

MOLD REPORT



**20 Park Place
Plainsboro, NJ**

**PREPARED BY
LHI ANALYTICAL**



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James Smith
20 Main Street
Princeton, NJ 08540

Report: 0006645

Re: 20 Park Place, Plainsboro, NJ

Dear James Smith;

The following mold assessment is based on findings of the physical inspection and testing on . Findings are current and accurate for the date and time they were found, but do not reflect expected or predictable mold growth and infestation on and within the property. This report addresses only those areas physically inspected and sampled. The Inspector is not responsible or liable for the non-discovery of any water damage, water problems, mold contamination, or other conditions of the Subject Property which may occur or may become evident after the inspection and testing time and date. Inspector is neither an insurer nor guarantor against water problems, mold problems or other defects in the Subject Property and improvements, systems or components inspected. Inspector makes no warranty, expressed or implied as to the fitness for use of condition of the systems or components inspected. Inspector assumes no responsibility for the cost of repairing any water problems, mold problems or any other defects or conditions. Inspector is not responsible or liable for any future water problems, mold problems or any other future failures or repairs. Remediation recommendations are suggested guidelines, not a detailed remediation protocol. More or less actions may be necessary and will be determined by the remediation company chosen by the property owners or other responsible party. Please see a copy of a Mold Inspection and Testing Agreement on our website.

The inspection report is completed the same day as the inspection but if samples are taken at the site lab results can take up to a week to be completed. If a radon test was requested, the results will follow after the exposure time of at least 48 hours. If you have not ordered a radon test, we strongly recommend testing because radon gas is a serious health risk.

Please refer to the inspection limitations for what an inspection does or does not cover. This inspection is based on a visual inspection of accessible areas of the property that can be accessed without damage to adjacent areas, for example painted-shut access panels or hidden by furnishings and stored items.

This inspection report and any verbal information given during the inspection and, at any time subsequent to the inspection is **CONFIDENTIAL** and is for the sole use of the client. This report is not transferable or assignable to any third party.

Please contact our office with any questions.



Craig Lewis
LEWIS HOME INSPECTION INC.
CERTIFIED MEMBER ASHI #4479
License # 24GI00019400

XC:



REPORT OVERVIEW

Executive Summary:

EXTERIOR MOLD INSPECTION

EXTERIOR INSPECTION

WINDOWS:

The inspector observed evidence of moisture intrusion under windows in the form of elevated moisture or moisture damage on the walls under windows, or in the form of defective caulking on the exterior side of windows. Windows above eye level are not typically readily accessible for inspection.

Details of findings are as follows:

Have all window frames and window caulking areas caulked, do not miss screws hidden under window screens and window shutter bolts around windows, window leaks are a very common cause of mold problems.

Wall penetrations such as pipes, bolts, screws, wires, wire conduits, electrical boxes, and anything else that penetrate exterior walls should also be caulked. Have all expansion joints, flashings, decorative trim, stucco cracks, and other exterior components that may now or may in the future leak caulked.

Work should be done properly and professionally to deter leaks. Often people look to companies that specialize in professional painting and water proofing to provide such services.

INTERIOR MOLD INSPECTION

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ODORS

Mold odors were in the following area(s): Bathroom and front bedroom.

Mold odor detection is an important part of any mold investigation because it lets us know that mold is present even if it cannot be visually detected and even when spore levels are low.

Even in the absence of excess mold spores mold odors can sometimes result in health complaints.

CAUSES AND ORIGINS

Water was observed to leak from the water supply line behind the toilet.

Indoor humidity at the area and time of testing was: 50 %RH, at 70 F this was too high.

Outdoor humidity was: 30 %RH at 75 F

Your humidity levels were high and measurements should be taken to lower the humidity levels because high humidity can cause mold and dust mite problems. According to the U.S. Environmental Protection Agency guide entitled Mold Remediation in Schools and Commercial Buildings, indoor humidity should be maintained below 60% relative humidity ideally 30-50% RH, if possible. Any and all conditions resulting in humidity problems must be properly repaired prior to remediation.

Humidity is simply a measurement of the amount of moisture in air compared to the maximum amount of moisture that same air could hold at a given temperature and pressure, example: If your humidity is 60%RH it is about 60% full in regards to the amount of moisture it can hold, levels above 60% can support mold growth or dust mite growth, and you might experience condensation problems on cold surfaces such as AC registers.

OTHER SUGGESTIONS:

The following is a list of items that require monitoring. This list may contain items which were previous problems in the home or a list of older systems that are at or exceed the normal life expectancy. This section is to be used as a guide **only**, money should be budgeted for near future replacement of older systems.

REMEDIATION

INTERIOR INSPECTION MOLD REMEDIATION SECTION:

MOISTURE CONTROL

MOISTURE REMOVAL

Extremely important: CORRECT ALL MOISTURE INTRUSION AND HUMIDITY PROBLEMS SEE ALL BLUE TEXT IN ALL SECTIONS OF REPORT FOR INFORMATION ON MOISTURE OR HUMIDITY CONDITIONS IN NEED OF REPAIR. THIS PROTOCOL AND THE RECOMMENDED GUIDELINES ARE MINIMUM REQUIREMENTS AND CAN BE SURPASSES WHEN NECESSARY TO PROPERLY COMPLETE A JOB.

Prior to any remediation, always correct all conditions that have contributed to excess moisture or humidity at the property. Extract any excess water from the property, and remove excess humidity with a professional dehumidifier. Humidity must be maintained between 30% and 50% in the work area. Your inspector is not responsible for mold that returns after remediation due your failure to have any and all required humidity and moisture repairs completed.

SPECIFIC MOLD REMOVAL RECOMMENDATIONS

Professional mold remediators must dispose of, or HEPA vac, or wipe with fungicide every surface inside your entire property including but not limited to any furniture, cabinets, and personal belongings if present at the property.

All wall, ceiling, and floor, must be fungicide wiped or HEPA vacuumed.

Laundry or dispose of any clothes and other textile items if present at the property.

Replace any carpets and carpet paddings.

Utilize through air scrubbing and dehumidification to remove spores and humidity from the air.

Clean the interior of the AC unit and ducts in accordance with NADCA standards. This mold is almost invisible in front of your face, thus do not expect the AC service person to see much in the ducts or AC unit but it will likely exist and should be cleaned.

REMOVE MOLDY MATERIALS SUCH AS THE MOLDY DRYWALL IN THE BOTTOM OF THE AC / WATER HEATER CLOSET. SEE ALL RED TEXT IN ALL SECTIONS OF REPORT FOR DETAILS OF WHAT NEEDS TO BE REMOVED AND FROM WHERE IT MUST BE REMOVED. FOLLOW THIS PROTOCOL AND FOLLOW EPA GUIDELINES OR NEW YORK STATE DEPT OF HEALTH GUIDELINES OR IICRC GUIDELINES WHEN REMOVING MOLD. FOLLOW NADCA STANDARDS FOR CLEANING AC SYSTEMS OR COMPONENTS. THIS PROTOCOL AND THE RECOMMENDED GUIDELINES ARE MINIMUM REQUIREMENTS AND CAN BE SURPASSES WHEN NECESSARY TO PROPERLY COMPLETE A JOB.

Unless otherwise stated in this protocol you must remove or cover all items in the work area after they have been properly cleaned of all contamination. Use negative pressure and containment in the work area and when done hepa vac or fungicide wipe all surfaces in the work area. Remove all visibly moldy materials, such as any insulation encountered. Remove at least 2 feet of material in each direction around the visible contamination. If mold is encountered behind any vapor barriers, remove, clean behind, and properly replace the vapor barrier so that the replacement barriers will keep moisture out. All heavily and even slightly visibly contaminated moldy porous surfaces require removal. Do not leave openings in walls, ceilings, floors, or other building components that can served as cross contamination pathways. Do not leave openings that can result in the entrance of humidity or other outdoor elements into the containment area from outdoors or to the interior from the crawl space. Double bag moldy debris, or wrap moldy debris in sheets of 6 mil plastic. Tape shut then, hepa vac or wet wipe exterior of bags, and dispose as normal waste unless prohibited by local regulations.

*ADDITIONAL MOLD REMOVAL RECOMMENDATIONS***INSPECTION FOR PREVIOUSLY HIDDEN MOLD**

Once the wall board or other moldy material is removed, the exposed areas must be inspected for mold growth on previously hidden surfaces, such as wall studs, pipes, conduits, and wall board materials which are located behind the studs. Any previously hidden mold now exposed must also be removed while retaining building structural integrity, enclosure integrity, and negative pressure. Upon removal, moldy materials are to be double bagged, sealed with tape, removed from the property and disposed of.

CLEANING OF COMPONENTS INSIDE THE WALL CAVITY

Non-removable, contaminated wooden materials (such as studs inside walls) must be sanded down at least 1/16th of an inch to remove mold prior to fungicidal treatment. Contaminated metal studs must be cleaned with a detergent solution and treated with fungicide. If it is not possible to clean and disinfect the structural item, then it must be removed, disposed of and replaced. Structural supporting members may need the consultation of a structural engineer prior to removal and replacement. Sand or wipe away mold from the top, bottom, front, back, and sides of items. Don't forget mold in tight crevices. The above approach to covering all surfaces must also be utilized when applying fungicide.

SITE INFORMATION

AND OTHER SITE INFORMATION:

REPORT NUMBER:

0006645.

INSPECTION DATE:

10/24/10.

CLIENT NAME:

James Smith.

INSPECTION SITE STREET**ADDRESS:**

20 Park Place.

CITY/STATE/ZIP:

Plainsboro, NJ.

CLIENTS MAILING ADDRESS:

20 Main Street Princeton NJ 08540.

CLIENTS E-MAIL ADDRESS:James@yahoo.com.**CLIENT PHONE NUMBER:**

GOALS

AND INTERVIEWS

INSPECTION TYPE AND GOALS

It was explained to the client prior to the inspection that likely undisclosed leaks and possible undisclosed mold conditions, and recent painting of walls may have resulted in hidden mold and moisture damage. It was explained that because of likely hidden mold and a lack of interview information regarding moisture leak history at the property, combined with no permission to open wall, much of the properties mold may remain hidden even if an inspection is conducted and ever after remediation is conducted. It was explained that hidden mold problems may always be a problem at this property when it is purchases because the mold may be so well hidden.

HEALTH CONCERNS

The client reported exposure to mold or mold odors when in the property. Exposure to mold or mold odor has been shown to result in upper respiratory conditions and other allergy or asthma like conditions in some persons.

THE FOLLOWING IS JUST GENERAL INFORMATION ON SOME HEALTH PROBLEMS THAT HAVE BEEN ATTRIBUTED TO MOLD ESXPOSURE.

ALLERGY AND ASTHMA

If you have allergy or asthma it is very common for mold spores or mold odor to cause allergy or asthma reactions. Such conditions are by far the most common health problems encountered by persons living or working in moldy environments.

ODORS

According to the EPA "some compounds produced by molds are volatile and are released directly into the air. These are known as microbial volatile organic compounds (mVOCs). Because these compounds often have strong and/or unpleasant odors, they can be the source of odors associated with molds. Exposure to mVOCs from molds has been linked to symptoms such as headaches, nasal irritation, dizziness, fatigue, and nausea. Research on MVOCs is still in the early phase." <http://www.epa.gov/mold/append_b.html>

In addition a well respected 2004 study titled Damp Indoor Spaces and Health was conducted by the Institute of Medicine.

It concluded that mold odors and damp indoor surroundings are associated with upper respiratory health complaints even in the absence of excessive spores.

http://books.nap.edu/openbook.php?record_id=11011&page=8

In another study researchers concluded that children who grew up in homes with mold odor were twice as likely to develop asthma later in life. Home Dampness and Molds, Parental Atopy, and Asthma in Childhood: a Six-year Population-based Cohort Study. Environmental Health Perspectives Volume 113, Number 3, March 2005.

<http://ehp.niehs.nih.gov/cgi-bin/findtoc.pl>

The above statement means that mold odors alone appear to be capable of causing common allergy like health complaints. The above scientific information regarding to the effects of mold odor exposure can be easily verified, and the importance of such information should not be ignored.

INFECTION

Sinus infection is common and about 94% of the time starts as a fungal infection of the sinus areas according to a 1999 Mayo Clinic study.

If you have cancer and are undergoing chemotherapy, are taking high doses of steroid medications, have lungs damaged by previous TB infections, or have a weakened immune system, you may be more likely to develop a more rare condition known as Aspergillosis which is the non invasive growth of aspergillus fungus balls in the lungs. Pen asp mold also causes other infections but these are even less common than the above mentioned rare condition known as aspergillosis.

Many other fungi can cause numerous types of infections but fungal infections are very rare and typically effect persons with immune system problems.

If your doctor feels that you are more prone to infection then you should discuss with your doctor not staying at the property.

Hypersensitivity pneumonitis (also called **extrinsic allergic alveolitis**, EAA) is an inflammation of the alveoli within the lungs caused by hypersensitivity to inhaled organic dusts. Sufferers are commonly exposed to the dust by their occupation or hobbies.

http://en.wikipedia.org/wiki/Hypersensitivity_pneumonitis Besides just organic dusts, Penicillium Aspergillus mold and Actinmycete bacteria are also considered causes of this and other similar pneumonitis conditions, for more info see:the book: Bioaerosols Assessment and control from ACGIH or see [wikipedia.org](http://en.wikipedia.org/wiki/Hypersensitivity_pneumonitis)

Also more importantly for reliable information and medical advice talk with your allergy doctor about these topics, this report is not medical advice, just a starting point for your doctor if he chooses to use information from this report.

Your inspector is not a doctor and this and all the other health info in this report is not medical advice, it is just intended to give you a starting point for discussion with someone who knows about allergies, immunology, and other medical issues, specifically you should consult your doctor. For reliable medical info go to your doctor, also get a referral to an allergy and immunology doctor.

EXTERIOR MOLD INSPECTION

EXTERIOR INSPECTION

WALL SIDING AND STRUCTURE

MATERIALS:

Exterior wall covering appeared to be composed primarily of wood siding. Exterior wall structure appeared to be composed primarily of wood frame.

WALL CONDITION:

Upon inspection of the exterior walls, and various attachments, the inspector observed no obvious visible conditions that would result in likely water intrusion.

WINDOWS:

The inspector observed evidence of moisture intrusion under windows in the form of elevated moisture or moisture damage on the walls under windows, or in the form of defective caulking on the exterior side of windows. Windows above eye level are not typically readily accessible for inspection.

Details of findings are as follows:

Have all window frames and window caulking areas caulked, do not miss screws hidden under window screens and window shutter bolts around windows, window leaks are a very common cause of mold problems.

Wall penetrations such as pipes, bolts, screws, wires, wire conduits, electrical boxes, and anything else that penetrate exterior walls should also be caulked. Have all expansion joints, flashings, decorative trim, stucco cracks, and other exterior components that may now or may in the future leak caulked.

Work should be done properly and professionally to deter leaks. Often people look to companies that specialize in professional painting and water proofing to provide such services.

FRESH AIR INTAKE

The location and condition of fresh air intakes on commercial buildings can be an important consideration for indoor air quality investigators. Fresh air intakes are intended to bring clean outdoor air into the AC system where it is filtered, cooled, and dried, next it can enter the building where it dilutes indoor pollutants and where it creates slight positive pressure indoors.

A fresh air intake near an outdoor source of contamination such as near plumbing vent pipes or other building exhaust vents, or near auto exhaust fumes can result in the fresh air intakes pulling poor quality outdoor air into the building.

In regards to fresh air intakes I observed, no readably visible problem conditions with the fresh air intake system, please note that we cannot see far into fresh air intakes to determine if baffle doors inside such systems are open or closed, nor can we calculate the capacity of such systems to service your building.

ROOF STYLE:

Gable.

ROOF COVERING MATERIAL:

Asphalt shingle.

PHOTO



ROOF CONDITION:

This mold inspector observed conditions that would indicate possible problem conditions with the roof at time of inspection, This is not a roof inspection, for more in depth information regarding the condition of this roof consult a roof inspection report.

Conditions that this mold inspector observed appeared to indicate possible excessive weathering conditions with the roof. Conditions that this inspector observed indicated possible leaks at this roof.

PHOTO



GRADING:

Landscape slopes towards the property and may result in possible water intrusion during heavy rains.

INTERIOR MOLD INSPECTION

INTERIOR MOLD INSPECTION

LOCATION:

SPECIFIC LOCATION INSPECTED OR TESTED:

All readily accessible areas of the property.

OBSERVATIONS:

Note photo of moldy surface(s) at the property.

ODORS

Mold odors were in the following area(s): Bathroom and front bedroom.

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Even in the absence of excess mold spores mold odors can sometimes result in health complaints.

PHOTO



SAMPLE LOCATIONS

SPECIFIC LOCATION INSPECTED OR TESTED:

Hall bathroom Type of samples taken, Surface Tape Sample.

Front bedroom, Type of samples taken, Air Sample, Surface Tape Sample, Carpet Sample.

CAUSES AND ORIGINS

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MOISTURE METER

ABOUT MOISTURE METERS

Moisture meters are hand held devices that pass tiny electrical charges or radio waves through surfaces to determine the moisture content in the surfaces being tested. They are helpful for measuring the moisture content in a building materials following water damage.

YOUR LEVELS

Moisture meter testing in the areas tested indicated elevated moisture levels at the time of inspection.

LEVELS IN GENERAL

One method recommended by the Standard and Reference Guide for Professional Water Damage Restoration also known as IICRC S500 involves using the dry standard in determining if a building material is moist or dry.

To do this one must take moisture readings from known dry materials in an undamaged areas of the structure, these readings can be used to establish a drying goal for similar types of materials in the effected areas.

INFRARED CAMERA

Various surfaces were scanned with an advanced device known as an infrared camera, this device detected no moisture in the areas scanned.

TEMPERATURE AND HUMIDITY READINGS

EXPLANATION OF HUMIDITY AND TEMPEATURE

Humidity is simply a measurement of the amount of moisture in air compared to the maximum amount of moisture that same air could hold at a given temperature and pressure. Temperature is an expression of the amount of molecular level kinetic energy in a substance.

LEVELS IN GENERAL

ASHRAE recommends indoor temperatures between 68F - 75F for thermal comfort. ASHRAE also recommends that the relative humidity be maintained between 30% and 60%. Levels below 30% may lead to symptoms such as eye irritation, and drying of the mucous membranes. Levels in excess of 60% are conducive to microbial growth.

YOUR LEVELS Indoor humidity at the area and time of testing was: 50 %RH, at 70 F

Outdoor humidity was: 30 %RH at 75 F

This was to high or evidence was observed that humidity was to high in the past.

You need to take measures to maintain lower humidity levels indoors.

If your humidity is above 60% it can support mold growth or dust mite growth, and you might experience condensation problems on cold surfaces such as AC registers.

BUILDING PRESSURE

Your inspector discovered no negative building pressure problems, this is satisfactory.

Why was pressure checked? Negative pressure in homes and other buildings causes humid outdoor air to be pulled into buildings in hot humid environments, and radon to be pulled into buildings in environments where radon is problematic, also negative pressure can pull dangerous levels of carbon monoxide out of gas burning devices. Smelly crawl space or attic air can also be pulled into such buildings.

RECOMMENDATIONS

For a full list of mold removal recommendations also known as remediation recommendations or remediation protocol please see the attached remediation protocol(s)

The mold remediation protocol section(s) of this report are very long and technical and is best read, understood, and followed by a professional remediator.

REMIEDIATION

INTERIOR INSPECTION MOLD REMEDIATION SECTION:

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Replace any carpets and carpet paddings.

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Clean the interior of the AC unit and ducts in accordance with NADCA standards. This mold is almost invisible in front of your face, thus do not expect the AC service person to see much in the ducts or AC unit but it will likely exist and should be cleaned.

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such as any insulation encountered. Remove at least 2 feet of material in each direction around the visible contamination. If mold is encountered behind any vapor barriers, remove, clean behind, and properly replace the vapor barrier so that the replacement barriers will keep moisture out. All heavily and even slightly visibly contaminated moldy porous surfaces require removal. Do not leave openings in walls, ceilings, floors, or other building components that can serve as cross contamination pathways. Do not leave openings that can result in the entrance of humidity or other outdoor elements into the containment area from outdoors or to the interior from the crawl space. Double bag moldy debris, or wrap moldy debris in sheets of 6 mil plastic. Tape shut then, hepa vac or wet wipe exterior of bags, and dispose as normal waste unless prohibited by local regulations.

ADDITIONAL MOLD REMOVAL RECOMMENDATIONS

INSPECTION FOR PREVIOUSLY HIDDEN MOLD

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GUIDELINES

RECOMMENDED GUIDELINES

Remediators should perform remediation in compliance with the Institute of Inspection Cleaning and Restoration Certification (IICRC) mold removal guidelines, The New York City Department of Health & Mental Hygiene Bureau of Environmental & Occupational Disease Epidemiology guidelines or in compliance with EPA mold removal guidelines for schools and commercial buildings. Air conditioner remediation should be done by a licensed AC contractor who specializes in cleaning mold contaminated HVAC systems. HVAC remediation work should be done in compliance with NADCA recommendations. The remediator should follow any applicable recommendations that the indoor environmental professional included below.

CONTRACTOR RESPONSIBILITIES

Remediation services should be rendered only by a professional, experienced, mold remediator who can verify the following: proper insurance coverage, proper certifications in mold remediation by a non-profit organization (such as IICRC, or Amlaq,) and possesses any licenses required in your area.

All work shall be done in strict accordance with all applicable regulations, standards, and codes.

It is highly recommended that the remediator use a legal written contract which outlines the contractor's responsibilities and client's obligations as well as cost estimates,

limitations and disclaimers. The agreement must be made prior to remediation regarding who is responsible for build-back of building materials after moldy building materials have been removed. All personal property removed by the remediator shall be returned to their proper locations after remediation is complete. Contractor also referred to as remediator shall have written permission to dispose of clients personal property, such as furniture and valuables. Do not discard items that are obviously cleanable. Employees must demonstrate completion of mold remediation training and respirator training. Employees must demonstrate hazardous communication training as required by the US Occupational Safety and Health Administration (OSHA 29 CFR 1910.1200). Tyvec coveralls should be utilized along with proper gloves, goggles, and foot cover. NIOSH-approved respirators and cartridges are highly recommended. Adequate respiratory protection must be utilized in accordance with OSHA 29 CFR 1910.134. In addition, the extent of coverall use and selection of respirator type and selection of containment type at this specific job site must comply with the mold removal guidelines prescribed by New York City Department of Health & Mental Hygiene Bureau of Environmental & Occupational Disease Epidemiology.

The remediator shall use all appropriate controls and work practices which are standard in the indoor air environment and mold remediation industry that apply, regardless of the inclusion or exclusion of such standards in this document. Should the above scope or protocol or any part thereof not be specifically adhered to, the consultant and mold inspection company shall be held harmless by all parties.

HVAC SYSTEM SHUT DOWN

Any air conditioner in the enclosed work area or with a return in the enclosed work area must be shut down, locked out, and all registers, grills, and returns must be sealed and taped with barriers consisting of polyethylene sheeting. Supplemental portable heating or air conditioning may be used in the building or work area if needed to maintain favorable temperatures for workers and building occupants.

REMOVAL OF PERSONAL ITEMS

All furniture, clothes, mirrors, and other personal items must be removed from the work areas and stored in a safe, dry place. Removal will deter cross contamination and will almost always expose hidden mold behind personal items. Hard-surfaced personal items that were in contaminated areas must be wiped with fungicide. Porous items in same areas must be HEPA vacuumed or disposed of. All non-movable and attached items in the work area shall be sealed with polyethylene sheeting after being first HEPA vacuumed and then wet wiped with fungicide, exercise caution when wrapping salvageable items to prevent trapping moisture.

SPORE LEVEL INFORMATION

SPORE LEVEL INFORMATION

GENERAL INFORMATION ON MOLD SPORE LEVELS

The below information was not provided as set health hazard specifications because reactions to mold spores will always differ from person to person. Many substances and factors including but not limited to the following may complicate matters even more: levels of dust mite and roach allergens, volatile organic compounds, gram negative bacteria, individual sensitivity to allergens, emotional stress, and general health. This information should not be relied on as any type of medical advise, see your doctor if you feel sick.

Guidelines on Assessment and Remediation of Fungi in Indoor Environments published in 2000 by the New York City Department of Health.

The most widely accepted guideline across the nation to help determine if indoor mold spore levels are indicative of a possible mold problem is the comparison of indoor and outdoor mold spore levels. Indoor mold spore levels should be similar to or lower than levels found outdoors, and the types of mold spores found indoors should be similar to types found outdoors. Most mold inspectors, certified indoor environmentalist, and industrial hygienists also will generally support the above mentioned comparison method. The below listed organizations and governing bodies also support the above view.

ACGIH 1989, Canada M&H CO. 1991, ACGIH 1993, OSHA 1994, and Brazil 2000.

When reading the below quotes remember that the mathematical symbol > means greater than and < means less than.

Burge 1990

If indoor microbial aerosols qualitatively differ from outdoor, and indoor levels are consistently more than double the outdoor levels and exceed 1000 cfu per cubic meter of air, investigate.

American Conference of Governmental Industrial Hygienists (Air Sampling Instruments for Evaluation of Atmospheric Contaminants 1995)

100 cfu or less per cubic meter of air is low.

100 cfu to 1000 cfu per cubic meter of air is intermediate.

1000 or more cfu per cubic meter of air is high.

**Much of the below information on studies from around the world is from
Worldwide Mold Exposure Standards for Mold and Bacteria, Robert C. Brandys,
PhD, MPH, PE, CIH, CSP, CMR and Gail M. Brandys, MS, CSP, CMR:**

Brazil Government Findings 2002

100-500 normal indoor mold spore levels per cubic meter of air, can be higher in summer.

Norway Government Findings

<750 acceptable.

OSHA 1992 findings

>1,000 Contamination

ACGIH 1993 Findings

>1,000 High

Czech Republic 2000 Findings

> 2,000 Health complaints.

Recommended References Materials For Additional Information

- 1) Worldwide Mold Exposure Standards for Mold and Bacteria,
Robert C. Brandys, PhD, MPH, PE, CIH, CSP, CMR and Gail M. Brandys, MS, CSP,
CMR
- 2) American Academy of Allergy, Asthma and Immunology
National Allergy Bureau findings 2002

DISCLAIMER

DISCLAIMERS

General Inspection limitations and Disclaimer.

Exterior inspection limitations and disclaimer

Unless otherwise agreed to, your inspector is not qualified as or acting as a home inspector, general contractor, structural engineer, synthetic stucco inspector, or a specialized leak detection expert. Your inspector does not necessarily inspect conditions on roofs and roof eaves. Areas typically not visible including flashings, high walls, 2nd floor windows and other areas above eye level are typically inaccessible for inspection. For a detailed analysis of the condition of roofs, exterior siding, the presence of synthetic stucco or siding defects, window caulking deterioration, deck connections, and other features that may result in water intrusion into your property, consult with qualified, licensed specialist in the appropriate fields.

Mold inspection limitations and disclaimer

Do not depend on your investigator for any medical advice; that is the job of a medical specialist. If any illness is experienced that may be related to mold or other indoor environmental factors, then a family doctor should be consulted regarding health complaints. In addition, the unhealthy person should obtain a referral to the appropriate medical professionals specializing in allergies, environmental medicine, or occupational health, as prescribed by the physician.

This investigation is not intended to report on typical tiny amounts or expected levels of indoor contaminants such as tiny amounts of mold or normal levels of indoor pollutants. Small amounts of mold in and on the air conditioner are common. The inspector does not offer an opinion as to the advisability of the purchase or sale of property. This is not a wood destroying organism or termite inspection report for fungus that causes wood decay.

This is not a building investigation for all potential indoor air quality problems that you may be experiencing because most firms will not inspect for and report on mold, allergens, bacteria, general indoor air quality, and industrial hygiene all on one report. This is an investigation only for those specific types of problems, contaminants, and conditions, reported on and agreed to be inspected and tested. Unless you pay for and request indoor air quality sampling or mold sampling or inspections in every room, inner wall stud bay, AC duct, carpet, and all other surface in all areas, then items tested or sampled and inspected during this standard inspection will be randomly tested or sampled and inspected.

The fee for all inspections is due in full at the time of inspections. Fees are due if you benefit from the inspectors findings and the same fees are due if you are financially harmed by the inspectors findings, fees are due if you are able to obtain insurance coverage based on this reports findings, and the same fees are due if you are denied coverage because of the findings in this report.

No destructive or disruptive testing or assessment will be performed. Your Inspector is not responsible or liable for the non-discovery of any water damage, water problems,

mold contamination, indoor air quality issues or other conditions of the subject property, or any other problems which may have developed or become more evident after the inspection and testing time and date. Inspector is not responsible for or liable for the non-discovery of any, water problems, mold contamination, indoor air quality issues or other conditions of the subject property that were not discovered due to inadequate sampling or testing in specific areas where such services were not requested and paid for or where no readily visible clues existed that would have warranted sampling in those areas. Your inspector is unlikely to sample for, or locate mold which may be hidden inside walls, behind wall paper, appliances, furniture or other inaccessible areas.

Inspectors often make mold removal recommendations also known as remediation recommendations for areas where mold is suspected to be hidden, examples of such areas include but are not limited to areas behind shower tile, behind cabinets, and inside walls. Because destructive or disruptive testing or assessment is not preformed the inspector cannot guarantee that the suspected hidden mold will be found in such areas during remediation. Your inspector typically advises remediation for such areas based on one or more of the following, odor, moisture levels, spore levels, client interview information, or educated guesses based on past experience as to the existence of hidden mold in a given area. Because inspectors do not typically perform inspections that involve tearing your walls open for direct examination your inspector cannot guarantee that visible mold will exist in the remediated area.

The inspector will not check any area that poses a safety threat to the inspector such as walking on roofs. A roof inspector should be consulted in regards to any roof concerns. Attics and crawl spaces with low clearance are not entered.

Only small areas of the interior of air conditioners are visible if opened. And a very small percentage (if any) of the interior area of AC ducts are visible. Any AC system evaluations done by your inspector is done as a very basic preliminary courtesy to the client only and should not be relied on to provide detailed information regarding the proper operation of the air condition systems operation. It is recommended that a qualified, licensed, AC service person or AC contractor review your AC system in regards to proper operation.

Mold sampling limitations and disclaimers

Though spore sampling and lab report analysis are common and are often an extremely helpful tool, there is always some degree of uncertainty regarding analysis of samples and the conclusions we draw from them. Non-viable samples only allow for spore identification to the genus and not the species level; thus, comparison of levels of similar types of indoor and outdoor spore types is not exact. Some spores that are reported to be similar are not always from the same species or even genus of mold, they may just look similar under the microscope. This is especially true for some small, round spores, such as aspergillus and penicillium spores. Viable sampling only allows for identification and enumeration of molds that germinates from live spores. Thus, many dead yet still allergenic spores may be missed in the lab results when using this methodology, resulting in low estimations of the number of actual spores present. Your inspector cannot guarantee that hidden mold in a wall can be found even with the aid of inner wall spore sampling as hidden mold may not be producing large numbers of spores during sampling or the spores, if produced, may not have access to the spore trap because insulation or wall studs may block the pathway between spores and spore trap. Even if inner wall spore levels are elevated, it does not guarantee that the mold producing it in the wall will be excessive enough to be visible if the wall is opened.

Allergen inspection limitations and disclaimer

The following applies to allergen testing and inspections. You will have received an allergen inspection or allergen testing only if you requested and paid for such, and only if your inspector agreed to do such. A proper sampling plan for allergens is dependent largely on complete information from the occupant(s) of the test site in regards to any known possible sources of, or reasons for, allergens, such as: leaks, humidity problems, possible pest infestation, or the history of pets at the property. Allergens for rats, mice, or roaches may be tested for, however this is not a pest inspection intended to identify hidden infestations of such pests. If you discover suspected infestations, please let your inspector know so that the appropriate tests can be conducted to determine if allergens they produce are at levels that may be of a concern to persons with allergies. Hay fever is a very common allergic reaction and is caused by small, wind blown, pollen typically produced by plants with small, non-showy flowers, including but not limited to many common grasses, trees, and weeds, most commonly ragweed. Mold and allergy inspectors are not adequately trained to identify such plants, and microbiology lab analysis of air samples are not typically designed to provide usable or detailed information, if any, on the types and numbers of pollen grains, other allergens or biological particles in a sample. Thus, this inspection only focuses on the common, settled, indoor allergens of biological origin that were sampled for. Sensitivity to allergens varies greatly and reliance on absolute thresholds for medical or legal purposes should be done only by trained specialists and with great caution. Allergen thresholds should not be viewed as would permissible exposure limits for various toxic chemicals. Unless otherwise specified in written form and paid for, this inspection is not intended to identify the following: chemical allergens, chemical irritants, food allergens, termite allergens, latex allergens, or horse allergens. This inspection is not intended to identify any allergens that were not tested for. All disclaimers and limitations in the mold inspection section of this report that are applicable for allergens also apply in regards to this allergen inspection.

Bacterial sampling limitations and disclaimers

The following applies to bacteria testing and inspections. You will have received bacteria inspection or testing only if you requested and paid for such, and only if your inspector agreed to do such. The following applies to bacteria testing and inspections. Some bacteria cause disease and infection. Bacterial sampling is not typically done to determine the presence or absence of many such harmful infectious bacteria. For example, Mycobacterium Tuberculosis which causes Tuberculosis, and Legionella which causes Legionnaires disease, do not typically show up on lab reports even if these dangerous bacteria are present during sampling. In most cases, indoor levels of bacteria are higher than outdoor levels. High indoor bacterial levels are primarily of common harmless varieties such as gram positive cocci from human skin. Bacteria sampling is sometimes done so that your inspector can make general relevant conclusions, or so that your inspector can try and determine if building health complaints may be linked to elevated airborne bacteria levels. Some species of bacteria which have the potential to produce endotoxins in their cell walls. These chemicals are proven to have the ability to cause respiratory problems in humans when exposed to elevated levels. Other bacteria are known to cause specific immune system related respiratory illnesses, such as humidifier fever, organic dust toxic syndrome, and hypersensitivity pneumonitis. In addition other bacteria are indicators of fecal contamination. Testing for these can help determine the presence or absence of sewage contamination.

Interior mold remediation limitations and disclaimers applicable to consultants

It is the responsibility of the consultant using this protocol to update it as needed so it complies with the most current technical standards on remediation and the most current

regulations and laws, which are applicable to remediation and the building trades. The consultant using this mold remediation protocol must modify and update it accordingly with each remediation job prescribed so that it is applicable to the specific remediation job that the protocol is to be used on.

After modification by the consultant, this document is to be used only by trained, certified, and where applicable licensed remediators only. It is offered without warranty, either expressed or implied, as to the merchantability, fitness for a particular purpose, or any other matter. Following the specification does not ensure compliance with any federal, state or local regulations, nor safe or satisfactory or complete performance of remediation. This remediation protocol must be modified in various sections by the person acting as a qualified indoor environmental professional, inspector, or industrial hygienist, to accurately account for unique remediation requirements in the property being remediated. It is strongly recommended that consultants using this general protocol consult with their legal or technical advisors prior to use.

Interior mold remediation limitations and disclaimers applicable to clients

Be Very Careful When Choosing A Remediation Firm. There Are Few Regulations In Most States.

Your Remediator Should Have No Conflict Of Interest.

They Should Be Certified, Insured, Professional, And Experienced Remediators, Who Use Updated Equipment And Methods. They Should Go Over Contracts Outlining Your Obligations, And The Remediators Obligations. Your Remediator Should Follow National Standards For Remediation. Last But Not Least They Must Possess Any And All Required Licenses Whenever Applicable.

We do not guarantee work performed by any persons we give you the numbers to including the ones on this list. Give them a call if you need mold removal or other related services, and also do not hesitate to find qualified firms from your local phone book and other sources.

Remediation is only conducted to rid a property of unusual mold conditions, it is sometimes conducted to rid a property of conditions that are reasonably believed to possibly contribute to asthma, allergy, and musty odors. Because of the limitations of current human knowledge and science as they relate to mold and indoor air quality, and because other common factors besides mold may contribute to health problems, doctors, remediators, and inspectors, cannot offer a guarantee that your health problems are related to your mold problem, thus we cannot guarantee that you will get better after remediation.

This protocol was prepared under the constraints of time and scope, and it reflects a limited investigation and evaluation. Further analytical testing may be required to find additional hidden mold infestations in hidden areas not sampled or inspected. Inspections by other specialists may be required to locate possible contamination from asbestos, lead paint, and other environmental hazards prior to remediation. The presence of such materials take precedence over mold remediation and removal of such regulated materials must be conducted in accordance with federal, state, provincial and local laws and regulations and require specific remediation protocols. The results of this analysis represent conditions only at the exact time and locations from where samples were taken. Thus, the report and this remediation letter should not be relied on to represent conditions at any other location or date and does not imply that this property is free of contaminants in other areas. The general mold remediation protocol template was created using current acceptable environmental hygiene

recommendations as defined by The Institute of Inspection Cleaning and Restoration Certification (IICRC), the New York City Department of Health & Mental Hygiene Bureau of Environmental & Occupational Disease Epidemiology, the American Conference of Governmental Industrial Hygienists, National Air Duct Cleaners Association, and other remediation techniques that are acceptable and used by professional remediators.