



## Report Contents

### Mold Remediation Protocol

Prepared for: [REDACTED]

Project Address: [REDACTED]

Date of Initial Assessment: **June 24, 2021**

Remediation Protocol Date: **October 21, 2021**

A handwritten signature in blue ink, appearing to read "C. Kraft".

**By Cary Kraft**

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## Section 1.0 Project Background

### 1.1 Site Description

- 1.1.1 Construction Type – Slab foundation, stone and siding exterior, drywall interior, wood framed walls, composition roof
- 1.1.2 Age of Structure – 14 Years
- 1.1.3 Building Type – Single family residence
- 1.1.4 Size of Structure – 1,679 Square feet
- 1.1.5 Scope – Laundry Area in Garage and adjacent walls to include Living Room and HVAC supply components in Living Room and Hall Bathroom (Powder)

### 1.2 Initial Observations and Findings

**1.2.1 Laundry Area in Garage and adjacent Living Room wall** – Visual inspection revealed mold growth at the walls in the Laundry Area in Garage. Elevated moisture was present on the walls in the Laundry Area in Garage and adjacent wall in Living Room. Visible contamination covered an area <25 square feet.

**1.2.2 HVAC supply components in Living Room and Hall Bathroom (Powder)** – Visual inspection revealed mold growth. Visible contamination covered an area <25 square feet.

### 1.3 Initial Microbial Sampling Results

Sample collection and analyses were performed according to *Minimum Work Practices and Procedures for Mold Assessment of the Texas Mold Assessment and Remediation Rules*.

#### 1.3.1 Air Samples Collected

Lab Code	Location	Conclusion
OS	Outdoor	Baseline
ST01	Living Room	Normal levels

#### 1.3.2 Surface Samples Collected

Lab Code	Location	Conclusion
DE01	Living Room (HVAC box)	Mold growth confirmed: Cladosporium species spores
DE02	Laundry Area in Garage (Drywall)	Mold growth confirmed: Stachybotrys

## **Section 2.0 Regulations and Notices**

### **2.1 Texas Mold Assessment and Remediation Regulations**

It is critical that licensed, trained, and qualified mold remediation professionals perform the clean-up work. Mold Remediation should be performed to the standards found in IICRC S520, Standard and Reference Guide for Mold Remediation, and in accordance with the laws of the state of Texas. In accordance with the Texas Mold Assessment and Remediation Rules (**Rules**), 16 Tex. Admin. Code, Chapter 78, if licensed Remediation Contractor is doing the mold remediation, a Mold Remediation Protocol is required. In addition, state notification requirements are triggered if more than 25 contiguous square feet of mold contamination material is affected in any one area. These requirements require 5-day notification prior to remediation. Contaminated materials should be removed using appropriate containment and removal practices in accordance with the **Rules**. Proper engineering controls must be in place to prevent the further spreading of airborne mold spores.

### **2.2 TAHPR – Texas Asbestos Health Protection Rules for Single Family Homes:**

Single family dwellings, that are to remain single family dwellings, do not fall under the definition of a “public building” as defined in the Texas Asbestos Health Protection Rules (TAHPR). Therefore, TAHPR does not require suspect materials to be sampled prior to disturbance or removed. However, federal Occupational Safety and Health Administration (OSHA) and Environmental Protection Agency (EPA) regulations concerning asbestos do apply, and any contractor that will disturb the material must be advised that it contains asbestos. Materials such as drywall wall and ceiling systems, flooring materials and mastics, and ceiling tiles, are just some examples of materials that could contain asbestos. In these cases, the responsibility to prove or disprove the presence of asbestos falls on the employer.

**Should significant variance from the instructions contained in this Protocol be required or other issues regarding remediation arise, the Remediation Contractor should first obtain concurrence from the Mold Assessment Consultant to determine further scope of work procedures. The steps outlined here are the minimum steps required for remediation. The remediation firm may take additional or varied steps as dictated by their judgment and/or operating procedures to adequately abate the mold contamination.**

## Section 3.0 Remediation Specification

### 3.1 Water Intrusion and Moisture Issues to be Repaired/Corrected:

1. Plumbing leak in Laundry Area in Garage
2. HVAC condensation due to inefficiencies

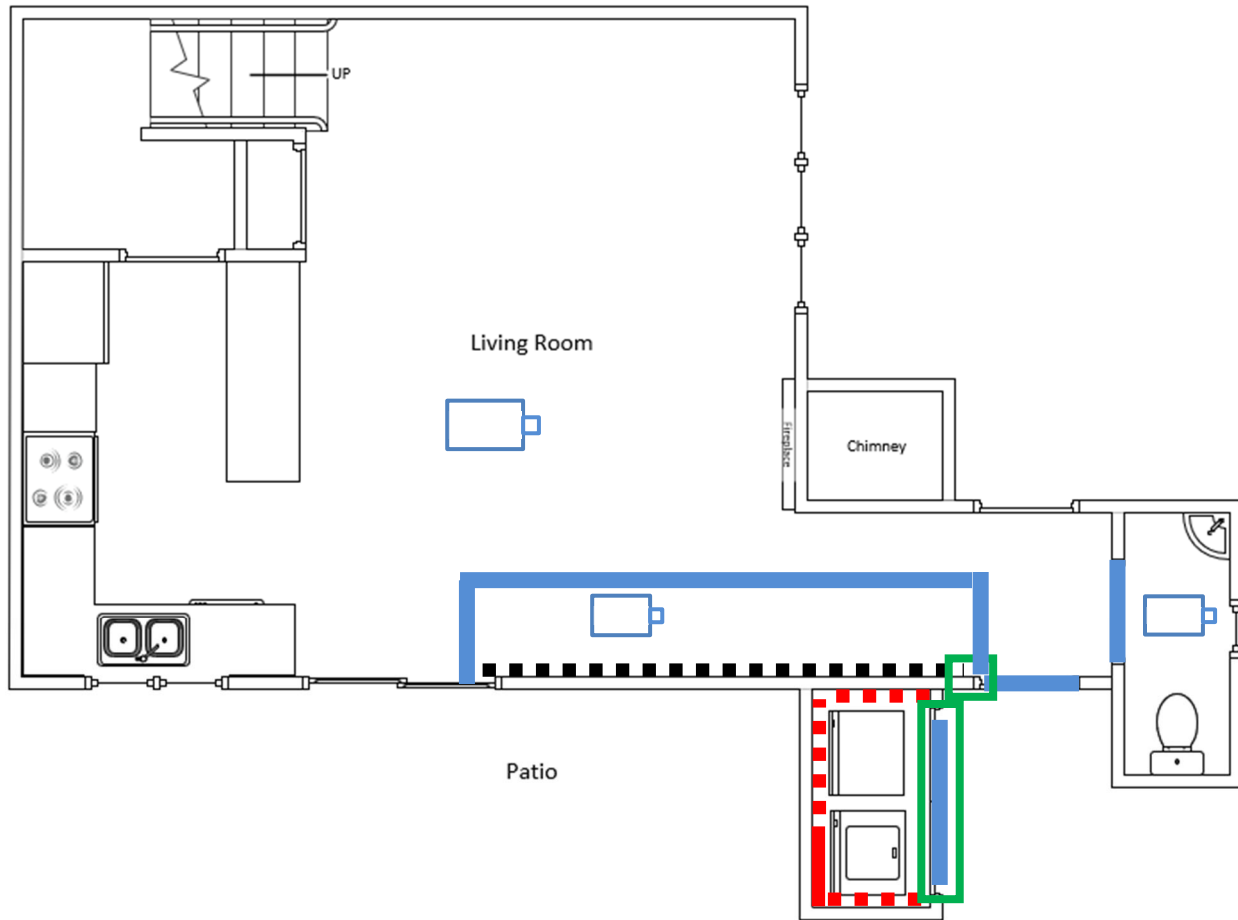
### 3.2 Specific Remediation Instructions

Room/Area	Remediation Instructions
<p>Laundry Area in Garage</p> <p>Adjacent walls to include Living Room</p> <p>SEE DIAGRAM</p>	<ol style="list-style-type: none"> <li>1. Remove all furniture and contents from areas to be contained.</li> <li>2. Erect a Limited Containment for each area/room, and install critical barriers over all openings – lights, plumbing penetrations, a/c vents, etc. Establish negative pressure, which must be maintained until Clearance. Exhaust to the exterior, if possible.</li> <li>3. Place dehumidifiers as needed to facilitate proper dry-out. All wood materials should be 15% moisture content or less to be considered “dry” at the time of the Clearance Inspection.</li> <li>4. <b>Remove baseboards and door casings in affected areas as shown on the Diagram.</b></li> <li>5. <b>Remove impacted wall materials as shown on the Diagram. Inspect remaining materials, if impacted or damaged, remove and dispose of accordingly 1-2 feet past the last visible impact.</b></li> <li>6. Remove and dispose of any exposed insulation. Open wall and ceiling cavities with insulation must be sealed off.</li> <li>7. Remove and replace all water-damaged, rotten wood materials. Wood rot <u>MUST</u> be removed to pass Clearance.</li> <li>8. Clean in place structurally sound framing, flooring, ceiling joists, metal and other wood structures by sanding, grinding, or wire brushing. This treatment must remove all fungal growth from the affected materials.</li> <li>9. HEPA vacuum all surfaces.</li> <li>10. Wipe down all surfaces with a detergent solution or EPA registered fungicide as a final remedial treatment.</li> <li>11. Reduce airborne particulate concentrations inside the contained area(s). Scrub air using HEPA filtration units. Time allowed for scrubbing should be determined by the CFM ratings of the units being used and the corresponding size of the contained area and amount of mold removed.</li> </ol> <p style="text-align: center;"><b>ESTIMATED AMOUNT OF MATERIAL TO BE REMOVED:</b></p> <p style="text-align: center;">DRYWALL – 120 SF</p>

Room/Area	Air Scrubbing Instructions for Other Areas
Adjacent Rooms	12. Use HEPA filtration equipment to scrub the air inside the structure during remediation. Post Assessment testing will include at least one indoor control air sample.

Room/Area	HVAC System Remediation Instructions
<b>HVAC System</b>  <b>Including the Following Rooms/Areas:</b>  <b>Living Room</b>  <b>Hall Bathroom (Powder)</b>	13. Erect a Containment around each supply duct penetration in each room. If drywall removal is required, allow enough room to remove 1-2 feet of drywall (8-16 SF) around the vent penetration. 14. Remove and dispose of all mold impacted ductwork and diffuser boxes in the following areas: <ol style="list-style-type: none"> <li>1. Hall Bathroom (Powder)</li> <li>2. Living Room – North and East Supply</li> </ol> 15. Clean remaining ductwork for areas listed above, if possible; otherwise, replace all ductwork. 16. Remove and dispose of any exposed insulation. Open wall and ceiling cavities with insulation must be sealed off. 17. Clean in place structurally sound framing, ceiling joists, other wood structures by sanding, grinding, or wire brushing. This treatment must remove all fungal growth from the affected materials. 18. HEPA vacuum all surfaces. 19. Reduce airborne particulate concentrations inside the containments. Scrub the air using HEPA filtration units.

### 3.3 Remediation Project Diagram



See tables in Section 3.2 for additional material removal and cleaning recommendations.

#### LEGEND

- Remove bottom four (4) feet of wall materials and trim.
- Remove bottom two (2) feet of wall materials and trim.
- Remove baseboard and lower 4 inches of wall and check for hidden mold and water damage. Remove impacted materials 1-2 feet beyond the last visible impact.
- Remove door casing and trim.
- Install plastic sheeting and/or zippered doorways or double flapped doorways at entries.
- HEPA Filtration and Dehumidification Unit(s).



### 3.4 General Guidelines for Successful Mold Remediation

1. Set up Limited Containment(s) and critical barriers where needed to prevent contamination of the rest of the occupied spaces during remediation processes. Establish negative pressure. (See the Texas **Rules** and EPA Guidelines)
2. Wear proper Personal Protection Equipment. (See the Texas **Rules** and EPA Guidelines)
3. Remove contaminated and water-damaged materials when feasible. Contaminated wall/ceiling surfaces and other materials should be removed, if feasible, at least one foot in all directions past the last appearance of mold growth. Any moldy or water-damaged non-structural building materials must be removed and discarded. Mold impacted and water-damaged materials should be immediately placed in plastic bags or wrapped and sealed for disposal.
4. Remove and dispose of any insulation where mold contamination is visible and where damaged drywall is being removed.
5. If materials are wet, dry all materials. Wood materials should be 15% moisture content or less. Mechanical dehumidification equipment should be used if materials will not be completely dry within 48 hours.
6. Clean any mold growth found on structural surfaces and within the exposed cavities. This process typically involves the use of HEPA vacuums, wet scrubbing, sanding, wire brushing, and wiping/drying with disposable wipes. (See EPA Guidelines)
7. Clean in-place structurally sound framing, flooring, ceiling joists, metal and other wood structures by sanding, grinding, or wire brushing. This treatment must remove all fungal growth from the affected materials, or the materials must be removed and replaced whenever structurally feasible. Clean/remove mold growth from any non-porous surfaces such as metal or glass or painted/sealed wood which is not water-damaged or wet. Water-damaged structural materials must be removed and replaced whenever feasible. (See EPA Guidelines)
8. HEPA vacuum all surfaces.
9. Wipe down all surfaces with a detergent solution or EPA registered fungicide as a final remedial treatment.
10. Reduce airborne particulate concentrations inside the contained area(s) or affected areas to normal levels. Scrub air using HEPA filtration units. Time allowed for scrubbing should be determined by the CFM ratings of the units being used and the corresponding sizes of the contained and/or affected areas.
11. **If initial air sample analysis results from samples collected from non-affected areas showed suspect or elevated levels, non-affected areas should be included in the project.** We recommend the use of HEPA filtration to reduce airborne particulate concentrations back to normal levels in all areas adjacent to contained area(s). Note: Indoor control air sampling may be included during the Clearance Testing.
12. **All remediated materials/areas should be accessible and visible. No new materials should be installed until after the project is deemed successful by the Mold Assessment Consultant.**

**NOTE:** The steps outlined here are the minimum steps required for remediation. A remediation contractor may take additional or varied steps as dictated by their judgment and/or operating procedures to adequately abate the mold contamination. However, should significant variance from the above recommendations be required or other issues regarding remediation arise, the remediation contractor should first obtain concurrence from the Mold Assessment Consultant.

For more information, see Guidelines for Remediating Building Materials with Mold Growth Caused by Clean Water provided by the US EPA: [http://www.epa.gov/iedmold1/i-e-r.html#Table%20-%20Mold%20Remediation%20Guidelines%20\(7\)](http://www.epa.gov/iedmold1/i-e-r.html#Table%20-%20Mold%20Remediation%20Guidelines%20(7))

**NOTICE: The use of EPA registered biocides or disinfectants may be used; however, under no circumstance should any microbial coating or encasement material or primers be applied to any surfaces prior to the Post-Remediation Inspection and Clearance Testing unless approved by the Mold Assessment Consultant.**

## **Section 4.0 Containments**

### **4.1 Create a *Limited* Containment for each affected area**

Install barriers of 6-mil flame retardant polyethylene sheeting with a slit entry and covering flap or with zippered entry. Install a single stage decontamination chamber at the entry to the containment. Install critical barriers over all openings/penetrations, lights, vents, outlets, etc. Place sheets of poly in the areas where workers will be walking through the structure.

NOTE: The containment(s) should be maintained under negative air pressure with a HEPA filtered fan unit between areas indoor that need remediation and unaffected areas of the structure to contain mold spores and dust/debris. If negative air pressure is lost, stop work and reestablish negative air before continuing. ***The containment or work area(s) should be unoccupied by non-remediation company workers during remediation activities.***

### **4.2 Seal HVAC supply vents and/or return air vents in remediation area(s)**

If HVAC system may be affected, supply vents should be sealed after material is remediated or ducts and system have been cleaned. The HVAC unit(s) should remain off during remediation operations.

### **4.3 HEPA Filtration**

After all remediation operations are complete inside the containment(s), 1 or more of the HEPA filtration units can be changed to the scrub mode, but negative pressure must be maintained. Time allowed for scrubbing should be determined by the remediation contractor and should be based on the CFM ratings of the units being used and the corresponding sizes of the contained and/or affected areas.

## **Section 5.0 Personal Protective Equipment (PPE)**

The *EPA Guidelines for Remediation of Building Materials with Mold Growth by Clean Water* for requirements of PPE should be followed. EPA Table 2 is included at the back of this document

### **5.1 PPE**

Review USEPA Table 2 (below) for proper PPE with regard to the scope of the work and amount of impacted material to be removed.

## **Section 6.0 Post-Remediation Assessment and Clearance Criteria**

Once the remediation has been completed, for the contaminated area(s) to achieve Clearance, a Post Remediation Inspection must be performed along with the collection and analysis of an appropriate number of samples.

Prior to obtaining final clearance the owner/agent must furnish documentation to Mold Inspection Sciences Texas, Inc. that the underlying cause(s) of the leak(s), water infiltration, high humidity issues has/have been repaired, so that it is reasonably certain that the mold will not return from the same cause.

The Mold Assessment Consultant shall perform visual, procedural, and analytical evaluations in the impacted area(s) to determine whether the remediation has been performed according to the Remediation Protocol provided for this project.

### **6.1 Visual Inspection**

A thorough visual inspection of the containment area(s) or remediation areas will be performed. All areas should be left dry and visibly free of all visible microbial contamination and debris. Containments must remain in place until Clearance Lab Results.

### **6.2 Sampling**

The sample analysis must reveal no mold growth on any surface sampled and airborne mold counts must be statistically similar to outdoor air for corresponding mold types and total indoor air mold spore concentrations must be generally lower than outdoor mold spore concentrations. IICRC S520 Clearance Standards apply.

- One air sample from inside each containment or work area where mold was previously detected (one per area).
- One indoor control air sample from inside the property outside of the containment(s) or work area(s).
- One to two surface sample(s) per affected area where mold growth was previously observed.
- At least One outdoor air sample required as a baseline for the Lab.

### **6.3 Clearance Criteria**

The Clearance Investigation and Testing is conducted when mold remediation and cleanup efforts are completed but before containment is removed and renovation activities have begun.

The purpose of the clearance investigation is to ensure that remediation activities have been completed as outlined in the Remediation Protocol, containment has been maintained, all dust and debris have been removed from the containment areas, and no malodors or visible mold is present.

Clearance testing consists of a visual assessment for mold problems in area(s) of remediation activities and the collection/analysis of a tape lift sample and an air quality test in these designated area(s). Clearance is defined as tape and air samples collected indoors being quantitatively equal to or less than outdoor samples, and qualitatively similar. There are no exposure limits for the swab or tape lift sample.

Clearance of air sampling consists of sampling all containment areas using the ACGIH air sampling protocol, which requires one (1) indoor air sample be collected in each containment area. In

addition, each containment area requires a swab or tape lift surface sample. The samples are sent to an accredited laboratory, which will analyze them for the presence of mold. The lab will then issue a report detailing the presence and types and quantities of mold as per sample analysis protocols.

Acceptable clearance is reached when air and swab/tape life samples collected indoors being quantitatively equal to or less than the outdoor sample, and qualitatively similar.

As a general rule acceptable clearance of a containment area is reached when the genus of fungi collected from indoor air using the (the Air-O-Cell™, Cyclex-d™ Cassette\*) are equal to or less than outdoor air. Marker spores such as Chaetomium or Stachybotrys (which are indicators of indoor mold grow) that are measured at more than 2 spores in the air test will result in the area not being cleared. Lower or higher levels of fungi indoors of different genera from outdoors can indicate contamination of interior substrates. Total average spore counts in the containment area should not exceed 2,000, and a single spore category should not exceed 1,000. In addition, the rank order and type of organism identified may indicate interior contamination and related need for additional action.

If the containment area has dust, debris, breached containment, lack of quality control related to remediation specifications the inspector will not conduct further clearance activities. The client will be informed of observed project deficit concerns for communication with the mold remediation contractor. In addition, if visible mold is present, a tape lift and swab sample is collected for lab analysis.

Clearance microbial sampling protocols and remediation specifications are based on numerous sources including: USEPA (2001), Mold Remediation in Schools and Commercial Buildings (EPA Pub. No. 402-K-01-001). Washington, D.C.: USEPA; New York City Department of Health (2000) Guidelines on Assessment and Remediation of Fungi in Indoor Environment, New York, NY; and the American Conference of Governmental Industrial Hygienists (1999). Bioaerosols: Assessment and Control. ISBN: 882417-29-1, Cincinnati, OH: ACGIH.

## Section 7.0 Photo Documentation

### 7.1 Job Site Photos from June 24, 2021



*Laundry Area in Garage*



*Laundry Area in Garage*



*Laundry Area in Garage*



*Laundry Area in Garage*



*Laundry Area in Garage*



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*Living Room*



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*Living Room*

## **Section 8.0 Mold Inspection Methodology**

### **8.1 General Methodology**

Mold Inspection Sciences Texas, Inc. performed an initial Mold Assessment at the subject property in accordance with generally accepted professional practices. A Mold Assessment normally includes the following:

- Visual inspection focused on the discovery of signs of mold growth and moisture intrusion
- Use of a moisture meter to help locate areas of actively wet building materials and to test suspect areas
- Collection of microbial samples requested by client and submission of samples to a qualified microbiology lab for analysis
- Provision of a written report of the mold inspection findings and, where applicable, a lab report of the sample analysis

### **8.2 Laboratory Services**

Microbial samples collected by MISTX are submitted under chain of custody to a Texas licensed laboratory. Fungal analysis Laboratories in Texas must be licensed by the Texas Department of Licensing and Regulation.

#### **8.2.1 Methodologies**

*Air Samples* – Air sampling for total fungi is designed to count and identify the presence of total fungal material (i.e. culturable and non-culturable spores) in a measured volume of air. The air samples are collected via the spore trap method with the use of a Zefon Air-O-Cell. Airflow through the cassette is produced by an electrically powered air-sampling device set and calibrated to a flow rate of 15 liters per minute. The sample cassettes are then sealed and submitted to the laboratory via a chain of custody for analysis.

*Surface Swab Samples* – Surface swab samples are collected using sterile swabs enclosed in sterile tubes which contain a transport media solution. These samples are collected by moistening the swab with the provided solution and then swabbing the suspect area. The swabs are then inserted into the sterile tubes, sealed, and submitted to the laboratory via a chain of custody for analysis.

*Surface Tape Samples*– Surface tape samples collected using a forensic tape lift kit. These samples are collected by pressing the tape media slide to the surface of a building material. The Bio-Tape slide is then sealed in its included case and submitted to the laboratory via a chain of custody for analysis.

### **8.3 Relative Humidity Readings**

Relative humidity (RH) readings were obtained from both the interior and exterior of the property. The RH was measured and recorded to determine the potential effect it may have on microbial amplification.



Guidance on RH in occupied buildings is provided by the American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE) in the ANSI/ASHRAE Standard 62.1-2016, *Ventilation for Acceptable Indoor Air Quality*. The RH in habitable spaces preferably should be maintained between 30% and 60% to minimize the growth of allergenic and pathogenic organisms (e.g., dust mites, fungi and associated mycotoxins).

#### 8.4 Moisture Content Readings

A moisture meter was utilized on this project to measure the moisture content (MC) of certain building materials (walls, ceilings, flooring, etc.) throughout the structure, especially areas suspect of water intrusion. Measurement and recording of MC is performed to detect building materials containing unacceptable levels of moisture (greater than 15% MC in wood) or elevated MC in other materials, relative to similar materials in undamaged areas of the structure.

NOTE: When a moisture meter is used in a non-penetrating manner, it is possible to obtain a reading of “Red” even if there is no excessive moisture. This can occur when there are certain types of materials below the surface being measured; such as metal. Moisture readings should be used as a guide for further testing and investigation.

#### 8.5 Infrared Camera Readings

Infrared cameras may be used to measure temperature anomalies in certain building materials (walls, ceilings, flooring, etc.), especially areas suspect of moisture or water intrusion. Thermography is used to assist in locating moisture issues.

#### 8.6 Limitations

MISTX has no knowledge of any hidden or unapparent or adverse environmental conditions of the property, including the presence of mold, hazardous wastes, toxic substances, etc. MISTX makes no guarantees or warranties, express or implied, regarding the condition of the property. This report is not an environmental assessment of the property.

This report and associated conclusions are based on the visible conditions of the inspected areas and materials. MISTX reserves the right to revise opinions and conclusions if necessary and warranted by the discovery of new or additional circumstances.

## Attachment 1: USEPA Table 2

<b>Table 2: Guidelines for Remediating Building Materials with Mold Growth Caused by Clean Water*</b>			
Material or Furnishing Affected	Cleanup Methods†	Personal Protective Equipment	Containment
<b>SMALL - Total Surface Area Affected Less Than 10 square feet (ft<sup>2</sup>)</b>			
Books and papers	3	Minimum  N-95 respirator, gloves, and goggles	None required
Carpet and backing	1, 3		
Concrete or cinder block	1, 3		
Hard surface, porous flooring (linoleum, ceramic)	1, 2, 3		
Non-porous, hard surfaces (plastics, metals)	1, 2, 3		
Upholstered furniture & drapes	1, 3		
Wallboard (drywall and gypsum board)	3		
Wood surfaces	1, 2, 3		
<b>MEDIUM - Total Surface Area Affected Between 10 and 100 (ft<sup>2</sup>)</b>			
Books and papers	3	Limited or Full  Use professional judgment, consider potential for remediator exposure and size of contaminated area	Limited  Use professional judgment, consider potential for remediator/occupant exposure and size of contaminated area
Carpet and backing	1,3,4		
Concrete or cinder block	1,3		
Hard surface, porous flooring (linoleum, ceramic tile, vinyl)	1,2,3		
Non-porous, hard surfaces (plastics, metals)	1,2,3		
Upholstered furniture & drapes	1,3,4		
Wallboard (drywall and gypsum board)	3,4		
Wood surfaces	1,2,3		
<b>LARGE - Total Surface Area Affected Greater Than 100 (ft<sup>2</sup>) or Potential for Increased Occupant or Remediator Exposure During Remediation Estimated to be Significant</b>			
Books and papers	3	Full  Use professional judgment, consider potential for remediator/occupant exposure and size of contaminated area	Full  Use professional judgment, consider potential for remediator exposure and size of contaminated area
Carpet and backing	1,3,4		
Concrete or cinder block	1,3		
Hard surface, porous flooring (linoleum, ceramic tile, vinyl)	1,2,3,4		
Non-porous, hard surfaces (plastics, metals)	1,2,3		
Upholstered furniture & drapes	1,2,4		
Wallboard (drywall and gypsum board)	3,4		
Wood surfaces	1,2,3,4		

\*Use professional judgment to determine prudent levels of Personal Protective Equipment and containment for each situation, particularly as the remediation site size increases and the potential for exposure and health effects rises. Assess the need for increased Personal Protective Equipment, if, during the remediation, more extensive contamination is encountered than was expected. These guidelines are for damage caused by clean water. If you know or suspect that the water source is contaminated with sewage, or chemical or biological pollutants, then the Occupational Safety and Health Administration (OSHA) requires PPE and containment. An experienced professional should be consulted if you and/or your remediator do not have expertise in remediating contaminated water situations.

†Select method most appropriate to situation. Since molds gradually destroy the things they grow on, if mold growth is not addressed promptly, some items may be damaged such that cleaning will not restore their original appearance. If mold growth is heavy and items are valuable or important, you may wish to consult a restoration/water damage/remediation expert. Please note that these are guidelines; other cleaning methods may be preferred by some professionals.

### Cleanup Methods

- **Method 1:** Wet vacuum (in the case of porous materials, some mold spores/fragments will remain in the material but will not grow if the material is completely dried). Steam cleaning may be an alternative for carpets and some upholstered furniture.
- **Method 2:** Damp-wipe surfaces with plain water or with water and detergent solution (except wood —use wood floor cleaner); scrub as needed.
- **Method 3:** High-efficiency particulate air (HEPA) vacuum after the material has been thoroughly dried. Dispose of the contents of the HEPA vacuum in well-sealed plastic bags.
- **Method 4:** Discard - remove water-damaged materials and seal in plastic bags while inside of containment, if present. Dispose of as normal waste. HEPA vacuum area after it is dried.

### Personal Protective Equipment (PPE)

- **Minimum:** Gloves, N-95 respirator, goggles/eye protection
- **Limited:** Gloves, N-95 respirator or half-face respirator with HEPA filter, disposable overalls, goggles/eye protection
- **Full:** Gloves, disposable full body clothing, head gear, foot coverings, full-face respirator with HEPA filter

### Containment

- **Limited:** Use polyethylene sheeting ceiling to floor around affected area with a slit entry and covering flap; maintain area under negative pressure with HEPA filtered fan unit. Block supply and return air vents within containment area.
- **Full:** Use two layers of fire-retardant polyethylene sheeting with one airlock chamber. Maintain area under negative pressure with HEPA filtered fan exhausted outside of building. Block supply and return air vents within containment area.