

**September 2002**



**WOHL Lab Staff Serve on  
National Industrial Hygiene Committees**

Two members of the Wisconsin Occupational Health Laboratory staff are making their mark at the national level as volunteer members of the American Industrial Hygiene Association's (AIHA) laboratory accreditation committees.

Derek Popp, WOHL's Quality Assurance officer, is a member and past chair of the Environmental Lead Laboratory Accreditation Committee. Bioaerosols Unit Technical Manager Christine Powell has been invited to join the Environmental Microbiology Laboratory Accreditation Committee.

The committees provide leadership and oversight for their respective AIHA programs and make recommendations

to the AIHA Analytical Accreditation Board as to which laboratories should receive AIHA accreditation.

WOHL, a part of the Wisconsin State Laboratory of Hygiene, Environmental Health Division, has been accredited by AIHA for industrial hygiene testing since the early 1980s, for environmental lead testing since the mid-1990s and for environmental microbiology since 2000.

The field of environmental microbiology testing for indoor air quality, especially for mold and fungi, is burgeoning. WOHL is one of only 11 laboratories in the United States to receive AIHA accreditation in environmental microbiology.

## **Environmental Microbiology Services**

The Bioaerosols/Environmental Microbiology Unit offers a wide range of microbiological testing related to indoor air quality for health agencies, governmental agencies, industrial hygienists and private citizens.

The unit analyzes for mold and bacteria on media plates, spore trap filters, swabs and bulks. WOHL has a limited amount of air sampling equipment (Anderson samplers, Zefon pumps, etc.) available for your use. Contact a WOHL microbiologist to arrange for shipment of media and/or sampling equipment or to discuss sampling strategy.

## **New Microbial Identification Capability**

The WOHL Bioaerosols Group recently purchased an automated microbial identification system. The instrument utilizes assays that identify organisms by their unique Carbon utilization patterns.

The Bioaerosols Group plans to use this instrument to complement the conventional biochemical identification procedures that are used at WOHL. As a result, bacterial identification to species level utilizing this technology will be made available if requested.

The Bioaerosols Group also plans to use this system in the future for the identification of fungal isolates to the species level. This capability will be especially useful for *Penicillium* speciation, as the fungal database can distinguish from among 130 different species in this Genus. We expect to be able to provide this service by fall 2002.

## **Tape Sampling for Fungi**

Tape sampling provides consultants with rapid identification and a semi-quantitative result of suspect visible mold present in a given area. Differentiation between viable or nonviable spores cannot be made with tape samples.

Samples should be collected using clear cellophane tape. Packing and frosted tapes are unacceptable. To sample, take a piece of tape 1-2 inches long and apply the tape to the surface to be sampled. Remove the tape without disturbing the surface the mold is attached to. Samples may be submitted affixed to the inside of the bag or on a slide. Do not fold the tape onto itself, these samples will be rejected. Label the bag or slide with an identifier and send the sample to the lab. Refrigeration is not required for tape samples. Tapes are analyzed under 40X objective by bright field microscopy once stained with lacto-phenol cotton blue. Most molds are identified to group level. Exceptions are:

*Pithomyces/Ulocadium* species,  
*Aspergillus/Penicillium* species,  
Basidiospores, Ascospores and  
Rusts/Smuts/Myxomycetes.

Semi-quantitative results are reported as follows:

Few: <25 spores/slide

Moderate:  $\geq$  1-10 spores/40X field

Many: >10 spores/40X field

Molds are ubiquitous in the environment and low levels may not be significant. Also, standard levels of spores considered significant in tape samples are not available. If you have questions regarding tape samples please contact the Bioaerosol Unit at 1-800-446-0403.

## Labeling and Sealing of End Caps on Sorbent Tubes

Receiving tubes that are clearly labeled and properly sealed can tremendously assist the lab in the analysis of sorbent tubes. Since WOHL needs to verify the media of each sample received, we require labeling the tubes in a manner that does not cover the catalog number or lot number stamped on the tubes. This can be accomplished by using either a flag style label or a small piece of masking tape placed at the back end of the tube. Also make sure the sample number is legible on the tube and is unique for each sample in the study. WOHL also does not recommend sealing the end caps with tape. The red caps supplied with the tubes are very snug and will give an airtight seal on the tubes. If a tamper seal is required, please wrap seals from end cap to end cap using paper sealing labels. If tape is needed, please only use masking tape. **Duct tape or re-enforced tape causes many problems in the lab and is discouraged.** If you have further questions on properly labeling or sealing your samples, please call the lab at 1-800-446-0403.

## Customer Survey

A customer feedback survey has been included in the mailing of this issue of Reactions. Your opinions and suggestions are very important to us as we strive to continually improve our laboratory. Please take a few minutes to fill out the survey and return it to us in the stamped return address envelope. As you can see, there are no identifying codes on the survey or the envelope, so your responses will be anonymous. You may of course put your name and phone number on the survey if you would like us to call you to discuss your input.

## Method Development

WOHL has had a number of requests over the years for methods we routinely do not do. Where possible we try to develop methods to meet our clients needs. However, in some cases we turn down those requests for lack of resources, time or workload. We have been looking at some of those requests and trying to determine if we are now at the point where we could offer some of the methods to customers. We are also interested in evaluating and improving some existing methods.

The attached survey seeks input to help us prioritize these method development efforts.

## Silica Exposures

Recently OSHA expanded the 1996 Silica Special Emphasis Program and included a conversion formula for construction and maritime. The PEL for respirable silica in General Industry is based on the formula,  $10/(\% \text{ quartz} + 2)$ , and then compared to the respirable dust value in  $\text{mg}/\text{m}^3$ . The PEL for respirable silica in Construction and Maritime is based on the formula,  $250(\% \text{ quartz} + 5)$ , listed in million particles per cubic foot (mppcf) and compared to the dust result in mppcf. We list the respirable dust level in  $\text{mg}/\text{m}^3$ . The conversion factor to convert  $\text{mg}/\text{m}^3$  to mppcf is:  $0.1 \text{ mg}/\text{m}^3 = 1 \text{ mppcf}$  (just multiply  $\text{mg}/\text{m}^3$  by 10 to convert to mppcf.)

WOHL has been providing the "Silica (quartz) Exposure Status Report" for some time. We are updating it to include the Construction and Maritime OSHA PEL as well. WOHL has no way of knowing which standard is appropriate for your samples. WOHL

has revised its report writing system and is seeking your input as to the format.

Should we provide this report as part of the "Official Report," as an "Unofficial" attachment (currently being done), or not at all? Please include any suggestions you have in the included survey.

We are asking for your input on what is to be included on the new exposure

status report. Currently we are listing the Dust mg/m<sup>3</sup>, the calculated OSHA PEL, the quartz mg/m<sup>3</sup>, the percent quartz, and a comment related to exposure. Possibilities for the new report include those previously listed as well as the Construction and Maritime PEL, dust result listed in mppcf, a comment related to exposure for Construction PEL, as well as others.



**Wisconsin Occupational Health Laboratory Metals Unit**  
**Doug Smeija, Shaker Amer, Jason Loughrin, Mike Grochowski**