



December 6, 2023

Transylvania County  
 155 Public Safety Way  
 Brevard, NC 28712  
 Attn: David McNeill, Assistant County Manager

Subject: Mold Assessment  
 Brevard Middle School  
 Brevard, NC  
 Project Number: FDG231120

Mr. McNeill:

At your request, Fleetwood Daniels Group, LLC (FDG) performed an indoor air quality assessment at the above referenced project location on November 28, 2023. The assessment included collection of mold spore trap air samples throughout the school buildings. Sampling was conducted under the recommendations of FDG and was under the direction of the client representative. Additionally, FDG collected two exterior air samples to be averaged and used for comparative analysis. The sample locations are identified on the attached drawing.

Sampling was requested in order to assess the general conditions of the building as it relates to mold. The air sampling was performed by Mrs. Suzanne Hinson and Mr. Clay Hinson, Industrial Hygienists with FDG.

## Results - Sampling & Analysis

### AIRBORNE MOLD SAMPLES

SAMPLE NUMBER	LOCATON	LABORATORY RESULTS Total Mold
BM-1	Exterior #1	1490 count/m <sup>3</sup> (1610 count/m <sup>3</sup> - Average Exterior)
BM-2	Interior – Office Area	157 count/m <sup>3</sup>
BM-3	Interior – Corridor at 40	2590 count/m <sup>3</sup>
BM-4	Interior – 6 <sup>th</sup> Grade Corridor	313 count/m <sup>3</sup>
BM-5	Interior – Corridor at 13	940 count/m <sup>3</sup>
BM-6	Interior – Corridor at 20	705 count/m <sup>3</sup>
BM-7	Interior – Library	78.4 count/m <sup>3</sup>
BM-8	Interior – Corridor at 29	705 count/m <sup>3</sup>
BM-9	Interior – Corridor at 33	157 count/m <sup>3</sup>
BM-10	Interior – Theater/Music Room	4080 count/m <sup>3</sup>
BM-11	Interior - Cafeteria	1020 count/m <sup>3</sup>
BM-12	Interior - Gymnasium	2430 count/m <sup>3</sup>
BM-13	Exterior #2	1720 count/m <sup>3</sup> (1610 count/m <sup>3</sup> - Average Exterior)

Count/m<sup>3</sup> = spore count per cubic meter of air

## Conclusions

The analysis of the air samples collected show total spore counts on the interior samples collected were lower than those on the exterior of the building (average of two samples) with the exception of the samples collected in the Corridor at 40, Theater/Music Room and Gymnasium.

Analysis shows that the spore types were generally consistent with those found on the exterior of the building. Common plant molds were present on the interior samples collected throughout the building. These common exterior genera of molds and are typically found in soils and decaying plant matter, but can also grow indoors given the right conditions. Given the right conditions, indoor growth can be widespread on damp substrates as some will grow indoors at low temperatures. Even though it is a common exterior general of mold, there were elevated levels of Myxomycete/Rust/Smut-like spores in some areas of the school that contributed to the higher total spore counts. These could exist from interior plants, or it is possible that high foot traffic between the indoors and outdoors (mulched areas or playgrounds) could be the cause of the counts. Although it is an allergen, there are no known toxins produced from these spores.

Sample analysis indicates low counts of *Aspergillus/Penicillium-like* spores on the several of the samples collected in the corridors and gymnasium, that were not identified on the exterior sample. These could be from current or prior water damaged areas such as ceiling tiles. FDG would recommend replacing any tiles that have water damaged areas with signs of mold growth. *Aspergillus/Penicillium-like* spores are typically indicators of water damaged building materials and are not commonly found naturally outside. These types of mold have been shown to have the possibility of causing respiratory issues especially in people with allergies or immune deficiencies when found in indoor areas. Significant counts of *Aspergillus/Penicillium-like* spores were identified on the sample in the Theater/Music Room. This is a centrally located room with carpeted surfaces, it is likely that any moisture issues in this room have and will continue to cause elevated mold levels. FDG would recommend investigation in this area to ensure there are no high moisture levels and take measures to reduce the spore counts. FDG also recommends installing a dehumidifier in this area to help maintain proper humidity levels.

In general, all areas of potential moisture intrusion should be addressed and corrected prior to remediation efforts where recommended. All areas should have HVAC units that provide an indoor environment with temperature and humidity levels in accordance with ASHRAE (American Society of Heating, Refrigerating, and Air-Conditioning Engineers) Standards. In the future all areas with visibly water damaged materials should be remediated as discovered to prevent an air quality concern in the future. Ways to reduce spore counts include, but are not limited to, HEPA air filtration, HEPA vacuum cleaning and/or surface cleaning with anti-microbial serum.

Observations, findings, results, and conclusions are limited to those conditions apparent at the time of the site visit. It should not be construed that actions taken as a result of this work will achieve complete compliance with every regulatory standard nor prevent every possible accident or loss. Neither should it be considered that any recommendations noted are the only possible actions to be taken.

## QUALIFICATIONS

This report summarizes FDG's evaluation of the conditions observed at the subject building during the course of the survey. Our findings are based upon our observations at the building and analyses

of the samples obtained at the time of this survey. Asbestos-containing materials may exist in the building, if materials are to be disturbed they should be tested for the presence of asbestos prior to disturbing. Any conditions discovered which deviate from the data contained in this report should be presented for our evaluation.

Attached with this report you will find the laboratory analytical results for each sample collected will be attached.

Fleetwood Daniels Group, L.L.C. is pleased to have provided our professional services for this project. If you have any questions or comments, please do not hesitate to call at (828) 400-1509.

Sincerely,  
FLEETWOOD DANIELS GROUP, L.L.C.

A handwritten signature in cursive script that reads "Suzanne Hinson".

Suzanne Hinson  
Principal

Attachments: Laboratory Analytical Reports

## **Laboratory Analytical Reports**



# Direct Exam: Spore Trap Analysis

SAI Method B-SOP-003



**Customer:** Fleetwood Daniels Group  
PO Box 1144  
Waynesville, NC 28786

**Attn:** Suzanne Hinson

**Lab Order ID:** 10038020  
**Analysis:** STA  
**Date Received:** 11/29/2023  
**Date Reported:** 11/30/2023

**Project:** FDG231120-Brevard Middle

Sample ID	BM-1	BM-2	BM-3	EXTERIOR								
Lab Sample ID	10038020_0001	10038020_0002	10038020_0003	AVERAGE								
Description	Exterior	Interior- office area	Interior- corridor @ 40	N/A								
Lab Notes				N/A								
Volume (L)	75	75	75	N/A								
Analytical Sensitivity (counts/m <sup>3</sup> )	78	78	78	N/A								
IDENTIFICATION	Raw Count	Concentration (counts/m <sup>3</sup> )	% Of Total	Raw Count	Concentration (counts/m <sup>3</sup> )	% Of Total	Raw Count	Concentration (counts/m <sup>3</sup> )	% Of Total	Raw Count	Concentration (counts/m <sup>3</sup> )	% Of Total
<i>Alternaria</i>												
Ascospores	11	862	57.9%				8	627	40.0%			
<i>Aspergillus/Penicillium-like</i>							6	470	18.2%			
Basidiospores	3	235	15.8%				2	118	10.0%			
<i>Cladosporium</i>	4	313	21.1%	1	78.4	50.0%				10	782	50.0%
<i>Curvularia</i>										<1	39.2	N/A
<i>Epicoccum</i>	1	78.4	5.26%				1	78.4	3.03%	<1	39.2	N/A
Myxomycete/Rust/Smut-like				1	78.4	50.0%	26	2040	78.8%			
TOTAL	19	1490	100.0%	2	157	100.0%	33	2590	100.0%	20	1610	100.0%
Non-Cellulosic Fibers	-	-	-	-	-	-	-	-	-	-	-	-
Hyphal Fragments	1	78.4	-	-	-	-	4	313	-	2	117.7	-
Insect Parts	-	-	-	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-	-	39.2	-
Skin Cell % of Total Debris	0-20%			60-80%			80-100%			N/A		
Total Debris in Background	0-20%			20-40%			80-100%			N/A		

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Palmer Hines (13)  
\_\_\_\_\_  
Analyst

*Palmer Hines*  
\_\_\_\_\_  
Approved Signatory



# Direct Exam: Spore Trap Analysis

SAI Method B-SOP-003



**Customer:** Fleetwood Daniels Group  
PO Box 1144  
Waynesville, NC 28786

**Attn:** Suzanne Hinson

**Lab Order ID:** 10038020

**Analysis:** STA

**Date Received:** 11/29/2023

**Date Reported:** 11/30/2023

**Project:** FDG231120-Brevard Middle

Sample ID	BM-4			BM-5			BM-6			EXTERIOR		
Lab Sample ID	10038020_0004			10038020_0005			10038020_0006			AVERAGE		
Description	Interior- 6th grade corridor			Interior-corridor @13			Interior-corridor @ 20			N/A		
Lab Notes										N/A		
Volume (L)	75			75			75			N/A		
Analytical Sensitivity (counts/m³)	78			78			78			N/A		
IDENTIFICATION	Raw Count	Concentration (counts/m³)	% Of Total	Raw Count	Concentration (counts/m³)	% Of Total	Raw Count	Concentration (counts/m³)	% Of Total	Raw Count	Concentration (counts/m³)	% Of Total
<i>Alternaria</i>												
Ascospores							1	78.4	11.1%	8	627	40.0%
<i>Aspergillus/Penicillium-like</i>	3	235	75.0%	7	549	58.3%	4	313	44.4%			
Basidiospores	1	78.4	25.0%				1	78.4	11.1%	2	118	10.0%
<i>Cladosporium</i>				3	235	25.0%				10	782	50.0%
<i>Curvularia</i>										<1	39.2	N/A
<i>Epicoccum</i>										<1	39.2	N/A
Myxomycete/Rust/Smut-like				2	157	16.7%	3	235	33.3%			
<b>TOTAL</b>	<b>4</b>	<b>313</b>	<b>100.0%</b>	<b>12</b>	<b>940.</b>	<b>100.0%</b>	<b>9</b>	<b>705</b>	<b>100.0%</b>	<b>20</b>	<b>1610</b>	<b>100.0%</b>
Non-Cellulosic Fibers	-	-	-	-	-	-	-	-	-	-	-	-
Hyphal Fragments	1	78.4	-	-	-	-	-	-	-	2	117.7	-
Insect Parts	-	-	-	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-	-	39.2	-
<b>Skin Cell % of Total Debris</b>		<b>60-80%</b>			<b>60-80%</b>			<b>80-100%</b>			<b>N/A</b>	
<b>Total Debris in Background</b>		<b>20-40%</b>			<b>80-100%</b>			<b>80-100%</b>			<b>N/A</b>	

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Palmer Hines (13)

Analyst

Approved Signatory



# Direct Exam: Spore Trap Analysis

SAI Method B-SOP-003



**Customer:** Fleetwood Daniels Group  
PO Box 1144  
Waynesville, NC 28786

**Attn:** Suzanne Hinson

**Lab Order ID:** 10038020

**Analysis:** STA

**Date Received:** 11/29/2023

**Date Reported:** 11/30/2023

**Project:** FDG231120-Brevard Middle

Sample ID	BM-7			BM-8			BM-9			EXTERIOR		
Lab Sample ID	10038020_0007			10038020_0008			10038020_0009			AVERAGE		
Description	Interior-library			Interior-corridor @29			Interior-corridor @33			N/A		
Lab Notes										N/A		
Volume (L)	75			75			75			N/A		
Analytical Sensitivity (counts/m³)	78			78			78			N/A		
IDENTIFICATION	Raw Count	Concentration (counts/m³)	% Of Total	Raw Count	Concentration (counts/m³)	% Of Total	Raw Count	Concentration (counts/m³)	% Of Total	Raw Count	Concentration (counts/m³)	% Of Total
<i>Alternaria</i>												
Ascospores				2	157	22.2%				8	627	40.0%
<i>Aspergillus/Penicillium-like</i>												
Basidiospores										2	118	10.0%
<i>Cladosporium</i>										10	782	50.0%
<i>Curvularia</i>										<1	39.2	N/A
<i>Epicoccum</i>										<1	39.2	N/A
Myxomycete/Rust/Smut-like	1	78.4	100.0%	7	549	77.8%	2	157	100.0%			
<b>TOTAL</b>	<b>1</b>	<b>78.4</b>	<b>100.0%</b>	<b>9</b>	<b>705</b>	<b>100.0%</b>	<b>2</b>	<b>157</b>	<b>100.0%</b>	<b>20</b>	<b>1610</b>	<b>100.0%</b>
Non-Cellulosic Fibers	-	-	-	-	-	-	-	-	-	-	-	-
Hyphal Fragments	-	-	-	1	78.4	-	-	-	-	2	117.7	-
Insect Parts	-	-	-	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-	-	39.2	-
<b>Skin Cell % of Total Debris</b>		<b>60-80%</b>			<b>60-80%</b>			<b>80-100%</b>			<b>N/A</b>	
<b>Total Debris in Background</b>		<b>20-40%</b>			<b>60-80%</b>			<b>60-80%</b>			<b>N/A</b>	

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Palmer Hines (13)

Analyst

Approved Signatory



# Direct Exam: Spore Trap Analysis

SAI Method B-SOP-003



**Customer:** Fleetwood Daniels Group  
PO Box 1144  
Waynesville, NC 28786

**Attn:** Suzanne Hinson

**Lab Order ID:** 10038020

**Analysis:** STA

**Date Received:** 11/29/2023

**Date Reported:** 11/30/2023

**Project:** FDG231120-Brevard Middle

Sample ID	BM-10			BM-11			BM-12			EXTERIOR		
Lab Sample ID	10038020_0010			10038020_0011			10038020_0012			AVERAGE		
Description	Interior-theater/ music rd.			Interior- cafeteria			Interior- gymnasium			N/A		
Lab Notes										N/A		
Volume (L)	75			75			75			N/A		
Analytical Sensitivity (counts/m³)	78			78			78			N/A		
IDENTIFICATION	Raw Count	Concentration (counts/m³)	% Of Total	Raw Count	Concentration (counts/m³)	% Of Total	Raw Count	Concentration (counts/m³)	% Of Total	Raw Count	Concentration (counts/m³)	% Of Total
<i>Alternaria</i>	1	78.4	1.92%									
Ascospores	2	157	3.85%	2	157	15.4%				8	627	40.0%
<i>Aspergillus/Penicillium-like</i>	45	3530	86.5%				7	549	22.6%			
Basidiospores				1	78.4	7.69%	2	157	6.45%	2	118	10.0%
<i>Cladosporium</i>				6	470.	46.2%	5	392	16.1%	10	782	50.0%
<i>Curvularia</i>							1	78.4	3.23%	<1	39.2	N/A
<i>Epicoccum</i>	1	78.4	1.92%							<1	39.2	N/A
Myxomycete/Rust/Smut-like	3	235	5.77%	4	313	30.8%	16	1250	51.6%			
<b>TOTAL</b>	<b>52</b>	<b>4080</b>	<b>100.0%</b>	<b>13</b>	<b>1020</b>	<b>100.0%</b>	<b>31</b>	<b>2430</b>	<b>100.0%</b>	<b>20</b>	<b>1610</b>	<b>100.0%</b>
Non-Cellulosic Fibers	-	-	-	-	-	-	-	-	-	-	-	-
Hyphal Fragments	-	-	-	2	157	-	4	313	-	2	117.7	-
Insect Parts	-	-	-	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	2	157	-	-	-	-	-	39.2	-
Skin Cell % of Total Debris		<b>80-100%</b>			<b>60-80%</b>			<b>80-100%</b>			<b>N/A</b>	
Total Debris in Background		<b>60-80%</b>			<b>80-100%</b>			<b>80-100%</b>			<b>N/A</b>	

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Palmer Hines (13)

Analyst

Approved Signatory





# Direct Exam: Spore Trap Analysis

SAI Method B-SOP-003



**Customer:** Fleetwood Daniels Group  
PO Box 1144  
Waynesville, NC 28786

**Attn:** Suzanne Hinson

**Lab Order ID:** 10038020

**Analysis:** STA

**Date Received:** 11/29/2023

**Date Reported:** 11/30/2023

**Project:** FDG231120-Brevard Middle

Sample ID	BM-13									EXTERIOR		
Lab Sample ID	10038020_0013									AVERAGE		
Description	Exterior									N/A		
Lab Notes										N/A		
Volume (L)	75									N/A		
Analytical Sensitivity (counts/m <sup>3</sup> )	78									N/A		
IDENTIFICATION	Raw Count	Concentration (counts/m <sup>3</sup> )	% Of Total	Raw Count	Concentration (counts/m <sup>3</sup> )	% Of Total	Raw Count	Concentration (counts/m <sup>3</sup> )	% Of Total	Raw Count	Concentration (counts/m <sup>3</sup> )	% Of Total
<i>Alternaria</i>												
Ascospores	5	392	22.7%							8	627	40.0%
<i>Aspergillus/Penicillium-like</i>												
Basidiospores										2	118	10.0%
<i>Cladosporium</i>	16	1250	72.7%							10	782	50.0%
<i>Curvularia</i>	1	78.4	4.55%							<1	39.2	N/A
<i>Epicoccum</i>										<1	39.2	N/A
Myxomycete/Rust/Smut-like												
<b>TOTAL</b>	<b>22</b>	<b>1720</b>	<b>100.0%</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>20</b>	<b>1610</b>	<b>100.0%</b>
Non-Cellulosic Fibers	-	-	-	-	-	-	-	-	-	-	-	-
Hyphal Fragments	2	157	-	-	-	-	-	-	-	2	117.7	-
Insect Parts	-	-	-	-	-	-	-	-	-	-	-	-
Pollen	1	78.4	-	-	-	-	-	-	-	-	39.2	-
<b>Skin Cell % of Total Debris</b>		<b>0-20%</b>			<b>N/A</b>			<b>N/A</b>			<b>N/A</b>	
<b>Total Debris in Background</b>		<b>0-20%</b>			<b>N/A</b>			<b>N/A</b>			<b>N/A</b>	

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Palmer Hines (13)  
\_\_\_\_\_  
Analyst

Approved Signatory