspected microbial growth on the green wall divider near the sink.
- The indoor air quality should pose no health or environmental risk, as the spore count was 40 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.
- HEPA vacuum, then damp-wipe the green wall divider near the sink with an anti-microbial agent to remove water staining and suspected microbial contamination.

Location	IAQ Sample #	Swab	R/H	Temp	CO2	Co	Cubic feet of air.	
112	2377978	N/A	12.8	74.6	498	000	7,500	
Inspected								
Ceiling Tiles	Walls	Teachers Desk	Children's Desk	Tables	Cabinets Shelving	Convector	HVAC Diffusors	Windows
2x2	CMU	1	13	5	3	1	0	6
Yes	No	No	No	No	No	No	N/A	No

Observation Notes

- Three ceiling tiles were water stained.
- The indoor air quality should pose no health or environmental risk, as the spore count was 80 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.

Location	IAQ Sample #	Swab	R/H	Temp	CO2	Co	Cubic feet of air.	
101	2377987	N/A	20.5	71.9	1,075	000	8,700	
Inspected								
Ceiling Tiles	Walls	Teachers Desk	Children's Desk	Tables	Cabinets Shelving	Convector	HVAC Diffusors	Windows
2x4	CMU	1	39	2	4	1	0	6
Yes	No	No	No	No	Yes	No	N/A	No

Observation Notes

- Light suspected microbial growth was seen in the sink cabinetry.
- Seven ceiling tiles were water stained.
- The Carbon Dioxide CO2 level in this room was slightly elevated at 1,075 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 240 spores per cubic meter of air.

Recommendations

- HEPA vacuum, then damp-wipe the sink cabinetry with an anti-microbial agent to remove suspected microbial contamination.
- 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.	
104	**2378008**	N/A	11.6	77.7	506	000	7,540	
Inspected								
Ceiling Tiles	Walls	Teachers Desk	Children's Desk	Tables	Cabinets Shelving	Convector	HVAC Diffusors	Windows
2x4	CMU	1	0	9	5	1	0	8
Yes	No	No	N/A	No	No	No	N/A	No

Observation Notes

- Two ceiling tiles were water stained.
- It was reported by the teacher in the classroom that there is a history of water intrusion from the exterior wall. The ceiling tiles had previously been replaced.
- The indoor air quality had elevated levels of **Beauveria-like** at **2,520** 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 exterior wall should be further evaluated for water and/or air intrusion.

Location	IAQ Sample #	Swab	R/H	Temp	CO2	Co	Cubic feet of air.	
107	2378002	N/A	24.2	75.0	**1,502**	000	9,000	
Inspected								
Ceiling Tiles	Walls	Teachers Desk	Children's Desk	Tables	Cabinets Shelving	Convector	HVAC Diffusors	Windows
2x4	CMU	1	35	1	5	1	0	8
Yes	No	No	No	No	No	No	N/A	No

Observation Notes

- Fourteen ceiling tiles were water stained. Several ceiling tiles contained grime/dirt.
- Math textbooks were stacked on the convector, restricting air flow. This may have caused the elevated levels of CO2. The levels of CO2 were detected at 1,502 ppm.
- The indoor air quality should pose no health or environmental risk, as the spore count was 80 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.

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.

Air Sampling Lab Results

SanAir Technologies Laboratory

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

Project Number: 4909 Brinkley Rd
P.O. Number:
Project Name: Thurgood Marshall Middle
Collected Date: 2/27/2019
Received Date: 2/28/2019 9:30:00 AM

SanAir ID Number
19009263
FINAL REPORT
3/4/2019 11:11:24 AM

Analyst: Macdonald, Claire

Air Cassette Analysis

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

SanAir ID Number	19009263-001			19009263-002			19009263-003			19009263-004		
Analysis Using STL	107C			107C			107C			107C		
Sample Number	2378012			2377988			2377983			2377993		
Sample Identification	Outdoors			Family Room			Teachers Lounge			Classroom #203		
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+			1+			1+			1+		
Other	**Raw Count**	**Count/M³**	**%**	**Raw Count**	**Count/M³**	**%**	**Raw Count**	**Count/M³**	**%**	**Raw Count**	**Count/M³**	**%**
Dander	1	40	n/a	11	440	n/a	32	1280	n/a	30	1200	n/a
Fibers				1	40	n/a	1	40	n/a	1	40	n/a
Mycelial Fragments												
Fungal Identification	**Raw Count**	**Count/M³**	**%**	**Raw Count**	**Count/M³**	**%**	**Raw Count**	**Count/M³**	**%**	**Raw Count**	**Count/M³**	**%**
Ascospores	1	40	>99									
Aspergillus/Penicillium												
Basidiospores												
Beauveria- like												
Chaetomium species												
Cladosporium species										1	40	>99
Pithomyces species												
Smuts/Myxomycetes												
TOTAL	**1**	**40**								**1**	**40**	

Signature: L. Claire Macdonald Date: 3/4/2019 Reviewed: Johnathan Wilson Date: 3/4/2019

SanAir Technologies Laboratory

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

Project Number: 4909 Brinkley Rd
P.O. Number:
Project Name: Thurgood Marshall Middle
Collected Date: 2/27/2019
Received Date: 2/28/2019 9:30:00 AM

SanAir ID Number
19009263
FINAL REPORT
3/4/2019 11:11:24 AM

Analyst: Macdonald, Claire

Air Cassette Analysis

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

SanAir ID Number	19009263-005			19009263-006			19009263-007			19009263-008		
Analysis Using STL	107C			107C			107C			107C		
Sample Number	2377998			2377968			2377973			2377992		
Sample Identification	Classroom #216			Classroom #209			Classroom #219			Classroom #126		
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/M^3			40 Count/M^3			40 Count/M^3			40 Count/M^3		
Background Density	1+			1+			2+			1+		
Other	**Raw Count**	**Count/M^3**	**%**	**Raw Count**	**Count/M^3**	**%**	**Raw Count**	**Count/M^3**	**%**	**Raw Count**	**Count/M^3**	**%**
Dander	16	640	n/a	27	1080	n/a	126	5040	n/a	18	720	n/a
Fibers	2	80	n/a	1	40	n/a	9	360	n/a	2	80	n/a
Mycelial Fragments										1	40	n/a
Fungal Identification	**Raw Count**	**Count/M^3**	**%**	**Raw Count**	**Count/M^3**	**%**	**Raw Count**	**Count/M^3**	**%**	**Raw Count**	**Count/M^3**	**%**
Ascospores												
Aspergillus/Penicillium	1	40	>99	1	40	50	1	40	>99	1	40	>99
Basidiospores				1	40	50						
Beauveria- like												
Chaetomium species												
Cladosporium species												
Pithomyces species												
Smuts/Myxomycetes												
TOTAL	**1**	**40**		**2**	**80**		**1**	**40**		**1**	**40**	

Signature: L. Claire Macdonald Date: 3/4/2019 Reviewed: Johnathan Wilson Date: 3/4/2019

SanAir Technologies Laboratory

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

Project Number: 4909 Brinkley Rd
P.O. Number:
Project Name: Thurgood Marshall Middle
Collected Date: 2/27/2019
Received Date: 2/28/2019 9:30:00 AM

SanAir ID Number
19009263
FINAL REPORT
3/4/2019 11:11:24 AM

Analyst: Macdonald, Claire

Air Cassette Analysis

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

SanAir ID Number	19009263-009			19009263-010			19009263-011			19009263-012		
Analysis Using STL	107C			107C			107C			107C		
Sample Number	2377997			2377978			2377987			2378008		
Sample Identification	Classroom #124			Classroom #112			Classroom #101			Classroom #104		
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+			1+			1+			2		
Other	**Raw Count**	**Count/M³**	**%**	**Raw Count**	**Count/M³**	**%**	**Raw Count**	**Count/M³**	**%**	**Raw Count**	**Count/M³**	**%**
Dander	29	1160	n/a	38	1520	n/a	21	840	n/a	36	1440	n/a
Fibers	1	40	n/a	4	160	n/a	1	40	n/a	1	40	n/a
Mycelial Fragments										1	40	n/a
Fungal Identification	**Raw Count**	**Count/M³**	**%**	**Raw Count**	**Count/M³**	**%**	**Raw Count**	**Count/M³**	**%**	**Raw Count**	**Count/M³**	**%**
Ascospores												
Aspergillus/Penicillium							6	240	>99	1	40	2
Basidiospores	1	40	>99	1	40	50						
Beauveria- like										63	2520	95
Chaetomium species				1	40	50						
Cladosporium species										2	80	3
Pithomyces species												
Smuts/Myxomycetes												
TOTAL	**1**	**40**		**2**	**80**		**6**	**240**		**66**	**2640**	

Signature: L. Claire Macdonald Date: 3/4/2019 Reviewed: Johnathan Wilson Date: 3/4/2019

SanAir Technologies Laboratory

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

Project Number: 4909 Brinkley Rd
P.O. Number:
Project Name: Thurgood Marshall Middle
Collected Date: 2/27/2019
Received Date: 2/28/2019 9:30:00 AM

SanAir ID Number
19009263
FINAL REPORT
3/4/2019 11:11:24 AM

Analyst: Macdonald, Claire

Air Cassette Analysis

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

SanAir ID Number	19009263-013		
Analysis Using STL	107C		
Sample Number	2378002		
Sample Identification	Classroom #107		
Sample Type	Air Cassette - Micro-5		
Volume	25 Liters		
Analytical Sensitivity	40 Count/M^3		
Background Density	2+		
Other	**Raw Count**	**Count/M^3**	**%**
Dander	179	7160	n/a
Fibers	4	160	n/a
Mycelial Fragments			
Fungal Identification	**Raw Count**	**Count/M^3**	**%**
Ascospores			
Aspergillus/Penicillium			
Basidiospores			
Beauveria- like			
Chaetomium species			
Cladosporium species			
Pithomyces species	1	40	50
Smuts/Myxomycetes	1	40	50
TOTAL	**2**	**80**	

Signature: L. Claire Macdonald Date: 3/4/2019 Reviewed: Johnathan Wilson Date: 3/4/2019

SanAir ID Number
19009263
FINAL REPORT
3/4/2019 11:11:24 AM

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

Project Number: 4909 Brinkley Rd
P.O. Number:
Project Name: Thurgood Marshall Middle
Collected Date: 2/27/2019
Received Date: 2/28/2019 9:30:00 AM

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.

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.

Beauveria- like - Beauveria is a recognized parasite of plants and insects. It has been isolated from the soil, plant debris, dung and foods, and is a saprobe.
Health Effects: It is rarely isolated from human infections, usually from immunocompromised individuals. Is considered a type I allergen.

SanAir ID Number
19009263
FINAL REPORT
3/4/2019 11:11:24 AM

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

Project Number: 4909 Brinkley Rd
P.O. Number:
Project Name: Thurgood Marshall Middle
Collected Date: 2/27/2019
Received Date: 2/28/2019 9:30:00 AM

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.

Chaetomium species - It is an ascomycete. It is found on a variety of substrates containing cellulose including paper and plant compost. It can be found on the damp or water damaged paper in sheetrock after a long term water damage. Several species have been reported to play a major role in decomposition of cellulose made materials. These fungi are able to dissolve the cellulose fibers in cotton and paper, and thus cause these materials to disintegrate. The process is especially rapid under moist conditions.
Health Effects: Chaetomium can produce type I fungal hypersensitivity and has caused onychomycosis (nail infections).
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.

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.

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.

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.

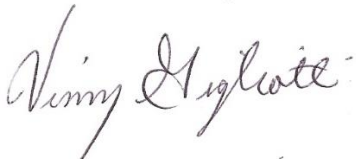
Conclusions/Recommendations

The samples in this report indicate elevated levels of Beauveria-like in the breathable airspace of Classroom #104. Due to a history of water intrusion, the exterior wall of the classroom should be further evaluated for water and/or air intrusion. No elevated airborne mold spores were detected in the other testing locations.

Although minimal amounts of suspected microbial growth were noticed during the inspection, several rooms still need attention. This is mainly due to multiple water damaged ceiling tiles located throughout the school and slightly elevated levels of CO2. Please refer to all the recommendations listed above.

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
- *Field Guide for Determination of Biological Contaminants in Environmental Samples, American Industrial Hygiene Association, 2005*
- *A Guide for Mold Remediation in Schools and Commercial Buildings, US Environmental Protection Agency, 2001 Protecting the Built Environment: Cleaning for Health, Michael A. Berry Ph.D., 1993*
- *IICRC S100 Standard and Reference Guide for Professional Carpet Cleaning, Fourth Edition, Institute of Inspection, Cleaning and Restoration Certification, (S100)**
- *IICRC S300 Standard and Reference Guide for Professional Upholstery Cleaning, First Edition, Institute of Inspection, Cleaning and Restoration Certification, (S300)**
- *ANSI/IICRC S500 Standard and Reference Guide for Professional Water Damage Restoration, Third Edition, Institute of Inspection, Cleaning and Restoration Certification, (S500)**