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**New Hampshire Mold Task Force  
and the American Lung Association Present:**

**Standard of Care**

for the New Hampshire Mold Industry

*A Guide for Citizens Affected by  
Mold & Moisture in NH Buildings*

Updated November, 2013

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## Executive Summary

In 2008, a group of New Hampshire Legislators, business leaders, and health administrators came together with the same concern: there are currently no laws in place to protect the citizens of NH when it comes to mold and poor indoor air quality. This group of professionals was motivated to find a way to get mold legislation on the books, and they worked together for several months to write and propose a bill to the NH House of Representatives. In 2009, [House Bill 482](#)<sup>1</sup>, relative to mold assessment, testing, and remediation and sponsored by NH Representatives French, Beck, Petterson, and Merrill, was presented on the floor and did not pass, losing by just one vote.

Not ready to give up, the group approached the lawmakers involved, who suggested that the group form a “Mold Task Force,” with the goal of creating a Standard of Care for the NH Mold Industry. The New Hampshire Mold Task Force (NHMTF)<sup>2</sup> was formed, and the group spent the next several months creating what is now this document. The goal of this Standard of Care is to provide information to the citizens of NH not only about the causes of indoor mold, the possible health risks, and prevention measures, but also about the Mold Industry in general, including best practices and tips for hiring consultants and contractors .

## Introduction

In most aspects of the environmental field there are legislative or industry standards for environmental contaminants, i.e., pesticides, PCB’s, lead, and asbestos to name just a few. Mold, however, is largely unregulated, and currently there are no federal, state or local laws, codes or regulations relating to mold investigation or remediation in the state of New Hampshire. The NHMTF believes that in the interest of public safety, mold should be managed in a similar fashion as these other environmental hazards. There are [31 states](#)<sup>3</sup> in the US which have some type of mold legislation with the specific goal to protect the consumer, and seven of those states now have full legislation addressing Indoor Environmental Professionals (IEPs) working in the Mold Industry. In “[Recognition, Evaluation, and Control of Indoor Mold](#),”<sup>4</sup> a reference book on indoor mold written by expert industrial hygiene practitioners, academics and government officials, one of the top concerns listed by most Indoor Environmental Professionals (IEPs) in today’s mold industry is “*the lack of federal or widely accepted industry qualification or practice standards for assessors and remediators.*”

One of the goals of Mold Legislation is to hold those in the Mold Industry to a certain standard so that citizens are not physically and financially burdened by negligence and/or unethical behavior. Another goal is to give citizens a legal course of action when their rights have been violated. Without mold laws, for example, landlords are not responsible to remove mold from buildings, facility managers are not required to respond to complaints about mold within their buildings, and those working in the mold industry are not regulated, meaning consumers often cannot tell the difference between unethical / untrained individuals and those with proper credentials and experience. With the absence of mold laws in NH, citizens do not have much legal protection when they are faced with an indoor mold problem.

Mold Investigations and Mold Remediation both require field experience and great attention to detail. A poorly managed investigation or poorly managed activities during the cleanup of a mold contaminated building will almost certainly increase the costs and the health risks of the occupants, as well as the health risks of the mold workers themselves! The [American Lung Association](#)<sup>5</sup> recognizes the affect that indoor air quality has on our health, and therefore has joined the New Hampshire Mold Task Force (NHMTF) and the efforts to, at a minimum, write a report outlining the minimum Standard of Care for the Mold Industry within New Hampshire. This Standard of Care document is the first step toward protecting the citizens of New Hampshire when it comes to mold and indoor air quality. The NHMTF hopes to raise the awareness of the consumer in regards to the potential health and financial risks involved with mold, to hold those in the Mold Industry to an acceptable standard of care, and to help guide the lawmakers of New Hampshire toward adopting legislation to protect the consumer.

## **Standard of Care**

The ‘Standard of Care’ for an industry is determined by the standard that would be exercised by the reasonably prudent professional in that line of work. A Standard of Care is important because it determines the level of negligence required to state a valid cause of action. The NHMTF has created this Standard of Care for the New Hampshire Mold Industry as a way to help protect citizens who are affected by mold. Going forward, this Standard of Care can now be used as a reference for best practices for those in the NH Mold Industry, as well as a way to inform and protect NH homeowners, tenants, landlords, building managers and anyone else with concerns about mold.

## **The NH Mold Industry: Certifications & Ethics**

Currently in NH, anyone can call themselves a “mold professional” and open a business to perform mold assessments and/or remediation (clean up). There are no prerequisites or credentials of any kind that are required, so a person without any education, training or experience can claim to be a “mold expert” in the state of NH. As this industry continues to grow, unfortunately, so do the number of unqualified and unscrupulous individuals (and organizations) looking to make a quick buck. Buyer beware.

Those in the industry who have worked hard to maintain their education, training, experience, and certifications have become frustrated that a person with no experience can start working in the mold industry simply after passing a one day certification class. An inexperienced person who tries to resolve a serious indoor mold issue is risking the health of anyone who enters that environment, including themselves! An Indoor Environmental Professional (IEP) has the training, experience and credentials to stand behind their title, and there are now several quality professional organizations which provide proper and rigorous training and certification programs. These third party certification programs attract large numbers of dedicated professionals, and provide consumers with a method of distinguishing qualified consultants and contractors from those with limited training, inadequate experience and dubious credentials.

These associations also verify and oversee parts of the industry to assist and protect the consumer. Consumers looking for help with mold issues should consider hiring companies or individuals associated with one or more of these independent organizations.<sup>6</sup>

In addition to providing information regarding experience, education and performance on their certifiants, these organizations also have the authority to take action when someone files a grievance with a person or firm holding the certification. The Task Force believes this is an important fact to consider for the consumer. It should be noted that the industry does have individuals with good training and experience with no credentials. However, without a license from the state or credentials from an independent accrediting body, the consumer cannot distinguish between those individuals that are well qualified from those that are not. Further, if a competent but uncertified mold company or mold worker is sued by a citizen of NH, their defense is weakened by their lack of credentials. **Therefore the NHMTF declares that third party certifications are essential in both protecting the citizens of NH as well as maintaining the credibility of mold professionals and the industry as a whole.**

Two of the more well-known certification programs identified by many states in both legislation and through independent “Standard of Care” guidance documents are: American Industrial Hygiene Association ([AIHA](#)) and American Council for Accredited Certification, ([ACAC](#))<sup>7</sup>. These certification programs meet rigorous third-party accreditation standards, as well as the American Society for Testing and Materials ([ASTM](#))<sup>8</sup> standards for conducting certification programs for professionals and contractors. The [ACAC](#) offers the only third-party designations dedicated to the field of indoor air quality. Though its board-awarded designations meet all these requirements and more, the same cannot be said of many other professional certification programs. Other organizations allow office staffers to grant certification in exchange for payment of fees and passing a simple examination based on a mandatory course with limited information. Field experience is rarely required, much less verified. As a result, "instant certifications" from such organizations are nearly worthless when challenged in court.

In January of 2006, the non-profit [ACAC](#) was awarded the Council of Engineering and Scientific Specialty Boards ([CESB](#))<sup>9</sup> accreditation for its Council Certified Indoor Environmental Consultant ([CIEC](#))<sup>10</sup>. In 2007 the ACAC applied for and received accreditation of its certification programs for those who perform microbial assessment and microbial remediation, the Council Certified Microbial Consultant, ([CMC](#))<sup>11</sup>. The NHMTF recommends that consumers look for these (CIEC, CMC) certifications when hiring a mold professional, as it will save them time and money and give them peace of mind that their problem is being handled safely and professionally.

The ACAC and the American Board of Industrial Hygiene, ([ABIH](#))<sup>12</sup> have a “Code of Ethics” or “Code of Conduct.” The Codes state that a professional shall not provide professional judgment in areas in which they are not competent, or lack expertise. There are many so-called professionals or individuals that provide indoor air quality testing for mold and cannot interpret the data, leaving the consumer forced to hire a “qualified” Indoor Environmental Professional, (IEP). The Code of Ethics / Code of Conduct also state that the IEP is to refrain from financial “Conflict of Interests.” These codes are established to better protect the consumer from individuals conducting both testing and the clean up on the same project. If a company or

individual offers to do both, this should be a red flag to consumers. Professional, certified IEPs who honor the Code of Ethics would never perform both testing and remediation on a single job, as it is regarded industry-wide as a conflict of interest. **Therefore, the NHMTF declares that mold testing and mold remediation are to be performed by two separate parties in order to protect the consumer and to honor the Code of Ethics and Code of Conduct set forth by the ACAC & ABIH.**

The Indoor Air Quality Association ([IAQA](#))<sup>13</sup> is a well-respected membership organization located in Washington D.C., which was established in 1995 to promote uniform standards, procedures and protocols in the Indoor Air Quality Industry. IAQA is a non-profit, 501(c) (6) organization, and their membership includes folks from a wide range of professions and trades including Environmental Consultants, HVAC Practitioners, Design Engineers, Restorers and Remediators, Industrial Hygienists, Building & Facilities Managers, Attorneys, Manufacturers and other related fields. The following is the “Position Statement” from the Indoor Air Quality Association (IAQA) about certifications:

*“IAQA members include a very diverse group of consultants, contractors and others with an interest in IAQ. It should therefore come as no surprise that members of IAQA are certified, registered or licensed by dozens of different organizations and entities. These include state and municipal governments; non-profit organizations like ABIH, ACAC, ASHI, AEE, ASHRAE, BCSP, IICRC, NADCA, NAFA, NEHA, RIA, USGBC and more; as well as by educational institutions and private training providers.*

*IAQA ceased being a certification body in 2006. That is when IAQA transferred its certification programs to the American IAQ Council (now the American Council for Accredited Certification - ACAC). The transfer of certification programs took place under an agreement whereby ACAC transferred its membership and chapter programs to IAQA.*

*Prior to this transfer, IAQA certification programs included the “Certified Mold Remediator - CMR” and the “Certified Indoor Environmentalist - CIE”. When these programs were transferred to ACAC, they underwent substantial change, allowing them to become accredited by the Council for Engineering and Scientific Specialty Boards (CESB). IAQA has no influence over or participation in the administration or operation of these or any other certification programs.*

*Within the sphere of IAQ consulting and contracting, as well as in their mold sub-specialties, there are several certification bodies. IAQA does not exclusively endorse or approve any particular certification program. IAQA believes its members should strive to achieve the experience, education, and credentials necessary to conduct their business activities in a competent, ethical manner. For some members, that may include certifications from multiple organizations.”*

*IAQA believes the following are important attributes for a certification body:*

- *The certification organization and its programs should be accredited by a non-profit, third-party organization such as [ANSI](#)<sup>14</sup>, [CESB](#)<sup>15</sup> or [NCCA](#)<sup>16</sup>.*
- *The certification organization should be operated in compliance with applicable ANSI, CESB and/or NCCA standards and guidelines for personnel certification programs.*
- *The certification organization should be structured such that its volunteer leadership is selected by their peers through a process that is democratic, transparent and consistently applied.*
- *The certification organization should use state-of-the-art psychometric methods in the development and maintenance of its certification examination programs.*
- *The certification organization should allow individuals who meet reasonable experience and/or education eligibility requirements to “challenge” its certification examinations without having to take a specific training course.*
- *Certification should be offered by non-profit organizations that are independent of training entities, product or service vendors, or other parties with similarly vested interests.*

While some may disregard the importance of certifications in the IAQ industry, it is the belief of the NHMTF that they are essential, both for the protection of the consumer and for maintaining the well-being and credibility of those working in the industry.

## **Mold and Your Health**

The fact that the Mold Industry is largely unregulated is just one of the many issues making this topic so controversial. Another issue often debated is whether or not mold has a negative effect on the public’s health. Some individuals are extremely sensitive to mold, while others in the same environment are completely unaffected. This makes it difficult to make the case that a moldy environment is unsafe for humans. IEP Consultants who investigate indoor mold problems can see the sometimes devastating results when mold is present and their clients are obviously suffering. But IEPs are not medical doctors, and therefore cannot tell a person that mold is causing their illness. On the other hand, most doctors do not have access to the scientific information being collected by the IEP. Medical doctors are not experts in indoor air quality, and without standards for acceptable exposure levels, physicians are reluctant to state that mold exposure is causing a particular set of symptoms. With no resources, no guidelines and no information to pass along to their patients, their hands are tied. Until it is scientifically documented and publicly accepted that mold exposure can cause illness, most doctors will avoid the “mold” diagnosis. This can be extremely frustrating for the person who is suffering.

While there are no industry standards relating to acceptable levels of mold exposure, there are some compelling pieces of research and literature which may serve to help prove the case that

mold can cause serious health issues for humans. The following organizations have made public statements to that effect:

### **The World Health Organization (WHO)**<sup>17</sup>

The World Health Organization ([WHO](#)) states that there is [sufficient evidence](#)<sup>18</sup> showing an association between indoor dampness-related agents and the following health outcomes:

- Asthma exacerbation
- Upper respiratory tract symptoms
- Coughing
- Wheezing

### **Indoor Environment Connections**<sup>19</sup>

*Indoor Environment Connections* is an independent trade newspaper which focuses on covering critical issues within the IAQ industry. In *Connections*, Volume 12 Issue 11 there was a front page article regarding IAQ research titled “Strong Link Between Mold and Asthma in Children.” The results identified that children exposed to mold at a young age were twice as likely to become asthmatic as children that were not exposed to mold at a young age.

### **“Recognition, Evaluation and Control of Indoor Mold”**<sup>20</sup>

[“Recognition, Evaluation and Control of Indoor Mold”](#) is a book written by expert industrial hygiene practitioners, academics and government officials and scientists scrutinized by external peer review, and is a go-to resource for most IAQ Professionals. In the 2008 edition, Section 1.3.5, this book specifically addresses several case studies from the Center for Disease Control and Prevention (CDC), which concentrate on the mold “Stachybotrys” or *S. chartarum*, otherwise known to the mass media as “Toxic Black Mold.” One of the many case studies discusses infants exposed to Stachybotrys in Cleveland, OH in the 1990s. Their research showed that there is a relationship between Stachybotrys exposure and *Idiopathic pulmonary hemosiderosis (IPH)*, which is hemorrhaging of the lungs in infants. The original links were published in 1998. A follow up study of 37 cases of IPH identified the following findings:

*In the cluster of 30 (7 were post mortem)*

- 88% were presented with respiratory distress requiring ICU.
- 81% required ventilator support.
- 50% required blood transfusions.
- 11% developed failure to thrive.
- Additional therapy for reactive airways was required for 39% of the infants for six months following pulmonary hemorrhaging. The average age of the infants was less than six months.

Though this was the most shocking case study in the publication, there are many similar examples showing a link between mold exposure and health issues in humans.



**American Industrial Hygiene Association (AIHA)**<sup>21</sup>

The American Industrial Hygiene Association ([AIHA](#)) makes the following statement about mold and human health: (Recognition, Evaluation and Control of Indoor Mold, AIHA, American Industrial Hygiene Association, “The Green Book” 2008).

“The presence of unwanted mold and excessive moisture within buildings is known as dampness. Dampness in buildings is linked with illness of occupants and deterioration of buildings. Dampness and moisture, combined with the organic nutrient materials and dirt indoors, trigger a biological spark that changes a relatively dry, stable environment into a living, thriving ecosystem within a building.

The combination of food, moisture, and appropriate temperatures allows and facilitates microbial growth, and also attracts insects, arachnids, and sometimes small mammals such as mice, rats and bats. Such a dampness induced ecosystem within a building creates dynamic and profound interactions between the organisms present and the factors influencing their growth, allowing for competition, cooperation and change over time.

The occupants associated with this ecosystem, and their activities produce dirt and water intrusion and influence the systems balance. Buildings are designed and constructed that often leak, become damp, and undergo biological deterioration. Individuals then occupy that space and expose themselves to biologically produced particles and gases that affect their health.”

**U.S. Environmental Protection Agency (EPA)**<sup>22</sup>

[The U.S. Environmental Protection Agency’s guidelines](#) for mold / moisture in schools and commercial buildings states that:

“In cases in which a particularly toxic mold species has been identified or is suspected, when extensive hidden mold is expected (such as behind vinyl wallpaper or in the HVAC system), when chances of the mold becoming airborne are estimated to be high, or sensitive individuals (e.g., those with severe allergies or asthma) are present, a more cautious or conservative approach to the remediation is indicated. Always make sure to protect the remediators and building occupants from exposure to mold.”

In summary, the NHMTF realizes that while many in our society are reluctant to claim there is a cause and effect relationship between mold and poor health, those who live with it and are suffering know the truth. New studies are being done every day, and the fact is that with the health risks, the costs of health care and the lack of information and protection to the consumer it is crucial that our citizens have as much knowledge as possible about this topic. We must be diligent in our response and care of this problem as it affects our citizens. The information stated in this section is just a small sampling of the evidence giving credibility to the argument that mold exposure *can and does* cause illness. The mold professionals who work in the field every day can further verify this claim. **The NHMTF declares that exposure to indoor mold is a potential and often very serious health concern for our citizens, and steps must be taken to**

**protect those sensitive to the effects of mold exposure, especially the very young, the elderly, and the immuno-compromized citizens of NH.**

## **Why You Have Mold**

During the energy crisis in the 1970's, building codes were changed to make homes more "energy efficient." Houses were sealed up as tightly as possible to ensure that there was no heat loss, resulting in lower heating bills and less oil consumption. New homes were literally sealed in plastic wrapping in the name of energy conservation. Though the energy savings may have been effective, many of these homes became giant Petri dishes, leading to an outbreak of mold infestations and illness. Even today we find that houses and buildings are being built too tight<sup>23</sup>, and the air has nowhere to go. Condensation and moisture are the result, and soon after that, the mold begins to grow.

Contrary to popular belief, indoor mold is not usually a *cleanliness* problem so much as a *moisture* problem. You cannot simply wipe the mold away with a damp cloth, standard cleaning agent, or paint over it and assume that your mold issue has been resolved. If the *moisture* problem is not resolved, the mold will always grow back.

Relative humidity (RH) is a measure of how much moisture is in the air at a particular temperature. If air in the middle of a basement is 60% RH at 70°F, the same air at the colder foundation wall could be at 60°F and have RH of 80%. The surface moisture content of any given material depends on the RH of the air near it. The greater the RH, the higher the moisture content of surrounding materials, and the more likely that mold will grow there. If there is a food source (wood, sheetrock, paper, etc.), oxygen, and temperatures in the range of 40°F to 100°F, mold is likely to grow.

Most people have no idea what the humidity and moisture levels are indoors. We recommend that people who have concerns about indoor mold purchase a [hygrometer](#).<sup>24</sup> This simple and inexpensive instrument can be found at most hardware stores, and it is used to measure humidity levels. Keeping the moisture content in your interior organic building materials low and the relative humidity below 60% will keep most mold issues at bay, since mold thrives when the relative humidity of the air at a surface is elevated.

### **The Basement**

Basement mold is a widespread issue. Because basements are built below ground level, the moisture in the surrounding soil permeates through the foundation and into the building. Additionally, when moist / humid air comes in contact with the cool concrete surfaces of a basement, it allows moisture to condense. We cannot help the fact that basements tend to be damp, but we can take some precautions to head off any serious basement mold issues before they occur. The NHMTF recommends taking the following precautions:

- Inspect walls, floors & ceiling for cracks, holes, drainage problems or signs of moisture.

- Immediately repair any problems found, dispose of ALL wet or moldy materials, including sheetrock, carpet, furniture, etc., and dry remaining area thoroughly (open windows, run fans, etc.). If mold or moisture remains, the problem *will* grow back.
- Apply a good quality waterproof sealant to the floors and walls.
- Invest in a (preferably self-draining) dehumidifier to maintain proper humidity levels.

There are contractors that specialize in basement waterproofing; certainly the more expensive way to go but a good option for those who can afford it.

### **Living Space**

The living space in a building is generally contaminated with mold by the effects of a moisture/humidity problem that is occurring either in the attic or, more often, the basement. Normal air currents and human traffic help to spread the mold spores throughout the building or house, and new colonies are born. When mold growth is found in the living space of a building, consider these sources as well as things like roof leaks, sweating / leaking pipes, or some other moisture issue in the main living area. The NHMTF recommends the following:

- Check all appliances, plumbing and pipes for hidden leaks or moisture problems.
- Think about recent “water events” in the area (overflowing tub, large or recurring spills, a water heater leak, flooding, sweating pipes, etc.)
- Remove and/or resolve any obvious and visible moisture problems within 24-48 hours (soaked carpets, wet sheetrock, leaking pipe, etc.).
- Thoroughly clean the visible mold with a mild detergent in hot water.
- Remove some of the house wrapping in the problem areas
- Open windows whenever possible (except during wet or humid weather).
- Use exhaust fans, vented to the outside, while showering or cooking.
- Use a dehumidifier
- Keep the relative humidity below 60%.

### **The Attic**

Attics contaminated with mold are somewhat easier jobs to solve. Most people know that hot air rises. Ideally, the hot air in a building will rise straight to the attic and, when properly ventilated, out into the great outdoors and beyond. Attic vents are designed to ensure proper air flow and this ventilation is absolutely critical; when vents are blocked, covered, or eliminated, mold and moisture problems result. Another common situation often observed in attics is when the bathroom or kitchen vents are vented straight into the attic. Releasing bathroom vents into the attic introduces very warm and humid air. As a result you have attic sheathing with elevated temperatures and elevated relative humidity, causing mold to grow, and most often it is heavily concentrated right where the bathroom vent is releasing the hot, humid air. Making sure vents are not blocked and that they are venting outdoors will solve most attic mold problems. Without proper ventilation, attics breed mold growth.

Whether indoor mold is growing in the basement, attic, or living space, the NHMTF always recommends calling a Board Certified Specialist when building materials have been wet for more than 48 hours, as this could result in the growth of black mold (stachybotrys). As

mentioned earlier, be sure to check the following websites for more information on how to find a Board Certified Indoor Environmental Professional: [www.acac.org](http://www.acac.org) and [www.abih.org](http://www.abih.org). Minor mold problems can be cleaned and managed without professional help if people are armed with the right information, but large ongoing mold issues should only be handled by an IEP.

## Hiring a consultant

When hiring a consultant to help with a mold issue, the public should be aware of a few things, but it really goes back to finding a qualified, certified individual with proper training. The NHMTF's recommendations for hiring Indoor Environmental Professionals (IEP's) or Consultants performing assessments and investigations are as follows:

- Certification as an industrial hygienist (CIH) by the American Board of Industrial Hygiene ([ABIH](http://www.abih.org))<sup>25</sup>. Additionally, one year of experience in conducting microbial investigations is required.
- Certification by the American Council for Accredited Certification ([ACAC](http://www.acac.org))<sup>26</sup> as one or more of the following: Council Certified Indoor Environmental Consultant (CIEC), Council Certified Indoor Environmentalist (CIE), Council Certified Mold Consultant (CMC), Council Certified Microbial Investigator (CMI)
- Other Third Party Independent Certification approved by [ANSI](http://www.ansi.org)<sup>27</sup> and [CESB](http://www.cesb.org)<sup>28</sup>.

The public should be aware that only a well-qualified IEP is trained to understand how indoor environments may affect health in the home and workplace. This involves the recognition of the potential of a threat to the occupants' health, evaluation of the threat, including measurements, when appropriate, and the design and implementation of effective and efficient strategies for mitigation or elimination of the risk. These actions comprise the public health contribution of the IEP, which are grounded in good science and engineering, effective risk communication skills, and skilled management of the investigation.

The United States Environmental Protection Agency ([EPA](http://www.epa.gov))<sup>29</sup>, the Occupational Safety and Health Administration ([OSHA](http://www.osha-slc.gov))<sup>30</sup>, the American Industrial Hygiene Association ([AIHA](http://www.aiha.org)) and all indoor air quality (IAQ) guidelines for the IEP clearly state that the physical investigation is the most important part of an indoor air quality assessment. The guidance documents from these agencies and national IAQ associations state clearly that testing alone is inadequate and insufficient in conducting an IAQ assessment. Individuals that are not qualified professionals often conduct a simple air test, state there is mold, (which of course there always is) and then leave the consumer with only laboratory results indicating there is mold. However, there is no written statement addressing findings, conclusions, recommendations, nor is there a scope of work for clean up or next steps to help the consumer through the ordeal of having mold within their residence. IEP's are appropriately trained and can professionally guide the consumer through a difficult situation. **Therefore, the NHMTF declares that IAQ testing alone is inadequate in most situations, and should be combined with a thorough physical investigation of a building by an IEP, followed by a written statement of findings, conclusions, recommendations, scope of work for remediation and if applicable, clearance testing.**

## Hiring a Remediator

There are a number of types of professional contractors that perform various kinds of environmental abatement. These include environmental contractors such as those who perform lead, radon, and/or asbestos abatement, and restoration and cleaning contractors involved in water restoration, smoke and fire restoration, and carpet cleaning specialists. Before entering into the mold abatement business, any contractor should acquire professional training in this area, and become familiar with technical and reference materials referenced in this document. If not, said contractor puts his or her own health and the health and safety of the client at great risk.

Clean-up standards for mold include standards and guidelines for assessment of mold problems in buildings, remediation of mold in buildings, and worker protection. Because mold is naturally occurring and ubiquitous, and health-based levels cannot be established, effective standards are necessarily focused on training and work practices. Such standards may be implemented through a regulatory (licensing) structure and/or through enforcement of professional best practices under consumer protection law.

Contractors should be trained to use state-of-the-art techniques when performing mold abatement to keep building occupants and their own workers safe. The State of New Hampshire does not offer training or licensure for mold abatement Contractors. There are a number of professional organizations and trade groups that have created credentialing and standards-setting programs in order to “self-police” the industry, in the absence of federal and state regulations. Below is a list of some of the national organizations offering training and credentialing in mold abatement. This list should not be considered comprehensive. It should be noted that the quality of the training one receives might vary greatly depending upon the organization sponsoring the training, the curricula, and the actual trainer.

Mold assessment and remediation guidelines made available by government agencies have improved vastly in the last decade. In and about 2004, significant progress was achieved in the development of quality industry assessment and remediation standards. The industry now has a broad array of documents available for the proper assessment and remediation of mold problems in buildings. The industry also has a variety of good quality, independent, third-party professional certifications for the education and certification of assessment and remediation professionals. The following is a listing of NHMTF notes, recommendations and resources in the area of mold remediation:

- The American National Standards Institute ([ANSI](#))<sup>31</sup> has accredited standards of practice for those who perform microbial assessments.
- ANSI accreditation process provides verification that the standards and guidelines represent true consensus on best practices for the industry.
- The Institute of Inspection Cleaning and Restoration Certification<sup>32</sup>- [IICRC S520](#)<sup>33</sup> is American National Standards Institute (ANSI) accredited. To qualify, an IICRC-Certified Firm must demonstrate proof of insurance, maintain a written customer complaint policy with documented follow-up and provide ongoing education and training leading to certification for all technicians. IICRC Certified Firms are also required to abide by the

IICRC Code of Ethics. Services provided by IICRC–Certified professionals range from flooring inspection and cleaning, to mold remediation, to water and fire damage restoration.

- The Federal Government (OSHA) has published a [guideline](#)<sup>34</sup> to protect those who perform mold assessment and remediation services.
- NHMTF recommends American Council for Accredited Certifications (ACAC) programs such as CEICC, CEICS, CETC and CSDS (engineering related level) and CIE, CMR, CMRS, CEICI, CEICR, CETI, CSDR, CIAQM, CMI and CRMI (engineering technician level)
- US EPA [guidance documents](#)<sup>35</sup> address maintenance and prevention, assessment, and remediation. Guidance tools, including sophisticated software, are also available or under development.
- Currently IICRC is working toward developing a Third Party Independent Certification for Remediation of Mold.
- The American Council for Accredited Certification. (ACAC) also offers Third Party Independent Certifications, should a consumer wish to look further into the experience of a contractor. Remediation specialists generally are required to have a minimum of two to five years of education and/or field experience for engineering-technician designations such as CMR, CMRS, CIAQM, CMI and CRMI.

The NHMTF believes it is also important to consider the following when looking at the options for a mold remediation firm: education, years of experience, current classes, current certifications, and a list of references. And remember, if a firm offers to do both the testing and remediation on a project, this should be a red flag to the consumer to find another company.

## **Conclusion and Recommendations**

The NHMTF began this report by stating that currently New Hampshire does not have any regulation as it relates to mold. It is the objective of the NHMTF to better protect the consumer in regards to health risks and unknown costs in dealing with indoor mold. The NHMTF is in high hopes that as a result of this Standard of Care, we are able to raise the awareness of the consumer and perhaps help guide the legislators of New Hampshire toward adopting mold legislation which will better protect our citizens. In summary, the NHMTF would like to emphasize the following points from this report:

- Exposure to indoor mold is a potential, and often very serious, health risk to our citizens, and steps must be taken by our lawmakers to protect those sensitive to the effects of mold exposure, especially the very young, the elderly, and the immuno-compromized citizens of NH.
- Third party certifications should be required of IEPs, as they are essential in both protecting the citizens of NH as well as maintaining the credibility of mold professionals and the industry as a whole.

- Consumers should look for third party certifications when hiring a mold professional, as it will save them time and money and give them peace of mind that their problem is being handled safely and professionally
- Mold testing and mold remediation should be performed by two separate parties in order to protect the consumer and to honor the Code of Ethics and Code of Conduct set forth by the ACAC & ABIH.
- IAQ testing alone is inadequate in most situations, and should be combined with a thorough physical investigation of a building by an IEP, followed by a written statement of findings, conclusions, recommendations, scope of work for remediation and if applicable, clearance testing.
- Before entering into the mold abatement business, any contractor should acquire professional training and become familiar with technical and reference materials referenced in this document, or risk his or her own health and the health and safety of the client.

Further, the NHMTF respectfully recommends the following to the Legislators of the State of New Hampshire:

- Amend the NH Building Codes to adequately control and prevent moisture problems in NH buildings (see endnote 23)
- Provide educational information to the citizens of NH regarding indoor mold, health effects, rights and resources.
- Adopt basic legislation to help protect the rights of tenants and homeowners affected by mold. The following is the suggested language for such a bill as prepared by NHMTF members and NH Senate Leaders:

#### STATE OF NEW HAMPSHIRE

In the Year of Our Lord Two Thousand Fourteen

AN ACT relative to certification and licensure for mold assessment or remediation services.  
 ANALYSIS This bill requires persons providing residential mold assessment or remediation services for mold contamination in residential dwellings be certified by certain professional organizations and licensed by the department of safety.

Be it enacted by the Senate and House of Representatives in General Court convened:

1 Findings. the general court finds that mold in a residential structure can constitute a significant health threat for the inhabitants. Homeowners who hire a professional to assess a mold problem or remediate the problem need assurance that the job will be done correctly. Failure to remediate a mold problem correctly not only is a waste of the homeowners money but may also result in serious health issues if the mold is not removed correctly or at all. This consumer protection proposal gives homeowners a method to protect their health and the health of their families by assuring a level of competence in those they hire to assess or remediate a mold problem.

2. New Chapter; Mold Assessment and Remediation. Amend RSA 141 by inserting after chapter 141-J the following new chapter:

#### CHAPTER 141-K MOLD ASSESSMENT AND REMEDIATION

141-K:1 Definitions. In this chapter:

I. "Mold assessment" means:

- (a) An inspection, investigation, or survey of a dwelling or other structure to provide information to the owner regarding the presence, identification, or evaluation of mold;
- (b) The development of a mold remediation specification or protocol; or
- (c) The collection or analysis of a mold sample.

II. "Mold remediation" means the removal, cleaning, sanitizing, demolition, or treatment of mold or mold-contaminated matter, live or dead, in a specific location after a mold assessment.

III. "Mold assessment license" means a license obtained from the department of safety that permits an individual to assess mold problems in a residential setting for a fee.

IV. "Mold remediation license" means a license obtained from the department of safety that permits an individual to remediate mold problems in a residential setting for a fee.

V. "Third party certification" means a certificate issued through a non-profit program such as one administered by ANSI, (American National Standards Institute), CESB, (Council of Engineering & Scientific Specialty Boards.), or NCCA, (National Commission for Certifying Agencies). Certifications are credentials of industry knowledge granted to individuals by a certification body for a limited time. The individual shall not own the designation; the designation shall be owned by the certifying body. Certificants shall meet certain requirements set by third party organizations in order to be recertified.

141-K:2 Mold Assessment and Remediation Certification.

I. No person shall perform residential mold assessment services for remuneration unless that person possesses a valid national third party certification and a valid mold assessment license from the state of New Hampshire.

II. No person shall perform residential mold remediation services for remuneration unless that person possesses a valid national third party certification and a valid mold remediation license for the state of New Hampshire.

III. The department of safety shall establish a license for persons engaging in mold assessment and a license for persons engaging in mold remediation. The commissioner of the department of safety shall adopt rules pursuant to RSA 541-A relative to the licensing process. The commissioner of the department of safety may set a fee for licensure in order to cover the cost of administering the licensing program.

IV. Any person who offers mold assessment or mold remediation services for a fee but does not comply with this section shall be guilty of a violation and fined \$150.



V. Any professional hired for remuneration by a resident, in which the primary work contracted for is neither mold assessment nor mold remediation shall be exempt from this chapter.

Duties of Commissioner of the Department of Safety. Amend RSA 21-P:4 by inserting after paragraph XV the following new paragraph:

XVI. Adopt comprehensive and uniform standards, practices, procedures, instructions, and rules relative to the licensing of persons engaged in mold assessment and mold remediation.

Effective Date. This act shall take effect January 1, 2015.

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## References / Appendices

<sup>1</sup> NH House Bill 482 <http://www.gencourt.state.nh.us/legislation/2009/HB0482.html>

<sup>2</sup> NH Mold Task Force Members as of December 1, 2013:

- Chair: Philip Alexakos, Manchester Health Department, [www.manchesternh.gov](http://www.manchesternh.gov)
- Tim Carr, Applied Microbial Remediation Specialist
- David Choate III, Colliers International, [www.colliers.com](http://www.colliers.com)
- Cathy Coe, Environmental Health Inc., [www.environmentalhealthinc.com](http://www.environmentalhealthinc.com)
- Dennis Francoeur, RPF Environmental, [www.airpf.com](http://www.airpf.com)
- Lee Gilman, American Lung Association, <http://www.lung.org/healthy-air/>
- Scott Knightly, Envirovantage, [www.envirovantage.com](http://www.envirovantage.com)
- Jeff May, May Indoor Air Investigations, [www.mayindoorair.com](http://www.mayindoorair.com)
- Ed Miller, American Lung Association, <http://www.lung.org/healthy-air/>
- Jessica Morton, NH Department of Environmental Services, <http://des.nh.gov/>
- Chair: Rick Rumba, Keene State College, [www.keene.edu/conted/workwisenh](http://www.keene.edu/conted/workwisenh)
- Chris Sullivan, Certrex LLC, [www.certrexllc.com](http://www.certrexllc.com)
- Chair: Guy Sylvester, Absolute Resource Associates, [www.absoluteresourceassociates.com](http://www.absoluteresourceassociates.com)

<sup>3</sup> Environmental Law Institute Database of State Indoor Air Quality Laws  
[http://www.elistore.org/Data/products/iaq\\_mold\\_database\\_2013.pdf](http://www.elistore.org/Data/products/iaq_mold_database_2013.pdf)

<sup>4</sup> “Recognition, Evaluation, and Control of Indoor Mold” Edited by Bradley Prezant, Donald M. Weekes, and J. David Miller, 2008  
[http://webportal.aiha.org/Purchase/ProductDetail.aspx?Product\\_code=3F9E0A5A-4778-DE11-96B0-0050568361FD](http://webportal.aiha.org/Purchase/ProductDetail.aspx?Product_code=3F9E0A5A-4778-DE11-96B0-0050568361FD)

<sup>5</sup> American Lung Association [www.lung.org/healthy-air/](http://www.lung.org/healthy-air/)

<sup>6</sup> Two well known, respected independent accrediting bodies are the American Industrial Hygiene Association (AIHA) [www.aiha.org](http://www.aiha.org) and the American Council for Accredited Certification, (ACAC) [www.acac.org](http://www.acac.org)

<sup>7</sup> The American Industrial Hygiene Association (AIHA) [www.aiha.org](http://www.aiha.org) and the American Council for Accredited Certification, (ACAC) [www.acac.org](http://www.acac.org)

<sup>8</sup> American Society for Testing and Materials (ASTM) [www.astm.org](http://www.astm.org)

<sup>9</sup> Council of Engineering and Scientific Specialty Boards (CESB) [www.cesb.org](http://www.cesb.org)

<sup>10</sup> Council Certified Indoor Environmental Consultant (CIEC)  
<http://www.acac.org/certify/indoorairqualitycertification.aspx>

<sup>11</sup> Council Certified Microbial Consultant(CMC)  
<http://www.acac.org/certify/moldinspectioncertification.aspx>

<sup>12</sup> American Board of Industrial Hygiene, (ABIH) [www.abih.org](http://www.abih.org)

<sup>13</sup> Indoor Air Quality Association (IAQA) [www.iaqa.org](http://www.iaqa.org)

<sup>14</sup> American National Standards Institute (ANSI) [www.ansi.org](http://www.ansi.org)

<sup>15</sup> Council of Engineering and Scientific Specialty Boards (CESB) [www.cesb.org](http://www.cesb.org)

<sup>16</sup> National Commission for Certifying Agencies (NCCA) [www.credentialingexcellence.org/ncca](http://www.credentialingexcellence.org/ncca)

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<sup>17</sup> The World Health Organization (WHO) [www.who.int/en/](http://www.who.int/en/)

<sup>18</sup> “WHO Guidelines for Indoor Air Quality” (p 71, Table 8)

[http://www.euro.who.int/\\_data/assets/pdf\\_file/0017/43325/E92645.pdf](http://www.euro.who.int/_data/assets/pdf_file/0017/43325/E92645.pdf)

<sup>19</sup> “Indoor Environment Connections” [www.ieconnections.com](http://www.ieconnections.com)

<sup>20</sup> “Recognition, Evaluation, and Control of Indoor Mold” Edited by Bradley Prezant, Donald M. Weekes, and J. David Miller, 2008

[http://webportal.aiha.org/Purchase/ProductDetail.aspx?Product\\_code=3F9E0A5A-4778-DE11-96B0-0050568361FD](http://webportal.aiha.org/Purchase/ProductDetail.aspx?Product_code=3F9E0A5A-4778-DE11-96B0-0050568361FD)

<sup>21</sup> American Industrial Hygiene Association (AIHA) [www.aiha.org](http://www.aiha.org)

<sup>22</sup> US Environmental Protection Agency (EPA) guidelines for mold:

[www.epa.gov/mold/mold\\_remediation.html](http://www.epa.gov/mold/mold_remediation.html)

<sup>23</sup> **NHMTF Summary of Building Codes for the prevention of Mold in buildings.**

*Homes, schools, and commercial buildings will have improved moisture control if Construction is in accordance with the state building codes. However, the current code provisions are not sufficient to prevent moisture problems resulting from poor construction technique or design. Key weaknesses in the codes for New Hampshire can be corrected by adding:*

- *Mandatory flashing of all windows and doors;*
- *Mandatory insulation and waterproofing of basement concrete (walls and floor); and*
- *Proper placement of vapor diffusion retarders on warm side of wall construction (in winter.)*

*To ensure that provisions critical to moisture control in New Hampshire buildings are implemented consistently, these moisture provisions of building codes should be added as mandatory, unamend able provisions when adopted by a municipality.*

*In regards to ventilation, New Hampshire Mold Task Force conducted a brief review of the building codes and standards contained in New Hampshire’s model code family and concluded that ventilation requirements for New Hampshire schools and commercial buildings are adequate. The ANSI-accredited ASHRAE standards 62.1 and 62.2 are acceptable minimum construction practices to ensure adequate ventilation to prevent moisture build-up. Ventilation requirements for homes are sufficient only if a municipality has adopted the model energy code. For topic areas in which ANSI-approved standards are not available, preferred standards and guidelines are those that are in development and intended for ANSI approval. Currently these include: the Indoor Environmental Standards Organization’s standard for microbial assessment for residential real estate transactions; the mold remediation standard of the Institute for Inspection, Cleaning and Restoration Certification; the American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) standard for inspection and maintenance of commercial HVAC systems; the Air Conditioning Contractors of America’s standard for residential HVAC system cleaning, and the Guidelines for Mold and Fungi Control and Remediation for Worker Protection in Indoor Work Environments (ASSE).*

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- <sup>24</sup> Wikipedia definition of hygrometer, an instrument used for measuring the moisture content in the environment. <http://en.wikipedia.org/wiki/Hygrometer>
- <sup>25</sup> American Board of Industrial Hygiene (ABIH) [www.abih.org](http://www.abih.org)
- <sup>26</sup> American Council for Accredited Certification (ACAC) [www.acac.org](http://www.acac.org)
- <sup>27</sup> American National Standards Institute (ANSI) [www.ansi.org](http://www.ansi.org)
- <sup>28</sup> Council of Engineering and Scientific Specialty Boards (CESB) [www.cesb.org](http://www.cesb.org)
- <sup>29</sup> US Environmental Protection Agency (EPA) [www.epa.gov](http://www.epa.gov)
- <sup>30</sup> Occupational Safety and Health Administration (OSHA) [www.osha.gov](http://www.osha.gov)
- <sup>31</sup> American National Standards Institute (ANSI) [www.ansi.org](http://www.ansi.org)
- <sup>32</sup> Institute of Inspection Cleaning and Restoration Certification IICRC [www.iicrc.org](http://www.iicrc.org)
- <sup>33</sup> IICRC S520-2008 is a procedural standard and reference guide for the remediation of mold damaged structures and contents. <http://iicrc.org/standards/iicrc-s520/>
- <sup>34</sup> OSHA Mold Guidelines [www.osha.gov/SLTC/molds/](http://www.osha.gov/SLTC/molds/)
- <sup>35</sup> US EPA Guidance Documents for Mold <http://www.epa.gov/mold/cleanupguidelines.html>