



HOME INSPECTIONS LLC

MOLD ASSESSMENT

Conducted at:

**35 Main Street
Anywhere, NY 11111**

Prepared for:

John Doe

Prepared By:

**Bernard Bouchard
Eastern Home Inspections LLC**

Assessment Date:

December 18, 2019

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**Via Email:
Jdoe@ssjjk.com**

January 2, 2020

Mr. John Doe

RE: Mold Assessment for

35 Main Street, Anywhere NY11111

Enclosed is documentation pertaining to the Mold Assessment conducted by ***Eastern Home Inspections LLC*** on December 18, 2019. This report is being submitted in compliance with Article 32 of the labor Law of the State of New York as amended by Chapter 551 of the Laws of 2014 Sub section 4759 licensing of mold inspection, assessment and remediation specialists and minimum work standards. This documentation contains the following:

- Executive Summary
- Explanation of Procedures used by ***Eastern Home Inspections LLC*** and background information on Mold
- Inspection Results - Inspection Observations and Lab Report
- Remediation Plan Overview
- Remediation Plan Details
- Photo of findings

Executive Summary

On 12/18/19, an assessment was performed to evaluate current indoor air quality and visual observations were made to evaluate possible microbial contamination at 35 Main Street, Anywhere NY. Mold Assessment is a process performed by an indoor environmental professional that includes the evaluation of data obtained from a specific location or building. Through occupant interviews and visual inspections, an initial hypothesis is formulated about the origin, identity, location and extent of amplification of mold contamination. When necessary, as was in this case, a sampling plan is developed and samples are collected and sent to a qualified laboratory for analysis. The data is interpreted by the indoor environmental professional, who may then develop a remediation plan.

The results of this Mold Assessment indicate that mold is present (see attached Lab Report document for detailed description) and Remediation is necessary (Detailed Remediation Plan appears on pages 6-8).

Explanation of Procedures and Information on Mold - how it develops and is evaluated

Eastern Home Inspections LLC has performed indoor air testing for airborne microbial contamination, noted moisture levels for building materials using direct-read, real-time monitoring equipment and visual observations of building areas as part of this inspection.

The inspection and testing were performed in accordance with generally accepted standards of mold inspections as outlined in Article 32 of the New York State Labor Law. The sampling analysis also follows analytical methods recommended by the American Industrial Hygiene Association (AIHA) and the American Conference of Governmental Industrial Hygienists (ACGIH).

Direct Read Instrumentation

Moisture content was determined by using the FLIR Instruments Direct Moisture Meter, Model# MR60. Indoor 1st floor bath relative humidity was 42% at 63 degrees Fahrenheit. Outdoor relative humidity was 65% at 38 degrees Fahrenheit.

Microbial Airborne Contamination

Air samples are collected to determine indoor air quality relating to microbial contamination using an Air-O-Cell™ spore trap. The samples were collected for a 5 minute period with a calibrated flow rate of 15 liters per minute. The Air-O-Cell™ spore trap is a sampling device designed for the rapid collection and quantitative analysis of a wide range of airborne aerosols. It collects non-viable particulate such as mold spores, pollen, insect parts, skin cell fragment, fibers (asbestos, fiberglass, cellulose, etc.) and inorganic particles.

Microbial Surface Contamination

Swab samples are collected when visible mold is present. These samples are used to determine the frequency and type of possible microbial growth present in areas with human occupancy. Such exposure to microbial contamination may affect human health and/or to cause structural decomposition. These samples are reviewed under direct microscopic examination by an independent American Industrial Hygiene Association (AIHA) member laboratory. All samples are immediately labeled upon collection and a Chain of Custody form accompanies all samples.

Background Information on Mold

Molds are mother nature's way of recycling organic compounds. Without molds the leaves that fell from the trees one hundred years ago would still be lying on the ground. While molds are ubiquitous in the environment there are times when either the levels of mold present are more than we typically compensate for, or certain types of mold should not be found in our home or work place. Since mold eats plant matter, and most of our homes are constructed using wood framing, mold can actually destroy the integrity of the home we live in or the building where we work.

- Mold needs three key elements to grow:
 1. Food source
 2. Temperature
 3. Water source

Mold eats organic compounds such as cellulose. Cellulose is found in paint, the paper on sheetrock, dirt, wood and clothing. Most molds grow at room temperature which is typically above 60 degrees Fahrenheit. Mold will grow if there is a water source such as water in a liquid state from a flood, leaking pipe or water infiltration, or high humidity above 60 % such as found in crawl spaces, attics or damp basements. We have no realistic way to control temperature but the use of Anti-microbial chemicals can be used to create a barrier between the food source and the mold, therefore removing or slowing the mold growth. We can control the water by altering physical conditions, i.e., by using a French Drain and we can control the humidity by the use of self-draining dehumidifiers.

The Institute of Medicine (National Academy of Sciences) 2004 report Damp Indoor Spaces and Health is considered to be the definitive epidemiological study and evaluation of peer reviewed scientific literature concerning associations between exposure to mold and other allergen/irritants related to damp/wet conditions in indoor environments and adverse health effects.

This report concluded that there is sufficient evidence of an association between exposure to mold and other allergens/irritants in damp/wet indoor spaces and the occurrence of upper respiratory tract symptoms, coughing, wheezing, asthma symptoms (in sensitized individuals with asthma), hypersensitivity pneumonitis (in susceptible persons), respiratory infections and fungus-related illnesses (in immune-compromised persons) and colonization and potential lung infection in individuals with chronic pulmonary disorders.

It should be recognized that other contaminants related to water damage and microbial growth, including bacteria, beta glucans, endotoxins and microbial Volatile Organic Compounds (VOCs) may also adversely affect indoor air quality.

Lab Report Interpretation

As of this writing, no government agencies have determined the amount of mold spores a person can be exposed to before health problems occur. Since there is no Permissible Exposure Limit for mold (PEL), the lab results should be interpreted not in terms of SAFE or UNSAFE levels, but rather in terms of the associations found between the Ambient control samples (normal background levels) and the affected area sampling and the correlation between the two. Here are some instructions for reviewing the attached lab report:

Swab sampling: This is a direct read. See the legend at the bottom of the attached report for values.

Air testing: Each column has a heading at the top showing where that sample was taken. As you read down each column, you will find listed the types of mold and next to them a number, that number being the total number of spores for that mold found on the sample. Compare that number against the reading for the same mold under the heading **Ambient** control sample or outside sample.

NOTE: The interior readings in the test area should never be greater than 10 times the background ambient sample or outside ambient sample.

IICRC S520 Fungal ecology condition definitions:

Condition 1: Naturally occurring, Normal fungal ecology which is an indoor environment that may have settled spores, fungal fragments or traces of actual growth whose identity, location and quantity are reflective of a normal fungal ecology for a similar indoor environment that does not require remediation.

Condition 2: Moderate Contamination. Settled spores, an indoor environment which is primarily contaminated with settled spores that were dispersed directly or indirectly from a condition 3 area and which may have traces of actual growth.

Condition 3: Substantial contamination (actual Growth) An indoor environment contaminated with the presence of actual mold growth and associated spores. Actual growth includes growth that is active or dormant, visible or hidden.

Lab Results: See attached file with lab report.

Inspection Results

Inspection Observations

1. 1st Floor showed no visible signs of mold growth
2. There were no odors that would indicate the presence of microbial VOC (Volatile Organic Compound).
3. Moisture levels in all rooms were within normal levels
4. There were no signs of water stains observed
5. Thermal imaging scans showed no signs of water intrusion
6. Visible mold was observed in the 2nd floor Southeast bedroom closet ceiling.
7. Thermal Imaging scan of the Master Bedroom ceiling showed the possibility of moisture present. Additional testing with a FLIR Moisture Meter indicated that the moisture levels were within normal ranges.
8. A visual inspection was conducted in the attic area, where there were indications of a past water leak from the HVAC air handler that services the 2nd Floor. Indications of a broken condensation line were present, along with rusting in the air handler drip pan. Repairs appear to have been satisfactory. It appears that insulation was removed during the repair procedure but not replaced.
9. The basement showed no visible signs of mold growth. There were no odors that would indicate the presence of microbial VOC. Moisture levels in all rooms were within acceptable levels. There were no signs of water stains observed. Thermal Imaging scans showed no signs of water intrusion.
10. During the inspection, there was an odor of combustible gas. Further testing was done using a Klein Tool ET120 combustible gas leak detector which showed above normal levels. **Further investigation by a qualified HVAC contractor is recommended.**

Overview of Sampling Data

Microbial Airborne Activity

Air samples were collected to determine indoor air quality relating to microbial contamination using an Air-O-Cell™ spore trap. The samples were collected for a 5 minute period with a calibrated flow rate of 15 liters per minute. A control, or base sample, of outside air is typically collected in the same manner as the inside air. The Air-O-Cell™ spore trap is a sampling device designed for the rapid collection and quantitative analysis of a wide range of airborne aerosols. It collects non-viable particulate such as mold spores, pollen, insect parts, skin cell fragment, fibers (asbestos, fiberglass, cellulose, etc.) and inorganic particles.

Air samples taken in the Dining Room/Kitchen area, as well as the Master Bedroom, indicated slightly elevated mold spores, as outlined in the attached report. A direct sample was taken of the visible mold in the 2nd Floor Southeast bedroom closet ceiling, which came back positive for elevated mold growth.

SUMMARY of FINDINGS

Based on visual inspection and results from the attached lab report, remediation is necessary as per the IICRC S520 standard and is therefore recommended.

Remediation Plan Overview

- The purpose of Mold Remediation is to return a space back to a normal fungal ecology (Condition 1 above), which is an indoor environment that may have settled spores, fungal fragments or traces of actual growth whose identity, location and quantity are reflective of a normal fungal ecology for a similar indoor environment.
- If the property is currently occupied, occupants must be notified in writing. The occupants should be informed about the nature of the work, work areas, and estimated cost of the work and estimated time of completion.
- A copy of a valid Mold Assessment or Mold Remediation License shall be placed conspicuously at the work site along with signage displayed at all accessible entrances to remediation areas indicating that a mold remediation project is underway.
- Contractor is advised that during demolition, all mold contaminated areas shall continue to be exposed until there are no signs of mold contamination for at a minimum of two feet past any damaged or contaminated areas, as per the IICRC S520 standard. Further, that if additional mold is observed on surfaces not outlined herein, that the contractor shall notify Eastern Home Inspections LLC of this additional information.
- Disinfectants, biocides and antimicrobial coatings may be used only if they are registered by the United States Environmental Protection Agency for the intended use for the specific surface to which they will be applied and if the use is consistent with the manufacturers labeling instructions. If a plan specifies the use of such a product but does not specify the brand or type of product, the mold remediation contractor may select the brand or type of product to be used. The decision to use such a product must take into account the potential for occupant sensitivities and possible adverse reactions to chemicals that have the potential to be off-gassed from surfaces coated with the products.
- For a remediated project to achieve clearance, a post remediation assessment will be performed by a Mold Assessment Licensee to determine whether the work area is free from visible mold and all work has been completed as outlined in the remediation plan. The post Remediation assessment shall, to the extent feasible, determine that the underlying cause of the mold has been remediated so that it is reasonably certain that the mold will not return from that remediated area. If it has been determined that the underlying cause of the mold has not been remediated, the NYS Mold Assessor must make a recommendation to the client as to the type of contractor who could remedy the source of the mold or the moisture causing the mold. Only a NYS Mold Assessor can determine if the remediation has been successful and issue a written PASSED CLEARANCE REPORT. Air monitoring will determine if the area remediated has been reduced to Condition 1 Levels, normal background levels that do not require remediation.
- All Air Filtration Devices (AFDs), dehumidifiers and fans need to be shut down 24 hours following the completion of the remediation protocol prior to the post remediation clearance inspection. In addition, all windows, doors or exterior openings should be closed during this 24 hour period.
- Personal protective equipment (PPE) shall be provided for the abatement worker by the remediation contractor. Minimum PPE for this project shall be a respirator N-95 or P-100 that have been properly fit to each individual in accordance with the OSHA Respiratory protection standard (29CFR 1910.134) as well as disposable coveralls that cover head and feet, work gloves over disposable gloves and any other safety equipment required by OSHA.

- Mold damaged building materials must be bagged in 6-mil or greater thickness bags. If the bagged waste is to be passed through an uncontaminated part of the building or home, the exterior of the bag shall be HEPA vacuumed and it shall be placed in a second bag, which subsequently shall be sealed and HEPA vacuumed prior to being moved through the uncontaminated part of the building or home. It is advisable to place double bagged waste in a sealed container before moving it through the uncontaminated areas. The remediation contractor is responsible for the safe disposal of mold and other construction debris.
- The contractor and homeowner are responsible to insure that all State and Federal regulations are followed with regard to asbestos containing materials encountered in this project
- The contractor and the homeowner are responsible to insure that all State and Federal regulations are followed with regard to lead based paint encountered in this project.

Remediation Plan Details for 35 Main Street, Anywhere NY

- The mold issue was discovered during an assessment requested by John Doe.
- The possible cause of the mold growth in the 2nd Floor Southeast bedroom closet was most likely due to a leak in the Attic HVAC system that services the 2nd Floor. All indications are that the necessary repairs to the HVAC system have been made.
- Remediation will be required in the 2nd floor Southeast bedroom closet to restore the closet area to a Condition 1 status.
- Remediation suggested in the kitchen and dining room to restore the area to a Condition 1 status.
- Remediation suggested in the Master Bedroom to restore the area to a Condition 1 status.
- This project should take approximately 3 days. The approximate estimated cost for the remediation of this project is \$3,200 - 4,700, which includes remediation and post-clearance assessment (**NOTE: this estimate cost does not include the rebuilding or replacement construction cost**).
- Note that the estimated cost is subject to change based on additional discovery and other factors.

2nd floor Southeast Bedroom Remediation Plan

- Install proper containment using 6 mil plastic under negative air pressure and all critical barriers
- Content manipulation to remove and clean all nonporous materials in the area
- HEPA vacuum all furniture and wrap in plastic 6 mil sheathing
- Controlled demolition of all existing drywall ceiling in closet areas. Remove all existing insulation
- HEPA vacuum all surfaces
- Apply antimicrobial disinfectant to affected areas using EPA registered product
- HEPA vacuum again all surfaces
- Encapsulate any residual mold stained materials with EPA registered antimicrobial coating, such as Fosters 40/25, after the post inspection has been performed
- Install HEPA filtered AFD devices as needed to remove airborne mold spores for three (3) days at 8 ACH per hour. Install Dehumidifiers as necessary to reduce relative humidity
- Post remediation air sample for clearance
- Consult with a qualified HVAC contractor to ensure proper operation of 2nd Floor air handler
- Install new HVAC HEPA return air filters

Kitchen, Dining Room and Master Bedroom Remediation Plan

- Professional cleaning of all fabrics, drapes, couches, chairs in these areas
- Clean all non-porous materials in areas listed
- HEPA vacuum all furniture and surfaces
- Install HEPA filtered AFD devices, as needed, to remove any airborne mold spores for 3 days, 8 ACH per hour
- Clean and sanitize all HVAC air ducts and equipment
- Install new HVAC HEPA return air filter

Final Notes

Eastern Home Inspections LLC recommends that all biological remediation be conducted by a licensed remediation contractor as defined by Article 32 of the New York State labor law, as well as in accordance with the following guidelines established by the Institute of Inspection Cleaning and Restoration (IICRC). Their document entitled "*CRC S520 Standard and Reference Guide for Professional Mold Remediation*" outlines work practices and equipment to be utilized during the remediation procedure. Also follow recommendations outlined in the US EPA: *Mold Remediation in Schools and Commercial Buildings*, Publication EPA 402-K-01-001. New York City department of Health *guidelines on assessment and remediation of fungi in the indoor environment*. American Conference of Governmental Industrial Hygienists (ACGIH), *Bioaerosols*, American industrial Hygiene Association (AIHA), *Recognition, Evaluation and control of indoor mold, 2008*.

It is important to note that our findings relating to physical conditions observed during this assessment were not intended nor do they attempt to identify every possible source of contamination, mold or otherwise, in the structure. This Assessor is neither insurer nor guarantor against water problems, mold problems or other defects in the subject property or any of its components. This Assessor is not a Doctor and therefore is prohibited from making any medically related recommendations. Any measured results, analysis data and/or physical observations made are valid only for the period in which this inspection was conducted. Any additional degradation of building materials or contamination from new or reactivated sources or areas inaccessible at the time of the inspection are not the responsibility of *Eastern Home Inspections LLC*.

Historical events or ambient air conditions that have existed prior to this inspection cannot be correlated in any way with the enclosed data. No warranty, real or implied, is made as to what was or is the exact cause or source that may have adversely affected the indoor air quality. Please review the attached sampling report.

If you have questions, please do not hesitate to contact me. Thank you for the opportunity to assist you in this matter.

Sincerely,

Bernie Bouchard

Bernard Bouchard
Mold Assessor Certification

Eastern Home Inspections LLC
Mold Assessor Company License