

# Mold

## Inspection Sciences



### MOLD INSPECTION AND TESTING REPORT CIRS PROTOCOL

CLIENT	John Bluecheese
PROPERTY ADDRESS	2523 Laboratory Dr ~ Suspect, Colorado 80555
DATE OF INSPECTION	Tuesday, October 13, 2021

#### SUMMARY AND CONCLUSIONS

Based on the findings of our visual assessment and the concurrent laboratory analysis of the samples collected, the recommendation for professional mold remediation of the Basement area of the home is supported. The air sample showed elevated airborne mold spore counts as compared to our outdoor sample, the qPCR sample collected showed high levels of contamination and mold growth was confirmed at the Drywall and Sill Plate in association with previously water damaged building materials. Additional hidden mold growth is possible. See recommendations below.

Based on our visual inspection and laboratory analysis of the samples collected, professional cleaning and invasive exploration of the Utility Closet area of the home is recommended. The air sample collected was within normal tolerances; however, the sample showed the presence of "Marker" spore types (Chaetomium), which even in small concentrations can be a strong indicator of a mold source, and water damaged building materials were present. Hidden mold growth is possible. See recommendations below.

Based on the findings of our visual assessment and laboratory analysis of the samples collected, professional cleaning of the Laundry Room and Hall Bathroom areas is recommended. The air samples collected showed suspect airborne mold levels compared to our outdoor sample and previously water damaged building materials were present. Hidden mold growth is likely in all affected areas.

Based on our visual inspection and the laboratory analysis of the samples collected, we did not detect a mold problem in the Living Room area of the home. No visible mold-like growth was observed and all building materials were within normal tolerances, and all building materials were within normal tolerances.

This comprehensive CIRS inspection report demonstrates our detailed written summary & conclusions from a full investigation completed by our inspector.

growth is always a possibility in association with the water damaged building materials. Client may wish to have invasive exploration performed to definitively check for hidden mold growth. We've included invasive exploration information below.

**GENERAL RECOMMENDATIONS**

Engage a licensed professional to evaluate and repair, as necessary, the following items related to water intrusion:

- EXTERIOR - Lack of rain gutters; Openings / cracks; Downspout discharging at foundation and Cracked window
- KITCHEN - Previous sink plumbing leaks and/or spills; Cracked / deteriorated caulking
- BASEMENT - Previous HVAC / water heater plumbing leak
- UTILITY CLOSET - Previous HVAC / water heater plumbing leak
- HALL BATHROOM - Incidental moisture from shower and/or previous toilet plumbing leak and/or previous Laundry Room plumbing leak
- LAUNDRY ROOM - Previous roof leak and/or previous laundry plumbing leak and/or previous Hall Bathroom plumbing leak
- ATTIC - Previous leak at roof

**NOTE: FUTURE/CONTINUED MOLD GROWTH IS POSSIBLE IF MOISTURE INTRUSION ISSUES ARE NOT CORRECTED.**

**RECOMMENDATION FOR PROFESSIONAL MOLD REMEDIATION**

Room/Area	Location within Room/Area and/or Affected Materials
	Mold Impacted Water Damaged Materials. The air sample collection showed elevated airborne mold spores and mold growth was confirmed at the Sill Plate. Additional hidden mold possible within the wall cavities.

The results and recommendations based on our findings can expertly guide the best and most effective remediation procedures. Our recommendations address the specific types of deep cleaning required to properly clean a property where a CIRS patient may reside.

Use of containment / isolation barriers, the work area by installing HEPA filtered and impacted non-structural materials drywall, carpet, carpet pad, tack strips,

- During remediation, removal of affected materials (mold impacted, actively wet and/or previously wet materials) should continue until 12" past the last visibly / known impacted area wherever feasible.
- All exposed insulation should be removed from the work area,
- All associated debris should be double bagged and wet wiped with an appropriate anti-microbial solution prior to removal from the containment,
- All water damaged and/or mold impacted structural materials should be properly HEPA vacuumed, scrubbed/cleaned, wet wiped with an appropriate surfactant, and then HEPA vacuumed again,
- Compressed air should be applied to all surfaces to stir up particulate within the space and allow for air scrubbing.
  - If the work is occurring over several days, each day should end with a compressed air treatment.
- HEPA vacuum all surfaces within the work area,
- Wet wipe all surfaces within the work area with an appropriate surfactant,
- All exposed building materials and porous surfaces should be sealed with a \*clear penetrating encapsulant,
  - **\*IMPORTANT:** If colored / non-translucent encapsulant is used, full clearance will not be possible.
- All negative air machines and/or air scrubbers should be turned off,
- An appropriate non-mechanical air scrubbing solution (Such as AeroSolver), should be applied / fogged into the space,
  - Follow the manufacturers recommendations for appropriate application, set time and recommended procedures.
- Wet wipe all surfaces within the work area with an appropriate surfactant,
- Wet wipe all surfaces within the work area with alcohol,
- Dry wipe all surfaces within the work area with appropriate electrostatic cloths.

**RECOMMENDATION FOR PROFESSIONAL INVASIVE EXPLORATION**

Mold growth is possible in the areas listed in the table below. Client may require a mold remediation professional or other qualified professional to explore these areas.

Location within Room/Area
When mold growth is possible under/around the perimeter within the adjacent wall cavities and/or in contact with the flooring materials.
<b>Exposed Materials. The air sample showed the presence of "Marker" spore (Stachybotrys). Hidden mold growth is</b>

Our CIRS Protocol is designed to identify any potential mold sources, related contamination, and the proper cleaning procedures to ensure a safe and clean environment for CIRS patients and mold sensitive people.

	possible in association with the wall / framing materials.
Hall Bathroom	Water Damaged Materials. The air sample collected showed suspect airborne mold spore counts. Hidden mold growth is possible within the wall cavities and/or in association with the flooring materials.
Laundry Room	Water Damaged Materials. The air sample collected showed suspect airborne mold spore counts. Hidden mold growth is possible within the wall cavities.

- Isolate the work area with use of containment / isolation barriers,
- Establish negative air pressure within the work area by installing HEPA filtered negative air machines,
- Remove all water damaged and/or mold impacted non-structural materials (baseboards, trim, drywall, plaster, cabinetry, carpet, carpet pad, tack strips, underlayment, insulation, etc...),
  - During remediation, removal of affected materials (mold impacted, actively wet and/or previously wet materials) should continue until 12" past the last visibly / known impacted area wherever feasible.
- All exposed insulation should be removed from the work area,
- All associated debris should be double bagged and wet wiped with an appropriate anti-microbial solution prior to removal from the containment,
- All water damaged and/or mold impacted structural materials should be properly HEPA vacuumed, scrubbed/cleaned, wet wiped with an appropriate surfactant, and then HEPA vacuumed again,
- Compressed air should be applied to all surfaces to be cleaned to remove loose debris from the space and allow for air scrubbing,
  - If the work is occurring over several days, compressed air treatment.
- HEPA vacuum all surfaces within the containment area,
- Wet wipe all surfaces within the containment area,
- All exposed building materials should be sealed with a penetrating encapsulant,
  - **\*IMPORTANT:** If the encapsulant is not applied, the mold will not be contained and clearance will not be achieved.
- All negative air machines are to be maintained and calibrated,
- An appropriate non-mechanical barrier should be applied / fogged into the containment area,
  - Follow the manufacturer's instructions for application, drying time and recommended use.

At Mold Inspection Sciences, our CIRIS Protocol includes the investigation of the exterior and all interior spaces in your property. This is an important aspect in determining exactly where the contamination source is and what the proper remediation procedure will be.

- Wet wipe all surfaces within the work area with an appropriate surfactant,
- Wet wipe all surfaces within the work area with alcohol,
- Dry wipe all surfaces within the work area with appropriate electrostatic cloths.

**RECOMMENDATIONS FOR CLEANING OF INDIRECTLY IMPACTED AREAS**

Room/Area	Location within Room/Area
Lower Level	The qPCR sample showed High levels of contamination. All surfaces should be cleaned as outlined below.

- All porous contents should be removed from the space,
  - Porous contents should be disposed of and/or professionally cleaned.
- An appropriate non-mechanical air scrubbing solution (Such as AeroSolver), should be applied / fogged into the space,
  - Follow the manufacturers recommendations for appropriate application, set time and recommended procedures,
- Wet wipe all surfaces within the work area with an appropriate surfactant,
- Wet wipe all surfaces within the work area with alcohol wipes,
- Dry wipe all surfaces within the work area with appropriate electrostatic cloths.

After the mold remediation is complete, but before new building materials are installed, the remediation project should be inspected, tested, and approved by Mold Inspection Sciences.

**AIR SAMPLES**

Lab Code	Location	Conclusion Inside vs. Outside Ratio	Comments
OS	Outdoor	Baseline	Recommended by inspector and approved by client
ST01		Normal Tolerance Total spore count (3/853)	Recommended by inspector and approved by client.
		Penicillium/Aspergillus (20); Chaetomium and (920/<13)	Recommended by inspector and approved by client.
		(13/<13)	Recommended by inspector and approved by client.

Why is qPCR sampling important for a CIRS Protocol investigation? When used in conjunction with other sampling, it can reveal property conditions that are otherwise invisible.

ST04	Hall Bathroom	Suspect: <i>Penicillium/Aspergillus</i> types (510/320); and <i>Stachybotrys</i> (40/<13)	Recommended by inspector and approved by client.
ST05	Laundry Room	Suspect: <i>Stachybotrys</i> (40/<13)	Recommended by inspector and approved by client.

**DIRECT SURFACE SAMPLES**

Lab Code	Location	Conclusion	Comments
DE01	Basement (Drywall)	Mold Growth: <i>Penicillium/Aspergillus</i> group; <i>Alternaria</i> species; <i>Cladosporium</i> species	Recommended by inspector and approved by client.
DE02	Basement (Sill Plate)	Mold Growth: <i>Alternaria</i> species; <i>Penicillium/Aspergillus</i> group	Recommended by inspector and approved by client.

**QPCR SAMPLES**

Lab Code	Location	Conclusion	Comments
EM01	Lower Level (Surfaces)	High: <i>Aspergillus niger</i> (120); <i>Aspergillus penicillioides</i> (210); <i>Aspergillus versicolor</i> (130); <i>Chaetomium globosum</i> (86); <i>Scopulariopsis chartarum</i> (64); <i>Stachybotrys chartarum</i> (7);	Recommended by inspector and approved by client
EM02	Main Level (Surfaces)	Low	Recommended by inspector and approved by client
EM03	Upper Level (Surfaces)	Low	Recommended by inspector and approved by client

For additional detailed information on the sample results, please see the laboratory report included with this inspection report.

Our qPCR samples are analyzed by our accredited laboratory so you will get 100% accurate results of the levels and types of mold contamination in your home or building.

## APPENDIX I

### INSPECTION PHOTOS AND COMMENTS

#### EXTERIOR [EAST]

The structure does not have rain gutters.



*No rain gutters observed on top story of structure.*

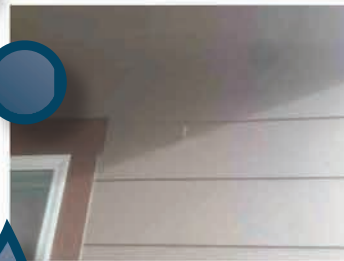
Moisture Content: Dry

Area Affected: Top Story

Suspected source(s)/cause(s):  
Lack of rain gutters

#### EXTERIOR [WEST]

Openings/cracks in exterior walls were observed.



Moisture Content: Dry

Area Affected: 3 Sq In

Suspected source(s)/cause(s):  
Openings / cracks

Mold is found outdoors and indoors. It can enter your home in a variety of ways, but it thrives in places with a lot of moisture. Our inspector will gather physical data, collect photographs and provide written documentation which can be used as evidence.

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*Openings and cracks observed.*

**EXTERIOR [SOUTH]**

Downspout discharges next to the foundation.



*Downspout observed discharging at foundation.*

Moisture Content: Dry  
Area Affected: 2 Lineal Ft  
Suspected source(s)/cause(s):  
Downspout discharging at foundation

**EXTERIOR [SOUTH]**

Cracked window was observed.



*Cracked and broken window observed common Garage.*

Moisture Content: Dry  
Area Affected: 2 Lineal Ft  
Suspected source(s)/cause(s):  
Cracked window

Have you heard of our CIRS Protocol Triangle™ service? This is where we coordinate with your healthcare provider and remediation contractor to ensure standards are adhered to and concerns are addressed.



**KITCHEN [NORTH]**

Water damage - Moisture damage or staining observed in this area.



*Water staining and damage observed under sink cabinetry.*

Moisture Content: Dry

Humidity this area: 56%

Humidity Outdoor: 65%

**KITCHEN [NORTH]**

Water damage - Moisture damage or staining observed in this area.



*Water staining and damage observed under sink cabinetry.*

Moisture Content: Dry

Humidity this area: 56%

Humidity Outdoor: 65%

Area Affected: 9 Sq In

Suspected source(s)/cause(s):  
Previous sink plumbing leaks and/or spills

SAMPLE

All areas that have been impacted by moisture will be reported, such as places where there have been leaks, flooding, around windows, or pipes.

**KITCHEN [NORTH]**

Caulking around toilet and/or sink is in poor condition.



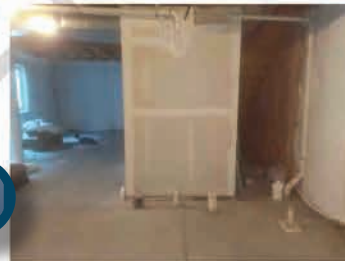
Moisture Content: Dry  
Humidity this area: 56%  
Humidity Outdoor: 65%  
Area Affected: 2 Lineal Ft  
Suspected source(s)/cause(s):  
Cracked / deteriorated caulking



*Cracked and deteriorated caulking observed around sink.*

**BASEMENT [WEST]**

Water damage - Moisture staining observed in this



Moisture Content: Dry  
Humidity this area: 47%  
Humidity Outdoor: 65%

*Water staining and damage observed on drywall and sill plate common Utility Closet.*

Full and limited property inspection services includes moisture readings, thermal imaging using the top of the line FLIR thermal imaging equipment (detects active leaks, missing insulation, duct maintenance issues) and hygrometer readings.

While some visible signs of mold include staining, discoloration, and water damage, not all indicators of mold can be seen or even smelled. That's why it is critical to get in touch with a professional that has the experience and tools to detect mold beyond the surface.



*Water staining and damage observed on drywall and sill plate.*

**Moisture Content:** Dry  
**Humidity this area:** 47%  
**Humidity Outdoor:** 65%  
**Area Affected:** 6 Lineal Ft  
**Suspected source(s)/cause(s):**  
Previous HVAC / water heater plumbing leak

**BASEMENT (DRYWALL) [WEST]**

Evidence of mold-like growth was observed.



*Mold-like growth observed on drywall common Utility Closet.*

**Moisture Content:** Dry  
**Humidity this area:** 47%  
**Humidity Outdoor:** 65%  
**Area Affected:** 6  
**Suspected source(s)/cause(s):**  
Previous HVAC / water heater plumbing leak

**BASEMENT (SILL PLATE) [SOUTH]**

Evidence of mold-like growth was observed.



**Moisture Content:** Dry  
**Humidity this area:** 47%  
**Humidity Outdoor:** 65%  
**Area Affected:** 8 Lineal Ft  
**Suspected source(s)/cause(s):**  
Previous HVAC / water heater plumbing leak

*Mold-like growth observed on sill plate  
common Utility Closet.*

**LOWER LEVEL [EAST]**

qPCR sample recommended for this area.



*qPCR sample recommended for this area.*

Moisture Content: Dry

Humidity this area: 47%  
Humidity Outdoor: 65%

**UTILITY CLOSET [NORTH]**

Water damage - Moisture damage or staining observed in this area.



*Water staining and damage observed on  
sill plate.*

Moisture Content: Dry

Humidity this area: 54%  
Humidity Outdoor: 65%

SAMPLE

Our investigations are conducted at a deeper level than a typical mold and moisture investigation, revealing unseen contamination that may be present in closed spaces or entering your property from the exterior.

**UTILITY CLOSET [EAST]**

Water damage - Moisture damage or staining observed in this area.



Moisture Content: Dry  
Humidity this area: 54%  
Humidity Outdoor: 65%  
Area Affected: 6 Lineal Ft  
Suspected source(s)/cause(s):  
Previous HVAC / water heater plumbing leak



*Water staining and damage observed on sill plate.*

**HALL BATHROOM [SOUTH]**

Water damage - Moisture damage or staining observed in this area.



Moisture Content: Dry  
Humidity this area: 46%  
Humidity Outdoor: 65%

*Water staining and damage observed on baseboards.*

Did you know?  
Our CIRS Protocol investigates historical contamination in your property providing insights into hazards you may not know were present. Having a property's history is invaluable in determining the proper remediation procedures.

**HALL BATHROOM [EAST]**

Water damage - Moisture damage or staining observed in this area.



Moisture Content: Dry  
Humidity this area: 46%  
Humidity Outdoor: 65%  
Area Affected: 3 Lineal Ft  
Suspected source(s)/cause(s):  
Incidental moisture from shower and/or previous toilet plumbing leak and/or previous Laundry Room plumbing leak



*Water staining and damage observed on baseboards around shower and toilet plumbing.*

**LAUNDRY ROOM [SOUTH]**

Water damage - Moisture damage or staining observed in this area.



Moisture Content: Dry  
Humidity this area: 51%  
Humidity Outdoor: 65%

We often find that the source of contamination is hidden. Utilizing cavity sampling in conjunction with qPCR sampling allows us to pinpoint the exact source of contamination.

*Water staining and damage observed on ceiling, wall, baseboard and flooring.*

**LAUNDRY ROOM [EAST]**

Water damage - Moisture damage or staining observed in this area.



Moisture Content: Dry

Humidity this area: 51%  
Humidity Outdoor: 65%

Area Affected: 8 x 2 Ft

Suspected source(s)/cause(s):  
Previous roof leak and/or previous laundry plumbing leak and/or previous Hall Bathroom plumbing leak

*Water staining and damage observed on ceiling and wall common Hall Bathroom.*

qPCR sampling and testing amplifies the presence of mold spores so that not only the genus but also the species of molds present can be identified. This deeper level of testing is useful for your health care provider in helping them determine the best course of action for your specific needs.

**LAUNDRY ROOM [EAST]**

Water damage - Moisture damage or staining observed in this area.



*Water staining and damage observed on baseboard and flooring.*

Moisture Content: Dry

Humidity this area: 51%  
Humidity Outdoor: 65%

Area Affected: 3 Sq Ft

Suspected source(s)/cause(s):  
Previous roof leak and/or previous laundry plumbing leak and/or previous Hall Bathroom plumbing leak

**ATTIC [WEST]**

Water damage - Moisture damage or staining observed in this area.



Moisture Content: Dry

Humidity this area: 61%  
Humidity Outdoor: 65%

Area Affected: 8 Sq Ft

Suspected source(s)/cause(s):  
Previous leak at roof

\* Humidity level for this area is above the ASHRAE recommended level for habitable spaces. Preferable level is between 30% and 60%.

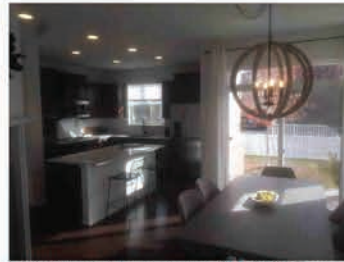
Over the past 18 years, we've performed thousands of investigations for a variety of clients and structures. Our testing services will determine the type of mold in your property and how much of it you are breathing.



*Water staining and damage observed on sheathing around Hall Bathroom vent termination.*

**MAIN LEVEL [EAST]**

qPCR sample recommended for this area.



Moisture Content: Dry

Humidity this area: 54%  
Humidity Outdoor: 65%

*qPCR sample recommended for this area.  
Suspect area: Kitchen.*

**UPPER LEVEL [SOUTH]**

qPCR sample recommended for this area.



Moisture Content: Dry

Humidity this area: 54%  
Humidity Outdoor: 65%

*qPCR sample recommended for this area.  
Suspect areas: Hall Bathroom and  
Laundry Room.*

When your healthcare provider recommends an expanded CIRS Protocol investigation our approach may include bacterial, mycotoxin, and other specialized sampling to gain the most comprehensive data about the condition of your property.

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Inspection Sciences

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