



OHANA INSPECTIONS

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MOLD PROTOCOL LIVING ROOM / LAUNDRY ROOM

1234 Main St.
Coral Springs FL 33071

Buyer Name
12/11/2018 9:00AM



Inspector
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ALO

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1: CONTROL SAMPLE

Information

Sample Area 1: Outdoor Sample

Front of Home
Outdoors

Sample Area 1: Humidity

30 %

Sample Area 1: Temperature

60 Degrees Fahrenheit

Sample Area 1: Detection

Method

Via Olfactory Inspection, Infrared
Camera & Moisture Detection,
Psychrometer & Temperature
Meter, Battery Operated Bio-
Pump

2: SAMPLE AREA 1

Information

Sample Area 1: Location of Sample

Living Room



Sample Area 1: Humidity

45.6 %



Sample Area 1: Temperature

74.8 Degrees Fahrenheit

Sample Area 1: Detection Method

Via Olfactory Inspection, Infrared Camera & Moisture Detection, Psychrometer & Temperature Meter, Battery Operated Bio-Pump

Sample Area 1: Sample Media

Swab



Affected Area: Dry Standard

20 %



Affected Area: Moisture Readings

100 %

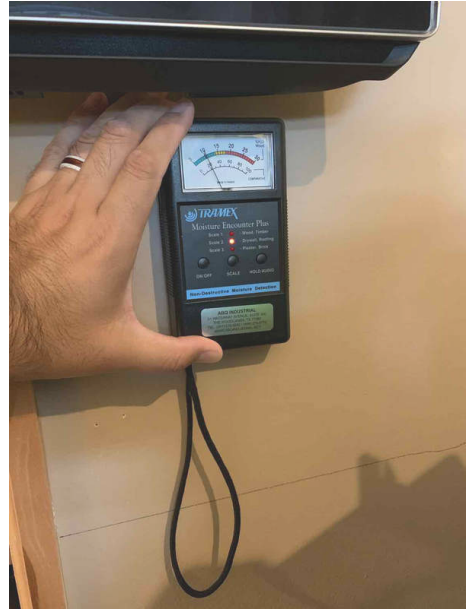


Affected Area: Removal Suggested

Yes

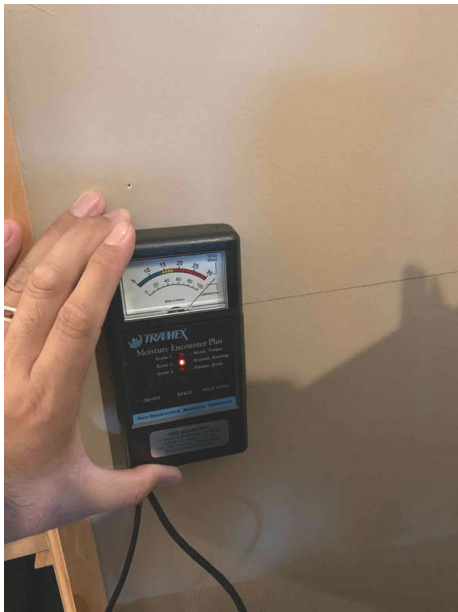
Affected Area 2: Dry Standard

20 %



Affected Area 2: Moisture Readings

100 %

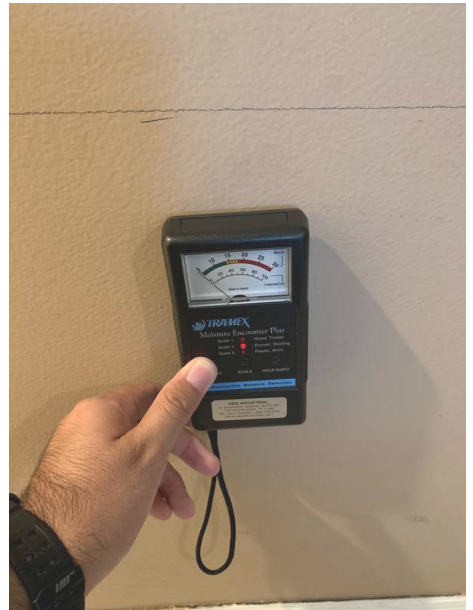


Affected Area 2: Removal Suggested

Yes

Affected Area 3: Dry Standard

0 %



Affected Area 3: Moisture Readings

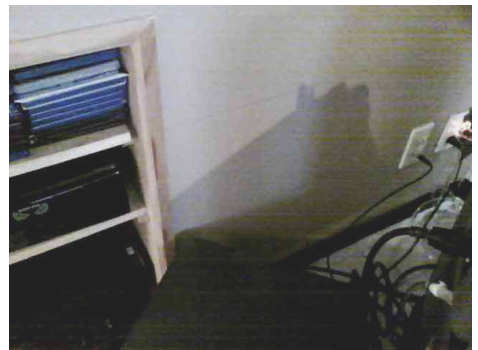
100 %

Affected Area 3: Removal Suggested

Yes



Sample Area 1: Thermal Images
Flir E6



Sample Area 1: Recommendations

Please refer standards of practice under Recommendations for Remediation for removal of affected materials and sanitization recommendations

Sample Area 1: Recommendations

Please refer to Standards of Practice under Recommendations for Remediation for content manipulation, containment, and drying equipment recommendations

Sample Area 1: Recommendations

- Observe the sub-floor and underlying building material for further damage and, with photographic proof, remove as needed.

Sample Area 1: Recommendations

- Remove the affected above mentioned area, continuing 2 ft. past any wetness, growth, or discoloration.



3: SAMPLE AREA 2

Information

Sample Area 2: Humidity

40.3 %



Sample Area 2: Temperature

81.3 Degrees Fahrenheit

Sample Area 2: Detection Method

Via Olfactory Inspection, Infrared Camera & Moisture Detection, Psychrometer & Temperature Meter, Battery Operated Bio-Pump

Sample Area 2: Sample Media

Swab



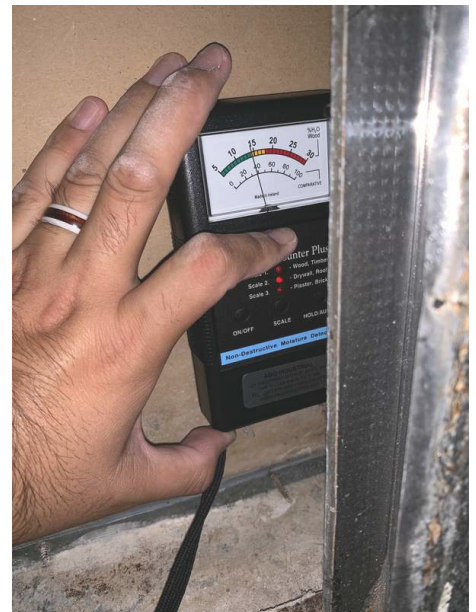
Affected Area: Dry Standard

0 %



Affected Area: Moisture Readings

50 %

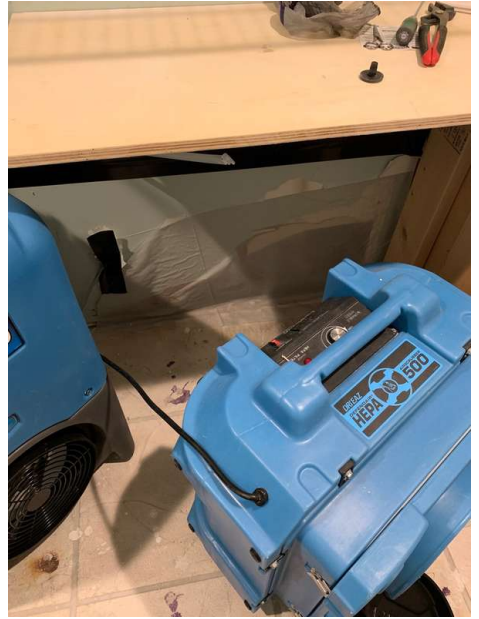


Affected Area: Removal Suggested

Yes

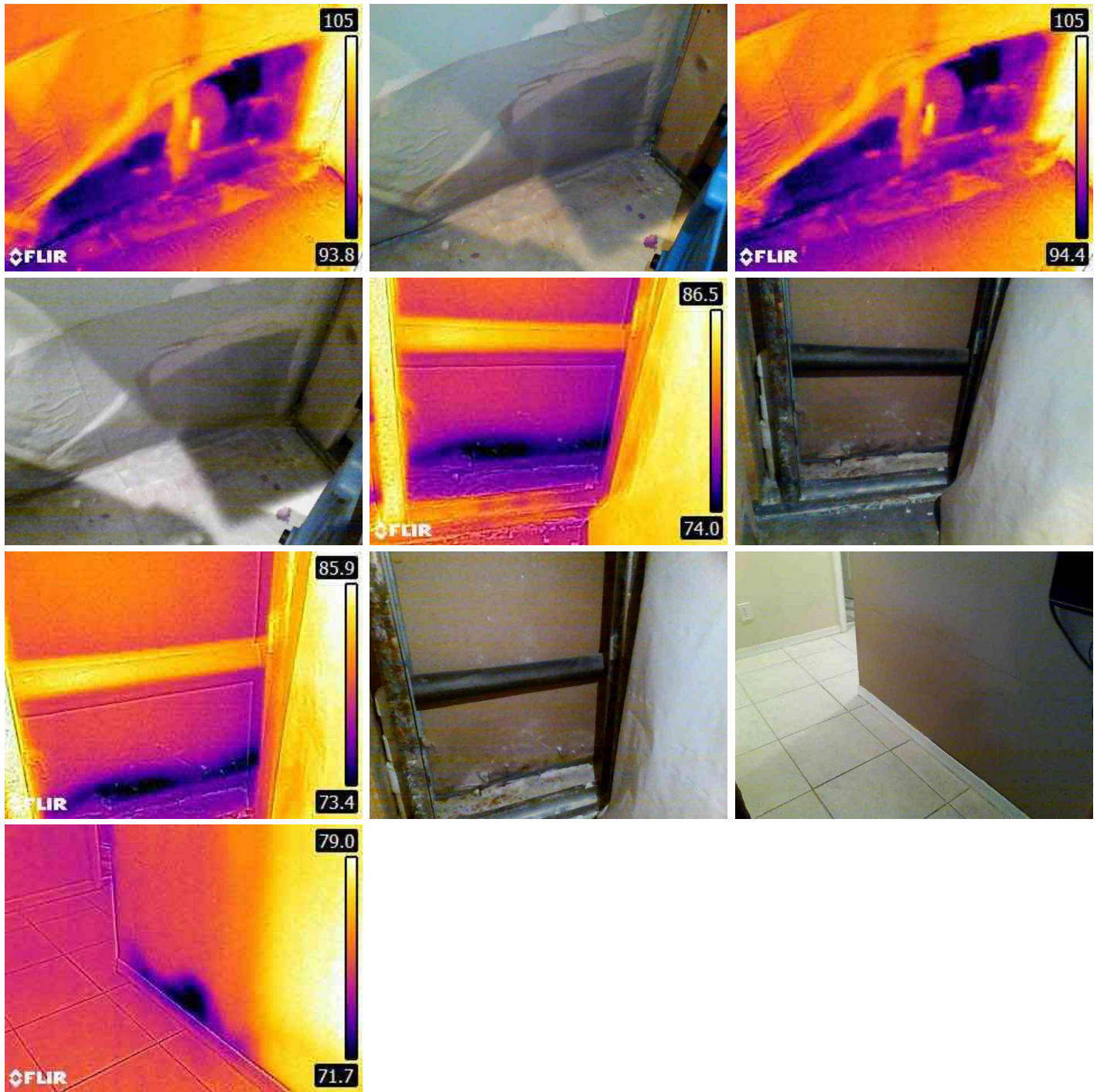
Yes

Sample Area 2: Location of Sample
Laundry Room



Sample Area 2: Thermal Images

Flir E6



Sample Area 2: Recommendations

Please refer standards of practice under Recommendations for Remediation for removal of affected materials and sanitization recommendations

Sample Area 2: Recommendations

Please refer to Standards of Practice under Recommendations for Remediation for content manipulation, containment, and drying equipment recommendations

Sample Area 2: Recommendations

- Observe the sub-floor and underlying building material for further damage and, with photographic proof, remove as needed.

4: LOSS

Information

Origin of Leak

According to the homeowner the loss occurred due to a plumbing leak. After performing a thermal scan of the property with a FLIR E-6, this theory was supported.

Affected Room

Living Room, Laundry Area

Water Intrusion Category

Category 3

According to the the standards of practice this loss is a:

Narrative

Narrative

According to the homeowner there was water intrusion due to a plumbing leak. All the affected areas had visible water damage and staining. At the time of inspection, active moisture was found. There were signs of visible growth. Swab samples were taken at above mentioned locations with signs of elevated mold spores present.

5: MOLD

Information

Mold Sampling Results

ANALYSIS METHOD	6210 Surface and Bulk Direct Examination	6210 Surface and Bulk Direct Examination
LOCATION	LIVING ROOM	LAUNDRY ROOM
COC / LINE #	1190267-1	1190267-2
SAMPLE TYPE & VOLUME	SWAB	SWAB
SERIAL NUMBER	#1	#2
COLLECTION DATE	Nov 27, 2018	Nov 27, 2018
ANALYSIS DATE	Nov 28, 2018	Nov 28, 2018
CONCLUSION	UNUSUAL	UNUSUAL
IDENTIFICATION	Mold Present	Mold Present
Stachybotrys	X	X
TOTAL SPORES	NA	NA
MINIMUM DETECTION LIMIT	NA	NA
BACKGROUND DEBRIS	Not Applicable	Not Applicable
OBSERVATIONS & COMMENTS	No presence of current or former growth observed. Only normally settled spores observed.	Presence of current or former growth observed.

Summary

Spores present of the following categories: Stachybotrys.

HVAC Sanitization

Professional cleaning of the air handler and ducts ARE NOT required

A licensed HVAC contractor should assess the condition of the air handler and ducts, following the National Air Duct Cleaners Association (NADCA) cleaning standard ACR 2013 Assessment, Cleaning, and Restoration 2013. The NADCA standard gives the contractor guidance as to what must be cleaned, how to clean or when to replace ducts.

6: INSPECTOR CREDENTIALS

Information

General: Mold Assessor License: **General: Home Inspector**

MRSA2953

License:

HI11023

STANDARDS OF PRACTICE

Control Sample

Any labs corresponding to the property above have been sent to Pro-Lab In Weston Florida.

By IICRC standards an Indoor Environmental Professional (IEP) is an individual who has been identified with the proper education, training, and experience. Oscar Lora is the representative for the company Ohana Inspections that has been outlined as the IEP for this property and has performed the onsite inspection and compiled the report prepared for the client listed above. Oscar Lora is a Florida Licensed Mold Assessor falling under the license number MRSA2953.

Oscar Lora inspected all affected areas visually, performed a scan of the room with an infrared camera, and backed up moisture levels with a penetrating and non-penetrating moisture meter. All photos of the affected areas are included in this report.

DISCLAIMER: Every effort to include a complete literature and peer review has been made to ensure the accuracy of the information provided within this document. However, Ohana Inspections does not warrant or make any representations as to the quality, content, accuracy, or completeness of this information. Such materials have been compiled from a variety of sources and are subject to change without notice. We currently do not test for mycotoxins or low-level VOCs.

Water Intrusion Category Determination:

According to the IICRC, which sets the standards for the cleaning industry and water damage restoration training, there are several different levels involved in liquid destruction. From the IICRCs-S500 standards, there are 3 categories which describe the type of liquid involved.

Category 1. Category 1 water originates from a sanitary water source and does not pose a substantial risk from dermal, ingestion, or inhalation exposure. Examples of Category 1 water sources can include but are not limited to broken water-supply lines; tub or sink overflows with no contaminants; appliance malfunctions involving water-supply lines; melting ice or snow; falling rainwater; broken toilet tanks, and toilet bowls that do not contain contaminants or additives. However, once clean water leaves the exit point, it may not remain clean once it contacts other surfaces or materials.

The cleanliness of Category 1 water may deteriorate to Category 2 or 3 for many reasons, including but not limited to: contact with building materials, systems, and contents; mixing with soils and other contaminants. Some factors which influence the potential organic and inorganic load in a structure include the age and history of the structure, previous water losses, general housekeeping, the type of use of the structure (e.g., nursing home, hospital, daycare, warehouse, veterinary clinic), and elapsed time or elevated temperature. Odors can indicate that Category 1 water has deteriorated.

Category 2. Category 2 water contains significant contamination and has the potential to cause discomfort or sickness if contacted or consumed by humans. Category 2 water can contain potentially unsafe levels of microorganisms or nutrients for microorganisms, as well as other organic or inorganic matter (chemical or biological). Examples of Category 2 water can include but are not limited to: discharge from dishwashers or washing machines; overflows from washing machines; overflows from toilet bowls on the room side of the trap with some urine but no feces; seepage due to hydrostatic pressure; broken aquariums and punctured water beds.

The cleanliness of Category 2 water can deteriorate for many reasons, including but not limited to: contact with building materials, systems, and contents; mixing with soils and other contaminants. Some factors that influence

the potential organic and inorganic load in a structure include the age and history of the structure, previous water losses, general housekeeping, the type of use of the structure, and elapsed time or elevated temperature.

Category 3. Category 3 water is grossly contaminated and can contain pathogenic, toxigenic, or other harmful agents. Examples of Category 3 water can include but are not limited to: sewage; toilet backflows that originate from beyond the toilet trap regardless of visible content or color; all forms of flooding from seawater; ground surface water and rising water from rivers or streams, and other contaminated water entering or affecting the indoor environment, such as wind-driven rain from hurricanes, tropical storms, or other weather-related events. Such water sources may carry silt, organic matter, pesticides, heavy metals, regulated materials, or toxic organic substances.

Recommendations for Remediation

We Recommend the Following (and Work Should Begin as Soon as Possible):

The removal of materials indicated should be the responsibility of persons trained in these matters, having a mold license and liability insurance.

Workers should comply with EPA, IICRC-S520, IICRC-S500, NIOSH, and OSHA guidelines regarding clothing, respirators, and remediation practices and principles.

It is recommended that any residence built before 1980 have the affected materials recommended for removal tested for lead and asbestos.

Contents:

All non-porous and semi-porous furnishings (wood, plastic, glass, etc.) inside the workspace should be cleaned and moved to conditioned storage outside or an unaffected area of the residence.

All porous materials (linens, clothes, fabrics, etc.) inside the containment should be laundered and moved to conditioned storage outside or an unaffected area of the residence.

Some items that fall into this category will not be able to be cleaned properly for reuse later and should be disposed of (fabric couches, wicker furnishings, mattresses, etc.). These items should be discussed with the remediation contractor to determine their abilities of cleaning.

Containment:

After all contents have been moved away from the workspace, the remediator should establish containment around the affected materials. Containment should be constructed of 6 mil fire retardant poly following the IICRC-S520 guidelines.

Seal off all HVAC vents inside the contained areas (supply and return).

Apply a negative pressure to the containment. How this negative pressure is achieved will be left up to the remediation contractor but should follow IICRC-S520 guidelines.

A minimum of 4 air exchanges per hour are recommended.

Drying Equipment:

Dehumidification equipment and Air Filtration Devices (AFDs), commonly known as air scrubbers, should be used while utilizing HEPA filtration. This is to help stabilize the contained work area environment.

Negative pressure is recommended using a lay-flat tube exhausting the work area air to the outside of the building envelope.

After the removal of the affected materials, negative pressure can be stopped, and the air filtration device with HEPA filtration can be used to further clean the contained work environment ambient air.

Removal of Affected Materials:

Remove and Discard:

Remove and discard any sheetrock with discoloration/growth/wetness or embedded microbial growth, continuing 2 ft. past any visual damage.

Remove and discard water-damaged and/or affected porous floorings, such as carpet, laminate, and wood, 2 ft. beyond visible water damage.

Observe the underlying materials, such as insulation, trusses, studs, etc., and remove materials as necessary.

It is recommended to remove any water-damaged framework. If it is decided not to be removed, then it should be wire-brushed or sanded to remove the wood grain discoloration and/or microbial growth, sanitized, allowed to dry completely, and then sealed with a clear encapsulant.

All removed damaged materials should be bagged inside the containment before being removed outside the containment.

It should also be noted that during the remediation process, additional areas of growth may be discovered and should be addressed. Addendums to this protocol will be written if deemed necessary.

Sanitization:

After the removal of the affected materials, sanitize the work area:

HEPA-vacuum the entire work area.

Fog all open spaces with an anti-microbial solution.

Damp-wipe all vertical and horizontal surfaces with an anti-microbial solution.

HEPA-vacuum the entire work area after the fogging and damp wipe-down.

Before taking down containment and starting reconstruction, have a licensed mold assessment company perform secondary microbial testing to ensure the remediation has been a success.

Post-Remediation Verification (PRV) Criteria:

The PRV will consist of visual, olfactory, and additional samples that were part of the initial assessment by a licensed mold assessor. If the PRV is successful, the licensed mold assessor will issue a PRV certificate to the remediator indicating no additional action is needed by remediator.

Psychrometrics or Psychrometry:

Although the principles of psychrometry apply to any physical system consisting of gas-vapor mixtures, the most common system of interest is the mixture of water vapor and air, because of its application in heating, ventilating, and air-conditioning and meteorology. In human terms, our thermal comfort is in large part a consequence of not just the temperature of the surrounding air, but (because we cool ourselves via perspiration) the extent to which that air is saturated with water vapor.

Many substances are hygroscopic, meaning they attract water, usually in proportion to the relative humidity or above a critical relative humidity. Such substances include cotton, paper, cellulose, other wood products, gypsum products, and many other building materials. In industrial drying applications, such as drying paper, manufacturers usually try to achieve an optimum between low relative humidity, which increases the drying rate, and energy usage, which decreases as exhaust relative humidity increases. In many industrial applications, it is important to avoid condensation that would ruin product or cause corrosion.

Molds and fungi can be controlled by keeping relative humidity low. Wood destroying fungi generally do not grow at relative humidity below 60%.

Here are the items in the psychrometry that we monitor during our investigations. Each of these items can play a significant role in mold growth and the prevention thereof. In many cases, these readings will also allow us to determine if the HVAC systems are working properly and sized correctly.

Relative Humidity: The ratio of the vapor pressure of moisture in the sample to the saturation pressure at the dry-bulb temperature of the sample.

Temperature or Dry-Bulb Temperature: The dry-bulb temperature is the temperature indicated by a thermometer exposed to the air in a place sheltered from direct solar radiation. The term dry-bulb is customarily added to temperature to distinguish it from wet-bulb and dewpoint temperature. In meteorology and psychrometrics, the word temperature by itself without a prefix usually means dry-bulb temperature. Technically, the temperature registered by the dry-bulb thermometer of a psychrometer. The name implies that the sensing bulb or element is dry.

Many Organizations Suggest the Following Interpretation:

The American Conference of Government Industrial Hygienists suggests an average range of 50 to 500 spores per cubic meter inside, with similar distribution outside. Canadian Guidelines suggest an upper limit of 500 spores per cubic meter. The California Healthy Buildings study suggests an average range of 100 to 1,000 spores per cubic meter.

Our interpretation is based on a combination of all the above suggestions in that while no one accepted guideline is available, common sense dictates that spore levels inside should be as low as possible, but in either case, based on experience. We believe that a combined total of each inside sample should be less than 1,000 spores per m³.

Direct Examination (Swab/Tape)

A direct exam allows for the rapid determination of the presence of fungal spores as well as identifies the types of fungi.

Direct sampling may reveal indoor reservoirs of spores that have not yet become airborne.

The lab reports tell the type present, and how much, by the description of:

High, medium, low, and rare where:

Rare = some background present

Low = 11 to 100 spores per sq. in.

Medium = 101 to 1,000 spores per sq. in.

High = over 1,000 spores per sq. in.

Sampling for Biological Materials:

The goal of biological sampling is to help determine whether the biological particles present in a particular environment are affecting or causing irritation in certain individuals. Sampling is also used to locate the sources of indoor microorganisms and facilitate effective remediation. While we are typically surrounded by a wide variety of different microorganisms every day, sampling provides us with a method to establish scientifically whether the environment in question contains more organisms than would normally be present.

Currently, there are no widely accepted protocols or regulations regarding biological air sampling. In the absence of standards, we believe that common sense should prevail. We know that some bacterial and fungal spores can cause disease only when they are alive (viable), while others are capable of producing allergies or irritation even when no longer living. Also, while cultures may permit greater accuracy in speciation some fungal organisms present, spores vary widely in their ability to grow and compete on laboratory media. This may result in an inaccurate characterization of the area sampled. Therefore, a complete sampling protocol for the biological flora in any environment uses both a culturable and nonculturable sampling method. There are times when this is not possible due to time and budget constraints. In these cases, we currently believe that a non-culturable spore trap sample provides a more accurate "snapshot" of the air and is usually the best choice when only one sampling method can be used. Nonculturable spore trap samplers draw measured volumes of air through the sampling device for a specified length of time. The collection surface is a coated glass slide. Particles in the air (spores, dust, etc.) impact onto the sticky surface and are "trapped" for later analysis. The primary advantage of the Air-O-Cell is their relatively low cost and small size (easy to transport, useful in small spaces). All of these devices have excellent aerodynamic characteristics and are very effective in monitoring airborne particles and organisms.

Air samples are typically evaluated using the fungal type identified and by comparing indoor and outdoor concentrations, compliant to non-compliant areas, or areas of concern to areas of non-concern. In general, the levels and types of fungi in the indoor (in non-problem buildings) should be similar to or lower than those found in the outdoor air.

Higher levels of spores found inside may indicate that moisture sources and resultant fungal growth are present. Spore count results are influenced by geographical location, seasonal and diurnal variation, and biotic/abiotic outside conditions. For example, rain or wind can affect the outdoor spore count concentration.

Disclosure of Limitation

This report represents the professional opinion of the licensed mold assessor and/or certified field technician of Ohana Inspections at the time of the visual survey and is furnished as an aid to the mold remediation and/or water mitigation for the affected areas assessed only. This report addresses only the areas assessed. Those areas not assessed will need a secondary visit and/or addendum for further damage found.

This report is not intended to be used as a definitive scope of work for construction estimates. It is highly recommended that the contractor performing the work do their individual site visit to determine their costs and scope of work.

Neither the licensed mold assessor and/or certified technician nor Ohana Inspections will guaranty or offer any guaranty of the indicated defects and will not be responsible for the hidden defects which could not be detected at the time the visual survey was performed. The physical, visual survey intended was to identify water damage and/or microbial growth that is affecting the building envelope.

Other restrictive conditions that may apply:

The components and/or appliances that were not checked will not be part of the report.

The structural elements demand an explorative inspection, if required.

Geotechnical tests are the competence of a Geotechnical Specialist and, therefore, is not included as part of this report.

Any asbestos cement and/or lead-based paint material presence can only be handled by a State Certified Technician.

Any fluoromethane leak presence can only be handled by a Certified Refrigeration Technician.

Any adverse situation regarding the plumbing system can only be handled by a Master Plumber or the construction inspector.

Any pest control condition is the responsibility of a professional exterminator.

The negative external effects on the structure that are not inside the property limit are considered existent and incurable.

All existing functional obsolescence will be evaluated by the party in competence according to actual construction costs for all deficiencies and demolition costs for all excess.

Neither the Licensed Mold Assessor nor Ohana Inspections will use any invasive tool if otherwise stated in the scope of work.

Neither the Licensed Mold Assessor nor Ohana Inspections will be responsible for any defects, losses, conditions, problems, damage, or any other adverse situation that would have come up after the visual survey was performed.

Neither the Licensed Mold Assessor nor Ohana Inspections will be responsible for any appliance or any other component malfunction of the mechanical or electrical system, or any other accessory.

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Ohana Inspections assumes no liability for the misuse of this information by others. The observations, comments, conclusions, analysis, and opinions expressed herein are based upon the results and interpretations of the visual survey, testing and/or data collection activities performed at the time of the visual survey, and the best information provided to us at the time of this documents preparation. Ohana Inspections reserves the right to amplify the observations, comments and/or the recommendations to this report should conditions change, or additional information become available.

Loss

Indoor Environmental Professional (IEP) skills include performing an assessment of the contaminated property, systems, and contents, creating a sample strategy, sampling the indoor environment, interpreting laboratory data and, if necessary, confirming Category 1, 2, or 3 water by IICRC-S500 standards for the purpose of establishing a scope of work and verifying the return of the environment to an acceptable or otherwise non-contaminated status. Below each of these sections is established and elaborated on by the IEP appointed by Air Quality Assessors of Florida.