Spotts, Stevens and McCoy
1047 N. Park Road > Reading PA 19610
610.621.2000 > F. 610.621.2001 > SSMGROUP.COM

September 6, 2022

Mr. Joe Gnoffo
Operations Supervisor
Montoursville Area School District
50 North Arch Street
Montoursville, PA 17754
[jgnoffo@montoursville.k12.pa.us]

RE: Montoursville Area School District
District Wide Random Mold/IAQ Sampling
SSM File 109944.0016

Dear: Mr. Gnoffo:

On August 22, 2022, at the request of the Montoursville Area School District, Spotts, Stevens & McCoy (SSM) performed District Wide, Random Mold and Indoor Air Quality (IAQ) sampling at Loyalsock Valley Elementary School, C. E. McCall Middle School, Lyter Elementary School and Montoursville Area High School. The sampling included twenty (20) total airborne mold spore samples inside the schools and five (5) exterior samples for comparison purposes. The sampling was done at random locations throughout each of the Schools. Some areas chosen in the Schools included areas with the most student traffic such as cafeterias and libraries.

Results and Observations

The results of the total airborne mold spore sampling showed that the air quality was generally acceptable throughout the C. E. McCall Middle School, Lyter Elementary School and Montoursville Area High School, as compared to the exterior mold spore samples. Loyalsock Valley Elementary School did have a room that may require follow-up monitoring. Below is a summary of the sampling from each building. The total airborne mold spore results are categorized as "Acceptable", where the concentration is at or below the background (exterior) samples, "Slightly Elevated" when the concentration is above the background samples and "Elevated", when the concentration if ten times or more than the background samples.

Loyalsock Valley Elementary School
The results of the total airborne mold spore sampling showed that the air was generally acceptable throughout the Loyalsock Valley Elementary School. The areas sampled included the Café, the Library, Room A1, Room B1, Room B7 and the Music Room. The Cafe (Sample No. L8-22-1A) was "Slightly Elevated" for Aspergillus/Penicillium, Myxomycetes, Pithomyces, Bispora, Unidentifiable spores and Hyphal Fragments when compared to the exterior background samples (L8-22-7A and L8-22-8A). Room A1 (sample L8-11-2A) was "Slightly Elevated" for Alternaria and Hyphal Fragments; Room B7 (sample L8-22-4A) was "Slightly Elevated" for Hyphal Fragments: Room B1 (sample L8-22-5A) was "Slightly Elevated) for Aspergillus/Penicillium; and the Library (sample L8-22-6A) was "Slightly Elevated" for Epicoccum, Pithomyces and Hyphal Fragments. All other airborne mold spore samples found were at "Acceptable" levels when compared to the exterior "background" samples.

Direct read instrument sampling showed that the Café, Room A, the Music Room and Room B7 were elevated for Relative Humidity (RH). All other direct read sampling results were within industry standards.

Lyter Elementary School
The results of the total airborne mold spore sampling showed that the air quality was acceptable throughout the Lyter Elementary School. The areas sampled included the Library, the Café, B-10 and C-3. Room C-3 (sample GL8-22-2A) was "Slightly Elevated" for Epicoccum and Harzia when compared to the exterior background samples (samples EX8-22-1A, EX8-22-2A and EX-22-3A). Room B-10 was "Slightly Elevated" for Yeast. All other airborne mold spore samples found were at "Acceptable" levels when compared to the exterior "background" samples.

Direct read instrument sampling showed that the Café, Room C3 and Room B10 were elevated for Relative Humidity (RH). All other direct read sampling results were within industry standards.

McCall Middle School
The results of the total airborne mold spore sampling showed that the air was acceptable throughout the McCall Middle School. The Areas sampled included the Café, the Library, the Music Room 111, Room 164 and Room 205. The sample collected in Room 164 (sample M8-22-3A) was "Slightly Elevated" for Hyphal Fragments and the sample collected in the Music Room 111 (Sample M8-22-5A) was "Slightly Elevated" for Alternaria, Epociccum and Hyphal Fragments when compared to the exterior background samples (Samples EX8-22-1A, EX8-22-2A and EX8-22-3A). All other mold spores found were at "Acceptable" levels.

Direct read instrument sampling showed that the Café, Music Room 111, Room 164 and Room 205 were elevated for Relative Humidity (RH). All other direct read sampling results were within industry standards.

Montoursville Area High School
The results of the total airborne mold spore sampling showed that the air was acceptable throughout the Montoursville Area High School. The Areas sampled included the Café, the Library, Room 213 the Chorus Room and the Auxiliary Gym. The sample collected in the Auxiliary Gym (sample H8-22-2A) was "Slightly Elevated" for Curvularia, Polythrincicum and Hyphal Fragmentsand the Library (sample H8-22-4A) was "Slightly Elevated" for Alternaria and Bipolaris when compared to the exterior background samples (samples EX8-22-1A, EX8-22-2A and EX8-22-3A). All other mold spores found were at "Acceptable" levels when compared to the exterior background samples.

Direct read instrument sampling showed that the Chorus Room was elevated for Relative Humidity (RH). All other direct read sampling results were within industry standards.

See "Description of Molds Identified" attached to this letter for explanations of mold species found at "Slightly Elevated" or "Elevated" levels.

Criteria and Observations of Evaluated Areas
Criteria for Mold Sampling

If airborne mold spores are found in the interior samples, they generally should be similar to the varieties found in the outside samples, and should be at a substantially lower number (1/2 to 1/4 or less of the outside count), unless the windows are open for ventilation which can result in virtual equality. If windows are not open in an area sampled and the results are comparable to outside, it may indicate inadequate filtration on the HVAC

system or outside air may be following a less obvious pathway (for example in a window in an adjacent room and then into the sampled area). If varieties of mold are found that are not present in the outside samples, they may be artifacts (entered the building with normal air exchange when different varieties of mold were outside, possibly hours, days, or even months before).
They could also indicate localized mold growth occurring outside near an entry point (such as a window or a fresh air intake for an HVAC system) that did not directly affect the outside samples. An additional possible source is that they could indicate mold growth occurring in a hidden or distant location within the building or possibly a passive reservoir such as carpeting where mold spores have settled into the carpet with other dust and dirt and get released by activity (people walking in a hall or on the carpet, etc). If an option other than active growth in the sampled area is suspected, similar mold varieties will usually be noted in samples collected closer to the unknown source. If mold spores are found in substantially higher number than the outside sample, or elevated counts appear for varieties not found outside, then this could indicate some mold growth in the vicinity of the collected sample and a careful visual inspection is in order. Some specific varieties of mold can indicate problems; for example: the presence of significant numbers of Stachybotrys or Chaetomium can indicate very wet conditions were occurring recently or in the past at a prime mold food source (such as drywall, cellulose ceiling tile or paper products including cardboard).

Direct Read IEQ Parameters

Direct read parameters were used to evaluate general air quality conditions in the Loyalsock Valley Elementary School, C. E. McCall Middle School, Lyter Elementary School and Montoursville Area High School during the IEQ Evaluation. The direct read criteria included:

- Carbon Monoxide (CO) levels which are measured to evaluate possible intrusion of combustion exhaust
- Carbon Dioxide (CO_2) levels which are measured as an indicator of adequate ventilation
- Total particulate levels that are measured for IAQ evaluations to determine the presence of dust and particulate as a potential allergen/irritant and for cleanliness.
- Relative humidity levels were measured since humidity in excess of 60% could contribute to increased microbial growth, which in turn may aggravate allergic conditions or create biological hazards. Values near the 60% RH level are more common in the cooling season and values lower than 30% RH are very common in the heating season. Interior humidity can shift quickly depending on the outside conditions and the amount of outside air being introduced to the building.
- Total volatile organic compounds (VOC's) are often present in the indoor environment from many familiar sources, (inks, glues, etc.), however, elevated concentrations are generally to be avoided, making TVOC's a common parameter in IAQ/IEQ evaluations.

CONCLUSION

The results of the District Wide Limited Mold/IAQ sampling of the Montoursville Area School District showed generally acceptable conditions throughout the buildings.

RECOMMENDATIONS

SSM makes the following recommendations:

- Ensure that all HVAC filters are changed as per manufacturer's recommendations.
- Try to have RH levels maintained at 60% or lower during summer months.
- At Loyalsock Valley Elementary School, clean all piping located behind the shelves on each side of the HVAC units. Remove and clean the diffusers and HEPA vacuum the area followed by wet wiping with a sporicidal cleaner.

- At Loyalsock Valley Elementary School, consider an HVAC engineering specialist to evaluate the system in the building to ensure RH levels are below 60%, especially in summer months when there is little or no activity in the building.
- As always, staff should be vigilant when leaks are discovered to address the source, clean the moisture and replace discolored building materials such as ceiling tiles.

We appreciate the opportunity to provide the Montoursville Area School District with mold consulting services for this project. Should you have questions or require additional information, please contact me.

Very truly yours,
Spotts, Stevens and McCoy

William M. Katinowsky
Industrial Hygienist
bill.katinowsky@ssmgroup.com

Enclosures

Laboratory Analytical Report

Loyalsock Valley Elementary School

EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077
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Order ID:	372213499
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Project ID:	

Attn: Asbestos Division
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1047 North Park Road
Reading, PA 19610

Phone: (610) 621-2000
Fax:
Collected: 08/22/2022
Received: 08/23/2022
Analyzed: 08/24/2022

Proj: Loyalsock ES Montoursville ASD 17754 109944-0016

Spore Trap ASSESSMENTReport™ Air-O-Cell(™) Analysis of Fungal Spores & Particulates (Methods MICRO-SOP-201, ASTM D7391)

	Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
372213499-0001	Alternaria (Ulocladium)	-	-	-	Acceptable
	Ascospores	5	200	0.7	Acceptable
Client Sample ID	Aspergillus/Penicillium	7	300	1	Slightly Elevated
L8-22-1A	Basidiospores	644	28100	96.6	Acceptable
	Bipolaris++	-	-	-	Acceptable
	Chaetomium++	-	-	-	Acceptable
Location	Cladosporium	6	300	1	Acceptable
Cafe	Curvularia	-	-	-	Acceptable
	Epicoccum	-	-	-	Acceptable
Sample Volume (L)	Fusarium++	-	-	-	Acceptable
	Ganoderma	2	90	0.3	Acceptable
75	Myxomycetes++	1*	10*	0	Slightly Elevated
	Pithomyces++	1	40	0.1	Slightly Elevated
Sample Type	Rust	-	-	-	Acceptable
Inside	Stachybotrys/Memnoniella	-	-	-	Acceptable
	Unidentifiable Spores	1	40	0.1	Slightly Elevated
Comments	Bispora	1*	10*	0	Slightly Elevated
	Chaetoconis	-	-	-	Acceptable
	Nigrospora	-	-	-	Acceptable
	Paecilomyces++	-	-	-	Acceptable
	Zygophiala/Schizothyrium	-	-	-	Acceptable
	Total Fungi	**668**	**29090**	**100**	Acceptable
	Hyphal Fragment	1	40	-	Slightly Elevated
	Insect Fragment	1	40	-	Slightly Elevated
	Pollen	-	-	-	Acceptable

Analytical Sensitivity 600x: **44** counts/cubic meter
Analytical Sensitivity 300x *: **13*** counts/cubic meter

Skin Fragments: **1** 1 to 4 (low to high)
Fibrous Particulate: **1** 1 to 4 (low to high)
Background: **3** 1 to 4 (low to high); 5 (overloaded)

Acceptable Concentration at or below background
Slightly Elevated Concentration above background
ELEVATED Concentration 10X or more above background

Not commonly found growing indoors, spores likely come from outside.
Spores reported to be able to cause allergies in individuals.
Potential for mycotoxin production exists with these fungi.
These fungi are considered water damage indicators.

Bipolaris++ = Bipolaris / Drechslera / Exserohilum
Myxomycetes++ = Myxomycetes / Smut /

Initial report from: 08/25/2022 09:24:04

Vincent Iuzzolino, M.S., Laboratory Director
or Other Approved Signatory

For Information on the fungi listed in this report please visit the Resources section at www.emsl.com

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Spore Trap ASSESSMENTReport™ Air-O-Cell(™) Analysis of Fungal Spores & Particulates (Methods MICRO-SOP-201, ASTM D7391)

	Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
372213499-0002	Alternaria (Ulocladium)	1	40	1.1	Slightly Elevated
	Ascospores	-	-	-	Acceptable
Client Sample ID	Aspergillus/Penicillium	1	40	1.1	Acceptable
L8-22-2A	Basidiospores	80	3500	96.7	Acceptable
	Bipolaris++	-	-	-	Acceptable
	Chaetomium++	-	-	-	Acceptable
Location	Cladosporium	1	40	1.1	Acceptable
Room A1	Curvularia	-	-	-	Acceptable
	Epicoccum	-	-	-	Acceptable
Sample Volume (L)	Fusarium++	-	-	-	Acceptable
	Ganoderma	-	-	-	Acceptable
75	Myxomycetes++	-	-	-	Acceptable
	Pithomyces++	-	-	-	Acceptable
Sample Type	Rust	-	-	-	Acceptable
Inside	Stachybotrys/Memnoniella	-	-	-	Acceptable
	Unidentifiable Spores	-	-	-	Acceptable
Comments	Bispora	-	-	-	Acceptable
	Chaetoconis	-	-	-	Acceptable
	Nigrospora	-	-	-	Acceptable
	Paecilomyces++	-	-	-	Acceptable
	Zygophiala/Schizothyrium	-	-	-	Acceptable
	Total Fungi	**83**	**3620**	**100**	Acceptable
	Hyphal Fragment	1	40	-	Slightly Elevated
	Insect Fragment	-	-	-	Acceptable
	Pollen	-	-	-	Acceptable

Analytical Sensitivity 600x: **44** counts/cubic meter
Analytical Sensitivity 300x *: **13*** counts/cubic meter

Skin Fragments: **1** 1 to 4 (low to high)
Fibrous Particulate: **1** 1 to 4 (low to high)
Background: **1** 1 to 4 (low to high); 5 (overloaded)

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Slightly Elevated Concentration above background
ELEVATED Concentration 10X or more above background

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Bipolaris++ = Bipolaris / Drechslera / Exserohilum
Myxomycetes++ = Myxomycetes / Smut /

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	Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
372213499-0003	Alternaria (Ulocladium)	-	-	-	Acceptable
	Ascospores	3	100	3.1	Acceptable
Client Sample ID	Aspergillus/Penicillium	-	-	-	Acceptable
L8-22-3A	Basidiospores	70	3100	96.9	Acceptable
	Bipolaris++	-	-	-	Acceptable
	Chaetomium++	-	-	-	Acceptable
Location	Cladosporium	-	-	-	Acceptable
Music Room	Curvularia	-	-	-	Acceptable
	Epicoccum	-	-	-	Acceptable
Sample Volume (L)	Fusarium++	-	-	-	Acceptable
	Ganoderma	-	-	-	Acceptable
75	Myxomycetes++	-	-	-	Acceptable
	Pithomyces++	-	-	-	Acceptable
Sample Type	Rust	-	-	-	Acceptable
Inside	Stachybotrys/Memnoniella	-	-	-	Acceptable
	Unidentifiable Spores	-	-	-	Acceptable
Comments	Bispora	-	-	-	Acceptable
	Chaetoconis	-	-	-	Acceptable
	Nigrospora	-	-	-	Acceptable
	Paecilomyces++	-	-	-	Acceptable
	Zygophiala/Schizothyrium	-	-	-	Acceptable
	Total Fungi	**73**	**3200**	**100**	Acceptable
	Hyphal Fragment	-	-	-	Acceptable
	Insect Fragment	-	-	-	Acceptable
	Pollen	-	-	-	Acceptable

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Analytical Sensitivity 300x *: **13*** counts/cubic meter

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Slightly Elevated Concentration above background
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Bipolaris++ = Bipolaris / Drechslera / Exserohilum
Myxomycetes++ = Myxomycetes / Smut /

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Spore Trap ASSESSMENTReport™ Air-O-Cell(™) Analysis of Fungal Spores & Particulates (Methods MICRO-SOP-201, ASTM D7391)

Client Sample ID: 372213499-0004
Location: L8-22-4A
Sample Volume (L): Room B7
Sample Type: 75
Comments: Inside

Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
Alternaria (Ulocladium)	-	-	-	Acceptable
Ascospores	2	90	2.3	Acceptable
Aspergillus/Penicillium	-	-	-	Acceptable
Basidiospores	85	3700	96.6	Acceptable
Bipolaris++	-	-	-	Acceptable
Chaetomium++	-	-	-	Acceptable
Cladosporium	-	-	-	Acceptable
Curvularia	-	-	-	Acceptable
Epicoccum	-	-	-	Acceptable
Fusarium++	-	-	-	Acceptable
Ganoderma	1	40	1	Acceptable
Myxomycetes++	-	-	-	Acceptable
Pithomyces++	-	-	-	Acceptable
Rust	-	-	-	Acceptable
Stachybotrys/Memnoniella	-	-	-	Acceptable
Unidentifiable Spores	-	-	-	Acceptable
Bispora	-	-	-	Acceptable
Chaetoconis	-	-	-	Acceptable
Nigrospora	-	-	-	Acceptable
Paecilomyces++	-	-	-	Acceptable
Zygophiala/Schizothyrium	-	-	-	Acceptable
Total Fungi	**88**	**3830**	**100**	Acceptable
Hyphal Fragment	2	90	-	Slightly Elevated
Insect Fragment	-	-	-	Acceptable
Pollen	-	-	-	Acceptable

Analytical Sensitivity 600x: **44** counts/cubic meter
Analytical Sensitivity 300x *: **13*** counts/cubic meter

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Background: **1** 1 to 4 (low to high); 5 (overloaded)

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Slightly Elevated Concentration above background
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Bipolaris++ = Bipolaris / Drechslera / Exserohilum
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	Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
372213499-0005	Alternaria (Ulocladium)	-	-	-	Acceptable
	Ascospores	3	100	2.2	Acceptable
Client Sample ID	Aspergillus/Penicillium	3	100	2.2	Slightly Elevated
L8-22-5A	Basidiospores	99	4300	93.5	Acceptable
	Bipolaris++	-	-	-	Acceptable
	Chaetomium++	-	-	-	Acceptable
Location	Cladosporium	3	100	2.2	Acceptable
Room B1	Curvularia	-	-	-	Acceptable
	Epicoccum	-	-	-	Acceptable
Sample Volume (L)	Fusarium++	-	-	-	Acceptable
	Ganoderma	-	-	-	Acceptable
75	Myxomycetes++	-	-	-	Acceptable
	Pithomyces++	-	-	-	Acceptable
Sample Type	Rust	-	-	-	Acceptable
Inside	Stachybotrys/Memnoniella	-	-	-	Acceptable
	Unidentifiable Spores	-	-	-	Acceptable
Comments	Bispora	-	-	-	Acceptable
	Chaetoconis	-	-	-	Acceptable
	Nigrospora	-	-	-	Acceptable
	Paecilomyces++	-	-	-	Acceptable
	Zygophiala/Schizothyrium	-	-	-	Acceptable
	Total Fungi	**108**	**4600**	**100**	Acceptable
	Hyphal Fragment	-	-	-	Acceptable
	Insect Fragment	-	-	-	Acceptable
	Pollen	-	-	-	Acceptable

Analytical Sensitivity 600x: **44** counts/cubic meter
Analytical Sensitivity 300x *: **13*** counts/cubic meter

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Fibrous Particulate: **1** 1 to 4 (low to high)
Background: **1** 1 to 4 (low to high); 5 (overloaded)

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Slightly Elevated Concentration above background
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	Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
372213499-0006	Alternaria (Ulocladium)	-	-	-	Acceptable
	Ascospores	-	-	-	Acceptable
Client Sample ID	Aspergillus/Penicillium	1	40	2.5	Acceptable
L8-22-6A	Basidiospores	31	1400	86.4	Acceptable
	Bipolaris++	-	-	-	Acceptable
	Chaetomium++	-	-	-	Acceptable
Location	Cladosporium	3	100	6.2	Acceptable
Library	Curvularia	-	-	-	Acceptable
	Epicoccum	1	40	2.5	Slightly Elevated
Sample Volume (L)	Fusarium++	-	-	-	Acceptable
	Ganoderma	-	-	-	Acceptable
75	Myxomycetes++	-	-	-	Acceptable
	Pithomyces++	1	40	2.5	Slightly Elevated
Sample Type	Rust	-	-	-	Acceptable
Inside	Stachybotrys/Memnoniella	-	-	-	Acceptable
	Unidentifiable Spores	-	-	-	Acceptable
Comments	Bispora	-	-	-	Acceptable
	Chaetoconis	-	-	-	Acceptable
	Nigrospora	-	-	-	Acceptable
	Paecilomyces++	-	-	-	Acceptable
	Zygophiala/Schizothyrium	-	-	-	Acceptable
	Total Fungi	**37**	**1620**	**100**	Acceptable
	Hyphal Fragment	2	90	-	Slightly Elevated
	Insect Fragment	-	-	-	Acceptable
	Pollen	1	40	-	Slightly Elevated

Analytical Sensitivity 600x: **44** counts/cubic meter
Analytical Sensitivity 300x *: **13*** counts/cubic meter

Skin Fragments:	**2**	1 to 4 (low to high)
Fibrous Particulate:	**1**	1 to 4 (low to high)
Background:	**2**	1 to 4 (low to high); 5 (overloaded)

Acceptable Concentration at or below background
Slightly Elevated Concentration above background
ELEVATED Concentration 10X or more above background

Not commonly found growing indoors, spores likely come from outside.
Spores reported to be able to cause allergies in individuals.
Potential for mycotoxin production exists with these fungi.
These fungi are considered water damage indicators.

Bipolaris++ = Bipolaris / Drechslera / Exserohilum
Myxomycetes++ = Myxomycetes / Smut /

Initial report from: 08/25/2022 09:24:04

Vincent Iuzzolino, M.S., Laboratory Director
or Other Approved Signatory

For Information on the fungi listed in this report please visit the Resources section at www.emsl.com

EMSL Analytical, Inc.

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Phone/Fax: (800) 220-3675 / (856) 786-0262
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Order ID:	372213499
Customer ID:	SPOT50
Customer PO:	
Project ID:	

Attn: Asbestos Division
Spotts Stevens and McCoy, Inc.
1047 North Park Road
Reading, PA 19610

Phone:	(610) 621-2000
Fax:	
Collected:	08/22/2022
Received:	08/23/2022
Analyzed:	08/24/2022

Proj: Loyalsock ES Montoursville ASD 17754 109944-0016

Spore Trap ASSESSMENTReport™ Air-O-Cell(™) Analysis of Fungal Spores & Particulates (Methods MICRO-SOP-201, ASTM D7391)

	Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
372213499-0007	Alternaria (Ulocladium)	-	-	-	
	Ascospores	136	5940	12.2	
Client Sample ID	Aspergillus/Penicillium	-	-	-	
L8-22-7A	Basidiospores	946	41300	84.7	
	Bipolaris++	-	-	-	
	Chaetomium++	-	-	-	
Location	Cladosporium	25	1100	2.3	
Exterior, Front Entrance	Curvularia	-	-	-	
	Epicoccum	-	-	-	
Sample Volume (L)	Fusarium++	-	-	-	
	Ganoderma	5	200	0.4	
75	Myxomycetes++	-	-	-	
	Pithomyces++	-	-	-	
Sample Type	Rust	-	-	-	
Background	Stachybotrys/Memnoniella	-	-	-	
	Unidentifiable Spores	-	-	-	
Comments	Bispora	-	-	-	
	Chaetoconis	-	-	-	
	Nigrospora	1	40	0.1	
	Paecilomyces++	3	100	0.2	
	Zygophiala/Schizothyrium	2	90	0.2	
	Total Fungi	**1118**	**48770**	**100**	
	Hyphal Fragment	-	-	-	
	Insect Fragment	-	-	-	
	Pollen	-	-	-	

Analytical Sensitivity 600x: **44** counts/cubic meter
Analytical Sensitivity 300x *: **13*** counts/cubic meter

Skin Fragments:	**1**	1 to 4 (low to high)
Fibrous Particulate:	**1**	1 to 4 (low to high)
Background:	**1**	1 to 4 (low to high); 5 (overloaded)

Not commonly found growing indoors, spores likely come from outside.
Spores reported to be able to cause allergies in individuals.
Potential for mycotoxin production exists with these fungi.
These fungi are considered water damage indicators.

Bipolaris++ = Bipolaris / Drechslera / Exserohilum
Myxomycetes++ = Myxomycetes / Smut /

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Proj: Loyalsock ES Montoursville ASD 17754 109944-0016

Spore Trap ASSESSMENTReport™ Air-O-Cell(™) Analysis of Fungal Spores & Particulates (Methods MICRO-SOP-201, ASTM D7391)

Client Sample ID
L8-22-8A

Location
Exterior, Parking

Sample Volume (L)
75

Sample Type
Background

Comments

Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
Alternaria (Ulocladium)	-	-	-	
Ascospores	61	2700	6.5	
Aspergillus/Penicillium	2	90	0.2	
Basidiospores	842	36700	89	
Bipolaris++	-	-	-	
Chaetomium++	-	-	-	
Cladosporium	35	1500	3.6	
Curvularia	-	-	-	
Epicoccum	-	-	-	
Fusarium++	-	-	-	
Ganoderma	5	200	0.5	
Myxomycetes++	-	-	-	
Pithomyces++	-	-	-	
Rust	-	-	-	
Stachybotrys/Memnoniella	-	-	-	
Unidentifiable Spores	-	-	-	
Bispora	-	-	-	
Chaetoconis	1	40	0.1	
Nigrospora	-	-	-	
Paecilomyces++	-	-	-	
Zygophiala/Schizothyrium	-	-	-	
Total Fungi	**946**	**41230**	**100**	
Hyphal Fragment	-	-	-	
Insect Fragment	-	-	-	
Pollen	-	-	-	

Analytical Sensitivity 600x: **44** counts/cubic meter
Analytical Sensitivity 300x *: **13*** counts/cubic meter

Skin Fragments:	**1**	1 to 4 (low to high)
Fibrous Particulate:	**1**	1 to 4 (low to high)
Background:	**1**	1 to 4 (low to high); 5 (overloaded)

Not commonly found growing indoors, spores likely come from outside.
Spores reported to be able to cause allergies in individuals.
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Myxomycetes++ = Myxomycetes / Smut /

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Laboratory Analytical Report

Lyter Elementary School

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Analyzed: 08/25/2022

Proj: George Lyter ES Montoursville ASD / 109944-0016

Spore Trap ASSESSMENTReport™ Air-O-Cell(™) Analysis of Fungal Spores & Particulates (Methods MICRO-SOP-201, ASTM D7391)

	Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
372213491-0001	Alternaria (Ulocladium)	-	-	-	Acceptable
	Ascospores	-	-	-	Acceptable
Client Sample ID	Aspergillus/Penicillium	-	-	-	Acceptable
GL8-22-1A	Basidiospores	3	100	32.3	Acceptable
	Bipolaris++	-	-	-	Acceptable
	Chaetomium++	-	-	-	Acceptable
Location	Cladosporium	4	200	64.5	Acceptable
Library	Curvularia	-	-	-	Acceptable
	Epicoccum	-	-	-	Acceptable
Sample Volume (L)	Fusarium++	-	-	-	Acceptable
	Ganoderma	-	-	-	Acceptable
75	Myxomycetes++	1*	10*	3.2	Acceptable
	Pithomyces++	-	-	-	Acceptable
Sample Type	Rust	-	-	-	Acceptable
Inside	Scopulariopsis/Microascus	-	-	-	Acceptable
	Stachybotrys/Memnoniella	-	-	-	Acceptable
Comments	Unidentifiable Spores	-	-	-	Acceptable
	Zygomycetes	-	-	-	Acceptable
	Chaetoconis	-	-	-	Acceptable
	Harzia	-	-	-	Acceptable
	Yeast	-	-	-	Acceptable
	Total Fungi	**8**	**310**	**100**	Acceptable
	Hyphal Fragment	-	-	-	Acceptable
	Insect Fragment	-	-	-	Acceptable
	Pollen	-	-	-	Acceptable

Analytical Sensitivity 600x: **44** counts/cubic meter
Analytical Sensitivity 300x *: **13*** counts/cubic meter

Skin Fragments: **2** 1 to 4 (low to high)
Fibrous Particulate: **1** 1 to 4 (low to high)
Background: **1** 1 to 4 (low to high); 5 (overloaded)

Acceptable Concentration at or below background
Slightly Elevated Concentration above background
ELEVATED Concentration 10X or more above background

Not commonly found growing indoors, spores likely come from outside.
Spores reported to be able to cause allergies in individuals.
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These fungi are considered water damage indicators.

Bipolaris++ = Bipolaris / Drechslera / Exserohilum
Myxomycetes++ = Myxomycetes / Smut /

Report amended: 08/25/2022 12:02:41 Replaces initial report from:08/25/2022 11:02:27 Reason Code: Data Entry-Change to Project

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Fax:
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Received: 08/23/2022
Analyzed: 08/25/2022

Proj: George Lyter ES Montoursville ASD / 109944-0016

Spore Trap ASSESSMENTReport™ Air-O-Cell(™) Analysis of Fungal Spores & Particulates (Methods MICRO-SOP-201, ASTM D7391)

Client Sample ID: GL8-22-2A
Location: Room C3
Sample Volume (L): 75
Sample Type: Inside
Comments:

Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
Alternaria (Ulocladium)	-	-	-	Acceptable
Ascospores	43	1900	12.7	Acceptable
Aspergillus/Penicillium	-	-	-	Acceptable
Basidiospores	281	12500	83.7	Acceptable
Bipolaris++	-	-	-	Acceptable
Chaetomium++	-	-	-	Acceptable
Cladosporium	10	440	2.9	Acceptable
Curvularia	-	-	-	Acceptable
Epicoccum	1	40	0.3	Slightly Elevated
Fusarium++	-	-	-	Acceptable
Ganoderma	1	40	0.3	Acceptable
Myxomycetes++	-	-	-	Acceptable
Pithomyces++	-	-	-	Acceptable
Rust	-	-	-	Acceptable
Scopulariopsis/Microascus	-	-	-	Acceptable
Stachybotrys/Memnoniella	-	-	-	Acceptable
Unidentifiable Spores	-	-	-	Acceptable
Zygomycetes	-	-	-	Acceptable
Chaetoconis	-	-	-	Acceptable
Harzia	1*	10*	0.1	Slightly Elevated
Yeast	-	-	-	Acceptable
Total Fungi	**337**	**14930**	**100**	Acceptable
Hyphal Fragment	-	-	-	Acceptable
Insect Fragment	1	40	-	Slightly Elevated
Pollen	1*	10*	-	Slightly Elevated

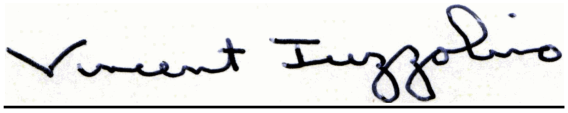
Analytical Sensitivity 600x: **44** counts/cubic meter
Analytical Sensitivity 300x *: **13*** counts/cubic meter

Skin Fragments: **1** 1 to 4 (low to high)
Fibrous Particulate: **1** 1 to 4 (low to high)
Background: **1** 1 to 4 (low to high); 5 (overloaded)

Acceptable Concentration at or below background
Slightly Elevated Concentration above background
ELEVATED Concentration 10X or more above background

Not commonly found growing indoors, spores likely come from outside.
Spores reported to be able to cause allergies in individuals.
Potential for mycotoxin production exists with these fungi.
These fungi are considered water damage indicators.

Bipolaris++ = Bipolaris / Drechslera / Exserohilum
Myxomycetes++ = Myxomycetes / Smut /



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Analyzed: 08/25/2022

Proj: George Lyter ES Montoursville ASD / 109944-0016

Spore Trap ASSESSMENTReport™ Air-O-Cell(™) Analysis of Fungal Spores & Particulates (Methods MICRO-SOP-201, ASTM D7391)

Client Sample ID: GL8-22-3A
Location: Room B10
Sample Volume (L): 75
Sample Type: Inside
Comments:

Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
Alternaria (Ulocladium)	-	-	-	Acceptable
Ascospores	14	620	13.8	Acceptable
Aspergillus/Penicillium	-	-	-	Acceptable
Basidiospores	80	3600	80.4	Acceptable
Bipolaris++	-	-	-	Acceptable
Chaetomium++	-	-	-	Acceptable
Cladosporium	1	40	0.9	Acceptable
Curvularia	-	-	-	Acceptable
Epicoccum	-	-	-	Acceptable
Fusarium++	-	-	-	Acceptable
Ganoderma	-	-	-	Acceptable
Myxomycetes++	-	-	-	Acceptable
Pithomyces++	-	-	-	Acceptable
Rust	-	-	-	Acceptable
Scopulariopsis/Microascus	-	-	-	Acceptable
Stachybotrys/Memnoniella	-	-	-	Acceptable
Unidentifiable Spores	-	-	-	Acceptable
Zygomycetes	-	-	-	Acceptable
Chaetoconis	-	-	-	Acceptable
Harzia	-	-	-	Acceptable
Yeast	17*	220*	4.9	Slightly Elevated
Total Fungi	**112**	**4480**	**100**	Acceptable
Hyphal Fragment	-	-	-	Acceptable
Insect Fragment	1	40	-	Slightly Elevated
Pollen	-	-	-	Acceptable

Analytical Sensitivity 600x: **44** counts/cubic meter
Analytical Sensitivity 300x *: **13*** counts/cubic meter

Skin Fragments: **3** 1 to 4 (low to high)
Fibrous Particulate: **1** 1 to 4 (low to high)
Background: **1** 1 to 4 (low to high); 5 (overloaded)

Acceptable Concentration at or below background
Slightly Elevated Concentration above background
ELEVATED Concentration 10X or more above background

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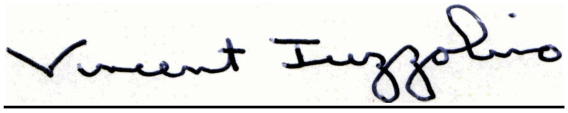

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Spore Trap ASSESSMENTReport™ Air-O-Cell(™) Analysis of Fungal Spores & Particulates (Methods MICRO-SOP-201, ASTM D7391)

	Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
372213491-0004	Alternaria (Ulocladium)	-	-	-	Acceptable
	Ascospores	1	40	50	Acceptable
Client Sample ID	Aspergillus/Penicillium	-	-	-	Acceptable
GL8-22-4A	Basidiospores	-	-	-	Acceptable
	Bipolaris++	-	-	-	Acceptable
	Chaetomium++	-	-	-	Acceptable
Location	Cladosporium	1	40	50	Acceptable
Cafe	Curvularia	-	-	-	Acceptable
	Epicoccum	-	-	-	Acceptable
Sample Volume (L)	Fusarium++	-	-	-	Acceptable
	Ganoderma	-	-	-	Acceptable
75	Myxomycetes++	-	-	-	Acceptable
	Pithomyces++	-	-	-	Acceptable
Sample Type	Rust	-	-	-	Acceptable
	Scopulariopsis/Microascus	-	-	-	Acceptable
Inside	Stachybotrys/Memnoniella	-	-	-	Acceptable
Comments	Unidentifiable Spores	-	-	-	Acceptable
	Zygomycetes	-	-	-	Acceptable
	Chaetoconis	-	-	-	Acceptable
	Harzia	-	-	-	Acceptable
	Yeast	-	-	-	Acceptable
	Total Fungi	**2**	**80**	**100**	Acceptable
	Hyphal Fragment	-	-	-	Acceptable
	Insect Fragment	-	-	-	Acceptable
	Pollen	-	-	-	Acceptable

Analytical Sensitivity 600x: **44** counts/cubic meter
Analytical Sensitivity 300x *: **13*** counts/cubic meter

Skin Fragments: **1** 1 to 4 (low to high)
Fibrous Particulate: **1** 1 to 4 (low to high)
Background: **1** 1 to 4 (low to high); 5 (overloaded)

Acceptable Concentration at or below background
Slightly Elevated Concentration above background
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Spore Trap ASSESSMENTReport™ Air-O-Cell(™) Analysis of Fungal Spores & Particulates (Methods MICRO-SOP-201, ASTM D7391)

	Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
372213491-0005	Alternaria (Ulocladium)	-	-	-	
	Ascospores	84	3700	11.7	✹
Client Sample ID	Aspergillus/Penicillium	4	200	0.6	✹
EX8-22-1A	Basidiospores	495	22000	69.5	▲ ✹
	Bipolaris++	-	-	-	
	Chaetomium++	-	-	-	
Location	Cladosporium	123	5460	17.3	✹
Exterior - 1	Curvularia	-	-	-	
	Epicoccum	-	-	-	
Sample Volume (L)	Fusarium++	-	-	-	
	Ganoderma	-	-	-	
75	Myxomycetes++	4	200	0.6	▲ ✹
	Pithomyces++	1	40	0.1	▲ ✹
Sample Type	Rust	-	-	-	
Background	Scopulariopsis/Microascus	-	-	-	
	Stachybotrys/Memnoniella	-	-	-	
Comments	Unidentifiable Spores	-	-	-	
	Zygomycetes	-	-	-	
	Chaetoconis	1	40	0.1	
	Harzia	-	-	-	
	Yeast	-	-	-	
	Total Fungi	**712**	**31640**	**100**	
	Hyphal Fragment	-	-	-	
	Insect Fragment	-	-	-	
	Pollen	-	-	-	

Analytical Sensitivity 600x: **44** counts/cubic meter
Analytical Sensitivity 300x *: **13*** counts/cubic meter

Skin Fragments: **1** 1 to 4 (low to high)
Fibrous Particulate: **1** 1 to 4 (low to high)
Background: **1** 1 to 4 (low to high); 5 (overloaded)

▲ Not commonly found growing indoors, spores likely come from outside.
✹ Spores reported to be able to cause allergies in individuals.
☣ Potential for mycotoxin production exists with these fungi.
💧 These fungi are considered water damage indicators.

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Spore Trap ASSESSMENTReport™ Air-O-Cell(™) Analysis of Fungal Spores & Particulates (Methods MICRO-SOP-201, ASTM D7391)

	Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
372213491-0006	Alternaria (Ulocladium)	-	-	-	
	Ascospores	44	2000	11.8	
Client Sample ID	Aspergillus/Penicillium	-	-	-	
EX8-22-2A	Basidiospores	316	14000	82.8	
	Bipolaris++	-	-	-	
	Chaetomium++	-	-	-	
Location	Cladosporium	11	490	2.9	
Exterior - 2	Curvularia	-	-	-	
	Epicoccum	1*	10*	0.1	
Sample Volume (L)	Fusarium++	-	-	-	
	Ganoderma	2	90	0.5	
75	Myxomycetes++	-	-	-	
	Pithomyces++	1*	10*	0.1	
Sample Type	Rust	-	-	-	
Background	Scopulariopsis/Microascus	-	-	-	
	Stachybotrys/Memnoniella	-	-	-	
Comments	Unidentifiable Spores	5	200	1.2	
	Zygomycetes	-	-	-	
	Chaetoconis	-	-	-	
	Harzia	-	-	-	
	Yeast	3	100	0.6	
	Total Fungi	**383**	**16900**	**100**	
	Hyphal Fragment	-	-	-	
	Insect Fragment	-	-	-	
	Pollen	-	-	-	

Analytical Sensitivity 600x: **44** counts/cubic meter
Analytical Sensitivity 300x *: **13*** counts/cubic meter

Skin Fragments:	**1**	1 to 4 (low to high)
Fibrous Particulate:	**1**	1 to 4 (low to high)
Background:	**2**	1 to 4 (low to high); 5 (overloaded)

Not commonly found growing indoors, spores likely come from outside.
Spores reported to be able to cause allergies in individuals.
Potential for mycotoxin production exists with these fungi.
These fungi are considered water damage indicators.

Bipolaris++ = Bipolaris / Drechslera / Exserohilum
Myxomycetes++ = Myxomycetes / Smut /

Report amended: 08/25/2022 12:02:41 Replaces initial report from:08/25/2022 11:02:27 Reason Code: Data Entry-Change to Project

Vincent Iuzzolino, M.S., Laboratory Director
or Other Approved Signatory

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EMSL Analytical, Inc.

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Phone/Fax: (800) 220-3675 / (856) 786-0262
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Order ID:	372213491
Customer ID:	SPOT50
Customer PO:	
Project ID:	

Attn: Asbestos Division
Spotts Stevens and McCoy, Inc.
1047 North Park Road
Reading, PA 19610

Phone: (610) 621-2000
Fax:
Collected: 08/22/2022
Received: 08/23/2022
Analyzed: 08/25/2022

Proj: George Lyter ES Montoursville ASD / 109944-0016

Spore Trap ASSESSMENTReport™ Air-O-Cell(™) Analysis of Fungal Spores & Particulates (Methods MICRO-SOP-201, ASTM D7391)

	Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
372213491-0007	Alternaria (Ulocladium)	-	-	-	
	Ascospores	23	1000	7.6	✹
Client Sample ID	Aspergillus/Penicillium	1	40	0.3	✹
EX8-22-3A	Basidiospores	266	11800	90.1	🌲 ✹
	Bipolaris++	-	-	-	
	Chaetomium++	-	-	-	
Location	Cladosporium	4	200	1.5	✹
Exterior - 3	Curvularia	-	-	-	
	Epicoccum	-	-	-	
Sample Volume (L)	Fusarium++	-	-	-	
	Ganoderma	1	40	0.3	🌲 ✹
75	Myxomycetes++	1*	10*	0.1	🌲 ✹
	Pithomyces++	-	-	-	
Sample Type	Rust	-	-	-	
Background	Scopulariopsis/Microascus	-	-	-	
	Stachybotrys/Memnoniella	-	-	-	
Comments	Unidentifiable Spores	-	-	-	
	Zygomycetes	-	-	-	
	Chaetoconis	-	-	-	
	Harzia	-	-	-	
	Yeast	-	-	-	
	Total Fungi	**296**	**13090**	**100**	
	Hyphal Fragment	-	-	-	
	Insect Fragment	-	-	-	
	Pollen	-	-	-	

Analytical Sensitivity 600x: **44** counts/cubic meter
Analytical Sensitivity 300x *: **13*** counts/cubic meter

Skin Fragments: **1** 1 to 4 (low to high)
Fibrous Particulate: **1** 1 to 4 (low to high)
Background: **1** 1 to 4 (low to high); 5 (overloaded)

🌲 Not commonly found growing indoors, spores likely come from outside.
✹ Spores reported to be able to cause allergies in individuals.
☣ Potential for mycotoxin production exists with these fungi.
💧 These fungi are considered water damage indicators.

Bipolaris++ = Bipolaris / Drechslera / Exserohilum
Myxomycetes++ = Myxomycetes / Smut /

Report amended: 08/25/2022 12:02:41 Replaces initial report from:08/25/2022 11:02:27 Reason Code: Data Entry-Change to Project

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Laboratory Analytical Report

McCall Middle School

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Order ID:	372213506
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Project ID:	

Attn: Asbestos Division
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Reading, PA 19610

Phone: (610) 621-2000
Fax:
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Analyzed: 08/25/2022

Proj: McCall MS Montoursville ASD / 109944-0016

Spore Trap ASSESSMENTReport™ Air-O-Cell(™) Analysis of Fungal Spores & Particulates (Methods MICRO-SOP-201, ASTM D7391)

	Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
372213506-0001	Alternaria (Ulocladium)	-	-	-	Acceptable
	Ascospores	1	40	4.8	Acceptable
Client Sample ID	Aspergillus/Penicillium	-	-	-	Acceptable
M8-22-1A	Basidiospores	16	700	84.3	Acceptable
	Bipolaris++	-	-	-	Acceptable
	Chaetomium++	-	-	-	Acceptable
Location	Cladosporium	4*	50*	6	Acceptable
Cafe	Curvularia	-	-	-	Acceptable
	Epicoccum	-	-	-	Acceptable
Sample Volume (L)	Fusarium++	-	-	-	Acceptable
	Ganoderma	-	-	-	Acceptable
75	Myxomycetes++	-	-	-	Acceptable
	Pithomyces++	-	-	-	Acceptable
Sample Type	Rust	-	-	-	Acceptable
Inside	Scopulariopsis/Microascus	-	-	-	Acceptable
	Stachybotrys/Memnoniella	-	-	-	Acceptable
Comments	Unidentifiable Spores	-	-	-	Acceptable
	Zygomycetes	-	-	-	Acceptable
	Chaetoconis	1	40	4.8	Acceptable
	Yeast	-	-	-	Acceptable
	Total Fungi	**22**	**830**	**100**	Acceptable
	Hyphal Fragment	-	-	-	Acceptable
	Insect Fragment	1	40	-	Slightly Elevated
	Pollen	-	-	-	Acceptable

Analytical Sensitivity 600x: **44** counts/cubic meter
Analytical Sensitivity 300x *: **13*** counts/cubic meter

Skin Fragments: **1** 1 to 4 (low to high)
Fibrous Particulate: **1** 1 to 4 (low to high)
Background: **1** 1 to 4 (low to high); 5 (overloaded)

Acceptable Concentration at or below background
Slightly Elevated Concentration above background
ELEVATED Concentration 10X or more above background

Not commonly found growing indoors, spores likely come from outside.
Spores reported to be able to cause allergies in individuals.
Potential for mycotoxin production exists with these fungi.
These fungi are considered water damage indicators.

Bipolaris++ = Bipolaris / Drechslera / Exserohilum
Myxomycetes++ = Myxomycetes / Smut /

Initial report from: 08/25/2022 11:00:41

Vincent Iuzzolino, M.S., Laboratory Director
or Other Approved Signatory

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Order ID:	372213506
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Customer PO:	
Project ID:	

Attn: Asbestos Division
Spotts Stevens and McCoy, Inc.
1047 North Park Road
Reading, PA 19610

Phone: (610) 621-2000
Fax:
Collected: 08/22/2022
Received: 08/23/2022
Analyzed: 08/25/2022

Proj: McCall MS Montoursville ASD / 109944-0016

Spore Trap ASSESSMENTReport™ Air-O-Cell(™) Analysis of Fungal Spores & Particulates (Methods MICRO-SOP-201, ASTM D7391)

Client Sample ID: M8-22-2A
Location: Library
Sample Volume (L): 75
Sample Type: Inside
Comments:

Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
Alternaria (Ulocladium)	-	-	-	Acceptable
Ascospores	-	-	-	Acceptable
Aspergillus/Penicillium	-	-	-	Acceptable
Basidiospores	1	40	100	Acceptable
Bipolaris++	-	-	-	Acceptable
Chaetomium++	-	-	-	Acceptable
Cladosporium	-	-	-	Acceptable
Curvularia	-	-	-	Acceptable
Epicoccum	-	-	-	Acceptable
Fusarium++	-	-	-	Acceptable
Ganoderma	-	-	-	Acceptable
Myxomycetes++	-	-	-	Acceptable
Pithomyces++	-	-	-	Acceptable
Rust	-	-	-	Acceptable
Scopulariopsis/Microascus	-	-	-	Acceptable
Stachybotrys/Memnoniella	-	-	-	Acceptable
Unidentifiable Spores	-	-	-	Acceptable
Zygomycetes	-	-	-	Acceptable
Chaetoconis	-	-	-	Acceptable
Yeast	-	-	-	Acceptable
Total Fungi	**1**	**40**	**100**	Acceptable
Hyphal Fragment	-	-	-	Acceptable
Insect Fragment	-	-	-	Acceptable
Pollen	-	-	-	Acceptable

Analytical Sensitivity 600x: **44** counts/cubic meter
Analytical Sensitivity 300x *: **13*** counts/cubic meter

Skin Fragments: **2** 1 to 4 (low to high)
Fibrous Particulate: **1** 1 to 4 (low to high)
Background: **1** 1 to 4 (low to high); 5 (overloaded)

Acceptable Concentration at or below background
Slightly Elevated Concentration above background
ELEVATED Concentration 10X or more above background

Not commonly found growing indoors, spores likely come from outside.
Spores reported to be able to cause allergies in individuals.
Potential for mycotoxin production exists with these fungi.
These fungi are considered water damage indicators.

Bipolaris++ = Bipolaris / Drechslera / Exserohilum
Myxomycetes++ = Myxomycetes / Smut /

Initial report from: 08/25/2022 11:00:41

Vincent Iuzzolino, M.S., Laboratory Director
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Order ID:	372213506
Customer ID:	SPOT50
Customer PO:	
Project ID:	

Attn: Asbestos Division
Spotts Stevens and McCoy, Inc.
1047 North Park Road
Reading, PA 19610

Phone: (610) 621-2000
Fax:
Collected: 08/22/2022
Received: 08/23/2022
Analyzed: 08/25/2022

Proj: McCall MS Montoursville ASD / 109944-0016

Spore Trap ASSESSMENTReport™ Air-O-Cell(™) Analysis of Fungal Spores & Particulates (Methods MICRO-SOP-201, ASTM D7391)

Client Sample ID
M8-22-3A

Location
Room 164

Sample Volume (L)
75

Sample Type
Inside

Comments

Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
Alternaria (Ulocladium)	-	-	-	Acceptable
Ascospores	-	-	-	Acceptable
Aspergillus/Penicillium	-	-	-	Acceptable
Basidiospores	-	-	-	Acceptable
Bipolaris++	-	-	-	Acceptable
Chaetomium++	-	-	-	Acceptable
Cladosporium	-	-	-	Acceptable
Curvularia	-	-	-	Acceptable
Epicoccum	-	-	-	Acceptable
Fusarium++	-	-	-	Acceptable
Ganoderma	-	-	-	Acceptable
Myxomycetes++	-	-	-	Acceptable
Pithomyces++	-	-	-	Acceptable
Rust	-	-	-	Acceptable
Scopulariopsis/Microascus	-	-	-	Acceptable
Stachybotrys/Memnoniella	-	-	-	Acceptable
Unidentifiable Spores	-	-	-	Acceptable
Zygomycetes	-	-	-	Acceptable
Chaetoconis	-	-	-	Acceptable
Yeast	-	-	-	Acceptable
Total Fungi	-	**None Detected**	-	Acceptable
Hyphal Fragment	1	40	-	Slightly Elevated
Insect Fragment	-	-	-	Acceptable
Pollen	-	-	-	Acceptable

Analytical Sensitivity 600x: **44** counts/cubic meter
Analytical Sensitivity 300x *: **13*** counts/cubic meter

Skin Fragments: **2** 1 to 4 (low to high)
Fibrous Particulate: **1** 1 to 4 (low to high)
Background: **1** 1 to 4 (low to high); 5 (overloaded)

Acceptable Concentration at or below background
Slightly Elevated Concentration above background
ELEVATED Concentration 10X or more above background

Not commonly found growing indoors, spores likely come from outside.
Spores reported to be able to cause allergies in individuals.
Potential for mycotoxin production exists with these fungi.
These fungi are considered water damage indicators.

Bipolaris++ = Bipolaris / Drechslera / Exserohilum
Myxomycetes++ = Myxomycetes / Smut /

Initial report from: 08/25/2022 11:00:41

Vincent Iuzzolino, M.S., Laboratory Director
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Order ID:	372213506
Customer ID:	SPOT50
Customer PO:	
Project ID:	

Attn: Asbestos Division
Spotts Stevens and McCoy, Inc.
1047 North Park Road
Reading, PA 19610

Phone: (610) 621-2000
Fax:
Collected: 08/22/2022
Received: 08/23/2022
Analyzed: 08/25/2022

Proj: McCall MS Montoursville ASD / 109944-0016

Spore Trap ASSESSMENTReport™ Air-O-Cell(™) Analysis of Fungal Spores & Particulates (Methods MICRO-SOP-201, ASTM D7391)

Client Sample ID
M8-22-4A

Location
Room 205

Sample Volume (L)
75

Sample Type
Inside

Comments

Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
Alternaria (Ulocladium)	-	-	-	Acceptable
Ascospores	-	-	-	Acceptable
Aspergillus/Penicillium	-	-	-	Acceptable
Basidiospores	1	40	50	Acceptable
Bipolaris++	-	-	-	Acceptable
Chaetomium++	-	-	-	Acceptable
Cladosporium	1	40	50	Acceptable
Curvularia	-	-	-	Acceptable
Epicoccum	-	-	-	Acceptable
Fusarium++	-	-	-	Acceptable
Ganoderma	-	-	-	Acceptable
Myxomycetes++	-	-	-	Acceptable
Pithomyces++	-	-	-	Acceptable
Rust	-	-	-	Acceptable
Scopulariopsis/Microascus	-	-	-	Acceptable
Stachybotrys/Memnoniella	-	-	-	Acceptable
Unidentifiable Spores	-	-	-	Acceptable
Zygomycetes	-	-	-	Acceptable
Chaetoconis	-	-	-	Acceptable
Yeast	-	-	-	Acceptable
Total Fungi	**2**	**80**	**100**	Acceptable
Hyphal Fragment	-	-	-	Acceptable
Insect Fragment	-	-	-	Acceptable
Pollen	-	-	-	Acceptable

Analytical Sensitivity 600x: **44** counts/cubic meter
Analytical Sensitivity 300x *: **13*** counts/cubic meter

Skin Fragments: **1** 1 to 4 (low to high)
Fibrous Particulate: **1** 1 to 4 (low to high)
Background: **1** 1 to 4 (low to high); 5 (overloaded)

Acceptable Concentration at or below background
Slightly Elevated Concentration above background
ELEVATED Concentration 10X or more above background

Not commonly found growing indoors, spores likely come from outside.
Spores reported to be able to cause allergies in individuals.
Potential for mycotoxin production exists with these fungi.
These fungi are considered water damage indicators.

Bipolaris++ = Bipolaris / Drechslera / Exserohilum
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Initial report from: 08/25/2022 11:00:41

Vincent Iuzzolino, M.S., Laboratory Director
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Customer ID:	SPOT50
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Proj: McCall MS Montoursville ASD / 109944-0016

Spore Trap ASSESSMENTReport™ Air-O-Cell(™) Analysis of Fungal Spores & Particulates (Methods MICRO-SOP-201, ASTM D7391)

	Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
372213506-0005	Alternaria (Ulocladium)	1*	10*	1.9	Slightly Elevated
	Ascospores	-	-	-	Acceptable
Client Sample ID	Aspergillus/Penicillium	1	40	7.7	Acceptable
M8-22-5A	Basidiospores	7	300	57.7	Acceptable
	Bipolaris++	-	-	-	Acceptable
	Chaetomium++	-	-	-	Acceptable
Location	Cladosporium	3	100	19.2	Acceptable
Music Room 111	Curvularia	-	-	-	Acceptable
	Epicoccum	1	40	7.7	Slightly Elevated
Sample Volume (L)	Fusarium++	-	-	-	Acceptable
	Ganoderma	-	-	-	Acceptable
75	Myxomycetes++	-	-	-	Acceptable
	Pithomyces++	2*	30*	5.8	Acceptable
Sample Type	Rust	-	-	-	Acceptable
Inside	Scopulariopsis/Microascus	-	-	-	Acceptable
	Stachybotrys/Memnoniella	-	-	-	Acceptable
Comments	Unidentifiable Spores	-	-	-	Acceptable
	Zygomycetes	-	-	-	Acceptable
	Chaetoconis	-	-	-	Acceptable
	Yeast	-	-	-	Acceptable
	Total Fungi	**15**	**520**	**100**	Acceptable
	Hyphal Fragment	2	90	-	Slightly Elevated
	Insect Fragment	-	-	-	Acceptable
	Pollen	-	-	-	Acceptable

Analytical Sensitivity 600x: **44** counts/cubic meter
Analytical Sensitivity 300x *: **13*** counts/cubic meter

Skin Fragments: **2** 1 to 4 (low to high)
Fibrous Particulate: **1** 1 to 4 (low to high)
Background: **2** 1 to 4 (low to high); 5 (overloaded)

Acceptable Concentration at or below background
Slightly Elevated Concentration above background
ELEVATED Concentration 10X or more above background

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Bipolaris++ = Bipolaris / Drechslera / Exserohilum
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Proj: McCall MS Montoursville ASD / 109944-0016

Spore Trap ASSESSMENTReport™ Air-O-Cell(™) Analysis of Fungal Spores & Particulates (Methods MICRO-SOP-201, ASTM D7391)

Client Sample ID: EX8-22-1A
Location: Exterior 1
Sample Volume (L): 75
Sample Type: Background
Comments:

Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
Alternaria (Ulocladium)	-	-	-	
Ascospores	84	3700	11.7	
Aspergillus/Penicillium	4	200	0.6	
Basidiospores	495	22000	69.5	
Bipolaris++	-	-	-	
Chaetomium++	-	-	-	
Cladosporium	123	5460	17.3	
Curvularia	-	-	-	
Epicoccum	-	-	-	
Fusarium++	-	-	-	
Ganoderma	-	-	-	
Myxomycetes++	4	200	0.6	
Pithomyces++	1	40	0.1	
Rust	-	-	-	
Scopulariopsis/Microascus	-	-	-	
Stachybotrys/Memnoniella	-	-	-	
Unidentifiable Spores	-	-	-	
Zygomycetes	-	-	-	
Chaetoconis	1	40	0.1	
Yeast	-	-	-	
Total Fungi	**712**	**31640**	**100**	
Hyphal Fragment	-	-	-	
Insect Fragment	-	-	-	
Pollen	-	-	-	

Analytical Sensitivity 600x: **44** counts/cubic meter
Analytical Sensitivity 300x *: **13*** counts/cubic meter

Skin Fragments:	**1**	1 to 4 (low to high)
Fibrous Particulate:	**1**	1 to 4 (low to high)
Background:	**1**	1 to 4 (low to high); 5 (overloaded)

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Spore Trap ASSESSMENTReport™ Air-O-Cell(™) Analysis of Fungal Spores & Particulates (Methods MICRO-SOP-201, ASTM D7391)

Client Sample ID: EX8-22-2A
Location: Exterior 2
Sample Volume (L): 75
Sample Type: Background
Comments:

372213506-0007

Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
Alternaria (Ulocladium)	-	-	-	
Ascospores	44	2000	11.8	
Aspergillus/Penicillium	-	-	-	
Basidiospores	316	14000	82.8	
Bipolaris++	-	-	-	
Chaetomium++	-	-	-	
Cladosporium	11	490	2.9	
Curvularia	-	-	-	
Epicoccum	1*	10*	0.1	
Fusarium++	-	-	-	
Ganoderma	2	90	0.5	
Myxomycetes++	-	-	-	
Pithomyces++	1*	10*	0.1	
Rust	-	-	-	
Scopulariopsis/Microascus	-	-	-	
Stachybotrys/Memnoniella	-	-	-	
Unidentifiable Spores	5	200	1.2	
Zygomycetes	-	-	-	
Chaetoconis	-	-	-	
Yeast	3	100	0.6	
Total Fungi	**383**	**16900**	**100**	
Hyphal Fragment	-	-	-	
Insect Fragment	-	-	-	
Pollen	-	-	-	

Analytical Sensitivity 600x: **44** counts/cubic meter
Analytical Sensitivity 300x *: **13*** counts/cubic meter

Skin Fragments: **1** 1 to 4 (low to high)
Fibrous Particulate: **1** 1 to 4 (low to high)
Background: **2** 1 to 4 (low to high); 5 (overloaded)

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Phone/Fax: (800) 220-3675 / (856) 786-0262
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Order ID:	372213506
Customer ID:	SPOT50
Customer PO:	
Project ID:	

Attn: Asbestos Division
Spotts Stevens and McCoy, Inc.
1047 North Park Road
Reading, PA 19610

Phone:	(610) 621-2000
Fax:	
Collected:	08/22/2022
Received:	08/23/2022
Analyzed:	08/25/2022

Proj: McCall MS Montoursville ASD / 109944-0016

Spore Trap ASSESSMENTReport™ Air-O-Cell(™) Analysis of Fungal Spores & Particulates (Methods MICRO-SOP-201, ASTM D7391)

	Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
372213506-0008	Alternaria (Ulocladium)	-	-	-	
	Ascospores	23	1000	7.6	
Client Sample ID	Aspergillus/Penicillium	1	40	0.3	
EX8-22-3A	Basidiospores	266	11800	90.1	
	Bipolaris++	-	-	-	
	Chaetomium++	-	-	-	
Location	Cladosporium	4	200	1.5	
Exterior 3	Curvularia	-	-	-	
	Epicoccum	-	-	-	
Sample Volume (L)	Fusarium++	-	-	-	
	Ganoderma	1	40	0.3	
75	Myxomycetes++	1*	10*	0.1	
	Pithomyces++	-	-	-	
Sample Type	Rust	-	-	-	
	Scopulariopsis/Microascus	-	-	-	
Background	Stachybotrys/Memnoniella	-	-	-	
Comments	Unidentifiable Spores	-	-	-	
	Zygomycetes	-	-	-	
	Chaetoconis	-	-	-	
	Yeast	-	-	-	
	Total Fungi	**296**	**13090**	**100**	
	Hyphal Fragment	-	-	-	
	Insect Fragment	-	-	-	
	Pollen	-	-	-	

Analytical Sensitivity 600x: **44** counts/cubic meter
Analytical Sensitivity 300x *: **13*** counts/cubic meter

Skin Fragments:	**1**	1 to 4 (low to high)
Fibrous Particulate:	**1**	1 to 4 (low to high)
Background:	**1**	1 to 4 (low to high); 5 (overloaded)

Not commonly found growing indoors, spores likely come from outside.
Spores reported to be able to cause allergies in individuals.
Potential for mycotoxin production exists with these fungi.
These fungi are considered water damage indicators.

Bipolaris++ = Bipolaris / Drechslera / Exserohilum
Myxomycetes++ = Myxomycetes / Smut /

Initial report from: 08/25/2022 11:00:41

Vincent Iuzzolino, M.S., Laboratory Director
or Other Approved Signatory

For Information on the fungi listed in this report please visit the Resources section at www.emsl.com

Air Monitoring Data Form
Montoursville Area High School

EMSL Analytical, Inc.

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Order ID:	372213504
Customer ID:	SPOT50
Customer PO:	
Project ID:	

Attn: Asbestos Division
Spotts Stevens and McCoy, Inc.
1047 North Park Road
Reading, PA 19610

Phone: (610) 621-2000
Fax:
Collected: 08/22/2022
Received: 08/23/2022
Analyzed: 08/25/2022

Proj: High School Montoursville ASD PA 17754 / 109944-0016

Spore Trap ASSESSMENTReport™ Air-O-Cell(™) Analysis of Fungal Spores & Particulates (Methods MICRO-SOP-201, ASTM D7391)

	Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
372213504-0001	Alternaria (Ulocladium)	-	-	-	Acceptable
	Ascospores	-	-	-	Acceptable
Client Sample ID	Aspergillus/Penicillium	-	-	-	Acceptable
H8-22-1A	Basidiospores	7	300	88.2	Acceptable
	Bipolaris++	-	-	-	Acceptable
	Chaetomium++	-	-	-	Acceptable
Location	Cladosporium	1	40	11.8	Acceptable
Cafe	Curvularia	-	-	-	Acceptable
	Epicoccum	-	-	-	Acceptable
Sample Volume (L)	Fusarium++	-	-	-	Acceptable
	Ganoderma	-	-	-	Acceptable
75	Myxomycetes++	-	-	-	Acceptable
	Pithomyces++	-	-	-	Acceptable
Sample Type	Rust	-	-	-	Acceptable
Inside	Scopulariopsis/Microascus	-	-	-	Acceptable
	Stachybotrys/Memnoniella	-	-	-	Acceptable
Comments	Unidentifiable Spores	-	-	-	Acceptable
	Zygomycetes	-	-	-	Acceptable
	Chaetoconis	-	-	-	Acceptable
	Polythrincium	-	-	-	Acceptable
	Yeast	-	-	-	Acceptable
	Total Fungi	**8**	**340**	**100**	Acceptable
	Hyphal Fragment	-	-	-	Acceptable
	Insect Fragment	-	-	-	Acceptable
	Pollen	-	-	-	Acceptable

Analytical Sensitivity 600x: **44** counts/cubic meter
Analytical Sensitivity 300x *: **13*** counts/cubic meter

Skin Fragments: **2** 1 to 4 (low to high)
Fibrous Particulate: **1** 1 to 4 (low to high)
Background: **1** 1 to 4 (low to high); 5 (overloaded)

Acceptable Concentration at or below background
Slightly Elevated Concentration above background
ELEVATED Concentration 10X or more above background

Not commonly found growing indoors, spores likely come from outside.
Spores reported to be able to cause allergies in individuals.
Potential for mycotoxin production exists with these fungi.
These fungi are considered water damage indicators.

Bipolaris++ = Bipolaris / Drechslera / Exserohilum
Myxomycetes++ = Myxomycetes / Smut /

Initial report from: 08/25/2022 10:59:01

Vincent Iuzzolino, M.S., Laboratory Director
or Other Approved Signatory

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Spotts Stevens and McCoy, Inc.
1047 North Park Road
Reading, PA 19610

Phone: (610) 621-2000
Fax:
Collected: 08/22/2022
Received: 08/23/2022
Analyzed: 08/25/2022

Proj: High School Montoursville ASD PA 17754 / 109944-0016

Spore Trap ASSESSMENTReport™ Air-O-Cell(™) Analysis of Fungal Spores & Particulates (Methods MICRO-SOP-201, ASTM D7391)

Client Sample ID: H8-22-2A
Location: Aux Gym
Sample Volume (L): 75
Sample Type: Inside
Comments:

372213504-0002

Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
Alternaria (Ulocladium)	-	-	-	Acceptable
Ascospores	-	-	-	Acceptable
Aspergillus/Penicillium	-	-	-	Acceptable
Basidiospores	3	100	62.5	Acceptable
Bipolaris++	-	-	-	Acceptable
Chaetomium++	-	-	-	Acceptable
Cladosporium	-	-	-	Acceptable
Curvularia	1*	10*	6.3	Slightly Elevated
Epicoccum	-	-	-	Acceptable
Fusarium++	-	-	-	Acceptable
Ganoderma	-	-	-	Acceptable
Myxomycetes++	-	-	-	Acceptable
Pithomyces++	-	-	-	Acceptable
Rust	-	-	-	Acceptable
Scopulariopsis/Microascus	-	-	-	Acceptable
Stachybotrys/Memnoniella	-	-	-	Acceptable
Unidentifiable Spores	1	40	25	Acceptable
Zygomycetes	-	-	-	Acceptable
Chaetoconis	-	-	-	Acceptable
Polythrincium	1*	10*	6.3	Slightly Elevated
Yeast	-	-	-	Acceptable
Total Fungi	**6**	**160**	**100**	Acceptable
Hyphal Fragment	1*	10*	-	Slightly Elevated
Insect Fragment	-	-	-	Acceptable
Pollen	-	-	-	Acceptable

Analytical Sensitivity 600x: **44** counts/cubic meter
Analytical Sensitivity 300x *: **13*** counts/cubic meter

Skin Fragments: **1** 1 to 4 (low to high)
Fibrous Particulate: **1** 1 to 4 (low to high)
Background: **1** 1 to 4 (low to high); 5 (overloaded)

Acceptable Concentration at or below background
Slightly Elevated Concentration above background
ELEVATED Concentration 10X or more above background

Not commonly found growing indoors, spores likely come from outside.
Spores reported to be able to cause allergies in individuals.
Potential for mycotoxin production exists with these fungi.
These fungi are considered water damage indicators.

Bipolaris++ = Bipolaris / Drechslera / Exserohilum
Myxomycetes++ = Myxomycetes / Smut /

Initial report from: 08/25/2022 10:59:01

Vincent Iuzzolino, M.S., Laboratory Director
or Other Approved Signatory

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Order ID:	372213504
Customer ID:	SPOT50
Customer PO:	
Project ID:	

Attn: Asbestos Division
Spotts Stevens and McCoy, Inc.
1047 North Park Road
Reading, PA 19610

Phone: (610) 621-2000
Fax:
Collected: 08/22/2022
Received: 08/23/2022
Analyzed: 08/25/2022

Proj: High School Montoursville ASD PA 17754 / 109944-0016

Spore Trap ASSESSMENTReport™ Air-O-Cell(™) Analysis of Fungal Spores & Particulates (Methods MICRO-SOP-201, ASTM D7391)

Client Sample ID: H8-22-3A
Location: Chorus Room
Sample Volume (L): 75
Sample Type: Inside
Comments:

Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
Alternaria (Ulocladium)	-	-	-	Acceptable
Ascospores	-	-	-	Acceptable
Aspergillus/Penicillium	-	-	-	Acceptable
Basidiospores	2	90	69.2	Acceptable
Bipolaris++	-	-	-	Acceptable
Chaetomium++	-	-	-	Acceptable
Cladosporium	1	40	30.8	Acceptable
Curvularia	-	-	-	Acceptable
Epicoccum	-	-	-	Acceptable
Fusarium++	-	-	-	Acceptable
Ganoderma	-	-	-	Acceptable
Myxomycetes++	-	-	-	Acceptable
Pithomyces++	-	-	-	Acceptable
Rust	-	-	-	Acceptable
Scopulariopsis/Microascus	-	-	-	Acceptable
Stachybotrys/Memnoniella	-	-	-	Acceptable
Unidentifiable Spores	-	-	-	Acceptable
Zygomycetes	-	-	-	Acceptable
Chaetoconis	-	-	-	Acceptable
Polythrincium	-	-	-	Acceptable
Yeast	-	-	-	Acceptable
Total Fungi	**3**	**130**	**100**	Acceptable
Hyphal Fragment	-	-	-	Acceptable
Insect Fragment	-	-	-	Acceptable
Pollen	1*	10*	-	Slightly Elevated

Analytical Sensitivity 600x: **44** counts/cubic meter
Analytical Sensitivity 300x *: **13*** counts/cubic meter

Skin Fragments:	**2**	1 to 4 (low to high)
Fibrous Particulate:	**1**	1 to 4 (low to high)
Background:	**1**	1 to 4 (low to high); 5 (overloaded)

Acceptable Concentration at or below background
Slightly Elevated Concentration above background
ELEVATED Concentration 10X or more above background

Not commonly found growing indoors, spores likely come from outside.
Spores reported to be able to cause allergies in individuals.
Potential for mycotoxin production exists with these fungi.
These fungi are considered water damage indicators.

Bipolaris++ = Bipolaris / Drechslera / Exserohilum
Myxomycetes++ = Myxomycetes / Smut /

Initial report from: 08/25/2022 10:59:01

Vincent Iuzzolino, M.S., Laboratory Director
or Other Approved Signatory

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Order ID:	372213504
Customer ID:	SPOT50
Customer PO:	
Project ID:	

Attn: Asbestos Division
Spotts Stevens and McCoy, Inc.
1047 North Park Road
Reading, PA 19610

Phone: (610) 621-2000
Fax:
Collected: 08/22/2022
Received: 08/23/2022
Analyzed: 08/25/2022

Proj: High School Montoursville ASD PA 17754 / 109944-0016

Spore Trap ASSESSMENTReport™ Air-O-Cell(™) Analysis of Fungal Spores & Particulates (Methods MICRO-SOP-201, ASTM D7391)

372213504-0004

Client Sample ID
H8-22-4A

Location
Library

Sample Volume (L)
75

Sample Type
Inside

Comments

Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
Alternaria (Ulocladium)	1*	10*	1.7	Slightly Elevated
Ascospores	2	90	15.3	Acceptable
Aspergillus/Penicillium	1	40	6.8	Acceptable
Basidiospores	10	440	74.6	Acceptable
Bipolaris++	1*	10*	1.7	Slightly Elevated
Chaetomium++	-	-	-	Acceptable
Cladosporium	-	-	-	Acceptable
Curvularia	-	-	-	Acceptable
Epicoccum	-	-	-	Acceptable
Fusarium++	-	-	-	Acceptable
Ganoderma	-	-	-	Acceptable
Myxomycetes++	-	-	-	Acceptable
Pithomyces++	-	-	-	Acceptable
Rust	-	-	-	Acceptable
Scopulariopsis/Microascus	-	-	-	Acceptable
Stachybotrys/Memnoniella	-	-	-	Acceptable
Unidentifiable Spores	-	-	-	Acceptable
Zygomycetes	-	-	-	Acceptable
Chaetoconis	-	-	-	Acceptable
Polythrincium	-	-	-	Acceptable
Yeast	-	-	-	Acceptable
Total Fungi	**15**	**590**	**100**	Acceptable
Hyphal Fragment	-	-	-	Acceptable
Insect Fragment	-	-	-	Acceptable
Pollen	-	-	-	Acceptable

Analytical Sensitivity 600x: **44** counts/cubic meter
Analytical Sensitivity 300x *: **13*** counts/cubic meter

Skin Fragments:	**2**	1 to 4 (low to high)
Fibrous Particulate:	**1**	1 to 4 (low to high)
Background:	**1**	1 to 4 (low to high); 5 (overloaded)

Acceptable Concentration at or below background
Slightly Elevated Concentration above background
ELEVATED Concentration 10X or more above background

Not commonly found growing indoors, spores likely come from outside.
Spores reported to be able to cause allergies in individuals.
Potential for mycotoxin production exists with these fungi.
These fungi are considered water damage indicators.

Bipolaris++ = Bipolaris / Drechslera / Exserohilum
Myxomycetes++ = Myxomycetes / Smut /

Initial report from: 08/25/2022 10:59:01

Vincent Iuzzolino, M.S., Laboratory Director
or Other Approved Signatory

For Information on the fungi listed in this report please visit the Resources section at www.emsl.com

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Order ID:	372213504
Customer ID:	SPOT50
Customer PO:	
Project ID:	

Attn: Asbestos Division
Spotts Stevens and McCoy, Inc.
1047 North Park Road
Reading, PA 19610

Phone: (610) 621-2000
Fax:
Collected: 08/22/2022
Received: 08/23/2022
Analyzed: 08/25/2022

Proj: High School Montoursville ASD PA 17754 / 109944-0016

Spore Trap ASSESSMENTReport™ Air-O-Cell(™) Analysis of Fungal Spores & Particulates (Methods MICRO-SOP-201, ASTM D7391)

Client Sample ID: H8-22-5A
Location: Room 213
Sample Volume (L): 75
Sample Type: Inside
Comments:

372213504-0005

Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
Alternaria (Ulocladium)	-	-	-	Acceptable
Ascospores	-	-	-	Acceptable
Aspergillus/Penicillium	-	-	-	Acceptable
Basidiospores	7	300	85.7	Acceptable
Bipolaris++	-	-	-	Acceptable
Chaetomium++	-	-	-	Acceptable
Cladosporium	1	40	11.4	Acceptable
Curvularia	-	-	-	Acceptable
Epicoccum	-	-	-	Acceptable
Fusarium++	-	-	-	Acceptable
Ganoderma	-	-	-	Acceptable
Myxomycetes++	-	-	-	Acceptable
Pithomyces++	1*	10*	2.9	Acceptable
Rust	-	-	-	Acceptable
Scopulariopsis/Microascus	-	-	-	Acceptable
Stachybotrys/Memnoniella	-	-	-	Acceptable
Unidentifiable Spores	-	-	-	Acceptable
Zygomycetes	-	-	-	Acceptable
Chaetoconis	-	-	-	Acceptable
Polythrincium	-	-	-	Acceptable
Yeast	-	-	-	Acceptable
Total Fungi	**9**	**350**	**100**	Acceptable
Hyphal Fragment	-	-	-	Acceptable
Insect Fragment	-	-	-	Acceptable
Pollen	-	-	-	Acceptable

Analytical Sensitivity 600x: **44** counts/cubic meter
Analytical Sensitivity 300x *: **13*** counts/cubic meter

Skin Fragments: **3** 1 to 4 (low to high)
Fibrous Particulate: **1** 1 to 4 (low to high)
Background: **1** 1 to 4 (low to high); 5 (overloaded)

Acceptable Concentration at or below background
Slightly Elevated Concentration above background
ELEVATED Concentration 10X or more above background

Not commonly found growing indoors, spores likely come from outside.
Spores reported to be able to cause allergies in individuals.
Potential for mycotoxin production exists with these fungi.
These fungi are considered water damage indicators.

Bipolaris++ = Bipolaris / Drechslera / Exserohilum
Myxomycetes++ = Myxomycetes / Smut /

Initial report from: 08/25/2022 10:59:01

Vincent Iuzzolino, M.S., Laboratory Director
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Collected:	08/22/2022
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Proj: High School Montoursville ASD PA 17754 / 109944-0016

Spore Trap ASSESSMENTReport™ Air-O-Cell(™) Analysis of Fungal Spores & Particulates (Methods MICRO-SOP-201, ASTM D7391)

	Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
372213504-0006	Alternaria (Ulocladium)	-	-	-	
	Ascospores	84	3700	11.7	
Client Sample ID	Aspergillus/Penicillium	4	200	0.6	
EX8-22-1A	Basidiospores	495	22000	69.5	
	Bipolaris++	-	-	-	
	Chaetomium++	-	-	-	
Location	Cladosporium	123	5460	17.3	
Exterior 1	Curvularia	-	-	-	
	Epicoccum	-	-	-	
Sample Volume (L)	Fusarium++	-	-	-	
	Ganoderma	-	-	-	
75	Myxomycetes++	4	200	0.6	
	Pithomyces++	1	40	0.1	
Sample Type	Rust	-	-	-	
Background	Scopulariopsis/Microascus	-	-	-	
	Stachybotrys/Memnoniella	-	-	-	
Comments	Unidentifiable Spores	-	-	-	
	Zygomycetes	-	-	-	
	Chaetoconis	1	40	0.1	
	Polythrincium	-	-	-	
	Yeast	-	-	-	
	Total Fungi	**712**	**31640**	**100**	
	Hyphal Fragment	-	-	-	
	Insect Fragment	-	-	-	
	Pollen	-	-	-	

Analytical Sensitivity 600x: **44** counts/cubic meter
Analytical Sensitivity 300x *: **13*** counts/cubic meter

Skin Fragments:	**1**	1 to 4 (low to high)
Fibrous Particulate:	**1**	1 to 4 (low to high)
Background:	**1**	1 to 4 (low to high); 5 (overloaded)

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Proj: High School Montoursville ASD PA 17754 / 109944-0016

Spore Trap ASSESSMENTReport™ Air-O-Cell(™) Analysis of Fungal Spores & Particulates (Methods MICRO-SOP-201, ASTM D7391)

	Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
372213504-0007	Alternaria (Ulocladium)	-	-	-	
	Ascospores	44	2000	11.8	
Client Sample ID	Aspergillus/Penicillium	-	-	-	
EX8-22-2A	Basidiospores	316	14000	82.8	
	Bipolaris++	-	-	-	
	Chaetomium++	-	-	-	
Location	Cladosporium	11	490	2.9	
Exterior 2	Curvularia	-	-	-	
	Epicoccum	1*	10*	0.1	
Sample Volume (L)	Fusarium++	-	-	-	
	Ganoderma	2	90	0.5	
75	Myxomycetes++	-	-	-	
	Pithomyces++	1*	10*	0.1	
Sample Type	Rust	-	-	-	
Background	Scopulariopsis/Microascus	-	-	-	
	Stachybotrys/Memnoniella	-	-	-	
Comments	Unidentifiable Spores	5	200	1.2	
	Zygomycetes	-	-	-	
	Chaetoconis	-	-	-	
	Polythrincium	-	-	-	
	Yeast	3	100	0.6	
	Total Fungi	**383**	**16900**	**100**	
	Hyphal Fragment	-	-	-	
	Insect Fragment	-	-	-	
	Pollen	-	-	-	

Analytical Sensitivity 600x: **44** counts/cubic meter
Analytical Sensitivity 300x *: **13*** counts/cubic meter

Skin Fragments: **1** 1 to 4 (low to high)
Fibrous Particulate: **1** 1 to 4 (low to high)
Background: **2** 1 to 4 (low to high); 5 (overloaded)

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Spores reported to be able to cause allergies in individuals.
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These fungi are considered water damage indicators.

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Fax:
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Proj: High School Montoursville ASD PA 17754 / 109944-0016

Spore Trap ASSESSMENTReport™ Air-O-Cell(™) Analysis of Fungal Spores & Particulates (Methods MICRO-SOP-201, ASTM D7391)

Client Sample ID
EX8-22-3A

Location
Exterior 3

Sample Volume (L)
75

Sample Type
Background

Comments

Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
Alternaria (Ulocladium)	-	-	-	
Ascospores	23	1000	7.6	
Aspergillus/Penicillium	1	40	0.3	
Basidiospores	266	11800	90.1	
Bipolaris++	-	-	-	
Chaetomium++	-	-	-	
Cladosporium	4	200	1.5	
Curvularia	-	-	-	
Epicoccum	-	-	-	
Fusarium++	-	-	-	
Ganoderma	1	40	0.3	
Myxomycetes++	1*	10*	0.1	
Pithomyces++	-	-	-	
Rust	-	-	-	
Scopulariopsis/Microascus	-	-	-	
Stachybotrys/Memnoniella	-	-	-	
Unidentifiable Spores	-	-	-	
Zygomycetes	-	-	-	
Chaetoconis	-	-	-	
Polythrincium	-	-	-	
Yeast	-	-	-	
Total Fungi	**296**	**13090**	**100**	
Hyphal Fragment	-	-	-	
Insect Fragment	-	-	-	
Pollen	-	-	-	

Analytical Sensitivity 600x: **44** counts/cubic meter
Analytical Sensitivity 300x *: **13*** counts/cubic meter

Skin Fragments:	**1**	1 to 4 (low to high)
Fibrous Particulate:	**1**	1 to 4 (low to high)
Background:	**1**	1 to 4 (low to high); 5 (overloaded)

Not commonly found growing indoors, spores likely come from outside.
Spores reported to be able to cause allergies in individuals.
Potential for mycotoxin production exists with these fungi.
These fungi are considered water damage indicators.

Bipolaris++ = Bipolaris / Drechslera / Exserohilum
Myxomycetes++ = Myxomycetes / Smut /

Initial report from: 08/25/2022 10:59:01

Vincent Iuzzolino, M.S., Laboratory Director
or Other Approved Signatory

For Information on the fungi listed in this report please visit the Resources section at www.emsl.com

Description of Molds Identified as “Slightly Elevated”

Hyphal fragments or mycelia are components of fungal growth (similar to the roots and branches of a tree); it is common to find small hyphal fragments in outdoor air and possibly in indoor dust. Hyphal fragments or pieces found in air or dust samples are usually quite large and not likely to be inhaled deeply into the lungs, so mold hyphal fragments are less of an airborne risk to building occupants

Aspergillus (as-per-jill-us) – allergen / contaminant / opportunistic pathogen, commonly found in the environment around the world. It comprises approximately 200 species and can appear almost any color. Though commonly found on cultures, tape-lifts, and air samples, its spores are indistinguishable from *Penicillium* on non-cultured samples (like tape-lifts and air-o-cells) unless the conidiophore is present. Health effects vary by species, but many species are reported to be allergenic. Some species produce toxins that might have significant health effects in humans. *Aspergillus* is one of the most infectious of molds, but infections are not common in normal immune systems. *Aspergillus* spp. are well-known to play a role in three different clinical settings in humans: (1) opportunistic infections; (2) allergic states; and (3) toxicoses. Immunosuppression is the major factor predisposing to development of opportunistic infections. These infections may present in a wide spectrum, varying from local involvement to dissemination and as a whole called aspergillosis. Among all filamentous fungi, *Aspergillus* is in general the most commonly isolated one in invasive infections. It is the second most commonly recovered fungus in opportunistic mycoses following *Candida*. Construction in hospital environments constitutes a major risk for development of aspergillosis particularly in neutropenic patients. *Aspergillus versicolor* can be found mostly in temperate areas in air, house dust, foods, soils, hay, cotton, and dairy products. Its presence in indoor air often indicates signs of moisture problems in buildings, as it is readily found in water damaged building materials. This species produces the mycotoxin sterigmatocystin, which is reported to be carcinogenic to the liver and kidney, and it can cause such symptoms as diarrhea and upset stomach. It also produces the volatile organic compound (VOC) geosmin, this compound causes irritation of the mucus membranes of humans and pets; also causing the characteristic musty, earthy odor often connected with moldy houses.

Penicillium (pen-uh-sill'-ee-um) – contaminant / opportunistic pathogen, one of the most common genera found worldwide in soil and decaying vegetation and indoors in dust, food, and various building materials. Common bread mold is a species of Penicillium. Spores usually cannot be distinguished from Aspergillus on non-cultured samples (like tape-lifts and air-o-cells). It is reported to be allergenic, to cause certain infections in compromised individuals, and some species do produce toxins unhealthy to humans.

Curvularia (curve-you-lair'-ee-uh) – contaminant / opportunistic pathogen, found in air, soil and textiles. Reported to be allergenic. Rare infections of corneas, nails, and sinuses, primarily in immunocompromised individuals.

Epicoccum (epp-ee-cock'-um) – contaminant / opportunistic pathogen, found in soil, air, water and rotting vegetation and can be commonly found in outdoor air. It is a common allergen, and rarely can it cause an infection in the skin.

Myxomycete / Rust / Smut (mix-oh'-my-seat) – general category for commonly found genera usually associated with living and decaying plants as well as decaying wood. Sometimes can be found indoors. Some allergenic properties reported, but generally pose no health concerns to humans or animals. Smuts are ubiquitous parasitic plant pathogens, which require a living host to complete their life cycle and are not usually found growing indoors. Smuts are most often found on corn, grass, weeds, flowering plants and other fungi; they are usually disseminated by wind. They are called smuts because they form black powdery spore masses that resemble soot or smut. Myxomycetes are ubiquitous outdoor molds (often considered a slime mold), and are commonly found in forested areas where bark, soil, dung, and leaf litter are present.

Alternaria(all-tur-nair'-ee-uh) – common allergen / contaminant / opportunistic pathogen, one of the most common molds found world wide in soil and on plants and can commonly can be found indoors (frequently appearing black on window frames). It is an important airborne allergen and common agent for hay fever, asthma, and other allergy related symptoms.

Bipolaris is a dematiaceous, filamentous fungus. It is cosmopolitan in nature and is isolated from plant debris and soil. The pathogenic species have known teleomorphic states in the genus Cochliobolus and produce ascospores. Bipolaris is one of the causative agents of phaeohyphomycosis. The clinical spectrum is diverse, including allergic and chronic invasive sinusitis, keratitis, endophthalmitis, endocarditis, endarteritis, osteomyelitis, meningoencephalitis, peritonitis, otitis media (in agricultural field workers),and fungemia as well as cutaneous and pulmonary infections and allergic bronchopulmonary disease. Bipolaris can infect both immunocompetent and immunocompromised host

***Polythrincium sp*.** Polythrincium species comprise a very small proportion of the fungal biota. This genus is somewhat related to Ramularia. No information is available regarding health effects, or toxicity. Allergenicity has not been studied. May be identified in air on spore trap samples (spores have distinctive morphology). Also, spores may be seen in dust as part of the normal influx of outdoor microbial particles. Natural habitat is on leaves.

Pithomyces (pith-oh-my-sees) – contaminant, found on decaying plants, especially leaves and grasses. Rarely found indoors, but it can grow on paper. No reports of allergies or infections, but some species produce a toxin that causes facial eczema in sheep.

Unidentifiable Spores - All non-distinctive unidentifiable colorless spores seen on spore trap samples are placed into this category. These are all the genera described by the sentence: Spores do not have distinctive morphology and would be categorized as "other colorless" on spore trap samples.

Bispora sp. - No medical information at hand. In absence of data it is reasonable to expect fungal spores to be allergenic if present indoors at high levels. Bispora is a widespread fungus found in temperate climates. *Bispora betulina* is found in buildings on wood in wet areas. It can cause soft-rot wood decay.

Yeasts are microscopic fungi consisting of solitary cells that reproduce by budding.

Air Monitoring Data Form
Loyalsock Valley Elementary School

SSM Group, Inc. Air Monitoring Data Form

Date: August 22, 2022 **Project Name:** Montoursville Area School District, Loyalsock Valley Elementary School

Client/Work Order #: 109944.0016 **Analysts:** William M. Katinowsky

Sample	Location	CO_2 (PPM)	CO (PPM)	Temperature (°F)	Relative Humidity (%)	VOC (ppb)	Total Particulate (<10 µm) (mg/m3)	Total Resipitable Particulate (<10 µm) (mg/m^3)
	Recommended IAQ Limits*	***<1095***	***<9***	***68 - 75***	***30 - 60***	***< 1000***	***<0.150***	***<0.150***
1	Café	616	0.0	73.6	69.1	23	0.026	0.028
2	Room A-1	555	0.0	73.4	68.2	2	0.027	0.026
3	Music Room	515	0.0	75.1	68.0	32	0.027	0.025
4	B-7	549	0.0	75.1	60.6	32	0.026	0.028
5	B-1	572	0.0	76.1	59.2	7	0.027	0.028
6	Library	846	0.0	74.9	50.9	21	0.027	0.026
7	Exterior, Front Entrance	401	0.0	79.8	60.2	0	0.040	0.032
8	Exterior, Parking Lot	395	0.0	80.0	64.5	0	0.038	0.032
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Units - ppm = parts/million; ppb = parts/billion; mg/m3 = milligrams/cubic meter *CO2 recommended limit is outside ppm + 700 ppm. CO is an ASHRAE recommended level. For VOC's, recommended limit is 10% of PADOH IAQ for Schools evacuation limit and is generally for normal classrooms and hallways, special use areas such as Art rooms could be significantly higher due to expectation of some exposure in these areas and potential exposure duration would be shorter. Particulate values are based on EPA Ambient Air Quality values and are approximately 100 times lower than OSHA limits.

Air Monitoring Data Form
Lyter Elementary School

SSM Group, Inc. Air Monitoring Data Form

Date: August 22, 2022 **Project Name:** Montoursville Area School District, Lyter Elementary School

Client/Work Order #: 109944.0015 **Analysts:** William M. Katinowsky

Sample	Location	CO_2 (PPM)	CO (PPM)	Temperature (°F)	Relative Humidity (%)	VOC (ppb)	Total Particulate (<10 µm) (mg/m3)	Total Resipitable Particulate (<10 µm) (mg/m^3)
	Recommended IAQ Limits*	***<1101***	***<9***	***68 - 75***	***30 - 60***	***< 1000***	***<0.150***	***<0.150***
1	Room B-10	680	0.0	77.5	67.6	30	0.030	0.029
2	Library	812	0.0	73.8	51.5	28	0.026	0.024
3	Café	459	0.0	78.1	64.5	2	0.026	0.024
4	Room C-3 (window open)	545	0.0	76.6	76.8	2	0.027	0.027
5	Exterior	401	0.0	73.9	86+	0	0.035	0.033
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Units - ppm = parts/million; ppb = parts/billion; mg/m3 = milligrams/cubic meter *CO2 recommended limit is outside ppm + 700 ppm. CO is an ASHRAE recommended level. For VOC's, recommended limit is 10% of PADOH IAQ for Schools evacuation limit and is generally for normal classrooms and hallways, special use areas such as Art rooms could be significantly higher due to expectation of some exposure in these areas and potential exposure duration would be shorter. Particulate values are based on EPA Ambient Air Quality values and are approximately 100 times lower than OSHA limits.

Air Monitoring Data Form
McCall Middle School

SSM Group, Inc. Air Monitoring Data Form

Date: August 22, 2022 **Project Name:** Montoursville Area School District, C.E. McCall Middle School

Client/Work Order #: 109944.0016 **Analysts:** William M. Katinowsky

Sample	Location	CO_2 (PPM)	CO (PPM)	Temperature (°F)	Relative Humidity (%)	VOC (ppb)	Total Particulate (<10 µm) (mg/m3)	Total Resipitable Particulate (<10 µm) (mg/m^3)
	Recommended IAQ Limits*	***<1094***	***<9***	***68 - 75***	***30 - 60***	***< 1000***	***<0.150***	***<0.150***
1	Library	571	0.0	72.4	60.0	144	0.025	0.023
2	Café	421	0.0	73.0	66.4	2	0.035	0.034
3	Room 205	479	0.0	72.5	61.8	19	0.029	0.028
4	Room 164	559	0.0	73.2	61.8	4	0.031	0.029
5	Music Room	471	0.0	73.7	64.6	20	0.030	0.038
6	Exterior, Front	394	0.0	77+	82+	0	0.038	0.034
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Units - ppm = parts/million; ppb = parts/billion; mg/m3 = milligrams/cubic meter *CO2 recommended limit is outside ppm + 700 ppm. CO is an ASHRAE recommended level. For VOC's, recommended limit is 10% of PADOH IAQ for Schools evacuation limit and is generally for normal classrooms and hallways, special use areas such as Art rooms could be significantly higher due to expectation of some exposure in these areas and potential exposure duration would be shorter. Particulate values are based on EPA Ambient Air Quality values and are approximately 100 times lower than OSHA limits.

Laboratory Analytical Report
Montoursville Area High School

SSM Group, Inc. Air Monitoring Data Form

Date: August 22, 2022 **Project Name:** Montoursville Area School District, High School

Client/Work Order #: 109944.0016 **Analysts:** William M. Katinowsky

Sample	Location	CO_2 (PPM)	CO (PPM)	Temperature (°F)	Relative Humidity (%)	VOC (ppb)	Total Particulate (<10 µm) (mg/m3)	Total Resipitable Particulate (<10 µm) (mg/m^3)
	Recommended IAQ Limits*	***<1093***	***<9***	***68 - 75***	***30 - 60***	***< 1000***	***<0.150***	***<0.150***
1	Café	520	0.0	53.6	48.8	7	0.028	0.030
2	Auxiliary Gym	457	0.0	73.5	55.6	12	0.033	0.031
3	Chorus Room	411	0.0	71.5	60.7	23	0.027	0.027
4	Library	463	0.0	72.1	56.6	3	0.028	0.027
5	Room 213	451	0.0	74.3	50.0	2	0.033	0.035
6	Exterior, Front	393	0.0	73.5	50.0	0	0.034	0.031
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Units - ppm = parts/million; ppb = parts/billion; mg/m3 = milligrams/cubic meter *CO2 recommended limit is outside ppm + 700 ppm. CO is an ASHRAE recommended level. For VOC's, recommended limit is 10% of PADOH IAQ for Schools evacuation limit and is generally for normal classrooms and hallways, special use areas such as Art rooms could be significantly higher due to expectation of some exposure in these areas and potential exposure duration would be shorter. Particulate values are based on EPA Ambient Air Quality values and are approximately 100 times lower than OSHA limits.

Direct Read Instrument Parameters

Carbon Monoxide

Carbon Monoxide (CO) levels are measured to evaluate possible intrusion of combustion exhaust.

- **Criteria**
    - The Occupational Safety and Health Administration Permissible Exposure Limit (OSHA PEL) for carbon monoxide is 50 ppm.
    - The National Institute of Occupational Safety and Health Recommended Exposure Limit (NIOSH REL) is 35 ppm.
    - The American Council of Governmental Industrial Hygienists Threshold Limit Value (ACGIH TLV) is 25 ppm.
    - The American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE) recommended guideline for IAQ purposes is 9 ppm.

Carbon Dioxide

Carbon Dioxide (CO_2) levels are measured as an indicator of adequate ventilation.

- **Criteria**
    - The OSHA Permissible Exposure Limit (PEL) for carbon dioxide is 5,000 ppm.
    - The American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE) recommended guideline for IAQ purposes is site specific. The limit is calculated as the amount of CO_2 outside the building at the time of sampling plus 700 ppm.

Relative Humidity (% RH)

Relative humidity in excess of 60% potentially contributes to increased microbial growth, which in turn may aggravate allergic conditions or create biological hazards. Values near the 60% RH level are more common in the cooling season and values lower than 30% RH are very common in the heating season. Interior humidity can shift quickly depending on the outside conditions and the amount of outside air being introduced.

- **Criteria**

  Relative humidity affects occupant comfort when it is either too high or too low. The American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) recommended range for comfort is 30 to 60%.

Temperature

Occupant comfort may be affected by temperatures that are either too cold or too warm.

- **Criteria**

  The ASHRAE 55-2010 Standard provides calculations that produce an acceptable temperature range for interior applications during the heating season of 69 to 78 °F; these values are for temperature controlled buildings. Note the different ranges for different humidity.

Temperature / Humidity Ranges for Comfort			
Conditions	**Relative Humidity**	**Acceptable Operating Temperatures**	
		°C	**°F**
Summer (light clothing)	If 30%, then If 60%, then	24.5 - 28 23 - 25.5	76 - 82 74 - 78
Winter (warm clothing)	If 30%, then If 60%, then	20.5 - 25.5 20 - 24	69 - 78 68 - 75

Source: Adapted from ASHRAE 55-2010.

Total Volatile Organic Compound (TVOC)

Volatile organic compounds are often present in the indoor environment from many familiar sources, (inks, glues, etc.), however, elevated concentrations are generally to be avoided, making TVOC's a common parameter in IAQ/IEQ evaluations.

- **Criteria**

  The recommended limit for TVOC is based on a percentage (10% or 1000 ppb) of the Pennsylvania Department of Health (PADOH) IAQ for Schools VOC evacuation limit of 10,000 ppb. The 1000 ppb limit is generally for regular classrooms and hallways with special use areas such as Art rooms having a higher acceptable limit primarily due to use and shorter duration exposure.

Total Particulate

Total particulate levels are measured for IAQ evaluations to determine the presence of dust and particulate as potential allergen/irritant exposure and cleanliness.

- **Criteria**

  The OSHA Permissible Exposure Limit (PEL) for particulate is 15.0 mg/m^3. Particulate values are based on EPA Ambient Air Quality values and are 100 times lower than the OSHA PEL or 0.15 mg/m^3.