SUMMER 2006

Natural OUTLOOK

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Down the Drain No More

Water Reuse Becoming a Way of Business

Natural Outlook is published quarterly by the Agency Communications Division at the Texas Commission on Environmental Quality

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Instead of receiving this newsletter in the mail, readers can get an e-mail alert when *Natural Outlook* is available to view on the TCEQ Web site. To sign up for that option, visit **www.tceq.state.tx.us/goto/outlook**. The page also includes information on renewing subscriptions.

printed on recycled paper using soy-based ink

Natural OUTLOOK

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Informing Texans about important natural resource issues

Photo by Christine Luciano, Ft. Hood

on the back

Overdue Payments Draw Consequences

Starting Sept. 1, fees and penalties need to be paid in full before the TCEQ will accept applications for permits, licenses, registrations, or certifications.

COVER: Cleaning large aircraft is a job that consumes high volumes of water, but American Airlines has figured out a way to reuse the wash water and conserve millions of gallons. Photo by Starr Austin of American Airlines.

Riding to the Rescue

By planning ahead, water utilities can help each other in a crisis

During the calamity of Hurricane Rita last fall, an estimated 1,100 public water systems in East Texas were knocked out of operation—if not for a few hours, then for days or weeks.

The Category 3 storm arrived in late September, only a few weeks after Hurricane Katrina had devastated coastal communities in Louisiana, Alabama, and Mississippi.

As East Texas struggled to restore basic necessities such as electricity and drinking water, local officials issued numerous requests for assistance. The responses, though well intentioned, were not always on the mark.

In one case, the city of Jasper needed a generator to restore the pumps necessary for distributing drinking water. Three generators arrived, but none was the correct size.

Such mistakes could be avoided in the future with an Internet-based network designed to anticipate natural disasters, then provide a quick response by delivering assistance to public water and wastewater systems.

The Texas Water/Wastewater Agency Response Network (TxWARN) was established three months after communities from Sabine Pass to Nacogdoches were lashed by Hurricane Rita.

The relief program is based on assistance agreements, so that when one utility is damaged another utility in the region will be contacted to deliver needed equipment and personnel, even food and water if necessary.

"We call it utility-to-utility mutual aid," says Mike Howe, executive director of the Texas section of the American Water Works Association, which helped develop the system. "There's no waiting on anyone to approve the paperwork, because we do all that beforehand. The goal is to reduce bureaucracy and to move people and equipment where they're needed."

A New Resource

Texas became the third state to adopt this emergency warning model. California pioneered the concept several decades ago to better deal with earthquakes and wildfires. Two years ago, Florida created a WARN program as a means of preparing for hurricanes.

Structured in much the same way, TxWARN uses an emergency-equipment database to match up utility resources after a natural disaster.

Utilities joining TxWARN agree to provide an inventory of their equipment, including pumps, generators, chlorinators, pipelines, backhoes, and trucks. They also list the names and contact information for treatment plant operators and other personnel.

When a member utility has an emergency and calls for equipment such as generators, TxWARN already has a record of the number and size of the units needed. The database also shows which nearby utilities have matching equipment and are willing to share.

"It'll never be perfect, because you

Many downtown areas were out of commission after Hurricane Rita inundated East Texas communities last year. The storm also eliminated power to about 1,100 public water systems, leaving local officials in a scramble to find outside assistance.

Wind and flood damage was widespread across East Texas last fall. Since then, many communities have evaluated their emergency plans and addressed their vulnerabilities, including the possible failure of water and wastewater systems during a weather crisis.

can't predict the level of a natural disaster," says Howe, "but it will quickly get the resources where they are needed."

The free service is available to public and private utilities. Members agree to reimburse any utility providing them with assistance.

As of late June, 250 utilities had signed up for TxWARN. Members are not obligated to respond when called for assistance—only those willing and able.

The network is not reserved just for hurricane response, says Howe, noting that Texas has more than its share of tornadoes, wildfires, and floods. The network is available for any emergency event.

During an emergency, the TCEQ and TxWARN will work in tandem to locate needed resources and get them moved to disaster sites.

The TCEQ, which is one of the TxWARN sponsors, is working to obtain long-term funding for the program.

Vulnerabilities Exposed

In the aftermath of Hurricane Rita, TCEQ staff at headquarters and in several regional offices worked around the clock to contact public water and wastewater systems, ascertain damage, and help those systems get back in operation.

Staff discovered that, for the most part, it was the small and rural systems that needed the most assistance, according to Judy Rogers, homeland security coordinator for the TCEQ's Public Drinking Water Section.

She attributes this to the fact that the large and mid-size public water systems had already been required by the Environmental Protection Agency to prepare emergency response plans and vulnerability assessments. Small systems, however, were not required to do so and therefore did not always know their equipment requirements or even have emergency backup plans.

To help small systems be better prepared, she said the TCEQ has hired the Texas Rural Water Association (TRWA) to offer technical assistance to small public water systems (with fewer than 3,300 customers), starting in the Corpus Christi and Harlingen regions.

"We want them to know how to check out their system, including their chemical supplies for treating water. We also want them to have emergency response plans and to rehearse them," Rogers says. "Being prepared is cheaper and less painful."

In early 2006, the TCEQ notified more than 6,000 public water systems about the creation of TxWARN and urged them to join.

At the same time, Rogers reminds utilities that state law requires them to notify the TCEQ if they are out of service. "We have to know when a system has lost pressure so we can issue a boil-water notice to protect consumers and ensure the area has adequate water to fight fires," she explains.

Preparation Pays

Rogers and other TCEQ officials say water utilities are in much better shape to face a natural disaster than they were a year ago.

Not only is TxWARN in place, but TRWA has developed an emergency assistance cooperative for helping small and rural systems.

Many utility owners and operators, after witnessing the havoc brought by Katrina and Rita, have now carefully reviewed their disaster plans, says Rogers. A number of them have sought technical assistance to better understand what will be required of them in an emergency. Some have expanded personnel training so that a backup will be available if the main plant operator is absent.

Moreover, utilities around the state know that, when the unexpected happens, emergency assistance is available by phone or over the Internet.

One call to TxWARN will mobilize assistance from neighbors and fellow Texans who are willing to help.

Getting Creative with Conservation

Ingenuity leads to crafty solutions on water usage

By Liz Carmack

Higher temperatures and below-normal precipitation this summer continue to strain the state's water resources.

These conditions make water conservation more important than ever.

With drought affecting most of the state, Texans may draw inspiration from the accomplishments of three award-winning water savers.

In this issue, *Natural Outlook* highlights examples of outstanding environmental performance in the corporate world, the agricultural sector, and the military.

During the past decade, the American Airlines maintenance base at Alliance Airport, the Tom Green Water Control and Improvement District, and the U.S. Army's Fort Hood have instituted sweeping changes in operations and equipment to curb water use, improve efficiency, and cut costs. Lower water consumption has lightened the burden on community water resources and reduced the amount of wastewater discharged to treatment facilities and into the state's waterways.

In each of these examples, employees applied ingenuity and imagination to everyday tasks.

American Airlines Slashes Water Consumption at Maintenance Facility

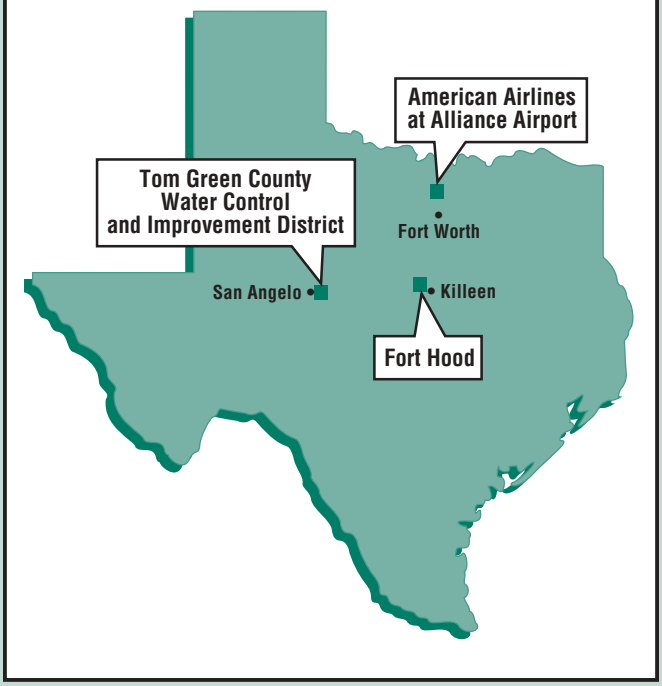
The American Airlines maintenance base at Alliance Airport used to purchase more than 100 million gallons of water a year from the city of Fort Worth.

But through innovations in the treatment of industrial wastewater, combined with reuse initiatives, the base has

Photograph by Starr Austin, American Airlines

Each Boeing 767 and 777 in the American Airlines fleet undergoes periodic cleanings at Alliance Airport. A crew of six takes as long as eight hours to scrub and rinse the exterior and cargo hold of each plane. All the wash water drains into a 250,000-gallon storage pond. The water is pumped to the waste treatment plant, then it is treated and reused. Cleaning dirt and grime off airplanes helps save fuel by reducing air drag.

Three Award-Winning Water Savers



cut water usage by 38 percent a year, saving almost $1 million over the last four years.

American Airlines maintains its fleet of Boeing 767s and 777s at Alliance, an industrial airport about 20 miles north of downtown Fort Worth. The maintenance base is so large that the airline operates its own central utility plant and industrial waste treatment facility at the airport.

Washing aircraft and cleaning engine parts are two main sources of industrial wastewater at the maintenance base. The industrial waste treatment facility removes grease, oil, and heavy metals from the water, then sends it through a reverse osmosis filtration system to further remove pollutants.

Staff at the maintenance base realized in the late 1990s that they could significantly reduce water consumption by using treated wastewater for the central utility plant's boilers and the air conditioning system's cooling towers.

Staff members also envisioned that, with the proper infrastructure, the plant effluent could also be sent around the maintenance base for other activities, including washing aircraft, rinsing fuel tanks, and irrigating the grounds.

But there was a problem: The waste treatment facility could not produce enough wastewater of sufficient quality to meet those needs.

"We had places where we could use the water, but we didn't have enough water coming in to supply the demand," says Bill O'Neil, crew chief for American's waste treatment plant at Alliance. "So we had to figure out how to get more water in to be able to send more water out."

At the time, the utility plant at the maintenance base discharged all its wastewater into the sanitary sewer system of the Trinity River Authority. Staff set out to recover that water and send it to the treatment facility for reuse.

They also decided to expand the facility's reverse osmosis system to produce more high-quality wastewater than the 125 gallons per minute they were producing at the time.

The staff began to collect data to justify the cost of changing infrastructure and expanding the reverse osmosis system.

The first task was to measure how much potable water the maintenance base used. Then they calculated how much it cost to treat wastewater—51 cents per 1,000 gallons—and compared it to what American was paying for potable water. At the time, the cost was about $1 per 1,000 gallons (today's rate is twice that).

The analysis showed that the proposed system would pay for itself in three years, and generate savings every year after that. O'Neil recalls that "every time a situation came up where it was going to be too expensive, the staff kept finding less expensive ways to get it done."

The airlines concluded it could save money while conserving a natural resource.

With management's backing, staff expanded the reverse osmosis system for $600,000, saving more than $700,000 by implementing their own redesigns and installing additional control valves, underground piping, and vaults.

With the expansion completed in 2002, the reverse osmosis system began to produce high-quality wastewater at a rate of 500 gallons per minute—four times what the system used to churn out.

Further infrastructure changes were made to recoup

Photograph by Starr Austin, American Airlines

After washing planes at Alliance Airport, staff at American Airlines' maintenance base redirects the treated water to the central utility plant boilers and the air conditioning cooling towers. These initiatives have reduced water usage by 38 percent a year.

even more wastewater. Staff adapted the plant's cooling pits to also serve as a lift station—at a cost of $160,000 or about half the estimate for installation of a new lift station.

Now all the wastewater produced by the central utility plant—about 40 million gallons a year—is captured and sent via the lift station to the treatment facility instead of being discharged into the sanitary sewer.

In fact, while 100 percent of the wastewater coming into the industrial waste treatment facility used to be discharged, now only 25 percent is. The remaining 5 million to 7 million gallons a month is recycled, says O'Neil.

American is sending O'Neil and his industrial waste treatment team to other maintenance facilities in Tulsa and Kansas City, Mo., to spread the word about the water conservation methods.

The American team at Alliance still finds ways to conserve water. In 2003, they worked with aircraft mechanics and parts washers to save 2 gallons a minute in the parts-cleaning process by switching to a smaller water line for the cleaning tanks. The engine parts are still thoroughly cleaned, while the maintenance base saves 8 million gallons of water annually.

The city of Fort Worth presented American's maintenance base with a Pollution Prevention Award in 2001.

This year, the TCEQ gave American Airlines one of its Texas Environmental Excellence Awards.

Wastewater Provides a Reliable Source of Irrigation

Water supplies are limited in the San Angelo area, where drought and water-robbing brush have kept levels low in Twin Buttes Reservoir. In response, officials at the Tom Green County Water Control and Improvement District work to make every drop count.

About 120 farms depend on the district to irrigate their cotton fields, which cover 15,000 acres in the eastern part of the county. For several decades, the district irrigated with water from Twin Buttes, which also supplied San Angelo, the county seat.

But a dilemma in the late 1990s placed both the city and the irrigators in a tight spot.

Wastewater from the city's treatment plant was affecting the water quality of the Concho River. Partially treated wastewater was being applied to land near the treatment plant, but heavy metals were leaching through the soil and into the nearby river. The municipality faced the expensive task of upgrading the treatment plant or building a new one.

Photograph by Tom Green County Water Control and Improvement District

With water flowing from Twin Buttes for the first time in nine years, the volume and flow rate along the irrigation canal are recorded with high-tech instruments. A solar-powered measuring station radios data to the main office 24 hours a day. At one time, personnel with the Tom Green County Water Control and Improvement District had to drive to this remote location twice a day to retrieve the monitoring data manually.

Instead, local officials realized they could save money by building a two-mile-long pipeline to the irrigation canal.

Water District Manager Yantis Green explains: "You can't use effluent on food crops. But this is cotton country."

Through an agreement between the district and the city, farmers were slated to get up to 8,000 acre-feet of wastewater and 17,000 acre-feet of lake water each year, but the latter provision was contingent on lake levels. When the agreement took effect, levels were so low that for years the district was not allowed to tap into Twin Buttes as a secondary irrigation source.

In 1997, the last year the district irrigated solely with lake water, it used 18,700 acre-feet. (An acre-foot is enough water to cover one acre to a depth of one foot.)

Then, farmers had to make do with half that amount —all from wastewater.

This year is different: For the first time, water from both sources is flowing through the district's 65-mile, concrete-lined canal, allowing access to 8,000 acre-feet in the lake in addition to 8,000 acre-feet of wastewater.

Lake water is available today because of a successful brush-clearing program, according to Green. Landowners, working with the Texas State Soil and Water Conservation Board (TSSWCB), spent the last two years clearing cedar, mesquite, and salt cedar from 230,000 acres, or more than one-quarter of the watershed.

"That has brought the streams back to life," Green says. "The lake's capacity three years ago was at 20,000 acre-feet. Now it's about 60,000 acre-feet."

That comes as welcome news for the county, which averages 21 inches of rain a year and has endured several years of drought.

"Lack of water has forced the district to get smart and become much more conscious of conservation," Green says. "We never stop looking for innovative ways to save."

Collaboration between the irrigation district, local cotton farmers, TSSWCB, and the U.S. Bureau of Reclamation has made additional water-saving projects possible, such as subsurface drip irrigation. Installed on 40 acres, long soaker hoses two feet below the surface release water

to the roots. No evaporation occurs. Two years into the pilot program, water use in the test area is down by 30 percent.

More savings have come with new technologies implemented through the Supervisory Control and Data Acquisition (SCADA) system. This computer-based system, which allows for remote monitoring and control of facilities, boosted the district's water delivery efficiency to an unprecedented 91 percent.

Green remembers when only 61 percent of the water released from the lake for irrigation was delivered to the crops. Delivery efficiency improved slightly when the district switched to wastewater, because the treatment plant was closer than the lake. Still, 20 percent to 40 percent of the water meant for irrigation was lost—some to evaporation, some because of the difficulty in managing water flow, and some when unused water was discharged to the Concho River.

Aided by a $180,000 federal grant, the high-tech equipment now monitors and controls the flow of irrigation water with pressurized pipelines, automatic canal gates, and digital meters that monitor water more accurately. An ultrasonic flow monitor checks on unused water and pumps return water to irrigation canals.

The SCADA system also helps farmers manage water more efficiently with a weather station that calculates the loss of water through evaporation from the soil and transpiration from plants.

The Bureau of Reclamation awarded the district its water conservation award in 2003. The district received a Texas Environmental Excellence Award from the TCEQ in 2005.

Fort Hood Retools Cleaning Method for Fuel Tankers

A major change in the way Fort Hood cleans the inside of its fuel tankers has saved the military post more than 3.5 million gallons of water since 2002, eliminated wastewater discharges, and freed soldiers to spend more time on training and other mission-critical duties.

Located about 50 miles southwest of Waco, Fort Hood is the largest active-duty armored post in the U.S. armed services, and is the only post in the country to support two full armored divisions.

Photograph by Christine Luciano, Fort Hood's Directorate of Public Works, Environmental Outreach Coordinator

When the Army retooled its method of cleaning out fuel tankers, the result was savings in time, money, and water. With the closed-loop system, water is used over and over to clean multiple tankers. It also frees soldiers to spend more time on training. Civilians now conduct the tanker-cleaning duties.

Photograph by Christine Luciano, Fort Hood's Directorate of Public Works, Environmental Outreach Coordinator

On cleaning day, the tanker drum receives hot water from an attachment on top of the vehicle, while the dirty water is suctioned out through the back. No more than 10 gallons of water is lost during the cleaning cycle for each vehicle.

The chore of cleaning out each 5,000-gallon fuel tanker used to take eight hours and up to 20,000 gallons of water. Soldiers would fill the tanker with water, agitate the water by driving the truck around, then drain it. This process had to be repeated four or five times per vehicle. A cleaning solution added during one wash round helped to remove residual fuel in the tanker.

The tankers carry 500 to 5,000 gallons of jet propulsion No. 8 fuel, which powers everything from planes to armored tanks and Humvees.

Now, the post's revamped tanker-cleaning facility uses water heated to 180 degrees and delivered through a high-pressure hose to clean as many as 45 tanker trucks a month.

With tanker cleaning becoming less labor-intensive, soldiers no longer have to pull that duty. The chore has been handed over to civilians, who can clean a 5,000-gallon tanker in two hours using only 2,000 gallons of water. This water is run through tankers about 10 times before being treated and recycled.

Randy Doyle, Fort Hood's pollution prevention (P2) program manager, describes the new process as a "closed-loop" system in that the wash water is retreated several times while cleaning multiple tankers. Then it is sent to the tactical-vehicle wash facility, where it is recycled while cleaning other equipment. In the past, wastewater from cleanings was released into the sanitary sewer system and ended up at the city of Killeen's wastewater treatment plant.

"Only about five to 10 gallons of water is lost with each cleaning," Doyle says of the new system.

Under the old method, tanker cleaning consumed about 900,000 gallons of fresh water each year. But from October 2004 to September 2005, the post used only 158,400 gallons to clean 207 tankers.

Army brass liked the project once they realized the benefit to soldiers, Doyle says. "Before, this was a wasted day for the soldier."

As an environmental benefit, less industrial wastewater goes to both the installation's sewage collection system and the wastewater treatment plant operated by a water district in Bell County, he says.

Early on, the creativity of the P2 team members was tested when they had difficulty finding suitable tanker-cleaning equipment. "The challenge was to find a system that would clean the different types of military vehicles we have in our inventory," Doyle says. After evaluating several proposals, the post selected an engineering firm to design and install the system at a cost of $450,000.

Another challenge arose after the new cleaning facility was up and running. The Army switched from using fuel tankers with no inner walls to ones with baffles, or segmented compartments. This made cleaning more difficult, but the P2 staff responded by increasing the water pressure and changing spray nozzles.

After the new facility was installed in 2000, it took about two years to work out the kinks and realize consistent savings, Doyle says.

The Army recognized the success of the pollution prevention team when it presented Fort Hood its P2 award in 1999 and named it runner-up for the award in 2005.

The Texas Environmental Excellence Awards showcase outstanding environmental performance in 10 different categories. The application deadline for the 2007 contest is Nov.3. Winners will be announced by the TCEQ next spring. Visit www.teea.org.

In the heavily industrial Houston Ship Channel, the TCEQ has employed a number of monitoring strategies to track volatile organic compounds (VOCs). With the recent addition of the remote sensing camera, the agency has gained the ability to make improvements in air quality much more quickly. Also, a growing number of refineries and plants are using gas-imaging technology for their own inspections.

Hunt for the Invisible

New gas-imaging device can find VOC emissions

The field of air quality monitoring is quickly advancing. That lesson hit home with a Houston plant manager escorting two TCEQ investigators on a plant inspection.

When the trio stopped in front of a heat exchanger, the manager explained that the equipment was out of service. But inspectors knew otherwise—that the exchanger was emitting volatile organic compounds (VOCs). What was the evidence?

All the investigators did was look through a hand-held camera about the size of a camcorder. The infrared-gas imaging camera makes it possible for the camera operator to see and record what the naked eye does not—hydrocarbon plumes. Typical sources include leaks from storage tanks, equipment seals, valves, connectors, compressor seals, open hatches, and cracks in pipelines.

VOCs contribute to ground-level ozone formation, and can be considered to be toxic.

The infrared-gas imaging camera, which was more than a decade in development, is the latest tool in the TCEQ's array of air monitoring equipment. So far, the camera is proving to be effective in discovering unreported or underreported VOC sources.

Technology Evolved

The TCEQ began field testing the new camera technology in 2004 and used it the following year in several major studies in the Houston and Beaumont areas. Based on the results, the agency has purchased two GasFindIR cameras and has one more on order.

"We have been convinced that this is a significant advancement in pollution detection," says Keith Sheedy, a TCEQ engineer and technical adviser in the Chief Engineer's Office. "It has proven to be highly effective in the detection of VOC emissions from leaks and sources not previously identified or industrial sources that were underreported to the TCEQ."

This specialized heat-sensitive technology was first developed by the military to track the source of rockets and missiles, based on exhaust plumes. In the last decade, natural gas producers

used the infrared-based cameras to search for pipeline leaks.

Other industries and the TCEQ became interested when it was shown that the technology also could assist in investigations and special studies of VOC sources.

The TCEQ put the camera to use in Houston last year in an air quality study focusing on 1,3-butadiene sources in the Manchester and Milby Park areas near the Houston Ship Channel.

Then the camera went aloft in a helicopter when the agency kicked off the Texas Air Quality Study II of the Gulf Coast and Southeast Texas. For several weeks, the helicopter conducted daily observational flights over the Houston Ship Channel and industrial areas of Texas City and Beaumont-Port Arthur.

The results were impressive, says Russ Nettles, manager of an emissions inventory team at the TCEQ. The remote sensing camera identified 30 sites with visible plumes in the Houston-Texas City area and 11 sites in the Beaumont-Port Arthur area.

The GasFindIR cameras are now used regularly by the Monitoring Operations Division on mobile laboratory trips and by the Houston regional office on reconnaissance and compliance investigations in the ship channel area.

Substantial Study Results

The most significant findings so far have come from the flyovers in Southeast Texas, according to Nettles.

The TCEQ was already tracking about 14,000 tons a year of reported emissions in the Houston Ship Channel area, according to the emissions inventory database. The 2005 flyovers and follow-up work identified another potential 7,000 tons a year of unreported emissions, says Nettles, who adds that the results are still being analyzed.

The leading source of emissions turned out to be floating-roof tanks. These cylindrical steel storage vessels are equipped with a roof that floats on the surface of stored liquid, usually petroleum or a petroleum product. Of the estimated 10,700 storage tanks in the study areas, about half were observed with the camera. Seventy-one tanks were spotted with visible plumes.

The second largest emissions category was barges, those flat-bottom boats that traverse the ship channel hauling petroleum products and chemicals.

About one of every six barges had visible hydrocarbon plumes emanating from the hatches or pressure-relief vents. The barges were either in transit, docked and being loaded or unloaded, or moored.

The third largest emissions category was oil and gas production sites. Of the estimated 500 storage tanks

Tim Doty, team leader of the TCEQ mobile monitoring operations unit, conducts fence-line screening for VOCs. The 100mm telephoto lens on the remote sensing camera allows investigators to search for VOC emissions from a distance. This investigative field trip concentrated on industrial facilities in the Beaumont area.

In the aftermath of Hurricane Rita last year, the high-tech camera was taken to Beaumont, Port Arthur, Port Neches, Orange, and Sabine Pass to look for leaking or uncontained VOCs. Although the industrial facilities had no electricity, the camera could detect heat. This proved helpful in finding downed power lines and determining whether chemical storage tanks were cooled sufficiently.

surveyed between Houston and Beaumont, about 50 were found to have emissions.

After gathering the study results, the TCEQ moved to fix the problems that had been uncovered. About 40 industrial sites with identified emission sources were contacted for emissions information. All of the companies contacted have responded to the requests for data.

Based on the study findings, bulk terminals in the Houston area have been additionally notified to revise their emissions inventories for 2002 to 2005.

As of late June, $380,000 in back emissions fees had been paid, and thousands of dollars more are expected.

As for barges, the TCEQ has no jurisdiction over those in transit. That authority falls to the U.S. Coast Guard. However, the TCEQ has been working with the Coast Guard, the American Waterways Operators, and the Louisiana Department of Environmental Quality to develop recommendations for better emissions controls.

Following up on study results for oil and gas production sites, the TCEQ joined with the Houston Advanced Research Center, a nonprofit research management organization, to study the amount of "flash" VOC emissions occuring when storage tanks receive liquid fuel from pipelines.

The HARC study, which is due for release by the end of summer, will be used to more accurately represent the emissions from this industry in the inventory.

Better Use of Resources

The TCEQ's increasing use of the remote sensing camera has led many private companies to aquire the technology as well.

In fact, the TCEQ is encouraging regulated companies to use this type of technology to identify leaks and make repairs as quickly as possible. Finding such emissions benefits the companies, too, because it is costly to lose raw product through leaks and operational inefficiencies.

While TCEQ officials are enthusiastic about remote sensing, they note its limitations. For example, the camera cannot identify the specific pollutant being emitted or the quantity released—other equipment is needed for that. And such conditions as steam or fog can hamper detection of VOCs.

However, the new technology goes a long way in making investigations more efficient and safe.

The cameras help the agency focus its resources on the areas most likely to be causing much of the VOC emissions problems. And agency investigators walking into potentially dangerous situations at industrial sites can now spot emissions from more than 100 feet away, as opposed to relying on handheld air monitors that require them to get within a few feet of the source.

"This is a powerful screening tool that provides enormous capability by being able to visualize and record gaseous emissions," says Steve Ligon, manager of the Air and Enforcement Section of Field Operations. "The challenge is for us to create an agencywide implementation strategy for this tool to find an appropriate role within agency programs."

Ligon said the TCEQ is working this summer to develop a comprehensive policy on the use of the remote sensing cameras.

Electronic Menu

Take your choice of e-payment, e-reporting, e-permitting, and other online services

Online government is a growing enterprise at the TCEQ as more and more electronic services become available. These choices offer a convenience to the companies, municipalities, and individuals conducting business with the agency.

The process of streamlining and modernizing services will improve the quality and timeliness of data, and ultimately save money by reducing the resources needed to receive and process paper.

In 2002, the TCEQ began moving some permitting and reporting functions to the Internet with the State of Texas Environmental Electronic Reporting System (STEERS). These services have expanded to the point that the agency has developed data systems that allow for electronic submittal of environmental information and electronic payment of fees.

The agency also is working to automate the review and approval of permit applications.

Here are the major e-services to emerge in recent years, as well as those soon to debut.

Electronic Payment

In coordination with TexasOnline, the TCEQ has built a system that enables agency customers to pay any invoiced fee and most permit fees online. The e-pay system processes about 870 transactions each month and has handled about $2.6 million since it became operative in September 2004.

TexasOnline, the state government Web site, also offers a business portal that provides a wide range of environmental information, such as the permits and licenses a small business owner might need from the TCEQ. The site is at **www.texasonline.com**.

Electronic Licensing

E-licensing is now available to individuals and companies needing to renew occupational licenses and registrations. Ten occupational licensing programs are available online. Eligible licensees who have completed their continuing education can renew their licenses online. Payments are made through TexasOnline.

Electronic Reporting

STEERS was designed to be a user-friendly program for TCEQ customers to submit environmental data electronically. The free service is available for certain programs in industrial and hazardous waste, petroleum storage tanks, storm water, and air emissions and maintenance events.

Since the Internet debut of STEERS in 2002, the TCEQ has received some 117,000 online submissions. Electronic reporting through an earlier desktop version of STEERS was made available in 1994.

The newest e-reporting component is for discharge monitoring reports. DMRs are required on a regular basis from most facilities holding state water quality permits. The 3,800 permitted water facilities in Texas generate more than 50,000 discharge monitoring reports each year.

Electronic Comments

E-comments are now received by the agency on all proposed rules. While public comment has always been a standard component of rulemaking, online accessibility makes it easier for the public to participate in the process.

Proposed rules scheduled for public comment are added to the e-comment list on the first date of the comment period and removed at the conclusion of the comment period. E-comments may be submitted at **www5.tceq.state.tx.us/rules/ecomments**.

The TCEQ is working with the Environmental Protection Agency and 11 other states to develop a DMR system that will be compatible with EPA's new database for water quality permits. The transition to this new system will be invisible to current eDMR users.

Electronic Permitting

Through STEERS, regulated entities have had the ability to submit electronic applications for coverage under two storm water general permits. Using TexasOnline, entities also can pay any invoiced fee and most permit fees.

Now e-permitting is under development to automate the review and approval of applications submitted electronically. Permit or registration types have been prioritized based on the number of applications, the complexity of each application and its review, database flexibility, and economic benefit to the state.

Based on these priorities, applications for storm water general permits and air permits by rule have been identified for inclusion in the first phase of the e-permitting initiative. The first release will support the 10,000 applications expected in August for renewals of multi-sector storm water general permits. Air permits by rule should be available online before the end of 2006.

The next phase, in 2007, will focus on registrations for dry cleaners and underground storage tanks.

The automated system will allow not only the submittal of forms but also the issuance of authorizations. The estimated time for the entire procedure of accessing the system, filling out a form, paying the application fee, and printing the permit authorization is less than 30 minutes.

Growing Pains

Of all the e-services projects undertaken by the TCEQ, e-permitting is one of the most complex.

To encourage use of the system, the TCEQ has notified all permit holders through letters and mail inserts, posted notices on the TCEQ's storm water Web page, and offered training sessions.

However, challenges remain, such as maintaining compliance with federal regulations concerning electronic reporting and managing complex permit application documents as they pass through the electronic workflow process.

Meanwhile, the Governor's Office is leading a streamlining efforts to revise the business portal at TexasOnline in order to provide a single point for collecting permit application data from new retail, construction, and child- and elder-care businesses.

The goal is for individuals to have to fill out only one set of forms. These forms would then be sent to the appropriate agencies for processing.

Besides assisting with this project, the TCEQ is mapping plans to eventually integrate the state's business portal with its e-permitting system.

See Government in Action

Live, from Austin, it's the TCEQ!

Starting this summer, public meetings held by the Commission can be viewed via computer—at no cost.

Under an agreement with TexasAdmin.Com Inc., the webcasts are conducted when the commissioners meet in public session twice a month to consider permit applications, enforcement actions, and other agency business, and during their monthly work sessions to discuss TCEQ programs and policies with staff.

TexasAdmin.Com also provides a six-month archive of the public meetings, which can be searched by agenda item. Sponsors of the webcasts are underwriting the company's cost.

The Texas Senate and House of Representatives have been broadcasting and webcasting committee hearings and chamber proceedings for several years, but the TCEQ is the first Texas state agency to authorize live streaming video of its public meetings.

This service makes it easier for the public to follow the process of environmental regulation, such as hearing the discussions that precede the commissioners' policy decisions. Ultimately, Texans gain greater insight into not just the TCEQ but state government in general.

The webcast linkup can be found on the TCEQ home page. Go to www.tceq.state.tx.us and look under "Express Links." Or go directly to www.texasadmin.com/cgi-bin/tnrcc.cgi.

INVOICE

Overdue Payments Draw Consequences

PAST DUE

The TCEQ is cracking down on tardy penalties and fees.

Starting Sept. 1, the agency will no longer issue, amend, or renew permits, registrations, certifications, or licenses to a person or entity that is delinquent on penalties or fees.

Executive Director Glenn Shankle said the agency will not declare an application administratively complete if the applicant is found to be delinquent on a fee or penalty. Also, the agency will withhold final action on any application that was ruled administratively complete before the agency knew about the overdue payments.

When fees or penalties are delinquent after Sept. 1, the applicant will have up to 30 days to make the catch-up payments.

Shankle noted that the new protocol has exceptions, such as for applicants who are on a TCEQ-approved payment plan or in the midst of a bankruptcy proceeding.

The new protocol represents the latest step in the agency's ongoing effort to make the enforcement program more effective. Dozens of reforms have been implemented in the last two years.

For more information, visit www.tceq.state.tx.us/goto/delin-protocol.

PD 020/06-3

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