

Indiana IAQ

Issue 6

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About Indiana IAQ:

A new kind of newsletter that addresses the concerns of everyone interested in Indoor Air Quality (IAQ) in Indiana. From the many questions and concerns received this newsletter and the ones to follow are developed from specific concerns. Information is collected and applied this way to the articles published.

Who can write in? *Anyone!* Contractors, mitigation technicians, restoration and remediation technicians, real estate professionals, banks, doctors, lawyers, insurance professionals, investors, anyone with an interest in IAQ.

To submit an idea for an article, write to:

IndianaIAQ@solutionsiec.com.

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Water-damage, You Make Me Sick!

Quite often I get calls from people that have just experienced a water-damage in their homes, and they just do not feel well at all! The immediate blame is usually pointed at mold, but did you know there are other irritants and contaminants found in water-damages? Mold is one of them, but there are others that can arise such as bacteria, Volatile Organic Compounds (VOCs), other allergy and allergen triggers already in the structure, ozone or other pre-existing contaminants, even the moisture itself.

Most of the time the



cleanliness and comfort of the home is compromised on each of the affected building materials, affected content materials, and the air quality, regardless the source of the water. Of course, as time elapses, conditions depreciate the cleanliness of the

water, the building materials, content items and the air, but you should know that there is an immediate

reaction that takes place in every water-damaged environment between the moisture and its surrounding environment.

In most cases, compromised building materials, contents and air quality are bombarded by a complex mixture of interactionary by-products from the moisture and its relations with the pre-existing debris inside the structure. Dormant microorganisms may begin to flourish under the moist conditions; allergy and asthma triggers may be introduced more potent with moisture than without in sensitized occupants; and soil . . .

(read more on page 3)

How Quickly Does Mold Grow After A Water Damage?

The quick answer to this question is that it depends on the mold species present, the type of water damage you are experiencing, and what pre-existing conditions were prior to the water damage.

In most cases, mold can begin to have some impact on the indoor air quality within twenty-four hours. That doesn't mean you will see the fuzzy stuff that soon; that takes a little longer in clean environments. In

fact, structures without mold growth (and I mean no mold growth at all—seen or unseen) can be easily protected from mold growth by properly mitigating the damage within the first twenty-four hours of water. . . (read more on page 2)

Legionnaires' Disease Hospitalizes Thousands Each Year in the U.S.

According to the Centers for Disease Control and Prevention (CDC) between 8,000 and 18,000 people are hospitalized in the U.S. each year due to Legionnaires' disease. This number may be just the tip of the iceberg as it is believed by many experts that most cases are not diagnosed or reported.

The disease caused by *Legionella*, Legionnaires' disease, got its name after a 1976 outbreak at an American Legion convention in Philadelphia that sickened 221 people and caused 34 deaths.

The transmission of *Legionella* occurs via aerosols, when mist containing the bacteria is inhaled. *Legionella* can be found in nature in environments such as lakes and streams, but most human infections occur from manmade sources involving cooling towers or

hot water systems.

Those infected by *Legionella* may take up to two weeks before they begin to show symptoms. There are 2 forms of the disease. Pontiac Fever is a mild illness that causes flu like symptoms that usually do not require treatment. However, Legionnaires' Disease is a far more serious form of pneumonia that can cause long lasting adverse health effects and can be fatal. Both diseases are preventable.

As one of the largest environmental laboratories in the country, and an expert resource for *Legionella* analysis, EMSL Analytical has developed a number of ongoing initiatives to educate environmental professionals and the general public about the organism that causes the disease. A dedicated website with more information can be found at www.LegionellaTesting.com.



Legionella pneumophila

According to Diane Miskowski, Business Development Manager: "EMSL is striving to increase the number of CDC ELITE proficient legionella labs nationwide. Currently Westmont NJ, Houston, TX and the Manhattan lab are members in good standing of this program."

To learn more about *Legionella* and other environmental services please call Diane Miskowski at 800-2203675 x1218.

Author: EMSL Analytical, Inc. is a nationwide, full service, analytical testing laboratory network providing Asbestos, Mold, Indoor Air Quality, Microbiological, Environmental, Chemical, Forensic, Materials, Industrial Hygiene and Mechanical Testing services.

How Quickly Does Mold Grow After A Water Damage?

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. . . intrusion. However, not many of our homes are free of mold growth completely.

Mold growth is something typically unseen, unless the mold has grown into a colony. A colony of mold is that fuzzy growth you see in printed advertisements or newspapers. While mold growth can be defined as any level or stage of growth (including colonies), colonies are more mature in statue, including (simply:) root, hyphae (a mold's (tree) trunk if you will), spores and other by-products.

Growth of mold, on any level, depends on the species present, the food-stuff for mold growth, the temperature and pH of the mold's environment, and amount of moisture available for mold reproduction. All things being perfect for growth, different species can begin growth anywhere from twenty-four hours up to three weeks. For example, some *Stachybotrys* species (the famous "toxic, black mold") require eight days of optimum conditions while other species of *Stachybotrys* may require up to twelve. In contrast, *Blastomyces dermatitidis* can be-

gin growth anywhere from five to twenty-one days!

However, if the water comes from a source that is contaminated, mold growth can be amplified. Cases like this include but are not limited to floods, sewage back-ups, unprocessed water (from any source), aquariums, and hydrostatic pressure.

And if the structure harbors debris (which is the norm for most of us), mold growth can be amplified. For this reason, good building hygiene is one of the best ways to prevent mold growth along with moisture control. For more information on this, visit our website at www.SolutionsIEC.com. Also, see issue 1 of Indiana IAQ for "Procedures for Processing Water Damaged Environments".

Average Colonization Rates:

<u>Microorganism:</u>	<u>Days:</u>
Candida albicans	1 – 2
Rhizopus species (sp.)	1 – 2
Cryptococcus neoformans	1 – 2
Aspergillus sp.	2 – 3
Penicillium sp.	2 – 3
Blastomyces Dermatitidis	5 – 21
Stachybotrys altra	8 – 12

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Water-damage, You Make Me Sick!

(CONTINUED FROM PAGE 1)

... and other debris may be liberated from areas (like the carpet cushion) into the water or content materials (where they can then be accessed more readily by the occupants).

In some cases the damage is immediate, such as with a flood or sewage back-up, while in other cases the contamination process takes more time. Pre-existing conditions (like structure cleanliness, maintenance and care), the source of the moisture, and occupant sensitivities are but a few of the things that influence the contamination process.

In a home I recently visited VOCs were the culprit. The family owned a ozone generating air cleaner, which was running when the water damage occurred. Although the source of the water was clean (a washing machine hose ruptured), the contamination process had an immediate affect.

As humidity increased the interaction between moisture and ozone along with that of the moist and oxidized building components lead to elevated levels of VOCs. Although the restoration company had contained the “wet areas”, two things continued to take place:

1. Areas of containment and drying were isolated to areas where wet building components were found *only*. This means anywhere humidity may have increased was not being addressed.
2. The airborne pollution, from the initial interaction between moisture and the rest of the structure, was ignored.

This is a case where proper ventilation, air filtration, and safety controls needed to be installed along with the proper drying formula in order to secure the structure from a further deteriorating contamination process, return

the structure to “pre-loss condition”, especially to secure the safety and health of all occupants.

Safety and health issues can be numerous. That is why it is so important to have professionals evaluate your specific situation and mitigate the loss as soon as possible (see issue 1 for, “Procedures for Processing Water Damaged Environments”). Overlooked and misdiagnosed conditions can lead to further building deterioration and occupant injury and disease.

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Can My Carpets Make Me Sick?

Carpeting and carpet cushion (PAD), like other building components, can have a dramatic influence on the quality of the indoor air. In a report from the United States Environmental Protection Agency (EPA) entitled “*Indoor Air Pollution: An Introduction for Health Professionals*” (www.epa.gov/iaq/pubs/hpguide.html#faq6), the EPA states that “*Carpet emits volatile organic compounds, as do products that accompany carpet installation such as adhesives and padding. Some people report symptoms such as eye, nose and throat irritation; headaches; skin irritations; shortness of breath or cough; and fatigue, which they may associate with new carpet installation. Carpet can also act as a “sink” for chemical and biological pollutants including pesticides, dust mites, and fungi.*”

Volatile organic compounds such as formaldehyde can be emitted from newly installed carpeting and other building materials, creating an environment very discomfoting. These volatile organic compounds can promote Sick Building Syndrome (SBS) with symptoms including eye, nose and/or throat irritation; nausea; dyspnea; allergic skin reactions;

headache; fatigue; and, dizziness.

Compounding things, these volatile organic compounds can be increased during periods of increased humidity. The American College of Allergy, Asthma and Immunology (ACAAI—www.acaai.org/) recently announced that “*Damp environments, poorly maintained heating and air conditioning systems, and carpeting may contribute to poor indoor air quality*”.

Damp environments increase dust mite activity and other microbial infestations. Mold, for example, can proliferate quickly after a water damage (see article in this issue on “*How Quickly Does Mold Grow After A Water Damage?*”) creating its own volatile organic compound, called microbial Volatile Organic Compounds (mVOCs).

But volatile organic compounds are just a part of the problem. A recent study of carpet cleaning practices discovered that it took a professional cleaning system four separate cleaning passes to return clear water in its collection tank—that is, four clean-

ings, one immediately following the other, on the same carpet before the water being sucked up in the vacuum hoses appeared clean (not measurably but visibly). For sensitized people or buildings experiencing a water damage, this can be a serious problem.

Left-over organics and debris within and/or underneath carpeting and PAD can neutralize a cleaning agent or process of disinfection, leaving the carpeting dirty and a source of indoor air pollution. Dust mites, soil, skin fragments, pollen, mold and other debris, as exposed to moisture, can increase in activity and potency. Once dry, increased or left-over debris can be liberated from the carpeting into the air or onto the occupant by normal use. In our next issue we will discuss what some professionals are doing about this problem. For more information on any of these indoor air pollutants, visit our website at www.solutionsiec.com.

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SOLUTIONS
Indoor Environmental Consulting

"Don't let problems with poor indoor air quality take control of your life. Empower yourself with SOLUTIONS—Indoor Environmental Consulting—today!"

(877) 624-7185

We're on the web!
www.SolutionsIEC.com

SOLUTIONS IEC is a truly experienced business that, with over seventeen years of mitigation, restoration, remediation and hygiene practices, can assist you in determining the Category and Condition of the damaged structure; develop a protocol that is real and specific to the structure; and can provide expertise beyond just an inspector's role. Our staff of professionals have been recognized in both indoor environmental consulting (Council-certified Indoor Environmental Consultants) and microbial remediation supervision (Council-certified Microbial Remediation Supervisors) - two of the most prestigious awards in the industry today! Don't let poor IAQ take control of your life. Empower yourself with SOLUTIONS—Indoor Environmental Consulting—today!

Serving the Indiana and Illinois states!



Christmas Wishes and Prayers

When I began SOLUTIONS—Indoor Environmental Consulting and Indiana IAQ, I was not sure how it would be received and if the newsletter would be responded to (after all it is suppose to be interactive). I wondered if there would be enough interest to keep them going. To my delight and blessing, many people have called in, written about and signed up for our services and this newsletter; I have been interviewed by newspapers, magazines and other media outlets; and I have been asked to develop some educational seminars for various professionals dealing with mold.

I am now going from starting business owner and author of this newsletter to speaker and educator (another step into the uncertain).

I would like to take the opportunity that I have here to express my sincere gratitude to all of you. Without your taking part, my family and I would not

be so blessed. We thank all of you!

To show our gratitude and appreciation we would like to extend our blessing to you. Please know that, as always, you are all in our thoughts and prayers.

Additionally, please accept our gift of \$50.00 off any of our services from now through December of 2010. Just mention you subscribe to our newsletter or show us this issue and we will subtract the \$50.00 from your final bill.

Thank you again for your warm responses to this newsletter and our services; for the blessings you have meant to us.

May God bless and keep all of you, and may you have a Blessed and Merry Christmas season!

- Jason Yost

