

Bilotta Environmental PLLC

04/04/22

To: Chris Nantista
Cottages on the Key
John Fries, Accutech Restoration and Remodeling

From: Jason Bilotta, MRSA394

RE: Post Remediation Inspection of 104 Avenida Venecia Siesta Key FL 34242

All,

Based on our 04/04/22 observations, and sampling analysis, it is our opinion that the cleaning and repair work that has been contracted for so far, has been done so successfully.

Inside the contracted area(s) of responsibility (Unit 173 and Unit 276), relative humidity and surface moisture content read 'dry' where measured, via moisture meter and hydrometer. All surfaces were clean, and free of suspected visible microbial growth, or excess dust, or debris. No malodor was observed in the contained work areas.

Limited surface and air sampling analysis suggests overall settled and aerosolized fungal spores measured well within range for what would generally be considered typical for a conditioned, indoor space in this region.

Please note, this assessment is not a thorough inspection of the entire premises, but instead an assessment limited to those areas reported to us as impacted by primary and secondary water damage. For example, this assessment does not include a review of the building envelope, plumbing, appliances, or AC system. This is not a "home inspection".

Semper Fi!



Jason Bilotta
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IAQ and Surface Sampling

Sample Analysis Interpretation

- Regarding Surface Sample Interpretation:
 - As a general rule, any active growth on indoor structural materials, or contents, is a problematic condition, and will warrant some form of cleaning or repair.
 - Active growth is usually visible to the naked eye, versus settled spores, which are generally not visible to naked eye, but can be found on horizontal surfaces.
 - Certain fungal types / genera are more likely to be found where water damage or wet / damp conditions exist. These “indoor molds” are generally considered to be indicator organisms for water damage, and tend to correlate with increased reports of occupant health complaints.
- Regarding Air Sample Interpretation: while there are no federal or stated threshold limits for airborne indoor mold, there are general conditions we look for:
 - Overall ‘spore counts’ should be comparable to or better than outside, and generally fall into expected range.
 - Typically, we find roughly 500-2500 spores /m3 in air-conditioned, indoor spaces in this region.
 - Overall aerosolized fungal spores should be predominately a mixture of ‘outdoor molds’, as opposed to predominately ‘indoor molds’ / molds that are generally considered to be indicator organisms for water damage or damp conditions.
- “Indoor Mold” types may include:
 - Some Aspergillus / Penicillium types ¹
 - Some Cladosporium molds (surface growth) ²
 - Chaetomium molds
 - Stachybotrys molds
 - Ulocladium molds

1 “Aspergillus - Penicillium types” encompasses a broad range of fungal genera and species, many of which found in organic material outside of the home. While surface growth on an indoor surface may be an indicator of water activity, light amounts of these Asp-Pen types may be settled spores that are naturally occurring in or around the environment.

2 Cladosporium is commonly found in air and ubiquitous in nature; however, active surface growth on indoor surfaces may be an indicator of condensation / elevated surface moisture).

Limitations and Exclusions

All the professional opinions presented in this assessment are based solely on the scope of work conducted and sources referred to in this report. The data presented by the author of this report was collected and analyzed using generally accepted industry methods and practices at the time the report was generated. This report represents the conditions, locations and material that were observed at the time the fieldwork was conducted. The scope of work for this project did not include an assessment of other environmental conditions which might exist on the property.

This assessment does not provide a guarantee of future conditions, especially if an additional loss event takes place; a follow up assessment may be needed to determine the condition of the home.

The author reserves all rights of this copyrighted material. Portions of this report may not be used independently of the entire report. No third party (aside from our client) may use this report for any use that may provide benefit to said party without express written consent of the author. The author's liability and that of its contractors and subcontractors, arising from any services rendered hereunder, shall not exceed the total fee paid by the client to Jason Bilotta.

References

ASTM 7338-10, Assessment of Buildings for Fungal Growth
IICRC S500, Standard and Reference Guide for Professional Water Damage Restoration.
IICRC S520, Standard and Reference Guide for Professional Mold Remediation.
ACGIH, Bioaerosols; Assessment and Control.
Bioaerosol Sampling (indoor air), NIOSH manual of analytical methods (NMAM), fourth edition
NADCA, Assessment, Cleaning, and Restoration of HVAC Systems (ACR 2021), March 2021.
Bioaerosols: Assessment and Control, ACGIH, May 1999
AIHA, Report of Microbial Growth Task Force, AIHA Press, May 2001
Mold Remediation in Schools and Commercial Buildings, EPA 402-K-01-001

APPENDIX A

Samples Collected and Analysis

Qualitative Analysis – Surface Sampling

Samples were analyzed via direct microscopic by Jason Bilotta, and reported as Qualitative Results. 100% of each slide was reviewed at 200-1000x for general identification (to genus or fungal type) and for estimated concentration. Samples may be submitted to a third party lab upon client request and approval of associated costs.

104 Avenida Venecia Siesta Key FL 34242 Chris_Nantista-COTK ACC PRV 220404

Particulate Type Location	Unit 173 Containment Exposed Framing	Unit 276 Containment Exposed Framing	Intentionally Blank	Intentionally Blank
Sample Date	04/04/22	04/04/22		
Aspergillus / Penicillium	-	-		
Chaetomium	-	-		
Stachybotrys	-	-		
Ulocladium	-	-		
Alternaria	-	-		
Bipolaris / Drechslera	-	-		
Cladosporium	-	-		
Curvularia	-	-		
Epicoccum	-	-		
Fusarium	-	-		
Pithomyces	-	-		
Scopulariopsis	-	-		
Torula	-	-		
Ascospores	-	-		
Basidiospores	-	-		
Ganoderma	-	-		
Myxomycetes, Periconia	-	-		
Rusts, Grasses, Smuts	-	-		
Cercospora	-	-		
Nigrospora	-	-		
Spegazzinia	-	-		
Other:	-	-		
Hyphal Fragment	-	-		
Debris Rating	(1) - Trace	(1) - Trace		
Notes	-	-		

Indicator Organisms	The presence of these organisms indoors is typically an indicator of a water source and/or water damage. These organisms are known to flourish indoors and are an indicator of overall indoor air quality.
Ubiquitous Molds	These organisms are found everywhere in nature, and their presence indoors may or may not indicate a water source.
Outdoor Molds	These organisms are commonly found outdoors and their presence indoors is likely due to passive air flow through an open window or door. These organisms are not known to flourish indoors.

Collected and Analyzed By: Jason Bilotta, MRSA394 | Date: 04/04/22

Quantitative Analysis – Spore Trap Sampling

Samples were analyzed via direct microscopic by Jason Bilotta, and reported as Quantitative Results. 100% of each slide was reviewed at 200-1000x for general identification (to genus or fungal type) and for estimated concentration. Samples may be submitted to a third party lab upon client request and approval of associated costs.

104 Avenida Venecia Siesta Key FL 34242 Chris_Nantista-COTK ACC PRV 220404

Particulate Type Location		Unit 173 Containment 0989		Unit 173 Indoor Control 1357		Unit 276 Containment 4371		Unit 276 Indoor Control 4372	
Sample Date		04/04/22		04/04/22		04/04/22		04/04/22	
Sample Type Volume		75L		75L		75L		75L	
		Raw Ct	Spores /m3	Raw Ct	Spores /m3	Raw Ct	Spores /m3	Raw Ct	Spores /m3
	Aspergillus / Penicillium	2	27	20	267	17	227	41	547
	Chaetomium	-	-	-	-	-	-	-	-
	Stachybotrys	-	-	-	-	-	-	-	-
	Ulocladium	-	-	-	-	-	-	-	-
	Alternaria	-	-	-	-	-	-	-	-
	Bipolaris / Drechslera	-	-	-	-	-	-	-	-
	Cladosporium	-	-	-	-	-	-	-	-
	Curvularia	-	-	-	-	-	-	-	-
	Epicoccum	-	-	-	-	-	-	-	-
	Fusarium	-	-	-	-	-	-	-	-
	Pithomyces	-	-	-	-	-	-	-	-
	Scopulariopsis	-	-	-	-	-	-	-	-
	Torula	-	-	-	-	-	-	-	-
	Ascospores	-	-	-	-	-	-	-	-
	Basidiospores	-	-	15	200	-	-	68	906
	Ganoderma	-	-	-	-	-	-	-	-
Myxomycetes, Periconia	-	-	-	-	-	-	-	-	
Rusts, Grasses, Smuts	-	-	-	-	-	-	-	-	
Cercospora	-	-	-	-	-	-	-	-	
Nigrospora	-	-	-	-	-	-	-	-	
Spegazzinia	-	-	-	-	-	-	-	-	
	Other Mold:	-	-	-	-	-	-	-	-
Total Spores		2	27 /m3	35	467 /m3	17	227 /m3	109	1,453 /m3
Hyphal Fragment		-		-		-		-	
Background Debris		(1) - Trace		(1) - Trace		(1) - Trace		(1) - Trace	
Detection Limit		13		13		13		13	
Notes		-		-		-		-	
Indicator Organisms		The presence of these organisms indoors is typically an indicator of a water source and/or water damage. These organisms are known to flourish indoors and are an indicator of overall indoor air quality.							
Ubiquitous Molds		These organisms are found everywhere in nature, and their presence indoors may or may not indicate a water source.							
Outdoor Molds		These organisms are commonly found outdoors and their presence indoors is likely due to passive air flow through an open window or door. These organisms are not known to flourish indoors.							

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104 Avenida Venecia Siesta Key FL 34242 Chris_Nantista-COTK ACC PRV 220404

Particulate Type Location		Outdoor Control 1750							
Sample Date		04/04/22							
Sample Type Volume		75L							
		Raw Ct	Spores /m3						
	Aspergillus / Penicillium	-	-		-		-		-
	Chaetomium	-	-						
	Stachybotrys	-	-						
	Ulocladium	-	-						
	Alternaria	-	-						
	Bipolaris / Drechslera	-	-						
	Cladosporium	107	1,426						
	Curvularia	-	-						
	Epicoccum	-	-						
	Fusarium	-	-						
	Pithomyces	-	-						
	Scopulariopsis	-	-						
	Torula	-	-						
	Ascospores	6	80						
	Basidiospores	26	347		-				-
	Ganoderma	-	-						
Myxomycetes, Periconia	-	-							
Rusts, Grasses, Smuts	-	-							
Cercospora	-	-							
Nigrospora	1	13							
Spegazzinia	-	-							
	Other Mold:	-	-						
Total Spores		140	1,866 /m3	-	-	-	-	-	-
Hyphal Fragment		-							
Background Debris		(1) - Trace							
Detection Limit		13							
Notes		-							
Indicator Organisms		The presence of these organisms indoors is typically an indicator of a water source and/or water damage. These organisms are known to flourish indoors and are an indicator of overall indoor air quality.							
Ubiquitous Molds		These organisms are found everywhere in nature, and their presence indoors may or may not indicate a water source.							
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Sampling Limitations and Uses

Applications of Sampling

Applied correctly, sampling can be helpful in assessing a building for atypical indoor mold conditions. In addition to determining if visible fungal growth has degraded overall IAQ (gross contamination), they can also help identify marker or indicator organisms for water damage during initial assessments, which may be needed for insurance coverage purposes. Air samples may be viable, non-viable, or biochemical. Surface sampling can help ID genus or species when verifying the presence of marker organisms is needed, such as suspected growth present in ducts, HVAC air handlers, impacted or suspect materials and contents; they can also help enumerate surface microbial growth.

Limitations of Sampling

If sampling is considered, a competent sampling strategy should be developed.¹ The distribution of fungal colonization or of fungal particles on surfaces or in the air may vary widely. Additionally, there are currently no regulations concerning what constitutes safe levels of fungi on surfaces or in the air. Therefore, sampling, if performed at all, should be planned to test a specific hypothesis.

Air and surface sampling, regardless of method, all come with limitations. To provide representative information, sampling strategies must be designed with these limits. For example, it is advised that air samples should represent 2-5% of air volume², up to including multiple controls, and with repeat sampling over days in order to obtain statistically significant information.³ This level of sampling is often not performed due to cost and time constraints. Therefore, sampling data often must be viewed as limited, and in the context of the built environment.

There is no consensus standard for sampling when assessing a building for fungal growth. It is unlikely that a federal threshold or regulatory level for airborne mold will be established because it cannot be justified scientifically.⁴

Review of Major Guidance Documents on Mold Remediation in Reference to Sampling

1. In the American Industrial Hygiene Association's 2008 review⁵ of Seven widely referenced Mold Remediation Guidance Documents made available prior to 2003,⁶ note that most documents mention sampling as an option, only one entity recommends air monitoring.
 1. NYC Dept of Health recommended in its 1993 document for air monitoring where visible mold is >30 ft.sq.
 2. In their NYC DOH 2000 document, which supersedes the 1993 document, the recommendation for air monitoring were restricted further to where visible mold is > 100 ft/2 or more.
2. The AIHA 2008 review included study of Four widely referenced Mold Remediation Guidance Documents made available after 2003⁷. AIHA notes that these documents refer to fungal sampling as "optional" or "conditional," and data interpretation is either not discussed, or only discussed in general principal.

Spore Trap Sampling for Bioaerosols

We understand that spore trap sampling is the most widely known and used method of "mold testing." In our view, most spore trap sampling strategies do not include a large enough sample set to adequately account for the rather large standard deviation one can expect in spore counts – as much as 20, 30, 50, even 100%. Without a larger sample size, these "spore counts" may be given too much weight, or accepted as fact, when they really should be considered estimations and / or screenings for grossly high counts. Unless we conduct a large sample set, our sampling strategy is designed to spot check for cleanliness and / or to screen for gross contamination, and as part of a larger visual and measured assessment. Determining an adequate sampling strategy varies with every project's goals and budget.

1 ASTM Standard D7338, 2010, "Standard Guide for Assessment Of Fungal Growth in Buildings," ASTM International, West Conshohocken, PA, 2003, DOI: 10.1520/D7338-10, www.astm.org.

2 Burge, H., "How Many Air Samples To Take for Mold Investigations?" Environmental Reporter, Volume 6, Issue 7, 2008

3 Bioaerosol Sampling (indoor air), NIOSH manual of analytical methods (NMAM), fourth edition

4 Prezant, B., Weekes, D., Miller, J., "Recognition, Evaluation and Control of Indoor Mold," American Industrial Hygiene Association, 2700 Prosperity Avenue, Suite 250, Fairfax, VA 22031, 2008

5 Prezant, B., Weekes, D., Miller, J., "Recognition, Evaluation and Control of Indoor Mold," American Industrial Hygiene Association, 2700 Prosperity Avenue, Suite 250, Fairfax, VA 22031, 2008

6 NYCDOH 1993; Health Canada 1995, Flannigan and Morey (ISIAQ) 2021; ACGIH, 1999; NYCDOH, 2000; US EPA 2001; AIHA 2001.

7 IICRC S520, Texas Mold Regulations 2004, Canadian Construction Association of Mould Guidelines 2004, Health Canada 2004

APPENDIX B

Site Photos



Site Photo # 1



Site Photo # 2



Site Photo # 3



Site Photo # 4



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Site Photo # 5



Site Photo # 6



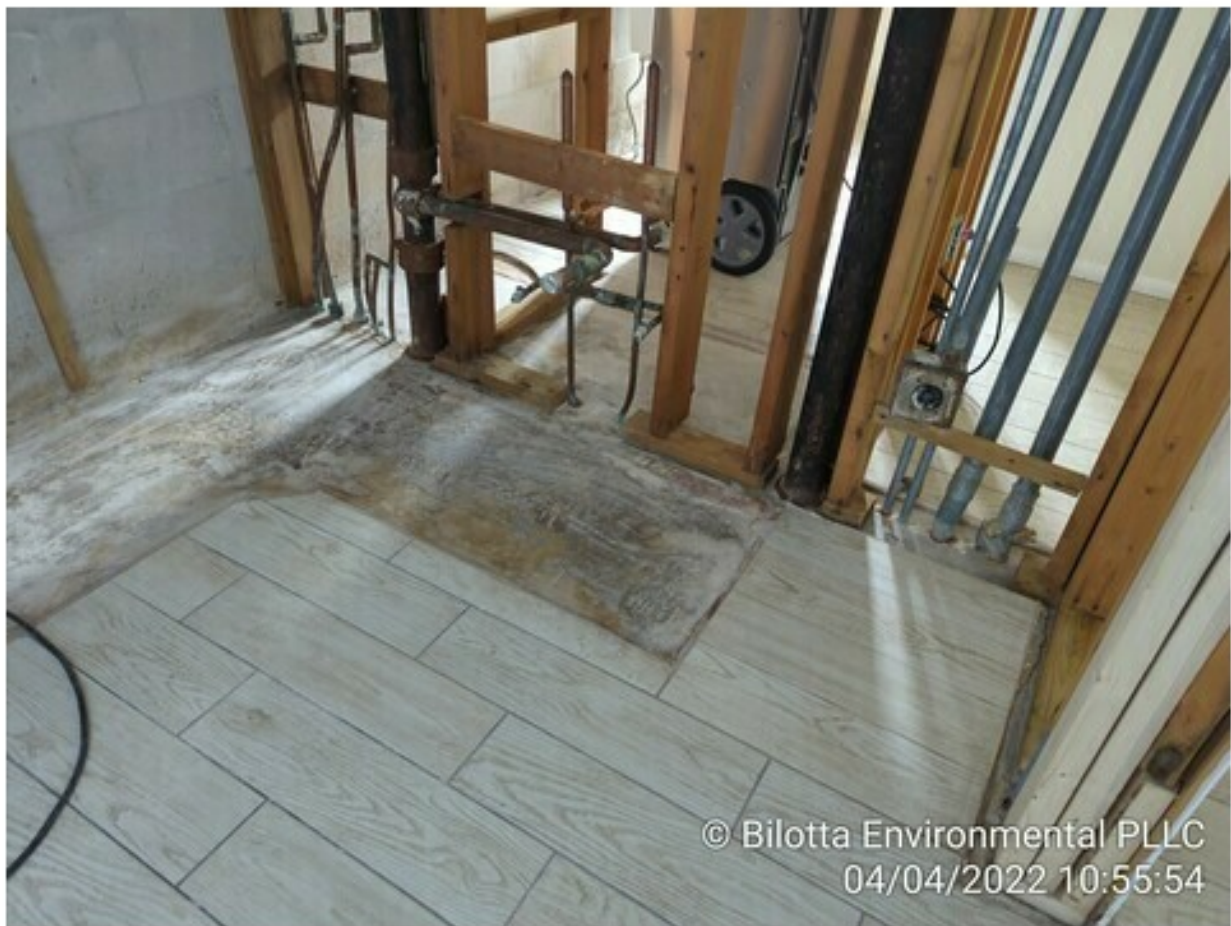
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Site Photo # 8



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Site Photo # 10



Site Photo # 11



Site Photo # 12



Site Photo # 13



Site Photo # 14



Site Photo # 15



Site Photo # 16



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Site Photo # 18



Site Photo # 19



Site Photo # 20

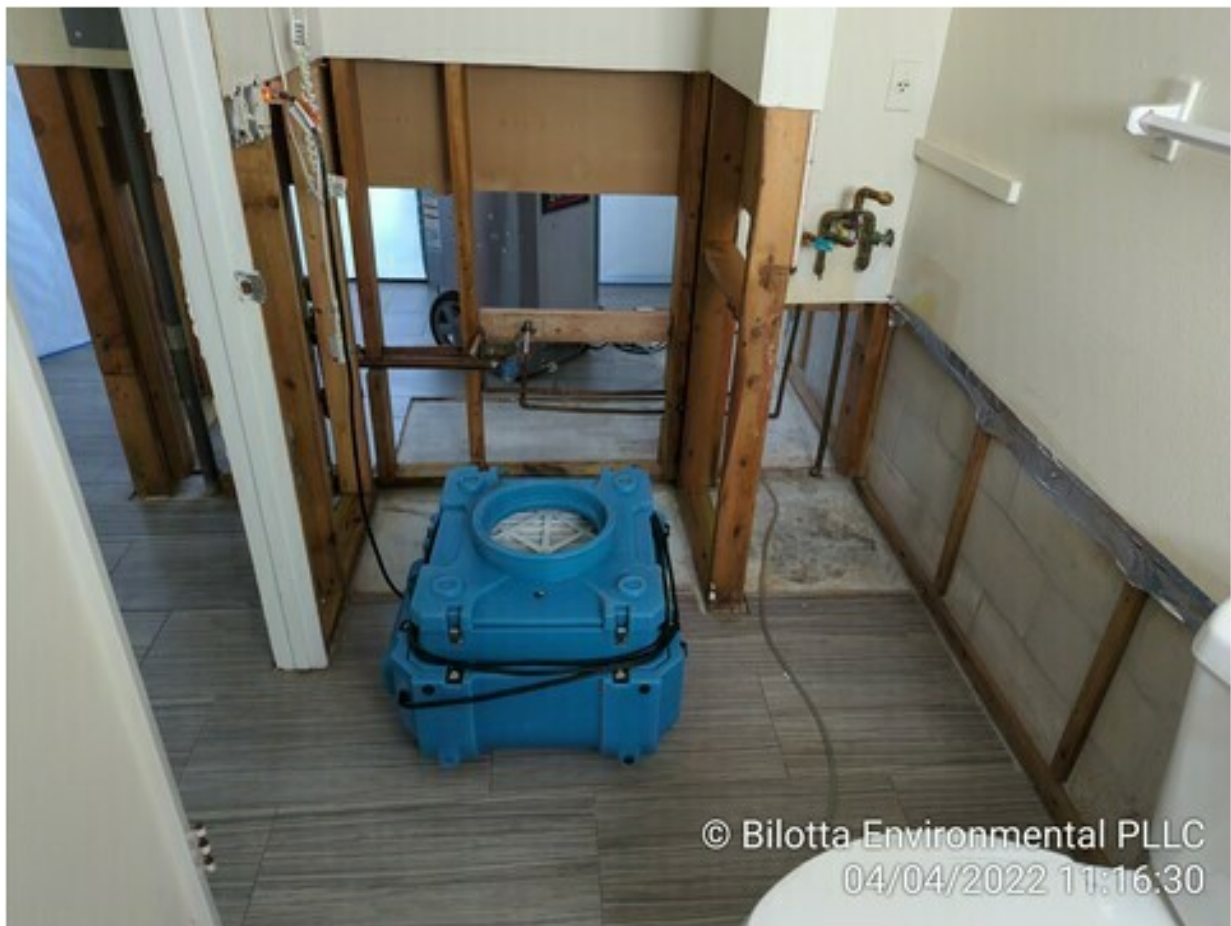




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