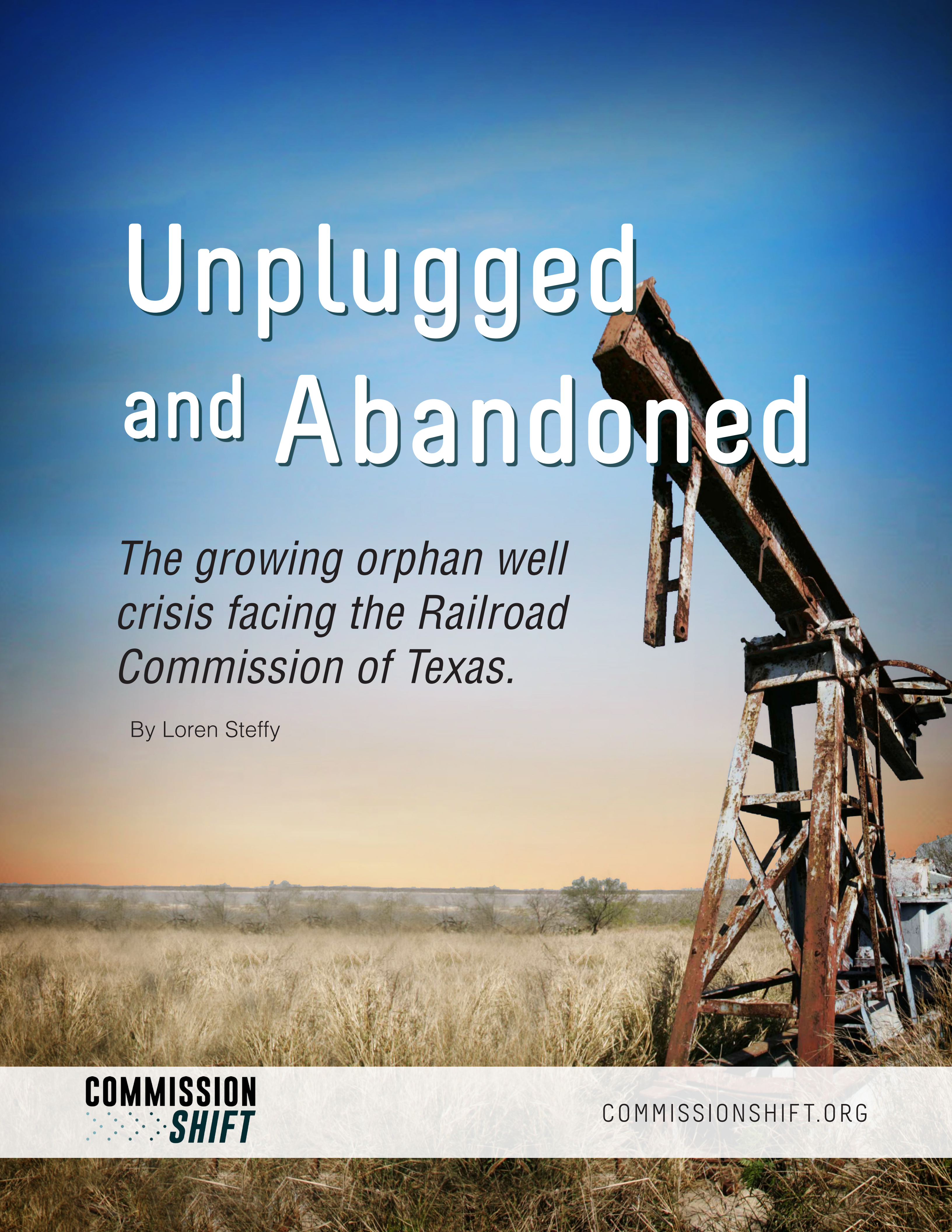

Unplugged and Abandoned

The growing orphan well crisis facing the Railroad Commission of Texas.

By Loren Steffy

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Commission Shift is building public support to hold the Railroad Commission of Texas accountable to its mission in a shifting energy landscape.

Contrary to what its name implies, the Railroad Commission of Texas has no authority over railroads. Instead, the agency oversees oil and gas development, coal and uranium mining, and gas utility service in Texas, among other functions. Its mission is to serve Texas through stewardship of natural resources and the environment, concern for personal and community safety, and support of enhanced development and economic vitality for the benefit of Texans. Too often, the Commission has promoted enhanced development of oil and gas over all other parts of its mission -to the detriment of natural resources and the environment, safety, and economic vitality.

Commission Shift is educating and organizing a wide array of stakeholders to build support for changes at the Railroad Commission of Texas (RRC) that improve the agency's function, transparency, and accountability to people and places impacted by the oil and gas industry.

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Table of Contents

Executive Summary

As investment moves away from oil and gas companies in favor of businesses with a better return, the state of Texas faces a significant economic threat. Combined with declining demand from depressed commodity prices, shifting consumer preferences and the global COVID-19 pandemic, the state faces a surge in oil and gas company bankruptcies and declining revenue from fees it collects from the industry. Meanwhile, the Railroad Commission of Texas—the state's oil and gas regulator—has been asleep at the switch.

Insolvent or financially distressed operators exacerbate the potential economic risks, public health dangers and environmental hazards posed by unplugged and abandoned oil and natural gas wells. As the wellbore deteriorates, it can leach oil, gas, and residual drilling fluids into groundwater supplies. Unplugged and abandoned wells also can release methane, a powerful greenhouse gas, into the atmosphere and open pits for collecting wastewater or other byproducts of the drilling process can leak and pose threats to groundwater as well.

Texas could face a dramatic increase in the number of "orphan" wells—those abandoned by companies that are no longer solvent. While environmental liabilities typically can't be dismissed in bankruptcy, companies often find a way to shift their liabilities to other entities or simply mask them from regulators. As a result, the state faces the prospect of more abandoned wells and rising cleanup costs.

The Railroad Commission has had opportunities to confront the transition occurring in the energy business and better prepare for the declining revenue and rising environmental risks it poses. So far, however, it has failed to do so.

For years, Texas had a well-funded program to ensure that the state was protected from the cost of plugging wells and remediating contaminated well sites through fee revenue and a bonding program funded by operators.

But these programs aren't keeping pace with the increased rate of drilling and higher costs for plugging and remediation associated with hydraulic fracturing and horizontal drilling. While fracked wells cost more to drill, their sites also can have higher remediation costs because of large amounts of wastewater and chemicals left behind by the process. Longer, horizontal wells also cost more to plug.

The potential increase in orphan wells could leave the Commission facing an increase in cleanup costs at a time of state budgetary shortfalls and cutbacks. The well plugging and cleanup costs already exceed the balance of the state's remediation fund, and taxpayers are bearing some of the cost of these liabilities. Other states have adopted or are considering more innovative solutions for addressing the backlog of orphaned wells.

The Railroad Commission, however, waived plugging requirements and fees that go into the Commission's cleanup program just after the coronavirus pandemic began and oil prices crashed, essentially letting companies off the hook for their environmental liabilities at a time when the Commission and the state can least afford it. In doing so, the Commission has protected the industry it's supposed to regulate at the expense of taxpayers, landowners, and the environment.

I. Introduction

When Fort Worth-based Weatherly Oil & Gas LLC, which operated more than 800 oil and natural gas wells, filed for bankruptcy in February 2019, it blamed weak commodity prices and fundamental changes in lending practices.[1,2,3]

Weatherly had 163 “orphan” wells, more than any other operator in the state, according to records filed with the state’s oil and gas regulator, the Texas Railroad Commission.[4] The state defines orphan wells as those that have been inactive for 12 months or more and that are out of compliance with regulatory requirements such as filing regular organization reports.[5] (By contrast, “abandoned” is a broader term that means a well is no longer active. Abandoned wells may have ceased production and been properly plugged by the operator, or they may be orphaned. The two terms are often used interchangeably, adding to the confusion about the hazards posed by orphaned and abandoned wells.)

In some cases, the operators of orphan wells either can no longer be found or can no longer afford to pay for plugging and remediation of a well site. When this happens, the state winds up picking up the tab eventually, but a backlog of orphaned wells means that it could take years for the Railroad Commission to plug newly orphaned wells. In the meantime, the unplugged wells pose an environmental risk.

Like many companies using hydraulic fracturing, or “fracking,” to extract oil and natural gas from shale formation thousands of feet below the earth’s surface, Weatherly borrowed heavily against its cash flow to finance new drilling. The more it drilled, and the more oil and gas it produced, the more its cash flow increased, allowing it to borrow more and repeat the process.

With historically low interest rates, lenders and investors happily poured money into the Texas oil patch, believing that the increased drilling would pay off. By 2019, however, they began to sour on the cash-flow model. Investors wanted a return, and lenders wanted more tangible collateral, specifically reserves and profits.

As its financing dried up, Weatherly found itself without enough capital to maintain its drilling program, and it diverted more cash flow toward paying senior debt holders.[6]

Across the country, hundreds of other companies have faced similar cash crunches. Since 2015, more than 250 producers in North America have filed for bankruptcy, representing more than $175 billion in debt. Almost half of those—124—were in Texas, which leads the nation in oil company bankruptcies. Forty-five producers filed for bankruptcy in 2020, a 61 percent increase from two years earlier.[7]

Weatherly’s abandoned wells hint at a much larger problem. In Fiscal Year 2020, the Railroad Commission classified about 6,200 wells as orphaned, and it plugged fewer than 1,500 of them. More than 146,000 additional wells are listed as “inactive.”[8]

Under the Commission’s rules, a well must generate at least five barrels a month for three consecutive months, or at least one barrel a month for 12 consecutive months to be considered producing or “active.” For gas wells, it’s 50,000 cubic feet a month for three consecutive months or at least 1,000 cubic feet for 12 consecutive months.[9]

If a well falls below these production levels, it's considered inactive, and the operator must disconnect electricity from the well equipment.[10]

After a certain period of time, an operator may decide to plug and abandon a well, meaning they permanently shut it down and fill the wellbore with cement. After a well has been shut in for 10 years, operators must remove the wellhead and other surface equipment.

However, the complexity of the rules, lax monitoring by the Commission, lenient enforcement and nominal fines undermine the Commission's responsibility to hold operators accountable.[11] Inactive and abandoned wells can become orphaned if the operator goes out of business or transfers the liability for the well to other entities who can't cover the remediation costs.

Abandoned, inactive and orphaned wells can contaminate groundwater and leak poisonous gases or methane, which contributes to the greenhouse effect and accelerates climate change. Some can even explode. What's more, unplugged and abandoned wells nationwide emit roughly the same amount of carbon as 2.1 million passenger cars.[12]

The state's laws requiring operators to pay for plugging inactive or abandoned wells are so weak that if companies like Weatherly go bankrupt or simply walk away from problem wells, the cleanup responsibility often shifts to the state.

To help offset these potential costs, the Railroad Commission collects fees and surcharges from operators when they begin drilling, and it requires that some operators post surety bonds to cover the cleanup costs for orphan wells and the surrounding sites. Unfortunately, the bonds cover cleanup costs for less than 3 percent of all unplugged wells.[13]

In 2009, Texas lawmakers recognized that the bonding program was falling behind. They passed a bill requiring operators to remove all surface equipment from wells that had not produced in 10 years. The Commission, which adopted the measure as RRC Statewide Rule 15 a year later, wanted to ensure that long-inactive wells were either plugged or brought back into production.[14]

Even so, the new requirements only covered a small percentage of the Commission's plugging expenses, which continued to grow as drilling activity accelerated during the fracking boom which continued until 2019.[15]

By May 2020, with bankruptcies rising, the Railroad Commission suspended requirements that operators plug wells and remediate pits within a year of ceasing operations.[16] The Commission also waived filing fees and surcharges that are deposited to the Oil and Gas Regulation and Cleanup (OGRC) Fund, which ordinarily covers most orphan well cleanup. As a result of the Commission's inaction, Texas' growing abandoned and orphaned well problem could pose a significant long-term risk to Texas taxpayers and the environment.

II. The Railroad Commission Must Recognize Systemic Decline and Use its Tools to Prevent Bankruptcies

In the spring of 2020, U.S. oil and gas producers found themselves facing an existential threat. Investors had soured on the industry, after years of pumping in capital. The industry was the worst-performing sector of the Standard & Poor's 500 Index over the past decade, with returns falling almost 40 percent in 2020 alone.[17]

For years, the industry spent more than it made on fracking as it expanded production and reduced the country's four-decade dependence on foreign oil. Fracking, in its modern form, was developed by Houston-based Mitchell Energy and Development Corp., which owned a large number of leases that had produced natural gas in Denton and Wise counties northwest of Fort Worth since the 1950s.

As those fields played out, Mitchell began looking for ways to replace its dwindling reserves. Geologists had known that natural gas forms in dense shale rock thousands of feet below the surface, then migrates to more porous rock formations such as limestone. There it pools into reservoirs that, when punctured by a drill bit, could be extracted.

After 17 years of trial and error, Mitchell in the late 1990s developed a method using water, sand and chemicals injected at high pressure into "unconventional" shale formations, creating tiny fractures that release the natural gas.

Fracking costs more than conventional drilling, but as natural gas prices rose in the early 2000s, Mitchell was able to make money. Other companies took notice, and they combined fracking with horizontal drilling, in which the well is drilled vertically into the shale, then angled horizontally across the formation. The technique allowed for more fractures, and thus more production, from each well.
The proliferation of fracking opened up new areas of Pennsylvania, North Dakota and other states to new drilling, and revitalized established oilfields such as the Permian Basin of West Texas, unleashing unprecedented reserves of natural gas and later oil.[18]

By 2016, the United States had become one of the world's largest energy producers for the first time since the 1970s, breaking the grip of OPEC, and in 2019, it actually exported more oil than it imported for the first time since 1973.[19]

All of this success touched off a feeding frenzy as companies rushed to tap into new shale reserves. The oil industry has always operated on boom-and-bust cycles, but this time the boom was fueled not just by demand but by low interest rates.

As the Federal Reserve kept interest rates near zero to stimulate the economy after the Great Recession of 2008 and 2009, private equity funds and institutional investors, desperate for higher returns, poured money into shale producers.

In addition to costing more than conventional wells, production from fracked wells also declines more quickly. As a result, producers must drill more wells, which in turn, increases the industry's need for capital.[20]

That increased drilling activity from the fracking boom has heightened risks to public health. Between 2000 and 2013 alone, more than 15.3 million Americans had an oil or gas well drilled within a mile of their home, and the numbers have only increased since then.[21] As the production in those wells decline, and the operators abandon them, the risk to nearby homeowners increases.

There are other risks, too. As far back as 2002, then-Railroad Commissioner Tony Garza noted that abandoned wells “may very well pose a potential threat to Texas’ most precious natural resource—water.”[22] While leaking wells sometimes cause surface pollution, such as when oil or brackish water ooze to the surface, many times the threat remains well below the surface, where oil, toxic minerals or other substances left over from the drilling process migrate into aquifers or water supplies.[23]

The proliferation of wells since the fracking boom can pose long-term risks that are greater than the risks from conventional drilling, including threats to water supplies and air quality, wastewater disposal issues and heightened instances of earthquakes.[24] The Texas Groundwater Protection Committee, a group of 10 state agencies that coordinate groundwater regulation, identified 568 cases of groundwater contamination in 116 counties from oil and gas activity, 27 of which were added to the list in 2019. (All of the cases on the list are still in the enforcement process. Cases that were resolved in prior years are not included on the list.)[25]

As drilling and production rose, prices fell, leading to a bust in 2014 and another one two years later. With each price decline, operators scaled back production until prices rose again. But by mid-2019, investors began to tire of the financial treadmill. The companies they had invested in were producing lots of oil and gas but not much profit. Their drilling programs were costing more than they were earning. By May 2019, nine in 10 shale companies were overspending their cash flow.[26]

Investment began to dry up, and producers worried about covering their debts and generating enough return to satisfy investors.

Then, in early 2020, a standoff over production quotas between Saudi Arabia and Russia sent oil prices into a tailspin just as COVID-19 lockdowns in the United States and Europe cut into oil demand. The price for West Texas Intermediate crude tumbled more than 60 percent, slipping below $20 a barrel. At the end of April, WTI futures actually turned negative for the first time in history—meaning investors had so much oil they would theoretically pay someone to take it away. The “negative oil” didn’t last long. Prices turned positive again the next day, but the message was clear: this was a bust unlike any the industry had ever seen.

a. Shifting preferences indicate permanent decline

While the combination of weak prices and weak demand are exacerbating the industry’s financial problems, another factor is also contributing to its long-term decline: consumer preferences for alternatives to oil.

In its annual energy outlook, BP—one of the world’s biggest oil companies—predicted demand could peak this decade at levels not much higher than they were before the pandemic. How quickly it declines depends on the speed with which governments enact policies to combat climate change. By 2050, oil use could fall by as much as 80 percent, the company estimated.[27]

Some of the biggest oil producers are embracing the change. Over the next five years, supermajors worldwide, including BP, have pledged to invest some $18 billion in clean energy, and while this is less than 10 percent of the industry’s total capital outlays, it represents a significant increase from the 1 percent spent on green projects in 2018.[28]

Part of the reason for the shift: consumers are changing their habits. Electric vehicles, for example, will account for 60 percent to 80 percent of all new car sales, compared with just 2.2 percent in 2020.[29]

Investors are shifting their focus as well. Some of the world's biggest fund managers have vowed to liquidate their fossil fuel holdings, concentrate on financing renewables and other climate friendly energy sources, or both.[30]

Policymakers, concerned about climate change, are increasingly adopting regulations that favor cleaner energy sources, such as wind and solar power, over fossil fuels. Concerns about climate change have prompted the mayors of 12 major cities—representing 36 million people around the world—to call for the divestment of fossil fuels.[31]

While that may be good news for the climate over the long-term, it presents growing environmental risks as oil and gas producers sell off or abandon poorly performing oil and gas properties, leaving regulators stuck with the cleanup. One recent study found that the shift from fossil fuels to renewables could force the eight biggest oil companies—Exxon Mobil, BP, Shell, Total, ENI, Chevron, ConocoPhillips and Equinor—to sell $111 billion worth of assets in the coming years to compete in a low-carbon world.[32] By failing to recognize this shift and waiving fees and surcharges that help pay for plugging, the Railroad Commission could find itself with a growing number of orphan wells and less money for plugging them.

But who will buy those properties in a world that no longer wants them? To answer that question, it helps to look at what has happened in the coal industry. About half of all U.S. coal was mined by companies that have since gone bankrupt. As with oil and gas, bankruptcy laws are designed to give priority to environmental liabilities, but a recent study published in the Stanford Law Review in April 2019, found that coal companies had used the bankruptcy reorganization process to shed $5.2 billion worth of environmental liabilities by transferring them. Coal producers simply concentrated the liabilities in underfunded subsidiaries that they later spun off, and those companies later failed.[33]

b. Laissez-faire approach contributes to bankruptcies

Just after COVID-19 lockdowns caused U.S. oil demand to plummet in March 2020, frightened producers called on the Railroad Commission to enact production quotas, an authority the Commission hadn't exercised in five decades. The agency's mission is to safeguard Texas' natural resources and support "economic vitality" for the benefit of all Texans.[34]

From the early 1930s to the early 1970s, that support meant regulating production to ensure stable prices and prevent oversupply. But as bankruptcies swelled with the COVID-19 lockdowns, the Commission did little to protect producers from economic collapse.

Production quotas would have required producers in the state to cut their output by 20 percent until the market stabilized. More than 90 speakers, mostly from the industry, signed up for a hearing in mid-April.

"If the Texas Railroad Commission does not regulate long term, we will disappear as an industry," warned Scott Sheffield, chief executive officer of Pioneer Natural Resources, a major independent producer.[35]

The producers found a sympathetic ear in Ryan Sitton, one of the three Republican Commissioners. "We are seeing a level of demand destruction and oil industry downturn that in the past occurred over a period of years now happening over a period of days," he warned in April.[36]

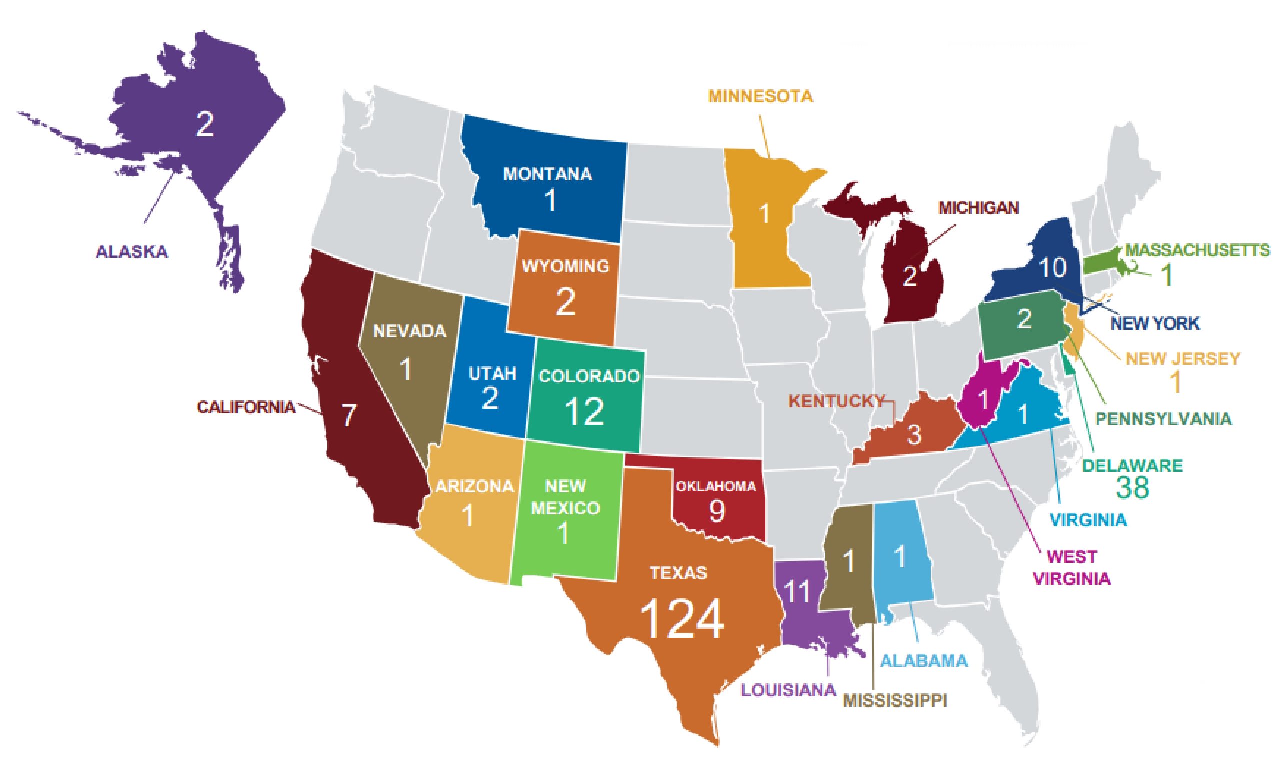
But his fellow Commissioners opposed the move. Chairman Wayne Christian said that because Texas accounts for only about 5 percent of global production, a statewide rationing program would have little impact on prices or worldwide oil supplies.

"By allowing the free market to work, producers can determine for themselves what level of production is economical," Christian wrote in the Houston Chronicle.[37] He claimed companies were already cutting production on their own.

They also were facing mounting financial hardships, which could lead to more orphan wells. Companies slashed spending, curtailed drilling programs and in the months that followed laid off 118,000 workers, almost 40,000 of them in Texas.[38] As the year wore on, more companies began to file bankruptcy—Chesapeake Energy, Whiting Petroleum, Diamond Offshore Drilling, California Resources Corp.—a total of 23 producers in the first eight months of 2020, representing some $49 billion in aggregate debt.[39]

Since 2015, 124 Texas-based oil and gas companies have filed bankruptcy, more than all other states combined, and their combined debt is more than $117 billion.[40]

Figure 1 2015 – 2020 E&P Bankruptcy Filings by State as of November 30, 2020. (Adapted from Hayes and Boone, LLP)



What's more, banks and other secured lenders hold much of the debt that's driving producers into bankruptcy, which could indicate more contentious restructurings and assets sales as they move through the reorganization process.[41]

Combined with the waiver on fees and surcharges for environmental cleanup, the industry is in an increasingly precarious financial position, and Texas faces the prospect of more wells being orphaned by companies that had made no commitment to ensure their remediation.

c. Bankruptcies impact the state budget

Despite years of economic diversification, oil and gas production remains a significant source of revenue for the state, counties and local school districts. Texas taxes oil and natural gas production at 4.6 percent and 7.5 percent of the market value, respectively. In addition, the state levies a tax on oil well services at 2.42 percent of the gross receipts for those services.[42] In Fiscal Year 2020, those taxes generated almost $4.2 billion in revenue, or about 3 percent of total state revenue. The impact of the drilling slowdown was already beginning to affect state coffers. Collections from oil production fell 16.9 percent from a year earlier and natural gas collections plunged 45.1 percent. Total state revenue dipped 1.5 percent.[43]

Table 1 Fiscal Year 2020 oil and gas-related revenue to the state budget.
Source: Texas Comptroller of Public Accounts Data Visualization Dashboard.

Revenue Description	Total[4]
Motor Fuel Taxes	$3,525,000,000
Oil Production Tax	$3,229,000,000
Land Income[1]	$1,716,000,000
Natural Gas Production Tax	$925,000,000
Oil Well Service Tax	$119,000,000
Railroad Commission Agency Revenue[2]	$118,000,000
State Energy Marketing Program	$49,000,000
Misc oil and gas related[3]	$3,000,000
Total Oil and Gas Related Revenue	$9,685,000,000
Total State Revenue	$336,834,000,000
Oil and gas related revenue percent of state revenue	2.9%

[1] Includes only oil and gas related income
[2] Includes fees or other income that is oil and gas related, does not include agency revenue that is administrative in nature such as returned checks or vehicles sold.
[3] Includes the Automotive Oil Sales Fee and Interest on Oil Overcharge Loans.
[4] Totals are inexact due to rounding

Oil and gas taxes and royalties are the state's fifth largest source of income, and the money collected pumps billions into the Economic Stabilization Fund, commonly called the Rainy Day Fund.[44] Taxes and royalties also support the State Highway Fund, which pays for highway construction and maintenance, a vital part of the network supporting the state's $328.9 billion export market, which accounts for 17.4 percent of the gross state product, roughly double the U.S. average.[45]

In addition, schools and universities are supported by the Public University Fund and the Public School Fund, which receive royalties from oil and gas produced on state lands. In Fiscal 2019, those royalties added more than $1 billion to each fund.[46] School districts and counties also collect property taxes from oil and gas properties, pipelines and gas utilities. In 2019, the taxes generated over $2 billion for school districts and over $688 million for counties.[47]

The Railroad Commission's laissez-faire approach allows abrupt and unpredictable changes in the state's oil and gas revenue, resulting in a broad impact on essential state services. Had the commission implemented production quotas in April 2020, it could have stabilized wellhead prices for operators. That might have allowed some companies to avoid or delay bankruptcy and cushioned the impact on the state budget. As the regulator for the biggest oil-producing state, action by the Commission might also have encouraged its counterparts in other states to enact similar quotas. While it's unlikely it would have affected oil prices globally, it could have shored up prices in regional markets, easing the financial pressure on some operators.

III. The Railroad Commission Must Act to Prevent Insolvent Operators from Transferring Liability to Taxpayers

In theory, bankruptcy doesn't absolve companies of cleanup responsibilities. When a producer goes bankrupt, its creditors line up at the courthouse, where they're basically assigned an order of priority based on the type of money they're owed by the bankrupt company, known as "the estate."

Creditors with the highest priority get paid first, starting with those whose claims are secured by assets that were posted as collateral for loans to the company. It's similar to a home mortgage, in which a bank can repossess a homeowner's property if they fail to make mortgage payments. In bankruptcy, secured creditors simply claim their collateral and hope that the value is enough to cover what they're owed.

Next in line are administrative claims, which are obligations a company must meet to continue operating, such as employee wages and taxes, followed by unsecured claims, which include payments to vendors and loans such as lines of credit that aren't secured with collateral. Stockholders are generally at the end of the line, and they rarely receive any payment for their shares in a bankruptcy reorganization.

A judge oversees the orderly distribution of funds from the estate to the various creditor groups.

Typically, environmental liabilities receive special treatment, known in legal parlance as a "super priority," meaning they vault ahead of other creditors, falling into the second tier of administrative claims. (Unpaid environmental fines at the time of the bankruptcy filing, however, can be dismissed as unsecured claims.) The bankruptcy process basically links the liability for cleanup to the property itself. If the estate sells it, the buyer assumes the responsibility for cleanup—or at least, that's how it's supposed to work. The high number of orphaned wells in the Railroad Commission's queue indicates that isn't always the case.[48]

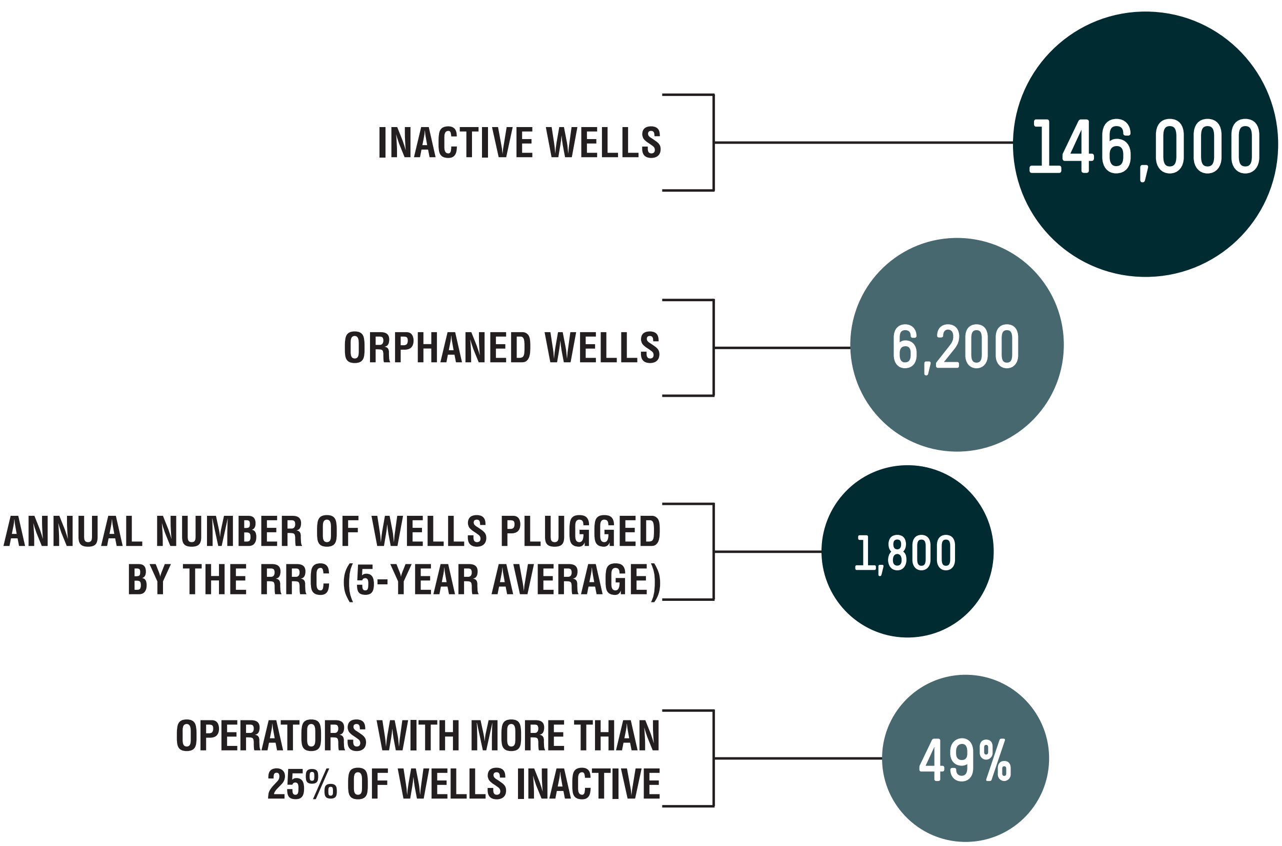
a. Companies can shuffle liability outside of bankruptcy

Already, the oil industry has begun to employ tactics similar to the coal industry's for avoiding liability. One of the biggest oil patch bankruptcies of 2020 is California Resources Corp., which was spun off from Houston-based Occidental Petroleum in 2014. CRC was stumbling under almost $5 billion worth of debt that was due at the end of 2022, and it burned through some $283 million in free cash. But CRC's demise didn't affect Oxy, its former parent. When CRC was set up, it borrowed $6 billion and paid that money to Oxy, which then washed its hands of its former subsidiary, as well as the liability for the 18,000 wells that CRC owns—some 6,000 of which are idle.[49]

CRC filed for bankruptcy in Texas, although the company's operations are in California. Texas regulators should be paying attention to the case, because something similar could happen with other producers, potentially leaving thousands or tens of thousands of orphan wells for the state to plug.

That's a concern because the Railroad Commission identified more than 6,200 orphan wells at the end of FY 2020,[50] but the Oil Field Cleanup Program has averaged an annual plugging rate of less than 1,800 during the past five years.[51] And there could be more on the way. The number of operators with more than 25 percent of their wells listed as inactive—the first step in a well becoming orphaned—rose to 49 percent by the end of Fiscal Year 2020 from 42 percent three years earlier.[52]

2020 BY THE NUMBERS



The Commission has assumed the number of inactive wells will remain steady at about 140,000 per year for the 2022-2023 biennium.[53] However, its own rules may be keeping it from understanding the potential for growth of orphaned wells. In 2016, the Commission changed Statewide Rule 15 to cut the threshold defining an inactive well in half: five barrels of oil per month instead of 10, and 50,000 cubic feet of gas per month instead of 100,000 over three consecutive months.[54] The change results in a lower number of "stripper wells," or marginal producers, that might ordinarily count toward the Commission's projection of potential orphan wells.

While environmental liabilities aren't supposed to be dismissed in bankruptcy, things don't always work the way the laws were designed. Consider the case of Houston-based EP Energy, one of the biggest producers in the Eagle Ford Shale of South Texas. EP filed for bankruptcy in October 2019,[55] but it didn't earmark any funds for well cleanup. The U.S Department of the Interior filed a motion noting that the decommissioning of wells on 12 EP offshore leases in the Gulf of Mexico were overdue, but it hadn't determined the plugging and reclamation costs for EP's onshore leases.[56] In other words, even though the company was already in bankruptcy, the status of its environmental obligations hadn't been determined by regulators.

The finances of the oil patch seem to be worsening faster than regulators' ability to monitor them. As more debt comes due in the next couple of years, the steady rise in oil patch bankruptcies is likely to continue through at least 2022.[57] By the end of that year, the number of filings nationwide could top 190, or roughly equal to the total of the past five years.[58] As a result, the scale and cost of potential environmental liabilities passed on to state and federal agencies could be far greater than they appear.

Meanwhile, oil prices began rising at the end of 2020, and topped $50 a barrel for the first time in almost a year. With the higher prices, smaller producers may feel emboldened to buy aging oil leases being sold by larger companies. If prices fall again, these older wells have a greater risk of becoming orphaned because the new owners have fewer resources to plug them. As a result, the scale and cost of potential environmental liabilities passed on to state and federal agencies could be far greater than they appear.[59]

b. The Railroad Commission waived plugging rules

The industry's deteriorating finances and the detrimental effects of depressed commodity prices on the state budget didn't stop Commissioners at a May 5 hearing from waiving the rules requiring that inactive wells be plugged, and pits remediated within a year. Nor did it stop them from suspending fees and surcharges operators pay that cover the plugging and remediation costs. The public, however, had little notice that Commissioners were even thinking of such measures because the only announcement was a cryptic public notice that they were considering "possible action," citing the COVID-19 pandemic as an excuse for taking emergency measures.[60] However, since the rules were initially enacted by the Legislature, it appears the Commission lacked the authority to waive the rules. In July, the consumer advocacy group Public Citizen and two landowners sued the Commission, claiming the waiver violated the Texas Open Meetings Act, the Texas Administrative Procedure Act and the Texas Natural Resource Code by failing to give proper public notice of the vote. The lawsuit called for the Commission to reinstate the rules for plugging wells and schedule public hearings before considering a waiver in the future.

One of the plaintiffs, Hugh Fitzsimons III, called the Commission's actions "reckless and irresponsible," saying it increases the risk to groundwater statewide. Fitzsimons is part owner of a ranch in Dimmit County, on the Texas-Mexico border, that has more than 100 inactive oil and gas wells. He raises bison, produces guahillo honey and grows olives on the land, and he worries that the wells could pose a threat to those activities.[61]

“It is a simple and irrefutable fact that once your water is contaminated you have no ranch,” he said.[62]

As a member of the Wintergarden Groundwater Conservation District, which covers Dimmit and two surrounding counties, Fitzsimons has seen the impact of increased drilling in the Eagle Ford Shale, one of the most active basins for fracking in Texas.[63] He recalls an incident in 2011 in which carcinogenic fracking fluid from an injection well migrated into an abandoned well nearby. The “breakout” produced a sludge, resembling chocolate pudding, that came within a hair’s breadth of contaminating the Carrizo Aquifer,[64] a key source of drinking water and irrigation for the Wintergarden, a multi-county region whose temperate climate makes it one of the country’s biggest year-round suppliers of vegetables.[65]

By waiving fees and surcharges, the Commission essentially created a hole in the revenue for the cleanup program of at least $400,000. Although the size of that hole remains uncertain, it comes amid financial difficulty and a looming state budget shortfall and casts further doubt about the viability of the bonding program, which is supposed to be self-supporting.

Despite the economic slowdown and weak prices, drilling activity in the state continues apace. In the first nine months of 2020, operators drilled more than 9,200 new wells, up from less than 6,500 for the same period a year earlier.[66] The rate of permitting, however, slowed to about 20 a day in midsummer from 60 day at the start of 2020.[67]

Apart from the lost revenue for future cleanup costs, waiving the fee requirements could be sending the wrong message to the industry at a critical time. In particular, the smallest firms, which often operate with the least environmental safeguards, and have the most limited financial resources, may leave the business without plugging wells that carry greater environmental risk because of their age or poor maintenance history.

Small producers tend to cause a larger share of environmental incidents, and one study by economists at the University of California, San Diego, found that bonding programs can reduce the number of orphan wells by 70 percent and the violations of clean water regulations by 25 percent.[68]

The Commission’s decision to waive the plugging requirements came as several factors were converging on the state’s oil and gas industry that would compound the concerns about the cost of orphaned wells.

c. The Oil Field Cleanup Fund has fallen behind

Molly Rooke’s family has owned a ranch in Refugio County, on the Texas Gulf Coast, since before Texas joined the United States in 1845. The ranch is dotted with dozens of unplugged, abandoned wells, and the family for years requested the Texas Railroad Commission’s help in plugging them.[69] In 2019, one of the wells blew out, spewing volatile chemicals into the air and contaminating nearby wetlands.

Rooke called the Commission to no avail. Only after drawing media attention to the problem did commissioners send workers to temporarily shut in the well. Rooke waited for more than a year for the crew to return and permanently plug the well.[70] “I thought there would be better communication and cooperation,” Rooke said. “I didn’t think it would take so long.”

That well, and others like it on her ranch, are “ticking time bombs,” Rooke said.[71]

Orphan well blow out on Molly Rooke's ranch, 2019. Photo courtesy Molly Rooke.

Unfortunately, the delays Rooke experienced aren't unique. As the number of abandoned wells has increased, the Commission has fallen farther behind in its efforts to plug orphaned wells and clean up other contaminated sites related to oil and gas drilling around the state.

Concerned about the cost of environmental remediation when, such as in Rooke's case, the operator of an errant well is no longer around to hold accountable, the Texas Legislature established the Oil Field Cleanup Fund in 1991 (now called the Oil and Gas Regulation and Cleanup Fund) to combat the pollution threat from abandoned wells, pits, storage tanks and other sites related to oil and gas exploration that might require remediation. The idea was straightforward: use a percentage of the fees the Railroad Commission already collected from drilling permits and production fees and earmark it for cleanup. It was one of the first such programs in the country, and until recently, it was one of the most effective.

By fiscal 1999, the fund was generating between $10 million and $13 million a year, or about 25 percent of the Commission's operating budget. During its first eight years, the fund paid for plugging more than 11,000 abandoned wells and cleaning up more than 1,300 polluted sites.

At the same time, the Commission also recreated a requirement that operators post a surety bond to cover potential cleanup costs. Studies have found that such bonding programs can be effective in creating a deterrent to contamination.[72] However, the Commission doesn't require operators to post bonds for all wells, and most of the orphan wells the Commission must pay to plug are owned by unbonded operators.[73] In addition, the bond revenue that is collected covers less than 16 percent of the actual plugging costs.[74]

While the oil and gas industry tacitly supported the bonding program, it also lobbied to waive some of the requirements, arguing that the rules put too much of a financial burden on small operators. Ironically, small operators are more likely to abandon problem wells than large companies.[75]

An orphan well on Molly Rooke's ranch remains with rusted and broken parts protruding from the surface. Photo courtesy Molly Rooke.

Although Texas has—on paper—one of the strictest bonding programs among oil-producing states,[76] it has not adjusted the programs terms to account for additional costs or environmental hazards posed by hydraulic fracturing and horizontal drilling.

Bond terms start as low as $25,000 a year for 10 wells or fewer, and go to $250,000 for operators with 100 wells or more.[77] In other words, a company may be bonded for as little as $2,500 on a well that may cost almost 10 times as much to clean up.

Because they aren't explicitly required to plug inactive wells, companies have some wiggle room to game the system. Operators must file a report, known as a W-10, with the Commission for every producing well. Unscrupulous companies can simply falsify a W-10, indicating the well has returned to production, then reclassify it later as shut-in, to restart the 10-year clock. Given that there may be dozens or even hundreds of wells in a particular field, it's unlikely the Commission would catch the falsified W-10.[78]

In 2008, the state had fewer than 157,000 producing wells. A decade later, that number had surged by almost 30,000, a rate of increase unseen since 1985, the peak for drilling activity in Texas.[79]

Unlike conventional wells, fracking technology incorporates acids, biocides, gelling agents and corrosion inhibitors.[80] The U.S. Environmental Protection Agency has identified more than 1,000 different chemicals used in the fracking process over the years.[81] Some of these chemicals are considered "trade secrets" by the drilling services companies, and the public has received at best scant information about their potential human health risks.

The depth of shale formations and the length of the horizontal well bores used in unconventional oil and gas development has raised the cost of plugging wells, which has more than doubled since 2008, to between $20,000 and $40,000 per well.[82] Some estimates, however, say the cost could be as much as five times greater.[83]

If the wells on Rooke's property were still owned by a company, the operator might face fines or legal action by the Commission. In 2020, it reported more than 30,000 violations for which it issued penalties or took other action, and more than 1,600 were referred for legal action. Only 59 were considered major.[84]

By 2000, the state had at least 17,000 abandoned wells, and the cleanup fund, which also pays to remediate abandoned sites, faced a potential liability of $540 million.[85] The Commission identified about 7,000 more wells as “non-compliant,” meaning operators had not paid the proper fees or filed the appropriate paperwork and the wells were slated for review to determine if they needed plugging. However, the Commission’s staff also acknowledged that the actual number of abandoned wells was probably far greater, because many were abandoned before reporting was required. As a result, the staff estimated that another 200,000 abandoned wells needed plugging. The staff estimated that plugging only the 17,000 that they already knew about would take 12 years and cost of about $76.5 million.[86]

Currently, when the Commission files complaints against operators who make false production reports, operators can protest the action and request a public hearing. The Commission doesn’t track data specifically related to filing false reports related to inactive wells, and for the actions it does bring, its enforcement rate is low. Although inspectors in Texas find more violations per inspection than their counterparts in other states, between 2006 and 2010, fewer than 1 percent of all violations identified by the Commission staff were referred for enforcement.[87]

Many oil companies now collect well production data in real time, yet the Commission lacks the capability to access this real-time data. By using real-time well data, the Commission could better ensure that its regulations are being followed by operators and that well data is up to date.

In some cases, operators sell their low-performing wells to buyers that squeeze out all the remaining oil, sell off the equipment, and never plug or remediate the well sites. Operators simply have no incentive to comply with the rules because of the scant rate of enforcement. The fines the Railroad Commission does issue tend to be so meager that they aren’t a deterrent.[88]

If a property is sold, the new operator has six months to bring wells into compliance by either plugging them or returning them to production.[89]

While the Commission insists that bankruptcy doesn’t absolve operators of cleanup liability, it can make it harder for the state to ensure that operators pay to properly plug and abandon wells.[90] More importantly, the Commission’s lack of oversight and enforcement over sales and bankruptcies may lead to wells becoming orphans.

d. The Railroad Commission turns to taxpayers for well cleanup

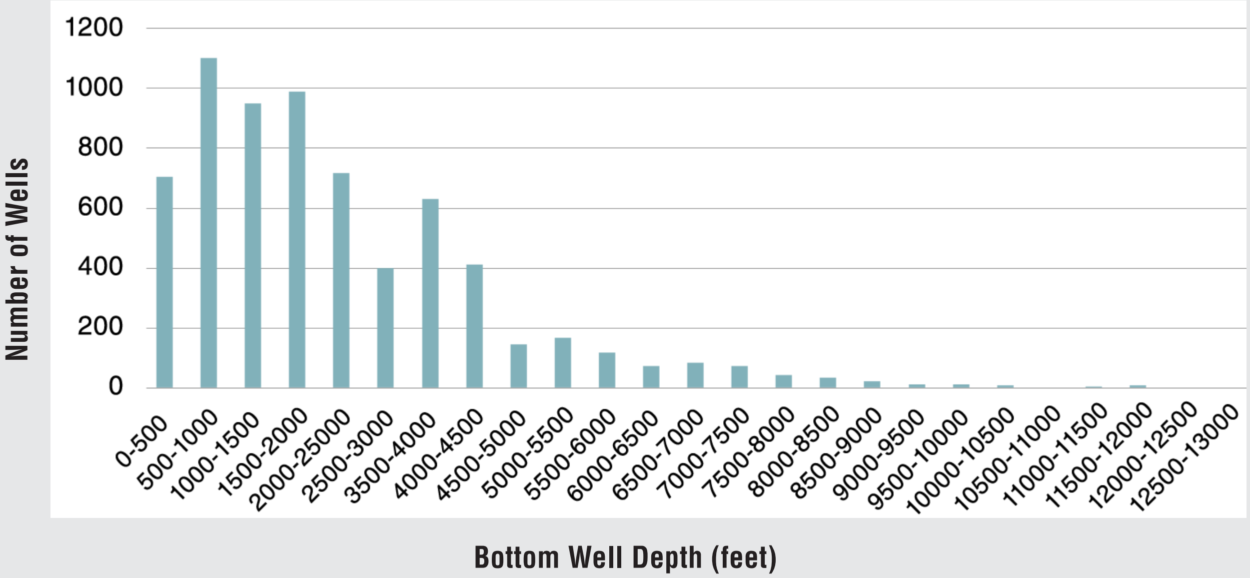
According to the Commission’s forecasts, the 6,200 orphan wells it identified in fiscal 2020, will rise to about 6,500 over the next biennium. In addition, the Commission assumes that the number of inactive wells in 2022 and 2023 will hold steady at about 140,000.[91] With rising bankruptcies and distressed asset sales in the industry, the chance for some of those inactive wells to become orphaned is rising.

While the Commission plugged fewer than 1,500 wells in fiscal 2020, it identified more than 1,900 others that were candidates for plugging.[92] The Commission staff prioritizes plugging based on the potential risks to public safety and the environment, and it estimates it will plug about 1,400 wells per year in the next biennium.[93,94]

The costs of plugging orphaned wells has risen significantly in the past five years. In 2015, the Commission paid less than $16,000 each to plug 692 wells,[95] and in 2020 it paid an average of almost $21,000 per well to plug 1,477 wells.[96] Commission data shows most wells it plugged were less than 4,000 feet deep, far shallower than most wells being drilled today.[97] As a result, the current cost of plugging wells may be a poor indicator of future expense.

Figure 2

FY 2015 - FY 2020 Depth of Plugged Wells



In addition to the well costs, the Commission also pays to remediate pits and other pollution sites, which cost $8.6 million in fiscal 2020.[98] In total, the Commission spent about $50 million for well plugging and site cleanup combined,[99] which is more than double the $19 million it paid in fiscal 2015.[100] Even though its spending more, it isn't keeping pace with the growing number of orphan wells.

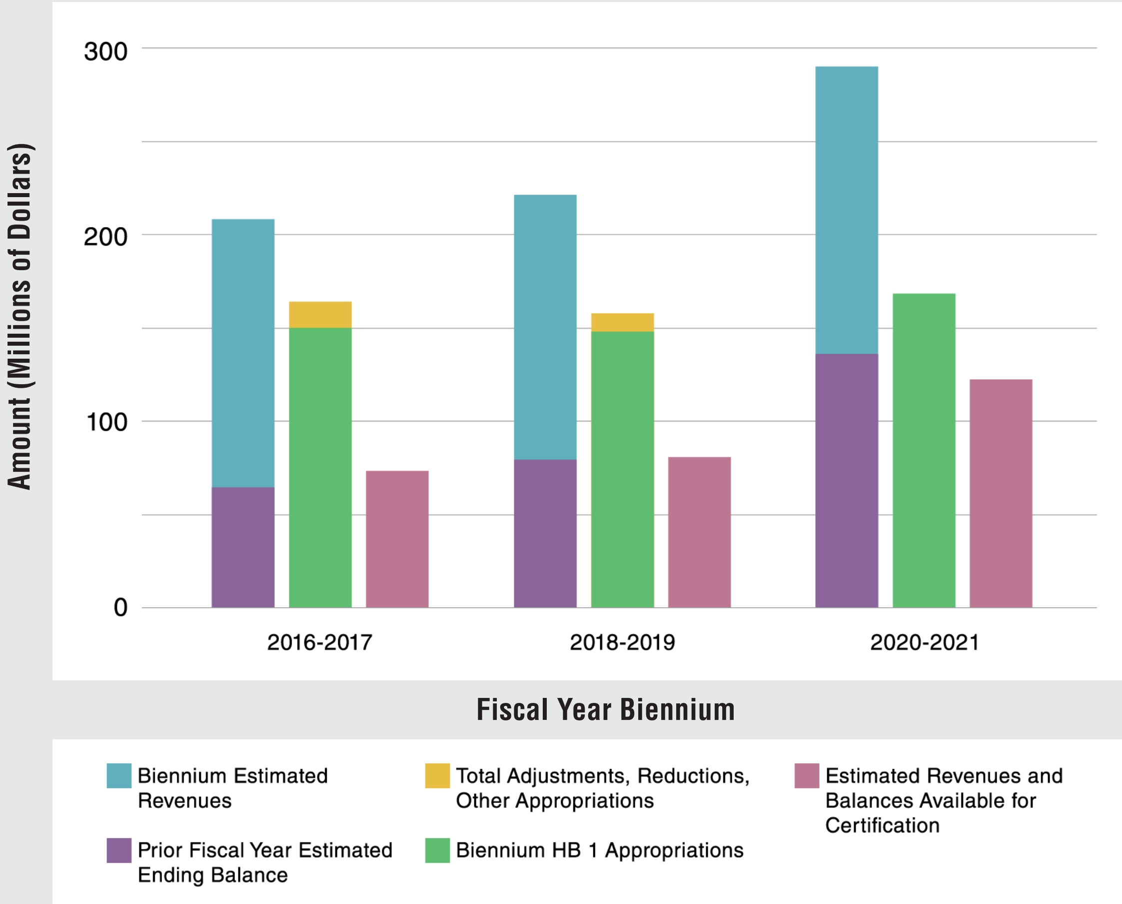
As the fortunes of the oil and gas industry have fluctuated, so has the balance of the cleanup fund. The downturn in industry fortunes in 2020 has curtailed contributions to the fund, even as company bankruptcies and the costs of plugging orphan wells continue to rise.

While orphan wells remain the focus of the plugging program, another concern is the estimated 37,000 wells that have been inactive for a decade or more.[101] If those wells become orphaned, the Commission's own estimates show plugging costs could exceed $2.3 billion.

The cleanup fund's revenue has increased steadily in recent years, though preliminary figures indicate 2020 revenue may have dipped by about 6 percent.[102] This caused the fund's year-end balance to jump from $64.1 million, in 2015 to $139 million in 2020.[103,104] Unfortunately, even with a rising surplus, the Commission must set aside revenues from bonds and other forms of financial assurance. With a more limited OGRC fund, the Commission had to request General Revenue Funds for its well plugging and remediation program for the 2022 – 2023 biennum.[105]

Figure 3

Over the past three biennia, the Oil and Gas Regulation and Cleanup fund has grown, but the Commission must retain bonds and financial assurances in its account. As such, the balance is used to certify the state's budget.

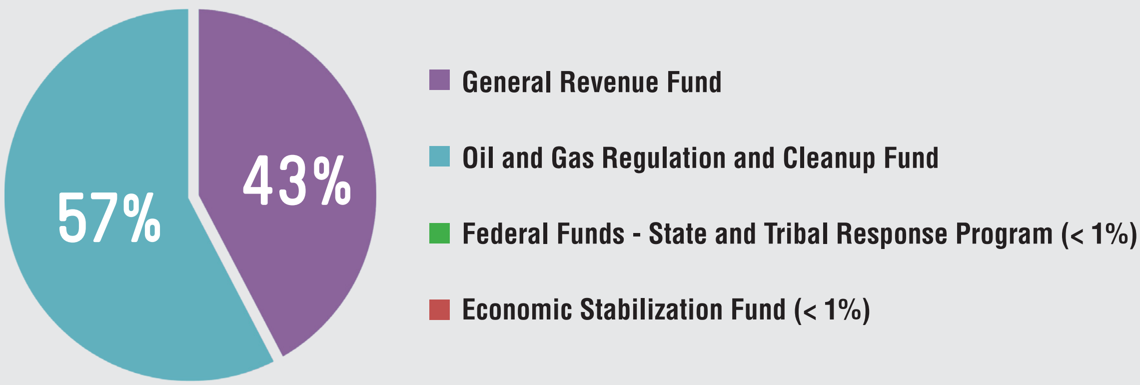


Source: Texas Comptroller of Public Accounts. Report on Use of General Revenue Dedicated Accounts.

For the 2022-2023 biennium, the Commission has requested total expenditures for well plugging and remediation, of more than $114 million, which includes the cost of administering the program, such as staff salaries and supply costs and storage, in addition to the actual plugging and remediation expenses. That budget request is about $29 million less than the Commission requested in the previous budget cycle.[106]

Figure 4

Oil and Gas Well Plugging and Remediation - Method of Financing



Source: Railroad Commission of Texas - Legislative Appropriations Request Fiscal Years 2022-2023

Plugging costs are funded by more than 20 sources of revenue, including the bonding program, oil production taxes, fines for regulatory violations and various fees.[107] Once collected, these fees—about $65 million for the next biennium—go into the OGRC Fund for well plugging and remediation.[108] In addition, the Commission has requested about $49 million from the General Revenue Fund for this purpose.[109]

Moreover, the Commission has acknowledged that depressed commodity prices in 2020 could adversely affect cleanup fund revenue. Something similar happened in 2016, when oil prices fell to a low of $26.21 per barrel. Fund revenue declined, and the Commission registered an $18.7 million revenue shortfall. “While the experience of Fiscal Year 2016 offers some indication of what the Commission may face regarding a revenue shortfall, at this time any estimate of future revenue for the Oil and Gas Regulation and Cleanup Fund carries uncertainty,” the Commission said.[110]

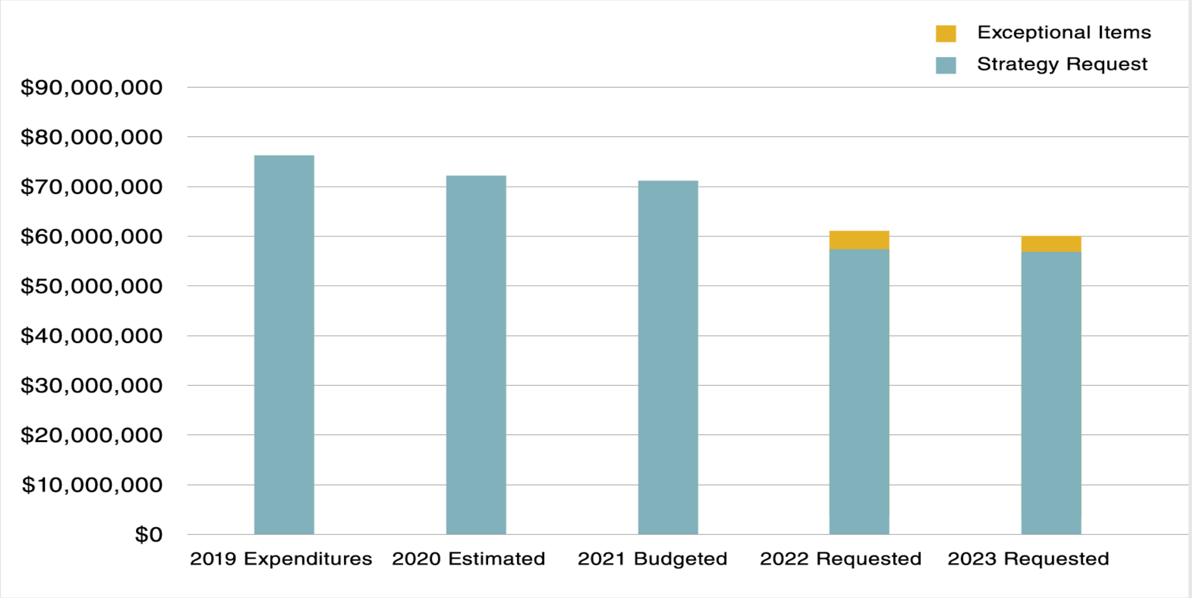
Because of the uncertainty and across-the-board budget cuts statewide, the Commission deferred cleanup activities for the largest projects and focused on smaller ones.[111] This, however, is not a sustainable strategy.

The rising cost of plugging orphan wells combined with the potential financial fallout from the Commission’s decision to waive fees and cleanup requirements comes amid mounting budget difficulties for the state. In July 2020, Texas Comptroller Glenn Hegar projected a $4.58 billion shortfall for Fiscal Year 2021, as weak oil prices and the COVID-related economic slowdown took their toll. All state agencies, including the Railroad Commission, were instructed to cut their spending by 5 percent from their fiscal 2020 appropriations.[112] Aligned with the instruction, the Commission reduced its 2022 – 2023 Legislative Appropriations Request (LAR) for the well plugging and site remediation program by 20 percent (Figure 1). The Commission included an exceptional item request for Oil and Gas Well Plugging and Remediation to complete "one large cleanup project and begin work on a second project during the 2022-23 biennium."[113] The increase, however, was not enough to bring the total Oil and Gas Well Plugging and Remediation Request up to previous years' expenditure levels.

In January 2021, fears about the state's budget deficit became less dire when Hegar announced only a $1 billion deficit (not accounting for the prior 5 percent budget cuts agencies were asked to make in FY2020).[114] It's not clear if this improved outlook would boost the Commission's Well Plugging and Remediation Appropriations.

Figure 5

RRC Oil and Gas Well Plugging and Remediation Expense Legislative Appropriations Request, 2022 - 2023



Source: Railroad Commission of Texas - Legislative Appropriations Request Fiscal Years 2022-2023

Even as economic conditions create an environment ripe for oil and gas bankruptcies, the Commission is not in a position to improve its oversight of well plugging and site remediation. Without a structural change in how well plugging and site remediation is funded, taxpayers could wind up footing more of the bill in the future as oil and gas development declines —or worse, the wells could be left unplugged and sites unremediated.

IV. Other States Provide Solutions

Determining the number of abandoned wells nationally is difficult because of reporting lapses, classification issues and conflicting data. However, two studies cited by the U.S. Environmental Protection Agency puts the number of abandoned wells nationally at between 2.6 million and 3 million[115]—some of which may be more than 100 years old.[116]

Plugging these wells not only protects public health, safety and groundwater, it also could significantly reduce the release of methane, a major contributor to climate change. The EPA estimates that unplugged and abandoned wells nationwide emit, on average, 280,000 metric tons of methane annually, or roughly the carbon emissions of 2.1 million passenger cars.[117]

Several attempts to improve orphan well cleanup have been proposed at the federal and state levels. In September 2020, Sen. Michael Bennet, a Colorado Democrat, introduced a bill that would create a nationwide cleanup fund to help states, tribes and federal agencies remediate well contamination on federal and private lands.

The new fund would be overseen by the Interior Department and would boost statewide blanket bond requirements by $200,000. Those requirements would be reviewed regularly and adjusted to keep up with inflation and ensure the program had funds to cover remediation claims.

It also would create a standard definition of an inactive well and set rules for when cleanup must begin.[118] Bennet believes the bill would create new jobs and reduce methane emissions.[119]

Because of the 118,000 energy industry jobs lost nationwide since the pandemic began,[120] regulators, industry groups and environmentalists are looking to tap the expertise of those laid off workers to bolster cleanup programs. The Center for American Progress, a left-leaning think tank, estimates that a $2 billion nationwide orphan well cleanup program could support 14,000 to 24,000 jobs in oil- and-gas-producing states.[121] The idea of paying laid off oil workers to plug orphaned wells has also been endorsed by the U.S. House of Representatives Natural Resources Committee and the Interstate Oil and Gas Compact Commission, a group of 31 oil and gas producing states.[122]

President Joe Biden has proposed that the government could put as many as 250,000 people to work plugging orphaned oil and natural gas wells and cleaning up other environmental hazards.[123]

In Montana, one former oil and gas manager set up a nonprofit, the Well Done Foundation, to coordinate the plugging of orphaned wells.[124] Similarly, a new nonprofit in Texas, Native State Environmental, is raising funds to help landowners pay the cost of plugging orphan wells.[125]

In Wyoming, state lawmakers considered boosting their reclamation program in hopes of spurring job growth and economic development. Wyoming has a bond program similar to Texas, but with a far larger balance—$159 million.[126] At the same time, the state has only 25,600 oil and gas wells.[127] In other words, its cleanup has more than five times the money that Texas has allocated, even though Texas has almost 20 times the number of active wells.

In mid-2020, the Wyoming Legislature proposed boosting the fund even more, by allocating an additional $7.5 million for accelerating orphan well cleanup. Wyoming had almost 2,800 orphaned wells at the time.

Similar to Bennet's plan, lawmakers suggested using the additional money for hiring displaced oil and gas workers to help with the expanded plugging program, a measure supported by a key industry trade group.

In a news release, the Petroleum Association of Wyoming said: "This would make sure employees in the energy service industry continue to take home a paycheck and are ready to restart drilling as demand returns, while also taking advantage of time and cost benefits of reducing the orphan well backlog—a liability the industry takes seriously."[128]

These programs could provide a framework that the Railroad Commission could use to strengthen its well cleanup program in Texas.

V. Conclusion

The Railroad Commission failed to adjust its orphan well program at the onset of the fracking boom, setting the state up for a disaster with the current oil and gas industry decline. While other states are looking at innovative programs to employ laid off industry workers to accelerate the plugging of abandoned wells, Texas continues to use the same formula it has for years.

But that formula hasn't kept pace with the growing number of wells that need plugging and sites that need remediation. As a result, funds allocated for the effort are not enough to keep up with current or future needs. Even as bankruptcies increase, the Commission has asked the Legislature for fewer funds, and it is requesting money from the General Revenue Fund for well plugging and site cleanup at a time when the state faces a significant budget shortfall.

The Commission's only action to address the dire state of the industry in the past year was to waive plugging requirements and surcharges and fees that help pay for environmental cleanup. Thankfully, on Dec. 8 state district Judge Jan Soifer barred the Railroad Commission from enforcing the three orders it adopted at its May 5 meeting. The judge determined that Railroad Commission violated the Texas Open Meetings Act by not specifying in the meeting notice which rules it intended to suspend. Railroad Commission is appealing the judge's finding and a trial is set for May 10. Though the Railroad Commission disagrees that it provided insufficient meeting notice, it attempted to remedy the violation by ratifying a revised notice retroactively on January 6, 2021.[129] Public Citizen contends that retroactively posting the appropriate language is not a sufficient remedy to the Commission's violation of the Texas Open Meetings Act.[130]

The Commission's decision to waive rules for struggling operators and appeal Soifer's order makes the state of the cleanup program all the more precarious. The Commission's actions create the potential for those costs to be shifted to the Commission and, ultimately, the taxpayer.

At the same time, declining revenue from oil and gas taxes and royalties could have a growing impact on state, county and school district funding, underscoring a broader need for Texas to develop a plan for weaning education and highway projects off of oil and gas-related revenue.

These are extraordinary times in the industry, and the Commission needs to fulfill its mandate to protect the state's natural resources and ensure economic vitality. That means taking steps to ensure Texas' growing orphan well problem doesn't pose a significant long-term risk to Texas landowners, taxpayers and the environment.

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