

How To Identify A Mold Consultant Who Can Support Your Case

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Commentary

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A mold litigation team typically includes a range of technical specialists, who may or may not also be required to serve as expert witnesses. In a large or complex case the roster of experts can easily grow to include building/facility engineers, mycologists (specialists in the study of mold and fungi), microbiologists, mold remediation contractors, and a host of clinical specialists, including a physician, toxicologists, immunologists, neurologists, dermatologists, pulmonologists, gastroenterologists, occupational and environmental medicine physicians, and/or neuropsychologists. Very often, the outcome of the case will hinge on the admissibility and credibility of such experts' work product, data quality and specialized knowledge in their respective fields.

Mold cases invariably require the services of a less familiar expert, the industrial hygienist (IH), who will have overall responsibility for technical data and sample collection and interpretation. Whether representing the plaintiff or the defendant, the toxic tort attorney is ultimately going to rely on the IH's analysis in deciding whether to proceed, settle, or terminate a toxic tort case. Choosing the right industrial hygienist for your team, therefore, is critical. Yet relatively few attorneys are familiar with this field.

While this article will not address the medical aspects of mold litigation, it is important to keep in mind that the commonly alleged etiologies, symptoms and permanency of mold-related illnesses are heavily disputed in the medical community. Clinicians and medical researchers continue to conduct critical peer review of the research and lab reports, rendering admissibility in court largely a function of the judge's application of *Daubert* or its state equivalent.

Of course, the first step in the trenchant analysis of an actual or potential mold claim is the critical process of procuring, interpreting and presenting the data that will support your case.

Finding Your Expert

With literally tens of thousands of tenants and employees filing complaints of mold-related injury or property damage every year, it was to be expected that a host of self-described “mold professionals” would quickly hang out their shingles. A recent *Wall Street Journal* article listed mold inspection as one of the most attractive job opportunities these days, and quoted an instructor at a Utah trade school who said, “Inspectors can earn as much as \$100,000 annually.”

Unfortunately, absent any current governmental licensing or certification for indoor air quality (IAQ) services other than those covering radon, lead, or asbestos, anyone can present himself as a mold expert or even an industrial hygienist, since industry “certification”— as of this point in time — is still completely voluntary.

Our most urgent recommendation, therefore, is simple: retain a professional industrial hygienist (IH) or better, a certified industrial hygienist (CIH) to carry out any needed inspection, sampling or testing. A qualified CIH, by definition, is trained to evaluate environments for a variety of factors, including air quality, and to recognize and evaluate materials that can impact occupants’ health. In addition to specialized training in industrial hygiene, the CIH is required to hold a college degree — often in engineering or a health-related field such as chemistry, biology, or microbiology or other natural science — as well as an understanding of the factors affecting the design and maintenance of HVAC (heating, ventilation and air conditioning) and building systems. Finally, the CIH must also demonstrate his or her knowledge by passing an 8-hour exam administered by the American Board of Industrial Hygienists (ABIH).

Together, this combination of education and training allow the attorney to have confidence that the CIH’s data collection and the presentation of the results will be defensible and that his or her evidence and testimony will meet applicable standards for admissibility. In many cases, the CIH is a key team member, whose value to the attorney actually goes beyond merely “filling in the blanks” on technical issues. Indeed, one of the expert’s most significant contributions may be to educate an attorney concerning the methodologies and standards used by that expert’s discipline.

Ideally, the search for a mold specialist would begin and end with a call to a colleague who knows (or knows of) a reliable expert. Since life is rarely so kind, the quest more often begins with the local Yellow Pages under “Mold Inspection and Remediation” or, better, “Environmental Services.” Perhaps the best way to start, however, is by calling the American Industrial Hygiene Association (AIHA; phone no. 703- 849-8888) to obtain a current industrial hygiene Consultants Listing, specifying particularly that you are seeking a CIH with expertise in indoor air quality.

What’s in a Name?

The “experts” who have joined in what one writer calls the “mold rush” go under various titles: “Certified Mold Inspector,” “Certified Toxic Mold Investigator,” “Certified Property Mold Specialist,” “Certified Residential Hygienist,” “Certified Environmental Hygienist,” “Certified Commercial Hygienist,” and others. Often, the label means no more than the completion of a few classes — sometimes as little as two days’ training — and the purchase of some basic testing equipment with an instruction booklet.

One typical training “Institute” advertises a five-day “Certified Environmental Hygienist” course and promises that “upon completion [including two days on mold testing & remediation — *for which you will also receive one or more of the above-mentioned mold certification designations by paying the separate annual mold certification membership dues*], you will be able to inspect, test, and remediate a home so that you can certify the home as a “HEALTHY HOME” — a big advertising and sales advantage to home owners and realtors interested in selling that home.” *Caveat emptor* indeed!

Once you have names of several candidates, it is time to begin the screening process. Obviously, the consultant should have the type of training and project experience that are relevant to your specific case. Check the candidate's credentials thoroughly. Certification or accreditation by a nationally recognized organization such as the ABIH or the Indoor Air Quality Association (IAQA) may be a plus.

Most importantly, ask for references and follow up by speaking with prior clients. If the candidate for your project refuses to refer you to past clients, you should jump to the next name on the list. Your case is too important to risk investing in an unknown entity.

When you do have the opportunity to speak with past clients, ask a variety of specific questions about the expert's performance. Since many people in business these days are reluctant to say anything negative, make it a point to learn as much as possible about the nature of the work performed, the work products involved (reports, analyses, testimony, etc.) and the timeliness and budgetary responsibility of the candidate — did he stay within the client's budget and complete the various stages of the project in a timely manner?

It is also important to determine and articulate ahead of time — as early as possible — what services and products you need. One of the difficulties here is that "mold" is not a single entity like environmental lead or radon, but a complex suite of living materials which may involve an array of mold and/or bacterial species, their spores, and toxic products and by-products including hard-to-verify volatile organic compounds (VOCs). Because indoor air quality issues can be complex and unpredictable, your initial scope of services is likely to change once the consultant is on board — yet another reason the selection process is so important.

As part of the screening process you would be well-advised to find time to meet with each candidate, in person or on the phone, to describe your client's position and needs. You should expect in response a clear verbal explanation of exactly how the candidate would handle the assignment. A clear and concise but thorough written proposal should follow. If the consultant responds to questions with too much technical jargon, his or her written or oral testimony may not provide the clear support you need in court. We sometimes also recommend having a candidate complete what we call — only half-humorously — "The Mold Test" (see sidebar).

Request a detailed, formal proposal from each consultant. Putting your request for proposal (RFP) in writing will help to assure consistency and "level the playing field" for all. The AIHA's guidelines suggest that your RFP or contract specifications should include:

- The project scope, specifying activities to be included, such as air monitoring, occupant surveys or health assessments;
- The work products, such as drawings, reports, tables, back-up data, as well as field notes and — increasingly today — video as well as photographic evidence;
- Quality control procedures;
- Project budget estimates and fee schedules; and
- A reasonable schedule.

Working With The Consultant

Considering the consequences, it is surprising how scant and fragile may be the physical evidence necessary to prosecute or defend a toxic mold case. The key evidence in a case may be linked to a surprisingly small number of spores or a few micrograms of a chemical on some type of sample media. It is therefore critical for the attorney to understand the inspection/testing process.

Many assume that there is little more to testing than taking a few air or wipe samples and gathering representative materials and scrapings from the allegedly dangerous home or workplace. In fact, a defensible inspection/testing process should begin with a careful assessment of the site — including any history of past or recent water damage — a visual inspection of the premises and a moisture analysis that includes wall cavities, spaces beneath carpeting and/or floors, and the interiors of air handling equipment. The responsible professional then uses sampling to verify observations, document conditions, and assess the extent of potential amplification.

The Sampling-Analysis Plan (SAP)

Toxic mold litigation presents almost limitless opportunities for seemingly minor mistakes or omissions that could potentially scuttle your case. Many of these involve the collection and handling of samples and data, transport of materials to and from the laboratory, and chain of custody.

As soon as possible after being selected, therefore, the consultant should prepare for the attorney a written Sampling and Analysis Plan, or SAP. This document, which should be developed with the attorney's participation, serves as a road map for what follows: it should describe the evidence the investigator seeks and how it will be obtained and handled. Though parts of the SAP will necessarily be couched in technical language, the document should be sufficiently clear and jargon-free to render it understandable to a layperson — your potential juror. The requirement of both content and clarity serves two purposes. It assures the attorney that the technical team is on the right track and enables a jury to follow your line of reasoning more intelligently, hopefully increasing your chances of success at trial.

The SAP typically has two primary components: a sampling plan and a laboratory analysis plan. While we need not address every detail here, a summary of the essential components of a good SAP is in order.

The Sampling Plan. The sampling plan should be designed with an eye toward jury presentation. Keeping in mind the following components will maximize your chances of success.

Objective. This may be general (e.g., to determine that there has or has not been significant atypical mold growth, and if so, the dominant species and extent of growth) or focused (e.g., to document or disprove the range of a particular mycotoxin exposure likely to occur in a particular location). The plaintiff may need to demonstrate only that mycotoxins or mold spores were present in abnormally high quantities. Defendant's counsel, on the other hand, faces the notoriously difficult challenge of proving a negative. It is important to have a sampling strategy that maximizes the probability of obtaining true positive results and minimizes the possibility of obtaining false negatives.

Locations To Be Inspected. Besides the obvious surfaces, these usually include areas such as wall chases, concrete or masonry slabs, subsurface drainage, roofing components, fiberglass insulation, gypsum wallboard, ceiling tiles, and HVAC systems. The consultant's familiarity with standards for building system design and maintenance will enable him or her to testify that the ventilation system, for example, is and has been operating according to accepted industry standards. In cases where health impacts are an issue, or the source of the mold is in question, this expertise may also allow the consultant to find evidence of other causative agents such as exhaust gas re-entrainment, contaminated or inappropriately located outdoor air intakes, or VOCs (volatile organic compounds) emitted by office equipment, new carpeting or wall coatings.

A frequent point of contention in mold cases is whether the levels and types of fungi found within the premises are similar to those found in outdoor air or in non-problem buildings. If the consultant fails to look in the right places or fails to take a large enough number of samples the resulting data may not be defensible. For the samples to be representative, it is also important to collect outside samples in dry weather, not on rainy or snowy days or immediately after a storm. The

guidelines published by the New York City Department of Health, Bureau of Environmental & Occupational Disease Epidemiology, suggest that outdoor air samples should be collected concurrently at an outdoor air intake, if possible, and at a location representative of outdoor air.

Types Of Samples To Be Taken. The attorney should work closely with the consultant on this aspect of the plan. The consultant should explain the uses, advantages, and limitations of various sampling techniques (e.g., tape/bulk/wipe sampling of visible mold, quiescent versus aggressive sampling, spore trap sampling, viable versus non-viable air samples, etc.), so the attorney and expert can focus on the best approach to support the client's case and arm themselves against the opposition's rebuttal. In some cases, collecting water samples from cooling towers, humidifiers, or condensation pans may provide evidence of significant bacterial contamination that may affect the outcome of the case.

Sampling Protocols And Procedures. Samples must be collected and handled according to carefully specified methods if the resulting evidence is to be used as intended. The attorney should become familiar with these methodologies to ensure that they are followed and cited. Something as simple as failing to calibrate air sampling pumps or failing to disinfect air sampling equipment between uses may subject your data to a damaging challenge.

New tools should be used where feasible. For example, specialized robotic fiberoptic video cameras enable the specialist to "see" and graphically record conditions within walls or other hard-to-reach spaces, as well as to download video straight into computer programs to prepare reports. This is a powerful investigative tool, and the resulting videotape provides a compelling medium for presenting to a jury what would otherwise be very dry testimony.

Handling And Transport Of Samples. The plan should specify (i) how the samples will be packaged, shipped and received; (ii) how the sample media will be stored and handled prior to use; and (iii) quality control. Even such a simple matter as the positioning of samples within containers may be crucial, since movement can cause spores to fall from the agar or other medium. Temperature fluctuations can also harm the sample by allowing condensation to form inside the container.

Because custody and care of samples is so critical, this area in particular can easily become the "weak link" in a case. The best-known instance of this is probably the O.J. Simpson case, in which biological samples collected at the crime scene were successfully challenged at trial because they had been in an investigator's pocket for an estimated *two minutes*. While this is admittedly an extreme example, it does demonstrate the importance of utilizing custody seals and documenting custody at every stage.

Often mold samples must be collected, rapidly packaged, and handed over to a courier for shipment to the laboratory. Failure to arrange special handling may subject the sample to rough handling, tumbling and — most significantly — extremes of heat and cold, all of which may render it invalid as evidence. Exposure to temperature extremes is a particular weak spot in the evidence chain. According to figures from the Federal Aviation Administration, the temperature range in a cargo hold can range from 0° to 104° F. during a single flight. During layovers and delays, the temperature in a cargo hold can quickly climb as high as 140° F — and delays are very common.

The Laboratory Plan. Actually a separate part of the SAP, the laboratory plan should identify the laboratory or laboratories the IH will use to analyze samples as well as the analytical methods to be used. The laboratory selected should be one capable of not only identifying allergenic and/or pathogenic fungi to the genus level by microscopic examination, but also speciating molds such as *Penicillium*, *Aspergillus*, and *Stachybotrys*. In addition to possessing the appropriate technical expertise and experience with related investigations, the lab should follow federal Good Laboratory Practice (GLP) procedures, and should be accredited by AIHA's EMLAP (Environmental Microbiology Laboratory Accreditation Program) program. AIHA-accredited laboratories are subject to quarterly proficiency testing, providing assurance that their evidence will hold up when faced with cross-examination or audit.

The laboratory should be able to work with any samples your consultant sends to them (e.g., bulk, swab, tape-lift, sporetrap, impact plate samples, etc.). Samples should reach the laboratory within 24 hours. Viable (living) samples are incubated at the laboratory and analyzed for fungal enumeration and identification. For the reasons discussed above, many laboratories will arrange for samples to be transported via their own courier service rather than using commercial air or ground transport.

The laboratory report should be detailed enough to counter opposing counsel's challenge. The extent of detail should be determined jointly, ahead of time, by attorney and consultant. Typically, the report may include an assessment of the total counts of fungi and bacteria in the samples, a comparison of the number and types of microbes recovered from the affected and background area(s) and comments regarding amplification of specific types of microorganisms. Tabular display of the genus/species identification, enumeration results and quantitative results, and identification of the microorganisms and/or particulates recovered from your samples can be very helpful in preparing court exhibits; the data should be arrayed so as to facilitate comparisons between relevant samples. As a matter of routine, the laboratory should also be instructed to save the samples and keep full, accurate notes on the delivery, receipt, and handling of samples, Chain of Custody forms, etc., as well as the required scientific documentation of the lab's analytical procedures and results.

Staying On The Same Page

A common saying in the fields of construction and engineering is that "you get what you *inspect*, not what you *expect*." This rule holds equally true in environmental investigations. An attorney who has developed a strong understanding of the mold consultant's technologies and procedures will rarely be caught off-guard on the facts, whatever the other strengths or vulnerabilities in the client's case.

To help, we advise clients to obtain a copy of the *AIHA Field Guide for the Determination of Biological Contaminants in Environmental Samples*, a 174-page paperback prepared by the Biosafety Committee of the AIHA and available for \$50.00 from AIHA Press, 2700 Prosperity Ave. Suite 250, Fairfax, VA 22031. Though written specifically to assist the professionals directly involved in collecting, storing, and transporting various types of microbial samples, this small volume can also serve as a worthwhile reference for anyone who employs such professionals.

The attorney who deals with toxic molds and their effects must confront a variety of important biological and medical questions which remain wide open. Attorneys and their experts frequently spar over the alleged long-term effects of mold exposure, the possible interactions and synergies between fungi and other microorganisms (such as bacteria), and the nature and action of VOCs and other mycotoxins. At some point in the future the EPA and other public health/safety bodies will undoubtedly get a handle on these and other vexing questions. Until then, this area of tort litigation will continue to develop from case to case. Hopefully the guidelines provided above will help yours. ■

The 'Mold Test'

Developed by BEM Systems, Inc., with tongue only partly in cheek, this brief quiz covers some of the general principles — some absurdly simple — as well as a handful of specific bits of information that should be part of every mold professional's mental "tool kit." One of the questions — No. 3 — could be seen as a trick question, since currently there are *no* authoritatively established threshold limits for airborne molds. A competent professional, however, should respond to the spirit of the question, by explaining, for instance, how a reference standard would be established for the particular job in hand. The last three questions are particularly diagnostic; though they may sound overly specific, anyone who really knows the current technology and practice should be able to answer all of them correctly.

The Mold Test

1. Is mold a plant or animal?
2. Name three of the mold species most frequently associated with water-damaged building materials.
3. What are the current threshold limits for airborne molds?
4. What is the advantage of collecting both spore trap and cultured samples for bioaerosols?
5. Name two reference books utilized for sampling protocols.
6. How does one determine if there is mold amplification in a building?
7. Name three health problems associated with molds.
8. What is the difference between MVOCs and mycotoxins?
9. What types of agar are used to sample for viable fungi?
10. What is the flow rate of the Andersen N6 sampling instrument?

The Mold Test — Answers

1. Neither; scientists now classify fungi as a separate, distinct kingdom.
2. Many species are associated with the problem. Among the more common are *Penicillium*, *Aspergillus*, and *Stachybotrys*, *Fusarium*, and *Trichoderma* and *Chaetmoium*.
3. None; there are currently no governmental regulations on acceptable levels of airborne molds.
4. The spore trap method is faster (because it requires only visual identification of the mold) and more comprehensive (because it captures both living and non-living material); cultured samples are important because they permit analysis down to the species level.
5. Two reference books are universally recognized and should be familiar to every professional: *The AIHA Field Guide for the Determination of Biological Contaminants in Environmental Samples* and *The ACGIH Bioaerosols Assessment and Control*.
6. Samples must be taken inside and outside the building and the results compared. Amplification may be present if the indoor samples contain (1) problem mold species not found outdoors and/or (2) significantly higher concentrations of indicator species.
7. Allergic reactions such as itchy skin or eyes, runny nose; triggering of asthma; pneumonitis (a pneumonia-like sensitivity to mold); and opportunistic infections in some hospital patients.
8. MVOCs (microbial volatile organic compounds) are responsible for the odors associated with mold infestation; mycotoxins are the actual poisons that may cause discomfort or illness.
9. Three types are commonly used: corn meal, malt extract, and potato.
10. 28.3 liters per minute.

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