



Lance Rosenfield/Prime

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<http://eagleford.publicintegrity.org/>

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KARNES CITY, Texas — When Lynn Buehring leaves her doctor's office in San Antonio she makes sure her inhaler is on the seat beside her, then steers her red GMC pickup truck southeast on U.S. 181, toward her home on the South Texas prairie.

About 40 miles down the road, between Poth and Falls City, drilling rigs, crude oil storage tanks and flares trailing black smoke appear amid the mesquite, live oak and pecan trees. Depending on the speed and direction of the wind, a yellow-brown haze might stretch across the horizon, filling the car with pungent odors. Sometimes Buehring's eyes burn, her chest tightens and pain stabs at her temples. On those days, she touches her inhaler for reassurance.

In another five miles Buehring, 58, passes into Karnes County, where she was born and once figured on living out her retirement, surrounded by a calm broken only by an occasional thunderstorm.

Today, however, the ranch-style house she shares with her 66-year-old husband, Shelby, is at the epicenter of one of the nation's biggest and least-publicized oil and gas booms. With more than 50 wells drilled within 2½ miles of their home, the days when the Buehrings could sit on the deck that Shelby built and lull away an afternoon are long gone. The fumes won't let them.



Known as the Eagle Ford Shale play, this 400-mile-long, 50-mile-wide bacchanal of oil and gas extraction stretches from Leon County, Texas, in the northeast to the Mexican border in the southwest.

Lynn Buehring and her husband Shelby, in Shelby's "man cave" at their home near Karnes City, Texas. (Lance Rosenfield/Prime)

Since 2008, [more than 7,000 oil and gas wells](#) have been sunk into the brittle, sedimentary rock. Another 5,500 have been [approved by state regulators](#), making the Eagle Ford one of the most active drilling sites in America. Energy companies, cheered on by state officials, envision thousands more wells scattered across the plains. It is, an industry spokesman says, an "absolute game-changer" for a long-depressed region of about 1.1 million people, some of whom suddenly find themselves with enough money to ensure their grandchildren's future.

From the porch of their little white house, the Buehrings can see, and often smell, evidence of the hell-bent rush to tap Texas oil.

In addition to the wells near their home, there are at least nine oil and gas production facilities. Little is known about six of the facilities, because they don't have to file their emissions data with the state. Air permits for the remaining three sites show they house 25 compressor engines, 10 heater treaters, 6 flares, 4 glycol dehydrators and 65 storage tanks for oil, wastewater and condensate. Combined, those sites have the state's permission to release 189 tons of volatile organic compounds, a class of toxic chemicals that includes benzene and formaldehyde, into the air each year. That's about 12 percent more than Valero's Houston Oil Refinery disgorged in 2012.

Those three facilities also are allowed to release 142 tons of nitrogen oxides, 95 tons of carbon monoxide, 19 tons of sulfur dioxide, 8 tons of particulate matter and 0.31 tons of hydrogen sulfide per year. Sometimes the

"I believe if
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-State Rep. Harvey
Hilderbran, a Republican
from Central Texas

emissions soar high into the sky and are carried by the wind until they drop to the ground miles away. Sometimes they blow straight toward the Buehrings' or their neighbors' homes.

The regulation of oil and gas extraction falls primarily to the states, whose rules vary dramatically. States are also responsible for enforcing the federal Clean Air Act, an arrangement that is problematic in Texas, which has sued the U.S. Environmental Protection Agency 18 times in the last decade.

For the past eight months, the [Center for Public Integrity](#), [InsideClimate](#)

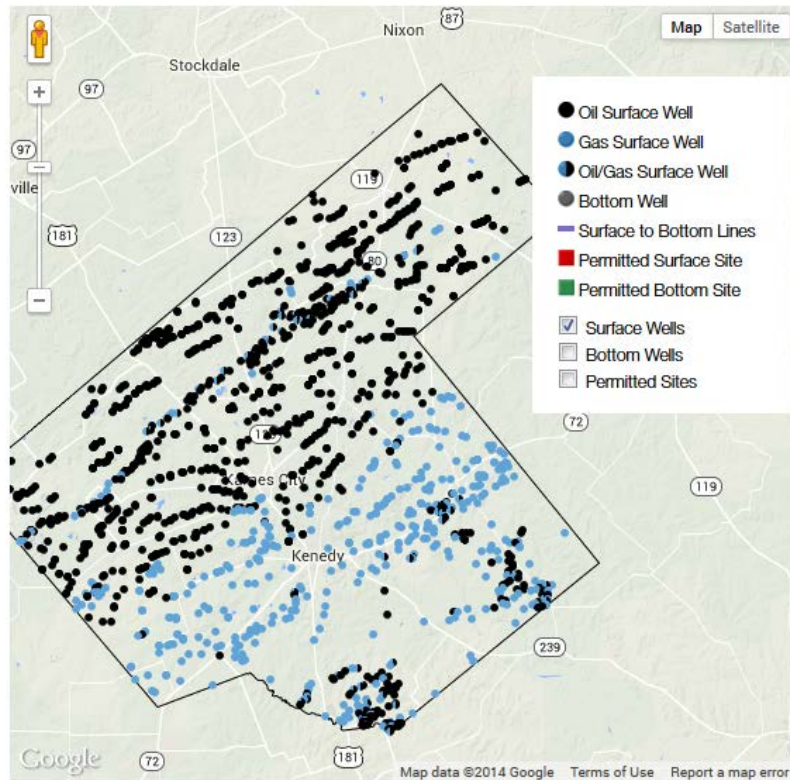
[News](#) and [The Weather Channel](#) have examined what Texas, the nation's biggest oil producer, has done to protect people in the Eagle Ford from the industry's pollutants. What's happening in the Eagle Ford is important not only for Texas, but also for Pennsylvania, Colorado, North Dakota and other states where horizontal drilling and high-volume hydraulic fracturing, or fracking, have made it profitable to extract oil and gas from deeply buried shale.

Our investigation and records obtained from Texas regulatory agencies reveal a system that does more to protect the industry than the public. Among the findings:

- Texas' air monitoring system is so flawed that the state knows almost nothing about the extent of the pollution in the Eagle Ford. Only five permanent air monitors are installed in the 20,000-square-mile region, and all are at the fringes of the shale play, far from the heavy drilling areas where emissions are highest.
- Thousands of oil and gas facilities, including six of the nine production sites near the Buehrings' house, are allowed to self-audit their emissions without reporting them to the state. The Texas Commission on Environmental Quality (TCEQ), which regulates most air emissions, doesn't even know some of these facilities exist. An [internal agency document](#) acknowledges that the rule allowing this practice "[c]annot be proven to be protective."
- Companies that break the law are rarely fined. Of the 284 oil and gas industry-related complaints filed with the TCEQ by Eagle Ford residents between Jan. 1, 2010, and Nov. 19, 2013, only two resulted in fines despite 164 documented violations. The largest was just \$14,250. (Pending enforcement actions could lead to six more fines.)

Oil and gas wells: Karnes County

Texas' Eagle Ford Shale region is littered with thousands of facilities



Map by John Bolger. Source: Texas Railroad Commission. Current as of fall 2013.

- The Texas legislature has cut the TCEQ’s budget by a third since the Eagle Ford boom began, [from \\$555 million in 2008 to \\$372 million in 2014](#). At the same time, the [amount allocated for air monitoring equipment](#) dropped from \$1.2 million to \$579,000.
- The Eagle Ford boom is feeding an ominous trend: A 100-percent statewide increase in unplanned toxic air releases associated with oil and gas production since 2009. Known as emission events, these releases are usually caused by human error or faulty equipment.
- Residents of the mostly rural Eagle Ford counties are at a disadvantage even in Texas because they haven’t been given air quality protections, such as more permanent monitors, provided to the wealthier, [more suburban Barnett Shale region](#) near Dallas-Fort Worth.

Texas officials tasked with overseeing the industry are often its strongest defenders, leaving the Buehrings and other families interviewed for this story to mostly fend for themselves. Oil money is so thoroughly ingrained in the Texas culture and economy that there is little interest in or sympathy for those who have become collateral damage in the drive for riches.

The TCEQ is [led by three commissioners](#) appointed by Gov. Rick Perry, a Republican who favors dismantling the EPA and voices doubt about climate change. TCEQ officials often go on to jobs as lobbyists for the energy industry they once regulated.

The [Texas Railroad Commission](#), which issues drilling permits and regulates all other aspects of oil and gas production, is controlled by three elected commissioners who accepted more than \$2 million in campaign contributions from the industry during the 2012 election cycle, according to data from the [National Institute on Money in State Politics](#).

State legislators who enact the laws that regulate the industry are often tied to it. Nearly one in four state legislators, or his or her spouse, has a financial interest in at least one energy company active in the Eagle Ford, a Center for Public Integrity analysis of personal financial disclosure forms shows.

Sidebar: [“Saturated with oil money, Texas legislature saved industry from pollution rule”](#)

“I believe if you’re anti-oil and gas, you’re anti-Texas,” state Rep. Harvey Hilderbran, a Republican from Central Texas, said during a [media panel discussion](#) in September.

The TCEQ declined to make any of its commissioners, officials or investigators available for interviews. In a prepared statement, it said air pollution isn’t a problem in the Eagle Ford.



Lynn Buehring in her home near Karnes City, Texas. (Lance Rosenfield/Prime)

“The air monitoring data evaluated to date indicate that air pollutants in the Eagle Ford Shale area have not been a concern either from a long-term or short-term perspective,” the statement said. “Therefore, we would not expect adverse health effects, adverse vegetative effects, or nuisance odors in this area.”

But an interoffice memorandum obtained through the Texas Public Information Act indicates the TCEQ knows its statewide air monitoring system is flawed.



Lynn Buehring shows the mask and medicine mist that she relies on for breathing. (Lance Rosenfield/Prime)

“The executive director has extensive records of underestimated or previously undetected emissions from oil and gas sites. These are not isolated instances but have occurred statewide and indicate a pattern,” Richard A. Hyde, then deputy director of the TCEQ’s Office of Permitting and Registration, [wrote in the Jan. 7, 2011](#), memo. Hyde, now the [TCEQ’s executive director](#), through an agency spokeswoman declined to comment.

Since drilling came to Karnes County, Lynn Buehring’s asthma has worsened. Instead of using a breathing machine once or twice a month, she now needs it several times a week, and sometimes twice a day. She has also developed migraine headaches so intense that they’ve induced temporary blindness and brought her to the brink of unconsciousness.

The Buehrings complained to the TCEQ in 2012, [prompting investigators to check out](#) several Marathon Oil facilities near their home. At one point the emissions were so high, the investigators wrote in their report, that they “[evacuated the area quickly to prevent exposure](#).” Marathon, a Houston-based company worth nearly \$25 billion at the end of 2013, reported that it fixed the problem and was not fined.

Last summer, the air around the Buehrings’ house was so bad — Lynn described a rancid chicken stench — that she couldn’t sit outside with Shelby and watch the sunset, a nighttime ritual since they bought their house in 1995.

“There’s nothing we can do,” Shelby said. “Nobody is listening to us. They’re not going to stop, so we have to live with it or leave ... This is my home, and I hate it here.”

The health issues faced by people who live in drilling areas — not just in Texas but throughout the United States — simply don’t carry enough weight to counterbalance the financial benefits derived from oil and gas development, said Robert Forbis Jr., an assistant professor of political science at Texas Tech University.

“Energy wins practically every time,” Forbis said. “It seems cynical to say that, but that’s how states see it — promote economic development and minimize risk factors.”



'Help us ... before we all die'

The energy industry's impact on Americans living near drilling areas has been fiercely debated in the last decade, as the shale boom brought drilling to vast stretches of the United States. Much of the concern has centered on how methane and fracking chemicals can contaminate drinking water. But scientists say air pollution is an equally serious problem that receives less attention, in part because it's so difficult to track.

Plumes of contaminated air move with the wind. Some of the chemicals break down in sunlight or react with other pollutants to form new compounds. The evidence disappears quickly, while health effects may linger.

People who live close to oil and gas development — whether in Texas' Eagle Ford, Pennsylvania's Marcellus Shale or Wyoming's Green River Basin — tend to report the same symptoms: nausea, nosebleeds, headaches, body rashes and respiratory problems. Public health experts say these shared experiences point to a pressing need for improved air monitoring.

"If you have pockets of communities with the same symptoms downwind of similar sources, then there is a body of evidence," said Isobel Simpson, an atmospheric scientist at the University of California, Irvine, who studies air pollution around the world.

Chemicals released during oil and gas extraction include hydrogen sulfide, a deadly gas found in abundance in Eagle Ford wells; volatile organic compounds (VOCs) like benzene, a known carcinogen; sulfur dioxide and particulate matter, which irritate the lungs; and other harmful substances such as carbon monoxide and carbon disulfide. VOCs also mix with nitrogen oxides emitted from field equipment to create ozone, a major respiratory hazard.

Studies show that, depending on the concentration and length of exposure, these chemicals can cause a range of ailments, from minor headaches to neurological damage and cancer. People in the Eagle Ford face an added layer of risk: hydrogen sulfide, also known as H₂S or sour gas, a naturally occurring component of crude oil and natural gas that lurks underground.

Like asbestos entombed in a 50-year-old ceiling, H₂S usually isn't a problem if left undisturbed. Once liberated, however, it becomes a formidable threat, capable even in miniscule doses — a few parts per million or less — of aggravating asthma and causing nausea, headaches and eye irritation. It gives off a rotten-egg odor in lower concentrations but at



*A flare from a well site is situated near a rural home in Karnes County.
(Lance Rosenfield/Prime)*

around 100 parts per million the chemical knocks out the sense of smell and begins to act as an asphyxiant. At 1,000 ppm it **kills within minutes.**

Karnes County, in particular, is rich with H₂S. **According to data operators** have submitted to the Railroad Commission, the county's Person field has an average concentration of 16,399 ppm — 16 times the lethal dose — with a maximum concentration of 71,550 ppm. The Panna Maria field has an average concentration of 24,408 ppm and a maximum of 39,000 ppm.

H₂S and some other chemicals emitted during oil and gas production are so dangerous that the federal government has developed safety standards for workers who encounter them on a regular basis.

But there are no clear federal standards to protect people living near drilling sites — including children, the sick and the elderly — who intermittently breathe varying amounts of toxic emissions for years on end.

Scientists “really haven't the foggiest idea” how oil and gas development affects public health, said Aaron Bernstein, associate director of the Center for Health and the Global Environment at Harvard University. Bernstein blames the information gap on a lack of monitoring and research, particularly in the rural, less affluent communities where most of the drilling occurs.

“It's not as though there isn't reason to be concerned,” he said. “These are industrial activities with known emissions that are known to affect people's health.”

Complaints lodged with the TCEQ hint at the scope of air problems in the Eagle Ford.

On Dec. 7, 2011, a woman in Frio County smelled “an oil and rotten egg odor” around 2 a.m. and woke up “with an upset stomach and horrible headaches.”

On April 10, 2012, a family in Atascosa County reported an odor “so bad that their lungs feel as if they will burst.”

“Help us residents of South Texas before we all die,” a Gonzales County resident pleaded the same day. The complaint alleged that an operator had dug a hole in the ground and buried “oily drilling waste...sometimes with diesel fuel, chemicals and oil floating on it.”

Nearly 300 complaints have been filed by Eagle Ford residents since 2010. But for every person who bothers to call the TCEQ, untold others suffer in silence. Among them: Mary Alice Longoria, an X-ray technician at a state prison who lives with her husband in a mobile home near Kenedy, in Karnes County. The Longorias have owned their 2½-acre plot for more than three decades. Until a year ago, Mary Alice could sit on her deck and see only rolling pasture, occupied by horses, cows, deer and the occasional dove hunter.



Detail of an entrance to a well site, with a sign warning of “Poisonous Gas: H₂S Present.” H₂S is Hydrogen Sulfide gas. (Lance Rosenfield/Prime)

Now, oil rigs and storage tanks mar her view and send foul odors, noise and blinding lights into her home. A flare ebbs and flows in the distance. She no longer allows her 2-year-old grandson, Gabriel, to play in the backyard because “I’m afraid for his health.” Family barbecues, a staple of South Texas life, have been discontinued.

If the flare burns through the night, Longoria said, she often finds a sticky deposit on the windshield of her pickup truck when she rises before dawn to go to work. Lynn Buehring, who lives about five miles away, described a “greasy, yellow substance” on her windshield.

Longoria hasn’t confronted the operator of the drilling site, having concluded it would do no good. Nor has she tried to contact the state. She wasn’t sure which agency would even field a complaint, she told a reporter; she’d never heard of the TCEQ.


The TCEQ maintains that people like Longoria have nothing to fear.

“[M]onitoring data provides evidence that overall, shale-play activity does not significantly impact air quality or pose a threat to human health,” agency spokeswoman Andrea Morrow wrote in an email. “While improperly operated facilities can result in temporary, local, unauthorized emissions, there are no indications that these emissions are of sufficient concentration or duration to harm residents of the Eagle Ford or Barnett shales.”

Omar Garcia, president of the South Texas Energy & Economic Roundtable — STEER — the communications arm of the 11 biggest Eagle Ford operators, predicts a “huge reduction in flaring” as more pipelines are installed to capture pollutants.

“The oil and gas industry places a premium on safety and the environment,” Garcia said. “All the operators follow strict guidelines.”

Patchy monitoring



Experts interviewed for this story say Texas doesn't have enough data to be able to claim, with any assurance, that the air is safe.

The TCEQ relies primarily on field canister samples, on-the-ground investigations and aerial surveys with infrared cameras to detect emissions. Last summer, the agency used the cameras during two flyovers to capture hundreds of images of the Eagle Ford. A contractor then surveyed 16,015 oil and gas storage tanks and found 800 with leaks, TCEQ spokesman Terry Clawson said.

Asked how the agency dealt with the polluters, Clawson did not respond.

Scientists say that while these spot checks are important, they are no substitute for strategically placed, stationary monitors that continuously measure how air quality changes over time.

The TCEQ has only [five permanent monitors](#) in the Eagle Ford, all positioned far from the most heavily drilled areas. The Barnett Shale in North Texas, by contrast, has 35 permanent monitors, even though that field covers only about 5,000 square miles — a quarter of the area of the Eagle Ford.

“The biggest challenge with air monitoring is having the measurements in place so you can catch the times when concentrations are high,” said Rob Jackson, a Duke University scientist who studies pollution from shale extraction.

The monitor closest to the Buehrings' house is in Floresville, 25 miles away, so it's hard to know how the couple might be affected by the plants and wells that surround them, Jackson said. Their daily exposures would vary dramatically based on wind direction, weather patterns and the rate of emissions from each well and plant.

The TCEQ has no plans to add air monitors in the Eagle Ford, but Clawson said it has contracted with the University of Texas “to conduct mobile monitoring upwind and downwind of the Eagle Ford Shale area.”

The goal of that study, however, isn’t to measure air emissions in the Eagle Ford. Instead, it aims to figure out how Eagle Ford pollution may be affecting cities like San Antonio, just beyond the shale play.

The study’s director said the data will be gathered from the monitor in Floresville. With no wells nearby, “our sampling wouldn’t be overcome by immediate emissions,” said David Sullivan, a research associate with the University of Texas’ Center for Energy and Environmental Resources.

San Antonio’s ozone levels have violated federal standards [dozens of times since the drilling began](#). Ozone is one of several greenhouse gases, including methane, released or created during drilling operations. Experts are particularly concerned about methane because it’s a powerful greenhouse gas and large-scale leakage could undermine natural gas’ reputation as a cleaner alternative to coal.

Even the EPA doesn’t know much about methane emissions or the other pollutants from oil and gas production. An [inspector general’s report](#) last year concluded that the agency’s air emissions database is incomplete and “likely underestimates” those emissions. The lack of reliable data, the report said, “hampers EPA’s ability to accurately assess risks and air quality impacts from oil and gas production activities.”

Environmental groups have tried to collect their own air-quality data in the Eagle Ford, but the process is so expensive and time-consuming that they’ve had little success.

Last March, Wilma Subra, an environmental consultant from Louisiana, and Sharon Wilson of the advocacy group Earthworks, accompanied Calvin Tillman, who runs a nonprofit called ShaleTest, as he took air samples near Mike and Myra Cerny’s one-acre tract, about a half-mile from the Buehrings.

There are at least 17 oil wells within a mile of the Cernys’ small house. Their teenage son, Cameron, gets frequent nosebleeds, and the fumes make his parents dizzy, irritable and nauseous. “This crap is killing me and my family,” said Mike, a former oil company truck driver. “We went from nice, easy country living to living in a Petri dish.”

Myra complained to the TCEQ in 2012, and [the agency cited Marathon Oil](#) for operating a broken flare and failing to report thousands of pounds of unauthorized emissions at its Sugarhorn Central gas processing plant. But Marathon paid no penalty. “I feel like we’re expendable,” Myra said.

"This crap is killing me and my family. We went from nice, easy country living to **living in a Petri dish.**"

-Mike Cerny,
former truck driver

The [Cernys have sued Marathon](#), hoping to get enough money to move away from the drilling. Marathon spokeswoman Lee Warren said in an email that the company “took corrective actions” after receiving the state citation and engaged in “good faith discussions with [the Cernys] to listen to and address their concerns.”



Lynn Buehring shows the mask and medicine mist that she relies on for breathing. (Lance Rosenfield/Prime)

Marathon had monitoring done around the family’s house in 2012, prior to the filing of the lawsuit, and found “no levels of air contaminants in excess of regulatory limits,” Warren wrote. “The TCEQ conducted further visits to the Sugarhorn site in 2013 and has closed out that case.”

The air samples the [environmental groups took](#) near the Cerny home detected 14 VOCs, including benzene, toluene and xylene, but none in concentrations the TCEQ considers immediately dangerous. Subra said that doesn’t mean the air is safe, because the data came from a “grab sample” that represented only a snapshot in time.

She and other scientists say there’s another factor that state and federal health guidelines don’t consider: the added risks of breathing many chemicals at once.

Guidelines are set for one compound at a time without considering what happens when people are simultaneously exposed to multiple chemicals. To add to the confusion, scientists don’t know much about some of the chemicals emitted, and certain proprietary compounds are hidden from public scrutiny.

Neil Carman, who spent 12 years as an investigator with a predecessor to the TCEQ and now works for the Sierra Club, said any of the chemicals could cause illness but become more pernicious when combined. “What you get is a toxic soup,” he said. “I would be very concerned about people living there day after day and getting a semi-continuous toxic exposure.”

One way to reduce emissions is to identify and crack down on the worst offenders, said Jackson, the Duke scientist. His research in parts of Pennsylvania’s Marcellus Shale has shown that while most of the gas wells have relatively low emissions, a small group — 1 percent, 5 percent, or even a tenth of a percent — release an enormous amount of pollutants.

In Texas, however, the fast pace of drilling and the TCEQ’s shrinking budget make it difficult to find the culprits.

“If I have just a couple of wells to look at, it’s kind of easy to identify the good actors from the bad actors,” said David Sterling, chair of the University of North Texas Health Science Center. But that becomes much harder when thousands of wells are being drilled. “As much

as I would like to believe that industry can police itself, history has shown that that has not worked without sufficient oversight.”

The number of employees in the TCEQ’s Office of Compliance and Enforcement, which conducts investigations and performs air monitoring and other health-related duties, has fallen 13 percent since 2010, when drilling in the Eagle Ford began picking up. Over the same period, the agency’s overall budget dropped 34 percent.

“State agencies don’t have the resources — and in a lot of cases they don’t have the political will — to implement regulations, monitoring and enforcement to keep pace with what’s going on in the field,” Subra said. “Yet they continue to grant [drilling] permits.”



Wilma Subra, left, an environmental scientist and president of Subra Company Inc., and Sharon Wilson, right, of the environmental group Earthworks, present a report on the Eagle Ford to residents of Karnes County and surrounding areas at a public meeting. (Lance Rosenfield/Prime)

Indeed, the Texas Railroad Commission rarely denies a drilling permit. From January 2003 through September 2013, it issued nearly 200,000 statewide. Only 650 — or 0.3 percent — were rejected.

The Railroad Commission’s enforcement record, like the TCEQ’s, has come under criticism. In fiscal year 2012, it referred for enforcement action only 2 percent of the 55,000 violations its field staff found statewide, [according to the state Sunset Advisory Commission](#), whose mission is to eliminate “waste, duplication, and inefficiency in government agencies.” Of the 217 fines levied, the average was less than \$9,000.

Railroad Commissioner David Porter said fines don’t tell the whole story. “We’re more concerned about bringing people into compliance than we are in punishment after the fact,” he said in an interview. One way to do this, he said, is through a process called severance: The commission can order companies to halt production if they don’t adhere to the rules; production can resume only after the problems have been fixed.

The commission has sent out about a quarter-million severance notices over the past 10 years. In 62 percent of the cases, the mere threat of a crippled well was enough to prod the operator into compliance, spokeswoman Ramona Nye wrote in an email. Another 32 percent were resolved after a severance order was issued. The rest required fines or closure.

Asked how many wells were closed by the commission last year, Nye wrote that such information was “not readily available.”



Texas' regulatory efforts are also hamstrung by a law that allows thousands of oil and gas facilities — including wells, storage tanks and compressor stations — to operate on an honor system, without reporting their emissions to the state.

Operators can [take advantage of this privilege](#) — called a permit by rule, or PBR — if their facilities emit no more than 25 tons of VOCs per year and handle natural gas that is low in hydrogen sulfide. Two employees in the TCEQ's air permits office — Anne Inman and John Gott — estimate these PBRs could account for at least half of the hundreds of thousands of air permits the agency has issued for new or modified oil and gas facilities since the 1970s.

"It's probably not even fair to call them permits," said Ilan Levin, an Austin-based lawyer with the Environmental Integrity Project, a research and advocacy organization. "The regulators don't have a clue as to what's really coming out of some of these facilities. They're just ever-so-gently regulated; that's exactly what the state of Texas has intended."

Operators with this type of permit aren't required to file paperwork backing up their self-determined status, so the TCEQ has no record of most of the facilities' locations or emissions. A [chart generated in 2011](#) by the office of then-TCEQ deputy executive director Zak Covar says the permits "Cannot be proven to be protective. Unclear requirements for records to demonstrate compliance with rules."

Levin said there's some justification for PBRs — "it would overwhelm the [TCEQ] if you had every mom-and-pop oil and gas operator out there filling out applications that had to be reviewed by regulators."

But Levin said the system is open to abuse.

Big operators sometimes get a PBR for each component of a facility. Each might be under the 25-ton-per-year threshold that would require a more rigorous permit, but the facility as a whole could emit more than that.

The TCEQ refers to the practice as the “[stacking of multiple authorizations](#),” and the memo from Covar’s office said its use “means that protectiveness and compliance with the rules cannot be demonstrated.”

The TCEQ also has trouble dealing with “emission events” — unplanned releases above and beyond what operators are allowed to discharge during standard maintenance, startup and shutdown activities. Emission events are usually caused by human error or faulty equipment.

The number of emission events associated with oil and gas development doubled between fiscal years 2009 and 2013, from 1,012 to 2,023. The amount of air pollutants released into the Texas air during these events increased 39 percent.

A [gas processing plant](#) in McMullen County, in the southwestern portion of the Eagle Ford, reported [166 emission events last year](#), almost one every other day. From 2007 through 2011, the Tilden plant, owned by Regency Energy Partners of Dallas, discharged 1,348 tons of sulfur dioxide during such episodes. That’s more than 30 times the amount it was legally allowed to release during “normal” operations.

Companies are required to report emission events within 24 hours. But they don’t always comply.

Marathon waited three months to report [a 2012 incident](#) at its Sugarhorn plant near the Cernys and Buehrings. It released 26,000 pounds of VOCs in 12 hours, 1,000 times more than [allowed under its air permit](#).

“It’s probably not even fair to call them permits. **They’re just ever-so-gently regulated**; that’s exactly what the state of Texas has intended.”

-Ilan Levin



Clearing and grading take place for a new Marathon Oil fracking and well site in the Eagle Ford Shale, near Karnes City, Texas. (Lance Rosenfield/Prime)



Few fines for violations

Eagle Ford operators that violate state regulations face few, if any, repercussions.

In an email, the TCEQ's Morrow said the agency has cited Regency's Tilden plant for five air violations over the past decade and that Regency has paid a single, \$3,000 fine.

Even then, Regency — which had a net income of \$48 million in 2012, the last full year for which data are available — wasn't punished for allowing chemicals to taint the air. Instead, it was fined for not reporting a Nov. 30, 2012, leak within 24 hours.

Morrow said fines are based on a facility's compliance history. Each facility receives a score and is rated high, satisfactory or unsatisfactory. The TCEQ considers the Tilden plant to be satisfactory, she said.

A spokeswoman for Regency, Vicki Anderson Granado, said in an email that the plant has been “modernized and improved throughout its history” and “was among the industry leaders” in adopting an acid gas injection technology that sends what would otherwise be air emissions deep underground.

Granado did not respond when asked why the plant had so many emission events last year.

Larry Soward, a former TCEQ commissioner with a reputation for being tough on industry, said the agency's enforcement strategy is shaped by its top-down management style. Its upper ranks consist of people who share Gov. Perry's business-friendly point of view, he said. Its middle managers and investigators “know the parameters very well in which they can operate. It's not unclear, especially to the field staff, who they can go after and who they can't.

“You have a regulatory system that says, ‘Well, even if you did something bad, we’re just going to say don’t do it again, or slap you on the wrist,’ and companies in industry know that,” Soward said.

He said his greatest regulatory success came after he left the TCEQ in 2009 and joined Air Alliance Houston, an environmental group, as a consultant in 2011. That year the group successfully helped lobby the legislature to increase the maximum TCEQ fine from \$10,000 per violation per day to \$25,000.

But the agency rarely imposes the maximum penalty.

Between January 2012 and October 2013, the TCEQ issued 117 fines statewide for violations related to oil and gas production. Operators paid less than \$25,000 in more than three-quarters of those cases, records show. The two fines that arose from complaints in the Eagle

Ford were both lower than that.

Houston psychiatrist Charles Covert, who owns a cattle ranch in La Salle County, filed [a sworn affidavit](#) with the TCEQ in April 2013 saying he had been “poisoned by [hydrogen sulfide] inhalation in his own ranch home compound and was seriously injured.” He said he required “intensive medical treatment by 5 doctors for the past seven months.”

Covert blamed his illness on discharges from the nearby Alderman Ranch Tank Battery, where Houston-based Swift Energy Co. has a well and stores crude oil and natural gas condensate, a mixture of hydrocarbon liquids. Swift, he alleged, operated the site for months without acknowledging the well was sour — a term that refers to high levels of hydrogen sulfide. Covert did not respond to interview requests.

After Covert complained, [TCEQ investigators went to the site four times](#). “The staff detected moderate to strong odors and experienced irritation of the eyes and a burning sensation in the throat during odor surveys,” the agency said in a statement.



Larry Soward, a former commissioner with the Texas Commission on Environmental Quality (TCEQ), and current chairman of Air Alliance Houston. (Lance Rosenfield/Prime)



Cattle graze near venting tanks which store produced water (white tanks) and condensate (green tanks) from oil and gas drilling activity nearby. The orange wind sock serves as a protection measure for the poison gas hydrogen sulfide. (Lance Rosenfield/Prime)

Swift, which had a net income of \$20.9 million in 2012, was cited for discharging air contaminants “in such concentration and of such duration” that could harm human health or property or impair quality of life. It was fined \$14,250.

In an emailed statement, Paul Vincent, Swift’s director of finance and investor relations, said the TCEQ citation “did not state that Swift Energy was causing adverse health effects, only that a potential for such effects was possible.” He said Swift paid the fine “without any admission of any violation alleged.”

More often than not, residents’ complaints lead nowhere, as Fred and Amber Lyssy discovered in April 2013.

The Lyssys raise pigs, goats and cattle on a 564-acre organic farm in Wilson County outside Floresville. The land is owned by Fred’s mother, Agnes Ramos, who for years has refused offers to lease the mineral rights for drilling. Some neighboring landowners have accepted, however, and the Lyssys’ land is now surrounded by wells, flares and holding tanks.

When foul odors swept across the farm, the Lyssys suspected a gas processing plant less than a mile away. Fred stopped letting his livestock graze on the pasture next to the facility and moved his and Amber’s bedroom to the opposite side of the house. They worry about how their three children — ages seven months, 3½ and 6 — will be affected by the pollution. They fear it will jeopardize their pledge to provide organic food to their customers.

“We are about liberty and freedom,” Amber said, “but they are trespassing with their emissions.”

The Lyssys’ anxiety mounted when six of their dogs — Anatolian Pyrenees that they use to work the farm — suffered mysterious, agonizing deaths. Five died within a few days of one



A view of the Lyssy family farm with a fracking operation nearby in rural Wilson County, adjacent to northwest of Karnes County. (Lance Rosenfield/Prime)



Amber Lyssy, center, holds open a chicken coop door while her son, Kaylen, 5, collects eggs. Amber holds her one-month-old son, Landon, while Mirabelle, 3, watches Kaylen. Fred Lyssy stands in the foreground. Fred and Amber and their three children live and work on their 564-acre organic farm near Floresville, Texas. (Lance Rosenfield/Prime)

another in February 2013. Amber said they began vomiting, scratching their heads bloody and whining for no apparent reason. Their veterinarian ruled out common substances like antifreeze and rat poison but could provide no explanation. The cost of a necropsy barred any more definitive answers.

After the Lyssys complained to the TCEQ, [inspectors made two visits to the area](#). Using an infrared camera and handheld gas monitors, they detected hydrogen sulfide and other unspecified emissions coming from a Hunt Oil complex with 12 crude oil tanks and a flare.



Fred Lyssy, right, works chores on his family's farm near Floresville, Texas. Two of his three children, Mirabelle, center, and Kaylen, left, look on from the bed of his pickup truck. Fracking operations have cropped up just beyond his fenceline. He and wife Amber are concerned about toxic emissions. (Lance Rosenfield/Prime)

A Hunt executive told the TCEQ he had no idea there were leaks and promised to repair the vents and oil tank hatches responsible for the emissions. The agency was satisfied and did not cite the company for any violations.

Three weeks later, the investigators returned for a third visit and again found hydrogen sulfide leaks, according to a TCEQ report. Again, Hunt — a private company with \$4 billion in revenue last year, according to [Forbes](#) — promised to get things fixed.

The investigation was closed in August with a notation that there were “no violations.” The Lyssys’ sixth Pyrenees, Big Boy, died in November after showing the same symptoms as their other dogs.

Paul Licata, Hunt’s vice president of environmental, health and safety, blamed the leaks found during the TCEQ’s follow-up visit on contractors who had done the initial repairs. When the inspectors discovered the site was still leaking, Licata said, Hunt responded immediately.

Jeanne Phillips, a Hunt spokeswoman, said the company “is pleased that the TCEQ found no fault with Hunt and we are proud of our longstanding policy of working closely with communities ... where we have operations.”

Oil companies are still pressuring Ramos to lease her mineral rights. They want the land so badly, she said, that company representatives have trespassed, lied, badgered and turned four of her six daughters against her.

“My daughters say, ‘But Mom, God put the oil on the land to be used, so you are going against God,’” Ramos said.

Ramos sees it differently. If she gave in to the oil companies, she said, “I would be going against God because he gave us this land to take care of.”

Lessons from the Barnett

Texas regulators and politicians had a clear idea of the problems that would arise in the Eagle Ford even before the drilling boom began.

Between 2003 and 2011, some 2,000 wells had been drilled within the city of Fort Worth, which lies atop the Barnett Shale formation, and six times that many were drilled in nearby communities. Tanker trucks rumbled past suburban lawns. Flares burned next to schools and playgrounds. An industry normally hidden in rural areas was suddenly visible to suburbanites, some of whom were frightened and incensed by the intrusion.

Under pressure from residents and the EPA, the TCEQ added more air monitors in the Barnett and agreed to respond to complaints in a timelier fashion. It also tightened its permit-by-rule regulations in the region.

The TCEQ was going to extend the new rules statewide, but in 2011 the legislature stepped in and passed a bill that effectively blocked the plan. The following year, the TCEQ itself limited the rules' use in the Barnett, restricting them to 15 of its 24 counties.

A [2012 agency memo](#) shows the TCEQ was fully aware that drilling companies needed more oversight. Titled "Findings and Lessons Learned from Barnett Shale Oil and Gas Activities," it said "nearly all of the issues documented [in the Barnett] arose from human or mechanical failure that were quickly



Results of air quality studies from fracking activities in the Barnett Shale around Fort Worth, Texas. (Lance Rosenfield/Prime)

remedied and could have been avoided through increase [sic] diligence on the part of the operator.”

Soward said Barnett residents got at least a little protection because they “yelled and screamed” until the TCEQ responded. But yelling — and organizing — doesn’t come naturally to most residents in the Eagle Ford, who tend to have fewer resources and less political power than people in North Texas.

The demographic differences may help explain why the city of Dallas recently passed one of the strictest setback rules in the country: No well can be drilled within 1,500 feet of homes, schools, churches and other sensitive locations. In Colorado, the equivalent rule is 500 to 1,000 feet depending on the type of building; it’s 500 feet in Pennsylvania.

Texas has no statewide setbacks, aside from a 1,320-foot buffer zone for facilities with high levels of hydrogen sulfide. For all other oil and gas sites, it relies on communities to take the lead. Eagle Ford counties like Karnes, LaSalle and McMullen have no restrictions despite a glut of drilling.



Every month, the Texas Railroad Commission updates an [online map of drilling activity](#) in the Eagle Ford, using green dots to represent oil wells and red dots to represent gas wells. Karnes County is almost entirely obscured by green and red; other counties aren’t far behind.

“Karnes County is ground zero,” said its chief administrative officer, County Judge Barbara Shaw. “We always have fears that the federal government is going to stop it.” Shaw, whose husband works in the oil industry, admits that the boom has brought about some unpleasant changes in the county of 15,000. Traffic deaths rose from two in 2010 to 25 in 2012, trucks are tearing up the roads, and monthly rents on houses have quadrupled, pricing out those with modest incomes.

Still, Shaw believes the benefits outweigh the disadvantages. Land that once sold for \$1,500 to \$2,000 acre now brings 10 or 20 times as much. Oil, the judge said, is “a natural resource that’s given by God to allow us to function I don’t think there’s anything wrong with that.”

The tax base for Karnes County’s industrial sector — which includes mineral rights, land and building values, and manufacturing — exploded from \$217 million in 2008 to \$6.2 billion in 2013, nearly a 28-fold increase.



Pipes carrying water for fracking operations line a gravel road in rural Karnes County. (Lance Rosenfield/Prime)

“The Eagle Ford Shale is the biggest economic investment zone in the entire world. It may go down as the largest oil and gas field ever discovered in the United States,” said Steve Everley, who works in Washington, D.C., for Energy in Depth, a research, education and public-relations arm of the Independent Petroleum Association of America. A former aide to Newt Gingrich, he’s a polished, thoughtful evangelist for oil and gas extraction.

Asked how poorer residents of places like Karnes City could expect to benefit, Everley said they might be able to find jobs in restaurants, or as truck drivers. The latter can make “six figures,” he said.

What about those whose lives have been disrupted, like the Buehrings and Mary Alice Longoria? Everley was not unsympathetic, saying they should complain to operators or the state if something is wrong, and that the industry “takes questions about air emissions or air pollution very seriously.”

Still, Everley made it clear he believes most of the naysayers are simply anti-drilling.

“I mean, are we going to prevent people from having jobs? Are we going to relegate an entire section of the state to continued poverty or are we going to move forward with economic development?”

Mary and Nolan Jonas accept the industry’s message — for now, at least. The couple, who were both born in Karnes County, began working the land soon after they were married 46 years ago. Nolan ran a farm and cattle ranch. Mary raised the children, two sons and a daughter, and taught math at Karnes City Junior High School for 20 years.

There were a few good years and a lot of bad ones, some really bad. Sometimes the land was so parched the crops withered, and the prairie grass dried so brittle the cattle had little to fill their stomachs.

But Nolan never gave up on his land. This was his home, his livelihood and his way of life.

Then came the Eagle Ford boom, and fortune was right underfoot. The Jonases sold their mineral rights to an oil development company. They won't say for how much, though Nolan said his grandchildren will never want.

"We had a lot of hard years on this land, but now it is giving back. It has made us prosperous," he said.



When the wind blows from the north, there's a piquant reminder of the bargain the Jonases have struck. A processing plant less than 150 yards from their property gives off an odor that Mary can't quite describe. Rotten eggs? Something oily? "It's an awful odor," she said. "I can't describe it because it's not like anything that I've ever smelled before." Will it harm them or their grandchildren, who play on a swing set as a bright orange flare trails smoke in the background? "I guess it's something to be concerned about, but I honestly hadn't thought about it," Mary said. "I've always just said we take the bad with the good."

To hear Everley tell it, the good will continue indefinitely. The Eagle Ford figures to produce for many years to come, and the industry is eyeing a new area — the Cline Shale in West Texas — for development.

"There is no end in sight," Everley said.

Contributors to this report include Alex Cohen, Chris Zubak-Skees, Zahra Hirji, Sabrina Shankman and Marcus Stern.

Correction: An earlier version of this article identified Zak Covar as the executive director of TCEQ in 2011. Covar was the deputy executive director in 2011, and did not become executive director until 2012.

Texas Officials Turn Blind Eye To Fracking Industry's Toxic Air Emissions

More than 2,400 air emissions permits have been issued in the Eagle Ford without safeguards to limit toxic chemicals breathed in by residents.

By David Hasemyer, InsideClimate News, and Ben Wieder and Alan Suderman, The Center for Public Integrity

February 18, 2014

<http://insideclimatenews.org/news/20140218/texas-officials-turn-blind-eye-fracking-industrys-toxic-air-emissions>

<http://www.publicintegrity.org/2014/02/18/14240/saturated-oil-money-texas-legislature-saved-industry-pollution-rule>

KARNES CITY, Texas—In January 2011, with air quality worsening in Texas' booming oil and gas fields and the federal government beginning to take notice, state environmental regulators adopted rules to reduce harmful emissions.

The industry rebelled. So did the state legislature.

A few months later, the legislature overwhelmingly approved SB1134, a bill that effectively prevented the new regulations from being applied in the Eagle Ford Shale region of South Texas, one of the fastest-growing oil shale plays in the nation. Since then, more than 2,400 air emissions permits have been issued in the Eagle Ford without additional safeguards that would have reduced the amounts of benzene, hydrogen sulfide, formaldehyde and other toxic chemicals that drift into the air breathed by 1.1 million people.

The Texas legislature's rush to protect the oil and gas industry reflects a culture in which politics and business are almost inseparable.

State Rep. Tom Craddick, who championed the House version of SB1134, owns stock in nine oil companies, five of which are active in the Eagle Ford. At the end of 2013, the stock was worth as much as \$1.5 million. That year Craddick, and the partnerships and



Residents from Karnes County, Texas, and surrounding areas attend a public presentation by Sharon Wilson and Wilma Subra of Earthworks, that details their findings of fracking emissions in the Eagle Ford shale. Panna Maria, Texas, Sept. 23, 2013. Credit: Lance Rosenfield/Prime

corporations he controls, received royalties of as much as \$885,000 for mineral rights. For decades he had a lucrative partnership with Mustang Mud, an oilfield supply company. Corporations, along with unions, are banned from giving directly to state candidates in Texas, but since 2000, industry employees and related political action committees have contributed more than \$800,000 to Craddick's campaigns, according to an analysis of data from the [National Institute on Money in State Politics](#).

The industry has also invested more than \$600,000 to help Craddick's daughter, Christi, win a seat on the Texas Railroad Commission in 2012. The Railroad Commission, which issues drilling permits, has been criticized for years for allowing its three commissioners to accept campaign contributions from the industry they regulate. But with support from the House Energy Resources Committee, of which Tom Craddick is a member, it has beaten back attempts at reform.

Other members of the Texas legislature also benefit from the oil and gas industry's largesse.

Forty-two of the body's 181 members or their spouses own stock or receive royalties from companies active in the Eagle Ford, according to a Center for Public Integrity review of thousands of pages of financial disclosure records. Their holdings are worth as much as \$9.6 million, according to a conservative estimate based on the 2012 data.

Gov. Rick Perry, who signed SB1134 soon after it landed on his desk, has collected more than \$11.5 million in campaign contributions from those in the industry since the 2000 election cycle. Attorney General Greg Abbott, the favorite to win the Republican nomination for governor, has raked in more than \$4 million. Since he has been in office, Abbott has sued the [U.S. Environmental Protection Agency](#) 18 times for interfering in Texas affairs.

Supporters say the oil and gas industry has been good to Texas, and they are right. The industry employed 315,000 people and paid \$8.5 billion in taxes in 2010. It has been particularly important to counties in the Eagle Ford. The tax base for the industrial sector in Karnes County, at the center of the drilling, exploded from \$217 million in 2008 to \$6.2 billion last year.

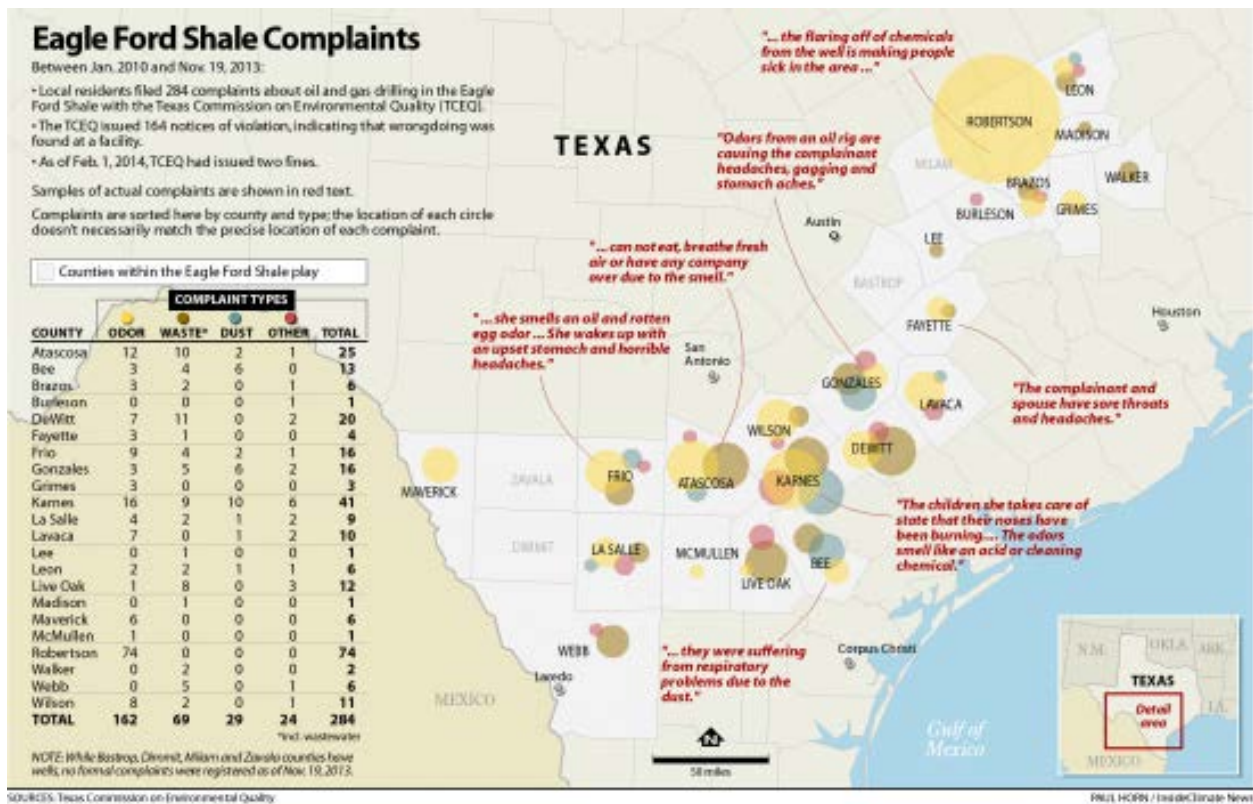
The downside of this surge in prosperity is the introduction of industrial-type air pollution to a rural area where people of limited means rarely share in the bounty and have little defense against an industry as iconic in Texas as longhorn steers.

Rep. Tim Kleinschmidt, a Republican who represents Karnes County in the state legislature, is no stranger to that industry. He has leased some of his own land to oil companies in the past, and the law firm where he practices specializes in negotiating oil and gas agreements. While his focus is now on commercial real estate, his first work for the firm was on those leases.

"I've practiced in an oil field my whole life," he said.

He acknowledges that the boom has created environmental and infrastructure challenges. On tours of the region he hears complaints about both. But he says he hears just as often about fortunes made overnight by residents who've leased their land.

Kleinschmidt said the industry is proactively addressing people's issues.



"I can't say too much in support of our oil and gas industry in Texas," he said. "Our oil and gas industry is very environmentally concerned."

That's not how Sister Elizabeth Riebschlaeger sees it.

The 77-year-old nun-turned-activist speeds through the Eagle Ford in her white Honda Civic, intent on exposing the ills she believes have been forced on residents by the oil and gas industry.

"They do not like to complain," she said. "They don't want to make trouble. They don't know they're being taken advantage of."

Most of the Eagle Ford's roughly 1.1 million residents live in small towns or on farms and have scant influence on lawmakers. About 23 percent have incomes below the federal poverty line, compared to 17 percent statewide and 15 percent nationally.

"Let's be blunt. That is not really a body of voters that the power structure in Austin [the state capital] has any real concern about," said Larry Soward, a former member of the [Texas Commission on Environmental Quality](#). Soward is now president of the board of Air Alliance Houston, an organization dedicated to reducing air pollution.

While the situation in Texas may be extreme, it's not unusual for politicians to be seduced by the industry, said Michael Nelson, a professor of environmental ethics and philosophy at Oregon State University.

"What's going on is the masking of a moral decision in a utilitarian kind of debate that puts more weight on what can be seen, in this case the financial benefit, [than on] what can't be as readily measured: the risks," Nelson said. "Those risks to health and environment aren't as perceptible as the financial benefit, so the cost benefit equation is tipped out of balance."

Business Comes First

People who suffer the effects of oil and gas emissions have few places to turn for help other than to the politicians and regulatory agencies that are often cheerleaders for, and financially beholden to, the industry.

“It doesn’t matter what the people say. *It ... does ... not ... matter,*” said Sharon Wilson, a leader in the Texas office of the environmental group Earthworks. An Earthworks [study](#) last year concluded “by failing to deter reckless operator behavior, [Texas] regulators practically condone it, thereby increasing health risks for residents living near oil and gas development.”

Rep. Lon Burnam, a Fort Worth Democrat who has served 16 years in the Texas House, is the most outspoken of a handful of legislators trying to curb the oil companies’ influence. He describes the legislature as “a wholly owned subsidiary of the oil and gas industry.”

In the last legislative session, Burnam introduced 12 bills that would have regulated or taxed the industry in some way. Most died in the House Energy Resources Committee, where six of the 11 members, including Craddick, own stock or receive royalties from the industry, according to their personal financial disclosures.

Sometimes it seems that everyone in Texas is connected in some way to the oil business, including even Burnam. According to his disclosure forms, his wife inherited mineral rights from her parents worth as much as \$10,000.

The Energy Resources Committee is led by Republican Rep. Jim Keffer, whose investment portfolio includes stock in Plains All American Pipeline, Anadarko Petroleum and Chevron worth as much as \$1.5 million at the end of 2013.

The committee’s vice-chair, Myra Crownover, is part owner of Robinson Drilling, a family-run West Texas company with 14 rigs that can drill more than two miles deep, according to its [website](#). Crownover says on her [website](#) that she was named the Texas oil and gas industry’s “Legislative Champion” last year.

Over the years, Robinson Drilling has been penalized by the federal [Occupational Safety and Health Administration](#) for numerous safety violations. Four Robinson Drilling workers have died since 2004, according to OSHA records. One worker has been paralyzed.

Crownover said in a statement that she is not involved in the day-to-day operations of Robinson Drilling, but knows the company “is fully committed to maintaining a safe working environment for its employees.”

“Incidents are down dramatically,” she said, “and Robinson Drilling has passed recent OSHA inspections without citations.”

Although Crownover benefits personally from the industry, she said she listens to diverse opinions when considering legislation before the committee. “Landowners, mineral owners, environmental groups, and the industry all have important and sometimes competing points of view,” she said in an email response to questions. “It is our job to sort it all out to ensure our environment is protected and all Texans benefit from the production of oil and gas.”

Soward, the former TCEQ commissioner who left in 2009, doesn't see it that way.

"The interests of the people ... are irrelevant to the extent that they differ from the interest of the industry," he said. "If someone has a problem with air quality or the roads being torn up or the land being ruined, they are not going to be listened to. They will not be heard because that is going against the interest of business."

The TCEQ, like the state legislature, is intertwined with the industry.

The agency's three commissioners are appointed by the governor and are paid \$150,000 a year.

Three of the last four commissioners later registered as lobbyists, and collectively have taken in between \$160,000 and \$420,000 since 2010. Jeffrey Saitas, the TCEQ's executive director from 1998 to 2002, also lobbies for oil and gas companies, among other clients.

In 2013 alone, Saitas banked between \$635,000 and \$1.3 million in fees, much of it from energy companies like Valero, Marathon Oil and DCP Midstream. That puts his total earnings as a lobbyist between \$6 million and \$12.3 million, according to financial disclosure records filed with the Texas Ethics Commission.

Saitas declined to comment for this article.

Modest Rules Ignite Uproar

Despite the industry's deep political ties, the TCEQ tightened its emissions standards in 2011.

Complaints from people in North Texas, where a gas-drilling boom had begun in the Barnett Shale in 2002, were drawing unwanted attention from the EPA. And a TCEQ study had found underestimated or previously undetected emissions at oil and gas sites.

"These are not isolated instances but have occurred statewide and indicate a pattern," Richard A. Hyde, then deputy director of TCEQ's Office of Permitting and Registration, wrote in a Jan. 7, 2011 interoffice memo obtained by InsideClimate News, the Center for Public Integrity and The Weather Channel.

Soward, the former TCEQ commissioner, said the rules were a modest attempt to placate people in Dallas-Fort Worth and head off EPA intervention.

"The state didn't want the federal government stepping in," Soward said. "I think TCEQ felt this was one thing they could do to have minimal impact on the industry but appear to strengthen regulatory action ... I think they were looking for a way out, not for a way to make things better."

The regulations required operators to install leak-detection systems and emission-control devices on equipment where none had been required before, and to reduce emissions when starting, shutting down and maintaining their wells. Operators of new wells would have to sample their releases and make the results available to state regulators. They would also be required to coat their storage tanks with reflective paint to reduce heat-generated emissions.

The rules were unexceptional when compared with regulations being considered in Colorado, also a major drilling state. But for the pro-industry Texas legislature, they went too far.

State Sen. Glenn Hegar, a Republican, led the opposition in the Senate while Craddick led the fight in the House. SB1134 prohibited the TCEQ from extending the new rules outside the Barnett Shale unless the agency first performed a time-consuming and costly analysis for each well application, proving that the benefit of improved air quality justified the additional cost to the operator.

Hegar, who is now running for state comptroller, prepared talking points to show where the TCEQ had erred. The second most generous donor to Hegar's campaign so far is Charles Scianna, president of Sim-Tex, a pipe manufacturer that services the oil and gas industry.

Instead of taking air samples in places where facilities were exceeding their state-approved emissions levels, samples should be taken in areas where facilities were in compliance, according to the undated talking points Hegar used to explain his objections to the rules.

"It would not be appropriate for TCEQ to use air quality monitoring data that has been, or will be, collected in areas where there are oil and gas facilities that are known to be operating out of compliance," the document said, because "TCEQ [should] address the non-compliant emissions from such facilities ... through enforcement against those facilities, rather than by including more stringent requirements in the new or amended permit."

A few months later, Hegar further handcuffed the TCEQ by placing a rider on the state budget bill. It prohibited the agency from using tax dollars to perform the cost-benefit analyses.

TCEQ spokeswoman Andrea Morrow said in a written statement that the legislation did not "significantly affect TCEQ's ability to implement new regulations." She did not elaborate or respond to further questions.

A year after the legislation became law, the TCEQ voluntarily narrowed the focus of its rules. Today the tighter standards apply in only 15 of the Barnett Shale's 24 counties.

While the legislature was slamming the door on the TCEQ's attempt to enforce new statewide emissions rules, it was also slashing the agency's budget.

Legislative appropriations for the TCEQ dropped 39 percent—from \$555 million in 2008 to \$341 million in 2013—even as the Eagle Ford was experiencing unprecedented growth in drilling. During that same period, the legislature cut the entire Texas budget just 8 percent.

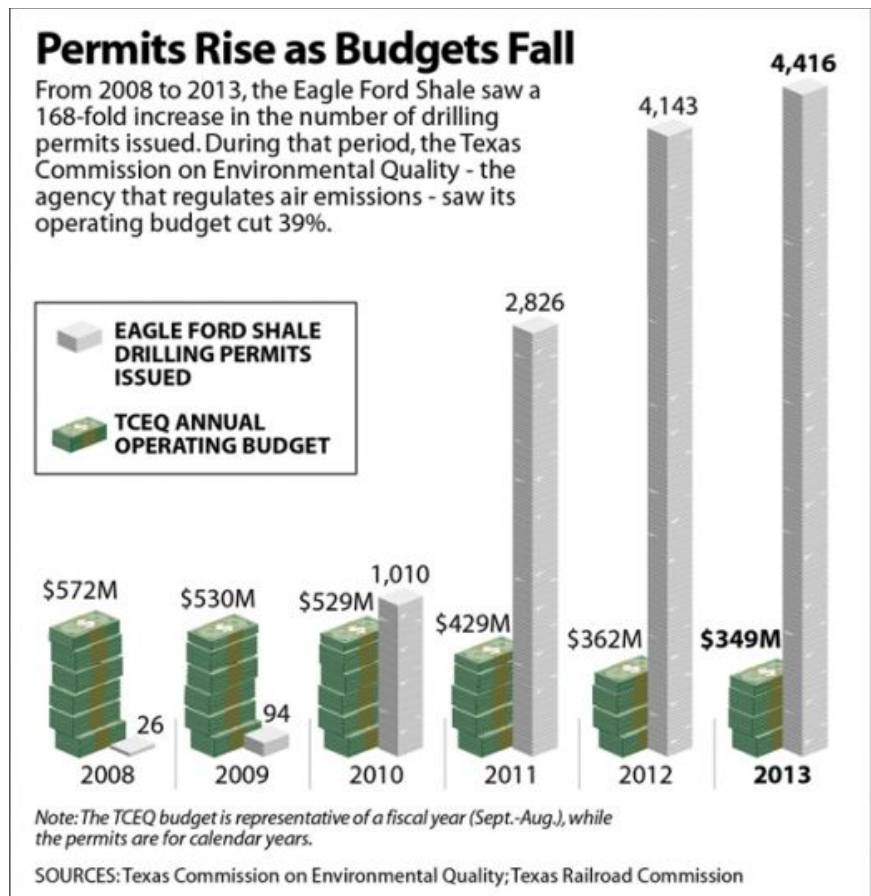
The TCEQ budget rose slightly in 2014, to \$372 million. But only \$3 million was allocated for regional air monitoring and just \$579,000 for air monitoring equipment.

Reforms Fail Again and Again

As the legislature was limiting the new air pollution rules, it was also snuffing out an attempt to reform the Texas Railroad Commission, which has long been criticized for bowing to powerful interests. Like the legislature and the TCEQ, the Railroad Commission

is powered by oil and gas industry money. Since 2010 the three current commissioners have accepted nearly \$2.3 million from the industry in campaign contributions.

The Sunset Advisory Commission, a legislative body charged with reviewing the efficiency of Texas agencies, urged legislators to dramatically reform the Railroad Commission. Among other things, it recommended that the Railroad Commission have one elected commissioner instead of three and that key decisions be made not by the commissioner but by independent administrative judges.



PAUL HORN / InsideClimate News

“Critics would argue that elected Commissioners pose a conflict for the agency’s regulatory role, as the costs of a statewide campaign often rely on campaign contributions from the regulated industry,” the Sunset Commission’s [2011 report](#) said.

Hegar, the state senator who with Craddick’s support had drawn up legislation to weaken the TCEQ emissions rules, chaired the Sunset Commission. He also introduced legislation to force the changes.

The reforms were necessary, he said in a [statement](#) at the time, to “meet the very tall test of balancing the protection of Texans and our environment while at the same time ensuring that the oil and gas industry remains vibrant in Texas.”

Hegar declined to discuss his support for Railroad Commission reforms or his pushback on the TCEQ rules. Legislative observers said Hegar’s pro-business bent likely motivated him to oppose tightening the emissions regulations and that growing public discontent with the Railroad Commission prompted him to support the commission reforms.

With Hegar’s support, the Senate voted 29 to 2 to approve the restructuring of the Railroad Commission. But the core reforms died in the House Energy Resources Committee, where Keffer, the nine-term Republican with hefty energy investments, presided over their demise. The committee, and then the full House, voted to keep three elected commissioners, but the House and Senate could agree only to defer the issue for two years.

Last year the Sunset Commission again hammered away at the Railroad Commission's deficiencies. It [recommended](#) that commissioners be barred from taking campaign contributions from the industry they regulate—and that they be required to resign if they run for another office.

Again the reforms died in Keffer's committee.

Tom Craddick, who sits on the committee, had a personal stake in the outcome of this fight.

Had the legislation been approved, his daughter, Christi, the railroad commissioner, would no longer be able to accept donations from the industry, whose contributions to her 2012 campaign accounted for 25 percent of her war chest.

"When rules intended to bring fairness and accountability to our public agencies are discounted the message is clear: the industry is setting the agenda," said Tom Smith, director of the Texas chapter of Public Citizen, a nonprofit public-interest advocacy organization.

The legislature later approved a bill that barred railroad commissioners from running for another office without first resigning from the commission, but Gov. Perry vetoed that bill. Its provisions would have applied to Chairman Barry Smitherman, who is currently running for Texas attorney general. According to campaign information filed on Jan. 15, he has raised more than \$2 million for his campaign, with energy company employees among his top donors. That included \$3,500 from employees of Range Resources, which controls more than one million acres of land in Texas and Pennsylvania.

Range Resources employees also donated more than \$5,000 to Smitherman's 2012 campaign for his commission seat, including a contribution from Jeffrey L. Ventura, the company's CEO.

Industry Boosters

The Railroad Commission defended Range Resources in a 2010 fight with the EPA.

Two families in a community just west of Fort Worth had complained that dangerous amounts of methane and benzene were poisoning their water wells. When the commission didn't act on the complaints, the EPA began investigating. It blamed the contamination on gas wells operated by Range Resources, and ordered the company to take a number of actions to solve the problem.

In 2010 the Railroad Commission, led at the time by Elizabeth Ames Jones, disputed the EPA's findings and conducted its own tests. It concluded that the methane and benzene were naturally occurring and voted 3-0 to absolve Range of the EPA's allegations.

"We'll see which is the real protection agency, and I'd say it's the Railroad Commission of Texas," Jones told [The Texas Tribune](#) after the vote.

Commissioner Michael Williams praised Range for standing up to the EPA.

"We owe an enormous thank you to Range Resources, because, quite frankly, they put up a diligent and aggressive defense of their operations," Williams said.

Both Williams and Jones received more than \$1 million in campaign contributions from the industry during their tenures. Jones resigned from the commission in 2012 to run unsuccessfully for the state senate. She is now a policy advisor at Patton Boggs, a Washington D.C.-based law and lobbying firm that advises U.S. and international clients on oil and gas projects.

Williams left the commission in 2011 to campaign for a U.S. Senate seat. He soon switched gears to run for an open U.S. House seat instead, but lost in the Republican primary. In 2012, Gov. Perry made Williams commissioner of the Texas Education Agency, the state's top education post.

The EPA eventually withdrew its order against Range Resources, saying it wanted to avoid an expensive legal battle.

Money Fuels Influence

Burnam, the Fort Worth Democrat who has tried for years to rein in the industry, has grown accustomed to such defeats. "It's a political environment that is not conducive to regulating in the interest of public health," he said.

Last year Burnam introduced legislation that included many of the environmental safeguards Colorado has adopted to police the drilling method known as hydraulic fracturing. Had the bill passed, companies would have been required to notify local officials before drilling within 1,000 feet of nursing homes, schools, hospitals and other occupied buildings. Companies also would have had to provide safety and health information to nearby residents through a public outreach program.

But opposition materialized quickly. The Texas Oil and Gas Association, Marathon, ConocoPhillips, Shell Oil, Chevron and other industry giants lined up to tell Texas legislators to kill the bill.

Bill Stevens, with the Texas Alliance of Energy Producers, told the House Energy Resources Committee that the requirements in Burnam's bill were too tough.

"You are establishing a baseline that is stricter and a higher standard than some people have or want in their communities," Stevens told Burnam in a cordial exchange captured by a video camera.

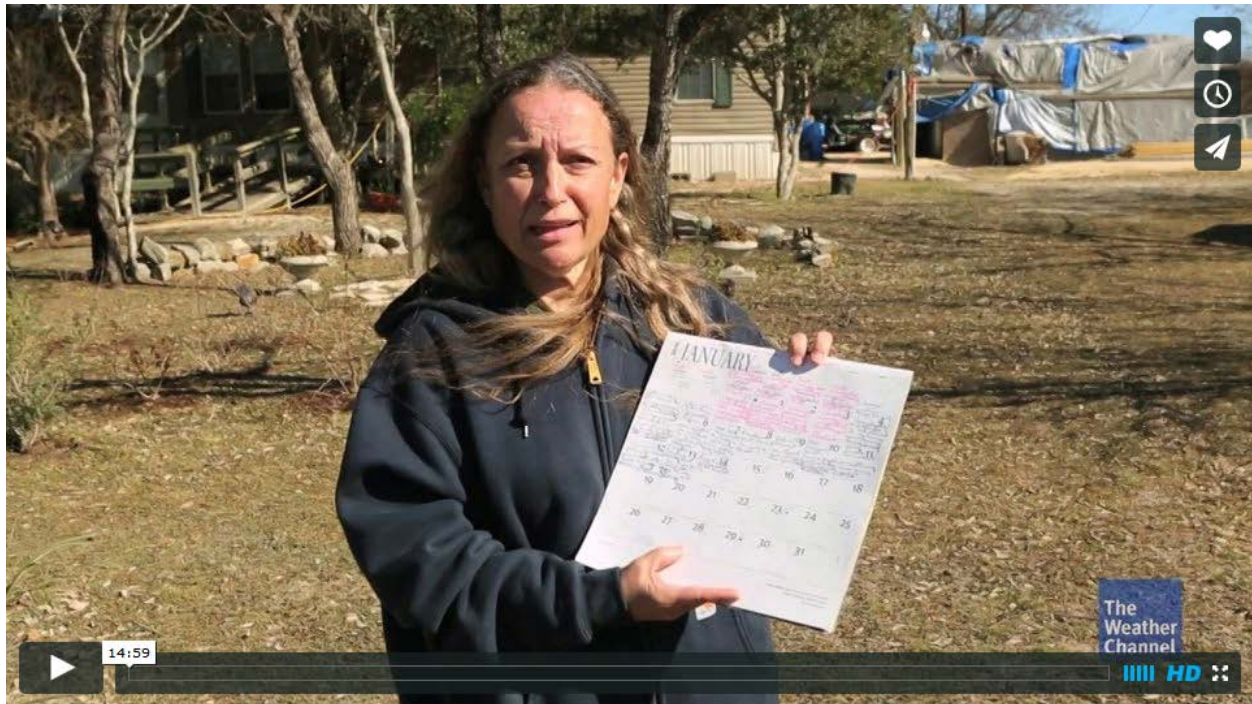
"That is definitely the purpose of this legislation," Burnam said. "I want to establish a baseline ... for the health, safety and welfare of the people."

After a short discussion of some of the bill's provisions, Stevens ended his testimony by saying: "If that is the baseline you are trying to establish for cities across the state, then that is something we oppose."

Burnam's bill died in committee.

This story has been jointly reported by InsideClimate News, The Center for Public Integrity and The Weather Channel. Contributors to this report include Lisa Song, Zahra Hirji, Sabrina Shankman and Marcus Stern.

Video: Fracking the Eagle Ford Shale



Greg Gilderman and Neil Katz, Executive Producers, The Weather Channel

February 18, 2014

<https://vimeo.com/86979931>

<http://stories.weather.com/fracking>

TRT: 14:59

VIDEO TRANSCRIPT - NARRATION IN BOLD

COLD OPEN

(Fred) At night sometimes, there's a flame over there, the whole sky is like, burning. I mean it looks like inferno or something.

(Lynn) There's stuff coming up into my throat and my nose is shutting down, and I can't get a breath.

(Ron) Texas was a very poor, agrarian state until oil was discovered. And I would suggest in large measure that our state is both funded, and controlled by this industry.

(Mrs. Lyssy) I can control what my kids eat, I can control what goes on their skin, but I can't control the air that's coming across from the neighbors.

(Joseph) Being 40 miles back on some ranch, with nothing but a little indicator that says the H₂S is present in the area, that stuff's so dangerous, that's 1,000 parts per million, you're dead.

END OF COLD OPEN

(Jim) The Eagle ford Shale formation is about 400 miles long, and about 50 miles wide. It's away from the big cities, it's not near population centers like Dallas Fort Worth. So it's mostly rural, it is a generally a poorer area of Texas, and for some reason it has not gotten a lot of attention nationally.

(Steve) It's also arguably the largest economic development in the entire world right now. There are a lot of different companies operating there, there is an enormous amount of investment flowing into the Eagle Ford, and it's just been an absolute game changer.

(Scott Pelley) There is a rush to some newly discovered oil fields in this country.

(Blake Farenthold) The Eagle Ford Shale and the district I represent has created over 400,000 jobs and roughly 2.6 billion dollars in salaries in a 13 county area.

(Lisa) You have thousands of wells now in the Eagle Ford. And this boom has been going really strong for at least 2 years, but you don't have any state air monitors in the places where the drilling is really booming. And if you don't have air monitors, you don't know what's in the air.

(Jim) I think air pollution associated with fracking, because it involves chemicals like hydrogen sulfide, because it involves carcinogens like benzene, could end up being a bigger public health threat, then let's say contaminated groundwater. // I think what they are saying in Texas, or the few who have spoken out, can we just slow it down a little bit, and make sure that we're not poisoning people.

END OF SECTION 1

Almost a year ago, I began travelling to South Texas, to see for myself what's happening in the Eagle Ford.

Seven thousand oil and gas wells have been sunk in this region, another five thousand are on the way.

This is Karnes County, the epicenter of the boom. New wells, relentless truck traffic. Flares everywhere.

The industry says all of this is safe. But people are worried.

(Rosie Reyna Arguellez) For myself, I've experienced a lot of difficulty with my breathing.

(Gunner Cantu) I used to come out here, this very park before all that was there and run, literally about four or five miles a day with, without any problems. Now I barely get a mile out before I start choking and it's just somethin', somethin' heavier with the air.

(Mary Alice Longoria) I have two and half acres and I can't bring my grandchild out here to enjoy it. Because I'm afraid for his health.

For the past eight months, InsideClimate News, The Weather Channel, and The Center Public Integrity have investigated air pollution in this region.

Oil and gas companies release thousands of tons of dangerous chemicals into the air each year.

Those gases, which include benzene, carbon monoxide, and formaldehyde, soar into the sky, then they land on schools, hospitals, and people's homes.

People in the Eagle Ford say they're getting sick, and their symptoms match the kinds of problems caused by these chemicals.

There's no scientific proof that their symptoms are caused by toxic air, because the studies haven't been done.

But as far as we can tell, regulators know almost nothing about what people in the Eagle Ford are breathing.

(Lynn) I've, you know, had problems before with allergies. But, these symptoms are different. Because what I had before were just mild breathing problems and they were occurring maybe once a month when the allergens were high.

Lynn Buehring and her husband were born in Karnes County.

They moved to this house to enjoy the big skies and quiet nights outside.

(Lynn) Well, then suddenly, this eagle ford shale stuff starts happening and I notice that stuff comes up into my throat and my nose is shutting down and there's this heaviness on my chest and it feels like an elephant is sitting here and it feels like someone is choking the air out of me, and I can't get a breath.

Lynn says her doctors blame her worsening asthma and her crippling migraines on the oil wells. It would be hard to say which well - more than 50 have been drilled within two and half miles of her home.

Fred and Amber Lyssy work a 564-acre, family-owned, organic farm on the northern edge of the Eagle Ford.

The Lyssys family won't lease their land to an oil company, but that hasn't stopped their neighbors.

(Amber) It just makes constant noise. They have bright lights on all night long. And that one was completed last summer. // And // It fared non-stop for a year.

(Fred) We're standing in the road, we own that side of the road. Ah, this is the neighbors. Where they're doing some massive // frack job. // Obviously you can hear the noise. // Pretty loud. Sometimes really echoes late at night. // But that flame's almost always going. // We don't feel safe having cattle or anything right here. If it did rain a whole bunch, or what kind of chemicals are coming this thing, we don't feel safe using this piece of land.

The chemicals released during oil and gas extraction include some of the most damaging volatile organic compounds, or VOCs, including benzene and toluene.

These chemicals have been linked to cancer, neurological problems, and other serious illnesses.

VOCs are released at every phase of oil and gas development: drilling, fracking, production and processing.

They're part of the fluid that is used to fracture the shale, and they are released from the earth when rock is cracked open. VOCs seep from well bores, storage tanks, flares, and even pipelines.

But oil fields in this part of Texas have an added danger: hydrogen sulfide.

It's a naturally occurring gas you'll find in some shale areas of the country but is especially abundant here.

In low concentrations it makes people sick, and in high concentrations, it can kill.

(Cynthia at Town Hall Meeting) We could smell, at times, hydrogen sulfide gas. We didn't know what it was at first. We could just smell rotten eggs. It was outside, very strong, very saturated. Then we could smell chlorine at times. Then we smelt crude oil at times. We knew what that was. I went over there where they were drilling, and I told them, "you're making us sick. Literally."

Cynthia Dupnik is among the people who say they've been getting sick since the boom began. I decided to visit her.

(Cynthia) This is a daily log of what we smell. If we can identify it. I will note on here the chemicals and I will note if we have any side effects from it and I'm doing it and I will continue doing this because I'm noticing we're gradually developing new symptoms off and on.

Cynthia lives in this small house, where she cares for her disabled daughter.

(Cynthia) My daughter has nosebleeds, I have sores in my nose at times, off and on, that don't want to heal correctly. There's something wrong about that picture especially when we didn't have it before.

When she could no longer tolerate the air, Cynthia complained to the agency responsible for policing the polluters, the Texas Commission on Environmental Quality, or TCEQ.

Since 2008, the number of wells in the Eagle Ford has skyrocketed, but the TCEQ had had its budget cut by a third.

Hundreds of complaints have poured in over the past few years from Eagle Ford residents. We wanted to know what they were doing about them.

Over the course of eight months, we made over a dozen interview requests.

And for eight months, the agency in charge of air emissions for hundreds of thousands wells affecting millions people, refused even a telephone interview.

The TCEQ did respond to us in an email. They told us:

“The air monitoring data evaluated to date indicate that air pollutants in the Eagle Ford Shale area have not been a concern either from a long-term or short-term perspective. Therefore, we would not expect adverse health effects, adverse effects, or nuisance odors in this area.”

(Steve on Fox News) They found this word “fracking,” which sounds like something you wouldn’t say to your grandmother.

We did speak with Steve Everly of Energy In Depth, a research and public-relations arm of the Independent Petroleum Association of America.

(Steve) The Texas Commission on Environmental Quality has actually gathered literally millions of data points on air emissions in the Eagle Ford region specifically, and they have come out and say that, you know, on balance-- Eagle Ford Shale development is not resulting in emissions that are threatening public health (CLEARs THROAT) or-- or causing any sort of high levels of air pollution that are (VOICE BREAKS) of concern.

We looked into what the TCEQ was monitoring – according to experts, not much.

While the agency does sporadic spot monitoring, we were shocked to learn that there are only five permanent air monitors in the entire Eagle Ford.

That’s five air monitors for an area nearly twice the size of Massachusetts. Karnes County is at the heart of oil and gas drilling in the Eagle Ford.

You’re looking at the closest air monitor. It’s more than 20 miles away.

(Jim) A lot of these events are very fleeting, they can be very intense. There can be a very high exposure to something like hydrogen sulfide or benzene and then it dissipates. It seems unlikely to me that this air monitor would pick that up.

The TCEQ knows there are problems. In this 2011 memo, the TCEQ acknowledges extensive records of underestimated or previously undetected emissions from oil and gas sites. These are not isolated incidents, but have occurred statewide, and indicted a pattern.

(Burnam) TCEQ is not uh a very good regulatory agency in fact if anything it is the contrary, they they specialize in making rules difficult and hoops difficult uh um jump through, but the fact of the matter is when it’s all said and done, time and time again, you see violation of the law, and no enforcement.

(Carman) I previously to this position worked for the Texas commission on environmental quality for 12 years inspecting industrial plants. // So I got a very good bird’s eye view of going into refineries, chemical plants, power plants, gas processing plants, and more. // but I also dealt with over a thousand citizen complaints // I // concluded that when citizens complained about air pollution they were always right. There was a problem.

(Steve) We’ve looked at actual data, and so have state regulators. and the consistent thing

that we've seen is that there are emissions, there are emissions from development and I think everyone would admit that. But the question is whether it's reaching a public health threshold, and that would threaten public health. And the data have consistently shown that that-- that threshold is not-- th-- that threshold's not being crossed.

The data haven't shown it because the data we need don't exist.

We know very little about air quality in the places with the most drilling, places like Karnes County.

(Lisa) In the Eagle Ford, we know that there are hundreds of complaints of people who live near these facilities and they're complaining of symptoms. A lot of them are symptoms that // we associate with hydrogen sulfide or VOCs or other chemicals. // Something like benzene, the effects don't show up until decades later. // We know benzene causes leukemia, but do we really want to wait 30 years before seeing leukemia in a place before you consider that as scientific proof.

What's going on in the Eagle Ford Shale is more subtle than a refinery explosion or an oil spill. A toxic soup of chemicals is being released into the air, day in and day out. We won't know the effects of these emissions for very a long time.

(Cynthia) The chemicals, the chemicals in the air. We can't get away from 'em, 'cause we live here. We're here 24/7. We cannot get away from it. We don't have another home to go to.

CREDITS

Fracking the Eagle Ford Shale: 6 Graphics

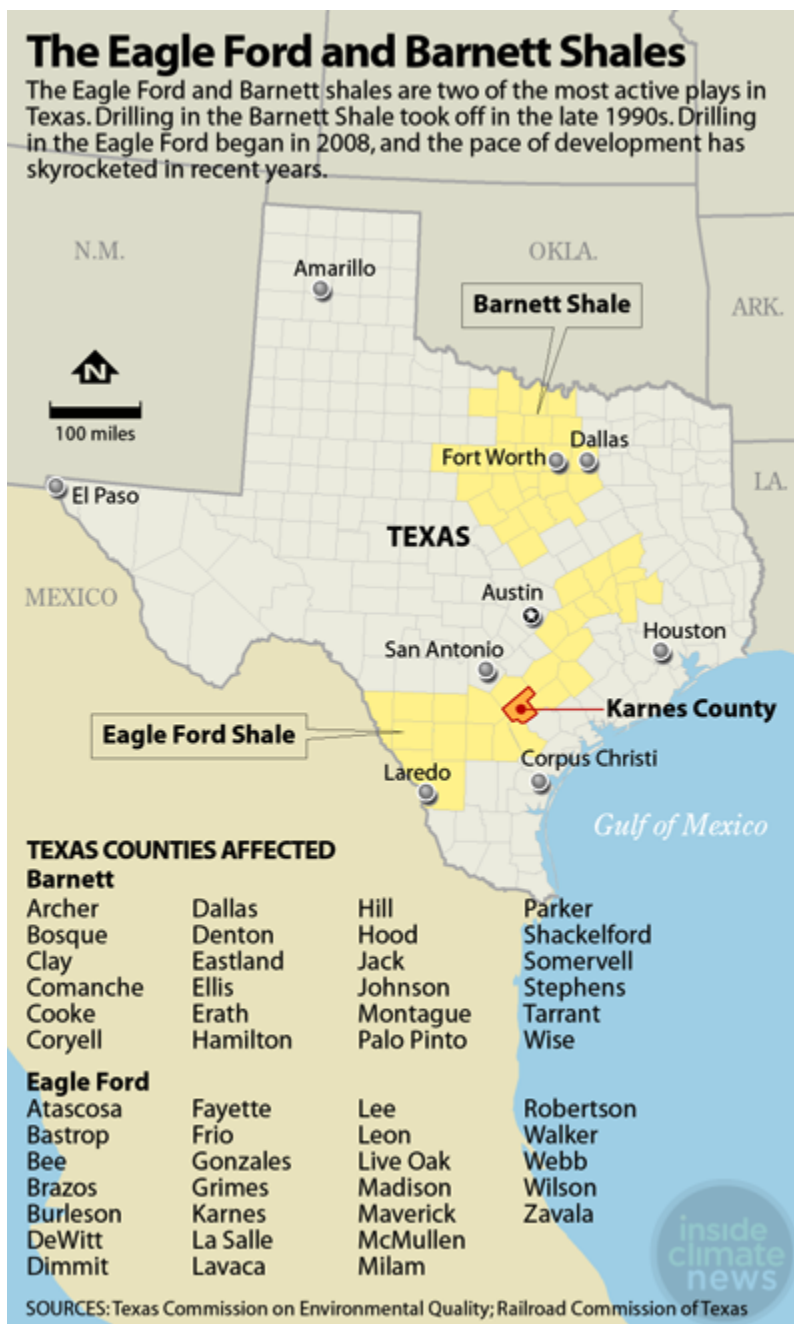
By Paul Horn (1 through 5) and John Bolger (6), InsideClimate News

February 18, 2014

<http://insideclimatenews.org/fracking-eagle-ford-shale-6-graphics>

1) The Eagle Ford and Barnett Shales

Since 2008, more than 7,000 oil and gas wells have been sunk into the brittle, sedimentary rock of the Eagle Ford Shale play. Another 5,500 have been approved by state regulators, making the Eagle Ford one of the most active drilling sites in America.

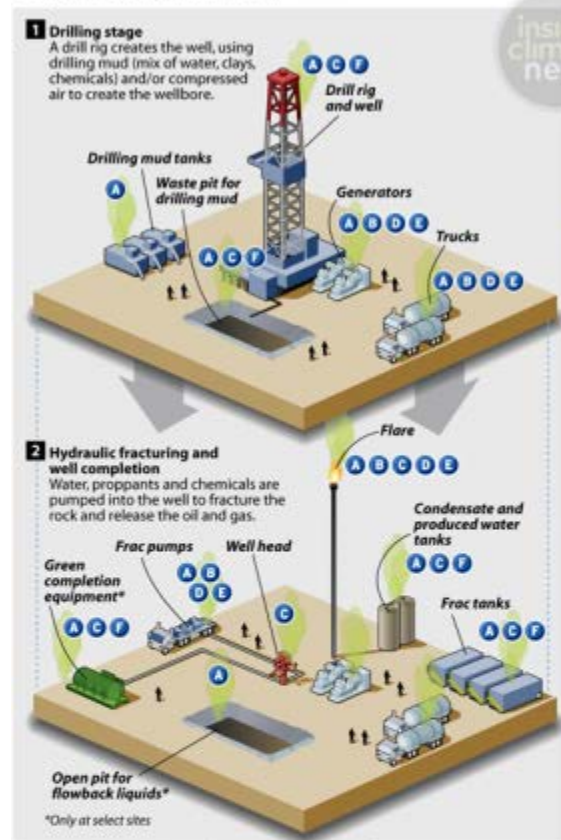


2) Air Emissions From Oil and Gas Development in the Eagle Ford

This diagram shows some of the many air emission sources during drilling, fracking, production and processing at an oil well in the Eagle Ford Shale.

Air Emissions from Oil and Gas Development in the Eagle Ford

There are more than 7,000 oil and gas wells in the Eagle Ford Shale, and Texas regulators have approved another 5,500. Most of them, like the one shown here, are oil wells that also produce condensate and natural gas. Developing these resources releases various air pollutants, some of which are shown in this simplified diagram.

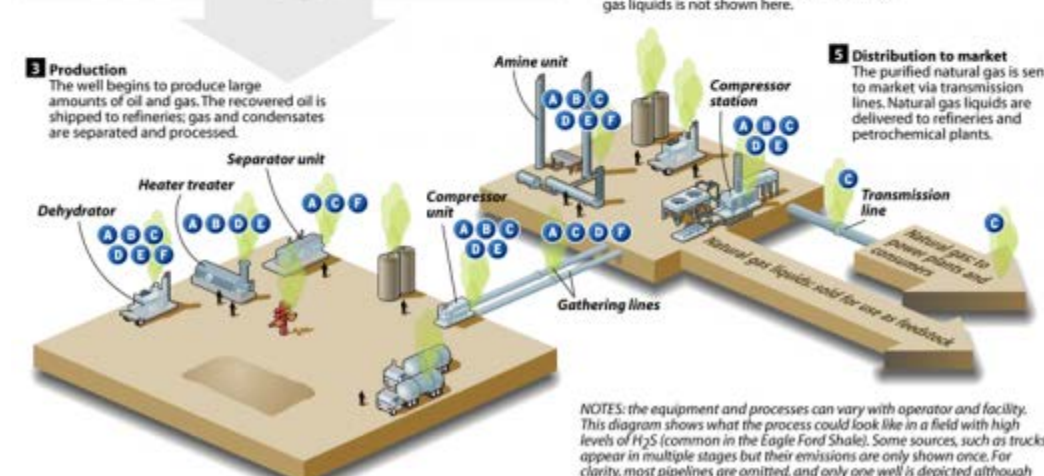


Emission Sources

The pollutants come from a number of sources, including the diesel- or natural gas-fueled equipment, the oil and gas itself, and leaks from storage devices. The emissions' actual and relative amounts vary widely based on operator practices and local geology. The emissions occur regularly in some cases, but are intermittent in others.

CHEMICAL	WHAT IT IS	WHAT IT DOES
A VOCs	Volatile organic compounds including benzene, formaldehyde	There are dozens of VOCs that make people sick. Some can cause cancer. VOCs react with NOx to form ozone, a respiratory irritant and greenhouse gas.
B PM	Particulate matter	Affects the heart and lungs.
C CH ₄	Methane	Main component of natural gas. Much more powerful than CO ₂ as a greenhouse gas.
D CO ₂	Carbon dioxide	Major greenhouse gas.
E NOx	Nitrogen oxides	Reacts with VOCs to create ozone.
F H ₂ S	Hydrogen sulfide	Toxic gas found in some gas fields. Causes illness and death at certain concentrations.

Fugitive emissions: pipelines, valves, pneumatic devices etc. leak methane, VOCs, H₂S and CO₂ throughout the entire process.

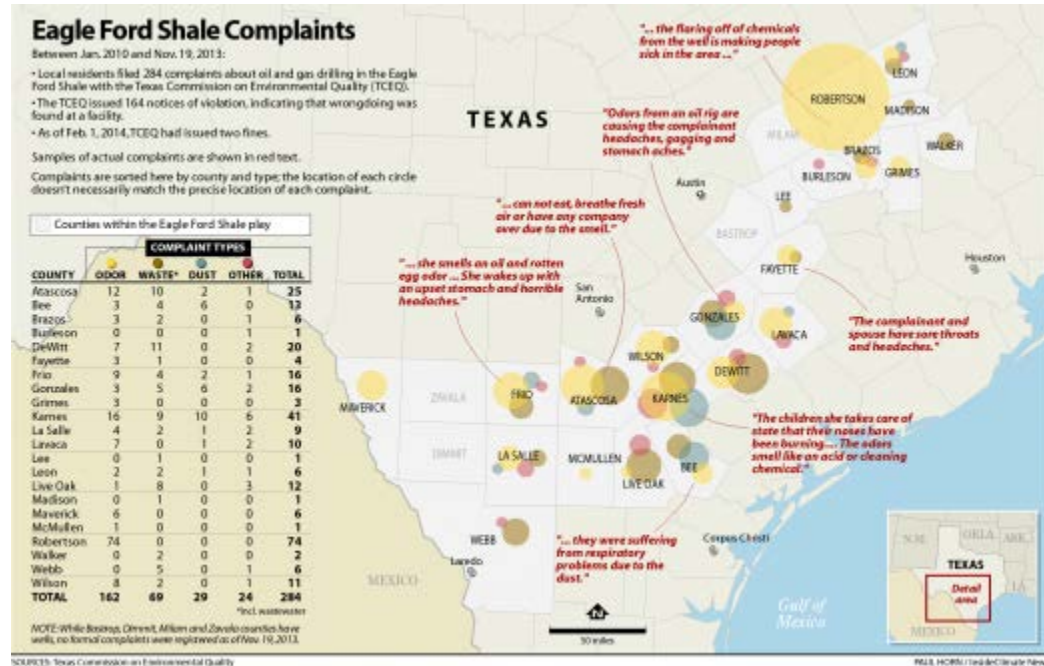


SOURCES: EPA and Schlumberger publications; experts consulted for various aspects of the diagram include Ramdin Alvarez (EDF), Richard Haut and Jay Oliguer (PARC), Alisa Rich (UNIT), Jim Tarr (Stone Lion Env. Corp), engineers from industry and Candoro-Enrlix.

Research by LISA SONG / InsideClimate News Graphic by PAUL HORN / InsideClimate News

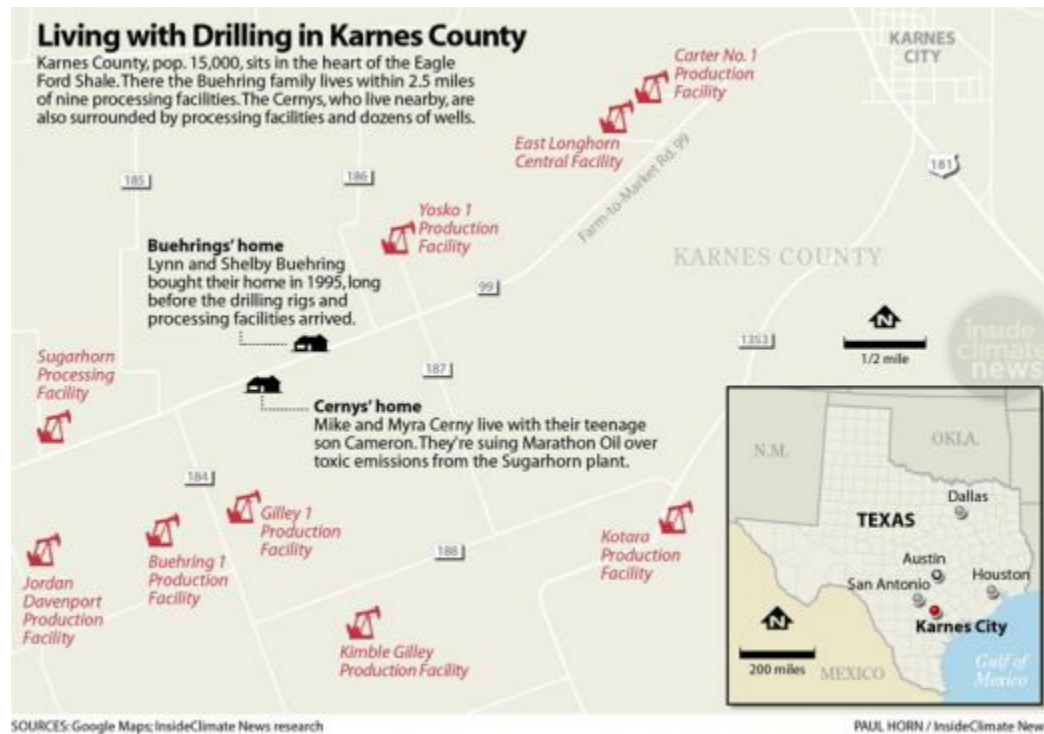
3) Complaints Lodged With Texas Environmental Regulator Hint at Scope of Air Problem

We scraped hundreds of entries in a citizens' complaint database run by the Texas Commission on Environmental Quality (TCEQ) to find the ones specifically related to oil and gas activity in the Eagle Ford Shale.



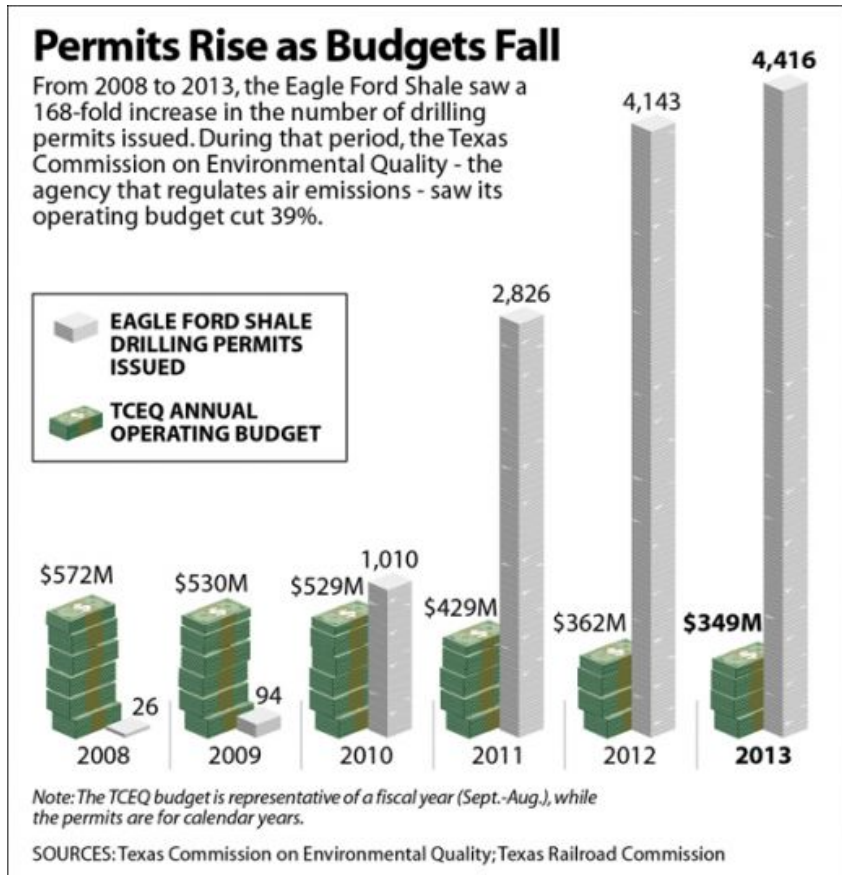
4) Living With Drilling in Karnes County

Karnes County, pop. 15,000, sits in the heart of the Eagle Ford Shale.



5) Permits Rise as Budgets Fall

From 2008-2013, the Eagle Ford Shale saw a 168-fold increase in the number of drilling permits issued. During that period the TCEQ saw its budget cut by 39 percent.



PAUL HORN / InsideClimate News

6) Oil and Gas Wells in Karnes County, Texas — An Interactive Map

