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 Technical Team Keeps an Eye on Standards

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New Technical Team Keeps an Eye on Standards

A new division at the TCEQ--the Chief Engineer's Office--has been established to advise the executive director and top managers on technical and policy matters and to help maintain consistency.

Revamped report provides more information on water quality

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The TCEQ has established the Chief Engineer's Office to serve as a technical adviser to the executive director. The staff of 19 draws on specialists in air, water, and solid waste, as well as toxicology.

"The formation of this office fits into our overall goal of striving for excellence in our primary agency functions, especially in technical and policy matters," said Executive Director Margaret Hoffman. "The chief engineer and his staff will advise us on the consistent application of scientific and engineering principles and standards."

Heading up the new group is David C. Schanbacher, a professional engineer who joined the Texas Air Control Board in 1992 to work on air permits.

With formation of the Texas Natural Resource Conservation Commission--now the TCEQ, Schanbacher worked in the Office of Air Quality and eventually for the executive director. In 2000, he was assigned on a part-time basis to assist the Senate Natural Resources Committee with an interim study on air quality.

Diverse Staff

The chief engineer's staff includes three engineers, a biologist, 13 toxicologists, and administrative staff--all drawn from other parts of the agency. The toxicologists assess the risk of adverse health effects when the general public is exposed to environmental pollutants (see [sidebar](#)).

"We've definitely covered all the areas that the agency oversees--air, water, and waste," said Schanbacher. "Our folks have experience in field inspections, permitting, and enforcement."

Only months after its formation, the chief engineer's staff has begun participating in a variety of projects. Staff members are involved in technical appeals to the executive director, such as reviewing the technical aspects of enforcement cases and permit applications. They also review proposed rules to ensure they are consistent with agency policies and standards.

In addition, the chief engineer provides assistance to various divisions within the agency.

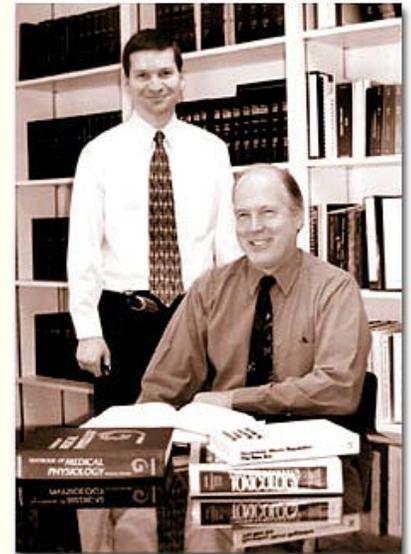
For example, the office is reviewing grant requests, as well as innovative pollution control technology applications, submitted to the Texas Emissions Reduction Plan, a program administered by the TCEQ. The TERP funds economic incentives and new technologies that improve air quality.

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Multiple Roles

The new office also has taken an active role in proposed rules aimed at curbing the emissions of highly reactive volatile organic compounds in the Houston area.

The rules will play an important part in the state's revised plan to reduce air pollution in Houston's vast industrial



As newly designated chief engineer, David C. Schanbacher (right) advises TCEQ management on high-level technical and policy matters. His office monitors for uniform compliance with engineering standards and for consistent application of scientific principles. In the same office, Michael Honeycutt (left) leads a team of toxicologists who assess potentially harmful effects when a neighborhood or community is exposed to pollutants.

complex. Action on the rule package is expected in 2004.

Hoffman said the Chief Engineer's Office gives the agency "additional assurance that we only ask people to do the things that will have a real benefit to the environment.

"Their expertise will be a helpful resource to our divisions and to the public at large," she said.

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Toxicologists Assess Risk

The TCEQ receives hundreds of measurements each month from the environmental monitoring of air quality, water quality, and soil conditions. With this data, it is the job of the agency's toxicologists to spot potential problems that could affect human health.

That was the case two years ago when preliminary drinking water samples from the West Texas town of Levelland suggested excessive levels of the chemical perchlorate.

"The readings we saw indicated the presence of perchlorate at more than 130 parts per billion," recalls the TCEQ's Michael Honeycutt. "We called the city right away and said to shut off the drinking water. We were in Levelland the next morning to notify the public of our concerns and to start an investigation."

Perchlorate readings at 4 parts per billion (ppb) or higher trigger health concerns at the TCEQ, so the Levelland readings required an immediate response. Perchlorate occurs naturally but is also manufactured for use in rockets, fireworks, air bags, and matches. Research has linked the chemical to effects such as lowered IQ and delayed development of motor skills in infants and young children.

Within a few days, the TCEQ had traced the perchlorate to one malfunctioning water tank, so the problem was known to be isolated. The needed repairs were made. But the incident underscores the role that toxicological expertise plays in TCEQ enforcement activities and emergency responses.

Of the 13 toxicologists in the TCEQ's Chief Engineer's Office, most have advanced toxicology degrees in biochemistry, chemistry, or physiology. They put that training to use in a field known as "risk assessment"--analyzing potentially adverse effects to people who have been exposed to environmental hazards. Once hazards are verified, the toxicology team participates in finding the best regulatory options that will ensure a safe resolution to the problem.

Honeycutt, who manages the Toxicology Section, said toxicologists pore over a wide variety of monitoring results each day--for example, air samples from urban industrial areas, groundwater from rural Texas, or soil from Superfund sites. They evaluate the safety of measurements of benzene, arsenic, lead, and mercury--to name a few of the many volatile organic compounds and other chemicals being scrutinized.

"We review the most current literature to determine what levels are unsafe," said Honeycutt, "and we attend toxicological conferences to keep up with the latest research. A lot of this work comes down to interpretation. We extrapolate the results and apply sound science to determine at what level a chemical becomes unsafe in the body."

Another responsibility is "risk communications"--interpreting complex scientific studies and conclusions for the general public. Toxicologists need to be able to communicate as effectively with the media about the health effects of air pollution as they do with a lone property owner who is worried about a water well.

"It's our job to understand the dry, scientific jargon, then interpret it for the public," said Honeycutt. "If there is a hazard, members of a community need to understand exactly what we're dealing with. Or, if the situation is low risk, they should be reassured their safety is not in question."

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