



Tribal Air Monitoring Outlook

US EPA/R&IE/CIE



TAMS Center

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Polly Hennessey, Editor

Tribal Residential Indoor Air Quality Training

Healthy Homes



Indoor Air Quality

According to the Alliance for Healthy Homes, “Many homes fall short of the basic requirements of a healthy home and contain one or more hazards that adversely affect human health. Among the health hazards we may encounter in our homes are those that cause and contribute to asthma (such as dust allergens, mold and pests), toxic materials (such as lead, asbestos and chemical pesticides) and poisonous gases (such as carbon monoxide and radon).” In 1999, the U.S. Department of Housing and Urban Development (HUD) called for a fifty-two percent reduction in the number of substandard occupied housing units throughout the United States.

In 2002, Emilio Braganza, Director of the Center for Indoor Environments (CIE), with the Environmental Protection Agency’s (EPA) Radiation and Indoor Environments National Laboratory (R&IE), Las Vegas, NV, recommended the establishment of a new direction for R&IE’s indoor air program. His vision included following the training model established by the Tribal Air Monitoring Support (TAMS) Center also located in Las Vegas, NV. The TAMS model emphasizes a hands-on training approach to teaching skills that have immediate practical application to participating tribes and which has become part of the professional, working relationship established between EPA and EPA’s American Indian Air Quality Training Program (AIAQTP) and the Institute for Tribal Environmental Professionals (ITEP). Using this model as an approach would also expand the technical level of the course and tribal-specific training material. In order to ensure a successful indoor air training program that could be effectively utilized by national tribal participants it was necessary to develop a pilot indoor air quality training course. With this in mind, Emilio Braganza and Alex Baer, an environmental engineer, with CIE, worked together with the University of Minnesota to implement such a training plan. The plan was developed with the added assistance of TAMS and the support of ITEP and delivered in 2003. After the pilot courses were delivered, Alex Baer was named Grant Project Officer.

In April 2004, a Request for Initial Proposals (RFIP) to *Plan, Develop and Deliver Hands-On Indoor Air Quality Training to Tribal Air Professionals* was put out for solicitation. The stated purpose of the training was to build tribal capacity and provide tribes with the resources and training to implement and maintain an



*Alex Baer, Grant
Project Officer,
EPA, Radiation & Indoor
Environments, Las Vegas, NV.*



*Angie Lien, National
Director, American Lung
Association, Health House
Program, St. Paul, MN..*

Indoor Air Program within their tribes. In early July 2004, proposals were received from several applicants. After review by a panel, a grantee was selected and a cooperative agreement was established between EPA and the American Lung Association of Minnesota (ALAMN) with Angie Lien being named as ALAMN Project Manager for the Grant. Concurrently, Alex Baer was also able to secure a more effective partnership between TAMS and ALAMN in the development and delivery of the course.

The following is a detailed discussion of the Course Plan:

“The American Lung Association (ALA) proposes to partner closely with a tribe and Native American Co-Trainers in each ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers) climate zone to plan, develop and deliver a series of three comprehensive hands-on Indoor Air Quality (IAQ) training courses. Tailored to specific tribal needs in each climate zone through pre-assessment, the training will give tribal professionals the knowledge and skills they need to effectively and efficiently understand, investigate and remediate IAQ problems on tribal lands to initiate a Tribal IAQ Program. Participants will also gain knowledge to construct and specify new buildings that will be more durable and have better indoor environments, establishing the potential to prevent serious future IAQ problems.

The course teaching methods and preliminary content are carefully designed to provide participants with a high level of knowledge and skills in the learning objectives mentioned above. The technical courses will thoroughly cover IAQ problems, building diagnostics and effective IAQ intervention in the context of building science and building performance principles, practice and application. Emphasis is placed on maximizing participatory learning to reinforce and integrate the material and assure application in everyday practice through: an ongoing mix of lecture, small group discussion, hands-on classroom application and field experience in investigation and remediation for a model home with IAQ problems.

Technical Courses I and II will be presented in a combined one-week format at a central tribal location twice in each of the four climate zones for a total of 200 tribal professionals from the building/housing trades/professions, public health and environment fields. Course III will be offered in a different format.

The limit will be twenty-five attendees for each technical course to assure effective experiential small group learning. The one-week format and central location will help assure full participation. Tribal Housing, Environment and Public Health Programs from tribes across the country will be invited to send personnel who are in a position to investigate, remediate and make a positive difference in IAQ problems on tribal lands. The Housing Program staff to attend will include Housing Directors and other housing and building personnel such as building superintendents, design personnel and contractors.

Health House staff will work closely with EPA and national Native American groups such as the Native American Housing Council to identify at least one tribe in each climate region to sponsor and host the technical training courses. The selected tribes will have demonstrated experience in and commitment to addressing IAQ problems and preferably have started a successful IAQ Program.

Health House is strongly committed to providing the program in close conjunction with tribes and addressing their interests and concerns. Health House is committed to sharing its expertise to empower tribes to take control of their own IAQ needs.

The Project's Technical Experts...the Project Director, the Native American Co-Trainers and national Native American IAQ, building science and housing experts will also take a central role in providing initial input on curriculum development (pre-assessment) and reviewing and making recommendations for revising the curriculum draft. This will assure that the curriculum is culturally appropriate and specific to IAQ and tribal housing needs in each climate zone.

The Native American Co-Trainers will attend a three-day, 'train the trainers' session in the fourth or fifth months of the project's first year. In addition to providing advanced IAQ and building science education, the training will help further develop the final curriculum to address local needs based on input from the Co-Trainers. The Co-Trainers will also help coordinate the Courses I, II and III sites and identify onsite housing to be used for field work during each training.

Technical Course I: Investigating Indoor Air Quality Problems in Tribal Homes.

Course I will be provided during the first two and one-half days of the week-long technical course using a combination of lecture, group classroom practical exercises and field experience. The course will be approximately sixty percent lecture and forty percent experiential learning. The courses will provide participants with: 1) a strong understanding of key IAQ problems in tribal residences in their climate region, 2) a good level of competence in using a problem solving approach to investigate and diagnose the causes of these IAQ problems, 3) solid knowledge and skill in how and when to use key equipment, tools and tests

Technical Course II. Remediation of Indoor Air Quality Problems in Tribal Homes.

Course II will be provided on the last half of day three and days four and five of the combined one-week technical course. The course will teach participants a wide range of effective, affordable and efficient remediation strategies to address the major IAQ-related problems of moisture and mold (moisture control strategies), combustion gases, leaky buildings, inadequate ventilation, particulate control and radon. The emphasis will be on strategies that are most important to address each climate zone's unique problems. In addition to a number of group classroom practice exercises, a key learning strategy will be for participants to use the model home as a real-life learning tool for designing a remediation approach. An important component of the training course will be to teach the order in which to approach specific problems with multiple potential causes, a key to cost-effectiveness. Safety protocols will be taught for each remediation method, such as how to protect worker and occupant health during mold remediation.

Course III: Programmatic Course on Developing a Tribal Indoor Air Quality Program.

This course will be offered in a five-day format, teaching and supporting all interested parties to work together and/or individually to plan, develop, raise funds for, and implement a Tribal IAQ Program. Health House expects Tribal Housing Departments to be most interested in starting an IAQ Program, with Public Health or Environment Programs also having some interest. The course will be taught by Patrick Huelman, a building science expert with significant experience starting and teaching others to initiate IAQ Programs and three Native American IAQ experts with experience developing an IAQ or related housing program. The course will teach and explore in-depth what is needed to develop an IAQ program, breaking down the specific process and components and giving suggestions on how to be successful. Course III will also teach participants how to: identify staffing needs and hire personnel; identify equipment needs to include cost-effectiveness in equipment purchases; carry out outreach to educate tribal members about the nature and importance of IAQ problems and provide a mechanism for asking for assistance, and set up systems to track program activities, for intervention protocols and program reporting.”

To find out more about training courses, dates and locations, please visit <http://www.healthhouse.org/TribalTraining/Index.asp>.

If you have any questions concerning the Tribal Residential Indoor Air Quality Training Program, please contact: Alex Baer at www.baer.alejandra@epa.gov; telephone: (702) 784-8281 or Angie Lien at www.angie.lien@alamn.org, telephone: (651) 268-7602.



Church Rock Uranium Mining Project (CRUMP)

The following article is a brief history and update to the Church Rock Project which was originally initiated to analyze potential health risks to the local population in the Church Rock, New Mexico area, see the November 2003 issue of the *Outlook*. The initial project group consisted of scientists and technicians from the Tribal Air Monitoring Support Center (TAMS) affiliated with the Institute for Tribal Environmental Professionals (ITEP) of Northern Arizona University (NAU) and the Radiation and Indoor Environments National Laboratory (R&IE), both located in Las Vegas, NV, along with the Southwest Research and Information Center (SRIC), located in Albuquerque, NM. The original spill took place in 1979 when the dam at Church Rock ruptured, sending hundreds of tons of mill tailing wastes and contaminated liquid into the Rio Puerco Wash, a stream traditionally fed by spring rains.

In June 2003, the CRUMP group met to devise a strategy to assess various environmental issues surrounding the Church Rock Chapter site. Representatives from the Navajo Nation's Church Rock Chapter, R&IE (Jack Burnette, Roger Shura, Helly Diaz-Marcano, James Harris and George Dilbeck), the New Mexico Scientific Laboratory Division (NMSLD), the Navajo Tribal Utility Authority, TAMS (Annabelle Allison and Melinda Ronca-Battista) and EPA's Region 9, were in attendance. The project was a direct outgrowth of the environmental concerns that the Church Rock residents had expressed regarding the uranium mining and subsequent spill which had occurred on their lands. The following areas were to be examined:

Water Quality: Water samples were to be taken from approximately fourteen locations on the Church Rock and adjacent sites. These samples would be tested for various water quality parameters. Uranium-in-water was one of the prime contaminants of concern to the residents.

Scanner Van Survey: Since uranium was mined and transported around the Church Rock Chapter, a scanner van survey was proposed to see if areas where ambient radiation was at background levels could be detected. It was determined that the scanner van would be useful in identifying possible areas of uranium contamination.

Indoor Radon Testing: To those Church Rock residents who were interested, Indoor Radon testing would be made available. Many of the homes in the Chapter did not have air conditioning and had to be tested several times during the year. This testing is currently in progress.

Particulate Monitoring (PM₁₀): A follow up item to be initiated at a later date.

During the last week of October 2003 several surveys were conducted. The surveys were as follows:

Water: Fourteen wells and other water systems were surveyed for contamination. Each of the CRUMP members that tested these systems were responsible for their individual water



Abandoned water wells sampled at the Springstead housing site and tested.

*Photo courtesy of the Navajo Nation
EPA Radon Program*



Navajo dwellings located 0.25 miles from abandoned uranium mill tailings (gray dirt in background) in Church Rock Chapter.

Photo courtesy of the Navajo Nation EPA Radon Program

collections and used their own internal protocols. The responsibilities of each member were as follows:

R&IE: Members of R&IE were responsible for the sampling of the fourteen systems in question. These samples were returned to the R&IE Radioanalytical Laboratory and analyzed for uranium contamination. The new standard for uranium in water went into effect in December 2003 at a level of $30\mu\text{g/L}$. Only one of the water systems that was sampled exceeded this limit.

NMSLD: The NMSLD (a division of the New Mexico State Department of Health) performed the remainder of the Safe Drinking Water Act compliance monitoring parameters for radionuclides on the fourteen systems. One water system (different from the system that R&IE determined to be out of compliance) was found to be out of compliance for both gross alpha activity and ^{226}Ra .

NTUA: The Navajo Tribal Utility Authority analyzed all of the fourteen water samples for general chemistry and heavy metals.

The results of these tests were reported at a meeting of the Church Rock Chapter House in February 2004.

The scanner van survey was done over a three day period in 2003 around the Church Rock Chapter site. The survey included the mining area, the roads traveled by ore carrying trucks and the Church Rock housing areas.

In December 2003 and January 2004, Roger Shura an Environmental Radiation Monitoring Specialist with EPA's Radiation and Indoor Environments National Laboratory, transferred the raw data collected by the scanner van to Melinda Ronca-Battista, a Health Physicist and Quality Assurance Specialist with the TAMS Center. Melinda worked with other

CRUMP members putting the data onto spread sheets and plotting the data around the Church Rock site. On March 10-11, 2005, Roger Shura attended a meeting in Albuquerque, NM, to present his latest revised scanner van survey data from the Church Rock Chapter site to Jeff Inglis and Andy Bain of EPA Region 9 and other Church Rock stakeholders. This data is in the final stages of finalization and a report will be issued upon completion.

In early 2004, the members of the Church Rock Chapter had their homes surveyed for indoor radon. A tribal environmental professional was assigned to assist members in the placement of radon canisters around the homes and to collect the canisters after a suitable time period. Many of the homes required several measurements or follow up measurements for a variety of reasons. These surveys are currently in progress.

The Particulate Monitoring (PM₁₀) started in June 2005. Two monitoring systems are in place and will run for approximately twelve months.

If you would like further information, please call George Dilbeck at (702) 784-8278 or email: dilbeck.george@epa.gov.



7th National Tribal Conference on Environmental Management



Evelyn Clay (far left), Radon Specialist, R&IE, delivering a Poster Presentation on Radon and R&IE's support to the tribal community.

Evelyn Clay, a Radon Specialist with EPA's Radiation and Indoor Environments National Laboratory (R&IE), Las Vegas, NV, attended the 7th National Tribal Conference on Environmental Management sponsored in part by EPA under a Cooperative Agreement and hosted by the Grand Traverse Band of Ottawa and Chippewa Indians. The Conference theme was *Sacred Ground: Sustainability for Indian Country and Mother Earth*. The Conference was held at the Grand Traverse Resort and Spa, owned and operated by the Grand Traverse Band in Traverse City, MI. The Conference provided an opportunity for tribal



The World Champion Hoop Dancers and American Legion Eagletown Post No. 120 Honor Guard participate in the Jingtamok (Pow Wow) and feast held at the Grand Traverse Resort Shores.

leaders, tribal environmental managers, tribal scientists, tribal organizations and federal agencies to share information about environmental programs and discuss issues of vital interest to Indian Country. The Conference focus was on multi-media environmental issues affecting tribes, familiarizing tribes with the full extent of tribal and federal environmental activities and generally on exchanging knowledge and skills that will enhance the environmental protection of native communities throughout the United States.

If you would like further information on EPA's Radon Program and its support to the tribal community, please call Evelyn Clay at (702) 798-2324 or email: clay.evelyn@epa.gov.



TAMS Course Schedule

Quality Assurance Project Plans (QAPP), August 30-September 2, 2005, Flagstaff, AZ

Dataloggers, October 12-14, 2005 Las Vegas, NV

Air Pollution Technology (TECH), November 14-18, 2005, Las Vegas, NV

Air Toxics Monitoring, December 6-8, 2005, Phoenix, AZ

Air Monitoring Data Management, January 24-27, 2006, Las Vegas, NV

Meteorological Monitoring (MET), February 7-9, 2006, Las Vegas, NV

Air Quality System (AQS), February 28-March 2, 2006, Kansas City, KS

Environmental Radiation Monitoring for Tribes, April 18-21, 2006, Las Vegas, NV

Air Pollution Technology (TECH), May 1-5, 2006, Las Vegas, NV



The TAMS Team



*Glenn Gehring, Technical Specialist
with the Tribal Air Monitoring Support Center,
Las Vegas, NV.*

The TAMS Center welcomes a new team member, Glenn Gehring. Glenn has been with TAMS since March 7, 2005. Glenn is originally from Wooster, OH, which is located in the heart of Amish Country. He received his Bachelor of Science degree in Natural Resources from Ohio State University, Columbus, OH. Before coming to TAMS, he worked at Cherokee Nation, which is located in northeastern Oklahoma and he is a Citizen of Cherokee Nation. He was affiliated with the Inter-Tribal Environmental Council, which includes approximately thirty-eight member tribes. Prior to Cherokee Nation, Glenn worked with the Suquamish Tribe of Port Madison Indian Reservation, Washington, as their Air Quality Specialist. Glenn also worked with the Indian Health Service between 1997-2000 in the Puget Sound area in Washington State and Rhinelander, WI.

While with the Indian Health Service, Glenn designed on-site wastewater systems and water supply systems for individual homes and small clusters of homes (Scattered Site Program). He also provided technical assistance on water quality and wastewater issues and served as the Environmental Health Specialist for several tribes.

Since joining the TAMS team, Glenn has been lead instructor for several training courses, including Meteorological Monitoring and Gaseous Pollutant Monitoring. He has also provided professional assistance to the Reno-Sparks Indian Colony and the Walker River Paiute Tribe, both located in Nevada.

Glenn arrived in Las Vegas, NV, in early Spring of this year and was able not only to explore the natural features of southern Nevada and Death Valley, CA, but to view the spectacular proliferation of wildflowers due to a heavier than usual amount of rainfall in the region. Below are two photographs taken by Glenn.



Photographs taken by Glenn Gehring, early Spring 2005, Death Valley National Park, CA.

Virgil Masayesva 1948—2005



“There is no death. Only a change of worlds.”
Seattle [Seath] (1786-1866), Suquamish Chief

On March 16, 2005, Virgil Masayesva, Director, Institute for Tribal Environmental Professionals (ITEP) passed away. He co-founded and was instrumental in establishing the Institute and, most notably, for us, the development of the Tribal Air Monitoring Center (TAMS), located in Las Vegas, NV. He leaves to us his legacy and vision for the future.

“Our next step now, as is true at Hopi, is to plant the seeds—to implement our ideas and begin the process of moving ahead, always keeping our eye on the over-riding goal, which is to assist tribes as effectively as we can as they build environmental-management capacity.”

Virgil Masayesva
Native Voices, Winter 2003-04

On March 15, 2005, EPA issued the Clean Air Mercury Rule to permanently cap and reduce mercury emissions from coal-fired power plants for the first time ever. This rule makes the United States the first country in the world to regulate mercury emissions from utilities.

The July broadcast of *Air Toxics Now* will be devoted entirely to the Clean Air Mercury Rule and will feature a historical perspective of mercury emissions and the Clean Air Act. The broadcast will also include the influence of the Clean Air Interstate Rule.

The broadcast will be simulcast over the Internet and can be viewed on your personal computer. You will need to install RealPlayer to view the broadcast. RealPlayer is available free of charge and can be downloaded from the Internet site www.real.com/player. On the day of the broadcast go to <http://nditsvns04.its.state.nc.us/rmngen/broadcast/epa/live.rm> and follow instructions for viewing the simulcast. This link will NOT be active until 1 hour prior to the broadcast.

For more information

<http://www.epa.gov/apti/schedule.html>

Air Toxics Now
presents

**Clean Air
Mercury Rule**

Wednesday

July 20, 2005
1:00-3:00 PM EST

