

**American Industrial Hygiene Association**

**Mold Biological Contamination  
Panel Discussion/Press Conference**

**June 4, 2002, 9:15 a.m. PDT, San Diego, CA**

\*Chin Yang's microphone was not working properly during the panel discussion. We apologize for the fact that we were not able to capture his comments.

Donald M. Weekes, CIH, CSP, Abacus Environmental, Ellington, CT

We will start with questions emailed to us in advance. The first question is:

If a building has been found to have a mold problem in the past and all visible mold has been remediated, is it necessary to look behind walls to see if mold is present?

Ed Light, CIH, Building Dynamics, Ashton, MD

We would only consider looking behind walls if there was evidence of musty odors, and/or evidence of water damage that would likely wet the surfaces behind the walls. Just a general concern about mold or even a general concern about health is insufficient cause to start tearing apart the buildings looking for mold. There should be some solid physical evidence to justify taking this step. If occupants are worried about health, then they should go to the doctor first, and determine whether their problem can be related to mold.

Donald M. Weekes

Thank you, Ed. Anyone else wish to talk on this question?

Professor J. David Miller, Ph.D., Carleton University, Department of Chemistry, Ottawa, ON

I completely agree with that, and I just wanted to add this thought. The way I say it is that you need probable cause, which is saying you need to look for some sign in the building that would indicate you need to look inside a wall cavity or other hidden structure. The only caution is sometimes investigators encounter buildings where many years have passed after the event that caused the mold. In those cases, it is often more difficult to see external signs of water damage because they have been for example, painted over. It is very much the principal of having a reason to open up wall cavities.

Donald M. Weekes

Again, I notice that a few people have drifted in. If there are any questions, again, if you ask the panel directly, please use the microphone. We are answering questions that have been pre-submitted. Also, I want to remind folks that there are a number of fact sheets in the back from AIHA, "Facts About Mold for Everyone," "Facts About Mold for the Professional," "Facts About Mold Glossary." Three recent publications from AIHA which do a very good job of summarizing the issues about mold. The next question is: What should real estate brokers and agents know about mold in the context of a home they

have listed for sale? I have some experience with this myself, actually. I'll answer that question. What I have found in most cases is that dealing with mold in the real estate transaction, the key issue is really how to go about doing the testing. The key question to ask is really what is it that has happened in the past — or what (inaudible)? Has there been water in the basement? Has there been a leak in the roof? Has there been a plumbing problem of one nature or another? If that in fact was answered truthfully, then the information that it provided will give a good indication whether there is a need in any way — at all, to do any type of testing at all.

If in fact water problems have been minimal or nonexistent in the house, it is less likely that molds would be present. Therefore, if you're in a position by asking questions about water damage and problems of that nature, that you're going to have issues in regards to whether or not there is a need to do anything with regard to mold. Any real estate agent or broker that is interested in finding out more information about that should basically refer to the "Facts About Mold for Everyone," and discuss that with the individuals that they're dealing with in terms of the real estate transaction. There is no need to make, at least in my opinion, at this point, to make mold testing part of every transaction. What we're looking to do is to basically get some basic facts about the house first, and one of the basic facts is whether or not there has been any water damage at all. If you have that, then you can make a decision based on that information as to whether or not mold testing is really appropriate. Anyone wish to elaborate? David?

J. David Miller

To which I'd add the different States and Provinces in Canada have legislation about disclosure in property transactions, so I'd also counsel the person to check the laws in the jurisdictions they live. And certainly, in both Canada and the United States, Courts been unkind to people who have knowing or covered up mold damage in a residence or public building.

Donald M. Weekes

Anyone else?

Ed Light

All homes have mold in them. If you look closely enough, virtually all homes have at least a small amount of mold growth. In preparing a home for sale, this type of mold growth should be cleaned up, through simple means, if it's a very small amount. But the more difficult issue I see involving real estate sales is where there are ongoing water/moisture/condensation problems. If those problems are expected to continue, then that information should be made available so that the buyer is aware of what they're getting into some buyers will chance to fix it themselves, and others may tolerate this type of problem.

Donald M. Weekes

Okay. Anyone else?

Chin S. Yang, Ph.D., P & K Microbiology Services, Cherry Hill, NJ

I think honesty is always good, and I generally advise home seller is to provide full disclosure. And if a

house has gone through remediation, then a report from the remediation contractor or industrial hygiene professional is made available.

Donald M. Weekes

Yes, one more.

J. David Miller

Dr. Yang has introduced another key idea, and that is one that we're trying to talk about today, and that is that the skill of an investigator, people that are highly trained in mold investigations, is really key. Make sure that the person telling you your building is okay is qualified. And certified industrial hygienists are certainly one of the really key groups in the United States where you could depend on that kind of advice.

Donald M. Weekes

Okay. Thank you. All right. We're going to move on to the next question, and that is: What is the status of molds-related disclosure legislation in home sales? And Aaron, I'll ask you to give an answer to that.

Aaron, Trippler, Government Affairs Director, AIHA

Well, actually, I'd like to go a little bit further on that, because one of the things that AIHA is not necessarily doing is following specific home disclosure legislation. However, on the Federal level, there is going to be legislation introduced dealing with that. Unfortunately, I wanted to say that, the legislation is being introduced today, and the bill number is H.R. 4855, which is being introduced. And one of the things it will do is it will mandate Federal guidelines that states must adhere to that require homeowners and residential real estate developers to disclose mold problems upon the sale of their homes. There are several other provisions of the legislation; we could probably talk about it a little bit later, but I know there are several states that are also looking at home disclosure, but the one issue that we were following there on the Federal level is being introduced today. Unfortunately, the bill is not available until 5:00 this afternoon.

Donald M. Weekes

Okay, anyone else? I do think that we do need to indicate that it is going to be introduced by Representative John Conyers. I believe it's called the "Melina" bill, if I'm not mistaken?

Aaron, Trippler, Government Affairs Director, AIHA

That's the correct. The actual title will be "The Toxic Mold Safety and Protection Act," known as the "Melina" bill.

Donald M. Weekes

Very good. Okay. The next question I have is: How worried should brokers and agents be about potential exposure to liability from mold issues? That is a very specific question about liability insurance.

I'm not really sure any of us are necessarily qualified, but I'll simply open it up to Jack to take a shot at that, and then go from there.

Jack Springston, CIH, CSP, Ambient Group, Inc., Glen Head, NY

I think as evidenced by the Ballard case and a number of other cases, where we're looking at millions of dollars worth of settlement costs, that there should be some concern by the insurance companies and brokers regarding this issue. I also have concerns that this is going to perpetuate this myth about all mold being toxic, about the black molds and what-not. But it's an issue that will have to be dealt with as we go along.

Donald M. Weekes

Okay, anyone else on the panel? Yeah, I do a fair amount of home inspections myself, and one of the questions I'm always asked is about liability, not only liability of the broker, but personal insurance company, the restoration company, the consultant — all of which are going to be potentially liable if the mold remediation or whatever needs to be done in the house goes awry. So what we generally set up in advance is a program, in some cases called a "project design," in some cases called an "engineering specification," but it is a protocol for how we're going to go about doing this work. And in those regards, it does give some assurance to the real estate broker, to the individuals that are dealing with this issue, that someone on a professional level is looking at what is going to be done at this location. That protocol is then given to all necessary parties. They have an opportunity to review it; they have an opportunity to question it; and at the end of the day, what they're really looking for is really some assurance that what will happen is that the house will be remediated in a fashion that will allow everybody to reoccupy. At that point in time, there maybe some questions as to how the work was done, but by sticking to the protocol, by sticking to the engineering specification, you have an indication that someone has looked at this very carefully, and tried to make the best possible outcome, which is basically that everyone will feel comfortable living in that house. Any other comments?

Chin S. Yang

Quick comment about it. (Inaudible; broken-up sound)

Male Voice

I can mention about one case I'm dealing with, too, with insurance companies. One of the buildings down at Ground Zero where there is some mold contamination. The insurance company appears more concerned about that, and wishes to address that, rather than the dust and other contaminants that were generated by the collapse of the Towers. So it's kind of an odd scenario where they're more afraid of the mold, due to the liability issues, rather than the other contaminants.

Donald M. Weekes

Thank you. The next question we have is: What are the experts saying about mold testing in homes and businesses? And I'll call on Ken Dillon to give the first answer on that.

Kenneth Dillon, Ph.D., CIH, UAB School of Public Health, Birmingham, Alabama

Thank you. I think this is a good time to mention that the AIHA has now published factsheets to the public and to professionals about how to deal with mold problems, and mold testing in homes is a topic that is addressed. And this is very good consensus among all the committees that were consulted is that the first thing you really need to do is to go and look, and to perform what we call an “informed inspection” of the sources of water, wood damage, mold growth — just go and look. And also that certainly for an individual homeowner, testing should not be done unless the mold problem is what we would call an extensive mold problem. And in many cases, say if you have what Dr. Miller likes to refer to as a “postage stamp size” growth of mold, that a homeowner could take care of with the proper precautions. So at least for an individual, if it gets to the point of testing, an expert needs to be brought in. And, of course, CIHs are beginning to fulfill that role very well. And that if the mold growth is extensive, then certainly there could be extensive testing going on that, word of caution, that the money should be spent primarily to clean up the problem, if that can be done in a safe way.

Donald M. Weekes

Does anyone else wish to discuss this issue? Chin?

Chin S. Yang

(Broken-up sound)

Donald M. Weekes

Anyone else? Ed.

Ed Light

Now we have a great overemphasis on testing that is, in fact, often putting us off track from solving mold problems. Many investigators, including some industrial hygienists, are simply responding to the issue of mold in a home or building with tests, instead of doing an informed inspection to find the extent of the mold, assess exposure of the occupants, and determine how best to fix the problem. In most of these cases, we find that a simple inspection of the home will give us these answers, while overemphasis on testing will divert us from solving the problem. So we need to avoid unnecessary testing. Good industrial hygienists do more than test. Our multidisciplinary background should allow us to recognize a variety of environmental problems in the home, to evaluate potential exposures, and to control adverse conditions.

Donald M. Weekes

Ed, thank you.

J. David Miller

The factsheet that we have distributed says for homes testing is not the first choice. And Ed Light and Dr. Dillon had used the term “informed inspection.” I just thought I’d talk about that briefly, because it’s a critical idea that emerged probably in the early 1990s. What that means is that you should be having someone who understands how the building works, how buildings fail and where to look

conducting a mold investigation. Very often, as Ed Light has implied, people make decisions based on sampling, instead of proper knowledge about the building. In larger buildings, it is more complicated. Often if there is contamination in the ventilation system or in other places, then sampling does have an important role. But sampling never, ever, should be done without being preceded by, or concurrent with, an informed inspection.

Donald M. Weekes

Thank you. Any other? Jack.

Jack Springston

I might as well chime in. My feeling is if it looks like mold, and it smells like mold, it probably is mold, and there is no need for testing. The other problem is inspectors who go in and take a sample and it comes back and it's very high in, whatever, penicillium or what-not, but they don't tell you how big of an area was contaminated. They could have taken a sample from a growth the size of a dime, and then are trying to tell you that the whole building is contaminated based on that one sample. So my feeling is that in most cases sampling is not necessary, and if it's done, it's probably going to just confuse the issue rather than clarify it.

Donald M. Weekes

Okay, one more.

J. David Miller

I think the fact all of us want to comment tells how strongly we feel about getting this particular message out. And the nuance that Jack added is that taking an air sample doesn't tell us anything about health. The critical thing is how much mold is in the building. How many square yards of mold or square feet or square inches? That's really what we need to know. That is how we figure the remediation process. That is how we figure currently whether the building is at much risk for a population health problems. All of us have seen examples where an investigator will stick the sampler on top of that square inch of mold, create a gigantic result that makes it look like the building is in total failure, which is far from the case. This upsets the people in the building, it creates economic hardship for the owners and sometimes the occupants. This has no place in the proper practice of industrial hygiene.

Donald M. Weekes

Thank you. We have one question from one of our listeners on the Web: What is the occupational safety and health hazard associated with toxic mold? It is somewhat of a leading question; I will say that right up front. However, I will throw this open first to, actually, Chin Yang, and see if he could perhaps give us a little insight into that.

Chin Yang

(Broken up sound)

Donald M. Weekes

Thank you, Chin. Anyone else? David.

J. David Miller

I think the critical issue is that it is accepted widely now that when buildings have mold problems, and there gets to be a material amount of mold, many square feet or many square yards in a space, that there are population health effects. The United States National Academy of Sciences Institute of Medicine's report on asthma, said some of the things that we know. These include that mold can cause occupational asthma in buildings. We know that mold can exacerbate asthma in people that are mold-sensitive asthmatics. We know that mold in buildings can increase upper respiratory disease. Those are the things we really know, and that is why governments and the World Health Organization and other cognizant authorities, including the American Industrial Hygiene Association, advise that if there is mold in a building, it needs to be taken out. Those are the things we really know.

Ed Light

One of the very controversial issues involving mold in homes and buildings has to do with whether some molds are indeed toxic and present a greater hazard and should be treated differently. In our field practice, we assume that all molds have similar health effects and that in homes and buildings, toxic mold cannot be identified or treated differently. This is an area of great confusion out there now because many practitioners in the field, some industrial hygienists and many non-industrial hygienists are going out and testing, and if they find a particular mold which someone claims is toxic, they treat it very, very differently. And, again, the science demonstrates that in the case of home and building occupants, these types of mold should not be treated differently.

Donald M. Weekes

All right, thank you. At this point, I'm going to ask Aaron Tripler, who is the Government Affairs Director for AIHA, to comment on some of the state legislation that is currently being contemplated, and also some which has passed.

Aaron Tripler

I think beyond the science of the issue, the state legislatures are very heavily involved because of what took place in Texas. It probably all started with California legislation, and their legislation actually asked a task force to come back to the Department of Health with advice, and part of that advice is whether or not there is a feasibility of adopting municipal exposure levels on mold. The only other state that has introduced legislation that far-reaching is New York, and it hasn't been enacted yet. But there are about eight other states out there that have introduced legislation this year, and all of them really go about it in a much calmer fashion, by saying we're going to create a task force, and that task force should come back with all kinds of recommendations. Now AIHA has become involved from two perspectives, not dealing with the science, because they aren't at that point yet. But our two issues are: (1) you need to make sure that the people who are inspecting or remediating mold are qualified and competent, and (2) any sampling that is done, the analysis of that sampling must be done by an

accredited laboratory. We've been successful in three or four of those bills having been written, including a CIH on the task force, but the legislation hasn't moved.

Now the Federal bill that's being introduced today by Representative Conyers is very far-reaching. While I have not seen the final version, it does address those two issues that I mentioned about competency and laboratories. But it also creates several things. One is it would require EPA to come up with a threshold limit. Very difficult, I'm sure most of the other panelists would say. It also creates a Federal insurance program to assist people in reimbursing them for mold remediation, and also would appropriate some money for research into mold. So whether or not the final bill has all of these efforts in it remains to be seen. It will be available sometime this afternoon. But our interest in that legislation in the states so far, there's nothing technical. It has simply been to assure competency of individuals and the qualifications of laboratories.

#### Donald M. Weekes

Okay, anyone else? If not, actually this leads in very nicely to the next question, which is: Are industrial hygienists qualified to test for mold? And I'd like to have Jack give the first answer on that.

#### Jack Springston

Absolutely industrial hygienists are, I believe in my mind, uniquely qualified. As we know, industrial hygiene is the recognition, evaluation and control of hazards. And what is old growth in a building except a hazard? To become an industrial hygienist requires years of formal education, professional development courses and training in learning how to not only take samples, but to do inspections, informed inspections, and to recognize these hazards. I'm concerned about these courses that are coming up, certifications where people can go and take a three-day class, and then become a "mold expert." That is impossible. It cannot be done. And I think people need to recognize this.

#### Donald M. Weekes

Good. I will emphasize that although we are talking about industrial hygienists, specifically we believe very sincerely that certified industrial hygienists are the gold standard for what needs to be done with this type of issue. When there is a problem in a business or a home, a certified industrial hygienist who has not only trained but has gone through a course or a two-day testing program, eight hours each day, has the qualifications, the best qualifications, to do this work. This doesn't necessarily mean that there aren't other qualified individuals. However, if you're going to go with an accountant, you want a CPA. If you're going to go with a lawyer, you want one to pass the bar. If you want to go with a doctor, you want one who has got a medical degree. Well, if you want an industrial hygienist, you go with one who is a certified industrial hygienist.

#### Male Voice

I would like add that the AIHA provides some training experiences for industrial hygienists particularly in addressing mold problems and biological contamination in general. And so there are a group of PDCs (professional development courses) that are offered, either annually or sometimes twice a year, and I think an industrial hygienist who does not have the experience or the training, even though he's

been extensively trained in how to recognize, evaluate and control, should take advantage of what the AIHA has to offer. And certainly a PDC is not going to make you an expert. Often, it raises issues about what you should know, and what's known, and what's unknown about the subject. This is a rapidly changing science, and (inaudible) addressing the discovery and remediation of mold and health effects. So I would suggest to the industrial hygienist that you need an additional training, and then you also need to find yourself with someone who knows the business to get the experience.

Donald M. Weekes

Thank you. Anyone else? Chin, go ahead.

Chin S. Yang

I'm speaking from a mycologist's point of view. I have been working with industrial hygienists over the last 24 years. I have worked with other types of professionals — architects, engineers, home inspectors. It is my experience that I am most welcome with talking to industrial hygienists. As Dr. Ken Dillon mentioned, the knowledge and science of mold is moving very fast. And it's important for the people who are going to do mold assessment, testing, remediation, to learn how to convey information to the public. And the American Industrial Hygiene Conference and the information dissemination of this organization is very helpful, and to me personally, even though I deal with molds most of my life, I find it's very useful also to interact with the industrial hygienist community, because they know how to deal with the building structure.

Donald M. Weekes

David?

J. David Miller

I think Dr. Yang and Professor Dillon have added thoughts that need a little bit of reinforcement. If we were having this press conference in 1988, which is not so long ago, the advice to the community would have been that mold, if it grew in the building, was a cosmetic problem and that there was a high tolerable exposure. That was the guidance and best advice only 15 years ago. That certainly wouldn't be very good advice today. And there are two broad thoughts there. One thought is that we really don't have very good methods for measuring mold exposure and that is part of the dilemma we have when we talk about sampling. I think many people think that because there are sampling methods, that these are highly evolved and that we are really sure what they mean. Unfortunately this is not the case; the methods are difficult to properly apply and interpret. There is a lot of research and development going on in many countries to try to improve these methods. This would be similar for any contaminant we might talk about over the past 30 or 40 years. This always happens.

And then just very briefly on the health front, we've had an inversion of thinking, from dampness in buildings being of modest consequence to having public health significance. There I now a great deal of research underway to try to figure out exactly what burden of disease is mold in buildings causing. We do not know the answer to that question, and probably will not have a full answer for another five to ten years.

Donald M. Weekes

Thank you. Anyone else? Yes, Jack.

Jack Springston

A couple of other points I'd like to make. Mention has been made a number of times about CIHs being highly qualified for doing this work, which is true. That's not to say that there are other people out there who are not certified that are not qualified to do that. I know a number of individuals who are extremely capable. One thing about CIH, though, is that we have a Code of Ethics, which compels CIHs to only work in those areas of their expertise. If there's a CIH whose expertise is in the chemical industry, and somebody asks them to do a mold survey, they would have to say, "No, that's not my area of expertise. Let me give you a name." Which brings me to my last point, where I'd read a news article where at the end of it, they were quoting an individual who does inspections, and he indicated that he charges \$150 an hour to do mold inspections. He used to do lead and asbestos inspections, but there was no money in it, so now he went to mold inspections. My question is: What is his expertise? How does that make him qualified? I don't believe it does.

Donald M. Weekes

Okay, thank you. All right, I'm going to move on to the next question: What type of mold testing is recommended to determine if it is safe? People spend time in a building that was previously found to have dangerous molds in it. Again, I indicate this is somewhat of a leading question, however, I do think there is some concern about this issue, and I'm going to ask Ed to begin, if you could, with an answer on that one.

Ed Light

This is another area of real controversy. There is no single test that can determine if occupants should vacate. The question of health problems due to mold is very much one of individual sensitivity. In some circumstances, individuals may have health problems due to mold. Tests done by industrial hygienists alone will not determine that. It's the medical end that is critical here. However, the physician acting on his own, may not know the of these individuals. So ideally what we try to promote is the industrial hygienist working in conjunction with a physician to determine if there is a sensitivity to the mold present in the home or building that requires them to leave. That would be an objective type of decision. You have to remember that there is mold present in every home or building naturally. Since that many sampling surveys are being done now simply highlighting whether or not a so-called "toxic mold" is present, not whether it's actually toxic or whether there's actual exposure, we don't know whether it's causing a health problem. Again, it's the partnership of the industrial hygienist and the physician to determine if getting out is necessary. In my view, we've had too many homes unnecessarily vacated because of mold scares that are not medically justified.

Donald M. Weekes

Okay, David.

J. David Miller

I'll just try to give a response to the question, which had to do with what type of mold testing is there to determine if a building is safe. And if I try to understand the question, as Don Weekes said, it's a bit leading, the AIHA has worked on the question of if there has been mold contamination in the building, what are the things that should be done. And as has the City of New York, as has Health Canada, as has the US EPA. The number one thing is: has the moisture problem that caused the mold been fixed? Has that area been properly investigated and remediated according to the guidelines that exist, including those from the U.S. EPA? If I am in a building where there had been a mold problem, I want to know that the building has been investigated properly and that the mold has been removed under safe conditions. Essentially no amount of testing is going to convince me to go in, or to recommend that people go in, unless that has been done.

Donald M. Weekes

Ken, do you have something to add to that?

Kenneth Dillon

I just wanted to reaffirm that, and point out that these quality assurance concepts for remediation of mold are offered in another AIHA publication, "Task Force on Mold Growth: The Report of the Task Force," and that is available here at the Conference and from headquarters.

Donald M. Weekes

Since I headed that task force, I'm very glad that you mentioned that. Basically, I would like to remind any reporter that is present, if they have a question, and they want to ask the panel, certainly step up to the microphone. You're certainly invited to do so at any time during this press conference. And with that, I'll move on to the next question, which, again, is a difficult one, but is one that is happening quite a lot, and it is: What is the latest on mold remediation in the home? I'm going to take the lead on that one, since I do a fair amount of work in homes myself. Most of the time, what we're dealing with is what is known in the insurance industry as a "covered peril." In other words, it is a loss that has taken place that has coverage under the insurance policy. And in those cases, what we then are responsive to, are the needs of the homeowner and the insurance company to take care of any mold growth that has taken place. A couple of things that I generally find with most of these situations is that almost every loss that I've been involved with has taken place when somebody is on vacation, or they're away from the house for a period of time. So I tell everyone, "Stay in your homes permanently." Basically, that seems to be the case, though, that there is an awful lot of these cases that evolve from a simple water loss to a major mold problem, based because the original situation, water problem, was not adequately addressed in a very short period of time, in most cases within hours. If it is in fact allowed to develop over a day, two days, a week, then most likely you're going to have mold growth.

The second thing that I have found is in many cases the mold problems exist in parts of the house that are not generally visited on a daily basis. Basements are the most common in that regard. And that is particularly the case in the part of the country I'm from, from the northeast. I know that different parts of the country have different other problems, but in the northeast, that is what has happened. And,

again, it seems that people in the northeast have a propensity for living in their basements. They build elaborate family rooms and consoles with TVs, and store all sorts of paper in this environment. They are creating a perfect environment for mold growth, quite frankly. It's like a mushroom factory; it's nice and dark and wet and humid. And so we get a fair amount of growth in those areas. And if you're not going down to your basement on a regular basis, and all of a sudden you go down in that basement and there is mold growth, well, it's probably related to some kind of covered peril that is covered under the insurance policy. Insurance companies are trying to respond to these issues by helping to do the proper thing in terms of mold remediation. Do they always do so? No, they do not. However, they are making an effort. And what I find in my practice is, basically, that mold remediation is a developing science. It is not necessarily set in concrete as to what has to be done. We, as industrial hygienists, are being called upon to do project designs, as I mentioned earlier. Those project designs really weigh out what has to be done in mold remediation. That is constantly evolving as well. There are constant changes and updates, in terms of new products that are being developed for this particular area. As an industrial hygienist, I'm constantly looking for more information about that issue. So it is something that is going to be evolving as time goes on. I think we have a better handle on it than we did a year ago. Certainly we have a better handle on it than we did five years ago. And I think we'll have a much better handle on it as we go forward. Anything else from the panel?

Kenneth Dillon

I would like to mention a HUD program called the Healthy Homes Initiative, addressing mold and other hazards in homes, for people who can't really afford to address these problems. And what's coming out of that are very efficient protocols for investigating and remediating and getting the homeowners to help look after their houses. And so I would suggest that another resource here on remediation, just go to the HUD website and read about the Healthy Homes Initiative.

Donald M. Weekes

Jack?

Jack Springston

I don't really do work in homes, and my area of specialty is in commercial buildings, but I would like to offer a word of caution. You cannot rely solely on the contractor to do the right thing. Homeowners have to be concerned or be aware of bringing in people to assess a condition who have a monetary reason for suggesting full-scale abatement. They really need to bring in an independent third-party industrial hygienist who will give you an accurate representation of the condition, and then make recommendations as far as remediation goes.

Donald M. Weekes

On to the next question: Once a home has been properly cleaned, is it cured? Is there anyway to cure it permanently? Again, a very difficult question to answer, because I'm not sure necessarily there is a "cure" for something that doesn't live, such as a house, but I will throw this initially to David Miller, if you want to answer that one.

J. David Miller

There have been a number of large research studies in North America providing data on mold in the single-family residence house. About a fifth of the mold in homes is what I call "household mold," which is the mold that grows in bathrooms or growing in the defroster pans of the refrigerators. It is the mold that around the windows if there is condensation failure. So housecleaning is a pretty critical thing about keeping mold out of our houses. Another big factor in mold is condensation failure. This can be a very big problem, depending on which extreme of the continent you live in, either very cold or very hot. Condensation failure is when there is not enough air exchange to get the water vapor out of the house. Water is generated from living in the house, from showers, cooking and washing, and so on, and there's an amazing amount of water that a family of four will generate, and it has to go somewhere. So if it isn't exhausted outdoors, it goes into the fabric of the building and mold grows. As Don Weekes said, a lot of mold is in basements. That is probably a top source. Or crawl space, in warmer areas, where that is the practice. The last big piece of mold is very typically around windows inside the walls from leaks. And that's why, to go back to Ed Light's intervention some time ago, it's so important that the person you ask to come and look at your house understands all of that, so that he or she knows where to look, and not miss any of the big picture items. So to "cure" the house, all those engineering things need to be thought about, all those maintenance things.

Donald M. Weekes

Ken?

Kenneth Dillon

I just can't resist this. I would say an ounce of prevention is worth a pound of cure, and it goes back to the factsheets that AIHA has put out, and the remarks that Dr. Miller made about prevention. This is something we can prevent. I think every building engineer and every homeowner should know that.

Donald M. Weekes

Chin, do you have a comment?

Chin S. Yang

Yes, I think the question (broken-up speech; inaudible).

Donald M. Weekes

Yes, and I'll just reiterate. In terms of curing a house permanently, that is not going to occur in most cases unless you address the water problem. If you don't address the water problems, there is no amount of remediation that is going to cure or eliminate the mold from your house. You do need to

address whatever water problem there may be, whether it be from groundwater intrusion, whether it be from a roof leak, whether it be from problems with your plumbing, whatever it might be. If you don't address those problems, it doesn't matter how much remediation you do. You need to basically address that first.

J. David Miller

There is another issue that we need to note. Professor Dillon raised the HUD Healthy Homes Initiative and there are similar initiatives of the corresponding agency in Canada (CMHC). It is easy for us to talk about people who have the resources to make a house perfect, and we know full well that a very big fraction of our population cannot make their houses perfect. One of the big things that I think is really important is that in these government programs, we are trying to acquire information that would let us know what are the minimum things we need to do to protect the children in those homes. Support for these programs, I believe, is critical, because data from Professor Jack Spengler's group at Harvard University and from studies done by the Federal government in Canada is that about 10 percent of residential homes have dampness problems sufficient to affect the health of children in the buildings. That is a very big number of homes. The good news is that the vast majority of our houses and buildings are fine, and I think that does need to be said at a press conference like this. No one knows what the exact percentages are, but certainly the vast majority of our homes and buildings are OK. So support for programs that help us determine what are the minimum things we need to do to protect health I think is quite critical for the people who cannot afford to have perfect homes.

Donald M. Weekes

Jack?

Jack Springston

I just wanted to touch on one thing that (inaudible) mentioned. We get calls from building owners where they say, "We've had a pipe burst, and we've got water. We need you to come in and do mold testing." And my response is, "No, you don't. You need to get somebody in there to dry out the materials." If you can get to it quick enough, 24 to 48 hours is the generally accepted time frame, if you can get to those materials and dry them out within that time frame, you're not going to have a mold problem. The other thing is if you're dealing with wet walls, you can't just put a dehumidifier and dry it until it's dry to the touch on the outside. You've got to deal with the moisture between the walls. So you need to bring in a company that specializes in drying out following moisture problems.

Donald M. Weekes

Okay. And our last question on the sheet here is a real simple question, but probably has an enormous impact, and that is: How clean is clean? I'm going to start with Chin on this one, to give us a little picture of what you think "clean" is.

Chin S. Yang

(Broken-up speech)

Donald M. Weekes

I will give you an opportunity to answer first, and then we'll approach some industrial hygienists, too.

Chin S. Yang

(Broken-up speech)

Donald M. Weekes

Ed?

Ed Light

This is yet another controversy. We deal with many contaminants in industrial hygiene. For example, with asbestos, we have very specific measurements and very specific standards to determine how clean is clean after a remediation or abatement type project. Unfortunately, the natural biology of mold does not cooperate here, so we cannot make precise measurements to make an exact determination, as far as finishing up the project. In the case of our company, we oversee various mold cleanup projects. We put the emphasis on an engineering determination: Have we located and removed or properly treated all of the identified mold growth? Do we know that the contractor has followed proper work procedures in getting to that end, so that the building has not become contaminated, and that other areas have stayed clean? That determination gives us the best confidence the area is safe. If testing is done, in our projects, it's considered secondary. We may do some tests, but we consider the procedures followed and the visual condition of the work area as being more important. This is something that we don't have full agreement on, with clearance becoming an expensive issue across the country.

J. David Miller

Ed, having said that, I note that there is full agreement here at this table and in the factsheets that we generated that the steps that he outlined are the right steps.

Male Voice

I agree with Ed, but we find often people want data, some sort of testing, and results that give them a peace of mind. The question is, do we do air samples? Do we do dust samples? Do we surface wipe samples? Do we do a combination of that? If we do that type of sampling, do we sample only for the viable or living organisms? Or do we look for the total organisms, all the spores, living or dead, because we know that they can also cause certain health reactions in individuals. And it also brings us the question, well, what is our clearance criteria, and can we set a permissible exposure limit in mold, which is an absolute nightmare to address, because I think everybody on this panel, and virtually everybody that's in this field will say, no, you cannot. Though Chin's response is basically what we use, we need to compare what's outside to what's inside, and make an informed decision based on those results.

Donald M. Weekes

Okay, I'm going to have the last word, because I am the moderator. Basically, the key to any of this work is that use an individual that can exercise professional judgment, not go with someone you do not

trust, because if you go with that, you're just going to end up with nightmares. Make sure that whatever you do, have someone who has an experience level that you feel confident in. You would not choose a financial advisor on the basis of his training at a five-day course. You would choose a financial advisor on whether or not his career has shown that he can do the job. Do the same with an industrial hygienist. Pick someone who has shown by his experience and his knowledge that he is a professional and can exercise professional judgment. With that, I'll bring a close to this press conference at this point. Thank you very much for attending.

(End of Press Conference)

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