

Tribal Air Monitoring Outlook

EPA/R&IE/CIE/TAMS

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Editor

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Mold Matters How Moisture Makes It Possible



Mold spores float through indoor and outdoor air searching for damp surfaces.

Breathe Fresh Air

It lives. Mold lives as a type of fungus growing in our natural environment. Mold spores are everywhere and that includes our homes. If conditions are favorable it will thrive. What are the conditions ripe for mold growth:

1. Oxygen
2. Temperature (humidity)
3. Nutrients (food)
4. Water
5. Time (24 hrs to ten days from inception).

If these conditions work in tandem, mold will flourish. It is especially partial to wet, damp areas; areas that have flooded, areas with high condensation caused by high indoor humidity or surfaces that are too cold; roof and plumbing leaks. These are a few of the moisture inducing sources responsible for indoor mold and mildew problems.

It is almost impossible to eliminate mold from indoor environments. Mold spores float through the air and in dust. They remain harmless unless moisture is present. Once moisture is detected the drying process



Water stains on wall and ceiling.
Photo courtesy of EPA

“It is important to dry water damaged areas and items within 24 to 48 hours to prevent mold growth.”
Source: EPA



Mold on grout.
Photo courtesy of EPA

should begin. The use of fans and dehumidifiers is recommended for severe problems along with moving any wet items away from the wall and off the floors. Controlling humidity is crucial to mold control. The humidity level should be between 20-40 percent in the winter and less than 60 percent the rest of the year.

Remember that mold can grow, for the most part, on any organic surface. This means that paper, cloth, wood, plant material and soil provide favorable conditions for mold growth. These substances are the nutrients that are necessary for mold to develop. Different types of mold can grow in dissimilar circumstances. It does not always have to be in a high humidity area. Some molds favor cool vicinities such as bread in a refrigerator, while others grow well in places like warm, moist basements.

Yes, molds can make you sick. There are health risks associated with most molds. These risks range from mild to severe. Not only can molds be unpleasant to smell and unsightly to see, they can cause allergic reactions in sensitive individuals and, in some cases, serious toxic effects can result. Some of the most common allergic symptoms include: nasal congestion and irritation; sneezing and coughing; throat and eye irritations; difficulty breathing; asthmatic attacks and itching and skin rashes. Some neurotoxin effects are: fatigue; headaches; memory loss; depression and mood swings. The latter most often occur when black mold, or mycotoxins, is present. This is why it is crucial that all mold problems be promptly addressed and

immediately removed. Be aware and investigate if mold is suspected. Look for visible mold growth; search areas with noticeable mold odors; look for signs of excess moisture or water damage; search behind and underneath materials like carpet and pad, wallpaper, vinyl flooring, sink cabinets, furniture or stored items.

If molds become a problem there are several guidelines to follow for clean-up and removal. Most importantly in any clean-up is to protect yourself and to protect others: the use of rubber gloves and eye goggles is recommended along with protective outer clothing. Make sure that all moldy materials are contained in plastic bags and to hang plastic sheeting to separate work areas from non-work areas. Surface mold growing on non-porous or semi-porous materials such as hard plastic, concrete, glass, metal and solid wood can usually be cleaned by using a stiff brush, hot water and a non-ammonia soap/detergent or commercial cleaner. Be sure to rinse the surface with clean water and dispose of any excess rinse water.

It is recommended that surfaces be disinfected after cleaning. This will help to remove any mold missed by the original cleaning. It is important to remember that the cleaned area should be continuously monitored for new mold growth and signs of moisture. If you are highly sensitive to mold then an experienced mold professional may be necessary.



Heavy duty vinyl allerderm gloves

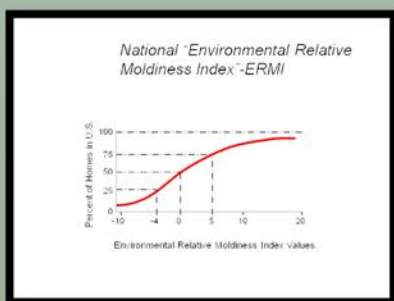


Non-vented clear safety goggles

According to EPA guidelines, if the moldy area is less than about 10 square feet, in most cases, this can be handled by the individual. However, “if there has been a lot of water damage and/or mold growth covers more than 10 square feet, consult EPA’s *Mold Remediation in Schools and Commercial Buildings*. Although focused on schools and commercial buildings, this document is applicable to other building types. If you choose to hire a contractor (or other professional service provider) to do the cleanup, make sure the contractor has experience cleaning up mold. Check references and ask the contractor to follow the recommendations in EPA’S *Mold Remediation in Schools and Commercial Buildings*, the guidelines of the American Conference of Government Industrial Hygienists (ACGIH), or other guidelines from professional or government organizations.”

“A research tool, called the Environmental Relative Moldiness Index (ERMI), has been developed and is being evaluated in research studies by the EPA’s Office of Research and Development. In the research studies, dust samples are collected in a home and the DNA from some of the many molds contained in the house dust is extracted and analyzed. The DNA results are then used to characterize the concentrations of the molds in the dust sample. The sample results are then compared to the ERMI...The analysis can be used by researchers in the U.S. to estimate the amount of mold in a home as well as indicate some of the types of mold that are present.”

For more information on mold prevention and cleanup, please go to <http://www.epa.gov/iedmold1/preventionandcontrol.html>.



Graphic courtesy of EPA

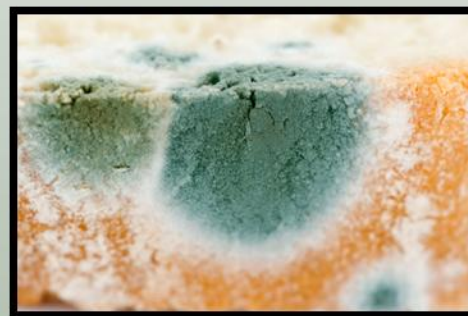
Our Moldy Environment



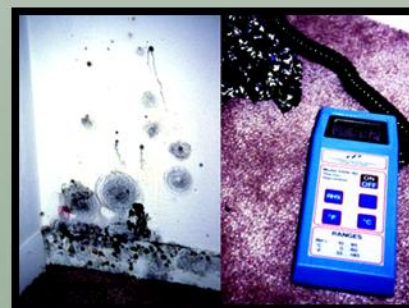
Condensation on a window



Magnified mold spores lit from behind



Mold Mildew



Mold in a bedroom closet with moisture meter

All photos courtesy of EPA

Joy Tso

TAMS Summer Intern

Joy Tso is a student at Northern Arizona University (NAU) located in Flagstaff, AZ. She is working on a double-major in Speech-Language Pathology and Environmental Science with a minor in Community Health. While serving her summer internship, Joy also continues her work with the Environmental Education Outreach Program where she keeps schools, on and off the Navajo reservations, informed on environmental issues affecting all Tribes. During her internship, she will be working at the Radiation and Indoor Environments National Laboratory (R&IE), Radon Lab, assisting in analysis of Radon test kits using the charcoal canister system and the Gravimetric Lab where she will assist in recording and packaging of analyzed filters for archiving at the Gravimetric Lab.

Joy is also being kept busy working with Melinda Ronca-Battista, TAMS' Air Quality QA/QC specialist, editing the Tribal Data Toolbox SOPs to reflect the changes made in version 2.0 of the Toolbox and assisting in revising the online version of the Tribal Data Toolbox course so that it can be delivered using the newest NAU e-learning delivery system. As she works through Toolbox 2.0, she will be learning how air monitoring data is managed, validated, analyzed and reported. As she does this, she will be providing important feedback on both the new version of the Toolbox and the new online course.

Joy will return to her studies when she completes her summer internship with TAMS.



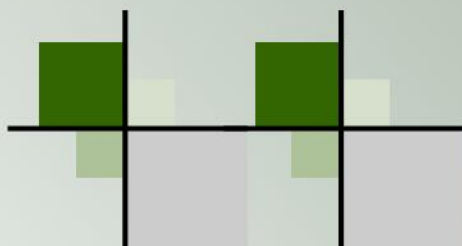
Joy Tso, TAMS Summer Intern, working in the Radon Laboratory with Evelyn Conerly, R&IE Radon Specialist.



Joy records the analyzed Gravimetric filters before they are packaged.



Joy packages analyzed filters before they are archived.



AIAQTP Courses

August 30-September 2
Management of Tribal Air Programs and Grants
Milwaukee, WI

August 31-September 2
Mini-Course
Primary Quality Assurance Organization
Pechanga Band of Luiseno Indians
Temecula, CA

September 13-16
Indoor Air Quality in Alaska
Fairbanks, AK

October 11-14
Climate Change on Tribal Lands
Flagstaff, AZ

October 25-27
Meteorological Monitoring - Tams Course
Las Vegas, NV

November 15-18
Tribal Participation in the State Implementation Plan (SIP)
Denver, CO

December 13-15
GIS for Air Quality-TAMS Course
Las Vegas, NV

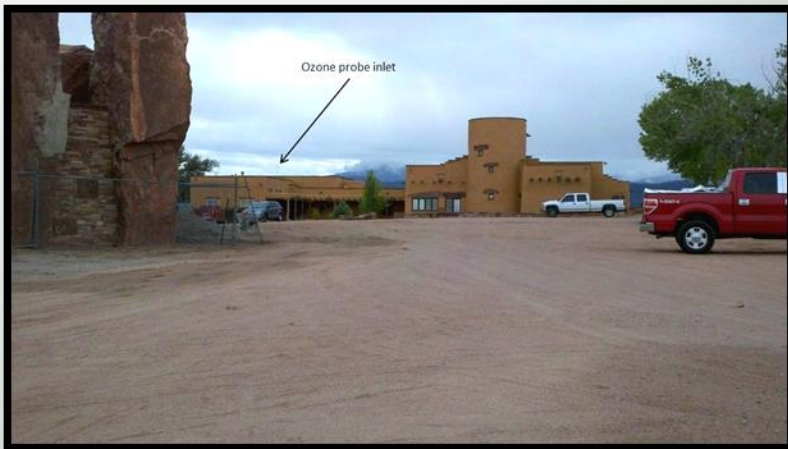
For more information on these courses go to: http://www4.edu/itep/air/training_aq.asp
or call

Lydia Scheer, Training Coordinator, at 928-523-6887 for ITEP courses
Lee Rose, Administrative Associate, at 702-784-8264 for TAMS courses



Pojoaque Pueblo

One of the services provided by TAMS to the Tribes is on-site professional assistance in setting up meteorological and air monitoring systems. Last June 2011, Glenn Gehring, TAMS Technical Specialist, visited the Pueblo of Pojoaque, located in the Santa Fe, New Mexico area to help in setting up an ozone monitoring system. If you are interested in on-site professional assistance, contact Glenn Gehring at glenn.gehring@nau.edu.



Entrance to Pojoaque site.



Ozone Probe Inlet.



Adam Duran and Juan De La Cruz, setting up Ozone Monitoring System.



Continuation of Ozone Monitoring System setup.



EPA

Indoor Air Quality Partners

The U.S. Environmental Protection Agency's Indoor Air Quality Information Hotline Service, which provided basic information on pollutants and sources of indoor air pollutants, was disconnected as of May 16, 2011. After May 16, callers to the hotline's toll-free number, 1-800-438-4318, will receive a message stating that the service has been disconnected and will be directed to EPA's IAQ website at <http://www.epa.gov/iaq/> to obtain information.

Gravimetric Lab Weighing Services

The TAMS Center and the Center for Indoor Environments (CIE), R&IE, offer a weighing service to interested members of the Tribal community for the 47 mm filter used in PM 2.5 monitoring programs. The weighing service includes filter handling, inspection, equilibration and weighing with data entry, validation, management and subsequent distribution to the participating tribes. Currently, there are sixteen Tribes using this service. The list is current as of May 2011.

Leech Lake Band of Ojibwe
Cortina Indian Rancheria
La Posta Band of Mission Indians
La Jolla Band of Luiseno Indians
Navajo Nation
Pala Band of Mission Indians
Southern Ute Indian Tribe
Eastern Band of Cherokee
Hopi
Manzanita Tribe
Pechanga
Delaware Nation of Oklahoma
Lac du Flambeau Band of Lake Superior Chippewa
Washoe Tribe of Nevada and California
Yerington Paiute Indian Tribe
Southwest Research and Information Center (formerly CRUMP)



Gravimetric Lab Weighing Station



***Gravimetric Lab
Equilibration Chamber***



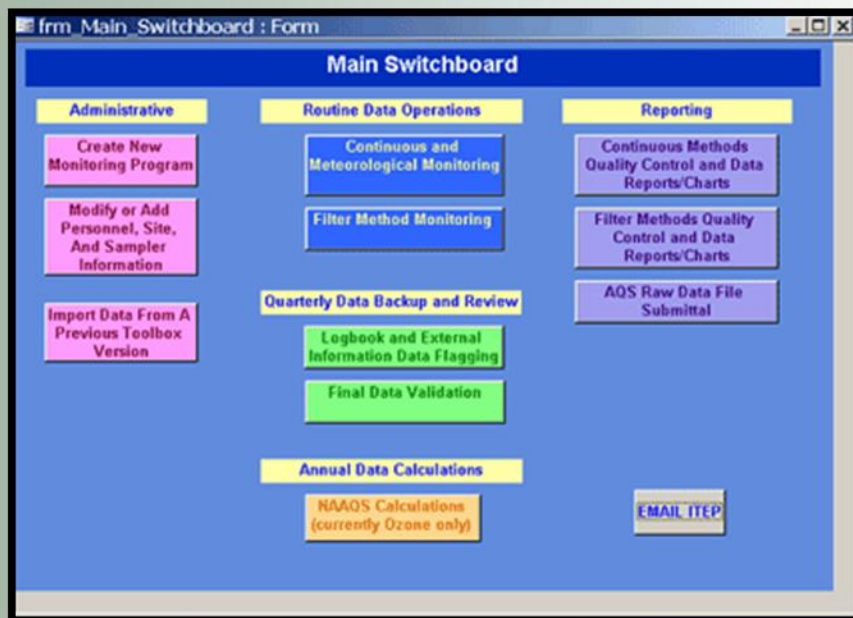
***Light Table Magnification
used to search for
filter defects***

NEWS YOU CAN USE

Melinda Ronca-Battista, TAMS Quality Assurance and Quality Control Specialist, has two news items worth noting.

- * The Tribal Data Toolbox, the MS Access database designed by Angelique Luedeker, ITEP, and Melinda Ronca-Battista, and free to Tribes, is now undergoing revisions necessary to keep up with changing EPA recommendations and Microsoft operating system changes. The Toolbox version 2.0 will be issued in 2011, along with rewritten SOPs and a redesigned online course. As always, the Toolbox facilitates routine and QC data review, validation, and the generation of reports, charts and AQS-formatted files.
- * Turbo-QAPP is now being revised also to keep current with EPA method codes and QC recommendations, as well as adding many hyperlinks and how-to documents and examples. Version 1.70 will be issued in 2011.

Please email Melinda with comments or suggested changes to both of these programs. These are collaborative efforts and are intended for you, so help us help you and email your ideas. Melinda can be reached at melinda.ronca-battista@nau.edu or (480) 759-1544.



The Toolbox is a form-driven database designed to walk users through the data entry, validation and archival processes.

Graphic courtesy of ITEP

Emission Inventory

“An emissions inventory is a database that lists, by source, the amount of air pollutants discharged into the atmosphere of a community during a given time period.”

TEISS Training at the TAMS Center
by Sarah Kelly, ITEP

Whether your tribe is just starting an air program or has a long-established program, chances are you will be asked to do or update an emissions inventory (EI) for your reservation. ITEP’s level 3 EI/TEISS Training is a great place to get started. The training covers the basics and particulars of conducting an EI. An EI is a process of identifying sources of air pollution that affect the air people breathe on your tribal lands. These pollution sources may be on tribal land or in surrounding areas. Data on the types and amounts of pollution these sources emit may exist in national or state databases. However, if there are sources on your reservation, you will likely have to figure out this information yourself. That is where the Tribal Emission Inventory Software Solution (TEISS) comes in to help.

TEISS was conceived and developed by the tribal air professionals in the Western Regional Air Partnership’s (WRAP) Tribal Data Development Working Group (TDDWG). Lakes Environmental was contracted to develop and update the software. TEISS is a computer program that helps tribes organize data collected from the National Emission Inventory (NEI) and from state agencies. It also helps tribal air professionals develop air pollution emission estimates for sources on their lands by providing forms to guide data collection, calculators to do the math and a database that keeps it all organized. TEISS also puts all tribal data into the proper format so it can be submitted to the NEI if the tribe desires.

The EI/TEISS Training emphasizes hands-on work with TEISS and the methods of developing an EI. Time is scheduled to allow participants to get started on their own projects with the assistance of experienced ITEP and tribal instructors. If you need to do an EI, be sure to put this training on your calendar.

For more information, contact Sarah Kelly, ITEP, at kelly.sarah@nau.edu or (928) 523-59037



*Emissions Inventory
Graphic courtesy of EPA*