

# Mold Assessment Group



**Phone: 704-517-3097**

**Project Number:** 18333

**Property:** 3217 Maymont Place  
Charlotte, NC 28205

**Survey Date:** September 26, 2018

**Report Date:** October 1, 2018

**Report Generated for:**  
Eric Gamble

**Report By:** Todd Taylor

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## Background

At the request of Mr. Gamble, Mold Assessment Group conducted air and surface sampling at the above referenced property. There was a suspicious substance noticed in the basement and other areas of the home. Mr. Gamble wanted Mold Assessment Group to survey the suspicious substance, take samples and present the status of the lab results.

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## Complete Visual Inspection & Scope of work

A visual inspection is the most important initial step in identifying a possible mold and/or bacterial problem. The extent of any water damage and mold growth was visually assessed by Mold Assessment Group. This assessment is important to determine remedial strategies. A relevant history is necessary for accurate sampling. Ceiling tiles, gypsum wallboards (sheet rock), cardboard, paper and other cellulosic surfaces were given careful attention during a visual inspection. Mold Assessment Group used a hygrometer and a protimeter (moisture meter), where necessary to help detect hidden moisture behind walls, ceilings and floors to determine the areas of potential mold growth and continuing moisture penetration.

The presence of mold, bacteria, water damage or musty odors should be addressed immediately. In all instances, any source of water must be stopped and the extent of water damage must be determined. Water damage materials should be dried and repaired. Mold damaged materials should be remediated.

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## Visual Observations

- 1 There was a “suspicious” substance noticed in the basement, walls, closets and ceilings throughout the residence.
- 2 Moisture readings taken from the joist were between 11% and 44% which is high for this time of year. Moisture readings above 20% can support the development of mold.

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## **Assessment Methodology**

To determine whether the property has a serious mold and/or bacterial problem, Mold Assessment Group uses a variety of mold and bacterial testing techniques to take samples of possible mold growth or bacterial contamination. For non-viable air sampling, we use an air cassette spore trap method. We pull air into a spore trap at the rate of 15 liters of air for 5 minutes for a total of 75 liters. The air cassette is sealed and shipped overnight to the lab for processing the next day. This method is less detailed than viable sampling but very accurate and much faster. Topical samples, if any, are taken using swabs or lift tapes. At the laboratory non-viable swabs and lift tapes are transferred to slides and analyzed that day.

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## **Topical Sampling**

Mold Assessment Group performs bulk or surface sampling if the visual inspection indicates the presence of fungal growth or the building inhabitants are suffering from health problems, which are or may be associated with fungal and/or bacterial exposure. Bulk or surface sampling should also be performed to identify the presence or absence of mold and/or bacteria if visual inspection is equivocal (e.g. discoloration and staining). Bulks samples are collected from visibly moldy surfaces by scrapping and cutting materials with a clean tool into a clean plastic bag. Surface samples are collected by wiping a measured area with a sterile swab or by stripping the suspect surface with clear tape. The non-viable samples are transferred to a slide at the lab and analyzed that day.

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## **Air Monitoring**

We perform air monitoring if indicated. Non-viable air samples are collected via spore trap cassette designed for rapid collection of airborne particulates including mold spores, pollen, insect parts, fibers, and dander for analysis of concentration and species. Air monitoring should be performed if there is evidence from a visual inspection that the ventilation systems may be contaminated. The purpose of such air monitoring is to assess the extent of contamination throughout the building. Sampling should be conducted while ventilation systems are operating.

Air monitoring should be performed if the presence of mold is suspected in a particular area of the structure (e.g. a microbial volatile is detected) but cannot be identified through a visual inspection or bulk sampling. The purpose of such air monitoring is to determine the location and or extent of mold contamination. Air monitoring should also be performed if the building inhabitants are suffering from health problems, which are or may be associated with fungal exposure. If air monitoring is performed, for comparative purposes and at a location representative of outdoor air. The outdoor control test is very helpful in evaluating whether there is an internally generated mold problem. Such a problem may exist if indoor mold tests report mold levels are either (a) higher than the outdoor air test (b) present indoors but absent from the outdoor control air test.

For all sampling methodologies, to prevent cross-contamination, the samples are sealed, labeled and delivered to the laboratory within twenty-four hours.

Air samples are taken using a Thomas Mega Lite Pump at 15 liters of air per minute. Pumps are calibrated using TSI Model 4146 primary calibrator. Serial Number 41461614001.

The following flow rates are used unless otherwise stated for non-viable, spore trap sampling.

#### Outside

Allergenco-D, Posi-track and Air-o-cell= 15 liters per minute for 10 minutes= 150 liters sampled  
Cyclax-d= 20 liters per minute for 10 minutes= 200 liters sampled.

#### Indoors

Allergenco-D, Posi-track and Air-o-cell= 15 liters per minute for 5 minutes= 75 liters sampled  
Cyclax-d= 20 liters per minute for 5-10 minutes = 100 to 200 liters sampled.

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## Interpreting Laboratory Results

The following can be used to better understand the laboratory results:

Samples	Air(Viable)	Swab	Air O Cell	Lift Tape	Allergenco-D
Low/Rare	<100 CFU/m <sup>3</sup>	1-10 Organisms are present on the slide	<300	1-10 Organisms are present on the slide	<300
Borderline	100-250 CFU/m <sup>3</sup>	11-300 Organisms are	300-3000	11-300 Organisms are	300-3000

		present on slide		present on slide	
Active Growth	250-1000 CFU/m3	301-999 Organisms are present on slide	3000-6000	301-999 Organisms are present on slide	3000-6000
Very Active	>1000 CFU/m3	>1000 Organisms are present on slide	>6000	>1000 Organisms are present on slide	>6000
TNTC	Too numerous to count		>180,000		>180,000

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## Laboratory Results

There are currently no standards or guidelines regarding results of fungal samples. There are no levels, which are typical or permissible. The above chart is based on historical analysis and experience and should not be used for health evaluation purposes. This report was developed in accordance with New York City Department of Health Bureau of Environmental & Occupational Disease Epidemiology "Guidelines on Assessment and Remediation of Fungi in Indoor Environments.", and the IICRC S-520 Protocol for Professional Mold Remediation.

Many fungi (e.g. species of *Aspergillus*, *Penicillium*, *Fusarium*, *Trichoderma*, and *Memnoniella*) in addition to *Stachybotrys* can produce potent mycotoxins. Mycotoxins are fungal metabolites that have been identified as toxic agents. Even low levels of these species should be remediated.

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## Sample Results

For full results, see attached lab analysis.

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## Conclusion

The surface samples taken from the basement and closet area of the first floor both reported elevated counts of Cladosporium. Cladosporium is a known allergen and will require remediation.

The air samples taken throughout the home reported elevated counts of Pen/Asp with both the first floor and basement samples being reported above evacuation levels. Therefore, only trained personnel wearing the proper personal protective equipment should be inside the home until the remediation has been completed. Mold Assessment Group uses a general baseline of 24,000 spores per cubic meter of air for evacuation. The counts from the first floor and basement were reported at 30,600 and 73,000 respectively.

Based on the visual inspection and analytical results fungal remediation of the home is indicated. The following section will describe the proper remediation activities that will be necessary to properly remediate mold growth and correct conditions promoting mold growth.

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## Decontamination Recommendation

Building materials supporting fungal growth should be remediated as rapidly as possible in order to ensure a healthy environment. Repair of the defects that led to water accumulation (or elevated humidity) should be conducted in conjunction with or prior to fungal remediation. Prompt remediation of contaminated material and infrastructure repair is the primary response to fungal contamination in buildings. Emphasis should be placed on preventing contamination through proper building and HVAC system maintenance and prompt repair of water damage. Currently, there are no United States federal regulations for evaluation potential health effects of fungal contamination and remediation.

## Mold Remediation Protocol

### INTERIOR OF HOME

- 1) Install a 500-cfm air filtration device on each floor and exhaust outside and run for 48 hours before remediation begins.
- 2) With scrubbers off, mist with proper anti-microbial agent such as Microband.
- 3) With 500 cfm air filtration device exhausted outside, run during the remediation process and for 24 hours after the remediation has been completed.
- 4) Remove and replace the infected material and continue 24 inches in all directions past the last point of visible damage and contamination.
- 5) HEPA Vacuum all floors, flat surfaces and soft items.
- 6) Wet wipe with the proper anti-microbial agent all cabinets, flat surfaces, fixtures, appliances, counter tops, window sashes and "hard" items.
- 7) Remove and replace all flex duct work or clean and treat.
- 8) Clean and treat all rigid duct work or remove and replace all rigid duct work.
- 9) Dry down wet materials to below 15% moisture content using large fans and dehumidifiers.
- 10) Once clearance is approved, put back can begin.

#All work should be performed by a Certified Mold Remediator following the applicable sections of the General Remediation Protocol Guidelines following this report.

#Due to the fact that this is a non-intrusive inspection, the remediator may discover additional issues to be addressed once remediation begins.

#Clearance testing should be performed by Mold Assessment Group once all remediation is complete and before any restoration, installation or encapsulation begins. (Clearance inspection and testing is a separate project and is not included in this service agreement)



## Closing Statements

The results of the tests represent conditions only at the time testing or sampling occurred. Thus, this report should not be relied upon to represent conditions on dates other than those reported and does not imply that the home is free of these or other contaminants. More sampling would be needed to determine the extent of the mold.

Opinions are based on findings and upon our professional expertise with no warranty or guarantee implied herein. This report is intended for the sole use of Mr. Gamble and his assigned agents.

Thank you for the opportunity to provide you with our service. If you have any questions or concerns regarding this letter or sample results provided, please do not hesitate to call.

Sincerely,

Todd Taylor  
CMI, CRMI, IH, GSP

Mr. Taylor has a Master's Degree in Occupational Safety and Health from East Carolina University. Mr. Taylor has a Bachelor's Degree in Safety Sciences from Murray State University.

Mr. Taylor authored an article in 2017, September. Examining Proper Protocols in Mold Remediation. Restoration and Remediation, 28-31.

Mr. Taylor is also FEMA Certified in the following:

1. Plan Review for Local Mitigation Plans
  2. Decision Making and Problem Solving
  3. Multi-hazard Emergency Planning for Schools
  4. Protecting Your Home or Small Business from Disaster
  5. Hazardous Materials Prevention
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## General Remediation Guidelines

(FOR REMEDIATORS)

**NOTE:**

PLEASE REFER TO "PROPERTY SPECIFIC DECONTAMINATION PROTOCOL"

PREVIOUSLY CONTAINED IN THIS REPORT FOR REMEDIAL ACTIONS SPECIFIC TO THIS PROPERTY.

STEP #1: FULL ACCESS TO THE PROPERTY 7 DAYS PER WEEK 24 HOURS PER DAY FOR THE DURATION OF THE REMEDIATION WORK WILL BE MADE AVAILABLE TO THE REMEDIATOR.

\*THE PROPERTY WILL BE OFF LIMITS TO NON-ESSENTIAL PERSONS AND CONTAINMENT AREAS ARE STRICTLY OFF LIMITS WITHOUT PROPER NOTICE AND PERMISSION OF THE REMEDIATOR.

\*#Prior to remediation, it is recommended that the materials being disturbed be evaluated for Asbestos containing material.

STEP #2: PERSONNEL

\* Individuals trained in the handling of hazardous materials and supervised on-site by Certified Mold Remediator.

\* Provide right-to-know training on exposure to the chemicals used and the health effects of exposure to the fungal organisms.

STEP #3: PPE

\* If needed, full faced negative pressure respirators (North 7600 series or similar) with CD/CL/HC/HF/OV/SD/P100 cartridges. The cartridge protects against chlorine dioxide, chlorine, hydrogen chloride, hydrogen fluoride, organic vapor, sulfur dioxide and provides a HEPA filter to protect against particles.

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- \* Disposable tyvek coveralls covering both the head and the shoes.
- \* Gloves: Neoprene, Rubber, Leather or cotton depending on the material to be removed.

Leather is recommended when sharp material is expected to be encountered during the demolition.

- \* Tools: Pliers or cutters to break up metal mesh in plaster walls. These and other tools are used to reduce skin contact with sharp objects.

**STEP #4: HYGIENE**

- \* Wash hands after exiting the enclosure and prior to using the hands to place anything in the mouth. Fungal organisms can cause dermatitis. Ingestion of the bacteria or fungi can cause severe diarrhea.

- \* During the exit from the enclosure, remove the coveralls leaving them inside either the enclosure or the first stage (dirty room) of the two stage decontamination room. In some cases, space will not allow for construction of the decontamination room.

- \* In the change area, take off the respirator. Remove the cartridges. Clean the surfaces of the cartridges with a disinfectant wipe and keep the cartridges for reuse. Soak and clean the respirator in a gallon of disinfectant (1/2 oz. A-33 quaternary ammonia disinfectant per gallon of water). Rinse the respirator in water, clean with a disinfectant wipe and dry with a clean towel.

- \* After an exhaust fan with a HEPA filter is used on a job site, the prefilter is covered with 4-6 mil poly and sealed with duct tape.

**STEP #5: CONTAINMENT OF AFFECTED AREA**

- \*ALL CONTAINMENT SYSTEMS WILL BE IN PLACE PRIOR TO THE START OF REMEDIATION DEMO AND CLEANING.

- \*NEGATIVE AIR WILL BE ACTIVELY ENGAGED PRIOR TO REMEDIATION AND CLEANING. VENT TO THE OUTSIDE OF THE BUILDING WHENEVER POSSIBLE.

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AMOUNT OF EQUIPMENT NEEDED IS BASED ON AT LEAST FOUR ( 4 ) AIR EXCHANGES PER HOUR.

CONTINUE NEGATIVE AIR MACHINE FOR A MINIMUM OF 24 HOURS AFTER REMEDIATION. TURN OFF NEGATIVE AIR MACHINE FOR 24 PRIOR TO FINAL CLEARANCE TESTING.

\* Complete isolation of work area from occupied spaces using plastic (4-6 mil poly) sheeting sealed with duct tape (including ventilation ducts/grills, fixtures and other openings).

\* If space allows, construct a two stage decontamination room with a changing area and a dirty room attached to the entrance of the containment area.

**STEP #6: CONTROL OF EXPOSURE TO ADJACENT AREAS**

\* Vacating people from spaces is not necessary but is recommended for individuals with reduced immune systems, infants, recent surgery patients, people with chronic inflammatory lung diseases or individuals with respiratory health concerns (asthma, hypersensitivity pneumonitis and severe allergies).

\* In general, there are fewer occupant complaints about the remediation if the adjacent spaces are vacated. The complaints about construction related odors are reduced and there is more space to place cleanup material.

**STEP #7 APPLYING ANTI-MICROBIAL AGENTS (FUNGICIDES/DISINFECTANTS) AND MOLD RESISTANT COATINGS AND SEALANTS**

\* Exhaust fan discharge is outside building - Keep HEPA exhaust fan on during the application of anti-microbial agents and sealants. Make sure adjacent outside windows are shut, the discharge is not close to an air intake, and window air conditions are shut off or set on re-circulation.

\* Exhaust fan discharge is inside building - Shut off HEPA exhaust fan during the application of

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anti-microbial agents and sealants. Turn the fan back on when the odor is no longer noticeable.

\* Applying anti-microbial agents to visible fungal growth prior to removal of material. Apply the solution to the surface and wait sixty minutes prior to removing the material. This provides sufficient time for the agent to disinfect the material and reduces the dust generated because the material is wetted.

\*Using sand paper or a wire brush, aggressively scrub all areas to be treated with the proper antimicrobial agents. Let dry completely.

\*Using a sprayer, thoroughly saturate the entire areas to be treated with the proper anti-microbial agents and dry completely.

\* In some cases, a surface is lightly misted with an anti-microbial solution prior to sealing. Sealing of the surface may begin within 90 minutes of the misting.

**STEP #8: CONTENTS REMEDIATION**

\*HARD SURFACES: TABLES, CHAIRS, STAINLESS STEEL TABLES, PACKAGED GOODS ETC., SHOULD BE WET-WIPED THOROUGHLY WITH THE PROPER QUATERNARY AMMONIA SOLUTION.

HARD FURNITURE MAY BE RESTORABLE AFTER HEAVY CLEANING AND REFINISHING.

\*METAL, STONE, OR CERAMIC ITEMS MAY BE COMPLETELY CLEANABLE.

\*SOFT SURFACES: UPHOLSTERED SOFAS, LOVE SEATS, AND CHAIRS, MATTRESSES, BOX SPRINGS, AREA RUGS, DRAPERY, ETC., SHOULD BE HEPA VACUUMED. PAPER ITEMS SUCH AS BOXES, BOOKS, PAINTINGS, PHOTOGRAPHS, ETC., SHOULD BE HEPA VACUUMED.

**STEP #9: STRUCTURAL REMEDIATION**

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\*REMOVE AND DISPOSE OF SEVERELY MOLD CONTAMINATED OR WATERDAMAGED SECTIONS OF CEILINGS, WALLS, DRYWALL, INSULATION, FLOORING AND OTHER DEBRIS FROM THE SPECIFIED PORTIONS OF DEFINED AREAS. THE DAMAGED AREA WILL BE REMOVED 18 TO 24 INCHES BEYOND VISIBLE MOLD COLONIES.

\*REMAINING WALLS, CEILINGS AND FLOORS WITHIN THE CONTAINMENT SHOULD BE HEPA VACUUMED AND WET-WIPED WITH THE PROPER QUATERNARY AMMONIA SOLUTION. ALL EXPOSED WOOD STRUCTURE MEMBERS INCLUDING PLYWOOD, CEILING OR FLOOR FRAMING SHOULD BE SANDED OR CLEANED WITH WIRE BRUSHES. ALL REMAINING WOOD STRUCTURE MEMBERS SHOULD BE DRIED DOWN TO BELOW 15% MOISTURE LEVEL.

\*PLUMBING FIXTURES SHOULD BE DISCONNECTED AND REMOVED PRIOR TO BEGINNING REMEDIATION.

**STEP #10: REMOVAL OF CONTAINMENT MATERIALS**

The outside of the bags could be cleaned with a damp cloth and a detergent solution or HEPA vac\* Containment materials that cannot be cleaned should be removed from the building in sealed plastic bag in the decontamination chamber prior to their transport to uncontaminated areas of the building. There are no special requirements for the disposal of moldy materials. Moldy materials that are bagged can be disposed of with other general waste.

\* Dirt, debris and broken plaster may be placed in 55 gallon drums inside the containment area. Before removal from the containment area, close the drum and clean the outside surface.

**STEP #11: CLEANING OF THE CONTAINMENT AREA**

\* The contained area and decontamination room should be HEPA vacuumed and cleaned with a damp cloth and/or mop with a detergent solution and be visibly clean prior to the removal of

isolation barriers.

**STEP #12: CONTAINMENT OF AREA USED DURING RECONSTRUCTION**

\* After the containment area has been cleaned, the enclosure can be used to contain the dusts generated by the sheetrock sanding and taping activities. This is done to reduce the problems with cleanup when reconstruction is completed. The use of HEPA exhaust filter is not required. The two stage decontamination area is also not needed.

**STEP #13: FINAL INSPECTION**

\* Prior to re-occupancy of the space, a visual inspection and or air sampling should be conducted by Mold Assessment Group. Re-occupancy may occur when the space passes the inspection.

\* Air scrubbers should run for at least 24-48 hours post remediation then should be turned off for a minimum of 24-48 hours prior to final clearance testing. This is to allow the area to return to “normal conditions” prior to re-testing. Finally, the air intake location of the air scrubber should be closed and sealed off after it is turned off to prevent the primary filter from allowing the recently captured spores from re-entering the clean air space.

## **REFERENCES**

Guidelines on Assessment and Remediation of Fungi in Indoor Environments, New York City Department of Health Bureau of Environment & Occupational Disease Epidemiology. April, 2000 16p. Managing Water Infiltration in Buildings, U of MN DEHS and Institute for Environmental Assessment. N.G. Carlson and A. Quraishi - 1998.

Additional procedures developed in consultation with Leviticus Corporation.

Controlled Study of Mold Growth and Cleaning Procedures, Journal of Occupational and

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