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# Mold Assessment Consultant MICHAEL CATALFUMO

License Number: MAC1451

The person named above is licensed by the Texas Department of Licensing and Regulation.

License Expires: October 12, 2019

Luis E. turning

Brian E. Francis Executive Director



# Texas Department of Insurance

Regulatory Policy Division - Property and Casualty Lines Office (104-PC) 333 Guadalupe, Austin, Texas 78701 ★ PO Box 149104, Austin, Texas 78714-9104 (512) 676-6710 | F: (512) 490-1014 | (800) 578-4677 | TDI.texas.gov | @TexasTDI

## CERTIFICATE OF MOLD DAMAGE REMEDIATION

| Certificate | Number       | NS1889  |                          | Date of Issuance          |                  | 10/10/20 | 19                 |  |
|-------------|--------------|---|--------------------------|---------------------------|------------------|----------|--------------------|--|
| Name_Ci     |              |   |                          |                           |                  |          |                    |  |
|             |              | 7 Tamarind Trail  |                          |                           |                  |          |                    |  |
|             |              |   | State                    | Texas                     |                  | Zip      | 77345              |  |
|             |              |   |                          |                           |                  |          |                    |  |
|             | Description: |   | T and d Tooli            |                           |                  |          |                    |  |
|             |              | Street  |                          |                           |                  |          | ock                |  |
| Addition o  | or Tract     | N/A   | City                     | Kingwood Count            |                  | ty       |                    |  |
|             |              | SIG   | IN APPROPRIATE C         | ERTIFICATION              |                  |          |                    |  |
| Mold As     | ssessment (  | Consultant License Ho   | older Certification      |                           |                  |          |                    |  |
|             | I herehv cer | tify that based on visua  | al procedural and analy  | utical evaluation, th     | ie mold conta    | mination | identified for     |  |
|             |              | has been remediated as  |                          |                           |                  |          |                    |  |
|             | this project | tify with reasonable cer<br>in the mold manageme<br>hat forms the basis for r | nt plan or remediation   | protocol have bee         | n remediated     | . А сору | of the written     |  |
|             |              |   |                          | N/A                       |                  |          | N/A                |  |
|             |              | sessment Consultant<br>e Holder Signature                                     |                          | rtment of Licensing and I | -                |          | Date               |  |
|             |              |   |                          |                           |                  |          |                    |  |
| Mold Re     | emediation   | Contractor License H  | lolder Certification     |                           |                  |          |                    |  |
|             |              |   |                          |                           | المام سمطة عادات |          | : cortificato      |  |
|             |              | tify that I completed mo<br>erty owner no later than                          |                          |                           |                  | remediad | ion certificate    |  |
|             |              |   |                          | N/A                       |                  |          | N/A                |  |
|             |              | mediation Contractor<br>e Holder Signature                                    | AL DEBARDOR SEC MARK CO. | tment of Licensing and I  | _                |          | Date of Completion |  |
|             |              |   | OR                       |                           |                  |          |                    |  |
| Mold A      | ssessment (  | Consultant or Adjusto   | or License Holder Cer    | tification                |                  |          |                    |  |
| l           |              | _   |                          |                           | a and that ha    | sad on m | v inspection I     |  |
|             |              | tify that I have inspecte<br>nined that the property                          |                          |                           |                  |          |                    |  |
|             |              | he basis for my certifica   |                          |                           |                  |          |                    |  |
|             |              | 7   |                          | MAC1451-10/19/20          | 19               |          | 10/10/2019         |  |
|             |              | n <del>ent</del> Consultant/Adjustor<br>e Holder Signature                    |                          | rtment of Licensing and I |                  |          | Date               |  |

Invoice: 1889100419JB7

Date: 10/09/2019

#### **NationSpec**

27818 Cold Spring Trace, Katy, TX 77494

Phone: (832) 699-3025

Fax:

Email: mikec@nationspec.com

# HOME INSPECTION INVOICE

| Payor                                 |  |
|---------------------------------------|--|
| Cindy Fox                             |  |
| Cindysfox@embarqmail.com              |  |
| (713) 303-8463<br>4507 tamarind trail |  |
| Kingwood, Texas 77345                 |  |
| Terms                                 |  |
| Due                                   |  |
| On Receipt                            |  |
| Client / Subject Property             |  |
| Cindy Fox                             |  |
| 4507 tamarind trail                   |  |
| Kingwood, TX 77345                    |  |

| Item                |                    | Amount   |
|---------------------|--------------------|--|
| Mold Inspection Fee |                    | \$525.00   |
|                     | Fees Subtotal:     | \$525.00   |
| Payments            |                    |  |
| 10/08/2019 Check    |                    | -\$525.00  |
|                     | Payments Subtotal: |  |
|                     |                    | المستوان والمراجعة والمراجعة والمستوان والمستو |

Total: \$0.00

Total Due: \$0.00

If you would like to make a payment for your inspection, please click the following link to pay online



Check (#) \$525.00 on 10/08/2019

#### **Eurofins EMLab P&K**

17461 Derian Ave, Suite 100, Irvine, CA 92614 (866) 888-6653 Fax (623) 780-7695 www.emlab.com

Client: NationSpec Home Inspection

C/O: Mike Catalfumo

Re: 4507 Tamarind Tr

Date of Receipt: 10-07-2019

Date of Report: 10-09-2019

### SPORE TRAP REPORT: NON-VIABLE METHODOLOGY

| Location:                      | 2915-3824:      |        |                   | 2915-3823: |            |           |  |
|--------------------------------|-----------------|--------|-------------------|------------|------------|-----------|--|
| C                              | Master Bed/Bath |        | Kitch/Living Room |            |            |           |  |
| Comments (see below)           | None            |        |                   |            | None       |           |  |
| Lab ID-Version‡:               | 10794781-1      |        |                   | 10794782-1 |            |           |  |
| Analysis Date:                 | 10/08/2019      |        |                   |            | 10/08/2019 | )         |  |
|                                | raw ct.         | % read | spores/m3         | raw ct.    | % read     | spores/m3 |  |
| Ascospores                     |                 |        |                   |            |            | •         |  |
| Basidiospores                  | 1               | 25     | 53                |            |            |           |  |
| Cercospora                     |                 |        |                   |            |            |           |  |
| Chaetomium                     |                 |        |                   |            |            |           |  |
| Cladosporium                   |                 |        |                   |            |            |           |  |
| Curvularia                     | 10              | 100    | 130               | 1          | 100        | 13        |  |
| Nigrospora                     |                 |        |                   |            |            |           |  |
| Other brown                    | 1               | 100    | 13                | 1          | 100        | 13        |  |
| Other colorless                |                 |        |                   |            |            |           |  |
| Penicillium/Aspergillus types† |                 |        |                   |            |            |           |  |
| Pithomyces                     |                 |        |                   |            |            |           |  |
| Rusts                          |                 |        |                   |            |            |           |  |
| Scopulariopsis                 |                 |        |                   | 1          | 25         | 53        |  |
| Smuts, Periconia, Myxomycetes  | 2               | 100    | 27                |            |            |           |  |
| Stachybotrys                   |                 |        |                   |            |            |           |  |
| Stemphylium                    |                 |        |                   |            |            |           |  |
| Tetraploa                      |                 |        |                   |            |            |           |  |
| Torula                         |                 |        |                   |            |            |           |  |
| Ulocladium                     |                 |        |                   | 1          | 100        | 13        |  |
| Zygomycetes                    |                 |        |                   |            |            |           |  |
| Background debris (1-4+)††     | 2+              |        |                   | 1+         |            |           |  |
| Hyphal fragments/m3            | 27              |        |                   | 53         |            |           |  |
| Pollen/m3                      | < 13            |        |                   | < 13       |            |           |  |
| Skin cells (1-4+)              | < 1+            |        |                   | < 1+       |            |           |  |
| Sample volume (liters)         | 75              |        |                   | 75         |            |           |  |
| § TOTAL SPORES/m3              |                 |        | 230               |            |            | 93        |  |

#### **Comments:**

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.

The analytical sensitivity is the spores/m<sup>3</sup> divided by the raw count, expressed in spores/m<sup>3</sup>. The limit of detection is the analytical sensitivity (in spores/m<sup>3</sup>) multiplied by the sample volume (in liters) divided by 1000 liters.

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

<sup>†</sup> 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.

<sup>††</sup>Background debris indicates the amount of non-biological particulate matter present on the trace (dust in the air) and the resulting visibility for the analyst. It is rated from 1+ (low) to 4+ (high). Counts from areas with 4+ background debris should be regarded as minimal counts and may be higher than reported. It is important to account for samples volumes when evaluating dust levels.

<sup>‡</sup> 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".

<sup>§</sup> Total Spores/m3 has been rounded to two significant figures to reflect analytical precision.



Report for:

Mike Catalfumo NationSpec Home Inspection 2900 Katy Hockley Cut Off Rd Suite A103 Katy, TX 77493

Regarding: Project: 4507 Tamarind Tr

EMĹ ID: 2269735

Approved by:

Danny Li

Dates of Analysis:

Spore trap analysis: 10-08-2019

Technical Manager

Service SOPs: Spore trap analysis (EM-MY-S-1038) AIHA-LAP, LLC accredited service, Lab ID #178697

All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. Due to the nature of the analyses performed, field blank correction of results is not applied. The results relate only to the samples as received. Sample air volume is supplied by the client.

Eurofins EMLab P&K ("the Company") shall have no liability to the client or the client's customer with respect to decisions or recommendations made, actions taken or courses of conduct implemented by either the client or the client's customer as a result of or based upon the Test Results. In no event shall the Company be liable to the client with respect to the Test Results except for the Company's own willful misconduct or gross negligence nor shall the Company be liable for incidental or consequential damages or lost profits or revenues to the fullest extent such liability may be disclaimed by law, even if the Company has been advised of the possibility of such damages, lost profits or lost revenues. In no event shall the Company's liability with respect to the Test Results exceed the amount paid to the Company by the client therefor.

Eurofins EMLab P&K's LabServe® reporting system includes automated fail-safes to ensure that all AIHA-LAP, LLC quality requirements are met and notifications are added to reports when any quality steps remain pending.

17461 Derian Ave, Suite 100, Irvine, CA 92614 (866) 888-6653 Fax (623) 780-7695 www.emlab.com

Client: NationSpec Home Inspection

C/O: Mike Catalfumo Date of Receipt: 10-07-2019 Re: 4507 Tamarind Tr Date of Report: 10-09-2019

#### SPORE TRAP REPORT: NON-VIABLE METHODOLOGY

| Location:                      | 2915-3999:           |            | 2915-3817:         |            |        |           |  |
|--------------------------------|----------------------|------------|--------------------|------------|--------|-----------|--|
| Comments (see below)           | Outside Control None |            | Front Left Hallway |            |        |           |  |
|                                |                      |            |                    | None       |        |           |  |
| Lab ID-Version‡:               |                      | 10794779-  |                    | 10794780-1 |        |           |  |
| Analysis Date:                 |                      | 10/08/2019 |                    | 10/08/2019 |        |           |  |
|                                | raw ct.              | % read     | spores/m3          | raw ct.    | % read | spores/m3 |  |
| Ascospores                     | 12                   | 25         | 640                |            |        |           |  |
| Basidiospores                  | 16                   | 25         | 850                |            |        |           |  |
| Cercospora                     | 2                    | 100        | 27                 |            |        |           |  |
| Chaetomium                     |                      |            |                    |            |        |           |  |
| Cladosporium                   | 21                   | 25         | 1,100              | 1          | 100    | 13        |  |
| Curvularia                     | 26                   | 100        | 350                | 10         | 100    | 130       |  |
| Nigrospora                     |                      |            |                    |            |        |           |  |
| Other brown                    | 6                    | 100        | 80                 |            |        |           |  |
| Other colorless                | 12                   | 100        | 160                |            |        |           |  |
| Penicillium/Aspergillus types† | 8                    | 25         | 430                |            |        |           |  |
| Pithomyces                     |                      |            |                    | 1          | 100    | 13        |  |
| Rusts                          |                      |            |                    |            |        | 15        |  |
| Scopulariopsis                 |                      |            |                    |            |        |           |  |
| Smuts, Periconia, Myxomycetes  | 12                   | 100        | 160                |            |        |           |  |
| Stachybotrys                   |                      |            |                    |            |        |           |  |
| Stemphylium                    |                      |            |                    |            |        |           |  |
| Tetraploa                      | 2                    | 100        | 27                 |            |        |           |  |
| Torula                         |                      |            |                    |            |        |           |  |
| Ulocladium                     | 1                    | 100        | 13                 |            |        |           |  |
| Zygomycetes                    |                      |            |                    |            |        |           |  |
| Background debris (1-4+)††     | 1+                   |            |                    | 1+         |        |           |  |
| Hyphal fragments/m3            | 27                   |            |                    | 27         |        |           |  |
| Pollen/m3                      | 27                   |            |                    | < 13       |        |           |  |
| Skin cells (1-4+)              | < 1+                 |            |                    | < 1+       |        |           |  |
| Sample volume (liters)         | 75                   |            |                    | 75         |        |           |  |
| § TOTAL SPORES/m3              |                      |            | 3,900              |            |        | 160       |  |

#### **Comments:**

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.

The analytical sensitivity is the spores/m<sup>3</sup> divided by the raw count, expressed in spores/m<sup>3</sup>. The limit of detection is the analytical sensitivity (in spores/m<sup>3</sup>) multiplied by the sample volume (in liters) divided by 1000 liters.

For more information regarding analytical sensitivity, please contact QA by calling the laboratory. ‡ 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/m3 has been rounded to two significant figures to reflect analytical precision.

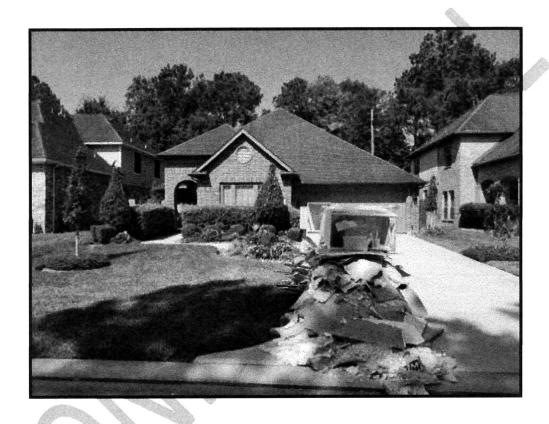
<sup>†</sup> The spores of Aspergillus and Penicillium (and others such as Acremonium, Paecilomyces) are small and round with very few distinguishing characteristics. They cannot be differentiated by non-viable sampling methods. Also, some species with very small spores are easily missed, and may be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

<sup>††</sup>Background debris indicates the amount of non-biological particulate matter present on the trace (dust in the air) and the resulting visibility for the analyst. It is rated from 1+ (low) to 4+ (high). Counts from areas with 4+ background debris should be regarded as minimal counts and may be higher than reported. It is important to account for samples volumes when evaluating dust levels.





Licensed Professional Inspector TREC 22337, 23360, 23043
Licensed Mold Assessment Consultant MAC 1451
Licensed Certified Applicator TDA 0786822, Licensed Termite Technician TDA 772239
Certified Professional Inspector NACHI17010333 - Certified Moisture Intrusion Inspector - Certified Commercial Inspector - Certified Owens Corning Roof Data Technician - Certified Pool/Spa Inspector
Certified Thermography Inspector



4507 tamarind trail, Kingwood, TX 77345
Inspection prepared for: Cindy Fox
Real Estate Agent: -

Date of Inspection: 10/4/2019 Time: 1:00 PM

Order ID: 1889

nspector: Michael Catalfumo

rec 22337

2900 Katy Hockley Cut Off Rd, A103, Katy, TX 77493

Phone: 832-699-3025 www.nationspec.com















#### Mold Scope:

Scope: The scope of the inspection is limited to the readily accessible areas of the property and is based on the condition of the property at the precise time and date of the inspection and on the laboratory analysis of the samples collected. Mold can exist in inaccessible areas such as behind walls and under carpeting. Furthermore, mold grows. As such, the report is not a guarantee that mold does or does not exist. The report is only indicative of the presence or absence of mold. As a courtesy the INSPECTION COMPANY may point out conditions that contribute to mold growth, but such comments are not part of the bargained for report.

#### Mold Information:

Common molds and their impact on health Molds or fungi can be found in at least small amounts almost anywhere due to their release of tiny spores. Spores can be hazardous to human health and, if inhaled, potentially cause allergic reactions, asthma symptoms in some people, or coughing, sniffling, and other cold-like symptoms. Health experts indicate that, depending on the type of mold present in a home, the amount and degree of exposure, and the health condition of the occupant, the health effects of mold can range from being insignificant to causing allergic reactions and illness.

Molds also release a mixture of various volatile chemicals into air that people breathe and that impact health. Pregnant women, infants, the elderly and those with health problems, such as respiratory disease or a weakened immune system, are more at risk when exposed to mold. Clinical manifestations range from harmless colonization to acute invasive disease. Predisposing factors include prolonged neutropenia, especially in leukemia or bone-marrow-transplant patients, corticosteroid therapy, cytotoxic chemotherapy, and AIDS. Species of mold can be difficult to identify. Mold comes in many colors and thousands of types; it can be black, white, red, orange, yellow, blue, or violet. It can be fuzzy or have no texture. Sometimes it looks like dirt or a stain. Also, different kinds of molds grow on different materials – some need a lot of moisture while some are happy with the trace amounts of moisture that are found within materials like wood.

#### What is Mold?

Mold is a fungus that thrives on moisture and poor ventilation. Molds are present everywhere - indoors and outdoors. In fact, there are more than 100,000 species of mold. They serve an important role by helping to break down organic matter. Outside, that's a good thing, but it's not good in your home. Molds are most likely to grow where there is water or dampness, such as in bathrooms and basements. They grow seeds, called "spores," that will float in the air like dust. Mold spores are in the air naturally and attach to any place that is damp, where they can begin growing immediately. These tiny spores cannot be seen without a microscope, but they can be breathed in. The spores, if inhaled, can trigger allergy and asthma symptoms in some people, or cause coughing, sniffling, and other cold-like symptoms.

There is no real standard that has been set that states what level of mold is 'safe' or can affect health. Every individual is different. Generally, however, there is consensus that, if you can see or smell mold, you should get rid of it. Mold is alive; it will grow and reproduce if it has what it needs – moisture and food. What it lives on is organic matter, so anything that comes from an organic source can feed mold: dust, dirt, paper, food, furniture, fabrics, carpets, drywall, and wood. Controlling the moisture and keeping your home dry is important in preventing mold growth. If you keep your home dry, mold is unlikely to grow.

If you keep your house cold, or can somehow starve the mold, it won't grow, but that won't kill the mold you already have. Mold spores will remain dormant, and when the conditions are right again, they'll start to grow. High moisture levels in your home can either come in from the outside such as through a foundation crack, flood or roof leak, or from inside from the people living in the home. In general, if you see condensation consistently on your windows, it is a sign of too much humidity in the home.

The amount of moisture is in the air can be measured. Humidity levels between 30 and 50 percent are ideal (relative humidity in the home should be under 45 percent in the winter or lower to avoid condensation on windows). Then, if necessary, you can use a dehumidifier to lower the relative humidity. If you do have a water leak from inside or outside, don't put off the repairs. A roof leak or foundation crack won't get any better the longer you wait, and the more moisture that gets into your home, the worse the problem will get. Moisture can become a real problem in your home when there is not enough ventilation to expel that moisture.

#### Interpretation of Results:

Direct surface samples may be acquired by swabbing a surface suspected of contamination, applying tape and lifting a sample, or analyzing a small piece of the surface material itself. These samples are then examined under a microscope. Some of mold types that may be found in direct samples produce spores that are so similar as to not be distinguishable by visual analysis alone and are therefore grouped together. Typically, the assessment of indoor air quality takes into account not only the analysis of the indoor air samples but also the comparison of these results to levels of fungi and other airborne matter in an outdoor baseline air sample. Spore count levels in indoor air samples generally should be lower than levels in outdoor air samples. Indoor spore counts that are lower that outdoor spore counts, however, do not automatically indicate that the indoor air quality is acceptable. Higher counts of individual types of spores or a higher count of the total spores in indoor samples may indicate mold growth inside buildings. The conclusion that indoor mold growth is occurring is strengthened further if mold spores' flowering bodies – called hyphae – also are identified in the indoor air sample.

- Penicillium/Aspergillus The most common mold species to show up in Indoor Air Samples. Most of the hundreds of subspecies are allergenic with only a few that are toxic. This group of species will grow with only the humidity in the air as its water source. An A/C failure will allow this mold to start growing on walls, furniture and clothing.
- Cladosporium The most common mold species and is considered to be an allergenic.
- Curvularia This is another common allergenic mold.
- Chaetomium This is a common water marker that usually indicates wet paper and/or drywall.
- Stachybotrys An excellent water marker and the most common toxic mold species. Stachybotrys Chartarum is the subspecies that's the subject of all the "60 Minutes" type news programs and all of the internet hype. Not all subspecies are toxic. These species need a direct water source to grow. This includes a window, roof or plumbing leak.
- Memnoniella A sister mold to Stachybotrys. The two species will grow together. It is also considered toxic.

#### **Mold Spore Level Guide**

For years there have been debates over how to set a standard for mold spore levels in homes. Because mold spore species and levels differ from state to state, no one has been able to agree. So a comparison to an outdoor air sample has been the rule of thumb. This is because you are letting mold spores into a home every time you open a door or window. It is not a perfect method and can lead to false positives. The following mold spore ranges are my opinion and are based on research and samples performed by me in the Houston metro area during a Mold Inspection. For this guide use the spore/m3 number and not the raw count for each species when you interpret an Air Sample Report from a Lab. There are exceptions at every level. False positives can be caused by a number of different issues. Normal life examples are dust and dirt on fan blades or other surfaces of the home, something in a garbage can or household pets that have been playing outside. When a general home or termite inspection is performed at the same time as the mold inspection it can inadvertently raise the spore counts. This can happen if an interior attic access is opened or the A/C filter is removed from the return before the air sample is performed.

**0-50 spores** - These are only trace levels and are <u>not</u> an issue. Even Stachybotrys is not considered an issue at these levels if the sample does not also contain water markers like Chaetomium and Fusarium or high levels of Penicillium/Aspergillus.

**50-200 spores** - These are still very low levels. The toxic mold species Stachybotrys and Memnoniella are just about the only species that are considered an issue at this level.

**200-500 spores** - Up to this point, the most common species (Penicillium/Aspergillus, Cladosporium and Curvularia) are still not an issue and are in the normal range.

**500-1000** spores - Sometimes the Penicillium/Aspergillus & Cladosporium levels are in this range and there is not an issue that needs to be remediated. If no water intrusion or mold issue is found during the inspection, these levels can be caused by normal life in an enclosed environment.

1000-2000 spores - This is where the grey area begins. When levels reach this point there may be an issue that needs to be addressed unless there is a corresponding number in the outdoor sample. If no water intrusion or mold issue is found during the inspection these levels can be achieved by a dusty home or A/C system.

**2000-5,000 spores** - Unless there is a corresponding number in the outdoor sample, this is the point were some remediation may be necessary. If a mold spore source has been identified, then clean up of that area is needed. If there was no water intrusion or mold issue found, the home may need to be cleaned and the duct system should be evaluated.

**5,000-15,000 spores** - Unless there is a corresponding number in the outdoor sample, a mold spore source has usually been identified and remediation of the area is needed. If there was no water intrusion or mold issue found, the duct system may need to be cleaned and/or a general "Spring Cleaning" of the home.

**15,000+ spores** - When spore levels are at this point, a mold issue will be easy to identify. Clean up will be required and should be performed by a Professional Mold Remediator.

#### **Moisture Information**

To be successful, moisture control does not require everything be kept completely dry. Moisture control is adequate as long as vulnerable materials are kept dry enough to avoid problems. That means the building must be designed, constructed and operated so that vulnerable materials do not get wet. It also means that when materials do get wet, the building needs to be managed in such a way that the damp materials dry out quickly.

In addition to causing health problems, moisture can damage building materials and components.

To diagnose or prevent a moisture problem, keep in mind four key elements of moisture behavior in buildings:

- 1. Typical symptoms of moisture problems. They include corrosion of metals, the growth of surface mold or wood-decaying molds, insect infestations, spalling exterior brick or concrete, peeling paint, failing floor adhesives, stained finishes and health symptoms.
- 2. Sources of moisture. Among them are rainwater, surface water, ground water, plumbing water, indoor and outdoor sources of humidity and sewer water.
- 3. Transport mechanisms. They include liquid water leaking through holes, wicking through porous materials, or running along the top or bottom of building assemblies and water vapor carried by warm, humid air leaking through assemblies and by diffusion through vapor-permeable materials.
- 4. Common failures of moisture control elements and systems. Moisture controls include site drainage, gutter systems, above- and below-grade drainage planes, effective flashing, condensate drainage and humidity controls. Failures can occur during any phase of a building's life and may include poor site selection or design, poor material or equipment selection, improper installation or sequence of building materials and equipment, insufficient coordination between trades during construction and insufficient or improper maintenance of materials or equipment.

#### **Recommendations:**

Industry best practices are always recommended after a moisture event and/or flood in the form of HEPA vacuuming the area, applying a proper anti-fungicide as approved by the EPA and applying an encapsulate or similar product approved for the type of application. Also be sure to have the HVAC system cleaned and replace filters with at filters that have a minimum of MERV 8 rating. Be sure to read and follow all instructions and wear proper safety gear (Nosh95 masks, goggles, gloves) and ventilate the area as indicated on the instructions. Informational only. Nationspec will not accept any liability for any damages arising from following this information.

#### Equipment:

Measurements used may be taken using the following: Buck Bioaire Spore Trap, Hygrometer, a Delmhorst BD2100 Moisture Meter and a FLIR Thermal Camera. Most equipment used for this evaluation is calibrated with NIST Certifications.

#### Mold Disclaimer:

INSPECTOR's liability arising for any damages allegedly arising out of any aspect of the mold testing and/or thermal imaging service shall be limited to the amount paid for the inspection. CLIENT voluntarily waives any claim for consequential, exemplary or incidental damages to the fullest extent allowed by law. The mold inspection and/or thermal imaging scan will be limited in scope to the equipment used by INSPECTOR. The inspection will be a non-destructive examination of the visible, safely and readily accessible portions of the interior and/or exterior of the structure for a typical temperature/thermal variations.

Limitation of Liability: It is understood the INSPECTION COMPANY and the laboratory are not insurers and that the inspection, laboratory analysis and report shall not be construed as a guarantee or warranty of any kind. The CLIENT agrees to hold the INSPECTION COMPANY and their respective officers, agents and employees harmless from and against any and all liabilities, demands, claims, and expenses incident thereto for injuries to persons and for loss of, damage to, destruction of property, cost of repairing or replacing, or consequential damage arising out of or in connection with this inspection. INSPECTION COMPANY'S liability arising for any damages allegedly arising out of any aspect of the mold testing and/or moisture and/or thermal imaging service shall be limited to the amount paid for the inspection. CLIENT voluntarily waives any claim for consequential, exemplary or incidental damages to the fullest extent allowed by law.

CLIENT IS HEREBY NOTIFIED THAT THE INSPECTOR HAS NOT MADE, DOES NOT MAKE, AND HEREBY DISCLAIMS ANY WARRANTIES OR GUARANTEES, EXPRESSED OR IMPLIED, REGARDING THE ADEQUACY, PERFORMANCE, OR CONDITION OF ANY STRUCTURE, ITEM, COMPONENT, OR SYSTEM INSPECTED, SPECIFICALLY INCLUDING (BUT NOT LIMITED TO), ANY IMPLIED WARRANTIES OF FITNESS, MERCHANTABILITY, HABITABILITY AND GOOD AND WORKMANLIKE CONDUCT. INSPECTION COMPANY shall not be held responsible or liable for any repairs or replacements with regard to the Property or the systems, components, or contents therein. The inspection is not intended or designed to be diagnostically and/or technically exhaustive, an inherent risk remains that undiscovered problems exist and/or future problems will develop.

INDEMNITY. CLIENT AGREES TO INDEMNIFY, DEFEND, AND HOLD HARMLESS INSPECTOR, ITS PARTNERS, OFFICERS, EMPLOYEES, ATTORNEYS, AND AGENTS, AND TO DEFEND ANY ACTION BROUGHT AGAINST ANY SUCH PARTIES, WITH RESPECT TO ANY AND ALL CLAIMS, DEMANDS, CAUSES OF ACTION, DEBTS OR LIABILITIES, INCLUDING REASONABLE ATTORNEYS' FEES, ARISING OUT OF OR RELATING TO THIS AGREEMENT, WHETHER OR NOT RESULTING FROM THE NEGLIGENCE OF ANY PARTY SO INDEMNIFIED, UNLESS CAUSED BY THE GROSSLY NEGLIGENT ACTIONS OR INTENTIONAL MISCONDUCT OF INSPECTOR.

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NO OTHER WARRANTIES OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO WARRANTIES REGARDING FUTURE USE, HABITABILITY, OPERABILITY, SUITABILITY, OR MERCHANTABILITY WITH RESPECT TO THE SUBJECT PROPERTY ARE PROVIDED. Moisture testing and/or thermal imaging services do NOT include any inspections, examinations, testing or evaluations for harmful, dangerous, or toxic substances or materials or environmental hazards including but not limited to: bio-aerosols, radon, lead, asbestos, contaminants, petroleum products, petrochemicals, radioactive materials, electromagnetic radiation, plant, animal, or insect secretions or excretions. If INSPECTOR offers any information or opinions about any of the forgoing, this information shall be deemed to be informational only and supplied as a courtesy to the CLIENT and shall not be deemed to be an amendment to this addendum or the inspection agreement. CLIENT agrees to indemnify and hold harmless INSPECTOR, its agents, employees, and inspectors for the presence of any harmful, dangerous, or toxic substances or materials or environmental hazards including but not limited to those listed in part 4 of this addendum as well as for any and all damages and liability for any mitigation, construction, or any other costs associated with the presence of any such hazards or substances or materials.

If CLIENT desires to obtain information regarding the presence of any harmful, dangerous, or toxic substances or materials or environmental hazards including but not limited to those listed in part 4 of this addendum, it is solely the responsibility of the CLIENT to contact and engage the services of qualified individuals or companies that specialize in the areas of specific interest or concern.

TAINTED, CORROSIVE DRYWALL. From approximately 1999 until today, some homes in Texas were reportedly built or renovated using tainted drywall imported from China ("Tainted, Corrosive Drywall"). Tainted, Corrosive Drywall may emit toxic levels of Hydrogen Sulfide (H2S), iron disulfide, strontium sulfide, carbon disulfide, carbonyl sulfide, formaldehyde, sulfur dioxide, and/or sulfur trioxide causing corrosion of copper and metal surfaces, including air conditioner coils, refrigerator coils, copper tubing, and electrical wiring, and it often creates noxious odors which may pose health risks. Tainted, Corrosive Drywall has most commonly been reported in houses built or renovated/remodeled after 2000 in 42 out of the nation's 50 states. Additional information concerning Tainted, Corrosive Drywall can be found at: http://www.cpsc.gov/info/drywall/index.html; http://www.constructionguru.com; and http://chinesedrywallcomplaintcenter.com.

# Report Summary

| Mold            |                                     |  |
|-----------------|-------------------------------------|--|
| Page 7 Item: 1  | Mold Inspection<br>Results          | 1.2. Mold sampled at the time and place of inspection was determined to be acceptable in the inspectors opinion.                       |
| Page 11 Item: 2 | Temp, Humidity,<br>Moisture Results | 2.3. Moisture content observed at time and place of inspection was considered acceptable for reconstruction in the inspectors opinion. |

# Mold

## 1. Mold Inspection Results

| Good | Fair | Poor | N/A | None |
|------|------|------|-----|------|
| X    |      |      |     |      |

Materials:

Air and/or swab samples were collected at 15LPM for 5 minutes for a total of 75L. Samples were analyzed at an independent laboratory and the results are attached to this report. These methods combined form the basis of the inspectors opinion at the time of inspection.

The inspector makes no guarantee against any unforeseen growth and/or future growth. Every attempt is made to provide a full inspection but at times there are restrictions beyond our control that include sealed walls, personal belongings and areas that are inaccessible.

Hyphal fragments – Hyphae are small fragments of the mycelium of a mold. Mycelium is a mass of hyphae; this is the vegetative body portion of the mold. It is common to find small number of hypha fragments in outdoor air and possibly in indoor dust. Their presence in indoor air samples in a high quantity or as large segments indicates active fungal growth in the building. If conditions are suitable, the hypha fragments begin to grow and eventually also lead to mold spore production.

Background Debris – Non-mold particulate matter, including dust and debris in the air from construction, insect and skin fragments, that is present in the sample is rated from 1-5 with 1 being very little, while a debris rating of 5 is unreadable. The higher the rating the more likelihood spores may be underestimated and overlap with background particulates.

Direct surface samples may be acquired by swabbing a surface suspected of contamination, applying tape and lifting a sample, or analyzing a small piece of the surface material itself. These samples are then examined under a microscope. Some of mold types that may be found in direct samples produce spores that are so similar as to not be distinguishable by visual analysis alone and are therefore grouped together; e.g., Aspergillus/Penicillium. Still other spore types lack identifiable characteristics and therefore are counted as part of a larger group, such as Ascospores and Basidiospores. Observations:

- 1.1. House flooded from the rear and sides. No flood water was observed in the front room, foyer, and garage bia the owner. No visible mold and/or smells at time of inspection. MC was within acceptable range
- 1.2. Mold sampled at the time and place of inspection was determined to be acceptable in the inspectors opinion.



Outside 75L control sample, 65% 90Ű



Foyer, no water observed



Front bedroom, no wate observed



Garage, no water observed



Laundry room



Front left hallway 75L sample, 58% 84°



Left middle bedroom



**Dining room** 



Hallway bathroom



Front left bedrooom



Left middle bedroom



Front left hallway



Front left hallway sample location



Front left bedroom



Middle hallway to living room



Living room



Living room into master bedroom



Master bedroom



Master bathroom



Living room



Master bedroom



Master bed/bath sample location



Master bathroom



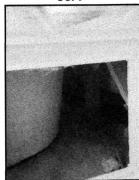
Living room



Master bedroom



Master bed/bath 75L sample, 61% 83°



Master bathroom under tub



Master bathroom



Master closet



Kitchen/living room sample location



Breakfast area



Master bathroom linen closet





Kitchen/living room, 60% 82°



**Pantry** 



Master bathroom



Master closet



Breakfast area



Kitchen



Kitchen



Kitchen



**Dining room** 



**Dining room** 

## 2. Temp, Humidity, Moisture Results

| Good | Fair | Poor | N/A | None |
|------|------|------|-----|------|
|      |      |      |     |      |
|      |      |      |     |      |

Materials:

A reading of 19% or more indicates excessive moisture and the possibility of structural damage; if not now, certainly over time. Wood materials won't start to rot until their moisture level reaches about 28%, but the decay process will continue until the material dries back down to 19% or less. If it never goes above 28% there may never be any damage. Observations:

- 2.1. Exterior RH: 65%
- 2.2. Exterior Temperature: 90°
- 2.3. Moisture content observed at time and place of inspection was considered acceptable for reconstruction in the inspectors opinion.



SE up high, 59% 80°



SE down low, 58% 81°



SW up high, 60% 81°



SW down low, 59% 81°



NW up high, 60% 80°



NE down low57% 82°



SE stud, 8.8%



SW up high, 59% 80°



NW down low, 58% 81°



NE up high, 58% 80°



SW sheathing, 10.1%



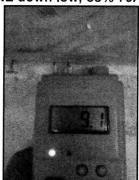
SW down low, 58% 80°



NE up high, 59% 81°



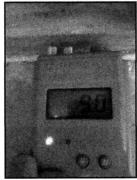
NE down low, 58% 79°



SW sole plate, 9.1%



SW stud, 8.3%



NW sole plate, 9.0%



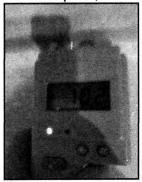
NESole plate, 8.3%



SW sole plate, 9.3%



NE sole plate, 8.2%



Kitchen sole plate, 10.2%



NW sole plate, 9.6%



NE stud, 8.1%



Middle hallway sole plate, 8.6%

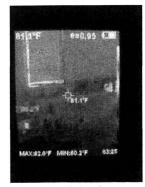
## 3. Results

| N/A | None |
|-----|------|
|     |      |
|     |      |

Materials:

The inspector may use Thermal Imaging to aid in the inspection process. Observations:

3.1. No anamolies observed in areas scanned at time of inspection.



Front left bedroom



Middle left bedroom



Middle hallway



Living room into master



Master bathroom



Master bedroom



Living room corner



Master bedroom



Dining room