

Client:

Date of Sampling: 01-11-2017  
 Date of Receipt: 01-11-2017  
 Date of Report: 01-12-2017

**QUANTITATIVE SPORE COUNT REPORT**

Location:	3: Baseboard South Wall	
Comments (see below)	None	
Sample type	Swab sample	
Lab ID-Version‡:	7727208-1	
Analysis Date:	01/12/2017	
	raw ct.	spores/unit
Aureobasidium		
Basidiospores		
Bipolaris/Drechslera group		
Botrytis		
Chaetomium	66	2,100,000
Cladosporium		
Curvularia		
Epicoccum		
Fusarium		
Myrothecium		
Nigrospora		
Other colorless		
Penicillium/Aspergillus types†	3	94,000
Pithomyces		
Rusts		
Smuts, Periconia, Myxomycetes		
Stachybotrys		
Stemphylium		
Torula		
Ulocladium		
Zygomycetes		
brown spore type, ID unknown	85	2,700,000
Background debris (1-4+)††	1+	
Sample size	1	
Unit	1 swab	
Hyphal fragments/unit	410,000	
<b>§ TOTAL SPORES/UNIT</b>		<b>4,800,000</b>

**Comments:**

† The spores of *Aspergillus* and *Penicillium* (and others such as *Acremonium*, *Paecilomyces*) are small and round with very few distinguishing characteristics. They cannot be differentiated by non viable sampling methods. Also, some species with very small spores are easily missed, and may be undercounted.

†† Background debris is an indication of the amount of non-biological particulate matter present on the slide (dust in the air) and is graded from 1+ to 4+ with 4+ indicating the largest amounts. This background material is also an indication of visibility for the analyst and resultant difficulty reading the slide. For example, high background debris may obscure the small spores such as the *Penicillium/Aspergillus* group. Counts from areas with 4+ background debris should be regarded as minimal counts and may actually be higher than reported.

‡ A "Version" indicated by "-x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

§ Total Spores/unit has been rounded to two significant figures to reflect analytical precision.

The limit of detection is 1 spore per area analyzed.








The analytical sensitivity is (1 Spore/Total Number of Fields Observed)\*(Total Sample Area(cm2)/Field Area of the microscope objective (cm2))\*(1/unit volume)\*Dilution Factor.






For more information regarding analytical sensitivity, please contact QA by calling the laboratory.

Spore types listed without a count or data entry were not detected during the course of the analysis for the respective sample, indicating a raw count of <1 spore.

- iii. Mold Resources, United States Environmental Protection Agency.  
<http://www.epa.gov/mold/moldresources.html>
- iv. Mold in My Home, What do I do? California Department of Health Services.  
[www.asbestos.org/Microbial/index.html](http://www.asbestos.org/Microbial/index.html)

**Table 1: Summary of Specific Mold Characteristics**

Fungi	Environmental Indicator		Typically Found
<i>Alternaria</i>			<i>Alternaria</i> is one of the more common fungi found in nature. It is found growing indoors on a variety of substrates including wallboards, painted walls, etc.
<i>Arthrimum</i>			<i>Arthrimum</i> is a saprobe and is found on plants. It is rarely found growing indoors.
Ascospores			Ascospores are ubiquitous in nature and are commonly found in the outdoor environment. Some fungi that belong to the ascomycete family include the sexual forms of <i>Penicillium/Aspergillus</i> , <i>Chaetomium</i> , etc that may be frequently found growing on damp substrates.
<i>Aureobasidium</i>			<i>Aureobasidium</i> is commonly found in a variety of soils. Indoors, it is commonly found where moisture accumulates, especially bathrooms, and kitchens, on shower curtains, tile grout, windowsills, textiles, and liquid waste materials.
Basidiospores			Basidiospores are Saprophytes and plant pathogens and are commonly found in gardens, forests, and woodlands. They also include organisms that are the agent of "dry rot," and other fungi that cause white and brown wood rot, which may grow and destroy the structural wood of buildings.
<i>Bipolaris/ Dreschlera</i>			<i>Bipolaris</i> and <i>Dreschlera</i> are usually found associated with plant debris, and soil. They are plant pathogens of numerous plants, particularly grasses. <i>Bipolaris</i> and <i>Dreschlera</i> can grow indoors on a variety of substrates.
<i>Botrytis</i>			<i>Botrytis</i> is commonly found in tropical and temperate climates growing on vegetative matter. They may be found indoors in conjugation with indoor plants, fruits and vegetables.
<i>Chaetomium</i>			<i>Chaetomium</i> is often found on materials containing cellulose such as sheetrock paper, or other wet materials.
<i>Cladosporium</i>			<i>Cladosporium</i> is a common outdoor mold. They are commonly found on dead plants, food, textiles, and a variety of other surfaces. Indoors, they can grow on a variety of substrates including textiles, wood, moist windowsills, etc. It can grow at 0°C and is associated with refrigerated foods.
<i>Curvularia</i>			<i>Curvularia</i> is found on plant materials and is considered a saprobe. Indoors, they can grow on a variety of substrates.
<i>Epicoccum</i>			<i>Epicoccum</i> is a saprophyte and considered a weekly parasitic secondary invader of plants. They tend to colonize continuously damp materials such as damp wallboard and fabrics.
<i>Fusarium</i>			<i>Fusarium</i> requires very wet conditions and is frequently isolated from plants and grains. They colonize continuously damp materials such as damp wallboard and water reservoirs for humidifiers and drip pans.

<i>Memmoniella</i>			<i>Memmoniella</i> can be found growing on a variety of cellulose-containing materials.
<i>Nigrospora</i>			<i>Nigrospora</i> is especially abundant in warm climates and is rarely found growing indoors.
<i>Oidium/Peronospora</i>			<i>Oidium</i> and <i>Peronospora</i> are plant pathogens and are not found growing indoors.
<i>Penicillium/Aspergillus</i>			<i>Penicillium</i> and <i>Aspergillus</i> are ubiquitous in environment. <i>Aspergillus</i> tends to colonize continuously damp materials such as damp wallboard and fabrics. <i>Penicillium</i> is commonly found in house dusts, wallpaper, decaying fabrics, moist clipboards, etc.
<i>Pithomyces/Ulocladium</i>			<i>Pithomyces</i> is commonly found on grass and decaying plant material and are rarely found growing indoors. <i>Ulocladium</i> has a high water requirement and therefore colonizes continuously damp materials such as damp wallboard and fabrics.
<b>Rusts</b>			Rusts are plant pathogens and only grow on host plants.
<b>Smuts/Periconia/Myxomycetes</b>			Smuts and Myxomycetes are parasitic plant pathogens that require a living host. Smuts do not usually grow indoors. <i>Periconia</i> are rarely found growing indoors. Myxomycetes are occasionally found indoors, but rarely growing.
<i>Stachybotrys</i>			<i>Stachybotrys</i> are commonly found indoors on wet materials containing cellulose, such as wallboard, jute, wicker, straw baskets, and other paper materials.
<i>Stemphylium</i>			<i>Stemphylium</i> is either parasitic or saprophytic and is rarely found growing indoors.
<i>Torula</i>			<i>Torula</i> can grow indoors on cellulose containing materials such as wallboard, jute, wicker, straw baskets, and other paper materials.
<b>Other brown/colorless</b>			An uncharacteristic fungal spore that does not lend itself to classification via direct microscopy.



Potential Water Intrusion/Indicator Mold



Potential Water Intrusion/Indicator Mold Capable of Mycotoxin Production

## Quality Programs

The EMLab P&K's laboratory network is staffed with highly trained analysts, the majority of which hold advanced degrees. The reliability of test results depends on many factors such as the personnel performing the tests, environmental conditions, selection and validation of test methods, equipment functioning, as well as the sampling, storage and handling of test items, all of which are a reflection of the overall quality system of the laboratory.

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