



## BNF Consulting, Inc.

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justin@askbnf.com

Inspected By: Justin H. Joe, PhD, CIH, CSP, CPE & Associates



## Mold Inspection Report

Prepared For:

Property Address:

Inspected on Mon, Aug 9 2021 at 11:30 AM

# General Background

Inspection Type:	Limited Mold Inspection
Mold Assessor / Industrial Hygienist:	Justin Joe, PhD, CIH, CSP
License:	NYS Mold Assessor Company Lic #00105, NYS Mold Assessor Lic #MA00076
Access By:	Client
People Present:	Homeowner
Property Type:	Single Family
Purpose of Inspection:	Initial Mold Inspection



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## Comment 1:

On August 9 2021, a Limited Mold Inspection and sampling was completed for the basement, the 1st and 2nd floors, and the attic of the subject property. The client questioned potentially compromised air quality due to possible spread of airborne mold spores in the residence. BNF was contacted In order to perform a precautionary screening for elevated mold spores and a moisture measurements within the areas of the basement due to present water stains throughout the ceiling, walls and basement floors.

The purpose of this survey was two folds 1) to evaluate a potential exposure to mold and 2) to provide a proper scope of remediation work. Multiple spore trap air samples and direct identification swab samples were collected from the questioned locations.

According to the laboratory analysis results as well as the observations made on-site at the time of the inspection, the following locations exhibited high spore count and/or moisture intrusion:

1. Entire basement
2. Air handler units
3. Master bathroom
4. Attic

BNF recommends to hire a NYS Licensed Mold Remediation Contractor to remediate water damage or mold on the basement ceiling by following the recommendations made in the remediation section of this report. Also recommend

to test for asbestos and lead based paint use prior to any demolition of building materials.

## Observations



Comment 2:

Location #1: Basement

Several observations from the basement:

1. Upon examination of the basement , BNF Consulting observed an elevated relative humidity of 61% RH. Ideally, RH should be maintained at 30-50% to prevent ample conditions for mold growth. It is recommended to run commercial-sized dehumidifiers to maintain proper humidity levels.
2. Additionally, water stains and visible mold was seen throughout the basement's ceiling or the subfloor plywood throughout the entire basement ceiling. Prior plumbing issues may have been saturated the ceiling and may not have been properly remediated/dried.
3. Water stains on the basement slab foundation floor and walls due to water leaks from the air handler unit, the boiler, and water heater. Learned that water puddles were on the floor few days ago. This could have contributed to high humidity in the basement to lead mold growth as well.
  - A. The expansion tank connected to the boiler shown water drip stains. It may has been leaking in the past.
  - B. The air handler unit also has visible water drip stains on the unit.
  - C. Noted drip pan under the flush outlet to the water heat. Suspected water leak in the past.
4. The air handler unit has also shown visible mold growth on the interior parts.

It is recommended to remove or properly remediate mold in the air handler unit or

# Mold Sampling Map



(Observations continued)

replace the unit. Hire a qualified contractor and perform HEPA sandwich cleaning (HEPA vacuum, anti-microbial wipe, HEPA vacuum) throughout the entire ceiling and walls with encapsulation.

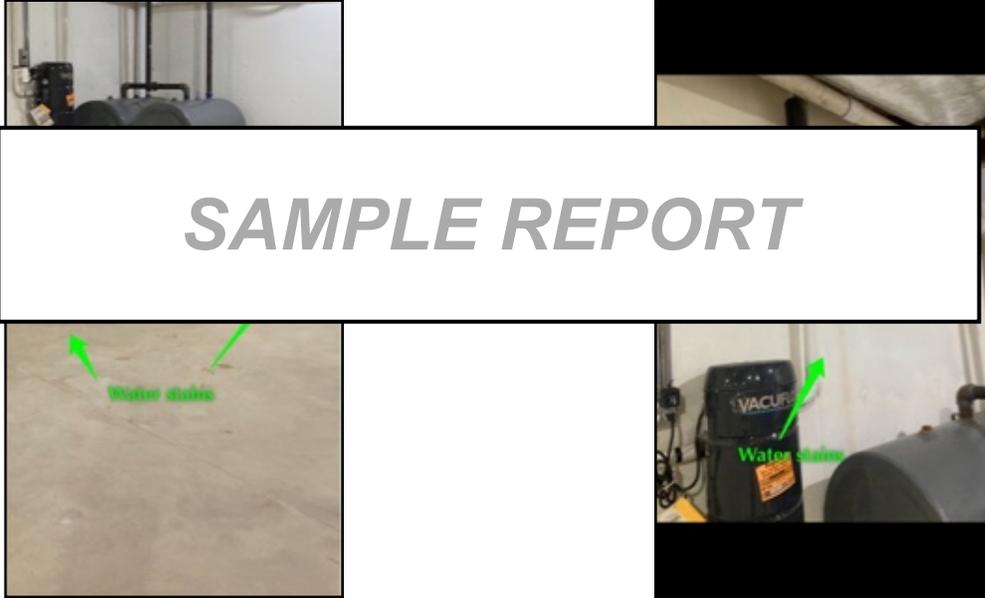


Figure 2-1

Figure 2-2



Figure 2-3

Figure 2-4

(Observations continued)

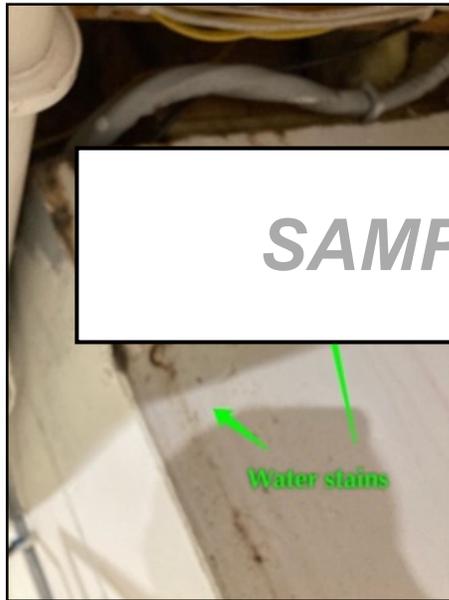


Figure 2-5



Figure 2-6

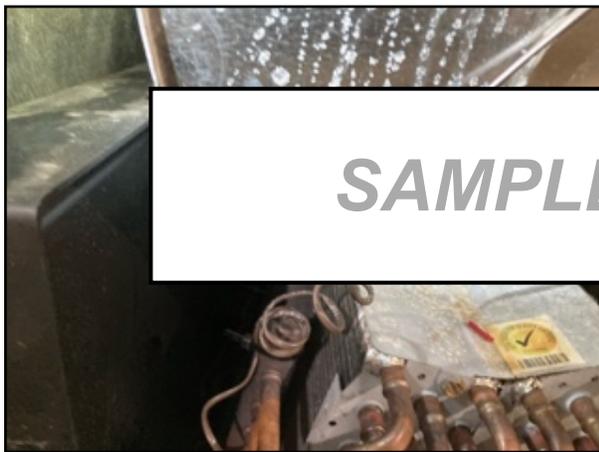


Figure 2-7



Figure 2-8

(Observations continued)



Comment 3:

Location #2: 2nd floor bathroom

Due to prior plumbing issues causing a water leak, a moisture reading was done through the second floor bathroom walls. Upon examination of the second floor bathroom, no elevated moisture was detected and normal spore count was sampled in the area.



Figure 3-1



Figure 3-2



Figure 3-3



(Observations continued)

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Comment 4:

Location #3: 1st Floor Office

Due to prior plumbing issues in the bathroom on top of the office causing a water leak, a moisture reading was done. Upon examination of the office no elevated moisture was detected and normal spore count was sampled in the area.

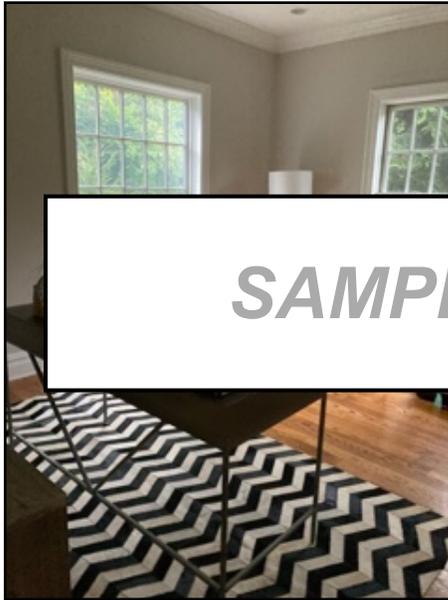


Figure 4-1



Figure 4-2



Comment 5:

Location #4: Master bathroom

Upon examination of the master bathroom, BNF Consulting observed elevated moisture beneath the jacuzzi/bathtub. Samples were taken due to potential cross contamination and it indicated a normal mold level.

However, it is recommended to remove the system (pump, hose, etc) beneath the jacuzzi/bathtub to discard the wood board under the pump while it had elevated moisture on it. Perform HEPA sandwich cleaning in the bathtub cavity and dry out.

(Observations continued)

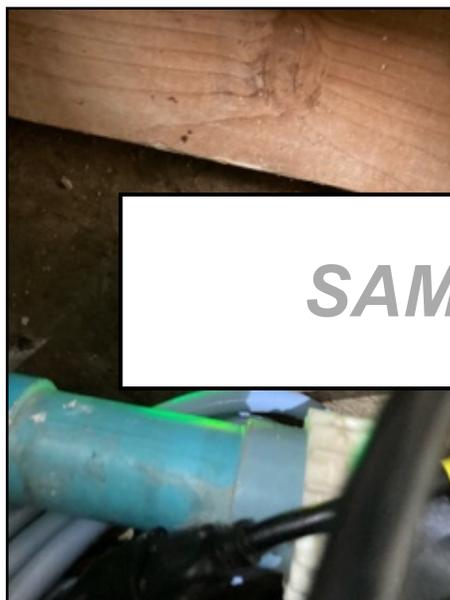


Figure 5-1



Figure 5-2

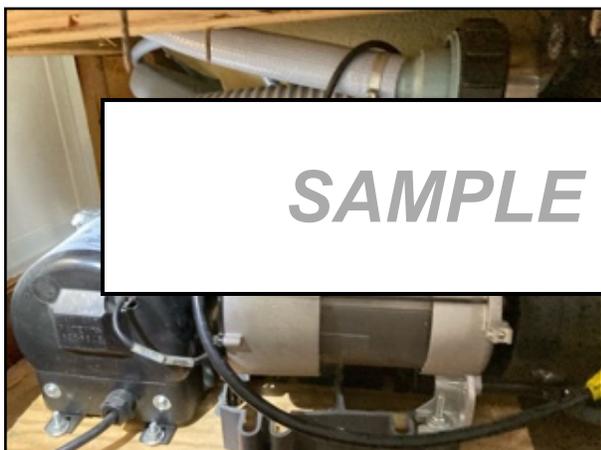


Figure 5-3

(Observations continued)

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Comment 6:

Location #5: Attic

1. Upon examination of the attic, multiple spots of visible mold growth were found on the studs and rafters.
2. The air handler unit has also shown visible mold growth on the interior parts.

It is recommended to remediate the mold on the spots on the rafters and studs in the attic. Hire a qualified contractor and perform HEPA sandwich cleaning (HEPA vacuum, anti-microbial wipe, HEPA vacuum) only spots where visible mold present.



Figure 6-1

Figure 6-2

(Observations continued)



Figure 6-3



Figure 6-4



Figure 6-5



Figure 6-6

***SAMPLE REPROT***

***SAMPLE REPORT***

(Observations continued)



Figure 6-7

Figure 6-8



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Comment 7:

Location #6: HVAC systems

Upon examination of the Air Handler Units that supply air into the living spaces of the home, BNF Consulting observed the visible surface presence of mold reservoir deposits along the interior components of BOTH air handlers units, including the blower fan blades, evaporator coils, and liners. Based on the age and condition of the air handler units, BNF suggests that the client remove and replace the air handler units and have the interior components of the ducts/grilles remediated of all surface mold.

Multiple swab samples were taken from the suspect areas to identify and quantify the mold condition.

## Environmental Parameters

Interior Average Humidity (%): 60%

Interior Average Temperature (F): 73

# Measurements And Summary Of Results

Subject Area(s): Attic, Bathroom, Office  
Mold Analysis Laboratory: QLab

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## Comment 8:

Samples were taken to assess mold conditions in the various locations using non-viable (non-culture) sampling the lab analysis indicates that:

1. Six (6): Spore trap samples was collected within the clients property. Laboratory analysis of airborne mold spores by Hayes Microbial Consulting concludes that all samples indicated HIGHLY ELEVATED levels of mold ( Aspergillus | Penicillium) in comparison to control/baseline sample within the basement. Normal spore count within the first floor office, second floor bathroom and second floor master bathroom was noted.
2. Ten (10): Direct identification, Swab sample was collected from the contaminated surfaces within the basement ceiling, walls and air handler unit, the second floor bathroom, second floor master bathroom and the attic. Laboratory analysis indicates HEAVY amounts of Cladosporium, a common indoor allergen, on the ceiling and walls of the basement. HEAVY amounts of Cladosporium was also detected within the air handler units interior parts. LIGHT trace of Cladosporium was found on the bathtub/jacuzzi unit beneath and lastly VERY HEAVY trace of Cladosporium was found in the parts of the air handler units of the attic and HAVY trace of Aspergillus/Penicillium a common allergen was found on the rafters and studs of the attic.

# Remediation And Clearance

Further Evaluation / Testing: Recommended  
Mold Remediation / Restoration : Recommended



Comment 9:

Area(s):

\*See "Observations" section for specific remediation details\*.

1. Remove all personal belongings from effected area.
2. Isolate the room entrance(s) using 6 mil polyethylene plastic sheeting. Install a double flap and/or zipper access.
3. Cover all openings such as supply and return air vents throughout effected area to prevent further contamination.
4. Perform TWO rounds of DEEP CLEANING using the HEPA Sandwich Method (HEPA VAC, Anti-microbial Wipe, HEPA VAC). During this process, be sure to come in contact with ALL surfaces including but not limited to, floors, walls, ceiling, furniture and behind all places which structures and personal belongings have been removed from. Surfaces should be free of ALL visible dust.
  - 4.1. Basement - Perform HEPA sandwich cleaning & encapsulation throughout the entire basement ceiling and walls.
  - 4.2. Master bathroom - Remove the pump unit beneath the master bedroom jacuzzi/bathtub and discard any wood board contains elevated moisture. Preform HEPA sandwich cleaning method and dry out the base/floor in the tub cavity.
  - 4.3 Attic- Perform HEPA sandwich cleaning on only spots where mold growth is present. Spot cleaning, no containment.
5. Using an airless sprayer, an anti-microbial encapsulate containing a microban, may be applied. It is recommended to use "clear" type encapsulate with no VOC, low odor, and no HAP such as SENTINEL 247 Zero Mold & Mildew Resistant Coating, Clear.
6. Run air scrubbers for NO LESS THAN 1 day to continue to eliminate mold spores from the air during AND after the cleaning has been completed INSIDE AND OUTSIDE of containment.
7. Commercial sized dehumidifiers should be used to regulate the humidity levels

during the remediation process.

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Comment 10:

Additional Recommendations:

- 1) Place a dehumidifier and set at 40% relative humidity. It is recommended to maintain a relative indoor humidity between 30-50%.
  
  - 2) Assure that all moisture intrusion problems are corrected. Failure to correct all moisture intrusion problems could potentially result in additional damage with the likely occurrence of mold growth.
  
  - 3) Make sure to test asbestos and lead paint prior to any demolition of building materials including, but not limited to, drywall, insulation, and plaster.
- 



Comment 11:

Area(a) : HVAC systems and duct works

Decontamination of the interior components of air handler unit, supply and return ductwork, registers/grilles, dampers, turning vanes, and VAV boxes should be accomplished.

1. Access points should be strategically placed throughout the systems as required. Access points are closed by using sheet metal plates sealed and gasketed. These doors allow easy inspection by the owner.
  
2. Registers should removed where possible. After cleaning, they are reinstalled to their original positions.
  
3. Interior surfaces of ductwork should be cleaned by using HEPA filtered vacuums, rotary brush systems and compressed air dislodging systems, as applicable to perform thorough cleaning.
  
4. Ductwork should be kept under negative pressure during the cleaning process to capture particulate and prevent cross contamination.

(Remediation And Clearance continued)

5. Digital photographs should be taken at appropriate locations throughout the HVAC systems, where adverse conditions are found.
6. An EPA registered solution should be fogged throughout each system upon completion. This retard bacterial growth within the systems. Area must remain unoccupied for a minimum of one hour once we start this process.
7. Protection of all areas where work is being performed should be provided, as well as cleanup upon completion.
8. Run air scrubbers for NO LESS THAN 1 day to prevent potential spread of mold spores during/after the remediation.

## References

Reference:

Attached



Comment 12:

Field Guide for the Determination of Biological Contaminants in Environmental Samples, 2nd Edition, American Industrial Hygiene Association, 2005.

Fungal Contamination in Public Buildings: Health Effects and Investigation Methods. Health Canada, Ottawa, Ontario, 2004.

Bioaerosols: Assessment and Control. Janet Macher, Ed., American Conference of Governmental Industrial Hygienists, Cincinnati, OH 1999.

"A Brief Guide to Mold, Moisture, and Your Home" Includes basic information on mold, cleanup guidelines, and moisture and mold prevention.

<http://www.epa.gov/mold/moldguide.html>

AIAH's "The Facts About Mold" consumer brochure.

<https://www.aiha.org/about-ih/Pages/Facts-About-Mold.aspx>

Bioaerosols: Assessment and Control, Microbial Volatile Organic Compounds, Pp.

(References continued)

26-1-26-17, Ammann, Harrier M. 1998.

Indoor air and human health, Health effects of biological contaminants. Pp. 171-178, Burge, Harriet A. 1996.

Standard and Reference Guide for Professional Mold Remediation, Institute for Inspection Cleaning and Restoration Certification (IICRC's), ANSI-S520 (2008)

Identification Manual for Fungi from Utility Poles in the Eastern United States, C.J. K. Wang, R.A. Zabel, American Type Culture Collection 1990

## Appendix A - Mold Protocols



Comment 13:

Based upon the results of the site assessment conducted by BNF Consulting the following surfaces, materials, or contents within the above referenced spaces should be remediate in accordance with current industry guidelines, including but not limited to the New York City Department of Mental Health and Hygiene publication "Guidelines on Assessment and Remediation of Fungi in Indoor Environments" and the Cleaning and Restoration Institutes Publications "IICRC S520 "Standard and Reference Guide for Professional Mold Remediation".



Comment 14:

## Post Remediation Assessment:

The Post Remediation Assessment and Clearance Sampling consist of the following:

1. Visual inspection of the previously identified contaminated area(s) and constructed containment(s);
2. Visual inspection to verify that all impacted materials have been removed according to the Mold Remediation Protocol;
3. Visual inspection and complete documentation including digital photos of the remediated area(s) to ensure that all visible mold growth has been removed, that there are no wet building materials, and that the area(s) are clean and debris free;
4. Collection of microbial air samples from each work area or containment and one or more surface samples of previously identified contaminated areas. Plus, the collection of one or more indoor control air samples from one or more areas inside the structure but outside of all work areas for cross-contamination verification;
5. A final written report of the Post Remediation Assessment and Clearance Sampling findings and a Lab Report of the sample analysis.



### Comment 15:

#### General Mold Remediation / Restoration Plan:

Remediation work is to be followed by a New York State licensed mold remediator to remove/remediate all contaminated building materials and to restore the indoor air quality to an acceptable level. Necessary work include:

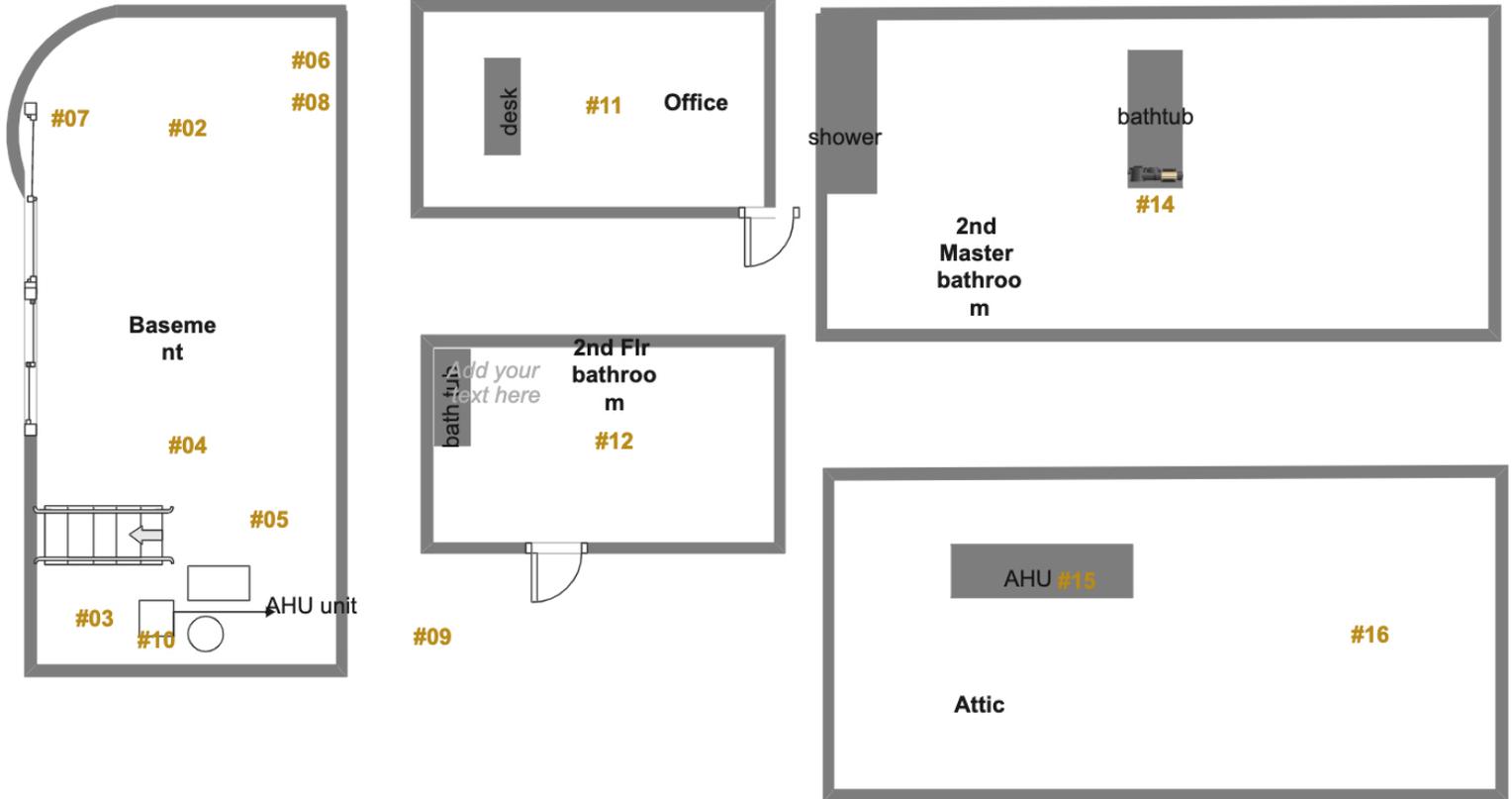
1. Wear Personal Protective Equipment (PPE) to all crew members conducting mold restoration/remediation.
2. Seal off all openings, seams and penetrations to the work area including air vents, grills, and light fixtures in the containment areas.
3. Create containment areas to isolate the bedrooms, the bathroom and the kitchen areas using 6 mil polyethylene plastic sheeting. Install a double flap and/or zipper access. Protective floor coverings should be used in the work areas for all means of egress. Create additional containments as necessary to create the adequate amount of negative pressure. Erect a decontamination chamber if no means of egress area available.

4. Create negative pressure containment in the work areas through fans such as air scrubbers equipped with a HEPA filter. Air scrubbers can be placed in a window or a common area to exhaust air through a containment wall. This will prevent the dispersion of mold spores during the remediation/removal process. The air exchange rate in the containment area should be at least 4-6 times per hour. Place additional air scrubbers outside of each containment area and on the first floor of the home.
5. Use commercial sized dehumidifiers to maintain the humidity levels during the remediation process. Some structural drying will be needed.
6. Inspect all personal belongings thoroughly for any signs of mold growth. Disinfectant solution can be used to wipe with for hard surface and non-porous items, but it should be discarded for porous items affect with visible and apparent mold growth. Porous items such as fabrics can be laundered and larger porous items can be HEPA filter vacuumed. Some items may need to be discarded.
7. Remove all personal items from the areas or wrap in plastic sheeting prior to the removal of any building materials.
8. Conduct two rounds of HEPA filter vacuuming and apply a Broad Spectrum cleaning solution or equivalent via damp wiping methods on all surfaces in the containment areas including walls, floors, doors, ceiling, and structures behind the removed materials. Surfaces should be free of all visible dust.
9. Run air scrubbers for no less than 2 day to continue to remove mold spores from the air after the cleaning process has been completed.
10. Place all removed materials in double sealed polyethylene bags. Bags are to be wiped with a cleaning solution prior to transport to the disposal areas.
11. Use some abrasive damp scrubbing to remove the mold growth on the structures behind the removed materials as needed.

## Appendix B - Photos

# Appendix C - Lab Reports

# Mold Sampling Map



Analysis Report prepared for

## BNF Consulting, Inc.

152 Rt 202, #404  
Lincolndale, NY 10540

Phone: (914) 610-8001

16887

Collected: **August 9, 2021**  
Received: **August 10, 2021**  
Reported: **August 10, 2021**

We would like to thank you for trusting Hayes Microbial for your analytical needs!  
We received 16 samples by FedEx in good condition for this project on August 10th, 2021.

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. This report may not be duplicated, except in full, without the written consent of Hayes Microbial Consulting, LLC..

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

Sample Number	1			2			3			11		
Sample Name	Control			Basement by Rear Window			Basement by Units & Closet			Office 1st Floor		
Sample Volume	75.00 liter			75.00 liter			75.00 liter			75.00 liter		
Reporting Limit	13 spores/m <sup>3</sup>			13 spores/m <sup>3</sup>			13 spores/m <sup>3</sup>			13 spores/m <sup>3</sup>		
Background	2			3			3			2		
Fragments	ND			ND			40/m <sup>3</sup>			ND		
Organism	Raw Count	Count / m <sup>3</sup>	% of Total	Raw Count	Count / m <sup>3</sup>	% of Total	Raw Count	Count / m <sup>3</sup>	% of Total	Raw Count	Count / m <sup>3</sup>	% of Total
Alternaria												
Ascospores	200	2667	64.1%	5	67	2.5%	7	93	1.3%	3	40	75.0%
Aspergillus Penicillium	3	40	<1%	192	2560	96.5%	544	7253	98.2%			
Basidiospores	80	1067	25.6%	2	27	1.0%	3	40	<1%			
Bipolaris Drechslera												
Chaetomium												
Cladosporium	28	373	9.0%									
Curvularia												
Epicoccum	1	13	<1%							1	13	25.0%
Fusarium												
Memnoniella												
Myxomycetes												
Pithomyces												
Stachybotrys												
Stemphylium												
Torula												
Ulocladium												
<b>Total</b>	<b>312</b>	<b>4160</b>	<b>100%</b>	<b>199</b>	<b>2654</b>	<b>100%</b>	<b>554</b>	<b>7386</b>	<b>100%</b>	<b>4</b>	<b>53</b>	<b>100%</b>

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



Collected: **Aug 9, 2021**

Received: **Aug 10, 2021**

Reported: **Aug 10, 2021**

Project Analyst:  
 Ramesh Poluri, PhD *P. Ramesh*

Date:  
**08 - 10 - 2021**

Reviewed By:  
 Steve Hayes, BSMT *Stephen N. Hayes*

Date:  
**08 - 10 - 2021**

Sample Number	12			13				
Sample Name	2nd FLR Bathroom			Master Bathroom				
Sample Volume	75.00 liter			75.00 liter				
Reporting Limit	13 spores/m <sup>3</sup>			13 spores/m <sup>3</sup>				
Background	2			2				
Fragments	ND			ND				
Organism	Raw Count	Count / m <sup>3</sup>	% of Total	Raw Count	Count / m <sup>3</sup>	% of Total		
Alternaria								
Ascospores	4	53	66.7%	2	27	66.7%		
Aspergillus Penicillium								
Basidiospores	1	13	16.7%					
Bipolaris Drechslera								
Chaetomium								
Cladosporium								
Curvularia	1	13	16.7%					
Epicoccum								
Fusarium								
Memnoniella								
Myxomycetes								
Pithomyces				1	13	33.3%		
Stachybotrys								
Stemphylium								
Torula								
Ulocladium								
Total	6	79	100%	3	40	100%		

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



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#	Swab (1.00 cm2)	Organism	Spore Estimate	Mycelial Estimate
#4	4 - Ceiling Above Entrance/ Exit	Cladosporium	Heavy	Few
#5	5 - Ceiling by the Unit	Cladosporium	Moderate	Trace
#6	6 - Ceiling by Electric Unit	Cladosporium	Very Heavy	Many
#7	7 - By Door Entrance on the Right	Cladosporium	Very Heavy	Many
#8	8 - Water Stain near Electric Panel	Ascospores	Light	ND
		Cladosporium	Rare	ND
#9	9 - Blower Of AHU	Cladosporium	Very Heavy	Many
#10	10 - Dust in AHU Near Coil/Blower	Cladosporium	Rare	ND
#14	14 - Bath Tub Unit	Cladosporium	Light	ND



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Reviewed By:  
 Steve Hayes, BSMT *Stephen N. Hayes*

Date:  
**08 - 10 - 2021**

#	Swab (1.00 cm2)	Organism	Spore Estimate	Mycelial Estimate
#15	15 - AHU in the Attic	Cladosporium	Very Heavy	Many
#16	16 - Wood Attic Foundation	Aspergillus Penicillium	Heavy	Few

**Spore Trap Information**

<b>Reporting Limit</b>	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.										
<b>Blanks</b>	Results have not been corrected for field or laboratory blanks.										
<b>Background</b>	<p>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 <i>Aspergillus</i> and <i>Penicillium</i> may be obscured. The background is rated on a scale of 1 to 5 and each level is determined as follows:</p> <p><b>NBD:</b> No background detected due to possible pump or cassette malfunction. Recollect sample. (Field Blanks will display NBD)</p> <p><b>1 :</b> &lt;5% of field occluded. No spores will be uncountable.</p> <p><b>2 :</b> 5-25% of field occluded.</p> <p><b>3 :</b> 25-75% of field occluded.</p> <p><b>4 :</b> 75-90% of field occluded.</p> <p><b>5 :</b> &gt;90% of field occluded. Suggested recollection of sample.</p>										
<b>Fragments</b>	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.										
<b>Control Comparisons</b>	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.										
<table border="1"> <tr> <td data-bbox="44 980 464 1040">Water Damage Indicator</td> <td data-bbox="491 980 2039 1006"><b>Blue:</b> These molds are commonly seen in conditions of prolonged water intrusion and usually indicate a problem.</td> </tr> <tr> <td data-bbox="44 1040 464 1101">Common Allergen</td> <td data-bbox="491 1040 2039 1066"><b>Green:</b> Although all molds are potential allergens, these are the most common allergens that may be found indoors.</td> </tr> <tr> <td data-bbox="44 1101 464 1161">Slightly Higher than Baseline</td> <td data-bbox="491 1101 2039 1127"><b>Orange:</b> The spore count is slightly higher than the outside count and may or may not indicate a source of contamination.</td> </tr> <tr> <td data-bbox="44 1161 464 1221">Significantly Higher than Baseline</td> <td data-bbox="491 1161 2039 1187"><b>Red:</b> The spore count is significantly higher than the baseline count and probably indicates a source of contamination.</td> </tr> <tr> <td data-bbox="44 1221 464 1279">Ratio Abnormality</td> <td data-bbox="491 1221 2039 1289"><b>Violet:</b> 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.</td> </tr> </table>	Water Damage Indicator	<b>Blue:</b> These molds are commonly seen in conditions of prolonged water intrusion and usually indicate a problem.	Common Allergen	<b>Green:</b> Although all molds are potential allergens, these are the most common allergens that may be found indoors.	Slightly Higher than Baseline	<b>Orange:</b> The spore count is slightly higher than the outside count and may or may not indicate a source of contamination.	Significantly Higher than Baseline	<b>Red:</b> The spore count is significantly higher than the baseline count and probably indicates a source of contamination.	Ratio Abnormality	<b>Violet:</b> 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.	
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Significantly Higher than Baseline	<b>Red:</b> The spore count is significantly higher than the baseline count and probably indicates a source of contamination.										
Ratio Abnormality	<b>Violet:</b> 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.										
<b>Color Coding</b>	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.										

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.

## Organism Descriptions

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<b>Ascospores</b>	<b>Habitat:</b> 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.
	<b>Effects:</b> Health affects are poorly studied, but many are likely to be allergenic.

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<b>Aspergillus Penicillium</b>	<b>Habitat:</b> 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.
	<b>Effects:</b> 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.

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<b>Basidiospores</b>	<b>Habitat:</b> 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.
	<b>Effects:</b> Common allergens and are also associated with hypersensitivity pneumonitis.

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<b>Cladosporium</b>	<b>Habitat:</b> 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.
	<b>Effects:</b> A common allergen, producing more than 10 allergenic antigens and a common cause of hypersensitivity pneumonitis.

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<b>Curvularia</b>	<b>Habitat:</b> They exist in soil and plant debris, and are plant pathogens.
	<b>Effects:</b> They are allergenic and a common cause of allergic fungal sinusitis. An occasional cause of human infection, including keratitis, sinusitis, onychomycosis, mycetoma, pneumonia, endocarditis and disseminated infection, primarily in the immunocompromised.

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<b>Epicoccum</b>	<b>Habitat:</b> 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.
	<b>Effects:</b> It is a common allergen. No cases of infection have been reported in humans.

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**Pithomyces**

**Habitat:** Common fungus isolated from soil, decaying plant material. Rarely found indoors.

**Effects:** Allergenic properties are poorly studied. No cases of infection in humans.



# HAYES

MICROBIAL CONSULTING  
3005 East Boundary Terrace, #F  
Midlothian, VA 23112, USA  
804.562.3435 Fax: 804.447.5562

Company: \_\_\_\_\_  
BNF Consulting, Inc.  
152 Route 202, #404  
Lincolndale, NY 10540

# N

SHIP: FEDEX - BOX 50  
DATE: 08-10-2021



Job Number: 16887 Job Name: \_\_\_\_\_ Collector: Dustin Email: Justin@askbrd.com  
 Date Collected: 8/9/21 Notes: \_\_\_\_\_  
 Mobile: \_\_\_\_\_

Sample #	Sample Name	Analysis Type	Volume	TAT	Notes
#1	Control	S	75L	6HR	
#2	Basement by Rear Window	↓			near electric panel
#3	Basement by units & closet	↓			Floor foundation seems to be saturated (prev)
#4	Stucco ceiling above entrance/exit	D	N/A		stain throughout
#5	ceiling by the unit	D			
#6	ceiling by electrical unit	D			
#7	By door entrance on the right	D			
#8	Water stain near Electric panel	D			
#9	Blower of AHU	D			
#10	Dust in AHU near coil/blower	D			
#11	office 1st floor	S	75L	↓	
#12	2nd Air Bathroom				4690

Acc  
Swab  
Acc

to use w/p

Analysis Type	Description	TAT	Acceptable Sample Types
Spore Trap S	Identification & Enumeration of Fungal Spores	24 Hour	Spore Trap cassettes, Impact slides
S+	I & E of Fungal Spores + total dander, fiber and pollen count	24 Hour	Spore Trap cassettes, impact slides
Direct ID D	ID and Semi-quantative enumeration of spores and mycelium	24 Hour	Tape, Bio-tape, swab, bulk, agar plate for ID only
D+	ID and Enumeration with spores count	24 Hour	Tape, Bio-tape, swab, bulk, agar plate for ID only
Culture	C1 Identification & Enumeration of Mold only	7 Day	Anderson Air Plate, Swab, Bulk
	C2 Identification & Enumeration of Bacteria only	4 Day	Anderson Air Plate, Swab, Bulk
	C3 Identification & Enumeration of Mold and Bacteria	7 Day	Anderson Air Plate, Swab, Bulk
	C5 Coliform Screen for Sewage Bacteria	2 Day	Anderson Air Plate, Swab, Bulk
Dust Mite A1	Semi-quantative analysis of dust mite allergen	24 Hour	Bulk Dust
Particle P	Total Particulate Analysis	24 Hour	Spore Trap cassettes, Impact slides, Bio-Tape

Relinquished by: Dustin Date: 8/9/21 Rcvd By: [Signature] Date: 8/10/21 Time: \_\_\_\_\_

