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Natural

OUTLOOK

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

THE TCEQ BORDER INITIATIVE

Addressing environmental quality
along the Texas border with Mexico



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Natural OUTLOOK

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Exploring environmental issues and challenges in Texas

2010 Environmental Excellence Award Winners

Demonstrate “Take Care of Texas” Spirit 1

Winners of the 2010 Environmental Excellence Awards are recognized for outstanding achievements in environmental preservation and protection.

If a River Runs Through It, Texas Shares the Water 4

Texas is a member of five interstate river compacts, covering the Rio Grande, Pecos, Canadian, Sabine, and Red rivers.

from the cover



The TCEQ Border Initiative 8

The TCEQ’s Border Initiative was created in 2008 as a comprehensive, cooperative effort to address environmental concerns along the Texas border with Mexico.

Reaping the Rewards of Reuse and Redevelopment 12

Crestview Station in Austin and 1531 Inspiration Drive in Dallas are just two of hundreds of properties across the state that have been cleaned up and redeveloped.

A Commitment to Air Quality in the Barnett Shale 14

The state devotes extensive resources to the Barnett Shale area in North Texas.

on the back

EnviroMentors Lend a Helping Hand

Volunteer experts give free, confidential assistance to those needing help complying with state environmental rules.

COVER: The Rio Grande flows through the Santa Elena Canyon in Big Bend National Park. The TCEQ uses high-resolution digital cameras to help track regional haze in the park. *Photo courtesy of J. Griffis Smith/TxDOT*

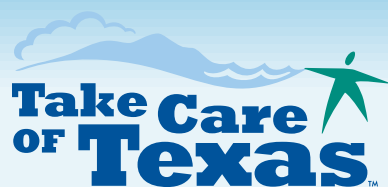


2010 Environmental Excellence Award Winners Demonstrate “Take Care of Texas” Spirit

Each year, the Texas Environmental Excellence Awards recognize exceptional achievements toward protecting our natural resources. All award recipients have two things in common: they exemplify the “Take Care of Texas” spirit and they are enhancing the TCEQ’s efforts to protect our state’s human and natural resources while ensuring clean air, clean water, and the safe management of waste.

Winners of the 2010 Texas Environmental Excellence Awards—recommended by the Governor’s Blue Ribbon Committee and approved by the Office of Governor Perry—were honored at an awards banquet during the 2010 Environmental Trade Fair and Conference, held on May 5.

Winners are highlighted in this article. For more information on the winning projects, including video vignettes, visit www.teea.org.



Youth

Sarah Jo Lambert, Lubbock

Despite an already active schedule as a high-school sophomore, Sarah Jo Lambert took time to help design and construct an 800-square-foot environmental center at Camp Rio Blanco—the Girl Scout camp in Crosbyton that she’s attended the past 11 years. The environmental center, Lorax Lodge—whose name Lambert picked from one of Dr. Seuss’s children’s books—serves to educate campers and visitors on how to implement green-building practices and on other ways to reduce their environmental impact. In addition to donating more than 600 hours of her own time, Lambert recruited more than 2,200 volunteers and sponsors, who made contributions or in-kind donations totaling over \$230,000.

To assist area educators and lodge visitors, Lambert developed an environmental teaching guide for kindergarten through twelfth grade. She also mapped a nature trail at the camp, identifying plants and wildlife.



Education

City of Waco, U.S. Army Corps of Engineers, and Baylor University

When the City of Waco looked to safeguard the community’s water supply, it increased Lake Waco by seven feet, providing an additional 20,000 acre-feet of water. However, raising the level also inundated surrounding habitat, which spurred the city to approve the development of a 180-acre constructed wetlands in 2001. Known as the Lake Waco Wetlands, this new habitat is now home to a variety of aquatic and terrestrial plants, mammals, birds, insects, amphibians, and reptiles.

In 2004, the wetlands project added a research and education center to serve as a special resource for the community. As the only wetlands in a 60-mile radius with public access, the Lake Waco Wetlands has become a major hub for the science programs of three colleges and universities and more than 24 school districts.

Baylor University, with the support and cooperation of the City of Waco and the U.S. Army Corps of Engineers,

initiated an innovative approach to environmental education at the Wetlands Research and Education Center, through a cooperative GEAR UP (Gaining Early Awareness and Readiness for Undergraduate Programs) grant. GEAR UP Waco works to increase the number of low-income students who are prepared for college.

Water Conservation

Tarrant Regional Water District, Fort Worth

As a water supply wholesaler for the North Central Texas area, the Tarrant Regional Water District (TRWD) provides service to more than 70 water-user groups, including the Trinity River Authority and the cities of Fort Worth, Arlington, and Mansfield. In an effort to develop a unified water conservation message for North Texas, the TRWD approached Dallas Water Utilities (DWU) in 2007 about using DWU's existing campaign tagline, "Save Water. Nothing Can Replace It," for the district's own collaborative campaign. Since then, the TRWD's water conservation campaign has continued to reach citizens of North Texas, who make up approximately 20 percent of the state's entire population.

By implementing strategies such as not watering between 10 a.m. and 6 p.m., consumer water use has declined the past

two years, despite population growth. Since the campaign began, water use among the district's primary customers has declined by more than 36.2 million gallons a day, saving a total of 13.2 billion gallons of water.

Government

Waco Metropolitan Area Regional Sewerage System

The Waco Metropolitan Area Regional Sewerage System wastewater treatment plant launched an initiative in 2002 to reduce and manage its energy usage in a way that benefits the environment and saves money. The plant treats up to 37.8 million gallons of municipal waste from seven member cities each day and has been systematically increasing the efficiency of its equipment and processes over the past eight years—yielding a 35 percent average reduction in annual energy usage.

The treatment plant also found a way to turn some of its waste into energy. In 2006, it developed an industrial receiving station capable of accepting fats, oils, grease, and high-strength organic wastes. The receiving station allows the plant to produce more methane gas and convert it to electricity. This bio-generated electricity now satisfies 33 percent of the plant's overall electricity needs, thereby reducing its reliance on natural gas.

Business/Technical and Innovative Technology

Oncor Electric Delivery LLC, Dallas

Operating the largest distribution and transmission system in Texas, which delivers electricity to approximately 3 million homes and businesses in the Dallas-Fort Worth Metroplex, Oncor Electric Delivery realized that it needed to increase the reliability of electrical power to meet rapidly expanding energy demands from a growing customer base. To this end, Oncor invested \$60 million in Texas' only urban Static Var Compensators (SVCs).

This cluster of SVCs, the largest concentration in the world, acts as a local, high-speed "voltage reservoir" that responds automatically to support the system during peak electricity demand. When a higher-than-usual demand on the electric grid system causes voltage fluctuations across the grid, the SVCs kick into action within 20 milliseconds—the fastest response time in the world—to prevent potentially widespread power outages.

In addition, installing an SVC in the Parkdale neighborhood of Dallas eliminates the need to generate an estimated 563 hours of peak-load electricity, thereby reducing air emissions and conserving 988,160 megawatt hours of energy. These annual savings will occur over the lifetime of the equipment and will continue to increase as the electric load grows.

Deadline for 2011 Awards is October 8

To better showcase those projects that are leading the way in improving the Texas environment, we have revised the categories for next year's awards. The categories for the 2011 Texas Environmental Excellence Awards are:

Technical/Technological ★ *Innovative Operations/Management*
Water Conservation ★ *Pollution Prevention* ★ *Civic/Community*
Education ★ *Agriculture* ★ *Youth* ★ *Individual*

The TCEQ began accepting 2011 applications in August, and the deadline to submit is Oct. 8, 2010. Apply online at www.teea.org. 🌱

Large Business/Nontechnical

Texas Lehigh Cement Company, LP, Buda

Buda is now a bustling suburb. But in 1978, when Texas Lehigh Cement Company first began operating its dry cement kiln there, the town was a rural, agricultural community. Texas Lehigh realized that the community might well have objections to having a cement plant as a neighbor, so it opened the plant's



doors to the public for tours. Further, in response to recent market and regulatory changes, Texas Lehigh began to consider the viability of using alternative sources of fuel in its operations. An ideal fuel would cost less, reduce the plant's environmental impact, and meet the approval of the surrounding community.

Texas Lehigh then involved the community in its research of emission-reduction options. Though this was not required by law, Texas Lehigh understood the value of proactively building strong community relationships. Texas Lehigh asserts that adopting this open-door approach of including its neighbors in the business-planning process has established trust and goodwill—giving the community a sense of partnership with the company, and a stake in its success.

Small Business

The Phoenix Commotion, Huntsville

Dan Phillips is spreading the notion that constructing homes with reclaimed materials has a viable place in the building industry. And he's making quite a commotion. This innovative business owner is building houses from donated, salvaged, and recycled materials that otherwise would go to the landfill, and offering single parents, families with low income, and professional artists the opportunity to own a home. Dan and his wife, Marsha, started the Huntsville-based company, the Phoenix Commotion, approximately 10 years ago, and have completed 14 houses to date.

Counter to standard building practices, the Phoenix Commotion allows the available materials to dictate the design of each house. Through networking, Dan maintains a steady stream of donated scrap materials. Whatever he can't use, he takes to a municipal warehouse, where

the overage is distributed to low-income families and nonprofit organizations.

All Phoenix Commotion–built homes feature Xeriscape landscaping and a rainwater-catchment system that provides water for toilet flushing and clothes washing. Ranging from \$18,000 to \$89,000, the affordability of these homes allows the new owners to join the economic mainstream and enjoy the confidence that comes with home ownership.

Civic/Nonprofit

Office of Community Outreach, Texas A&M University–Corpus Christi

The Office of Community Outreach at Texas A&M University–Corpus Christi has been supporting the quality of life in the Coastal Bend area since 1993.

Community Outreach forms partnerships with public and private organizations, and finds funding from grants and private donations, to offer a diverse range of environmental programs.

In 1999, Community Outreach's Gulf Coast Environmental Education Program began to offer summer camps for youth from low-income households. Due to its popularity, the program expanded to serve area youth, teachers, students, and the general public year-round. Featuring kayak instruction and exploration, the program offers one-day excursions and regular science activities, as well as summer camps.

On another front, one of Community Outreach's cornerstone programs, the Pollution Prevention Partnership, has been working to lower Corpus Christi's risk of becoming a nonattainment area for air quality standards, and has helped reduce air pollution by more than 600 tons. Two of its projects are aimed at reducing air emissions: AutoCheck, which screens and repairs high-emission

vehicles; and the Clean School Bus Program, which installs emissions-reduction components in school buses. AutoCheck has screened over 25,000 vehicles and repaired 338 high-polluting vehicles. The Clean School Bus Program has modified 91 buses, resulting in an average emissions reduction of 30 percent per bus.

Agriculture

Texas AgriLife Research, Texas AgriLife Extension Service, West Texas A&M University, Kansas State University, and USDA Agricultural Research Service, Amarillo

In 2002, a team of scientists, engineers, and government agencies partnered on a research project that has helped cattle feedyards and open-lot dairies reduce the emissions they generate. Today, the project continues to study emissions of dust and particulate matter, ammonia, hydrogen sulfide, odor, and volatile organic compounds from feedlots and open-lot dairies. The project has produced reliable data on air quality emissions and marked improvements in control strategies for a region that raises 42 percent of the fed beef in the United States and contains nearly 40 percent of the dairy production in Texas.

Scientists and engineers conducted seven years of research—both in the field and in laboratories—to determine best practices for reducing emissions that the cattle-feeding and dairy industries could adopt. The findings have helped cattle feedyards develop targeted strategies—such as timely, efficient water sprinkling, and frequent scraping of feedlot surfaces—to reduce or control dust. Additionally, the project's data has helped 80 Texas feedyards receive federal financial assistance for dust-control measures. 🐄

River compact commissions oversee interstate water allocation

Photo of Red River railroad bridge courtesy Stan A. Williams/TxDOT

IF A RIVER

When a river runs through more than one state, management of the available surface freshwater resources would be nearly impossible if not for interstate water compacts. Compacts, which are agreements signed by representatives of the states involved and ratified by the legislature of each state and by Congress, establish how the states along a particular river will equitably allocate their water. Each compact is administered by a commission composed of representatives from each state and, in some cases, a representative of the federal government, appointed by the president.

Texas Compact Commissions

Texas is a member of five interstate river compacts, covering the Rio Grande, Pecos, Canadian, Sabine, and Red rivers.

The compact commissioners representing Texas—all of whom are appointed by the governor, with the exception of the TCEQ’s executive director, who is by statute one of the commissioners for the Red River Compact—protect the state’s rights under the compacts, oversee water deliveries from one state to another, and work to prevent and resolve any disputes over water. The compact commissions are authorized to prepare and maintain comprehensive plans for the operations

of the rivers, monitor activities affecting water quantity and quality, and engage in water accounting and rulemaking. The Texas attorney general provides legal support and the TCEQ provides administrative and technical support.

“The TCEQ maintains a database of historical documents and records, river flows, water deliveries, and other technical information needed to administer the compacts,” says Herman Settemeyer, coordinator of the agency’s Interstate River Compact Program. Settemeyer, who has been with the TCEQ or its predecessor agencies since 1975, holds a B.S. in agricultural engineering



RUNS THROUGH IT, TEXAS SHARES THE WATER



from Texas A&M and an M.S. from the University of Wyoming.

Some of the compacts require a formal water accounting. “We develop and review these formal water accountings and provide hydrological analysis to the compact commissioners on how the water is delivered,” he adds. “If there are upstream changes to the timing or amount of water released along the river, we need to understand how that is going to affect water deliveries to Texas.”

Rio Grande

The Rio Grande begins in the mountains of southern Colorado, flows southward

through New Mexico, and then forms the boundary between Texas and Mexico as it flows to the Gulf of Mexico.

The Rio Grande Compact is the oldest of the Texas interstate compacts. Signed in 1938 by Texas, Colorado, and New Mexico, and approved by Congress in 1939, the compact apportions the waters of the Rio Grande and its tributaries above Fort Quitman, Texas, among the three states.

The compact allocates water on an “inflow/outflow” basis. This means that Colorado must deliver to the New Mexico state line an amount of water that varies with the flows recorded at various stream gauges in the Rio Grande Basin in

Colorado. Similarly, the amount of water that New Mexico is required to deliver to Texas depends upon gauged flows in the Rio Grande in north-central New Mexico. Instead of delivering the water to the state line, however, New Mexico delivers its water obligation into the Elephant Butte Reservoir, located near Truth or Consequences, New Mexico, about 100 miles upstream of El Paso and the Texas state line.

Throughout the years, Texas, New Mexico, and Colorado have had various disputes over the Rio Grande Compact. One example concerns the Elephant Butte Reservoir.

“The water in the reservoir supplies an irrigation district in New Mexico and another in Texas,” says Settemeyer. “For over 20 years, the two states, the two districts, and the Bureau of Reclamation had been trying to work out an operating agreement to make sure both districts are treated equally. Recently, the Texas commissioner helped the parties reach a consensus, and a formal agreement was signed by the districts and [the Bureau of] Reclamation. The districts have been working well together under the new agreement and litigation was avoided.”

Pecos River

The Pecos River rises in north-central New Mexico and flows southward, where it joins the Rio Grande in the backwaters of the Amistad Reservoir. With approximately 350 of its total of 900 miles located in Texas, the Pecos serves as the eastern boundary of the most mountainous and arid region of Texas. It was once a major

river, fordable at only a few places by settlers and cattle drivers heading west. But the quantity and quality of the Pecos River water reaching Texas have been reduced over time, due to water diversions, the construction of dams, groundwater pumping, the introduction of the non-native salt cedar tree, and salinity in the river.

Salinity is especially high at the portion of the river known as Malaga Bend, located near Malaga, New Mexico, just upstream of the state line.

“A series of springs at Malaga Bend can put anywhere from 400 to 600 tons of salt a day into the Pecos River,” says Texas Pecos River Commissioner J.W. Thrasher Jr. “We’re working with a company that would like to pump the water into pits and evaporate it for salt. Taking out as much salt as we can from the river would improve the water quality in the Pecos.”

The Pecos River Compact, signed by Texas and New Mexico in 1948, and

approved by Congress the following year, requires New Mexico to maintain deliveries of water to Texas based on 1948 water-use conditions in New Mexico.

For years, Texas considered New Mexico to be deficient in fulfilling the terms of the contract, so the state filed suit in the U.S. Supreme Court in 1974. In 1987, the Supreme Court ruled that New Mexico had violated the Pecos River Compact by depriving Texas of 340,100 acre-feet of water for the period 1950 to 1983. An acre-foot of water—the amount it would take to cover one acre of land with one foot of water—is about 326,000 gallons. Since completion of the litigation, New Mexico has taken measures to comply with the compact.

“New Mexico has spent a lot of money to make the state-line deliveries,” says Thrasher. “In the past, there was a lot of animosity between the two states over the Pecos River Compact. Now we have a good working relationship.”



Photo of Sabine River courtesy of the Sabine River Authority

Canadian River

From its source in the Cimarron Mountains of New Mexico and Colorado, the Canadian River flows in an easterly direction through the Texas Panhandle above Amarillo, then into Oklahoma where it joins the Arkansas River a few miles below Muskogee. With sufficient rain, it can carry large amounts of water, but it is more typically a low-volume, slow-flowing river. The river is an important municipal water source for the Texas Panhandle and central Oklahoma.

Signed by representatives of Texas, New Mexico, and Oklahoma in 1950, the Canadian River Compact was ratified at the federal level in 1952. The compact apportions the waters of the river basin equitably among the three signatory states through storage limitations. Texas and Oklahoma filed litigation in the U.S. Supreme Court against New Mexico over its storage of water. The litigation resulted in increased waters released to Texas from reservoirs in New Mexico.

Sabine River

The Sabine River begins east of Dallas and flows southeasterly through the prairie country of northeast Texas, through pine forests along the Texas-Louisiana border, and then south through bayou country to Sabine Lake and the Gulf of Mexico. The river supplies water for municipal, industrial, irrigation, recreation, mining, hydroelectric, and domestic and livestock purposes.

The Sabine River Compact was approved by the Texas Legislature in 1953, and was signed by the Louisiana Legislature and ratified by Congress in 1954. The impetus for the compact arose from competing claims to the river by local water users in both states, who finally agreed that they needed a compact to apportion the waters.



River compacts establish how the states along a particular river will equitably allocate their water. For the Rio Grande, New Mexico delivers its water obligation into the Elephant Butte Reservoir, located near Truth or Consequences, New Mexico, about 100 miles upstream of El Paso and the Texas state line.

The compact commissioners oversee water quantity and water quality measurements within the Sabine River Basin to ensure compact compliance and approval of withdrawals of water. Unlike most Texas rivers, the Sabine is entirely in an area of abundant rainfall, and because of this, the compact has functioned with little controversy.

Red River

The Red River—the sixth longest river in the United States—flows across the Texas Panhandle, down the Texas-Oklahoma border, through southwestern Arkansas, and into Louisiana, where it empties into the Mississippi and Atchafalaya rivers.

Prompted by the drought of the 1950s, the Red River Compact was completed in 1978 after more than 20 years of formal negotiations. The compact, which went into effect in 1980, apportions the waters of the Red River and its tributaries by dividing the river into five east-to-west “reaches,” and then into sub-basins.

The compact also gives its commission limited authority over water pollution in the basin. The states and the federal government are working to alleviate natural salt pollution, which is a significant limitation to water use in the basin.

Endangered Species

In the last 10 to 15 years, the Endangered Species Act has played an increasing role in the responsibilities of interstate river compacts. Listed endangered species affecting the compacts include the Arkansas River shiner on the Canadian River, the Pecos blunt-nose shiner on the Pecos, and the Rio Grande silvery minnow and the southwestern willow flycatcher on the Rio Grande.

“We work with other states to ensure that water deliveries are maintained while protecting the various endangered species,” Settemeyer says. “For example, we take into consideration what happens to the silvery minnow downstream when water is released or diverted upstream.”

Successes

Settemeyer feels that states working together to ensure compliance with the compacts and meeting their water deliveries is the biggest success story for the interstate compact commissions. “Our job,” says Settemeyer, “is to get the water to Texas.” 🌿

For more information, visit
www.tceq.state.tx.us/goto/texasrivercompacts.



THE TCEQ BORDER INITIATIVE

*Addressing environmental quality
along the Texas border with Mexico*



Texas and Mexico share a border that stretches for 1,254 miles, from El Paso to Brownsville. The people living in communities on both sides of the Rio Grande have a long history of strong economic, cultural, and social ties that unite the United States and Mexico in an enduring bond.

Texans have something else in common with their neighbors south of the border—a history of shared environmental concerns.

To address these concerns, the TCEQ has developed a comprehensive, cooperative effort to serve border residents.

TCEQ's Border Initiative

Created in 2008, the TCEQ's Border Initiative was the vision of Commissioner Buddy Garcia. As a native of Brownsville and former Texas Deputy Secretary of State, Garcia is familiar with the unique characteristics and needs of the border region.

"I'm very much a product of the border," says Commissioner Garcia. "So it was just a natural tendency to want to maximize improvements along the border, especially in the environment."

Commissioner Garcia, working with Commissioner Carlos Rubinstein (then Deputy Executive Director of the TCEQ), developed the various initiatives to be implemented by the Border

Affairs team under the direction of the executive director. In Harlingen, Laredo, El Paso, and Austin, the agency has 83 full-time employees working to ensure

that efforts along the U.S.–Mexico border have a measurable and positive environmental impact on the region.

The Border Affairs manager, Stephen M. Niemeier, P.E., has been working on border activities at the TCEQ or its predecessor agencies since 1992. "I am charged with making sure the activities and goals outlined in the initiative's action plan are implemented," he says.

The action plan, which is updated quarterly, addresses air, water, waste, and other environmental concerns, such as emergency response.

Partnerships

Because many environmental issues along the border are transboundary in nature, the TCEQ works with other U.S. and Mexican states, federal agencies in both countries, and binational organizations to accomplish mutual environmental protection goals.

Although these partnerships take different forms, many of the binational activities are pursued under the umbrella of the U.S.–Mexico Border 2012 Environmental Program, which was launched in 2003. The TCEQ is active at every level of this program—taking a macroview of borderwide concerns and microviews regarding issues specific to Texas and its four Mexican neighboring states of Tamaulipas, Nuevo León, Coahuila, and Chihuahua. Staff interacts with officials from the border cities in those four states, with its counterpart agencies at the state level, and with the Mexican federal government.

The TCEQ has developed a particularly strong relationship with the state environmental agency of Nuevo León, promoting technical exchange and mutually beneficial cooperative



In May 2010, TCEQ Commissioner Buddy Garcia (left) met with Nuevo León Gov. Rodrigo Medina de la Cruz and Secretary of Nuevo León's Ministry of Sustainable Development Fernando Gutiérrez Moreno, not pictured, to discuss environmental issues.



work. In May of 2010, the TCEQ renewed its partnership with its counterpart in Nuevo León by signing a memorandum of cooperation between the two state agencies. Commissioner Garcia and Secretary Fernando Gutiérrez Moreno, of Nuevo León's Ministry of Sustainable Development, signed the memorandum during the TCEQ's annual Environmental Trade Fair and Conference. Later that month, Nuevo León Gov. Rodrigo Medina de la Cruz, who was in Austin to meet with Gov. Rick Perry, met with Commissioner Garcia to discuss environmental issues and implementation of the newly signed memorandum.

At the Border Governors Conference, the TCEQ sits on the environment and water worktables with members

of the nine other U.S. and Mexico border states, to develop annual declarations. Commissioner Garcia represents the TCEQ on the Environment Worktable, and Commissioner Carlos Rubinstein on the Water Worktable.

Through these types of collaborative partnerships, the agency has accomplished a major goal of the Border Initiative, which is to increase cooperation and the exchange of knowledge, experience, and technology related to the environment along the border.

Initiative Outlines Important Actions

"The border region is an area with unique characteristics," says Niemeyer. "It's a geographically diverse region, and

TCEQ BORDER INITIATIVE ACCOMPLISHMENTS

Since its creation in 2008, the TCEQ's Border Initiative has realized many successes. Here are just a few of the accomplishments for 2009 and 2010. For more accomplishments, visit www.tceq.state.tx.us/goto/border.

- **Binational air quality monitoring.** The TCEQ was instrumental in ensuring that data reporting from air monitors in Ciudad Juárez continued after management of the monitors was transferred from the City of El Paso to the Ciudad Juárez Ecology Department.
- **Construction of water quality wetlands in the Texas Lower Rio Grande Valley.** The TCEQ Office of Water worked closely with the cities of La Feria, San Juan, and San Benito in the Lower Rio Grande Valley to design and construct wetlands to manage storm water runoff and improve the water quality of area arroyos.

- **Deployment of continuous water quality monitors.** Three additional real-time surface water quality monitors were deployed in Texas along the Rio Grande to measure the upstream and downstream inflows. The monitors also help measure salinity levels, allowing for action if levels elevate to the point of damaging agricultural production—a major economic activity for the area.
- **Scrap tire management.** The TCEQ partnered with EPA Region 6 and the environmental agency for the state of Nuevo León to conduct a binational workshop on municipal scrap tire management. In attendance were officials from the Mexican federal environmental agency, the acting deputy regional administrator for EPA Region 6, leaders of scrap tire programs from New Mexico and Texas, academics from both sides

of the border, and representatives from six Texas cities and counties and seven Mexican cities.

- **Technical exchanges with Nuevo León.** In 2009, the TCEQ organized several technical exchanges and training events with its counterpart agency in Nuevo León. The two agencies worked together on environmental law enforcement and air quality issues, including visible-emissions quantification, monitoring for particulate matter smaller than 2.5 microns, and calculating on-road vehicle emission inventories.
- **Dos Laredos Binational Emergency Preparedness Workshop and Exercise.** TCEQ personnel collaborated with 45 emergency response officials from local, state, and federal agencies from both countries in a knowledge-exchange workshop.

because of endemic issues such as poverty and rapid growth, we see things there that we don't see in any other part of the state."

The Border Initiative has had its share of successes, but there is much work to be done in the region. Important actions outlined by the initiative include:

- Continuing binational air quality monitoring in Ciudad Juárez
- Developing a Lower Rio Grande water quality initiative
- Providing technical assistance on the pretreatment of fats, oil, and grease
- Improving municipal management of scrap tires

- Developing coordinated emergency response measures with the International Boundary and Water Commission

"I feel very privileged to have the opportunity to partner with agencies and states on both sides of the border through this important initiative," says Commissioner Garcia. "What the agency is doing in the region is going to continue to be a success story." 🌟



The workshop included courses on the Incident Command System and a special exercise designed to enhance the ability of first responders at the local and state levels to respond to a hazardous-materials incident.

- **Clean School Bus grants.** The Texas Clean School Bus program awards grants to Texas school districts and charter schools for the purchase and installation of technology to reduce diesel emissions and onboard exposure of schoolchildren and bus drivers to the emissions. In fiscal 2009, with funds from the EPA, the program awarded nearly \$1 million to improve onboard air quality for 335 buses in 15 border school districts.
- **Reintroduction of the Rio Grande silvery minnow.** The Rio Grande silvery minnow had disappeared from the river below El Paso.

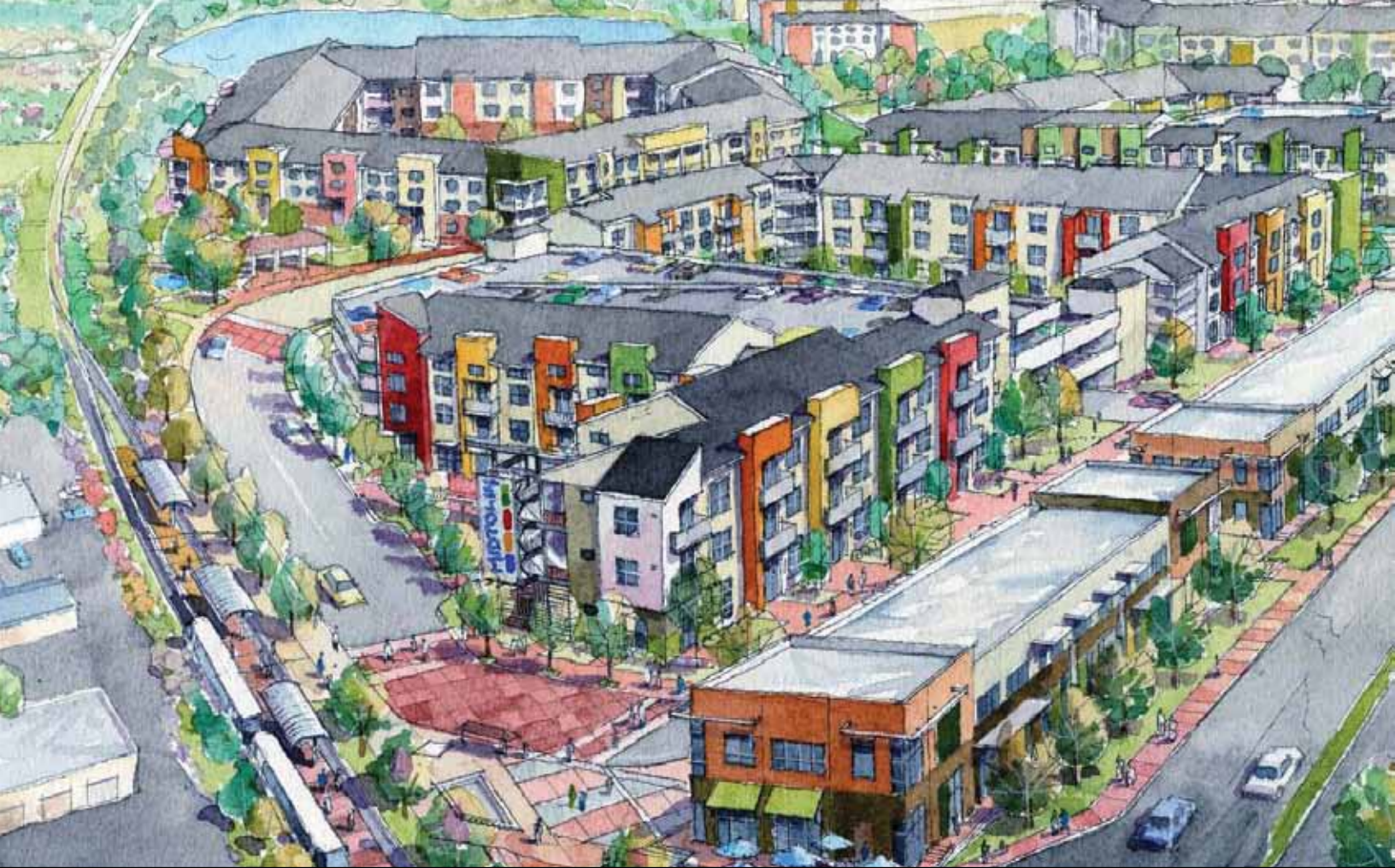


Sitting (L to R): Fernando Gutiérrez Moreno, Secretary of Nuevo León's Ministry of Sustainable Development, and TCEQ Commissioner Buddy Garcia signed a memorandum of cooperation between the two agencies. Standing (L to R): Plácido González, Undersecretary of Nuevo León's Ministry of Sustainable Development, TCEQ Chairman Bryan Shaw, Ph.D., and TCEQ Commissioner Carlos Rubinstein.

The TCEQ is a member of a stakeholder group chaired by the U.S. Fish and Wildlife Service to reintroduce the silvery minnow as an experimental, non-essential population in the Rio Grande. In 2008, 445,000 silvery minnow were reintroduced in the Big Bend reach of the Rio Grande, and another 509,000 the following year.

- **Participation on the Good Neighbor Environmental Board (GNEB).** A TCEQ staff person

who represents the State of Texas on the GNEB worked to ensure the production of a transboundary air quality case study for the 12th annual GNEB report, *Innovation, Including Incentives, to Prevent/Reduce Pollution along the U.S.–Mexico Border*. The report was released in Washington in 2009, and was accepted on behalf of the president by Nancy Sutley, the chair of the Council on Environmental Quality. 🌟



REAPING THE REWARDS OF REUSE AND REDEVELOPMENT

Voluntary Cleanup Program provides revitalization incentives

From 1949 until 2005, a research facility that processed components for soaps, foams, and glues operated on 71 acres at the intersection of Lamar and Airport boulevards in Austin. Waste from the facility was buried in landfills on the property until 1969.

Today, the property is being dramatically transformed into a transit-oriented urban village, designed

around one of Austin's commuter rail stops, and located only two miles north of the University of Texas campus and four miles north of the central business district.

When completed, Crestview Station will include apartments, approximately 500 single-family homes, 150,000 square feet of retail and office space, and ball fields.

Cleanup Comes First

Before redevelopment of Crestview Station could begin, the contamination from the previous owners needed to be addressed. To help make this happen, an application was submitted to the TCEQ's Voluntary Cleanup Program (VCP), which provides administrative, technical, and legal incentives to participants for investigation, cleanup,



Rendering of Austin's Midtown Commons at Crestview Station courtesy of Trammell Crow Company

and redevelopment of properties with contamination. The site was accepted into the program.

“The goal of the program is to clean up contaminated sites, get them back into productive use in the community, and restore a property’s market value,” says VCP project manager Roslyn Kygar. “When cleanup is completed and potential source areas have been addressed, a certificate of completion can be issued.”

Once the COC is issued, future landowners, local governments, public and private lending institutions, developers, and other stakeholders gain statutory protection that limits their liability to the state regarding past contamination at a site.

In the case of Crestview Station, a COC was issued once cleanup—which included excavating approximately

20,000 cubic yards of buried waste products and affected soils and hauling them to a chemical-disposal site—was completed.

Reclaiming an Urban Landfill

A five-acre site at 1531 Inspiration Drive in Dallas was identified as a prime location for urban housing. However, initial research into the history of the property revealed its use as a landfill starting in the late 1800s. Further research showed that it was called the “City Dumping Grounds” in the 1920s, and that it held an incinerator during the 1940s.

Once it was determined that the Voluntary Cleanup Program would provide the most benefits and be the best fit for redevelopment needs, an application was submitted to the VCP. The project was accepted into the program.

Soil and groundwater at the site were tested and several chemicals were found to exceed their respective protective concentration levels. It was also discovered that chemicals from the landfill were leaching into the groundwater.

Over 100,000 cubic yards of landfill were excavated and properly disposed of

at an off-site permitted facility. In order to ensure that all waste materials were removed, the site was excavated 15 to 17 feet below surface level.

Redevelopment was successfully completed in 2009, creating over 300 new residences.

Voluntary Cleanup Program

Crestview Station and 1531 Inspiration Drive are just two of hundreds of properties that have been cleaned up and redeveloped across the state. As of July 2010, 2,162 applications had been accepted into the VCP, and 1,241 VCP COCs had been issued.

“The perception of contamination or the liability associated with it could scare someone away from redeveloping a property,” says Kygar. “But with the Voluntary Cleanup Program, the certificate of completion issued by the TCEQ shows that the site cleanup has met a certain standard. Something really useful can then be done with the property with a certain degree of assurance.”

For more information on the VCP, visit www.tceq.state.tx.us/goto/vcp. 



Courtesy of Mike Blizzard, Blisco Productions

The 71-acre property at the intersection of Lamar and Airport boulevards in Austin was once the site of a research facility that processed components for soaps, foams, and glues.

A COMMITMENT TO AIR QUALITY IN THE BARNETT SHALE

State devotes extensive resources to the area

The Barnett Shale area in North Texas has received a lot of attention recently, as some residents have expressed misgivings about oil and gas operations. The story has been covered heavily by the media, and residents have brought their questions to federal, state, and local government agencies.

“In response to these concerns, the TCEQ has committed a tremendous amount of time and resources to the issue of Barnett Shale air quality, and we will continue to do so,” says Chairman Bryan Shaw, Ph.D. “After several months of operation, state-of-the-art, 24-hour air monitors in the Barnett Shale area are showing no levels of concern for any chemicals. This reinforces our conclusion that there are no immediate health concerns from air quality in the area, and that when they are properly managed and maintained, oil and gas operations do not cause harmful excess air emissions.”

Formation Is Rich in Natural Gas

The Barnett Shale geological formation is in a 23-county area that lies to

the west, northwest, and southwest of the DFW area. Rich in natural gas, the formation has witnessed a massive expansion of oil and gas activities in the last several years. Approximately 14,000 gas wells have been drilled, producing approximately 4.8 billion cubic feet of natural gas per day. The Barnett Shale may very well contain some 26 trillion cubic feet of natural gas—a resource that could help meet the energy needs of the State of Texas and other parts of the nation.

Proximity to Production Has Caused Concern

Portions of the Barnett Shale lie under urban and suburban areas, which means that some of the natural gas operations and facilities are close to homes and other structures. This proximity has caused some area residents to become concerned about potential health effects. Consequently, as production has risen, complaints to federal, state, and local agencies, including the TCEQ, have increased.

Oil and gas operations in Texas are regulated by the Texas Railroad Commission; however, the TCEQ is responsible for permitting some of the equipment used in these operations and associated air emissions.

TCEQ Assesses Air Quality in Barnett Shale Area

Due to concerns about the effect of oil and gas operations on ozone levels in the Dallas–Fort Worth area, in 2007 the TCEQ began surveying the rapidly expanding Barnett Shale natural gas operations. Through a series of helicopter flyovers, the agency assessed the number of compressors operating in the area. These flights, along with subsequent studies, determined that—due to the location of the operations and the prevailing wind direction—emissions from oil and gas operations in the Barnett Shale area were not a significant factor in Dallas–Fort Worth ozone levels. However, with the EPA promulgating new, much lower ozone standards, these operations will again be examined to see if they can play a part in helping to meet the new standards.

In order to assess the air quality in the Barnett Shale area, and determine whether there was any scientific evidence of threats to public health, in 2009 and 2010 the TCEQ conducted several large, in-depth surveys of air quality in the six counties surrounding Fort Worth. The TCEQ deployed teams of air monitoring experts into the area to conduct the surveys. Staff used GasFind IR cameras (which show emissions that are invisible to the naked eye), handheld instruments to measure VOCs (volatile

organic compounds), van-mounted gas chromatograph analyzers, SUMMA air sampling canisters, and their own senses to look for and measure emissions from oil and gas operations.

Although gas chromatograph analyzers and SUMMA canisters measure many VOCs, some of which are air toxics, TCEQ toxicologists have determined that benzene is the key air contaminant of concern. If benzene levels from oil and gas facilities are below levels of concern, other air toxics should be as well.

From Aug. 1, 2009, to June 30, 2010, the TCEQ surveyed more than 560 sites using the GasFind IR camera. At approximately 450 of these sites, a handheld VOC sampler was also used. Based on observations with these instruments, 319 canister samples have been collected. In addition, samples have

been collected via mobile Real-Time Automated Gas Chromatograph.

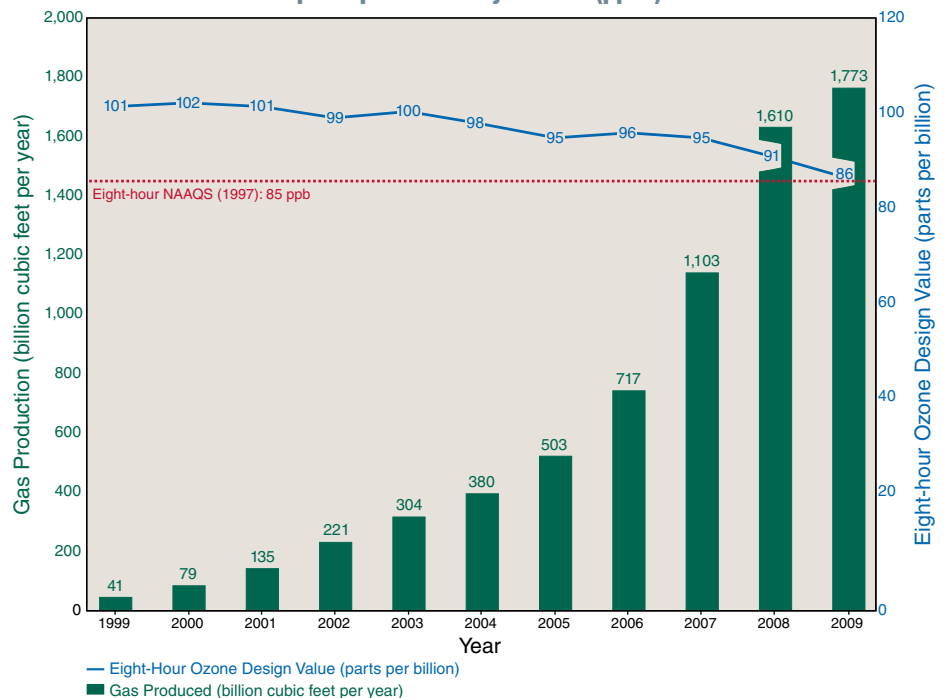
Out of all the samples taken, the TCEQ has only found two instances of benzene exceeding short-term levels of concern. Subsequent sampling at these two locations has shown low levels of benzene.

Monitoring Results Available on TCEQ Website

In an effort to demonstrate transparency and help the public understand the issues, monitoring results, health-effect evaluations, and other documents pertaining to the TCEQ’s efforts in the Barnett Shale area are posted on the TCEQ website, at www.tceq.state.tx.us/goto/barnettshale.

In order to comprehend the issue of air emissions in the Barnett Shale area, it is important to understand two

Dallas–Fort Worth Ozone Design Values Compared to Barnett Shale Natural Gas Production
parts per billion by volume (ppbv)



numbers that are used to assess the potential for adverse health effects from exposure to benzene: 180 ppbv (parts per billion by volume) and 1.4 ppbv. The first number, 180 ppbv, is the short-term air monitoring comparison value for benzene. This number is conservative and it is unlikely that adverse health effects would occur if someone were to be exposed to this concentration of benzene for a short period of time (one hour). The second number, 1.4 ppbv, is the long-term air monitoring comparison value for benzene. Someone exposed to this level 24 hours a day for 70 years would not be expected to experience adverse health effects.

“Our studies and samples are leading us to conclude that oil and gas operations, when properly managed and maintained, should not cause harmful emissions,” says Commissioner Buddy Garcia. “When staff sees a sample that causes concern, we quickly identify the cause of the emissions and it is fixed. We continue to diligently monitor air quality, vigorously investigate complaints, and take necessary enforcement actions to help ensure compliance.”

TCEQ Installs Monitors

“One of the primary lessons we have learned is the need for long-term air monitoring data,” says Commissioner Carlos Rubinstein. “Simply taking an instantaneous air sample, and then trying to draw conclusions about a long-term health concern, is an inappropriate

The annual benzene averages from Auto-GC air monitors in the Dallas-Fort Worth-Barnett Shale area are substantially lower than the long-term air monitoring comparison value (AMCV) of 1.4 ppbv. The results from the monitors are posted hourly on the TCEQ website, at www.tceq.state.tx.us/goto/barnettshale.

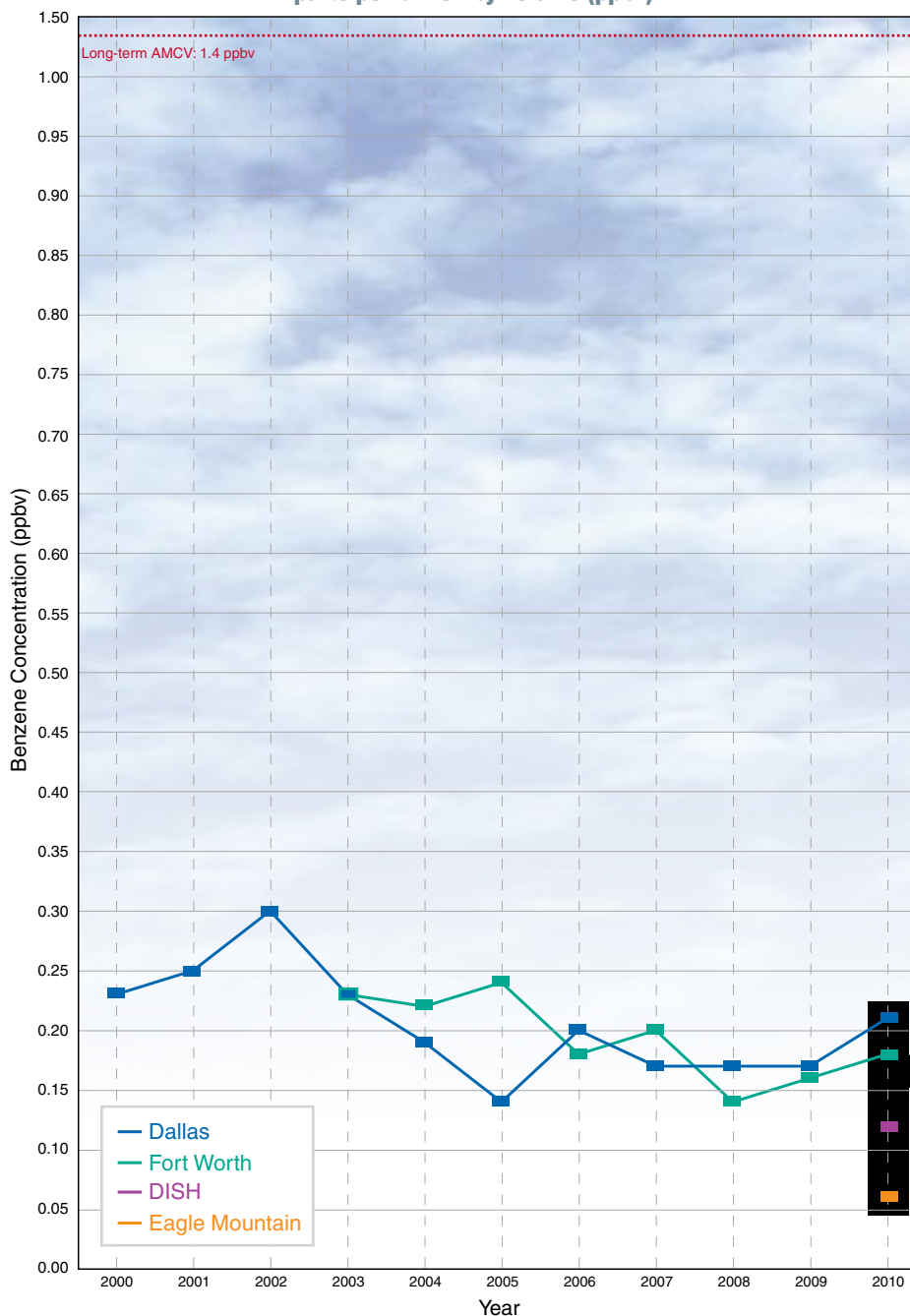
comparison, and is also made all the more difficult when dealing with measured amounts of chemicals that are very low.”

So the TCEQ added two new long-term monitors in the Barnett Shale area, and will install three more in the near future.

In the spring of 2009, the TCEQ installed automated gas chromatograph

(AutoGC) monitors in two locations that are surrounded by natural gas operations—the town of DISH, in Denton County, and near Eagle Mountain Lake, in Tarrant County. These monitors operate around the clock, measuring levels of more than 45 VOCs, including benzene. After months of continuous operation, there have been no chemicals

Auto GC Benzene Annual Averages
parts per billion by volume (ppbv)



measured above levels of concern. The results from the monitors are posted hourly on the TCEQ website, at www.tceq.state.tx.us/goto/barnettshale.

The same holds true of two already existing fixed-site VOC monitors in Fort Worth and Denton, which have shown no increase in benzene levels as natural gas operations in the Barnett Shale area have grown over the years.

The TCEQ will install three more new AutoGC monitors: one in Flower Mound, one in Tarrant County, and another in a location yet to be determined. These monitors, which cost as much as \$250,000 for the first year and \$100,000 per year thereafter, will also have their results posted online.

In addition, monitoring surveys in Fort Worth have found no immediate levels of concern for benzene. The City of Fort Worth is planning to conduct an independent monitoring survey of its own in the near future.

TCEQ Addresses Concerns, Launches Outreach Efforts

Much of the concern about natural gas operations has been centered in DISH, so in early 2009, the Texas Department

of State Health Services performed blood tests on 28 DISH residents (representing about 13 percent of the town's population). Test results showed that the exposure of DISH residents to VOCs was similar to that of the general U.S. population, and that exposure to certain contaminants was no higher than that of the general U.S. population. The study further found that the only residents who had higher levels of benzene in their blood were smokers. Cigarette smoke contains benzene, so finding this in smokers' blood is not unusual, the department noted.

At the same time that it addressed the concerns of residents in the Barnett Shale area, the TCEQ launched an ongoing outreach effort to oil and gas associations and operators in the area. Efforts included educating the industry on current rules and on the importance of proper operational maintenance.

The Path Forward

Today, the TCEQ continues a multi-pronged effort to assess the air quality in the Barnett Shale area, and reduce emissions, with the goal of ensuring that the air is safe to breathe.

One important effort is to increase the quality and quantity of long-term air monitoring in the area. Although short-term sampling is useful, and can help determine if a particular site is emitting excess emissions, long-term air monitoring is needed to determine the overall air quality and air quality trends in the area.

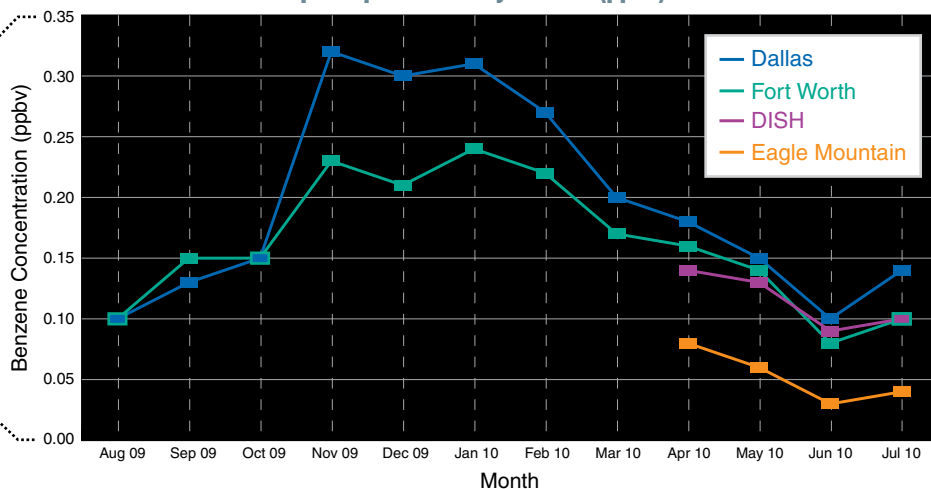
The TCEQ regional office in Fort Worth has added seven new air inspectors to respond to air quality complaints quickly. In most cases, responses to complaints are handled within a few hours of receipt.


The TCEQ is also in the process of amending its rules that authorize oil and gas facility equipment. The new rules will update administrative and technical requirements, and will include enforceable monitoring, sampling, and record-keeping requirements. The new rules will help the agency ensure that these oil and gas facilities are properly operated and maintained in order to be protective of public health and welfare, and will allow the agency to effectively focus resources on facilities that produce significant emissions.

Even though TCEQ air monitoring indicates that ambient air in the Barnett Shale area poses no immediate health concerns, the agency will continue to focus on the area, taking measures to improve air quality and ensure that the air is safe to breathe. ♻️

Monitors added in DISH and Eagle Mountain in April 2010 report monthly benzene averages substantially lower than the long-term air monitoring comparison value (AMCV) of 1.4 ppbv.

2009–2010 Monthly Benzene Average
parts per billion by volume (ppbv)



 Natural Outlook, MC 118
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, TX 78711-3087

RETURN SERVICE REQUESTED

PD-020/10-04

ENVIROMENTORS LEND A HELPING HAND

When the owner of a fish farm in the Houston area needed assistance understanding the environmental requirements related to raising ornamental carp for aquariums, TCEQ Compliance Specialist Cynthia Williams worked with Leslie McGaha, a volunteer, to lend a hand. Adding excitement was the farm owner's advice to "Beware of wild dogs on the property." Although she did get muddy, McGaha managed to avoid the dogs while helping the owner.

McGaha is a TCEQ EnviroMentor in Houston. She and 117 other environmental professionals across the state volunteer to give free, confidential assistance to those needing help complying with state environmental rules.

A service of the Small Businesses and Local Government Assistance (SBLGA) Section of the Small Business and Environmental Assistance (SBEA) Division, the program matches EnviroMentors with customers needing help.

"A typical customer is a business professional who is new to environmental requirements," says Jane Scheidler, EnviroMentor program coordinator, "or an operator of a small business who is unaware of the regulations that exist for his or her industry."

"Volunteers provide important one-on-one assistance to customers," says SBEA Division Director Brian Christian, adding that from May 2009 through April 2010, 43 EnviroMentors

contributed 1,640 hours to 77 different projects. Five individuals impressively contributed a record 100-plus hours each.

Cathy Dougherty, a licensed professional engineer in Rowlett, contributed 85 hours helping a small water and wastewater company whose manager had suddenly left. "By re-creating the company's records and submitting them to the TCEQ, as well as preparing its wastewater permit for renewal, Cathy performed a valuable service," says Scheidler.

EnviroMentors appreciate the variety offered by the program. "No two cases are ever alike," says Jeanne Yturri of Zephyr Environmental Corporation in Austin. "No matter how many times I pick up the phone, I can still be surprised by the variety of situations."

Many EnviroMentors also find volunteering to be a deeply rewarding experience. "The program has given us a chance to work with small companies that have critical environmental needs," says Michael Whitehead, president of W&M Environmental Group, Plano. "It's a great opportunity for those with a passion to help others."

The TCEQ is currently looking for EnviroMentors in Midland, San Angelo, Abilene, and El Paso. If you'd like to volunteer, contact Scheidler at sbap@tceq.state.tx.us. And if you'd like an EnviroMentor to lend your business a helping hand, please visit www.TexasEnviroHelp.org. 

