

AWARD-WINNING WALL STREET JOURNAL REPORTER AND AUTHOR OF *THE GREATEST TRADE EVER*

GREGORY ZUCKERMAN



THE OUTRAGEOUS
INSIDE STORY OF
THE NEW BILLIONAIRE
WILDCATTERS

THE FRACKERS

INTRODUCTION

William Butler was up nights, full of worry.

The grizzled eighty-three-year-old rancher in South Texas owed millions of dollars to various lenders, had almost nothing in the bank, and feared his two sons wouldn't be able to manage when he was gone.

Butler had the look of someone just off the set of a John Ford movie. Tall and broad, he tended his cattle in a flannel shirt, blue jeans, and muddy boots. He went by the nickname "Buck," spent seven days a week working with thousands of cows on his ranch, and in his old age relied on a walking stick made from the manhood of a two-thousand-pound Brahma bull.

Buck Butler was no cinema hero, however. A series of local schemers and connivers had taken advantage of him over the years. Butler compounded his problems by plowing all his free cash into nearby land, usually telling his nervous wife, Vera, about the purchases only after they had been completed.

By 2009, Butler faced growing difficulties with his business and was coping with a nervous system disorder. Vera began taking medication to calm her own nerves.

"When you owe over three million dollars you worry," she explains.

Less than four years later, on a warm January afternoon in 2013, I bounced around the front seat of Butler's new Dodge pickup as he told the story of how his difficult days had come to an end and a new life had begun.

Pointing to his rolling acreage like a proud parent, Butler described how one day—just over two years earlier—a representative of Conoco-Phillips had come knocking on his office door to ask if the huge oil

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company could drill on his property. It turned out that a type of rock called shale was buried more than a mile below its surface. The rock was soaked with oil that suddenly had become accessible. Almost overnight, Butler's land was transformed into some of the most valuable acreage in the world.

Butler parked his truck outside a Mexican restaurant in Nixon, Texas, population twenty-four hundred, and turned to me with piercing blue eyes.

"It's goddamn unbelievable what's happened to me in the last two years," he said, a smile of relief forming on his rugged face. "I have to reach out and pinch myself, it's too good to be true."

I was a business reporter from New York on a visit to South Texas in search of a story. My crisp blue Yankees cap seemed to clash with Butler's scuffed cowboy hat, and his honeyed Texas twang sometimes sounded like an entirely new language. I had spent a career at the *Wall Street Journal* writing about men and women who traded stocks and bonds, not livestock. Before I began my research, "frack" was the kind of word I'd caution my kids to avoid.

At that moment, though, I was sure my Marlboro Man's tale, and the stories of others I had heard in places like Williston, North Dakota, New Milford, Pennsylvania, and Lexington, Oklahoma, were among the most compelling a writer could hope to find. Buck Butler and others at the heart of one of the greatest energy revolutions in history had experienced astonishing and unexpected change thanks to American oil and gas discoveries deemed unthinkable just a few years ago. The nation itself has been transformed, as has the world.

The more work I put into the topic, the clearer it became that a burst of drilling in shale and other long-overlooked rock formations had created the biggest phenomenon to hit the business world since the housing and technology booms. In some ways, the impact of the energy bonanza might be even more dramatic than the previous expansions, especially if shale drilling catches on around the globe. Surging oil and gas production likely will affect governments, companies, and individuals in remarkable ways for decades to come.

Consider the following:

- As recently as 2006, business and government leaders fretted that America was running out of energy. By 2013, however, the United States was producing seven and a half million barrels of crude oil each day, up from five million in 2005. The country enjoyed its largest production increase in history in 2012 and could pump more than eleven million barrels a day by 2020, its highest figure ever and more than even Saudi Arabia currently produces.

So much oil is flowing that in a few more years, the United States may not need to import any crude, or might only rely on friends such as Canada and Mexico, ending a fifty-year addiction to oil from countries with interests that many years ago diverged from ours. In 2013, Saudi Arabia's billionaire prince Alwaleed bin Talal said the kingdom's oil-dependent economy had become vulnerable to rising U.S. energy production, a shocking turnaround from a few years ago when America seemed hopelessly dependent on Middle Eastern oil.

- America already is the world's largest producer of natural gas, thanks to shale drilling, and the country sits on two of the world's largest gas fields. Gas production has soared 20 percent in five years, and the United States now should have enough gas to last generations. Soon, the nation will begin *exporting* gas, an unimaginable possibility just a few years ago when energy supplies looked set to run out and the construction of gas importing facilities was considered a matter of national urgency.
- Rising production from dense rock has sent natural gas prices tumbling 75 percent since 2008. Because gas is used to heat and cool homes, produce electricity, grow food, power some vehicles, and make plastic, steel, and other products, the American gusher has been a boon to consumers and businesses, many of whom are still suffering from the worst economic downturn since the Great Depression. Meanwhile, growing U.S. oil production has allowed the country to enforce a boycott of crude from Iran at relatively little cost, and it could help keep a lid on global prices for years to come.

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- The energy boom could generate more than two million new jobs by 2020, offsetting the jobs lost in the housing market's collapse. Hiring is on the rise in Texas, Oklahoma, and Louisiana, as well as in Ohio, Wyoming, West Virginia, and Pennsylvania, a shot in the arm for many long-struggling regions. North Dakota enjoys an unemployment rate of about 3 percent, a Walmart in the heart of the state's oil region pays employees twenty-two dollars an hour, and some local McDonald's outlets have resorted to offering bonuses of \$300 and thirty-two-inch flat-screen televisions to lure new employees.¹
- Electricity and natural gas prices are so much cheaper in the United States than in most other countries that they could help usher in a new era of American economic dominance. A "reshoring" trend already is under way, as steel, chemical, fertilizer, plastics, tire, and other companies move production back to the country or expand existing factories, while foreign firms build new plants in the United States. The shift is helping to bring back some jobs once believed to have been lost forever to China and other low-cost economies. Some even see a manufacturing rebound in the making as "made in the USA" again becomes *de rigueur*.
- All the newfound oil and gas, along with expected energy exports, could boost the value of the U.S. dollar and reduce the nation's trade deficit. The explosion of oil also has defense specialists debating whether the United States may be able to avoid certain future military actions aimed at securing energy supplies, allowing the country to trim its bloated defense budget and perhaps cede some security responsibilities to other countries, like China, that remain dependent on Middle East oil production.
- China, Russia, Argentina, and Mexico are among the countries with their own deep pockets of shale that may be tapped in the years ahead, while government officials in the United Kingdom and elsewhere have urged their countries to embrace shale drilling. In fact, global gas production could rise by 50 percent by 2035, some analysts say, helping consumers and businesses around the world.

But troubling questions have been raised about the environmental consequences of some of the production methods responsible for soaring oil and gas supplies, including hydraulic fracturing, or “fracking.” Some worry about their impact on air and water quality, while others are concerned that fracking may contribute to climate change or lead to tremors and other disturbances. Hollywood starlets, rock stars, and media moguls, including Yoko Ono, Sean Lennon, Alec Baldwin, Paul McCartney, and Scarlett Johansson, have become activists on the hot-button issue, which figures to dominate headlines for years to come. The Rolling Stones even wrote a song, “Doom and Gloom,” that disparages fracking.

Many of the environmental threats can be addressed or are overstated. But progress has been too slow, there have been damaging mishaps, and some say there’s too little regulation. While soaring natural gas production actually might help alleviate global warming by reducing demand for dirtier coal in places like China, the resurgence of fossil fuels threatens to sap interest in still cleaner alternative energy sources. The full impact of the new drilling may take years to be fully understood, and some companies continue to resist sharing full details of how they fracture rock to get all that oil and gas, adding to the unease.

The shifts that have taken place in the United States, and those on the way around the globe, are in many ways not nearly as astonishing as the story of how a small group of individuals made it all happen, against all odds. These modern-day wildcatters ignored the skepticism and derision of experts, major oil companies, and even colleagues to drill in rock they believed was packed with oil and gas miles beneath the earth’s surface. These men have altered the economic, environmental, and geopolitical course of the world while scoring some of the swiftest windfalls in history.

George Mitchell, who discovered a novel way to extract gas from shale formations, pocketed more than \$2 billion. His impact eventually might even approach that of Henry Ford and Alexander Graham Bell. Aubrey McClendon and Tom Ward turned \$50,000 into one of the na-

tion's largest natural gas producers, one that would control the mineral rights to fifteen million acres, around three times the area of New Jersey. Mark Papa built a \$43 billion oil power from the discards of the disgraced Enron Corporation.

Another pioneer, Harold Hamm, amassed a fortune of more than \$12 billion, making him one of America's richest individuals. Hamm, who owns more oil in the ground than any American, has more wealth than Rupert Murdoch, Steven Cohen, Sumner Redstone, or even the estate of Steve Jobs. Hamm's ongoing divorce likely will set a record for the costliest in history and could leave his wife with more money than Oprah Winfrey. Even Hamm's right-hand man is worth as much as \$400 million, a sign of the outsized profits racked up by innovators of the age.

Some of the architects of the "shale gale" were upended by a revolution they themselves helped create, however. They would see fortunes slip through their fingers and experience ridicule and scorn rather than wealth and admiration. And if the worst fears about the drilling are borne out, those at the forefront of the movement will be remembered for the damage they wrought rather than the blessings they bestowed.

But how did a few unlikely, ambitious, and headstrong wildcatters—some without college degrees or much background in geology or drilling—manage to tap massive energy deposits dismissed by the largest energy powers? ExxonMobil's corporate headquarters are directly above a huge shale formation, but the oil giant disregarded the area, even as George Mitchell worked on coaxing historic amounts of gas from rock in the region.

Why did a new age of energy emerge from the depths of the Great Recession, even as Federal Reserve chairman Alan Greenspan warned of dwindling U.S. supplies, investors Warren Buffett and Henry Kravis bet on a dearth of natural gas, and Vladimir Putin predicted a Russian gas monopoly?

Why did private enterprise revitalize the nation's energy outlook with a focus on fossil fuels, of all things, even as governments funneled \$2 trillion toward cleaner, alternative energy? How did obscure energy entrepreneurs develop technologies to produce a surge of energy, even as a chorus of experts, including Peter Thiel, an original investor in Face-

book, derided the country for no longer making dramatic technological advances? And why did it all happen in the United States and not in China, Russia, or other countries that boast their own enormous deposits of oil and gas in similar rock?

This book, based on over three hundred hours of interviews with more than fifty of the key players of the era, attempts to answer these questions. It also anticipates how the new age of energy might influence global financial markets, economies, military activities, and international politics. Government experts charged with developing energy policy were caught flat-footed by the dramatic recent shifts, as were environmental specialists and top oil-and-gas executives, suggesting that there is much to learn from those who managed to lead the shale revolution.

Those responsible for the remarkable period skirted danger every step of the way, risking their reputations and livelihoods for the discoveries of a century. Their saga unfolded in barren fields, in cluttered pickup trucks, and in high-pressure boardrooms. It's one that will continue to impact the world for years to come.

PROLOGUE

The phone call came as a jolt.

It was May 2007 and Harold Hamm was enjoying dinner at the Brown Palace Hotel and Spa, an elegant hotel in downtown Denver. To Hamm's right were two longtime colleagues from his energy company, Continental Resources. A pair of Merrill Lynch investment bankers sat to Hamm's left. The group was two-thirds through a grueling ten-day coast-to-coast trip aimed at wooing investors ahead of a crucial initial public offering of shares of Continental.

When rock bands go on road trips, the days are slow and the nights furious; when executives take to the road to sell pieces of their companies, the opposite usually is true. Hamm and the bankers had spent a full day convincing mutual fund honchos that Continental was set to strike it big in North Dakota, a long-overlooked part of the country. Now the group relaxed over dinner and drinks, their jackets off and ties loosened, as they discussed ways to improve their pitch.

As he'd courted the investors, Hamm hadn't dwelled on the personal challenges he had overcome, such as growing up dirt poor in rural Lexington, Oklahoma, the youngest of thirteen children. He'd also avoided mention of his more recent turbulent love life.

Instead, Hamm shared an upbeat message about his company and a promising 15,000-square-mile formation of rocks called the Bakken that was under parts of North Dakota, Montana, and Canada. Hamm believed he was at the vanguard of a revolution that would deliver new oil and gas supplies to a nation running out of energy.

For all his big talk, though, Continental was producing just seven thousand barrels of oil a day from the Bakken's dense rock. It was a mere trickle, representing a fraction of 1 percent of what Exxon pumped on a

daily basis. The results offered little proof that much more would flow from a region that had frustrated wildcatters for years, making Hamm's pitch to investors challenging.

Still, the trip appeared to be on track, and the final leg—meetings with investors in Los Angeles—was just days away. The Merrill Lynch bankers told Hamm there seemed to be enough interest in Continental for the company to sell its shares for as much as eighteen dollars each in its prospective offering. With the IPO just a few weeks away, Hamm, a sixty-one-year-old with thinning auburn hair, a full stomach, and a playful grin, was in good spirits as the dinner wound down.

A lot was riding on the offering. Continental already owed \$253 million to lenders, and Hamm planned to use some of the IPO's proceeds to pay down a portion of that debt. He knew his company would have to raise hundreds of millions of additional dollars at some point to tap the vast quantities of oil he was convinced were buried in the Bakken's layers of rock. Being public was the only way his company could raise enough cash at reasonable rates to find all that oil.

"We had to be public to be a major player in the Bakken," Hamm recalls. "But at that point we had very little product."

Outside the hotel, gloom was setting in. The real estate market was on its last legs, financial firms were wobbling, and the global economy soon would experience its worst downturn in eighty years. Technology and management gurus said America had lost its creative spirit and the country's economic dominance seemed doomed. Many economists predicted a passing of the baton to India, Brazil, and China. Energy producers were coming up dry, leading to hand-wringing on Wall Street and in Washington, D.C., about how the United States would meet its future energy needs.

As Hamm looked around the table, though, he was convinced he was close to realizing his life's dream, one that would help confer extraordinary blessings on the nation just when it needed them most. Most executives his age were negotiating retirement packages and scouting golf courses. In a sense, though, Hamm's real life's work was just beginning. He was convinced a historic gusher was in the offing that would reenergize the entire country.

Just then, one of the Merrill Lynch bankers, Christopher Mize, heard his cell phone ring. Hamm watched as Mize picked it up.

“Wow . . . that’s a surprise . . . okay . . . thanks.”

Hamm sensed something was wrong.

“It’s not good,” Mize told him.

Two competitors in North Dakota had just reported results from their own exploration efforts in the Bakken rock layer. They were big-time disappointments, suggesting that Continental would also come up dry in the area.

“They busted their pick,” one of the bankers told Hamm, using industry lingo for a huge strikeout.

We can pull the plug on the IPO or keep it going and try to make it happen, though it will be more of a challenge, the bankers told Hamm. It’s up to you, Harold. Think it through, carefully.

Hamm barely uttered a good night and went straight to his room, shaken by the news.

The next morning, Hamm told his team they’d continue to pursue the IPO, even if it meant lowering the price to try to entice investors. They might not appreciate what Continental was working on, but Hamm was sure they’d catch on.

Behind Hamm’s confidence was an understanding of the dramatic advances a few American companies like his own were achieving in the way they drilled and extracted oil and gas, breakthroughs that Wall Street investors, industry experts, and even the largest oil companies didn’t fully appreciate. For decades, prospectors had fractured, or broken up, rock formations by pummeling them with various liquids, creating pathways for natural gas to flow to the surface. The process was called hydraulic fracturing, or fracking.

But Hamm, along with other adventurous wildcatters around the country, had begun to combine improved fracking techniques with cutting-edge methods of drilling sideways deep in the ground. They were targeting long, wide rock layers thick with oil and gas. These were formations of shale and other rock that geologists once only dreamed of accessing. Hamm was receiving daily updates detailing how his crew was boring ten thousand feet into the ground, turning drill bits to go another

two miles horizontally, and locating layers of rock brimming with oil. One of Hamm's men boasted he now could hit a target miles below the surface that was no larger than a tiepin.

Hamm was determined to use this new technology to tap a modern-day gusher, one that would change the direction of his company and even his country. He just needed to get investors on board.

Several weeks later, Continental sold its shares at a reduced price of fifteen dollars a share. Wall Street is accustomed to IPOs that soar on takeoff. This one barely fluttered. For months, the stock did little, falling below fifteen dollars in early September 2007. One of Hamm's key staff members sold all his shares—even he worried the company wouldn't amount to much.

Hamm still believed an abundance of oil lay untapped in overlooked areas of America, and that his company was getting closer to finding it. Few agreed with him, however.

Don't they get what's happening? Hamm thought.

There was good reason for deep skepticism about Harold Hamm and his quest to unlock huge amounts of oil in North Dakota. Hamm was a genial dreamer, maybe even past his prime, not unlike his nation.

The oil industry got its start in the United States and the country spent over a century as the world's energy giant. At one time, American oil-and-gas supplies seemed endless. But during the 1970s, promising fields became more difficult to locate. American oil production peaked in 1970 at 9.6 million barrels a day, and imports began to soar as the country scrambled to get enough crude to meet its growing demand. The 1973 Arab oil embargo served notice that the nation had become reliant on others for its energy needs. Those others usually weren't our best friends, either. Oil magnates J. R. Ewing on *Dallas* and Blake Carrington on *Dynasty* may have seduced television audiences in the 1970s and 1980s, but real-life drillers were finding it tough to regain their swagger amid a string of dry holes. A global glut of oil during the 1980s and 1990s resulted in weak prices—good news for consumers but bad news

for American wildcatters, who found it difficult to keep up with foreign rivals.

Power brokers in energy capitals such as Dallas, Houston, and Tulsa ignored what Hamm was up to in North Dakota. Instead, it was Aubrey McClendon—an Oklahoma upstart employing his own improved fracking and drilling techniques—who was gaining admiration and even envy. In late spring of 2008, McClendon became a multibillionaire, as shares of his new energy power, Chesapeake Energy, soared. He also helped bring a pro basketball team to Oklahoma City, electrifying the state. Later, when McClendon sat courtside at games with his relative, *Sports Illustrated* swimsuit cover model Kate Upton, the jealousy and buzz grew. Hamm owned his own front-row seat close by. Few noticed him, though.

Talk in the energy patch, in Washington, and on Wall Street in early 2008 was of “peak oil,” a popular and vaguely Malthusian notion that the growth of global energy supplies had reached its limit, a dreaded shift sure to lead to rising prices and global economic strains. McClendon’s company was among the few still making huge new discoveries by focusing its drilling on shale, a dense rock long ignored by oil giants.

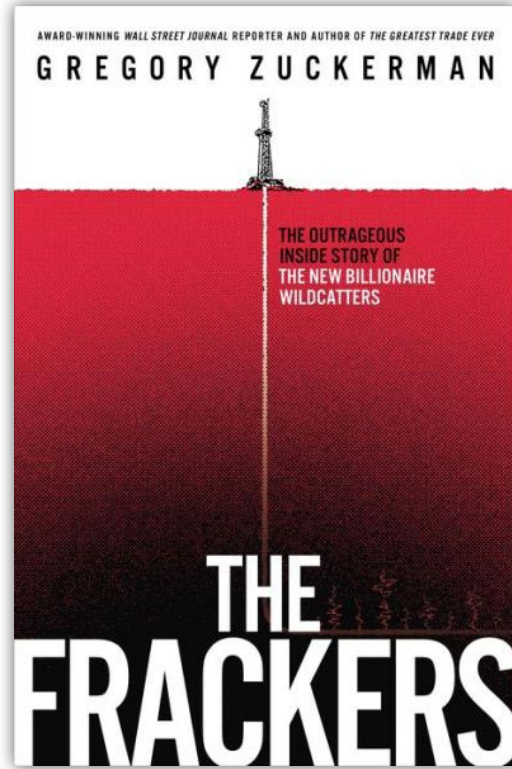
In March 2008, McClendon hosted a dinner at New York’s swanky ‘21’ Club for a group of Wall Street billionaires and others hoping to understand the new energy world. Investors George Soros and Stanley Druckenmiller were there. So were some of the leading minds of the global energy business. Over dinner, McClendon’s guests agreed that an era of oil and gas scarcity, and rising prices, had begun.

As he watched the conversation unfold from the head of the table, McClendon couldn’t hide a confident smile. His company was extracting growing quantities of natural gas, despite the pessimism around the room. McClendon had plans to pump even more of it, giving him a chance to become a modern-day Getty or Rockefeller.

Far from that New York hot spot, however, a revolution was quietly under way, one that star investors, energy experts, and most oil executives were oblivious to. It had started a decade earlier in Texas when a wildcatter named George Mitchell searched for a way to keep his business alive.

Soon Hamm, McClendon, and other once obscure drillers would unleash a dramatic transformation of the nation and the world. That evening in New York, though, few at the table had any idea what was ahead.

“It never occurred to any of us what was about to happen,” says Druckenmiller.



THE FRACKERS
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