November 1, 2024

Via email: *brad.kotzmoyer@goblusky.com*

Mr. Brad Kotzmoyer
BluSky Restoration
501 Service Road
Lancaster, Pennsylvania 17601

Subject: **Report of Limited Mold Assessment Services**
Northern Middle School – Room 227
Dillsburg, Pennsylvania
AETHER Project P24221

Dear Mr. Kotzmoyer:

Aether Assessments, LLC. (AETHER) is pleased to present this report of our services at the subject site. Please note that all sections of this report should be read and understood.

Thank you again for the opportunity to provide services for your project. Should you have any questions, or if you require additional information, please do not hesitate to contact me at 717.756.7727.

Respectfully,
AETHER ASSESSMENTS, LLC.

Braden A. Mercer
Industrial Hygiene Technician

Eric A. Mercer, CIEC
Owner-Principal

Attachments: Laboratory Analytical Results

1. PROJECT INFORMATION

Mr. Braden A. Mercer and/or Mr. Eric A. Mercer, CIEC, of AETHER conducted site visits for the purposes of an initial project area assessment and then post remediation assessments. The project area consisted of Room 227 where others identified suspect mold growth behind laminated posters hanging on a drywall bulkhead along the back of the room.

2. PRE-REMEDIATION ASSESSMENT

On October 22, 2024, Mr. Mercer conducted an initial assessment of the project area. The following observations were made:

Visual Assessment

- Visible mold growth was observed behind laminated posters along the bulkhead. Only two posters had been peeled from the wall to allow for viewing before our services, so impacts appeared contained. Further viewing was done by gently peeling edges until impacts were observed to help prevent spreading particulates.
- Growth appeared to extend to most of the area covered by the posters. A cursory viewing behind other wall hangings in the room did not indicate other areas of visible growth.
- AETHER used a Flir MR-77 moisture meter to test representative materials. No elevated moisture content was detected in the impacted materials.
- Custodial staff said they use a wet mop to wash the upper walls each summer and that it was likely that water would run behind the posters where it could promote the observed impacts.
- No other notable impacts were noted to surfaces or contents in the remainder of the room.

Room 227 - Approximate area of impact

Air Sampling Results

AETHER collected air samples from selected areas using Allergenco-D spore trap cassettes. Samples were collected using a sampling pump calibrated to a flow rate of 15 liters per minute for five (5) minutes in accordance with the manufacturer's recommendations. Following collection, the samples were shipped under chain of custody to Hayes Microbial Consulting in Midlothian, Virginia and analyzed for total mold spore count and genus identification. Hayes is accredited by the American Industrial Hygiene Association (AIHA) Environmental Microbiological Laboratory Accreditation Program (EMLAP).

Generally, it is desirable to have the inside concentrations of mold spores to be less than those found outside and in the same proportion of genera as outside. Inside concentrations that are higher or of

different genera than those found in the outside air may indicate amplification or reservoirs within the project area. However, minor variations to this are often expected as the indoor air does not directly correlate with fluctuations in outdoor mold counts.

Samples were collected from Room 227 near the bulkhead (A1), Room 227 near entry (A2), and Outdoors (A3). Samples collected from inside the structure indicated the following:

- **Each of the samples from Room 227 contained total fungal counts less than outdoors, and a fungal profile consistent with each other and normal minor deviations. In addition, none of the common water damage indicator molds were identified (*Stachybotrys, Chaetomium, Ulocladium, Memnoniella* or elevated counts of *Aspergillus/Penicillium (>200 c/m^3)).***
  - **The air sampling results did not reflect an impact from the observed conditions and were consistent with a normal indoor fungal ecology.**

Please reference the attached for complete laboratory analytical results.

Surface Sampling Results

Tape-lift sample(s) were collected from various surface(s) with suspect mold growth. Following collection, the sample(s) were shipped under chain of custody to Hayes and analyzed for mold identification via direct examination.

Mold is ubiquitous in nature and within the built environment. In our experience, it is not uncommon to observe Rare and light counts of settled spores from certain types of mold from surface samples in a normal indoor environment. However, the sampling results from the collected sample indicates the following:

- **Sample T1 (Bulkhead Staining) – The laboratory reported Very Heavy counts of *Aspergillus/Penicillium* and *Chaetomium* with many mycelial fragments for each.**
  - **The results are indicative of growth in the sampling area rather than normal settled spores or other staining.**
  - **Note – The reported concentrations are NOT intended to rate the severity of the growth or potential exposure. They are used mainly to determine if suspect staining is consistent with mold growth.**

Complete laboratory analytical results are included as attachments.

Recommendations

Based on the anticipated extent of impacts, it was recommended that work be conducted in accordance with standard industry guidelines including the Institute of Inspection, Cleaning and Restoration Certification (IICRC) S520, the E.P.A. Guidelines for Mold Remediation in Schools and Commercial Buildings, and the US Occupational Safety and Health Administration (OSHA). These guidelines discuss isolation of work areas, detailed work practices, procedures and equipment that should be utilized to help ensure a prompt return to a normal indoor fungal ecology, as well as the prevent the migration of contaminants to adjoining areas.

As it relates to this project, some specific recommendations included removing contents from the work area, isolating a suitably sized work area using sealed polyethylene sheeting, deployment of High Efficiency particulate Air Filtration (HEPA) air filtration units (AFU) in a manner to establish negative pressure in the work area and others to air wash surfaces and help remove airborne particulates from

the surrounding room. It was also recommended that impacted posters and drywall be discarded and ultimately surfaces throughout the contained work area and surrounding classroom be cleaned.

2. POST-REMEDIATION ASSESSMENT

The following slightly modified general criteria developed by Wondermakers Environmental and published in their book *Fungal Contamination, A Comprehensive Guide for Remediation,* correlates with our experience regarding acceptable completion of a remediation project and is therefore used by AETHER for these types of projects:

1. **VISUAL CRITERIA**
   - A. Visual Inspection - Were the specifications followed? Was the work area free of visible mold growth, dust and debris? Were moisture levels acceptable?
2. **SAMPLING CRITERIA**
   - A. Total Spore Count - Is the total spore count less than 2,000 counts/m^3 (normal fungal ecology)? If less than 800, go to step d.
   - B. Comparison to Make-up Source - Is the total spore count below the comparison sample (may not apply in Winter)?
   - C. Rank/Order Comparison **-** Is the level of each fungal type equal or less than 100 c/m^3 above the level of the same fungal type on the comparison sample?
   - D. *Aspergillus/Penicillium-like* - Were levels of the work area sample less than 200 c/m^3?
   - E. Target Organisms - Did the work area sample contain no more than 1 raw count, ideally zero, of no more than 1 target fungal types? (*Stachybotrys, Fusarium, Trichoderma, Memnoniella, Chaetomium*)

AETHER has no actual knowledge of work practices or other activities conducted since we were not on-site during the work. The following observations were made:

General

- It was noted that a contained work area had been established around the impacted materials and HEPA air filtration units were in operation. The containment consisted of sealed plastic sheeting on all sides with a zippered access door. In addition, the entry to the general room was also sealed with a sealed plastic zipper door.
- BluSky had removed impacted posters and drywall from the work area.

October 28, 2024–Post-Remediation Assessment 1

- **Visual Criteria –** Impacted drywall and posters were removed. Remaining surfaces within the adjacent bulkhead void, the work area and room in general were visibly cleaned and it is understood that BluSky used HEPA vacuums and damp wiping techniques during fine cleaning. It was noted that there were numerous houseplants in the room.
- **Sampling Criteria –** One sample was collected from inside the contained work area, another from inside the general classroom, and another from outdoors. Sample PA-2 (Room 227 General) contained *Aspergillus/Penicillium* at counts that did not meet the Sampling Criteria.
- **Recommendations –** Given the large number of houseplants, it was possible they influenced the general room air sample, but as a precaution AETHER recommended that BluSky remove the plants from the room and conduct an additional cleaning of exposed surfaces.

October 31, 2024 – Post-Remediation Assessment 2

- **Visual Criteria –** As previously noted, exposed surfaces appeared visibly cleaned. BluSky had also deployed additional AFUs throughout the room to help "air-wash' surfaces and remove particles from the air.
- **Sampling Criteria –** Samples were collected from outdoors, Room 227 and Room 227 contained work area. Each of the samples met the sampling criteria and were consistent with a normal indoor fungal ecology.
- **Recommendations –** The work area was returned to a normal indoor fungal ecology and is ready for material put-back.

3. CONDITIONS AND EXCLUSIONS

In addition to those contained elsewhere in this document, the following conditions and exclusions apply to the referenced scope of work:

- Please note that AETHER does not guarantee that we observed all surfaces. Areas outside the project area were also beyond our scope of work so we do not guarantee there are no impacts in wall cavities, plenums, surfaces between joined building materials, exterior sheathing, adjoining rooms, etc.
- The results of this assessment and our recommendations are not intended to diagnose or prevent specific illnesses. All recommendations should be presented to your treating physician for evaluation against your personal medical history.
- Observations of mold growth and water damage are inherently limited due to changing environmental conditions. Observations and testing results made during our assessment are valid only for that time and location as the extent of mold growth and water damage can change significantly based on the water intrusion source, housekeeping and maintenance activities, time until commencement of remediation, etc.
- Client was fully aware that the sampling strategy was for general informational purposes only and not intended to be comprehensive enough to represent all areas under all conditions.
- As mold is ubiquitous in nature and will grow given adequate conditions, our services and recommendations are in no way intended to guarantee that the structure is or will be "mold free" or that mold growth and/or water intrusion will not occur in the future.
- The evaluation of the structural integrity of the structure was not a component of our services and no part of this report should be construed as a structural evaluation.

4. CONCLUSIONS AND RECOMMENDATIONS

Based on the results of our services and any limitations discussed in this report, it appears that the project area is acceptable for material put-back. No further testing or remediation appears warranted as it relates to this specific concern.

Please note that no matter how clean an area is upon completion of remediation, mold growth can rapidly recur if sufficient moisture is present, so it is imperative that any current or future sources of water intrusion or elevated humidity are promptly addressed. This would include implementing damp wiping walls and posters rather than using a wet mop.

ANALYTICAL RESULTS

AETHER ASSESSMENTS, LLC

HAYES MICROBIAL CONSULTING

#24049350

Analysis Report prepared for

Aether Assessments, LLC

5004 Seneca Dr.
Mechanicsburg, PA 17050

Phone: **(717) 756-7727**

P24221
Northern M.S. Room 227

Collected: **October 31, 2024**
Received: **November 1, 2024**
Reported: **November 1, 2024**

We would like to thank you for trusting Hayes Microbial for your analytical needs!
We received 3 samples by FedEx in good condition for this project on November 1st, 2024.

The results in this analysis pertain only to this job, collected on the stated date, and should not be used in the interpretation of any other job. Information supplied by the customer can affect the validity of results. These results apply only to the samples as received. This report may not be duplicated, except in full, without the written consent of Hayes Microbial Consulting, LLC.

All information provided to Hayes Microbial is confidential information relating to our customers and their clients. We will not disclose, copy, or distribute any information verbally or written, except to those designated by the customer(s). We take confidentiality very seriously. No changes to the distribution list will be made without the express consent of the customer.

This laboratory bears no responsibility for sample collection activities, analytical method limitations, or your use of the test results. Interpretation and use of test results are your responsibility. Any reference to health effects or interpretation of mold levels is strictly the opinion of Hayes Microbial. In no event, shall Hayes Microbial or any of its employees be liable for lost profits or any special, incidental or consequential damages arising out of the use of these test results.

Steve Hayes, BSMT(ASCP)
Laboratory Director
Hayes Microbial Consulting, LLC.

EPA Laboratory ID: VA01419

Lab ID: #188863

DPH License: #PH-0198

Eric Mercer
Aether Assessments, LLC
5004 Seneca Dr.
Mechanicsburg, PA 17050
(717) 756-7727

P24221
Northern M.S. Room 227

#24049350

Spore Trap
SOP - HMC#101

Sample Number*	1	PA-1		2	PA-2		3	PA-3	
Sample Name*	**Outdoors**			**Room 227**			**Contained Area**		
Sample Volume*	75 L			75 L			75 L		
Reporting Limit	13 spores/m³			13 spores/m³			13 spores/m³		
Background	2			1			2		
Fragments	ND			ND			ND		
Organism	**Raw Count**	**Count / m³**	**% of Total**	**Raw Count**	**Count / m³**	**% of Total**	**Raw Count**	**Count / m³**	**% of Total**
Alternaria									
Ascospores	56	750	13.2%				1	13	25.0%
Aspergillus|Penicillium									
Basidiospores	21	280	5.0%				2	27	50.0%
Bipolaris|Drechslera									
Chaetomium									
Cladosporium	342	4600	80.7%	1	13	100.0%			
Curvularia									
Epicoccum	5	67	1.2%						
Fusarium									
Memnoniella									
Myxomycetes							1	13	25.0%
Pithomyces									
Stachybotrys									
Stemphylium									
Torula									
Ulocladium									
Total	424	5697	100%	1	13	100%	4	53	100%

Water Damage Indicator | Common Allergen | Slightly Higher than Baseline | Significantly Higher than Baseline | Ratio Abnormality

* indicates data provided by the customer

Collected: **Oct 31, 2024** Received: **Nov 1, 2024** Reported: **Nov 1, 2024**

HAYES MICROBIAL CONSULTING

Project Analyst: Joseph Lape, Date: **11 - 01 - 2024**

Reviewed By: Steve Hayes, BSMT Date: **11 - 01 - 2024**

Eric Mercer
Aether Assessments, LLC
5004 Seneca Dr.
Mechanicsburg, PA 17050
(717) 756-7727

P24221
Northern M.S. Room 227

#24049350

Spore Trap Information

Reporting Limit	The Reporting Limit is the lowest number of spores that can be detected based on the total volume of the sample collected and the percentage of the slide that is counted. At Hayes Microbial, 100% of the slide is read so the LOD is based solely on the total volume. Raw spore counts that exceed 500 spores will be estimated.
Blanks	Results have not been corrected for field or laboratory blanks.
Background	The Background is the amount of debris that is present in the sample. This debris consists of skin cells, dirt, dust, pollen, drywall dust and other organic and non-organic matter. As the background density increases, the likelihood of spores, especially small spores such as those of Aspergillus and Penicillium may be obscured. The background is rated on a scale of 1 to 5 and each level is determined as follows: **NBD:** No background detected due to possible pump or cassette malfunction. Recollect sample. (Field Blanks will display NBD) **1 :** <5% of field occluded. No spores will be uncountable. **2 :** 5-25% of field occluded. **3 :** 25-75% of field occluded. **4 :** 75-90% of field occluded. **5 :** >90% of field occluded. Suggested recollection of sample.
Fragments	Fragments are small pieces of fungal mycelium or spores. They are not identifiable as to type and when present in very large numbers, may indicate the presence of mold amplification.
Control Comparisons	There are no national standards for the numbers of fungal spores that may be present in the indoor environment. As a general rule and guideline that is widely accepted in the indoor air quality field, the numbers and types of spores that are present in the indoor environment should not exceed those that are present outdoors at any given time. There will always be some mold spores present in "normal" indoor environments. The purpose of sampling and counting spores is to help determine whether an abnormal condition exists within the indoor environment and if it does, to help pinpoint the area of contamination. Spore counts should not be used as the sole determining factor of mold contamination. There are many factors that can cause anomalies in the comparison of indoor and outdoor samples due to the dynamic nature of both of those environments.
Water Damage Indicator Common Allergen Slightly Higher than Baseline Significantly Higher than Baseline Ratio Abnormality	**Blue:** These molds are commonly seen in conditions of prolonged water intrusion and usually indicate a problem. **Green:** Although all molds are potential allergens, these are the most common allergens that may be found indoors. **Orange:** The spore count is slightly higher than the outside count and may or may not indicate a source of contamination. **Red:** The spore count is significantly higher than the baseline count and probably indicates a source of contamination. **Violet:** The types of spores found indoors should be similar to the ones that were identified in the baseline sample. Significant increases (more than 25%) in the ratio of a particular spore type may indicate the presence of abnormal levels of mold, even if the total number of spores of that type is lower in the indoor environment than it was outdoors.
Color Coding	Fungi that are present in indoor samples at levels lower than 200 per cubic meter are not color coded on the report, unless they are one of the water damage indicators.
Significant Figures	Raw counts and column totals may reflect more than 2 significant figures, but results should only be considered significant to 2 figures.

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P24221
Northern M.S. Room 227

#24049350

Analyte Descriptions

Ascospores	**Habitat:**	A large group consisting of more than 3000 species of fungi. Common plant pathogens and outdoor numbers become very high following rain. Most of the genera are indistinguishable by spore trap analysis and are combined on the report.
	Health Effects:	Health affects are poorly studied, but many are likely to be allergenic.
Basidiospores	**Habitat:**	A common group of Fungi that includes the mushrooms and bracket fungi. They are saprophytes and plant pathogens. In wet conditions they can cause structural damage to buildings.
	Health Effects:	Common allergens and are also associated with hypersensitivity pneumonitis.
Cladosporium	**Habitat:**	One of the most common genera worldwide. Found in soil and plant debris and on the leaf surfaces of living plants. The outdoor numbers are lower in the winter and often relatively high in the summer, especially in high humidity. The outdoor numbers often spike in the late afternoon and evening. Indoors, it can be found growing on textiles, wood, sheetrock, moist window sills and in HVAC supply ducts.
	Health Effects:	A common allergen, producing more than 10 allergenic antigens and a common cause of hypersensitivity pneumonitis.
Epicoccum	**Habitat:**	It is found in soil and plant litter and is a plant pathogen. It can grow indoors on a variety of substrates, including paper and textiles and is commonly found on wet drywall.
	Health Effects:	It is a common allergen. No cases of infection have been reported in humans.
Myxomycetes	**Habitat:**	Found on decaying plant material and as a plant pathogen.
	Health Effects:	Some allergenic properties reported, but generally pose no health concerns to humans.

HAYES
MICROBIAL CONSULTING

Aether Assessments, LLC
5004 Seneca Dr.
Mechanicsburg, PA 17050

P

SHIP: FEDEX - ENV PO
DATE: 11-01-2024

8136 1144 8803

MOLD

24049350

Job Number: P24221	Job Name: NORTHERN M.S. ROOM 227
Collector: Eric Mercer	
Date Collected: 10/31/24	

Mobile:

Email: emercer@aetheriaq.com

Note:

Analysis Type		Analysis Description	Turnaround	Accepted Media Types
Spore Trap	S	Identification & Enumeration of Fungal Spores	24 Hour	Air Cassettes, Impact Slides
	S+	Spore Trap Analysis with Dander, Fiber, and Pollen counts	24 Hour	Air Cassettes, Impact Slides
Direct ID	D	ID & Semi-Quantative Enumeration of spores and mycelium	24 Hour	Bio-Tape, Tape, Swab, Bulk, Agar Plate
	D+	Direct Analysis with Fully Quantitative spore count	24 Hour	Bio-Tape, Tape, Swab, Bulk, Agar Plate
Culture	C1	Identification & Enumeration of Mold only	7 Day	Air Plate, Agar Plate, Swab, Bulk
	C2	Identification & Enumeration of Bacteria only	4 Day	Air Plate, Agar Plate, Swab, Bulk
	C3	Identification & Enumeration of Mold and Bacteria	7 Day	Air Plate, Agar Plate, Swab, Bulk
	C5	Coliform Screen for Sewage Bacteria	2 Day	Agar Plate, Swab, Bulk
Particle	TPA	Total Particulate Analysis, ID & Count (Does Not Include Mold)	24 Hour	Air Cassettes, Impact Slides, Bio-Tape

#	Number	Sample	Analysis	Volume	Notes
1	PA-1 AP	OUTDOORS	S	75L	
2	PA 2 |	ROOM 227	↓	↓	
3	PA 3 |	CONTAINED AREA	↓	↓	
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					

Released by: MAH Date: 10/31/24 Received By: CCP Date: 10/1

AETHER ASSESSMENTS, LLC

HAYES MICROBIAL CONSULTING

#24048592

Analysis Report prepared for

Aether Assessments, LLC

5004 Seneca Dr.
Mechanicsburg, PA 17050

Phone: **(717) 756-7727**

P24221
Northern M.S.
Room 227

Collected: **October 28, 2024**
Received: **October 29, 2024**
Reported: **October 29, 2024**

We would like to thank you for trusting Hayes Microbial for your analytical needs!
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P24221
Northern M.S.
Room 227

#24048592

Spore Trap
SOP - HMC#101

Sample Number*	1	PA-1		2	PA-2		3	PA-3	
Sample Name*	**Outdoors**			**Room 227 General**			**Room 227 Work Area**		
Sample Volume*	75 L			75 L			75 L		
Reporting Limit	13 spores/m³			13 spores/m³			13 spores/m³		
Background	2			2			2		
Fragments	40/m³			13/m³			ND		
Organism	**Raw Count**	**Count / m³**	**% of Total**	**Raw Count**	**Count / m³**	**% of Total**	**Raw Count**	**Count / m³**	**% of Total**
Alternaria	14	190	<1%	1	13	2.8%			
Ascospores	22	290	<1%	2	27	5.6%	6	80	12.2%
Aspergillus|Penicillium				31	410	86.1%	13	170	26.5%
Basidiospores							2	27	4.1%
Bipolaris|Drechslera									
Chaetomium									
Cladosporium	3801	51000	98.0%	1	13	2.8%	23	310	46.9%
Curvularia									
Epicoccum	34	450	<1%	1	13	2.8%			
Fusarium									
Memnoniella									
Myxomycetes	4	53	<1%						
Nigrospora	1	13	<1%						
Pithomyces	1	13	<1%						
Rusts/Smuts							5	67	10.2%
Stachybotrys									
Stemphylium									
Torula									
Ulocladium									
Total	3877	52009	100%	36	476	100%	49	654	100%

Water Damage Indicator | Common Allergen | Slightly Higher than Baseline | Significantly Higher than Baseline | Ratio Abnormality

* indicates data provided by the customer

Collected: **Oct 28, 2024** Received: **Oct 29, 2024** Reported: **Oct 29, 2024**

Project Analyst: Joseph Lape, Date: **10 - 29 - 2024**

Reviewed By: Steve Hayes, BSMT Date: **10 - 29 - 2024**

HAYES MICROBIAL CONSULTING
3005 East Boundary Terrace, Suite F. Midlothian, VA. 23112 (804) 562-3435 contact@hayesmicrobial.com

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P24221
Northern M.S.
Room 227

#24048592

Spore Trap Information

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Control Comparisons	There are no national standards for the numbers of fungal spores that may be present in the indoor environment. As a general rule and guideline that is widely accepted in the indoor air quality field, the numbers and types of spores that are present in the indoor environment should not exceed those that are present outdoors at any given time. There will always be some mold spores present in "normal" indoor environments. The purpose of sampling and counting spores is to help determine whether an abnormal condition exists within the indoor environment and if it does, to help pinpoint the area of contamination. Spore counts should not be used as the sole determining factor of mold contamination. There are many factors that can cause anomalies in the comparison of indoor and outdoor samples due to the dynamic nature of both of those environments.
Water Damage Indicator Common Allergen Slightly Higher than Baseline Significantly Higher than Baseline Ratio Abnormality	**Blue:** These molds are commonly seen in conditions of prolonged water intrusion and usually indicate a problem. **Green:** Although all molds are potential allergens, these are the most common allergens that may be found indoors. **Orange:** The spore count is slightly higher than the outside count and may or may not indicate a source of contamination. **Red:** The spore count is significantly higher than the baseline count and probably indicates a source of contamination. **Violet:** The types of spores found indoors should be similar to the ones that were identified in the baseline sample. Significant increases (more than 25%) in the ratio of a particular spore type may indicate the presence of abnormal levels of mold, even if the total number of spores of that type is lower in the indoor environment than it was outdoors.
Color Coding	Fungi that are present in indoor samples at levels lower than 200 per cubic meter are not color coded on the report, unless they are one of the water damage indicators.
Significant Figures	Raw counts and column totals may reflect more than 2 significant figures, but results should only be considered significant to 2 figures.

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P24221
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Room 227

#24048592

Analyte Descriptions

Alternaria	**Habitat:**	Commonly found outdoors in soil and decaying plants. Indoors, it is commonly found on window sills and other horizontal surfaces.
	Health Effects:	A common allergen and has been associated with hypersensitivity pneumonitis. Alternaria is capable of producing toxic metabolites which may be associated with disease in humans or animals. Occasionally an agent of onychomycosis, ulcerated cutaneous infection and chronic sinusitis, principally in the immunocompromised patient.
Ascospores	**Habitat:**	A large group consisting of more than 3000 species of fungi. Common plant pathogens and outdoor numbers become very high following rain. Most of the genera are indistinguishable by spore trap analysis and are combined on the report.
	Health Effects:	Health affects are poorly studied, but many are likely to be allergenic.
Aspergillus|Penicillium	**Habitat:**	The most common fungi isolated from the environment. Very common in soil and on decaying plant material. Are able to grow well indoors on a wide variety of substrates.
	Health Effects:	This group contains common allergens and many can cause hypersensitivity pneumonitis. They may cause extrinsic asthma, and many are opportunistic pathogens. Many species produce mycotoxins which may be associated with disease in humans and other animals. Toxin production is dependent on the species, the food source, competition with other organisms, and other environmental conditions.
Basidiospores	**Habitat:**	A common group of Fungi that includes the mushrooms and bracket fungi. They are saprophytes and plant pathogens. In wet conditions they can cause structural damage to buildings.
	Health Effects:	Common allergens and are also associated with hypersensitivity pneumonitis.
Cladosporium	**Habitat:**	One of the most common genera worldwide. Found in soil and plant debris and on the leaf surfaces of living plants. The outdoor numbers are lower in the winter and often relatively high in the summer, especially in high humidity. The outdoor numbers often spike in the late afternoon and evening. Indoors, it can be found growing on textiles, wood, sheetrock, moist window sills and in HVAC supply ducts.
	Health Effects:	A common allergen, producing more than 10 allergenic antigens and a common cause of hypersensitivity pneumonitis.
Epicoccum	**Habitat:**	It is found in soil and plant litter and is a plant pathogen. It can grow indoors on a variety of substrates, including paper and textiles and is commonly found on wet drywall.
	Health Effects:	It is a common allergen. No cases of infection have been reported in humans.

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P24221
Northern M.S.
Room 227

#24048592

Analyte Descriptions

Myxomycetes	**Habitat:**	Found on decaying plant material and as a plant pathogen.
	Health Effects:	Some allergenic properties reported, but generally pose no health concerns to humans.
Nigrospora	**Habitat:**	Found on wood, soil and decaying plant matter.
	Health Effects:	Health effects are poorly studied.
Pithomyces	**Habitat:**	Common fungus isolated from soil, decaying plant material. Rarely found indoors.
	Health Effects:	Allergenic properties are poorly studied. No cases of infection in humans.
Rusts/Smuts	**Habitat:**	Found on decaying plant material and as a plant pathogen.
	Health Effects:	Some allergenic properties reported.

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SHIP: FEDEX - ENV PO
DATE: 10-29-2024

8136 1144 8825

MOLD

24048592

Job Number: P24221	Job Name: NORTHERN M.S. Room 227		
Collector: Eric Mercer		Mobile:	Email: emercer@aetheriaq.com
Date Collected: 10/28/24		Note:	

Analysis Type		Analysis Description	Turnaround	Accepted Media Types
Spore Trap	S	Identification & Enumeration of Fungal Spores	24 Hour	Air Cassettes, Impact Slides
	S+	Spore Trap Analysis with Dander, Fiber, and Pollen counts	24 Hour	Air Cassettes, Impact Slides
Direct ID	D	ID & Semi-Quantative Enumeration of spores and mycelium	24 Hour	Bio-Tape, Tape, Swab, Bulk, Agar Plate
	D+	Direct Analysis with Fully Quantitative spore count	24 Hour	Bio-Tape, Tape, Swab, Bulk, Agar Plate
Culture	C1	Identification & Enumeration of Mold only	7 Day	Air Plate, Agar Plate, Swab, Bulk
	C2	Identification & Enumeration of Bacteria only	4 Day	Air Plate, Agar Plate, Swab, Bulk
	C3	Identification & Enumeration of Mold and Bacteria	7 Day	Air Plate, Agar Plate, Swab, Bulk
	C5	Coliform Screen for Sewage Bacteria	2 Day	Agar Plate, Swab, Bulk
Particle	TPA	Total Particulate Analysis, ID & Count (Does Not Include Mold)	24 Hour	Air Cassettes, Impact Slides, Bio-Tape

#	Number	Sample	Analysis	Volume	Notes
1	PA-1 AD	OUTDOORS	S	75	
2	PA-2	Room 227 GENERAL	↓	↓	
3	PA-3	Room 227 WORK AREA			
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					

Released by:	Date: 10/28/24	Received By: 3	Date: 10-29

AETHER ASSESSMENTS, LLC

HAYES MICROBIAL CONSULTING

#24047587

Analysis Report prepared for

Aether Assessments, LLC

5004 Seneca Dr.
Mechanicsburg, PA 17050

Phone: **(717) 756-7727**

24221
Northern MS - 227

Collected: **October 22, 2024**
Received: **October 23, 2024**
Reported: **October 23, 2024**

We would like to thank you for trusting Hayes Microbial for your analytical needs!
We received 4 samples by FedEx in good condition for this project on October 23rd, 2024.

The results in this analysis pertain only to this job, collected on the stated date, and should not be used in the interpretation of any other job. Information supplied by the customer can affect the validity of results. These results apply only to the samples as received. This report may not be duplicated, except in full, without the written consent of Hayes Microbial Consulting, LLC.

All information provided to Hayes Microbial is confidential information relating to our customers and their clients. We will not disclose, copy, or distribute any information verbally or written, except to those designated by the customer(s). We take confidentiality very seriously. No changes to the distribution list will be made without the express consent of the customer.

This laboratory bears no responsibility for sample collection activities, analytical method limitations, or your use of the test results. Interpretation and use of test results are your responsibility. Any reference to health effects or interpretation of mold levels is strictly the opinion of Hayes Microbial. In no event, shall Hayes Microbial or any of its employees be liable for lost profits or any special, incidental or consequential damages arising out of the use of these test results.

Steve Hayes, BSMT(ASCP)
Laboratory Director
Hayes Microbial Consulting, LLC.

EPA Laboratory ID: VA01419

Lab ID: #188863

DPH License: #PH-0198

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24221
Northern MS - 227

#24047587

Spore Trap
SOP - HMC#101

Sample Number*	1	A1		2	A2		3	A3	
Sample Name*	**227 - Near Bulkhead**			**227 - Near Entry**			**Outdoors**		
Sample Volume*	75 L			75 L			75 L		
Reporting Limit	13 spores/m³			13 spores/m³			13 spores/m³		
Background	2			1			2		
Fragments	ND			ND			67/m³		
Organism	**Raw Count**	**Count / m³**	**% of Total**	**Raw Count**	**Count / m³**	**% of Total**	**Raw Count**	**Count / m³**	**% of Total**
Alternaria				1	13	33.3%	6	80	4.2%
Ascospores	1	13	20.0%				13	170	9.1%
Aspergillus|Penicillium	2	27	40.0%						
Basidiospores	1	13	20.0%	2	27	66.7%	32	430	22.4%
Bipolaris|Drechslera									
Chaetomium									
Cladosporium							62	830	43.4%
Curvularia									
Epicoccum							1	13	<1%
Fusarium									
Memnoniella									
Myxomycetes	1	13	20.0%				29	390	20.3%
Pithomyces									
Stachybotrys									
Stemphylium									
Torula									
Ulocladium									
Total	5	66	100%	3	40	100%	143	1913	100%

Water Damage Indicator | Common Allergen | Slightly Higher than Baseline | Significantly Higher than Baseline | Ratio Abnormality

* indicates data provided by the customer

Collected: **Oct 22, 2024** Received: **Oct 23, 2024** Reported: **Oct 23, 2024**

HAYES MICROBIAL CONSULTING

Project Analyst: Andrew Shields, Date: **10 - 23 - 2024**

Reviewed By: Steve Hayes, BSMT Date: **10 - 23 - 2024**

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24221
Northern MS - 227

#24047587

Direct Analysis
SOP - HMC#102

#4	Bio-Tape (1.00 cm2*)	Organism	Spore Estimate	Mycelial Estimate
T1 - Bulkhead		Aspergillus|Penicillium	Very Heavy	Many
		Chaetomium	Very Heavy	Many

* indicates data provided by the customer

Collected: **Oct 22, 2024** Received: **Oct 23, 2024** Reported: **Oct 23, 2024**

Project Analyst: Andrew Shields, Date: **10 - 23 - 2024**

Reviewed By: Steve Hayes, BSMT Date: **10 - 23 - 2024**

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#24047587

Spore Trap Information

Reporting Limit	The Reporting Limit is the lowest number of spores that can be detected based on the total volume of the sample collected and the percentage of the slide that is counted. At Hayes Microbial, 100% of the slide is read so the LOD is based solely on the total volume. Raw spore counts that exceed 500 spores will be estimated.
Blanks	Results have not been corrected for field or laboratory blanks.
Background	The Background is the amount of debris that is present in the sample. This debris consists of skin cells, dirt, dust, pollen, drywall dust and other organic and non-organic matter. As the background density increases, the likelihood of spores, especially small spores such as those of Aspergillus and Penicillium may be obscured. The background is rated on a scale of 1 to 5 and each level is determined as follows: **NBD:** No background detected due to possible pump or cassette malfunction. Recollect sample. (Field Blanks will display NBD) **1 :** <5% of field occluded. No spores will be uncountable. **2 :** 5-25% of field occluded. **3 :** 25-75% of field occluded. **4 :** 75-90% of field occluded. **5 :** >90% of field occluded. Suggested recollection of sample.
Fragments	Fragments are small pieces of fungal mycelium or spores. They are not identifiable as to type and when present in very large numbers, may indicate the presence of mold amplification.
Control Comparisons	There are no national standards for the numbers of fungal spores that may be present in the indoor environment. As a general rule and guideline that is widely accepted in the indoor air quality field, the numbers and types of spores that are present in the indoor environment should not exceed those that are present outdoors at any given time. There will always be some mold spores present in "normal" indoor environments. The purpose of sampling and counting spores is to help determine whether an abnormal condition exists within the indoor environment and if it does, to help pinpoint the area of contamination. Spore counts should not be used as the sole determining factor of mold contamination. There are many factors that can cause anomalies in the comparison of indoor and outdoor samples due to the dynamic nature of both of those environments.
Water Damage Indicator Common Allergen Slightly Higher than Baseline Significantly Higher than Baseline Ratio Abnormality	**Blue:** These molds are commonly seen in conditions of prolonged water intrusion and usually indicate a problem. **Green:** Although all molds are potential allergens, these are the most common allergens that may be found indoors. **Orange:** The spore count is slightly higher than the outside count and may or may not indicate a source of contamination. **Red:** The spore count is significantly higher than the baseline count and probably indicates a source of contamination. **Violet:** The types of spores found indoors should be similar to the ones that were identified in the baseline sample. Significant increases (more than 25%) in the ratio of a particular spore type may indicate the presence of abnormal levels of mold, even if the total number of spores of that type is lower in the indoor environment than it was outdoors.
Color Coding	Fungi that are present in indoor samples at levels lower than 200 per cubic meter are not color coded on the report, unless they are one of the water damage indicators.
Significant Figures	Raw counts and column totals may reflect more than 2 significant figures, but results should only be considered significant to 2 figures.

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24221
Northern MS - 227

#24047587

Direct Analysis Information

Spore Estimate		Percentages
ND	None Detected	0%
Rare	Less than 10 spores	< 1%
Light	10 - 99 spores	1-10%
Moderate	100 - 999 spores	11-25%
Heavy	1000 - 9999 spores	26-50%
Very Heavy	10000 or greater spores	51-100%

Mycelial Estimate	
ND	None Detected No active growth at site.
Trace	Very small amount of Mycelium Probably no active growth at site.
Few	Some Mycelium Possible active growth at site.
Many	Large amount of Mycelium Probable active growth at site.

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Analyte Descriptions

Alternaria	**Habitat:**	Commonly found outdoors in soil and decaying plants. Indoors, it is commonly found on window sills and other horizontal surfaces.
	Health Effects:	A common allergen and has been associated with hypersensitivity pneumonitis. Alternaria is capable of producing toxic metabolites which may be associated with disease in humans or animals. Occasionally an agent of onychomycosis, ulcerated cutaneous infection and chronic sinusitis, principally in the immunocompromised patient.
Ascospores	**Habitat:**	A large group consisting of more than 3000 species of fungi. Common plant pathogens and outdoor numbers become very high following rain. Most of the genera are indistinguishable by spore trap analysis and are combined on the report.
	Health Effects:	Health affects are poorly studied, but many are likely to be allergenic.
Aspergillus|Penicillium	**Habitat:**	The most common fungi isolated from the environment. Very common in soil and on decaying plant material. Are able to grow well indoors on a wide variety of substrates.
	Health Effects:	This group contains common allergens and many can cause hypersensitivity pneumonitis. They may cause extrinsic asthma, and many are opportunistic pathogens. Many species produce mycotoxins which may be associated with disease in humans and other animals. Toxin production is dependent on the species, the food source, competition with other organisms, and other environmental conditions.
Basidiospores	**Habitat:**	A common group of Fungi that includes the mushrooms and bracket fungi. They are saprophytes and plant pathogens. In wet conditions they can cause structural damage to buildings.
	Health Effects:	Common allergens and are also associated with hypersensitivity pneumonitis.
Chaetomium	**Habitat:**	Ascomycete fungus, commonly isolated from soil and decaying plant materials. It is cellulolytic and grows well indoors on damp sheetrock and other paper substrates. It is often found growing with Stachybotrys.
	Health Effects:	It is reported to be allergenic and may produce toxins.
Cladosporium	**Habitat:**	One of the most common genera worldwide. Found in soil and plant debris and on the leaf surfaces of living plants. The outdoor numbers are lower in the winter and often relatively high in the summer, especially in high humidity. The outdoor numbers often spike in the late afternoon and evening. Indoors, it can be found growing on textiles, wood, sheetrock, moist window sills and in HVAC supply ducts.
	Health Effects:	A common allergen, producing more than 10 allergenic antigens and a common cause of hypersensitivity pneumonitis.

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#24047587

Analyte Descriptions

Epicoccum	**Habitat:**	It is found in soil and plant litter and is a plant pathogen. It can grow indoors on a variety of substrates, including paper and textiles and is commonly found on wet drywall.
	Health Effects:	It is a common allergen. No cases of infection have been reported in humans.
Myxomycetes	**Habitat:**	Found on decaying plant material and as a plant pathogen.
	Health Effects:	Some allergenic properties reported, but generally pose no health concerns to humans.

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SHIP: FEDEX - ENV PO
DATE: 10-23-2024

8136 1143 8239

MOLD

24047587

Job Number: 24221	Job Name: NORTHERN MS - 227		
Collector: Eric Mercer		Mobile:	Email: emercer@aetheriaq.com
Date Collected: 10/22/24		Note:	

Analysis Type		Analysis Description	Turnaround	Accepted Media Types
Spore Trap	S	Identification & Enumeration of Fungal Spores	24 Hour	Air Cassettes, Impact Slides
	S+	Spore Trap Analysis with Dander, Fiber, and Pollen counts	24 Hour	Air Cassettes, Impact Slides
Direct ID	D	ID & Semi-Quantative Enumeration of spores and mycelium	24 Hour	Bio-Tape, Tape, Swab, Bulk, Agar Plate
	D+	Direct Analysis with Fully Quantitative spore count	24 Hour	Bio-Tape, Tape, Swab, Bulk, Agar Plate
Culture	C1	Identification & Enumeration of Mold only	7 Day	Air Plate, Agar Plate, Swab, Bulk
	C2	Identification & Enumeration of Bacteria only	4 Day	Air Plate, Agar Plate, Swab, Bulk
	C3	Identification & Enumeration of Mold and Bacteria	7 Day	Air Plate, Agar Plate, Swab, Bulk
	C5	Coliform Screen for Sewage Bacteria	2 Day	Agar Plate, Swab, Bulk
Particle	TPA	Total Particulate Analysis, ID & Count (Does Not Include Mold)	24 Hour	Air Cassettes, Impact Slides, Bio-Tape

#	Number	Sample	Analysis	Volume	Notes
1	A1 AD	227 - NEAR BULKHEAD	S	75L	
2	A2 |	227 - NEAR ENTRY	↓	↓	
3	A3 |	OUTDOORS	↓	↓	
4					
5	T1 BT	BULKHEAD	D	~~0~~	
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					

Released by:	Date: 10/22/24	Received By: CCP	Date: 10/23