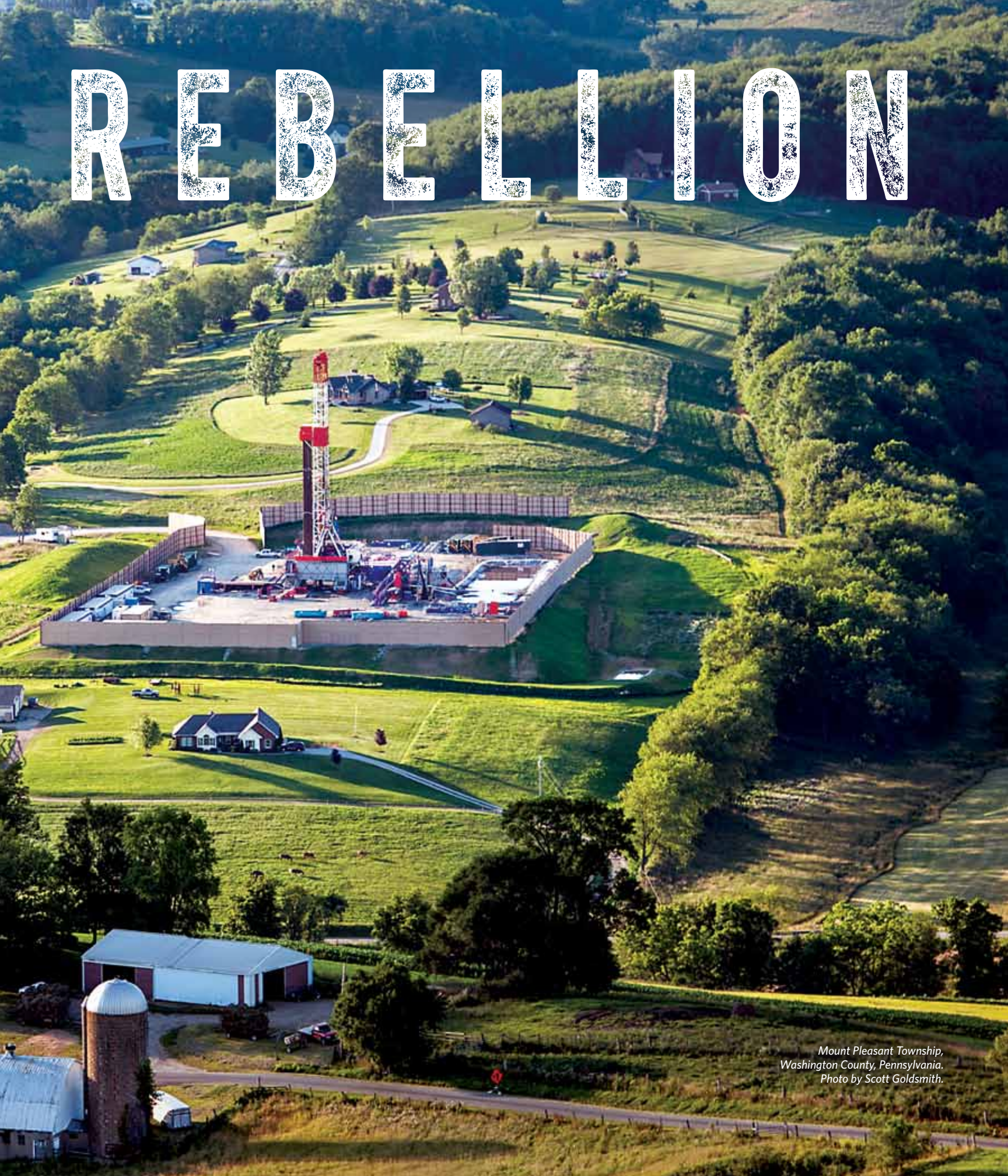


THE SHALE

In Pennsylvania, a band of unlikely activists fights the fracking boom. **BY BARRY YEOMAN**

REBELLION



Mount Pleasant Township,
Washington County, Pennsylvania.
Photo by Scott Goldsmith

Six months before she helped organize the protest known as Hands Across Riverdale, the word “fracking” didn’t mean much to Deb Eck. “Not a damn thing,” says the 52-year-old dollar-store manager. A single mother of twins, she was putting in crushing hours to provide a decent life for her daughters, who are now 12. On good days, she arrived home from work in time to help the girls with their schoolwork, tuck them into bed, and spend the rest of the night cooking and cleaning. There was no time to read about the natural-gas boom unfolding in her backyard.

One consolation for Eck’s hard work was the tranquility of her home. Riverdale Mobile Home Park’s 32 trailers sat on a leafy bank of the Susquehanna River in Piatt Township, Pennsylvania, in the state’s mountainous center, three hours from any major city. “The kids would play with the ducks in the field and had all kinds of friends,” she says. “I never had to worry about them going outside.” Nor did she worry about rent. The \$200 Eck paid for her lot was well within her monthly budget.

In February 2012, she learned that her landlord had sold the property to a joint venture called Aqua-PVR Water Services, which planned to build a water-withdrawal facility for local gas-drilling operations. Piatt Township sits atop the Marcellus Shale, a 95,000-square-mile rock formation stretching from New York to West Virginia. The shale contains an estimated \$500 billion worth of recoverable natural gas in Pennsylvania alone and has attracted a rush of energy companies into the region. The fuel is accessed by drilling thousands of feet down and then horizontally across a layer of sedimentary rock. Chemical-laced water is pumped underground to “fracture” the rock, creating fissures that free up the gas. The extraction process, including the horizontal drilling and hydraulic fracturing, is colloquially known as “fracking.”

Building the new plant meant evicting Riverdale’s residents. Eck and her neighbors were offered \$2,500 apiece—well below the cost of moving a trailer—if they agreed to leave two months before their June 1 deadline. That figure would taper down to zero if they delayed. Eck’s main worry was where she and her daughters were going to live. But then she went online and learned about the toxic chemicals used in fracking, which have been linked to water contamination. She read about how gas development destroys the integrity of forests, wreaking havoc with resident wildlife. “The more I found out, the worse it got,” she says. “They’re going to turn this peaceful, quiet community into an industrial area, suck water out of the Susquehanna, and ruin the habitat for how many different animals. It just made you sick to your stomach.”

As Eck kept reading, she learned about the political

power of the natural-gas industry. “There’s no way we’re going to be able to fight this,” she concluded. But then one of her neighbors told her that he had been talking with some environmental activists who wanted to help Riverdale’s residents. “Help us do what?” she asked.

“They want to stop this because of the fracking,” she recalls him saying.

Hearing that, Eck felt a bit encouraged. “We’ve got to all stick together, though,” she told him. “If we stick together, we can fight this. Maybe we’ll beat them.”

Most of Riverdale’s residents, desperate for cash, took the buyout. Some abandoned their trailers altogether or salvaged them for scrap. But seven households, including Eck’s, decided to defy the eviction notice. News of their plans traveled through environmental, church, student, and other progressive networks. As eviction day approached, anti-fracking activists descended on the park.

Among the first was Leah Schade. The minister of a Lutheran church in the next county, Schade had founded the Interfaith Sacred Earth Coalition, a network of clergy committed to safeguarding God’s creation. She had been offering pastoral support to Riverdale residents facing eviction, including an elderly couple—the wife had breast cancer—who couldn’t move their trailer and faced losing their life savings. Schade had tried using her moral authority to approach the new landowners, she says, only to be told, “Your job is to help these people move.” (Aqua-PVR’s parent company, Aqua America, did not return calls seeking comment.)

About two dozen people had arrived by May 31, the night before the bulldozing was slated to begin: college kids, senior citizens, local and regional environmentalists, veterans of the Occupy Wall Street movement. Schade helped organize an ecumenical prayer service. Participants lit 32 candles, one for each displaced family. They blessed four wooden bowls of river water. They read religious texts and held hands in a circle. When it was over, they launched into civil-disobedience training.

Schade stayed nearby with a friend that night. Returning the next morning, she could hardly believe what the residents and visitors had done. “Overnight, they had taken all of the



broken pieces of the discarded trailers, and old furniture and huge boards, and they built barriers across both roads and made signs,” she says. Tents had popped up; volunteers were making coffee; others were cleaning and patrolling the grounds. A full-scale occupation “was not something we had all planned,” she says. “I had expected to see simply a line of residents and activists with their arms linked, standing across the entrance to the park. Maybe a few signs and people chanting protests.” Surveying the riverside encampment, Schade turned to an acquaintance. “This is resurrection,” she said. “This is new life in the midst of death.”

Day after day, the protesters held off the bulldozers. Those who needed to leave for work, including Eck, did so. Others kept the encampment running: buying food, organizing security teams, caring for the children. The Occupy veterans built rocket stoves and composting toilets. “It was like a big family,” Eck says. “Lots of cooking. Lots of laughing. Even though we had lost so many members of our community, having the activists there made us feel like we weren’t alone. It actually made us think that maybe we stood a chance.”

Late one night, a protester and philosophy professor named Wendy Lynne Lee was patrolling the grounds when a truck pulled up. The driver was a Riverdale evictee who worked for a company that serviced the natural-gas industry. Because fracking paid his bills, he had not been sympathetic to the activists, some of whom he viewed as

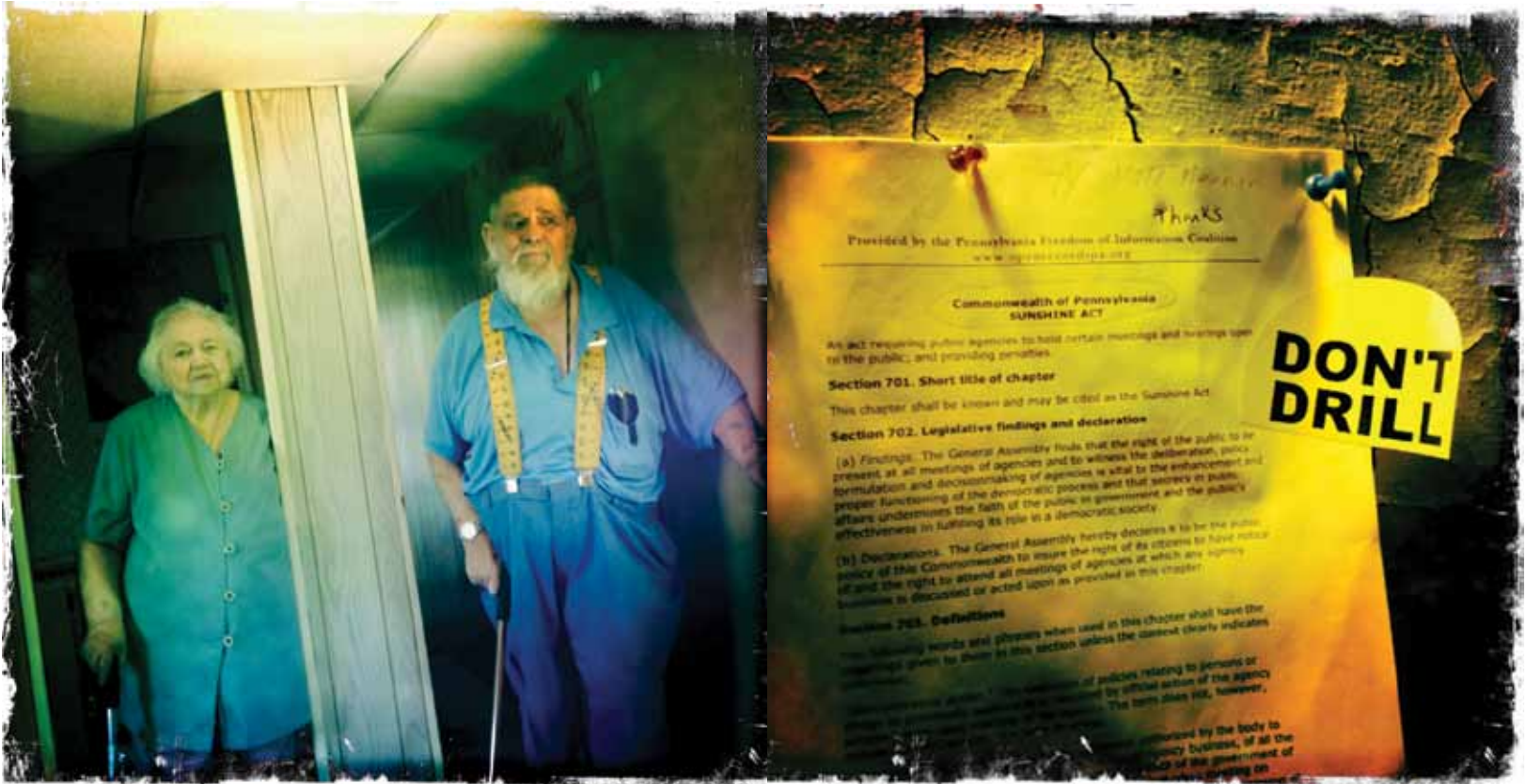
hippies. But he’d come to realize that he was in the same predicament as his neighbors, potentially facing homelessness because his trailer was too fragile to move. As Lee and the driver talked, he worried aloud about how he would provide for his family. Then he drove away. The next morning, when Lee emerged from her tent, she found him back at Riverdale, dismantling his roof to help fortify the encampment’s barricades. “That was his home,” she says, still incredulous. “He gave it to us to keep out the demolition crews for a few more days.” By that afternoon, the roof panels were covered with children’s handprints and painted words describing the residents: *Mother. School-bus driver. WWII Vet. Postal Worker. Americans.*

Thirteen days in, a private security team arrived, followed by the state police. Eck, who didn’t want to see the protesters arrested, asked them to stand down, which they did. “We knew it was going to fail,” says Schade. “But that’s not the point. The point is that the children there saw people who were resisting the powers and saw a vision of what is possible.”

More important, the standoff served as an emboldening moment for Pennsylvania’s Shale Rebellion, the loose-knit resistance that over the past three years has fought a desperate battle to stop the Marcellus drilling frenzy. Hands Across Riverdale drew blogosphere and news-media attention to a region where fracking opponents had felt

Accompanying this story are iPhone images by photo-journalist Lynn Johnson that document the anti-fracking rebellion in Pennsylvania. You can view the entire series at the Marcellus Shale Documentary Project’s website (<http://the-msdp.us>).

Above: Riverdale Mobile Home Park residents, including Deb Eck (in red), protest their eviction.



isolated and unheard. It broadened the movement, attracting economic-justice activists who saw how natural-gas extraction can harm people living at the margins. Although the water company won, the protest offered a cathartic moment of direct action after so many government meetings and letter-writing campaigns. Even today, the phrase “Remember Riverdale” serves as a motivational call for Pennsylvania’s anti-fracking activists.” For a lot of us,” Lee says, “these were 13 days that changed everything.”

FEW PLACES IN THE UNITED STATES are tougher ground for building an environmental-justice movement than the Appalachian counties of central Pennsylvania—politically conservative, temperamentally reticent, and historically reliant on resource extraction. “We’re family-oriented. We’re white. We don’t bother people. We take care of our own,” Schade told me in her office at United in Christ Lutheran Church, a rural congregation near West Milton, 35 miles southeast of Riverdale. “We labor under the American myth of you pull yourself up by your bootstraps. You’re independent. You do not get involved with other people’s business. And you trust the government.”

Yet central Pennsylvania, the hub of the Marcellus fracking boom, has also become one of the hubs of the Shale Rebellion. Across Pennsylvania, fracking opponents have shown up reliably at town-hall meetings. They have flooded

newspapers and state agencies with letters and comments. They have filed lawsuits and right-to-know requests. They have picketed legislators’ district offices and rallied outside industry conferences. They have protested in hazmat suits, in marching bands, in canoes. They have locked themselves to a giant papier-mâché pig. They have led educational hikes through threatened forests, driven anti-drilling floats in community parades, and given shale-field tours to overseas activists and policymakers. They have packed screenings of *Gasland*, Josh Fox’s 2010 documentary that featured Dimock Township in the state’s northeast corner, where drinking-water wells were found to be tainted with methane after fracking began. They have blogged prolifically. They have sat in trees to try to stop drilling and pipeline construction. In a handful of cities and towns, including Pittsburgh, they have passed ordinances, in defiance of state law, that ban fracking and strip drillers of their constitutional rights.

By and large, the activists are working independently of the national “Big Green” organizations, which generally came late to the fracking issue, initially viewing gas as a cleaner alternative to coal. With exceptions like Food & Water Watch, national groups have operated parallel to, rather than in collaboration with, the grassroots movement in Pennsylvania, focusing on tougher regulations rather than trying to ban drilling. “Some tend to have a

technocratic view of their role,” says Deborah Goldberg, an attorney with Earthjustice, a public-interest law firm based in San Francisco, which works closely with national and local groups. “They have scientists on staff, and they don’t feel like it’s important to work with local guys.”

The local guys are having an effect. A poll released in May by the University of Michigan and Muhlenberg College showed that 58 percent of Pennsylvanians support a fracking moratorium, compared to 31 percent who oppose it. While no earlier moratorium polls were conducted, this almost certainly represents a gain, considering that outright opposition to shale-gas extraction stood at 40 percent in Pennsylvania, compared to 27 percent who opposed fracking two years earlier. (Nationally, 49 percent of people oppose increased fracking, according to a recent Pew Research Center poll.) In June, Pennsylvania’s Democratic State Committee helped shift the state’s political center when it passed a resolution calling for a halt to fracking until “the practice can be done safely” and demanding restitution for the harms it has caused. That position puts party committee members in direct conflict with their major gubernatorial candidates for 2014, none of whom supports a moratorium, and with former Governor Ed Rendell, a Democrat who now works for a private-equity

Safe Drinking Water Act. Energy companies have more recently found a friend in President Barack Obama, who in his 2013 State of the Union speech linked the natural-gas boom to “cleaner power and greater energy independence” and promised to “keep cutting red tape and speeding up new oil and gas permits.”

No one knows exactly how much usable gas the Marcellus Shale contains. A U.S. Department of Energy report calls it the largest reservoir of “unconventional” natural gas—fuel trapped in rocks, requiring special technology to extract—in the world. Pennsylvania State University geosciences professor Terry Engelder projects that it could power the United States for 20 years.

The crossroads of the Marcellus gas industry lies in Williamsport, 15 minutes downstream from the former Riverdale Mobile Home Park. A small city best known as the international headquarters of Little League Baseball, Williamsport was dubbed the nation’s lumber capital during the 19th century. Locally harvested white pine and hemlock brought prosperity to the city, which boasts a collection of Victorian mansions called Millionaire’s Row. Then loggers tapped out the forests, forcing the last of Williamsport’s 30 sawmills to close in 1919. Deforestation left the city so destitute that police had to transport

BY AUGUST, 6,900 GAS WELLS HAD BEEN DRILLED IN PENNSYLVANIA. THAT FIGURE COULD EVENTUALLY REACH 100,000 OR MORE.

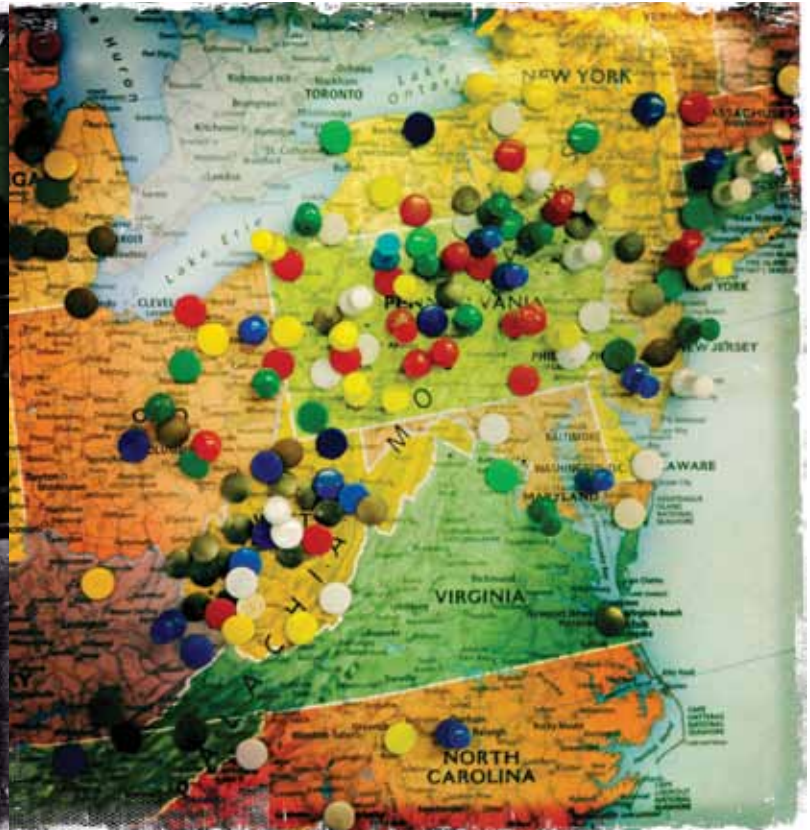
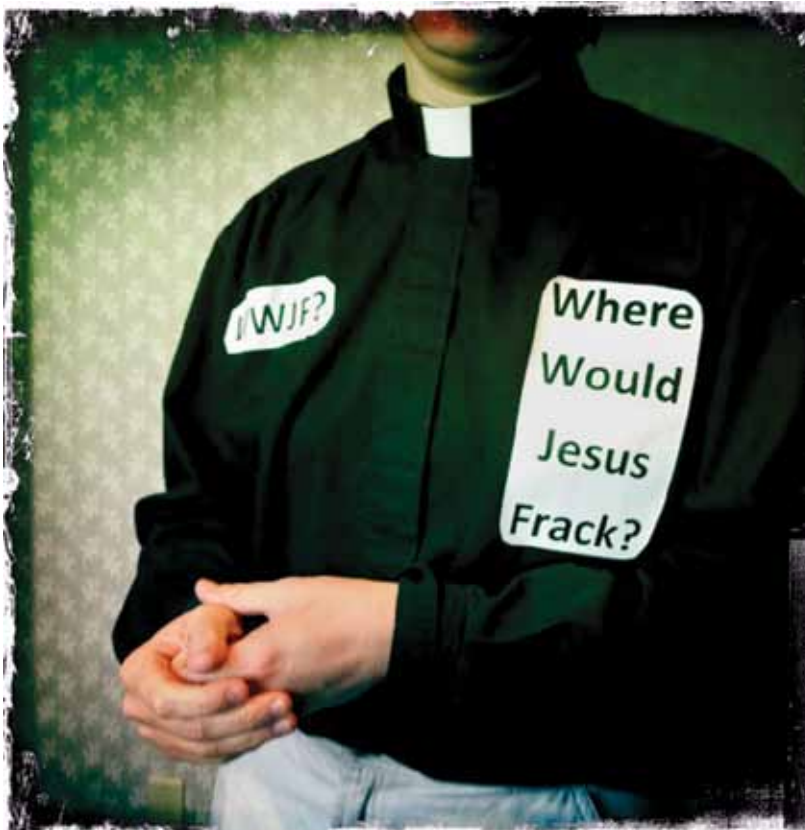
firm with natural-gas investments. In March, Rendell wrote a *New York Daily News* column urging New York state to end its five-year moratorium on drilling in the shale. “If we let fear carry the day,” he argued, “we will squander another key moment to move forward together.”

The Marcellus Shale, which underlies both the land and the conflict, covers almost two-thirds of Pennsylvania, extending across the entire northern tier of the state and dipping into the anthracite coal counties of the northeast. It also spans all of western Pennsylvania, including the Pittsburgh area. Geologists began recognizing the Marcellus’s potential in 2003—the same year, according to the American Society of Mechanical Engineers, that “producers began to explore the nation’s massive shale formations in earnest,” ushering in “fracking’s new Golden Age.” It took another five years for scientists to understand the full extent of the Marcellus and for drilling to ramp up. By then, Congress had given fracking a boost by passing in 2005 what’s commonly known as the “Halliburton loophole,” which stripped the U.S. Environmental Protection Agency of its power to regulate the practice under the

prisoners in wheelbarrows. Still, timber’s history defines Williamsport, just as coal defines the anthracite counties, and just as Titusville, in the state’s northwest, celebrates its distinction as the site of the world’s first oil well.

The deep forests around Williamsport have regenerated, and the area remains stunning. Winding two-lane roads cut through steep valleys laced with clear trout streams and brimming with white-tailed deer, otters, and bald eagles. Today the roads are populated with trucks bearing the logos of EXCO, a leading driller, and Halliburton, along with vehicles called “sand cans” that haul silica to prop open the shale fractures. Amid country churches and elementary schools sit concrete pads covered with wells and heavy equipment. They represent fracking’s infancy: As of August, gas companies had drilled 6,900 “unconventional” gas wells in Pennsylvania. Anthony Ingraffea, a professor of civil and environmental engineering at Cornell University and a prominent researcher in the field, predicts that figure could eventually reach 100,000. By contrast, 80,000 wells have been drilled or permitted nationwide since 2005.

Kevin Heatley, a restoration ecologist who lives outside



Hughesville, 20 miles east of Williamsport, says that the projected level of development would profoundly alter the region's terrain. Heatley uses the phrase "dispersed industrialization" to describe the interconnected well pads, pipelines, freshwater impoundments, compressor stations, and access roads, along with the artificial lighting and helicopter noise, that accompany fracking. That "industrial sprawl," he says, will fragment the landscape so much that it will no longer function naturally. "You will still have trees, but you will have wood lots, not core forest," he says. "You will have farms that are in between pipelines and in between compressor stations. The primary use of that landscape will be industrial extraction. They will try to screen it from the road, but if you fly over from the air, you will see a landscape that looks like a bad case of acne."

"WE'RE ON OUR WAY INTO FRACKLAND," Wendy Lynne Lee tells me as she steers her Honda Fit toward Sullivan County, east of Williamsport. The philosophy professor at nearby Bloomsburg University is 54 and generously inked and has the sinewy build of a marathon runner. As one of the founders, along with Leah Schade, of Shale Justice—a shoestring coalition of ten anti-fracking groups formed this year to share information and jointly plan protests—she's well known for a blog that fuses brainy polemics with unfiltered outrage. Last fall she delivered

a lecture called "The Good Ole' Boy Extraction Club: The Pseudo-Patriotic and Pervasively Patriarchal Culture of Hydraulic Fracturing." Diplomacy is not her forte. That has earned Lee equal measures of respect and derision. "Her academic scholarship is robust and her commitment to ethics based on her philosophical principles is beyond reproach," Schade says. "A fiction storyteller," writes Joe Massaro, a Pennsylvania-based field director for Energy in Depth, the public-relations arm of the Independent Petroleum Association of America.

From Lee's passenger seat, the mountains begin to look less inviting and more like sprawling natural-gas factories. In Davidson Township, 30 miles from Williamsport, we pass a tidy wooden house decorated with an eagle emblem and an American flag, flanked by barns, cornfields, and a row of oak trees. "I've taken, I don't know, 100 pictures of this farmhouse," Lee says. "Wait till you see what they now live with for the rest of their lives."

We round a corner. There's a gash ripped from the hillside, enclosed by a chain-link fence topped with three strands of barbed wire. Behind the fence stands a warehouse-size compressor station. It prepares the fracked gas for transportation along the 39-mile Marc I pipeline, built to connect three interstate pipelines carrying gas between the Northeast and the Gulf Coast. It's surrounded by so much bulldozed land that we can't see the whole complex from the road.



“The early years of this movement were focused on the frack pads”—the actual drilling sites, Lee says. “But without the pipelines and the compressors, there’s no point in fracking for the gas.” Research by Allen Robinson, a mechanical-engineering professor at Carnegie Mellon University in Pittsburgh, has found that compressor stations emit cancer-causing chemicals like benzene and formaldehyde, along with ozone, which aggravates asthma and other lung diseases. The stations are also subject to alarmingly frequent accidents. Since 2010, news and government reports have documented at least 35 fires and explosions at or next to compressor stations throughout the U.S., including two in Susquehanna County over the past two years. The first, in March 2012, blew a hole in the roof, rattled nearby homes, and released about a ton of methane gas; investigators concluded it was the result of a gas leak caused by human error. Industry officials say the news accounts exaggerate the problem of explosions. “I’m not saying it’s a good thing,” says Cathy Landry, a spokesperson for the Interstate Natural Gas Association of America. “But typically there haven’t been injuries to the public or third-party damage.”

Lee says the explosions are almost beside the point. “An accident doesn’t have to happen for this to be a disaster,” she says. “This *is* a disaster.” She turns to me: “This used to be a mountain.”

From Davidson Township, we’re off to Picture Rocks, partway back to Williamsport, where heavy machines are mowing down a wide stripe of woods to create a pipeline right-of-way. The clear-cut path brushes against the flagged boundary of a wetland and the edge of a classic red barn. Next door, a garage sale proceeds as if nothing were amiss. Nearby, we stop to observe a particularly large well pad where a farm used to be. A remnant of an old wooden fencing runs up to its edge, and volunteer corn stalks grow in the ditch. Now there are six natural-gas wells, along with trucks, trailers, floodlights, a flare, a crane-like contraption called a wire line, and tanks to hold both fuel and the toxic water that returns to the surface after drilling. “Just imagine 100,000 of these,” Lee says, nodding toward a well. “Plus all the compressors, all the pipelines, all the dehydrators, all the water withdrawals, all the sand cans, all the waste haulers. I can’t imagine what’s left of Pennsylvania.”

DESPITE THE INDUSTRY’S INSISTENCE that fracking is safe, a growing body of science has linked it to various ills. Researchers have associated it with the poisoning of drinking-water wells. Duke University scientists have found elevated salts, metals, and radioactivity in river water and sediment near a western Pennsylvania creek where treated wastewater was released. In 2011, Cornell

engineer Ingraffea and two colleagues concluded that shale gas has a larger greenhouse-gas footprint than coal or conventional oil and gas when viewed over a 20-year period. These studies speak in likelihoods, not certainties: Fracking remains poorly studied, partly because drillers have successfully lobbied not to disclose the chemicals they use, citing trade secrets.

None of this tops Kevin Heatley's list of worries. In 1999, the ecologist moved to nine wooded acres near Hughesville, knowing hardly a soul but drawn to the land. Heatley can see black bears and bobcats just outside his house, and coyotes deeper into the forest. Once during a snowstorm, he spotted a porcupine taking refuge in the branches of a white pine. "I love the snakes. I love the frogs," he says. "I'm not religious, but that's as close to sacred as you can get."

The prospect of losing this bounty has driven him to reluctant activism. Heatley sits on the steering committee of Shale Justice and used to serve on the board of one of its member groups, the Williamsport-based Responsible Drilling Alliance. He gives lectures around the region and shows visitors the shale fields. He'd rather spend that time fishing.

We meet at his house on a summer morning and walk the land. At 53, Heatley has a compact frame, blue eyes,

Heatley wants to show me what this industrialization looks like on a more stomach-turning scale. So we drive across the county to McHenry Township, population 143, to visit a man named Bob Deering. At the turnoff to the mountain where Deering lives, a security guard sitting under an umbrella stops us. "I gotta put you back across the road for just a couple of minutes," she says. "There's trucks coming down." Though Deering lives up a public road, it has been commandeered, with the township's permission, by a drilling company, whose security contractor has posted guard shacks at intervals and a sign that says, "Travel at your own risk." We wait on the shoulder for 12 minutes. It's 90 degrees outside. "Welcome to Pennsylvania," Heatley says.

Uphill, past another guard station, we reach Deering's two-story log house. Deering, who is wearing a gray Smith & Wesson baseball cap, is 62, with a reedy voice and a salt-and-pepper beard that covers a deeply creased face. Growing up three counties to the south, he often came to a hunting camp on this mountain to shoot turkey and deer with his family. "We used to swing like Tarzan and the apes between maple trees," he recalls of his childhood. "This was our retreat." By the time he retired from his job servicing telephones and computers for Verizon in 2001,

FEW PLACES IN THE U.S. ARE TOUGHER GROUND FOR BUILDING AN ENVIRONMENTAL-JUSTICE MOVEMENT THAN CENTRAL PENNSYLVANIA.

and a boisterous sense of humor that he uses to win allies. "I will tell you something if you can keep a secret," he declared at a June hearing about drilling near the Old Logger's Path in Loyalsock State Forest. "One time when I was much younger and much better looking, I made love to a beautiful woman on a flat moss-covered rock up along the Old Logger's Path." The crowd whooped. "And I'll be damned if I'm gonna let them put some fracker eating his McDonald's lunch on top of that rock."

The humor fails to conceal a wellspring of anger, particularly when Heatley talks about industrial sprawl. "What made this area unique was core forest, interior forest," he says. "That's going away. You cannot put in industrial sites every mile and not have massive changes in the fundamental structure and functioning of that forest." The impacts, he says, are "cascading": They work their way throughout the ecosystem, altering the hydrology, air temperature, soil moisture, microorganisms, plant communities, stream chemistry, and animal populations. Talking about this gets him enraged at the gas companies. "These people do not give a fuck about the structure and function," he says.

his parents had moved here permanently, and he wanted to live closer to them. He and his wife built their home on property surrounded by state forest and state game lands.

Six years later, as the drilling fever was starting to heat up in Pennsylvania, landmen representing various gas companies arrived seeking mineral rights from Deering and his neighbors. One offered Deering a five-year, \$900-a-year lease. "He didn't put it in writing, but he said, 'We will never drill on top of your ground. We just want to lease your ground to lock it up.'"

That didn't sound so bad, so Deering signed, and indeed, his land was never touched. But just up the road, drillers began leveling state forest tracts, replacing the woods with fracking infrastructure. Between 2008 and 2010, Pennsylvania's government had leased 138,000 acres of state forest to developers in an effort to balance its books during a recession. "The state budget was *in extremis*, and this was right at the beginning of the land rush for the Marcellus," says John Quigley, who served as the state's secretary of conservation and natural resources during some of that time. "The price of leases was exploding."



Helicopters doing seismic tests hovered above Deering's home. Explosives were detonated nearby. Stadium lights obliterated the night sky. Residents were banned from driving on township roads for up to ten hours on some days to accommodate the trucks climbing the mountain. A wastewater retention pond went up adjacent to Deering's land. Two compressor stations are in the works.

At the end of the lease term, Deering and four of his neighbors refused to renew. Two others had no choice because their leases required automatic renewal. By then, much of the land around his property was ruined.

Deering and his wife tried to maintain some normalcy. He would take their golden retriever Barley on walks along a road where fracking trucks drove. Arriving home, the dog often licked her paws. Then Barley, who was only seven, developed throat and mouth cancer and had to be euthanized. (Sandra Bamberger, a veterinarian in Ithaca, New York, says oral tumors in dogs can be caused by exposure to drilling wastewater but are also "fairly common.") Deering will never know if there was a connection—and he doesn't make any claims—but what jarred him, he says, was the vet's first comment after delivering the diagnosis: "You're not going to try to push this on the gas company, are you? I'm not getting involved in a lawsuit."

"I'm not a tree hugger," Deering says. But his recent experiences have prodded him to show up at hearings, tell

his story, and support others in similar predicaments. "I was in the Army for seven and a half years," he says. "Now I know why Third World countries hate us so bad."

We climb into Deering's truck. At yet another checkpoint, a placard instructs employees not to let journalists pass: "Must ask them to leave and report it to your supervisor rite [*sic*] away." I hide my recorder as Deering finesses our way through—it's a public road, after all—and then I understand why I'm not wanted here. This looks nothing like a state forest. Large tracts have been mowed down, and some of the land has been converted into well pads. Trucks carrying drilling waste kick up dust along packed-stone roads. We pass a pipeline right-of-way as wide as a small skyscraper is tall. "Right over the top of this mountain," Deering says, "is where the sun sets."

Heatley's usual buoyancy has drained away. He turns to Deering, looking tired. "I don't want to live here anymore," he says.

"What do I tell my kids?" Deering asks in commiseration. "My son has a degree in forestry. I'm going to say, 'I tried. I did my part. I lost.'"

WHILE IT CONTINUES TO BUILD STEAM, the Shale Rebellion remains—for now—a decentralized movement with no uniform goal. Some activists are focused entirely on their own backyards; others want to keep wells out of state



forests. Some want tighter regulation; others are fighting for a statewide moratorium or a total ban.

Heatley emphatically supports a ban, but he agrees with most activists that the first priority is “to generate enough public resentment and distrust of this industry to ultimately change the political paradigm.” That means contending with some deep pockets. According to research by Common Cause, the natural-gas industry reported spending \$21.6 million lobbying state officials between 2007 and 2012. That figure doesn’t touch the amount actually spent during the Marcellus boom, because Pennsylvania had no lobbying disclosure law from 2002 through 2006. “That was a period when the industry knew the boom was coming”—but the public didn’t—“and they got their dominoes in place,” says James Browning, Common Cause’s regional director for state operations. “That’s five years of lobbying without disclosure.” Pennsylvania imposes no limits on campaign contributions from individuals, which helped Governor Tom Corbett, a Republican, amass \$1.8 million from gas interests between 2004 and 2011.

Corbett is an avid fracking supporter who sees the Marcellus as “a source of potential wealth, the foundation of a new economy.” He says the sale of mineral rights by landowners is the “American way” and predicts that natural gas will generate jobs and spinoff businesses into the 22nd century. Backing Corbett, along with prominent Democrats

like Rendell, is a legislature with Republican majorities in both chambers. Pennsylvania remains the only major energy state that doesn’t tax the value of extracted gas. Corbett refused to reconsider such a tax even as he was proposing extensive education cuts in 2011, saying it would “scare these industries off.”

Needless to say, fracking opponents can’t match the industry’s spending. “The only thing we have to counteract the money,” Heatley says, “is numbers.” That’s why groups like Shale Justice are focusing more on building citizen support than on pushing specific legislative goals.

The industry knows that public disapproval is its No. 1 threat. In 2012, the international corporate consulting firm Control Risks published an assessment of the global anti-fracking movement that attracted considerable attention in the business and environmentalist worlds for its comprehensiveness and candor. Analyst Jonathan Wood described a drilling sector that “has repeatedly been caught off guard by the sophistication, speed and influence of anti-fracking activists,” who have organized community-based groups adept at using online social media like Facebook and YouTube. Many of those activists, Wood wrote, were inspired by *Gasland*, which “brought anti-fracking sentiment to the masses” and “almost single-handedly ... made unconventional gas production internationally controversial.”

Wood nodded to another tactic used by the Pennsylvania

rebels: monitoring the industry and publishing the findings online. Until 2008 in the Marcellus Shale region, he wrote, “companies [played] on general ignorance about the science, practice and economics of hydraulic fracturing to secure favorable lease terms.” As anti-drilling groups emerged, their websites published details about drilling licenses, contamination incidents, lawsuits, and legislation, which in turn helped “correct significant information asymmetries.”

In 2008, then-Governor David Paterson of New York responded to mounting concerns about contamination in the shale by ordering a fracking moratorium until an environmental assessment was completed. “This was the crucial decision,” says Matthew Barnes, a Princeton University doctoral student who is writing his dissertation on fracking politics. The moratorium, which continues more than five years later, bought grassroots opponents enough time to organize “an onslaught of anti-fracking protests and demonstrations” and to point out the problems unfolding across the border in Pennsylvania. More than 150 municipal governments passed fracking bans and moratoria, and two key court decisions upheld local bans. Those decisions are under review by the state’s highest court. Still, Barnes says, in New York “the anti groups are definitely winning.”

north of Williamsport, and lives in a house that has been in his family for more than a century. Between high school and college, he intermittently built gas pipelines in Pennsylvania and New York. Now he works as a stonemason when he’s not publishing the free newspaper. He wants me to understand that he’s no lackey—he doesn’t accept advertising from major energy companies—but rather a man with local roots who believes fracking has rescued this region from despair. “I remember people driving two hours to a job that made ten bucks an hour, and that’s big money,” he says, adding that today they can make two or three times that much driving trucks for gas companies.

We talk for two consecutive nights. Asbury steers clear of bashing anti-drilling activists, speaking admiringly of their passion. But he also casts them as sentimentalists distraught primarily over the loss of pastoral beauty. “I have empathy,” he says. “I envision some guy in a high-rise in Jersey or Philly, and every month he gets that copy of *Hobby Farm*, and he dreams of the day he can say sayonara to the cubicle and burn his tie and go off and be Old MacDonald. And he comes here, and all of a sudden it’s trucks and it’s traffic. But, you know....” He changes the topic. I interrupt him.

“You know *what?*” I ask.

“That’s just how life is,” he says. “Things change. Change

FRACKING REMAINS POORLY STUDIED, PARTLY BECAUSE DRILLERS HAVE SUCCESSFULLY LOBBIED NOT TO DISCLOSE THE CHEMICALS THEY USE.

PENNSYLVANIA ISN’T NEW YORK. It lacks the liberal home-rule laws that give broad powers to local governments. Its state officials are more conservative, and its long tradition of extraction has led to greater public comfort with it. There’s also the economic argument: More than half of Pennsylvanians still say the benefits of fracking outweigh the problems. And there are benefits. A 2013 survey by the U.S. Bureau of Economic Analysis ranked Williamsport and surrounding Lycoming County, which covers more than 1,200 square miles, as the nation’s third-leading metropolitan area in economic growth.

One night in Williamsport, I stop by a microbrewery and sit at the bar. A friendly, towering, Red Man–chewing guy claims the stool next to me. He has thick eyebrows and the long face one often associates with Civil War re-enactors—which, it turns out, he is. He welcomes me to one of the nation’s economic powerhouses and hands me the newspaper he publishes for shale-field workers, a haphazard broadsheet called *The Drill’N Man* that claims an average circulation of 30,000.

James Asbury, who is 35, grew up in Mansfield, 50 miles

can be a dance that says, ‘Look at what’s new.’ Or it can be a tantrum that says, ‘I want it back the way it was before.’ We can’t save something just because it’s beautiful. We can’t save every scrap and stick and twig.”

Besides, Asbury says, beauty is subjective. “I look at that flare in the sky”—the one that burns off excess methane—“and I think somebody’s mortgage just got paid. One of my neighbors can sleep easier.”

Only one moment from our interview disquiets me. On the second night, as we sit down with our beers, Asbury says, “So I heard you spent some time with Wendy Lee.” I hadn’t mentioned the professor the previous night. I ask how he knows. “I have contacts with every waitress and every...”—here he pauses—“I’ve got everybody pegged. I know crap about people that they don’t know about themselves. Nothing gets done in this business without...”—another pause—“there are double spies and double agents.”

When I mention this later to Kevin Heatley, he sounds creeped out. Things are tense in central Pennsylvania, with distrust on both sides. Heatley describes being followed by unmarked pickup trucks while taking visitors

on tours of fracking sites. Lee's house was broken into, and nothing was stolen, shortly after she met with some direct-action environmentalists in September. "It starts to make you paranoid," Heatley says. "You're hypervigilant. Instead of being secure, you're looking over your shoulder to make sure you're aware if somebody's surveilling you." The ecologist now stashes his telephone underneath his pillow at night to make sure no one tampers with it. "I've slept more with my phone than I've ever slept with women," he says.

Industry representatives describe feeling menaced, too. "I've heard stories about operators finding pipe bombs on their right-of-ways," says Joe Massaro, the Energy in Depth field director. "We've had a couple of instances where [fracking opponents] created blockades on access roads to well pads. They wear bandanas to cover their face. I hate to put the label 'ecoterrorism' on it, but that's what it comes off as." Massaro says he doesn't worry about activists like Lee, with whom he has sparred online. "It's the ones we don't know that I'm nervous about."

Whether this nervousness is warranted isn't clear. In 2010, the Pennsylvania Office of Homeland Security released an intelligence bulletin forecasting a rise in crime by radical environmentalists. (It quoted the FBI.) The

bulletin listed every meeting where activists might show up in the coming weeks, including public meetings and a *Gasland* screening. But when a reporter from the nonprofit newsroom ProPublica contacted the Pennsylvania State Police's Domestic Security Office, he was told there were no "incidents of any significance [nor] any environmental extremists." Since then there have been a drive-by shooting and an attempted pipe-bomb attack at Marcellus sites near Pittsburgh. No one was hurt, and police didn't link either incident to environmentalists.

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MORE THAN HALF OF PENNSYLVANIANS STILL SAY THE ECONOMIC BENEFITS OF FRACKING OUTWEIGH THE ENVIRONMENTAL PROBLEMS.

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THOUGH PENNSYLVANIA'S SHALE REBELS have met resistance from state officials, Quigley, the former secretary of conservation and natural resources, credits them with "altering the conversation" by raising issues like environmental contamination. "There is a continuing threat to the industry's social license to operate," he says, "if they choose to ignore these issues." Even so, activists recognize that state policy change remains a long way off. That's why Shale Justice's Wendy Lynne Lee and others have been looking to broaden their strategic arsenal. Recently, they've

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The tactic has begun to spread to central Pennsylvania. Sixty-five miles from Williamsport, residents of State College, home to Penn State, defied their nervous elected officials in 2011 and approved—with 72 percent of the vote—a similar fracking ban. They were followed in 2012 by adjacent Ferguson Township, which is part suburban and part rural. Municipal civil disobedience, Lee says, might offer the only viable end run around state officials gung ho about drilling. “It offers a return to the prospect of a democracy,” she says, “perhaps a return to the democracy we have never had.”

MORE THAN A YEAR AFTER THE OCCUPATION of Riverdale, Deb Eck still works long hours at the dollar store, though now she comes home to a different trailer park, where her daughters don’t feel safe. “All my furniture’s basically in the same place,” she says. “But it’s not home.” Time constraints keep her from being too involved in anti-fracking politics, but she thinks that she might be cultivating the next activist generation. One of her twin daughters recently won a citizenship award at her school. When the girl learned the prize was named after a state legislator who rebuffed the evictees, and who accepted campaign dollars from Aqua America, her mother says she announced, “I don’t want that award anymore.”

Twenty-five miles away, Bob Deering watches as more

natural-gas infrastructure pops up around the home that was supposed to be his quiet escape. The state forest on one side of his house is already being fracked; recently he learned that thousands of acres of state game lands on the other side have also been leased. “Now we’re surrounded,” he says.

Central Pennsylvania’s shale rebels teeter along the boundary of hope and despair. They wonder if the state can be saved. But they find reasons to press on.

“What we’re doing here—while it may never save Pennsylvania, it has unequivocally, without a doubt, saved people’s homes in other sections of the planet,” says Kevin Heatley, who has met with citizens concerned about fracking from Michigan to Australia. “People come to Pennsylvania and they look at it as the poster child. If we show other people just what’s going on, they’re mortified. So we’ve actually put the brakes on the industry in other areas because we’re communicating. I’m coming out of the fire, and they all want to know what it’s like to live in that. When you tell them it’s horrible, you can energize them.

“Whether we’re going to save Pennsylvania,” he continues, “that’s going to be a harder row to hoe. But if we walked away tomorrow and said, ‘That’s it; somebody take the flag, leave Pennsylvania, it’s gone,’ we’ve still had a dramatic impact on other people’s homes and lives. That is really, to me, our success story so far.” ■

Above left, Douglas Shields, former Pittsburgh City Council president