



P.O. Box 41794
Houston, TX 77241
Office: 713-937-6568

November 18, 2017

Kim Ahrens
22502 Westbrook Cinco Lane
Katy, Texas 77450

***RE: Limited Mold Assessment and
Flood Damage Report***

BACKGROUND

At your request, Envirohealth, Inc. assessed the conditions of your home following the flood damage response after Hurricane Harvey. An indicator of successful flood response is the absence of excessive mold growth. Every building and residential structure has some level of mold (fungal) growth. The first order variable causing elevated levels of mold contamination is water/moisture leaks/intrusion, including high humidity (Relative Humidity – R.H. approaching dew point saturation). Indicators of mold growth include visible growth, rot and odors. High humidity and high moisture levels in building materials support continued growth of viable mold colonies. On September 11, 2017, the subject home was inspected for signs of visible mold growth and indicators of conditions that would support mold growth. This will be referred to as limited assessment for the purposes of this document. Also, the subject home was inspected for proper removal of black water (sewage mixed flood water) contaminated material related to Hurricane Harvey.

The purposes of this Limited Mold/IAQ Assessment were 1.) to identify conditions that could cause mold growth, 2.) to characterize the extent, if any, of present mold contamination, and 3.) to provide a general characterization of the indoor air quality

in the residence. To this end, Envirohealth, Inc. performed a visual inspection of the residence's interior and collected pertinent data.

This Limited Mold Assessment Report includes the findings and recommendations resulting from the Limited Mold Assessment conducted on the above date. This assessment is not a warranty or guarantee of future performance or conditions. This investigation did not include a plumbing leak test or building envelope leak evaluation. This investigation included the collection of biological air samples that would further support observations and conclusions of proper response to the black water wetted material. The collected samples were submitted to Bioldea Analytical, Inc. (a Texas licensed mold laboratory) for analysis.

No exposure limits or standards have been established relating to fungal organisms or fungal contamination in commercial or residential settings. However, this assessment was conducted in accordance with current industry guidelines and practices, and in accordance with the Texas Mold Assessment and Remediation Rules (25 TAC §§295.301-339), revised May 2007 (TMARR). The client was provided with a copy of the Texas Department of State Health Services' *Consumer Mold Information Sheet*. Findings and conclusions in this report may be changed as new information warrants.

METHODOLOGY

Envirohealth, Inc. visited the home to document current conditions, owner information and record any remnant detrimental conditions. General information was also documented as available on the cleanup and dry down activities conducted after the flood water receded. The general condition of the home was documented with photographs. If the interior was not isolated from the exterior environment and surfaces weren't clean and dry (moisture meter) samples were

delayed until such conditions were achieved. This assessment measured indoor humidity levels, general cleanliness and building material moisture levels in support of determining effectiveness of contaminated material removal and cleaning. At the time of this assessment, fans, dehumidifiers and any scrubbers had been turned off by the client or client's representative to avoid effects on air samples. Envirohealth, Inc. sampled indoor air levels of spores to further support a determination of successful removal and cleanup.

Spore Trap (Non-culturable) Air Sampling

Air sampling is used to identify and quantify a broad spectrum of fungal spores (both culturable (viable) and non-culturable (non-viable)) present in the air. The resulting spore counts are used to assess whether the levels present suggest a fungal problem in the indoor locations. Envirohealth, Inc. believes that this type of sampling can provide a higher level of verification than is possible with only visual and moisture level monitoring (typical endpoint of most response actions). Assessment after all areas are exposed supports better repair and cleanup of structure that would otherwise be covered by building materials after build back. Also, a clean, dry normal indoor air environment confirmed under the worst deconstructed home condition indicates a high-quality removal that marks a successful starting point for build back or resale. Although there can be no guarantee of future conditions, Envirohealth, Inc.'s certification, where successful, shows that the home achieved results similar to a more formal remediation.

Sampling locations include problem areas representative of the whole home interior and an outdoor sample (or samples) for interpretation. Air sampling data represents a specific moment in time and field observations are of equal importance. Items such as HVAC operation, and how accessible the outside air is (e.g. nearby windows and doors to the outside) are noted because they may affect results.

Moisture Meter (Material Moisture) Measurements

This was a visual investigation. No intrusive inspections of wall cavities were made; however, most were fully exposed. Moisture mapping and checking was conducted using the Delmhorst BD-10 Contractors Moisture Meter. To avoid conditions conducive for mold growth, moisture levels in wood based materials should be at 15% or less. Although this is helpful to pinpoint problem areas requiring more dry down, professional interpretation is needed to confirm acceptable dryness.

Thermal Imaging

The FLIR E6 infrared camera was used for the purpose of identifying thermal anomalies that might indicate areas of possible moisture in building materials. A thermal anomaly, if present, was further investigated/inspected.

Relative Humidity

Indoors, Relative Humidity (R.H.), the relative amount of moisture in the air, should be maintained at less than 55%, to minimize fungal growth on surfaces and in the HVAC System(s). Indoors, R.H. will vary according to performance of the HVAC System(s) during the heating and cooling seasons, as well as occupant activities.

OBSERVATIONS, DATA & ANALYSIS

On September 11, 2017, all interior areas were not sufficiently clean. No visible mold growth was observed on interior surfaces. All susceptible flood water contact interior building materials had been removed and the remaining black water contact interior surfaces had been disinfected, according to the owner. Dry down

OBSERVATIONS, DATA & ANALYSIS

had been in progress shortly after removal until low material moisture levels were achieved.

On September 11, 2017, the measured moisture levels in building materials for this home were within normal limits that would be considered at equilibrium or dry.

On September 11, 2017, Relative Humidity levels were checked to ensure that the indoor levels were normal (55% or less).

Although air sampling has its limitations, it can be a useful tool in determining the extent of airborne fungal spores and whether or not a hidden reservoir(s) of fungal growth is resulting in high concentrations of airborne fungal spores in the indoor environment. To conduct such air sampling, samples are collected from outdoors (or an interior non-affected area(s) as an indication of “normal” background and the suspect area(s) for purposes of comparison. In this case, there was not a non-affected area in the flooded portion of the home.

Every residence and building has some fungal growth, spores and mycelial fragments in it; however, it is generally accepted that the general numbers should be less and type (genus) of fungi found indoors should be similar to that found outdoors with the exception of “indicator” mold genera that favor high moisture conditions. The presence of the “indicator” mold genera indicate remnant high moisture conditions and/or growth reservoirs in building materials and include *Aspergillus/Penicillium*-like spores (elevated compared to the outdoors), *Stachybotrys*, *Fusarium*, *Trichoderma*, *Memnoniella*, and *Chaetomium*. These primary and secondary colonizers are indicators of water damage that has not been successfully remediated if measured in excess levels. Analysis of the spore trap air sampling conducted on September 11, 2017 reported spore numbers

elevated above “background” or “typical” levels with the presence of excessive indicator mold genera.

The home was revisited on September 30, 2017, after the homeowner reported additional cleaning had been completed. Analysis of the spore trap air sampling conducted on September 30, 2017 reported that spore numbers were at or below “background” or “typical” levels with the absence of excessive indicator mold genera.

On September 11 and September 30, 2017, the measured moisture levels in building materials of this home were within normal limits that would be considered at equilibrium or dry. Relative Humidity levels were checked to ensure that the indoor levels were normal (55% or less).


CONCLUSIONS AND RECOMMENDATIONS

The visual inspection of the home indicate that water damage and/or visible/suspect mold growth have been properly addressed. It is the opinion of Envirohealth, Inc. that the cleanup response of flooded areas of the home was successful. This home is ready for final cleaning and buildback. (See the attached certificate.)

The buildback contractor is responsible for new, site specific planning, testing, engineering and implementation of all repairs, according to the current code requirements. It is recommended that the home’s HVAC system(s) be serviced and cleaned by a licensed HVAC contractor when the buildback is completed. Envirohealth, Inc. is not responsible for new and changing conditions that may cause further water damage. Future water releases or leaks should be responded to and dried within 48 hours to prevent additional growth. It is recommended that

the HVAC systems and components be cleaned after buildback and reoccupancy. Additional information can be found at www.epa.gov/mold/moldresources.html and <http://www.dshs.texas.gov/mold/default.shtm>. (Also, see attachments to this document.)

Texas Department of State Health Services
Mold Assessment Consultant
License Number: MAC0169
Expiration Date: March 6, 2018



Gary L. Stanford, C.I.E.

Attachments:

Laboratory Results

Laboratory Chain of Custody

TDI Certificate of Mold Damage Remediation.

Notices

Limitations

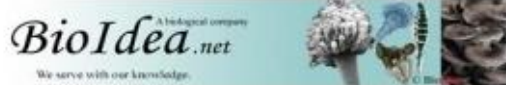
Texas Mold Regulations and Sources

MAC0169 License

General Mold Management Best Practices

Photographs

Attention Gary Stanford
 Client Envirohealth, Inc.
 PO Box 41794



Houston, TX 77241 **11511 Early Forest Ln, Houston, TX 77043**
 Project Ahrens-0917; 22502 Westbrook Cinco Ln, Katy, TX 77450 www.BioIdea.net 281-920-3066
 BioIdea Order ID 17EHI050 Sampling Date 9/11/2017 Report Date 9/11/2017

Air Cassette Mold Spore Report, Method M11, M12, M13, M14, M15, M19

Client Sample No.	AS1		AS2		AS3		AS4	
Sample Location	Outside		Kitchen		Study		Master Bdrm/ Bathroom	
Sampl Vol L Sensitivity	75	53	75	53	75	53	75	53
Left Column=Raw Data	25%	1000 L	25%	1000 L	25%	1000 L	25%	1000 L
Alternaria	-	-	1	53	-	-	-	-
Acremonium-like	-	-	2	107	-	-	-	-
Arthrospores	-	-	-	-	-	-	-	-
Ascospores	15	800	-	-	2	107	-	-
Aspergillus/Penicillium	15	800	95	5067	60	3200	35	1867
Arthrinium	-	-	1	53	1	53	-	-
Basidiospores	7	373	-	-	1	53	1	53
Bipolaris/ Drechslera	-	-	8	427	2	107	3	160
Chaetomium	-	-	3	160	2	107	-	-
Cladosporium	150	8000	25	1333	10	533	20	1067
Curvularia	-	-	2	107	-	-	2	107
Epicoccum	-	-	1	53	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-
Ganoderma	1	53	-	-	1	53	-	-
Memnoniella	-	-	-	-	-	-	-	-
Myxomycete	4	213	2	107	1	53	2	107
Paecilomyces	-	-	-	-	-	-	-	-
Peronospora (Mildew)	2	107	-	-	-	-	-	-
Pith /Stemph /Uloclad	2	107	1	53	-	-	-	-
Sporangiospore (Zygo)	-	-	-	-	-	-	-	-
Nigrospora	-	-	2	107	1	53	-	-
Spegazzinia	-	-	-	-	-	-	-	-
Stachybotrys	-	-	-	-	-	-	-	-
Rust/Urediniopore	2	107	-	-	-	-	-	-
Torula	-	-	-	-	-	-	-	-
Hyphal Fragment	5	267	5	267	1	53	2	107
Unidentified Spores	45	2400	-	-	-	-	-	-
Total Spores	248	13227	148	7893	82	4373	65	3467
Bkgd Debris (1-5)	2		3		2		3	

Note:

J. Jay Jin
 Analyst: J. Jay Jin, PhD

How to interpret your report? 1. Left column is Raw Data with Reading percentage; Right column is data converted in Standardized 1000 L (M3). 2. Sensitivity = 1000 liters / your sampled volume / reading percentage. 3. Your samples were scanned 100%, then read at the indicated percentage. 4. Some mold spores are grouped together due to morphological similarity. 5. **Background Debris** indicates how clean or dirty your air is. Rating 1= 0-19%; 2=20-39%; 3=40-59%; 4=60-79%; 5=80-100% covered by particulates, fibers, pollens, molds, insect parts etc inside the impact area. 6. When background rating is 5, which is overloaded, mold spores are estimated based on peripheral reading. 7. For abbreviation: Asp/Pen= Aspergillus/Penicillium. Clado/Cladoph=Cladosporium/Cladophialophora; Pith/Stem/Uloclad=Pithomyces/Stemphylium/Ulocladium; Bipolaris/Drechslera may include Exserohilum. Zygo=Zygomycete. 8. Stachybotrys is the so-called "Black Mold"; Memnoniella is the sister genus to Stachy; Zygomycetes (Zygo) is the "Black Bread Mold"; Myxomycete is the "Slime Mold", not true molds; Basidiospores are from mushrooms, solely of outdoors. 9. Raw counts may not be comparable among samples if sampling volumes are different. 10. By submitting samples with COC, you agree on terms, conditions, and payment, see Disclaimer @BioIdea.net.

BioIdea Order No. 17 EHL050

 BioIdea.net
 We solve environmental problems.


Mold, Bacteria and Water Sample Submission Form

Contact person: Gary Stanford	Alternat. phone:
Company: Envirohealth, Inc.	Alternat. email:
Address1: PO Box 41794	Project name: <u>Ahrens - 0917</u>
Address2:	Your project No.:
City: Houston State: TX ZIP: 77241	Proj. address1: <u>22502 Westbrook ^{Circle Ln.}</u>
Cell phone: 713-826-4550 Bus. phone:	Proj. address2: <u>Katy TX 77450</u>
Email: gary_stanford@comcast.net	Sampling date: <u>9-11-17</u>

Mold Testing Methods:**Air Cassettes (M10 series):**

- M11 Air-O-Cell (Zefon);
- M12 Allergenco (EMS);
- M13 Cycllex-D (EMS);
- M14 Micro5 (EMS);
- M15 Bio-Cell (GrafiTech);
- M19 Customer defined cassette;

Surface Materials (M20 series):

- M21 Direct exam (Tape samples);
- M22 Direct exam (Bulk samples);
- M23 Direct exam (Swab samples);

Live Mold on Medium Plates (M30 series):

- M31 Anderson impactors (use a vacuum pump);
- M32 Stationary plates (without using a vacuum pump);
- M33 Derived from Swabs, Tapes, and Bulk samples;
- M34 *Aspergillus* species determination (culture only);
- M35 *Penicillium* species determination (culture only);
- M36 *Stachybotrys* species determination (culture only);
- M37 *Cladosporium* species determination (culture only);
- M39 Customer defined species determination (culture);

Bacteria & Water Testing: (*24-48 hr turn-around only)

- BAC11 Bacterial total coliform presence or absence;
- BAC12 *E. coli* (*Escherichia coli*) presence or absence;

Turn-Around Time (*Apply to mold samples. *Bacteria/ Water samples use 24-48hr turn-around only):Rush 3-7 hr same-night turn-around | 2nd-day at night turn-around | 3rd-day at night | 4th-7th day at night

Sample No.	Sample location	Air volume (liters); Water >100 ml	Sample type	Testing Method	Turn-around Time*
AS1	Outside	75L	Air	M12	Rush
AS2	Kitchen	↓	↓	↓	↓
AS3	Study	↓	↓	↓	↓
AS4	Master Bedroom/Bath	↓	↓	↓	↓

Relinquished by Jud Date 9-11-17; Received by JT Date 9/11/17832-495-5301 c; 281-920-3066 www.bioidea.net

11511 Early Forest Ln, Houston, TX 77043

Attention Gary Stanford
 Client Envirohealth, Inc.
 PO Box 41794



Houston, TX 77241

11511 Earl Forest Ln, Houston, TX 77043

Project Ahrens-0917-2; 22502 Westbrook Cinco Ln, Katy, TX 774 www.Bioldea.net 281-920-3066

Bioldea Order ID 17EHI099 Sampling Date 9/30/2017 Report Date 9/30/2017

Air Cassette Mold Spore Report, Method M11, M12, M13, M14, M15, M19

Client Sample No.	AS5		AS6		-	-
Sample Location	Kitchen		Study		-	-
Sampl Vol L Sensitivity	75	53	75	53	-	-
Left Column=Raw Data	25%	1000 L	25%	1000 L	-	-
Alternaria	-	-	-	-	-	-
Acremonium-like	-	-	-	-	-	-
Arthrospores	-	-	-	-	-	-
Ascospores	3	160	-	-	-	-
Aspergillus/Penicillium	8	427	7	373	-	-
Arthrinium	-	-	-	-	-	-
Basidiospores	3	160	-	-	-	-
Bipolaris/Drechslera	1	53	-	-	-	-
Chaetomium	2	107	1	53	-	-
Cladosporium	4	213	2	107	-	-
Curvularia	3	160	-	-	-	-
Epicoccum	1	53	1	53	-	-
Fusarium	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-
Memnoniella	-	-	-	-	-	-
Myxomycete	-	-	1	53	-	-
Paecilomyces	-	-	-	-	-	-
Peronospora (Mildew)	-	-	-	-	-	-
Pith /Stemph /Uloclad	-	-	-	-	-	-
Sporangiospore (Zygo)	-	-	-	-	-	-
Nigrospora	-	-	-	-	-	-
Spegazzinia	-	-	-	-	-	-
Stachybotrys	-	-	-	-	-	-
Rust/Urediniospore	-	-	-	-	-	-
Torula	-	-	-	-	-	-
Hyphal Fragment	2	107	1	53	-	-
Unidentified Spores	-	-	-	-	-	-
Total Spores	27	1440	13	693	-	-
Bkgd Debris (1-5)	3		3		-	-

Note:

J. Jay Jin
 Analyst: J. Jay Jin, PhD

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BioIdea Order No. 17EHI099

BioIdea.net



Mold, Bacteria and Water Sample Submission Form

Contact person: Gary Stanford	Alternat. phone:
Company: Envirohealth, Inc.	Alternat. email:
Address1: PO Box 41794	Project name:
Address2:	Your project No.: <u>AHrens-0917-2</u>
City: Houston State: TX ZIP: 77241	Proj. address1: <u>22502 Westbrake Circo</u>
Cell phone: 713-826-4550 Bus. phone:	Proj. address2: <u>Katy TX 77450</u>
Email: gary_stanford@comcast.net	Sampling date: <u>9-30-17</u>

Mold Testing Methods:**Air Cassettes (M10 series):**

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Turn-Around Time (*Apply to mold samples. *Bacteria/ Water samples use 24-48hr turn-around only):Rush 3-7 hr same-night turn-around | 2nd-day at night turn-around | 3rd-day at night | 4th-7th day at night

Sample No.	Sample location	Air volume (liters); Water >100 ml	Sample type	Testing Method	Turn-around Time*
<u>AS 5</u>	<u>Kitchen</u>	<u>75L</u>	<u>Air</u>	<u>M12</u>	<u>Rush</u>
<u>AS 6</u>	<u>Sturdy</u>	<u>↓</u>	<u>↓</u>	<u>↓</u>	<u>↓</u>

Relinquished by [Signature] Date 9-30-17; Received by [Signature] Date 9/30/17

832-495-5301 e; 281-920-3066 www.bioidea.net

11511 Early Forest Ln, Houston, TX 77043



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

Print

CERTIFICATE OF MOLD DAMAGE REMEDIATION

Certificate Number 11182017 - 22502 Date of Issuance 11/18/2017

Name Kim Ahrens

Mailing Address 22502 Westbrook Cinco Ranch

City Katy State Texas Zip 77450

Property Description:

Number 22502 Street Westbrook Cinco Ranch Lot Block

Addition or Tract City Katy County Fort Bend

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.
Mold Assessment Consultant/Adjustor License Holder Signature MAC 0169 03/07/2018 Department of State Health Services License No. and Expiration Date Date 11/18/2017

Notices

This Mold Assessment Report is NOT A MOLD REMEDIATION PROTOCOL. If there is less than 25 contiguous square feet of visible mold growth, a licensed Mold Remediation Contractor is not required by the Texas Mold Assessment and Remediation Rules (TMARR) to clean/remediate any identified mold. (Note: A Mold Remediation Protocol is prepared by a Mold Assessment Consultant and is a detailed scope of work for a mold remediation.) “Regardless of the size of the area affected by mold contamination, if a licensed Mold Remediation Contractor is hired by the consumer, the Mold Remediation Contractor must follow the TMARR. This includes developing a work plan which follows a protocol developed by a licensed Mold Assessment Consultant,” per the Texas Department of State Health Services. According to the Texas Mold Assessment and Remediation Rules and Regulations (TMARR) §295.303, Exceptions and Exemptions, (b) Minimum area exemption, “A person is not required to be licensed under this subchapter to perform mold remediation in an area in which the mold contamination for the project affects a total surface area of less than 25 contiguous square feet.”

Limitations

Unless a more comprehensive mold assessment is agreed to by all parties, Envirohealth, Inc. performed a “limited” mold assessment at the subject property in accordance with the Texas Mold Assessment and Remediation Rules (TMARR) and generally accepted industry standards and professional practices. Envirohealth, Inc. has no knowledge of any hidden or unapparent or adverse environmental conditions of the property, including the presence of mold, hazardous wastes, toxic substances, etc. Envirohealth, Inc. makes no guarantees or warranties, express or implied, regarding the condition of the property. Envirohealth, Inc.’s report and associated conclusions are based on the visible conditions of the inspected areas and materials. Envirohealth, Inc. reserves the right to revise opinions and conclusions, if necessary and warranted, based on the discovery and/or disclosure of new or additional information. This

report is specific and “limited” in nature and shall not be relied on as a statement that no mold exists in this property. It is always possible that hidden mold growth exists beyond the visibly accessible areas and normal levels of mold will always be present.

Texas Mold Regulations and Sources

Under the Texas Mold Assessment and Remediation Rules (Rules) (25 TAC §§295.301295.338), all companies and individuals who perform mold-related activities must have the appropriate licensing from the Texas Department of State Health Services. For more information about mold and the Texas Mold Assessment and Remediation Rules, please visit the Texas Mold Program website at <http://www.dshs.texas.gov/mold/default.shtm>.



TEXAS DEPARTMENT OF STATE HEALTH SERVICES

BE IT KNOWN THAT

GARY L STANFORD

is hereby licensed and authorized to perform as a

Mold Assessment Consultant

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 dark ink, appearing to read "Kirk Cole".

Kirk Cole, Interim
Commissioner of Health

License Number: MAC0169

Control Number: 8364

Expiration Date: 12/6/2017
(Void After Expiration Date)

VOID IF ALTERED NON-TRANSFERABLE

Licensed renewal extended to March 6, 2018 by the TDLR.

General Mold Management Best Practices

Every residential structure has some level of fungal growth and mold spores. Mold and mildew, including incidental or surface growth, can be minimized by good housekeeping practices and routine home maintenance.

- Repair plumbing leaks and other sources of water intrusion as soon as possible. Areas affected by water leaks or overflows should be dried within 24 – 48 hours. Wet carpet padding should be discarded. Ideally, there should be no carpet in bathrooms.
- Indoors, maintain the Relative Humidity at 60% or less, ideally <55%. Use the exhaust vent fans in bathrooms, kitchen, laundry room and other rooms that generate moisture.
- Clean the windowsills, glass and metal window frames of single pane, metal windows when they show indications of moisture condensation. Check to make sure that the alarm sensors in the bottoms of window frames are well sealed.
- Clean bathrooms and other high-moisture areas to remove visible fungal growth in bathtub and shower grout and caulk, as well as other surfaces. Maintain bathtub and shower caulk and grout, and keep the escutcheon (faucet) covers well sealed. Use exhaust vents when showering or bathing.
- Have the HVAC System(s) serviced annually and change air filters when they become loaded (dirty). Use good quality, properly fitted pleated filters that do not allow bypass. Clean accumulations of dust off the supply air registers and check for moisture condensation on registers and grilles. Plastic supply air registers tend not to sweat as much as metal ones. To minimize air infiltration, by maintaining a tightly sealed duct system, and to maximize dehumidification, consult a licensed HVAC contractor.
- Do not cover the interior surfaces of exterior walls with vinyl wallpaper. Acting as a vapor barrier, vinyl wallpaper can promote fungal growth between the wallpaper and the sheetrock.
- On a regular basis, check the roof, fascia, soffit, siding, doors and windows for indications of water intrusion, leaks and/or wood rot, and

make repairs in a timely manner.

- In landscaping, make sure that there is good foundation exposure (4" – 6") and that, on brick construction, the weep holes are open and above grade. Landscaping should slope away from the foundation perimeter and provide positive drainage away from the foundation perimeter.
- Sprinkler systems should be configured and maintained in such a manner as to not put bulk water directly onto windows, window ledges or the exterior siding or brick.
- Alarm sensors in window frames should be sealed and maintained.
- EIFS (exterior insulation finishing systems) and masonry stucco have specific installation and maintenance requirements. Consult a qualified inspector/contractor regarding the appropriate repair and maintenance of these exterior siding systems.
- If the exterior sheathing has been flooded with black water, it requires attention based on the type of material it is composed of (i.e. gypsum, foam, OSB or plywood). Generally, gypsum board that is exposed to blackwater must be removed to prevent future odors and continued growth in the interior paper. Although there are closed cell foam based systems (with a rainscreen) that don't require removal of your exterior gypsum, these are specialized systems and must be installed by trained professionals to ensure that proper moisture barrier is maintained in your wall system. Replacement of removed exterior sheathing should be under the direction of a licensed TX engineer to ensure that the new sheathing provides a sealed drip plain that prevents water intrusion or condensation. Related to plywood sheathing, if in good condition and absent of visible mold growth, antimicrobial encapsulant coatings can be used to seal and minimize future microbial growth during wet periods on the inside surface of wood structural sheathing. Foam sheathing may only require decontamination if it has not absorbed contaminated water. The splash guard plastic at the bottom inside sheathing surface is to protect the bottom wood from high moisture which is common during wet rainy periods. If this was removed during dry down, it should be replaced

or repaired to provide a new seal against water intrusions and prevent rot in wood members. Since success is determined by matching the proper application, professional installation and design, consult your local engineer or building professional before attempting to address contaminated exterior sheathing.

Photographs

