



August 30, 2018

Re: Mold Assessment
Vacant Residence
3319 Aberdeen Way
Houston, Texas 77025
HES Project No. 18-1721-10273

In accordance with your request, Honesty Environmental Services, Inc. (HES) has conducted a Mold Assessment at the above referenced site. Spore trap air samples collected and a chain of custody was initiated. The samples were delivered to the laboratory for analysis. The results of the sampling, performed on August 30, 2018 by Ryan Miller, a Texas Department of Licensing and Regulation (TDLR) licensed Mold Assessment Consultant (License # MAC1038) can be found in this report.

The spore trap air samples were analyzed for fungal/mold agents by J3 Resources, Inc., located at 6110 West 34th Street in Houston, Texas 77092. The laboratory report issued by J3 Resources, Inc., a TDLR licensed Mold Analysis Laboratory (License LAB0132) is attached.

The scope of the Mold Assessment in the residence located at 3319 Aberdeen Way in Houston, Texas was to evaluate the residence for conditions that may contribute to mold growth. This inspection was requested following water intrusion as a result of Hurricane Harvey.

At the time of the Mold Assessment the outside atmospheric conditions were: 90.6°F, Clear with 64.2% Relative Humidity.

Facility Inspection

An inspection of the residence was conducted to determine whether situations or conditions existed that could contribute to mold growth.

The inspection consisted of walk-through of the entire residence and a throughout visual inspection of accessible building materials in the home for the presence of mold and/or water damage.

Spore Trap Air Sampling

Total mold bioaerosol sampling was performed to identify and characterize general fungal concentrations in the subject areas. The total bioaerosol concentration is the result of both viable (culturable) and non-viable airborne fungal components. Total bioaerosol concentrations were determined by sampling with Allergenco D brand cassettes connected to a vacuum pump at a flow rate of 15 liters per minute. Bioaerosols were collected in representative indoor areas for ten-minute periods. Airborne bioaerosols were impacted onto prepared microscope slides within the Allergenco D brand cassettes. Total bioaerosol sampling protocols were conducted in accordance with the American Conference of Governmental Industrial Hygienists, ACGIH publication Guidelines for the Assessment of Bioaerosols in the Indoor Environment.

Qualitative and quantitative analysis of bioaerosols were performed by direct microscopic examination. Quantitative values were calculated by dividing the raw spore counts by the volume of air sampled, and dividing by the fraction of the slide analyzed. All components were reported in particles per cubic meter (particles/m³). A total concentration of particles/m³ was also reported for each sample location. The indoor concentrations are compared to the outdoor concentrations. Indoor concentrations exceeding outdoor concentrations are generally considered unacceptable.

The spore trap samples were delivered to J3 Resources, Inc. for analysis using Light Microscopy. The Sample Summary Table 1 lists the sample number, location and results for each spore trap air sample collected. The laboratory analytical data can be found as an attachment to this report.

Climatologic Direct Measurements

The American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) published recommendations regarding thermal comfort. ASHRAE standard 55-1992, "Thermal Environment Conditions for Human Occupancy," defines the desired conditions for the work environment. The desired conditions exist when temperature and humidity is in a range at which 80% or more of building occupants would feel comfortable while dressed in "typical" clothing and engaged in light, mostly sedentary activities. In order to avoid conditions sufficiently moist to promote the growth of molds or other bio-growth, relative humidity should not exceed 60%.

Measurements of temperature, relative humidity and dew point were conducted using a EXTECH Model RH300, Humidity Dew Point Stick, an electronic monitoring instrument. The instrument provides direct-reading measurements of temperature within the range of -4° to 160° F and relative humidity within the range of 0% to 100%. Measurements were conducted in various locations throughout the building.

The Sample Summary Table 2 lists the sample number, location and results for each measurement of temperature and humidity collected.

Moisture Readings

Relative moisture concentrations for building materials were analyzed using an EXTECH Moisture Meter M0210 which is capable of invasive moisture sampling. Invasive moisture readings were taken from the exposed lumber and drywall components using the pins capable of probing deep within the substrate of the material.

It is recommended that moisture in wood components be less than 15% and drywall be less than 0.8%.

The Sample Summary Table 3 lists the location and results for each moisture measurement collected.

Facility Inspection Visual Observations

- The renovations were complete and the residence was unoccupied at the time of the inspection.
- The HVAC system was operating at the time of the inspection.
- No evidence of visible mold growth was observed inside the residence.

Spore Trap Air Sampling Analytical Results

- Individual mold spore species concentrations were less inside the residence than the outside reference sample with the exception of a low counts of ***Stachybotrys*** in the master bedroom.
- ***Stachybotrys*** was not present in the outside reference sample. However, a low count (2 mold spores) were detected on the air sample collected from the Master Bedroom.
- Total mold spore levels were less inside the residence than the outside reference sample.

Climatologic Readings

- Temperature and humidity levels at the interior of the residence were within acceptable levels.
- The temperature reading at the kitchen was 74.2°F and the master bedroom was 74.4°F, which are within the acceptable range of 70°F to 75°F. The humidity level in the kitchen was 44.7% and the master bedroom was 48.1%, which is within the acceptable level of below 60%.

Moisture Testing Results

- Moisture testing found that the moisture levels in the drywall on the 1st floor were within the acceptable levels of less than 0.8%.

Conclusion

- Individual mold spore species concentrations were less than the outside reference sample at the living room.
- Low levels of ***Stachybotrys*** mold spore species (2 mold spores) were found inside the residence, but not in the outside reference sample.
- Temperature and humidity levels at the interior of the residence were within acceptable levels.
- Moisture testing found the moisture levels in the drywall on the 1st floor was within an acceptable level.
- Total mold spore counts were less inside the residence than the outside reference sample.

Recommendations

- Install a high-quality HVAC air filter to filter out the low levels of mold spores found inside the residence and change the filter per the manufacturer's recommendations.
- Follow the Mold Prevention Tips outlined below to prevent mold growth from occurring.

General Mold Information

What is mold?

- A non-specific term for a type of fungus.
- Mildew is sometimes used interchangeably with the word mold it is also a type of fungus.
- There are over 100,000 known types of fungi.
- Mold propagates by spreading a large number of spores, which travel through the air.
- Because there are so many different types of fungi it is difficult to know how to terminate an outbreak.

What causes mold to grow?

- Mold spores are everywhere.
- Food (organic materials, paper, dust, cloth, starch, etc.).
- Moisture from high humidity (over 60%)
- Mold likes high temperatures (mid 70°F), darkness, and stagnant air.

Why is mold a problem?

- Mold can eat organic materials such as paper, dust, adhesives, leather, cloth, starches.
- Mold can stain paper, cloth, leather.
- Some varieties of mold are toxic to humans.

How to combat mold: DON'T ALLOW IT TO DEVELOP

- Maintain moderate temperature and humidity (70-75°F and 60% or lower relative humidity)
- Circulate air.
- Dust regularly.

Mold Prevention Tips

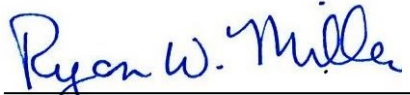
The following recommendations were taken from the EPA's "Mold Remediation in Schools and Commercial Buildings":

- Fix leaky plumbing and leaks in the building envelope as soon as possible.
- Watch for condensation and wet spots. Fix source(s) of moisture problem(s) as soon as possible.

- Prevent Moisture due to condensation by increasing surface temperature of reducing the moisture level in air (humidity). To increase surface temperature, insulate or increase air circulation. To reduce the moisture level in air, repair leaks, increase ventilation (if outside air is cold and dry), or dehumidify (if outdoor air is warm and humid).
- Keep heating, ventilation, and air conditioning (HVAC) drip pans clean, flowing properly, and unobstructed.
- Vent moisture-generating appliances, such as dryers, to the outside where possible.
- Maintain low indoor humidity, below 60% relative humidity (RH), ideally 30-50%, if possible.
- Perform regular building / HVAC inspections and maintenance as scheduled.
- Clean and dry wet or damp spots within 48 hours.
- Don't let foundations stay wet. Provide drainage and slope the ground away from the foundation.

We appreciate the opportunity to provide our services to you. Please feel free to call if there are any questions.

Sincerely,
Honesty Environmental Services, Inc.



Ryan W. Miller, LEED AP, COSS
Vice President

Attachments

**Sample Summary Table 1
Spore Trap Air Samples**

<i>Sample No.</i>	<i>Location</i>	<i>Total Fungal Count (Spores/m³)</i>
01	Outside	16400
02	Kitchen	120
03	Master Bedroom	80

**Measurement Summary Table 2
Measurement of Climatologic Conditions**

<i>Location</i>	<i>Relative Humidity</i>	<i>Temperature</i>	<i>Dew Point</i>
Exterior of Residence	89.4%	81.1°F	77.7°F
Kitchen	44.7%	74.2°F	58.2°F
Master Bedroom	48.1%	74.4°F	57.2°F

**Measurement Summary Table 3
Moisture Readings**

<i>Material / Location</i>	<i>Reading Range (%)</i>
Drywall / Master Bedroom	0.71 – 0.74
Drywall / Office	0.67 – 0.68
Drywall / Master Bathroom	0.68 – 0.71
Drywall / Den	0.68 – 0.69
Drywall / Dining Room	0.61 – 0.62
Drywall / Living Room	0.71 – 0.77

Note:

1. Moisture readings in drywall should be 0.8% or less.

LABORATORY ANALYTICAL RESULTS

J3 Resources, Inc.

6110 W. 34th Street, Houston, Texas 77092
 Phone: (713) 290-0221 Fax: (713) 290-0248
 j3resources.com



Spore Trap Report - Total Airborne Fungal Spores

Ryan Miller
 Honesty Environmental Services, Inc.
 6741B Satsuma Drive
 Houston, TX 77041

J3 Order #: JH18101525
 Project #: 18-1721-10273
 Receipt Date: 30-Aug-2018
 Analysis Date: 30-Aug-2018
 Report Date: 30-Aug-2018

3319 Aberdeen Way

Sample Number	01	02	03
Location	Outside	Kitchen	Master Bedroom
Volume (liters)	75	75	75
Debris Rank (0-5)	3	3	3
Limit of Detection (Particles/m ³)	13	13	13
Total Fungal Count (Spores/m ³)	16400	120	80

INDIVIDUAL FUNGAL SPORE DETAIL

	Raw Count	Spores / m ³	%	Raw Count	Spores / m ³	%	Raw Count	Spores / m ³	%
Alternaria	2	27	< 1						
Ascospores	276	3680	22						
Basidiospores	849	11300	69	9	120	100	4	53	67
Cercospora-like									
Chaetomium									
Cladosporium	83	1110	7						
Curvularia	17	227	1						
Drechslera-like	1	13	< 1						
Epicoccum									
Fusarium									
Memnoniella									
Nigrospora	4	53	< 1						
Oidium									
Penicillium/Aspergillus-like									
Pithomyces/Ulocladium									
Rust/Smuts/Myxomycetes/Perconia									
Spegazzinia									
Stachybotrys							2	27	33
Tetraploa									
Torula									
Unidentified Spores									
Zygothiala	1	13	< 1						
Totals	1233	16400	100	9	120	100	6	80	100

MISCELLANEOUS PARTICLES DETAIL

	Raw Count	Particles / m ³	Raw Count	Particles / m ³	Raw Count	Particles / m ³
Hyphal Fragments			1	13		
Pollen					1	13

Analyst: Jake Dao

Lee Poye QA Officer

These results relate only to the samples submitted and were received in acceptable condition unless stated otherwise. The laboratory is not responsible for concentrations which depend on volume collected by non-laboratory personnel. Samples are analyzed according to J3 SOP# 7-03-2, which includes a 100% scan of the trace at 200X magnification and a minimum of 20% of the trace counted at 400X magnification. Debris rank indicates loading of particulates, both biological and non-biological, which may interfere with analysis. High debris rankings (4+) may obscure small spores and/or prevent the adherence of airborne particulates. Fungal counts on samples with high debris or 'overloaded' rankings should be regarded as minimal with actual counts being higher than reported. Blank corrections are not applied to data unless requested by the customer. LOD = Limit of Detection. N/A = Not Applicable.

ENVIRONMENTAL MICROBIOLOGY CHAIN OF CUSTODY



Open Lab Fee

10/5/15

Submitter Name: Ryan Miller		Bill to: Same	
Company: Honesty Environmental, Inc.		Address:	
Address: 6741-B Satsuma Drive			
		City/State:	Zip:
City/State: Houston, Texas	Zip: 77041	PO #:	
Project Information			
Project Name: 3319 Aberdeen Way		Project Manager: Ryan Miller	
Project #: 18-1721-10273		Notification By: Email: <input type="checkbox"/> Verbal: <input type="checkbox"/> Text: <input type="checkbox"/>	
Email Report To: ryan@honestyenvironmental.com		Email Invoice To: theresa@honestyenvironmental.com	
Special Instructions:			
Turnaround Times – Please Select One			
Emergency* <input type="checkbox"/>	1 Day <input checked="" type="checkbox"/>	2 Day <input type="checkbox"/>	3 Day <input type="checkbox"/>
MOLD			
Air Samples, Non-Culturable	Surface Samples, Non Culturable	Air & Surface Samples, Culturable	
<input checked="" type="checkbox"/> Spore Trap Analysis (Air-O-Cell, Allergenco D)	<input type="checkbox"/> Direct Exam ○ Tape/Swab ○ Bulk/Dust	<input type="checkbox"/> Culture Plates (with Genius ID and Abundance)	
BACTERIA			
AIR		SURFACE/WATER	
<input type="checkbox"/> Total Count (TSA – TOTAL CFU's) <input type="checkbox"/> Gram Negative Count (Maconkey – Total CFU's) <input type="checkbox"/> Total & Gram Negative Count <input type="checkbox"/> Gram Stains and Counts		<input type="checkbox"/> Total Coliforms / <i>E. Coli</i> (Presence/Absence) <input type="checkbox"/> Total Count (TSA – TOTAL CFU's) <input type="checkbox"/> <i>Enterococcus sp.</i> (Presence/Absence) <input type="checkbox"/> <i>Legionella</i>	
SAMPLE INFORMATION			
SAMPLE NUMBER	SAMPLE LOCATION / MATERIAL	VOLUME	
01	OUTSIDE	75L	
02	Kitchen	75L	
03	Master Bedroom	75L	
Signatures			
Relinquished By: Ryan W. Miller		Date: 8/30/15	Time: 9:50
Received By:		Date: 9/30/15	Time: 9:40am

* Emergency TAT requires prior lab notification. All samples analyzed outside normal business hours are charged at Emergency rate.

PHOTOGRAPHS



3319 Aberdeen Way * Houston, Texas



Office



Master Bedroom



Dining Room



Master Bathroom



Kitchen/Breakfast Area

TDLR LICENSES



TEXAS DEPARTMENT OF LICENSING AND REGULATION

P.O. Box 12057
Austin, Texas 78711-2057
1-800-803-9202 (512) 463-6599
www.tdlr.texas.gov

If you cut around the border of the license it will fit in
a standard 5" x 7" frame.

HONESTY ENVIRONMENTAL SERVICES, INC.
6741B SATSUMA DRIVE
HOUSTON TX 77041

Mike Arismendez
Chair

Thomas F. Butler
Vice Chair



Helen Callier
Rick Figueroa
Ravi Shah
Deborah A. Yurco

Mold Assessment Company
HONESTY ENVIRONMENTAL SERVICES INC

License Number: ACO0132

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

License Expires: January 12, 2020

Brian E. Francis
Executive Director

STATE OF TEXAS

RYAN W MILLER

MOLD ASSESSMENT CONSULTANT



LICENSE NUMBER MAC1038
EXPIRES 03/04/2020

TEXAS DEPARTMENT OF LICENSING AND REGULATION

The person named on this card may perform
the duties within the scope of work
authorized by applicable law through the
expiration date shown on the front of the card.



A handwritten signature in black ink that reads "Brian E. Francis".

Brian E. Francis
Executive Director

Texas Department of Licensing and Regulation

www.tdlr.texas.gov



TEXAS DEPARTMENT OF STATE HEALTH SERVICES

Be it known that

J3 RESOURCES INC

is licensed to perform as a

Mold Analysis Laboratory

in the State of Texas and is hereby governed by the rights, privileges, and responsibilities set forth in Title 25, Texas Administrative Code, Chapter 295, relating to Texas Mold Assessment and Remediation Rules, as long as this license is not suspended or revoked.

A handwritten signature in black ink, appearing to read "John Hellerstedt".

John Hellerstedt, M.D.
Commissioner of Health

License Number: LAB0132

Expiration Date: 12/2/2018

Control Number: 6559

(Void After Expiration Date)

VOID IF ALTERED NON-TRANSFERABLE

**TEXAS DEPARTMENT OF INSURANCE
CERTIFICATE OF MOLD DAMAGE REMEDIATION**



TEXAS DEPARTMENT OF INSURANCE

PC326 MDR-1 | Eff. 12/15/05

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



CERTIFICATE OF MOLD DAMAGE REMEDIATION

Certificate Number 18-1712-10273 Date of Issuance August 31, 2018

Name

Mailing Address

City State Zip

Property Description:

Number 3319 Street Aberdeen Drive Lot 8 Block 15

Addition or Tract Southern Oaks Sec 2 City Houston County Harris

SIGN APPROPRIATE CERTIFICATION

Mold Assessment Consultant License Holder Certification

- I hereby certify that based on visual, procedural and analytical evaluation, the mold contamination identified for this project has been remediated as outlined in the mold management plan or remediation protocol.
I further certify with reasonable certainty that the underlying cause or causes of the mold that were identified for this project in the mold management plan or remediation protocol have been remediated. A copy of the written evaluation that forms the basis for my certification has been provided to the person named in this certificate.

Mold Assessment Consultant License Holder Signature

Department of State Health Services License No. and Expiration Date

Date

Mold Remediation Contractor License Holder Certification

- I hereby certify that I completed mold remediation on this project and will provide the mold remediation certificate to the property owner no later than the 10th day after the date of completion.

Mold Remediation Contractor License Holder Signature

Department of State Health Services License No. and Expiration Date

Date of Completion

OR

Mold Assessment Consultant or Adjustor License Holder Certification

- I hereby certify that I have inspected the property described in this certificate and that based on my inspection I have determined that the property does not contain evidence of mold damage. A copy of the written evaluation that forms the basis for my certification has been provided to the person named in this certificate.

Signature of Ryan W. Miller

Mold Assessment Consultant/Adjustor License Holder Signature

MAC 1038 / Expires 3/04/2020

Department of State Health Services License No. and Expiration Date

8/31/2018

Date

TEXAS CONSUMER MOLD INFORMATION SHEET



CONSUMER MOLD INFORMATION SHEET



State rules require licensed mold assessors and remediators to give a copy of this Consumer Mold Information Sheet to each client and to the property owner, if not the same person, before starting any mold-related activity [16 TAC 78.70].

How does Texas regulate businesses that do testing for mold or that do mold cleanup?

The Department of Licensing and Regulation (TDLR) regulates such businesses in accordance with the [Texas Occupations Code, Chapter 1958](#). Under the **Texas Mold Assessment and Remediation Rules (rules)** ([16 Tex. Admin. Code, Chapter 78](#)), all companies and individuals who perform mold-related activities in Texas must be licensed by TDLR unless exempt. (See Page 2 regarding owner exemptions.) Individuals must meet certain qualifications, have required training, and pass a state exam and criminal history background check in order to be issued a license. Applicants for a mold remediation worker registration must have training and pass a criminal history background in order to be registered by TDLR. Laboratories that analyze mold samples must also be licensed and meet certain qualifications. The rules set minimum work practices and procedures and also require licensees to follow a code of ethics. To prevent conflicts of interest, the rules also prohibit a licensee from conducting both mold assessment and mold remediation on the same project. While the rules regulate the activities of mold licensees when they are doing mold-related activities, the rules do not require any property owner or occupant to clean up mold or to have it cleaned up.

How can I know if someone is licensed?

A licensed individual is required to carry a current TDLR license certificate with the license number on it. A search tool and listings of currently licensed companies and individuals can be found at: <https://www.tdlr.texas.gov/LicenseSearch/>.

What is “mold assessment?”

Mold assessment is an inspection of a building by a **mold assessment consultant** or **technician** to evaluate whether mold growth is present and to what extent. Samples may be taken to determine the amount and types of mold that are present; however, sampling is not necessary in many cases. When

mold cleanup is necessary a licensed mold assessment consultant can provide you with a **mold remediation protocol**. A protocol must specify the estimated quantities and locations of materials to be remediated, methods to be used and clearance criteria that must be met.

What is meant by “clearance criteria?”

Clearance criteria refer to the level of “cleanliness” that must be achieved by the persons conducting the mold cleanup. It is important to understand and agree with the mold assessment consultant prior to starting the project as to what an acceptable clearance level will be, including what will be acceptable results for any air sampling or surface sampling for mold. There are no national or state standards for a “safe” level of mold. Mold spores are a natural part of the environment and are always present at some level in the air and on surfaces all around us.

What is “mold remediation?”

Mold remediation is the cleanup and removal of mold growth from surfaces and/or contents in a building. It also refers to actions taken to prevent mold from growing back. Licensed **mold remediation contractors** must follow a mold remediation protocol as described above and their own **mold remediation work plan** that provides specific instructions and/or standard operating procedures for how the project will be done.

Before a remediation project can be deemed successful, a mold assessment consultant must conduct a **post-remediation assessment**. This is an inspection to ensure that the work area is free from all visible mold and wood rot, the project was completed in compliance with the remediation protocol and remediation work plan, and that it meets all clearance criteria that were specified in the protocol. The assessment consultant must give you a **passed clearance report** documenting the results of this inspection. If the project fails clearance,

further remediation as prescribed by a consultant will be necessary.

What is a Certificate of Mold Damage Remediation?

No later than the 10th day after a mold remediation project stop date, the remediation contractor must sign and give you a **Certificate of Mold Damage Remediation**. The licensed mold assessment consultant who conducted the post-remediation assessment must also sign the certificate. The consultant must truthfully state on the certificate that the mold contamination identified for the project has been remediated and whether the underlying cause of the mold has been corrected. (That work may involve other types of professional services that are not regulated by the mold rules, such as plumbing or carpentry.) Receiving a certificate documenting that the underlying cause of the mold was remediated is an advantage for a homeowner. It prevents an insurer from making an underwriting decision on the residential property based on previous mold damage or previous claims for mold damage. If you sell your property, the law requires that you provide the buyer a copy of all certificates you have received for that property within the preceding five years.

How is a property owner protected if a mold assessor or remediator does a poor job or damages the property?

The rules require licensees to have commercial general liability insurance in the amount of at least \$1 million, or to be self-insured, to cover any damage to your property. Before hiring anyone, you should ask for proof of such insurance coverage. You may wish to inquire if the company carries additional insurance, such as professional liability/errors and omissions (for consultants) or pollution insurance (for contractors), that would provide additional recourse to you should the company fail to perform properly.

How is my confidentiality protected if I share personal information about myself with a company?

Under the code of ethics in the rules, to the extent required by law, licensees must keep confidential any personal information about a client (including medical conditions) obtained during the course of a mold-related activity. Further, you may be able to negotiate a contract to include language that other personal information be kept confidential unless disclosure "is required by law." However, licensees are required to identify dates and addresses of projects and other details that can become public information.

How do I file a complaint about a company?

Anyone who believes a company or individual has violated the rules can file a complaint with TDLR. For information on this process, call 1-800-803-9202, or complete the online complaint form at <https://www.tdlr.texas.gov/complaints/>.

Can property owners do mold assessment or remediation on their own property without being licensed?

Yes. A homeowner can take samples for mold or clean it up in the home without a license. An owner, or a managing agent or employee of an owner of a residential property is not required to be licensed, **unless** the property has 10 or more residential dwelling units. For non-residential properties, an owner or tenant, or a managing agent or employee of an owner or tenant, is not required to be licensed to do mold assessment or remediation on property owned or leased by the owner or tenant, **unless** the mold contamination affects a total surface area of 25 contiguous square feet or more. Please refer to 16 TAC §78.30 for further details on exceptions and exemptions to licensing requirements.

For more information about mold and the Texas Mold Assessment and Remediation Rules, contact:

Texas Department of Licensing and Regulation

Mold Assessors and Remediators

PO Box 12057, Austin, TX 78711

Phone: 512-463-6599 or 800-803-9202

www.tdlr.texas.gov
