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Analysis Report prepared for

## Active Home Inspections

1608 Old Pecos Trail  
Santa Fe, NM 87505  
Ph.: (505) 986-1015

Job Number: 10017-M  
Job Name: ██████████  
205 Las Mananitas  
SFNM 87501  
Date Sampled: 08-28-2014  
Date Analyzed: 08-29-2014  
Report Date: 08-29-2014

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AIHA EMPAT Laboratory ID# 188863  
EPA Laboratory ID# VA01419



NVLAP Lab Code: 500096-0



LAB #188863

AIHA Accredited  
Environmental Microbiology



Certified Clinical Microbiologist

Texas Dept. of State  
Health Services

Mold License: LAB1021  
Asbestos License: 300435



# HAYES

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

HMC #14013791

**Active Home Inspections  
1608 Old Pecos Trail  
Sante Fe, NM 87505**

August 29, 2014

Client Job Number: 10017-M  
Client Job Name: [REDACTED]  
205 Las Mananitas  
SFNM 87501

Dear Active Home Inspections,

We would like to thank you for trusting Hayes Microbial for your analytical needs. On August 29, 2014 we received 5 samples by FedEx for the job referenced above.

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 Consulting. In no event, shall Hayes Microbial Consulting or any of its employees be liable for lost profits or any special, incidental or consequential damages arising out of your use of the test results.

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



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Spore Trap Analysis  
 SOP #HMC101

**HMC #14013791**

Job Number: <b>10017-M</b>	Job Name: <b>██████████</b>	Date Collected: <b>08/28/2014</b>
Collected by: <b>Robert Willis</b>	<b>205 Las Mananitas</b>	Date Received: <b>08/29/2014</b>
Email: <b>activehome2010@aol.com</b>	<b>SFNM 87501</b>	Date Reported: <b>08/29/2014</b>

HMC ID Number	14013791 - 1	14013791 - 2	14013791 - 3	14013791 - 4
Sample ID#	A	B	C	D
Sample Name	Outdoors - 15' X 24	Main House - Middle 24	Guest House - Middle 24	Studio - Middle 24
Sample Volume	25 liters	25 liters	25 liters	25 liters
Limit of Detection	40 spores/M3	40 spores/M3	40 spores/M3	40 spores/M3
Background	2	2	2	3
Fragments	ND	40 /M3	ND	ND

Organism	Raw Count	Count / M3	% of Total	Raw Count	Count / M3	% of Total	Raw Count	Count / M3	% of Total	Raw Count	Count / M3	% of Total
Alternaria	1	40	3.2%							1	40	4.2%
Ascospores	12	480	38.7%	4	160	44.4%	5	200	62.5%	3	120	12.5%
Aspergillus Penicillium	1	40	3.2%							4	160	16.7%
Basidiospores	2	80	6.5%	1	40	11.1%	1	40	12.5%			
Bipolaris Drechslera							1	40	12.5%			
Chaetomium										6	240	25.0%
Cladosporium	15	600	48.4%	3	120	33.3%	1	40	12.5%	1	40	4.2%
Curvularia												
Epicoccum												
Fusarium												
Memnoniella												
Myxomycetes												
Pithomyces				1	40	11.1%						
Stachybotrys										9	360	37.5%
Stemphylium												
Torula												
Ulocladium												
Unspecified Spore												
Total	31	1240		9	360		8	320		24	960	

Water Damage Indicator	Common Allergen	Slightly Higher than Outside Air	Significantly Higher than Outside Air	Ratio Abnormality
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Signature: P. Ramesh

Date: 08/29/2014

Reviewed by: Stephen N. Hayes

Date: 08/29/2014



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Direct ID Analysis  
SOP #HMC102

**HMC #14013791**

Job Number: <b>10017-M</b>	Job Name: <b>[REDACTED]</b>	Date Collected: <b>08/28/2014</b>
Collected by: <b>Robert Willis</b>	<b>205 Las Mananitas</b>	Date Received: <b>08/29/2014</b>
Email: <b>activehome2010@aol.com</b>	<b>SFNM 87501</b>	Date Reported: <b>08/29/2014</b>

<b>HMC ID Number: 14013791 - 5</b>		<b>Sample Media: Bio-Tape</b>	
<b>Sample ID Number: E</b>		<b>Sample Name: Studio - Bath Below Sink</b>	
<b>Organism</b>	<b>Spore Estimate</b>	<b>Mycelial Estimate</b>	<b>Note</b>
Chaetomium	Light	ND	
Stachybotrys	Heavy	Few	

Signature: P. Ramesh

Date: 08/29/2014

Reviewed by: Stephen N. Hayes

Date: 08/29/2014



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## Spore Trap Information

HMC #14013791

<b>Limit of Detection</b>	The Limit of Detection 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 Aspergillus and Penicillium may be obscured. The background is rated on a scale of 1 to 4 and each level is determined as follows:</p> <p><b>ND</b> : No background detected. (Pump or cassette malfunction.) Recollect sample.</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. Suggest 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>Indoor/Outdoor 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.
Water Damage Indicators	These molds are commonly seen in conditions of prolonged water intrusion and usually indicate a problem.
Common Allergens	Although all molds are potential allergens, these are the most common allergens that may be found indoors.
Slightly Higher than Outside Air	The spore count is slightly higher than the outside count and may or may not indicate a source of contamination.
Significantly Higher than Outside Air	The spore count is significantly higher than the outdoor count and probably indicates a source of contamination.
Ratio Abnormality	The types of spores found indoors should be similar to the ones that were identified in the outdoor 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 Note</b>	Fungi that are present in indoor samples at levels lower than 200 per cubic meter are considered insignificant. Insignificant spore counts are not color coded on the report.



## Additional Information for Direct Identification Analysis

Spore Estimate	
ND	None Detected
Rare	Less than 10 spores
Light	10 - 99 spores
Moderate	100 - 999 spores
Heavy	1000 - 9999 spores
Very Heavy	10000 or greater spores

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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#### 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.

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#### 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.

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#### 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 and on the food source for the fungus. Some of these toxins have been found to be carcinogenic.

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#### 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.

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#### Bipolaris|Drechslera

**Habitat:** They are found in soil and as plant pathogens. Can grow indoors on a variety of substrates.

**Health Effects:** They may be allergenic and are very commonly involved in allergic fungal sinusitis. They are opportunistic pathogens but occasionally infect healthy individuals, causing keratitis, sinusitis and osteomyelitis.

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#### 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.

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## 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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## 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.

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## Stachybotrys

**Habitat:** Commonly found in soil and on decaying plant material. It is cellulolytic, and can be found indoors on wet materials containing cellulose, such as wallboard, ceiling tile, and other paper-based materials. It is found outdoors on decaying plant material although it is rarely detected on outdoor air samples.

**Health Effects:** Allergenic properties are poorly studied and no cases of infection have been reported in humans. They do however produce potent tricothecene mycotoxins. The toxins produced by this fungus can suppress the immune system affecting the lymphoid tissue and the bone marrow. The mycotoxin is also reported to be a liver and kidney carcinogen.

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