# BNF Consulting, Inc.

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Inspected By: Justin H. Joe, PhD, CIH, CSP, CBCP & Associates


# Mold Survey Report

Prepared For:

## David Jones

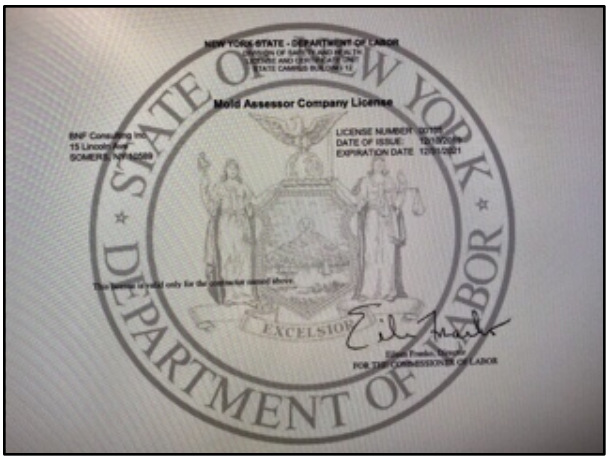
Property Address:

## ABC Street
## New York, NY 10591

Inspected on Thu, Oct 1 2020 at 5:00 PM

# General Background

| | |
|---|---|
| Inspection Type: | Limited Mold Inspection |
| Mold Assessor / Industrial Hygienist: | Justin Joe, PhD, CIH, CSP |
| License: | NYS Mold Assessor Company Lic #00105, NYS Mold Assessor Lic #MA00076 |





| | |
|---|---|
| Access By: | Realtor |
| People Present: | Listing Agent |
| Property Type: | Single Family |
| Purpose of Inspection: | Initial Mold Inspection |

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Comment 1:

(General Background continued)

On October 2nd 2020, Justin H. Joe, PhD, CIH, CSP of BNF Consulting, Inc. completed a Limited Mold Inspection and Sampling for the subject property. The purpose of the survey was to evaluate residents' potential exposure to mold throughout the home on all levels including the attic, basement and crawlspace. The home is currently listed and has been unattended for an extended period of time. This property was built in the late 1920's with most of the home being original and was observed to be in poor condition since it has been neglected and poorly maintained. Observed on the exterior was damaged/clogged gutters, damaged roofing, damaged siding and older poorly maintained windows. These observation are noted as points of entry for water intrusion that could cause mold on the interior. Due to the concerns of damages and lack of maintenance of the home a mold assessment was warranted.

A walkthrough of the home was preformed visually with a inferred camera and a moisture meter on all levels including the unfinished attic, unfinished basement and crawlspace. The purpose of the survey was two folds 1) to evaluate the potential exposure to mold and 2) to provide a remediation plan accordingly. Multiple spore trap air samples and tape lift samples were taken to identify and quantify mold types in the property. Assisting during the survey was the buyers realtor.


Figure 1-1

Figure 1-2

(General Background continued)

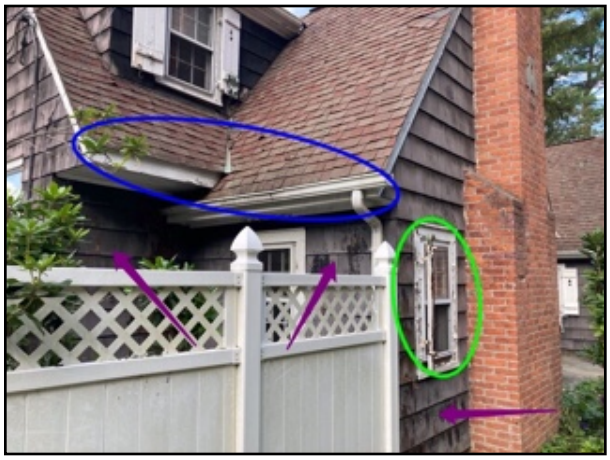

Figure 1-3

Figure 1-4

Figure 1-5

Figure 1-6

Figure 1-7

# Observations

Comment 2:
Unfinished Basement/Crawlspace
Upon inspection a visual inspection concluded that a mold like substance was visible. Some moisture was found visually on the lower portion of the concrete block walls as well as visual mold on the ceiling joist and exposed insulation. Since basement is below grade high humidity is common in these areas and could cause poor air quality/heightened mold spores especially during the summer damp months. A French drain and sump pump are located in the basement but they do not seem to be working. 1 Air Sample and 2 swabs were taken for mold contamination. Recommend 1) Install/maintain a dehumidifier to control humidity 2)Confirm sump pumps and French drain are in working order and 3) Remediation in the affected area as described in the following Remediation Section.


Figure 2-1

Figure 2-2

(Observations continued)

Figure 2-3

Figure 2-4

Figure 2-5

Figure 2-6

Figure 2-7

Figure 2-8

(Observations continued)

Comment 3:
Main level (Kitchen,Entry, living room and bathroom)

Upon inspection a visual inspection concluded that mold was visible in some areas of the main level. Some concerns were found visually of moisture on the plaster ceiling in kitchen and both fireplace mantels. A mold like substance was also found on various base moldings throughout this level. Inferred camera and moisture readings indicated normal levels of moisture for a plaster ceiling and walls. 3 air samples and 2 swab samples were taken for mold contamination. Recommend 1) Have fireplaces inspected by a licensed contractor 2) Remediation in the affected area as described in the following Remediation Section


Figure 3-1

Figure 3-2

Figure 3-3

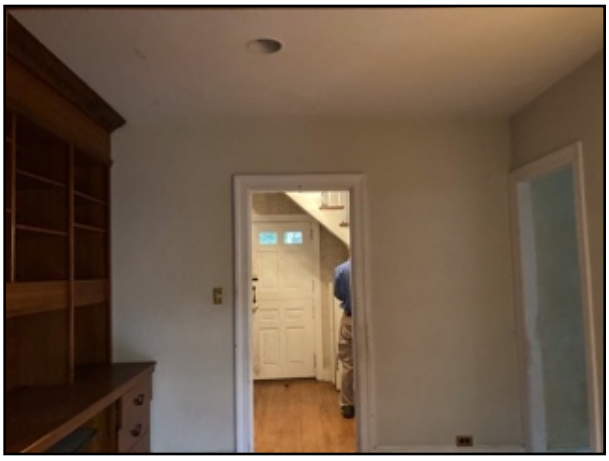

Figure 3-4

(Observations continued)

Figure 3-5

Figure 3-6

Figure 3-7

Figure 3-8

Figure 3-9

Figure 3-10

(Observations continued)

Figure 3-11

Figure 3-12

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Comment 4:
2nd level (Bedroom's and bathroom)

Upon inspection a visual inspection concluded that mold was visible in some areas of the 2nd level. A mold like substance was found on various base moldings throughout this level as well as door trims. Inferred camera and moisture readings indicated normal levels of moisture for a plaster ceiling and walls. 3 air samples and 2 swab samples were taken for mold contamination. Recommend 1) Remediation in the affected area as described in the following Remediation Section

(Observations continued)

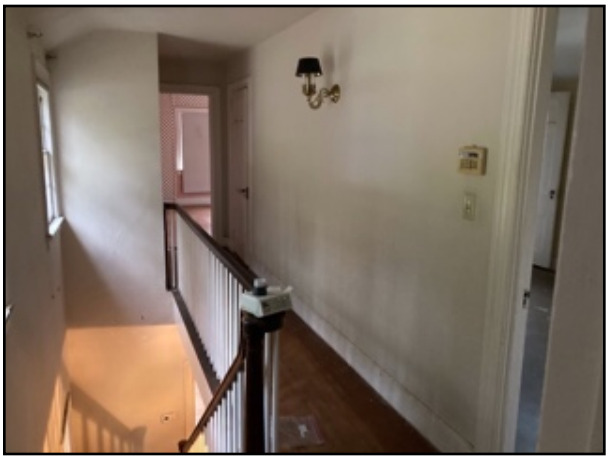

Figure 4-1

Figure 4-2

Figure 4-3

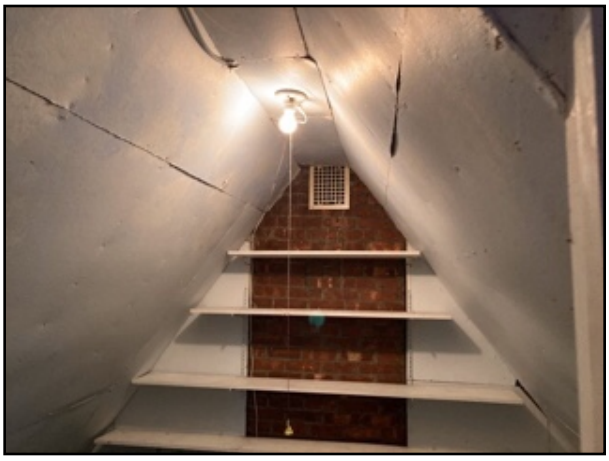

Figure 4-4

Figure 4-5

Figure 4-6

(Observations continued)

Figure 4-7

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Comment 5:
Attic:

Upon inspection a visual inspection concluded that a mold like substance was visible on the ceiling rafters and exposed insulation. Since there is a lack of ventilation and roof is in poor condition poor air quality/heightened mold spores are common. Ceiling exhaust vent is also dislodged and can cause warm damp air to enter into this space. 2 swabs were taken for mold contamination. Recommend 1) Install a vent to control humidity and add ventilation. 2) Fix bathroom vent 3)Remediation in the affected area as described in the following Remediation Section

(Observations continued)

Figure 5-1

Figure 5-2

Figure 5-3

Figure 5-4

# Environmental Parameters

| | |
|---|---|
| Outside Humidity (%): | 43 |
| Outside Temperature (F): | 78 |
| Interior Average Humidity (%): | 48 |
| Interior Average Temperature (F): | 78 |
| Basement Humidity (%): | 54 |
| Basement Temperature (F): | 79 |

# Measurements And Summary Of Results

Mold Analysis Laboratory: HAYES Microbial Consulting

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Comment 6:
Mold Sampling:

Samples were taken to assess mold conditions in the various locations using non-viable (non-culture) sampling the lab analysis indicates that:

1. Basement:
Very heavy levels of mold spores were detected from Air Sampling, Observed dominant mold spore group was Aspergillus/Penicillium mold type.

Very heavy levels of surface mold spores were detected from 2 swab samples in the crawlspace, Observed dominant mold spore group was Aspergillus/Penicillium mold type.

2. Main Level:
(Living room) Very heavy levels of mold spores were detected from Air Sampling, Observed dominant mold spore group was Aspergillus/Penicillium mold type.

Very heavy levels of surface mold spores were detected from 2 swab samples in (Bathroom,West living room) Observed dominant mold spore group was Cladosporium mold type

Normal levels of mold spores were detected through air sampling (Kitchen/Foyer)

3. 2nd Level:
Very heavy levels of surface mold spores were detected from 2 swab samples in (East Bathroom,West Bathroom) Observed dominant mold spore group was Cladosporium mold type

Normal levels of mold spores were detected through air sampling (West bedroom, East Bedroom, Center hall)

4. Attic

(Measurements And Summary Of Results continued)

Very heavy levels of surface mold spores were detected from 2 swab samples in (East Attic,West Attic) Observed dominant mold spore group was Cladosporium and Alternaria mold type.

# Remediation Plan

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|---|---|
| Further Evaluation / Testing: | Required |
| Mold Remediation / Restoration : | Required |

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Comment 7:
Area(s): Entire Home

1. Isolate effected area(s) using 6 mil polyethylene plastic sheeting. Install a double flap and/or zipper access.

2. Cover all openings such as supply and return air vents throughout effected area to prevent further contamination.

3. Specifics

A. Unfinished Basement/Crawlspace
- Remove all exposed insulation. Follow cleaning guidelines stated below

B. Main level
- Remove ceiling (plaster, drywall, wood strips, gypsum) in the kitchen and East living room where water intrusion is visible. The ceiling should be opened at least 5x5 sq ft. If mold is visible continue to remove until a clean margin is found.
- Follow cleaning methods below.

C. 2nd level
-Remove all carpeting/upholstery. Follow cleaning methods below

D. Attic (Mold Remediation Required)
- Remove all exposed insulation. Follow cleaning methods below.

(Remediation Plan continued)

5. Perform TWO rounds of DEEP CLEANING using the HEPA Sandwich Method (HEPA VAC, Anti-microbial Wipe, HEPA VAC). During this process, be sure to come in contact with ALL surfaces including but not limited to, floors, walls, ceiling, furniture and behind all places which structures and personal belongings have been removed from. Surfaces should be free of ALL visible dust.

6. Using an airless sprayer, an anti-microbial encapsulate containing a microban, may be applied as needed. All surfaces (Concrete block, wood ceiling joist, wood wall studs and wood sub floor) in the attic, crawlspace and unfinished basement.

7. Run air scrubbers for NO LESS THAN 1 day to continue to eliminate mold spores from the air during AND after the cleaning has been completed INSIDE AND OUTSIDE of containment.

8. Make sure to test asbestos and lead paint prior to any removal of building materials including, but limited to, drywall, insulation and plaster, caulking, flooring etc.

8. Commercial sized dehumidifiers should be used to regulate the humidity levels during the remediation process.

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Comment 8:
Personal Belongings - Specific Remediation Plan (Garage)

*** Hard surface and non-porous items, i.e. desk, dressers, cabinets, purses, picture frames, shoes, laptop
1. Inspect all personal belongings thoroughly for any signs of mold growth.
2. Do two rounds of HEPA filter vacuuming.
3. Apply a Broad Spectrum cleaning solution or equivalent via damp wiping methods on all surfaces in the containment areas. Surfaces should be free of all visible dust.

*** Porous items, i.e. fabrics, clothes, coats, some shoes, dresses, suit cases
1. Discard porous items affected with visible and apparent mold growth.
2. Use dry cleaning for clothes.
2. Porous items such as fabrics can be laundered.

(Remediation Plan continued)

4. Larger porous items can be HEPA filter vacuumed.

*** Surface cleaning effectiveness test
1. If you need to confirm surface cleaning effectiveness for decontamination of non-porous or semi-porous materials, collect surface samples using tape, swabs, or wipes. Surface sampling results should be at background levels.

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Comment 9:
Additional Recommendations:
1) Place a dehumidifier and set at 40% relative humidity. It is recommended to maintain a relative indoor humidity between 30-50%.

2) Assure that all moisture intrusion problems are corrected. Failure to correct all moisture intrusion problems could potentially result in additional damage with the likely occurrence of mold growth.

3) Make sure to test asbestos and lead paint prior to any demolition of building materials including, but not limited to, drywall, insulation, and plaster for buildings constructed before 1970.

# References

Reference: Attached

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Comment 10:

(References continued)

Field Guide for the Determination of Biological Contaminants in Environmental Samples, 2nd Edition, American Industrial Hygiene Association, 2005.

Fungal Contamination in Public Buildings: Health Effects and Investigation Methods. Health Canada, Ottawa, Ontario, 2004.

Bioaerosols: Assessment and Control. Janet Macher, Ed., American Conference of Governmental Industrial Hygienists, Cincinnati, OH 1999.

"A Brief Guide to Mold, Moisture, and Your Home"  Includes basic information on mold, cleanup guidelines, and moisture and mold prevention. http://www.epa.gov/mold/moldguide.html

AIAH's "The Facts About Mold" consumer brochure. https://www.aiha.org/about-ih/Pages/Facts-About-Mold.aspx

Bioaerosols: Assessment and Control, Microbial Volatile Organic Compounds, Pp. 26-1-26-17, Ammann, Harrier M. 1998.

Indoor air and human health, Health effects of biological contaminants. Pp. 171-178, Burge, Harriet A. 1996.

Standard and Reference Guide for Professional Mold Remediation, Institute for Inspection Cleaning and Restoration Certification (IICRC's), ANSI-S520 (2008)

Identification Manual for Fungi from Utility Poles in the Eastern United States, C.J. K. Wang, R.A. Zabel, American Type Culture Collection 1990

# Appendix A - Mold Protocols

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Comment 11:
Based upon the results of the site assessment conducted by BNF Consulting the following surfaces, materials, or contents within the above referenced spaces should be remediate in accordance with current industry guidelines, including but not limited to the New York City Department of Mental Health and Hygiene publication "Guidelines on Assessment and Remediation of Fungi in Indoor Environments" and the Cleaning and Restoration Institutes Publications "IICRC S520 "Standard and Reference Guide for Professional Mold Remediation".

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Comment 12:
General Mold Remediation / Restoration Plan:

Remediation work is to be followed by a New York State licensed mold remediator to remove/remediate all contaminated building materials and to restore the indoor air quality to an acceptable level. Necessary work include:

1. Wear Personal Protective Equipment (PPE) to all crew members conducting mold restoration/remediation.
2. Seal off all openings, seams and penetrations to the work area including air vents, grills, and light fixtures in the containment areas.
3. Create containment areas to isolate the bedrooms, the bathroom and the kitchen areas using 6 mil polyethylene plastic sheeting. Install a double flap and/or zipper access. Protective floor coverings should be used in the work areas for all means of egress. Create additional containments as necessary to create the adequate amount of negative pressure. Erect a decontamination chamber if no means of egress area available.
4. Create negative pressure containment in the work areas through fans such as air scrubbers equipped with a HEPA filter. Air scrubbers can be placed in a window or a common area to exhaust air through a containment wall. This will prevent the dispersion of mold spores during the remediation/removal process. The air exchange rate in the containment area should be at least 4-6 times per hour. Place additional air scrubbers outside of each containment area and on the first floor of the home.

5. Use commercial sized dehumidifiers to maintain the humidity levels during the remediation process. Some structural drying will be needed.

6. Inspect all personal belongings thoroughly for any signs of mold growth. Disinfectant solution can be used to wipe with for hard surface and non-porous items, but it should be discarded for porous items affect with visible and apparent mold growth. Porous items such as fabrics can be laundered and larger porous items can be HEPA filter vacuumed. Some items may need to be discarded.
7. Remove all personal items from the areas or wrap in plastic sheeting prior to the removal of any building materials.
8. Conduct two rounds of HEPA filter vacuuming and apply a Broad Spectrum cleaning solution or equivalent via damp wiping methods on all surfaces in the containment areas including walls, floors, doors, ceiling, and structures behind the removed materials. Surfaces should be free of all visible dust.

9. Run air scrubbers for no less than 2 day to continue to remove mold spores from the air after the cleaning process has been completed.
10. Place all removed materials in double sealed polyethylene bags. Bags are to be wiped with a cleaning solution prior to transport to the disposal areas.
11. Use some abrasive damp scrubbing to remove the mold growth on the structures behind the removed materials as needed.

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Comment 13:
Post Remediation Assessment:

The Post Remediation Assessment and Clearance Sampling consist of the following:

1. Visual inspection of the previously identified contaminated area(s) and constructed containment(s);

2. Visual inspection to verify that all impacted materials have been removed according to the Mold Remediation Protocol;

3. Visual inspection and complete documentation including digital photos of the remediated area(s) to ensure that all visible mold growth has been removed, that there are no wet building materials, and that the area(s) are clean and debris free;

4. Collection of microbial air samples from each work area or containment and one

or more surface samples of previously identified contaminated areas. Plus, the collection of one or more indoor control air samples from one or more areas inside the structure but outside of all work areas for cross-contamination verification;

5. A final written report of the Post Remediation Assessment and Clearance Sampling findings and a Lab Report of the sample analysis.

# Appendix C - Lab Reports