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Nancy Sorrells sat down in the gallery of the Supreme Court of the United States, looked around the storied chamber, and took a moment to marvel at just how far she and her neighbors had come.

It was February 24, 2020. Nearly six years had passed since Dominion Energy, one of the biggest power companies in the country, had unveiled its plans to build a natural gas pipeline from West Virginia's fracking fields across Virginia to eastern North Carolina.¹ At 42 inches in diameter, the pipeline would be the largest to ever cross Appalachia's rock-ribbed ridges. At close to 600 miles in length, it would be nearly as long as the Blue Ridge Mountains themselves. And with a price tag that had swelled to \$8 billion, its owners would have a strong incentive to keep gas flowing through it for decades to come.

Sorrells, a publisher and historian who lived in a Shenandoah Valley hamlet a few miles from the project's path, helped lead one of the dozens of grassroots groups that had banded together to fight it since 2014. She and a small contingent had traveled to Washington, DC, the night before, with plans to rise at three in the morning and wait for tickets to hear oral arguments in their case, *Atlantic Coast Pipeline LLC and U.S. Forest Service v. Cowpasture River Preservation Association*. But they discovered a long line of people already winding around First Street and East Capitol, angling to be among the fifty members of the public admitted.²

Throughout the night, fellow pipeline fighters from Virginia and West Virginia clustered together in small groups, chatting, sharing thermoses of tea, stamping their feet in the darkness. When Dominion routed its pipeline through their communities, the company had roused—and unified—a diverse group of citizens from across the political spectrum in opposition: retirees, innkeepers, farmers, scientists, physical therapists, pastors, nurses, teachers, builders, former lobbyists, engineers, and entrepreneurs. With temperatures hovering just above freezing, some wrapped themselves in sleeping bags and reclined on folding chairs to grab brief snatches of sleep.³ A member of Sorrells's group stayed in line, while the rest retired for the night. At 5:00 a.m., having secured just one ticket between them, the group decided that Sorrells should be the one to use it. After all, few had been more

relentless in the struggle against Dominion's pipeline or more confident that they could defeat it.

For years, Sorrells had been telling everyone that the Atlantic Coast Pipeline was not inevitable—that, if they kept fighting, their band of Davids could overcome Dominion's Goliath. In every email she sent, every flyer she handed out, she included the sentence: "This pipeline is not a done deal."

And here, she thought, was the proof. Nearly everyone had expected Dominion—the most politically powerful company in Virginia—to steamroll them. "At the very beginning it was like we were just a little drop in the ocean," she said. But after years of contending in courtrooms, street protests, shareholders' meetings, newspaper opinion pages, and under the fluorescent lights at every conceivable kind of county or state or federal public hearing, they had stymied the largest fossil fuel pipeline project to come out of Appalachia.

And they had forced Dominion to appeal to the highest court in the land for permission to build its gas line through Virginia's mountains.

Once the justices had taken their seats, Sorrells's first thought was: *There's Ruth Bader Ginsburg, this is unreal.* But as she listened to the oral arguments unfold, her excitement was tempered by a dawning realization: they were going to lose this case.

Many of the grassroots groups opposing Dominion's pipeline were represented by the Southern Environmental Law Center, a nonprofit legal organization based in Charlottesville. As was common practice, SELC had hired a veteran counsel with experience before the Supreme Court to argue the case. As he jostled with the justices, Sorrells kept jotting down notes and thinking of points she wished he would make.

"It wasn't a bad argument," she said. "But he didn't make those points, because he hadn't lived it for six years."



From her home at the western foot of the Blue Ridge, a few miles from where Dominion planned to drill a mile-long tunnel through the mountains, Sorrells had been living it since the day it was announced.

In the fall of 2014, Dominion had mailed a flyer to residents of

communities along the project's proposed route through western Virginia. Like a coach collecting opponents' taunts on the locker room bulletin board to motivate her players, Sorrells had held on to it ever since.⁴ Printed in large font, against a backdrop of forested mountains and lush valleys stretching west of the Blue Ridge, was a bold claim: "The Atlantic Coast Pipeline will change everything. And nothing."

This slogan encapsulated Dominion's sales pitch: its gas conduit would supercharge collective prosperity, at virtually no cost. The company sought to convince everyone—local landowners, lawmakers, investors, regulators—that the ACP was essential to meet growing demand for gas, lower energy bills for its customers, and cut its own carbon emissions as it replaced older coal-burning power plants. And, moreover, that it could safely bury its pipe across the region's steep, slide-prone slopes.⁵

But for many who lived in its path, that tagline offered an inverted reflection of their darkest fears. They feared that, in terms of concrete economic benefits, the pipeline would change nothing. Local businesses wouldn't be able to tap its gas even if they wanted to, unless they paid a \$5.5 million connection fee.⁶ Construction jobs would be temporary, largely filled by crews from Oklahoma and Texas. Many local residents got their power from local cooperatives, not Dominion.

And on the other side, they worried the project really would change everything. That it would threaten life and limb, water quality, property values, local businesses, ecosystems, the very stability of their beloved mountains themselves, and their children's ability to live safely among them. They worried about dwelling within the "blast radius" of a potential rupture and explosion. And many feared the climate consequences of a fossil fuel project with an eighty-year lifespan.

"The pipeline will be virtually invisible," Dominion's flyer promised. "There are 2.5 times more miles of underground natural gas pipelines than interstate highways in Virginia. Yet few people ever notice."

Yet few people ever notice. Those five words were, in retrospect, an inadvertent Rosetta stone for understanding the gambit of the Atlantic Coast Pipeline and the broader narrative driving the gas building boom that had engulfed America for more than a decade. Dominion was just one of many energy companies making big bets on gas. The success of

those investments depended on convincing people that there were few, if any, costs or risks worth paying any mind.

That line was intended to soothe locals' anxieties—to suggest that, after construction crews packed up and left, all they would see was a grassy strip that resembled a golf course fairway. But it could also be read as an admission that, if you looked closely enough, maybe there *was* something to see—cause for concern rather than comfort—going on down there. Nancy Sorrells, for instance, knew that beneath the flyer's verdant vista, where Dominion planned to string its pipe, was a vast network of limestone caves, sinkholes, and underground rivers connected to downstream drinking water supplies around the region, from Washington to Richmond.

And in fact, from Pennsylvania to Virginia, people already in the fracking-and-pipeline boom's crosshairs had been noticing for years. It was hard to ignore a massive trench being dug in your yard or farm or community, and giant pipes laid in it. And once you saw that messy process up close, it was hard not to wonder about some of the other, less obvious consequences—and about the strength of the industry's broader case for building more gas infrastructure.

According to Dominion and many other energy companies, the argument for natural gas was a slam dunk. As the flyer noted, burning gas to generate electricity produced half the carbon emissions of burning coal. This talking point undergirded the familiar claim that gas was a “bridge fuel” to a cleaner, climate-safe future—a metaphor repeated so often, in news stories and politicians' stump speeches and CEOs' conference keynotes, that it had hardened into orthodoxy.

It was indeed a fact that gas power plants produced less carbon dioxide than coal plants. But those selling the “bridge” needed people to *not* notice some other facts. For one, that the metaphor was floated by the gas industry itself way back in 1988, as climate change first burst into public consciousness, helpfully proffering their product as “the least harmful alternative while the world looks for other, longer-lasting solutions to the ‘greenhouse’ effect.”⁷ And secondly, that we all seemed to be stuck on their bridge, with no end in sight.

Bridges, of course, are meant to deliver you somewhere else. Three decades later, gas had dethroned coal as the leading source of power.

America had become the world's top producer and exporter of natural gas. Meanwhile, in the period between 1988 and 2020, humans had added more carbon dioxide to the atmosphere than in all of human history up to that point. Yet the industry continued to tout gas as the only sure route to a greener future. Exhibit A: the Atlantic Coast Pipeline, perhaps the most ambitious project yet.

By 2020, plenty of people had long since taken notice of some other salient facts too. Investing finite capital into gas meant fewer dollars available for renewables and a slower transition to clean energy. Building more gas infrastructure risked locking in decades of future carbon dioxide emissions.⁸ Gas wasn't the only alternative to coal: wind, solar, batteries, and energy efficiency were readily available and getting cheaper by the month. The six years since Dominion had launched its pipeline had been the six hottest years since recordkeeping began. And more gas meant more emissions of a climate-warming super-pollutant.

Because natural gas, you see, is methane.⁹ And methane is a greenhouse gas that packs eighty-six times the heat-trapping power as carbon dioxide over a twenty-year period. Some scientists have called it "carbon dioxide on steroids."¹⁰

Methane is responsible for a third of the global temperature rise since preindustrial times. Since 2007, methane levels in the atmosphere had surged at twice the rate of carbon dioxide concentrations.¹¹ Alarmed by this spike, climate scientists warned that unless methane emissions were wrestled downward, the world's efforts to keep global warming under 2 degrees would fail.¹² That would push us past tipping points from which there might be no returning, rendering unrecognizable the friendly climate that humans have evolved with—an outcome that really *would* change everything.

Dominion's project—if built—would play no small role in bringing about that reality. Because, like all gas pipelines, the Atlantic Coast Pipeline would be a very large and long-lived methane delivery device.

Picture an enormous, 42-inch-wide interstate-scale cigarette lighter that keeps working for a century. At one end: the fracking wells of the Marcellus Shale. At the other: dozens of gas power plants and hundreds of thousands of burner tips in furnaces, water heaters, and

kitchen stoves. In between: a vast metallic spaghetti of gas field gathering lines and large-diameter pipelines and local distribution lines.

On its journey through all those pipes and valves and fittings—any plumber could tell you—some methane would inevitably escape. If all the gas in the Marcellus Shale were to be exploited, methane leaks alone would likely equal three times the total annual carbon dioxide emissions of the United States—making the Marcellus the largest “methane bomb” in the world, according to researchers.¹³ The methane that did make it to the end of the pipe would feed machines designed to convert that gas into carbon dioxide—the primary driver of climate change.

Simple facts, derived from the laws of physics. But physics has a hard time competing with public relations.¹⁴



The word “methane” did not appear on Dominion’s flyer. Nor was it uttered in the chambers of the Supreme Court. As Nancy Sorrells listened, the oral arguments were starting to sound like a sophomore philosophy class: the justices seemed more interested in the metaphysics of trails than the physics of gas pipes.

At issue was whether the law allowed Dominion to build its pipeline at Reeds Gap, its chosen spot for crossing the Blue Ridge, where the Appalachian Trail ran through national forest land. The government’s lawyer, defending the Forest Service, repeated his core argument (which aligned with that of Dominion’s lawyers) that the company could bore underneath the iconic footpath because the “trail is not land.” This idea didn’t sit well with Justice Elena Kagan. “Nobody makes this distinction in real life,” she countered. A slightly surreal debate over the nature of a trail ensued, with musings from Justices Samuel Alito and Stephen Breyer. *Is a trail inseparable from the land that it traverses? Is it something that lies on top of the ground, but separate from it, like a ribbon? Does it go to the center of the earth?*

Then Chief Justice John Roberts chimed in and unintentionally cut to the heart of the matter. If the court ruled against Dominion, he worried aloud, would it “erect an impermeable barrier to any pipeline

from the area where the natural gas, those resources are located and to the area east of it where there's more of a need for them?"¹⁵ In other words, would the Appalachian Trail become a wall preventing energy companies from tapping the vast fossil fuel reserves lying underneath Appalachia?

As he listened, Greg Buppert's thoughts paralleled those of his client, Nancy Sorrells, sitting a few dozen feet away. The odds, he had to admit, were not looking good.¹⁶ Roberts wasn't the only justice peppering his lead counsel with skeptical questions.

Buppert, a senior attorney for the Southern Environmental Law Center, had started scrutinizing Dominion's proposed pipeline—and its risks to the region's water, air, climate, citizens, and economy—in the summer of 2014. At the time, Dominion had confidently predicted that the pipeline would be finished, with 1.5 billion cubic feet of gas flowing through it each day, by the end of 2018. But here it was, the winter of 2020, and not a single piece of the Atlantic Coast Pipeline had been laid in Virginia's soil. The project was at least three years behind schedule. Construction had been mostly halted since late 2018, thanks to a series of successful legal challenges mounted by SELC, their grassroots clients, and partner organizations in the region. Buppert was a seasoned environmental attorney, but at the outset he knew little about the 1938 Natural Gas Act or interstate pipelines. Over the past six years, he liked to joke, he had acquired an inadvertent PhD in both subjects. And to his now expertly trained ear, most of the justices seemed inclined to side with Dominion.¹⁷

Buppert and his colleagues—led by D. J. Gerken, SELC's lead litigator on the case since 2018—had argued that, because the Appalachian Trail was administered as a unit of the National Park System, Dominion would need special authorization from Congress to cross it at Reeds Gap. A federal appellate court had agreed, citing a hundred-year-old federal law that prohibited drilling or pipelines on National Park lands. Dominion had appealed, and now the justices would determine whether it needed that act of Congress to greenlight its plan—a time-consuming and uncertain prospect.¹⁸ The legal questions were narrow and technical, winding through a thicket of competing interpretations

of obscure statutes. But for a moment, the chief justice had gestured toward the much wider stakes of the morning's debate.

The premise embedded in Roberts's question was that America would need more methane gas, and more pipelines to transport it, for many years to come. This conviction was widely shared beyond the conservative-leaning Supreme Court: support for the natural gas construction frenzy underway across the country had become a fixed feature of the landscape of bipartisan elite opinion.

But that very premise—that building the Atlantic Coast Pipeline was good for America, that there was a *need* for its gas that outweighed all the risks it posed to the region's people, forests, climate, and economy—was the delusion that Greg Buppert and his colleagues had spent years trying to dispel. With the patience of a master builder, he had painstakingly assembled a case—still waiting to be heard by another federal appeals court—that challenged Dominion's rationale for the project *and* the methodology the federal government used to determine whether a gas pipeline was, in its arcane phrasing, in “the public convenience and necessity.”

In his view, *that* case was the main event. But no one was writing headlines about it. Instead, all eyes—Wall Street, the gas and utility industries, energy analysts, and environmental advocates—were trained on the Supreme Court.

As the oral arguments wrapped up, Buppert still had reason to be heartened.¹⁹ Justice Ruth Bader Ginsburg had noted that the case before them addressed only one of *four* fatal flaws that the appeals court found in the Forest Service permit. Wouldn't this question about who could authorize crossing the Appalachian Trail be “moot,” she wondered, if federal courts ruled the pipeline couldn't proceed due to those various other shortcomings? Until the Forest Service fixed them all, ACP LLC would still lack permission to cross the national forests.

And even if those problems were resolved, Dominion would still lack seven *other* critical permits—several of which the SELC and its allies had already successfully challenged.

If they lost this high-profile battle—if, as media outlets were already speculating, a Supreme Court win for Dominion breathed new life

into their embattled pipeline—Nancy Sorrells and her fellow activists were determined to press on. The larger war was still up for grabs—and the stakes were high.

They were fighting for their homes, their neighbors, their children's futures. The six-year-long fight—longer than the Civil War—that had converged on this contested spot atop the Blue Ridge Mountains was also a struggle to shape the trajectory of the US energy system for decades to come. Dominion and other energy companies wanted Sorrells and, indeed, all Americans to see projects like the Atlantic Coast Pipeline as a “bridge” to a better world—to a clean energy future.

But when they looked closely, many saw something that looked more like a fuse. With a blast radius that enveloped, and extended far beyond, their beloved Virginia hills.

Part I

The Public Necessity



John Ed Purvis on the land in Shipman, Virginia, that has been in his family since 1768. (Marcie Gates-Goff/BlueRidgeLife.com)

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Chapter One

The Burning Spring

On March 9, 1669, John Lederer walked west out of Jamestown in the company of three Native guides. The German physician and explorer had been tasked by Virginia's colonial governor with finding promising routes through the distant mountains to boost the fur trade and perhaps establish a "western passage" to California and its fabled Spanish mines of silver and copper, rumored to be just a few weeks' march away.

On the sixth day of their journey, Lederer's party crested a hill about a dozen miles northeast of what is now Charlottesville and glimpsed the mountains to the west. At this sight, Lederer's companions prostrated themselves and prayed, crying out in reverence for the mountains: "God is nigh!"

After four more days of walking—past "great herds of red and fallow deer" and "bears crashing mast like swine"—and a difficult climb, Lederer became the first European to set foot atop the Blue Ridge and see the Allegheny Highlands beyond. The view filled him with awe—and disappointment. Mountains stretched westward as far as he could see. Daunted by the thick tangle of trees and cliffs below, he returned to Jamestown.

The following year Lederer set out again with the same mission and a much larger contingent of twenty Englishmen and five Native guides. They traveled to where the Rockfish River flows into the James at the southeast corner of what is today Nelson County, Virginia. A community of Monacan Indians, who lived in a series of villages along the river, greeted them. Lederer asked the locals for directions, as one does. An old man grabbed a stick and traced in the dirt two well-trod routes they could take.¹

Lederer's English companions rebuffed this advice and insisted on pressing ahead in a straight westward line dictated by their compass, heedless of obstacles in their way. (This didn't sit well with Lederer, but he was outvoted.) After a week of rough going over "steep and craggy cliffs," the party reached a place where the Mahock Indians purportedly lived, likely near present-day Lynchburg. But Lederer found no sign of the tribe. This journey, too, would end without discovery of an easy route through the mountains.

On returning east, Lederer briefed his sponsors, penned an account of his travels, and drew an annotated map. "They are certainly in a great error," he wrote, "who imagine that the Continent of North America is but eight or ten days journey over from the Atlantick to the Indian Ocean." There were a lot more mountains in Virginia to cross, he reported, than people realized.²

Lederer hadn't been the first to try. From the day that European colonists first set foot in Virginia, they dreamt of western riches and saw the mountains as something to be overcome to tap them.

In 1607, soon after landing near what would become Jamestown, Captain Christopher Newport attempted to press inland along the James River. The Powhatan who lived there tried to talk him out of it. They warned that a day and a half above the falls (around present-day Richmond) the Englishmen would encounter the Monacans, their enemies, and that they would find nothing to eat and hard going in *Quiranck*, their name for the Blue Ridge. Newport made later forays into Monacan territory in search of gold and silver and a passage to the South China Sea, to no avail.³

As for the Mahock, they vanished from the historical record after 1728. In their only previously recorded encounter by Europeans, in

1608, Captain John Smith and his men stumbled into a group of them near the Rappahannock River. The Mahock attacked with a volley of arrows. After a skirmish and a chase, Smith found a wounded warrior left behind named Amoroleck. While his men treated the man's wounds, Smith asked what he knew of the land west of the mountains. Nothing, he replied, just that the sun lives there. Smith asked him why the Mahock had attacked. "We heard that you had come from the underworld to take our world from us," Amoroleck answered.⁴

It would be several decades before the settlers found something they prized in the mountains themselves. In 1742 another adventurer found a coal seam on a tributary of the Kanawha River, near present-day Charleston, West Virginia. And then, in 1773, George Washington caught wind of a peculiar spot several miles upstream.

He had a keen interest in the Allegheny Highlands, after exploring them on foot as a young surveyor and an officer during the French and Indian War. While commanding the Continental Army in 1780, after years of maneuvering and petitions, Washington finally secured ownership of 250 acres along the Little Kanawha River. (Back then it was all part of Virginia, so Thomas Jefferson, the colony's governor, ceded the lands jointly to Washington and another former army officer.)⁵

Washington had coveted the tract, he explained years later in his will, "on account of a bituminous Spring which it contains, of so inflammable a nature as to burn as freely as spirits, and is as nearly difficult to extinguish."

The "Spring" was basically a hole in the ground that exhaled a steady stream of natural gas; when filled with rainwater, it seemed to boil, and the surface of the water could be set aflame.⁶

The source of the "Burning Spring," as it came to be known, was not fully understood at the time. Washington didn't know exactly how, but he intuited that these vapors would one day make the land more valuable—that booms would come.⁷

Designed in a Week

In the winter of 2014, Brittany Moody was taking a break during a company training workshop in Richmond when Leslie Hartz, a

senior vice president at Dominion Energy, approached her with a request.

“Hey, I’m gonna need you to route a pipeline. How long do you think it’ll take you to complete it?”

“I’ll have it done in a week,” Moody replied.

As a manager of engineering projects with Dominion Transmission, the company’s gas transportation subsidiary, Moody knew pipelines. She had mapped several before. She had even grown up with one running through her family’s backyard in West Virginia. Moody assumed this project would be like others she had worked on. But when she found out it would be at least 550 miles long and 42 inches in diameter—far bigger than any she had designed—she began to worry that she had overpromised.

Moody set to tracing digital lines across the pixelated contours of the Allegheny and Blue Ridge Mountains on her computer screen. Eventually she settled on what seemed the most efficient path: a line connecting the spider’s web of gas-gathering lines in the fracking fields of northern West Virginia with the coastal city of Norfolk and the towns along the Interstate 95 corridor of eastern North Carolina, ending near the town of Lumberton, just shy of the South Carolina border.

When it was done, she had nearly delivered on her pledge. It took just over a week to design the initial route of what would become the Atlantic Coast Pipeline.⁸

To the uninitiated, that might not seem like adequate time to lay out the optimal route for the largest-ever gas pipeline to cross Appalachia’s steep terrain, two national forests, the karst-riddled Shenandoah Valley, the world’s second-oldest mountain range, the Blue Ridge Parkway, the Appalachian Trail, and the James River, all while cutting through thousands of private parcels—each representing an easement to be secured through negotiation or the use of eminent domain.

But Leslie Hartz and her boss, Dominion CEO and chairman Thomas F. Farrell II, had their reasons for moving quickly. A twenty-first-century gold rush was underway, and Dominion was determined to become one of its key players.⁹ If it moved quickly, it could own and operate its very own lucrative modern-day Western Passage. Because, while the mountains that John Lederer had spied were still an

imposing obstacle, they concealed a prize that fired the imaginations of Virginia's contemporary elites: vast quantities of methane.

The Allegheny Mountains were formed around 300 million years ago, thrust to Earth's surface as Africa collided with North America to form the supercontinent Pangaea. Prior to that slow-motion crash, countless organisms had lived and died and sunk to the bottom of a shallow inland sea that covered Appalachia for millions of years. As sediment piled above, heat and pressure transformed that carbon-rich stuff into methane and other gases, trapped in tiny crevices in the rock. That layer-cake matrix—known to today's geologists as the Marcellus Shale—contains more than 200 trillion cubic feet of gas.¹⁰ A thousand feet thick, extending roughly 600 miles from West Virginia to New York, it is one of the world's largest gas fields. And a few thousand feet beneath it lies another immense gas-rich formation: the Utica Shale.

That methane had remained mostly bottled up snugly in its subterranean crevices, sandwiched between impervious veins of limestone, until a Texan named George Mitchell came along. With the support of the US Department of Energy—which placed a long-running, taxpayer-financed bet on his idea—Mitchell spent years developing a technique called hydraulic fracturing.¹¹ To “frack” a shale, crews drill down and then horizontally, then inject a huge amount of sand and water laced with proprietary chemical lubricants at high pressure to shatter the rock. As gas flows out of the resulting fissures, they pump it to the surface. Fracking enabled drillers to reach a mile deep and thousands of feet sideways into oil and gas deposits long thought inaccessible or too costly to tap. It proved to be the key that would unlock the ancient methane entombed in the Appalachian underworld.

Throughout the 1980s and 1990s, while his fellow oil barons scoffed, Mitchell refined his new technique in Texas. But once fracking's effectiveness became obvious, its use accelerated in the early 2000s, as a bevy of wildcatters made their way into the hollows and hilltop farms of Pennsylvania, Ohio, and West Virginia.

The turning point came with the 2008 financial crash. In its wake, with record-low interest rates and corporate wreckage all around them, shell-shocked investors hunting for bigger returns to rebuild their portfolios set their sights on shale formations like the Marcellus, North

Dakota's Bakken, and the Eagle Ford and Permian Basin in Texas. Banks funneled cash to brash new companies like Chesapeake Energy, which hungrily bought up leases from local landowners. On the strength of its Marcellus holdings, Chesapeake—founded by a risk-loving Oklahoman named Aubrey McClendon—quickly became the second-biggest gas producer in the US (after ExxonMobil), and Pennsylvania became the second-biggest gas-producing state (after Texas).¹²

By 2010, the frackers were producing too much gas. They needed to expand their markets—to gin up demand for their hydrocarbons among consumers and companies. But to reach those customers, they would need to move methane out of the mountains to population centers near the coast. The gas producers needed a conduit that would trace Lederer's journeys in reverse. In fact, they needed several.

Pipeline companies answered the call with zeal. As in any commodity boom, fortunes were being made. Firms raced to capitalize, and new interstate pipelines popped up like mushrooms after a spring rain. There was the Rover Pipeline (Pennsylvania to Ohio to Michigan), the PennEast Pipeline (Pennsylvania to New Jersey), the Atlantic Sunrise Pipeline (Pennsylvania), the Constitution Pipeline (Pennsylvania to New York), and the Mountaineer Xpress Pipeline (West Virginia). And there was the Mountain Valley Pipeline, proposed by a consortium led by one of the biggest fracking companies in Appalachia, slated to start near the same point of origin as Dominion's project and cross the Blue Ridge farther south. The CEO of the company behind the Rover Pipeline, a Texas billionaire named Kelcy Warren, summed up the situation when he told investment analysts in a moment of candor that "the pipeline business will overbuild until the end of time."¹³

Amid this frenzy of activity, in the winter of 2014, Duke Energy—a utility giant based in North Carolina—had floated its own request for proposals to build a new pipeline to supply Marcellus gas to new power plants it was planning to build. That spring, Dominion and Duke decided to join forces. Dominion, as the majority owner, would lead the construction and operation of the project.

Under Tom Farrell's leadership, Dominion had become a poster child for the nation's ongoing "dash for gas." He moved aggressively to expand the company's gas portfolio, gobbling up storage facilities

and distribution utilities from Ohio to Utah and seeking federal approval to build a facility in Maryland to export supercooled liquefied gas around the world.¹⁴ But its new pipeline would be an even bigger undertaking.

As a piece of physical infrastructure, Dominion's was perhaps the most ambitious gas pipeline project in US history. The company would need to secure at least a dozen state and federal permits, billions in financing, and thousands of easements all along the route.

To the casual observer these might seem like daunting obstacles. But Dominion's leaders had cause for their confidence. Getting the newly fabled Marcellus riches to market had taken on the cast of a national mission. The story of "cheap, abundant, clean natural gas" had acquired seemingly unstoppable momentum. To many who lived in the project's corridor, it seemed that the force of this narrative—combined with Dominion's unparalleled clout—would be irresistible. More than enough to bulldoze a path straight across the mountains to the sea.

A Fragile Domain

Imagine one day you receive a letter in the mail. It informs you that a large energy company is planning to build a pipeline through your property. That surveyors will be coming out soon. That they'd like you to sign and return the enclosed permission form for them to do so. But that whether you do or not, the surveyors will be coming onto your land anyway. Because a state law gives them the power to do so without your permission.

Your likely response might be, *Well, damn*. Whatever your feelings about natural gas, if you have any, like most people, you are none too excited at the prospect of having your yard dug up and giant pipes full of pressurized, highly flammable gas buried in it.

Your next thought might be, *Well, there's nothing I can do about it*. Because you know that said energy company is the most powerful and politically connected company in your state.

This was the scenario that played out for John Ed Purvis—and hundreds of other landowners in Nelson County, Virginia—as he checked his mailbox one day in May 2014.

The letter he found there explained that his property was among those in a “potential route corridor” for Dominion’s new pipeline, that the company planned to begin surveying on July 1, and that “we are notifying you so that we can begin keeping you informed throughout this process and because surveys will be conducted on your property.”

Purvis assumed—not unreasonably—there wasn’t much he or anyone else could do about it. Enclosed with the letter was a copy of Virginia Code 56-49.01, the “Right-to-Trespass” statute passed in 2004, allowing pipeline companies to survey private property, whether the owners want them to or not.¹⁵

The Purvis land lay just east of the county seat of Lovingston, not far from where John Lederer passed through on his first journey. Locals knew it as “Purvis Hollow.” Purvis lived in the house his grandfather built in 1904, the same house where he was born in 1932. Around the county, Purvis was a familiar sight in his customary ball cap and bib overalls, whether stopping to chat at the local store or attending meetings of Nelson’s school board, on which he sat for seventeen years, gaining a reputation as a civic-minded fiscal conservative and a man of deep integrity. He tended a herd of beef cattle and farmed the same hilly acres as seven generations of Purvises before him, ever since an Englishman named George Purvis built a homestead there in 1768.

His family’s tenure on the land preceded George Washington’s acquisition of the Burning Spring by 12 years, the signing of the United States Constitution by two decades, and Congress’s passage of the Natural Gas Act by 170 years. That law empowered the Federal Energy Regulatory Commission (FERC) to authorize projects it deemed to be “required by the present or future public convenience and necessity”—an archaic way of saying that a pipeline was in the public interest. With that approval came the awesome power of eminent domain.

A permit from FERC gave Dominion the authority to seize land so it could clear a 125-foot-wide construction right-of-way—roughly the width of a four-lane highway—from Harrison County, West Virginia, all the way to Robeson County, North Carolina.

For about 30 miles, it would cut right through the heart of Nelson County. Dominion’s crews would excavate a 12-foot-deep trench, lay the pipe in it, and bulldoze fill on top of it. Once in place, the

permanent right-of-way would be 50 feet wide. No trees could grow within it. Nothing larger than a garden shed could be built atop it.

The forever-ness of this arrangement rankled Purvis: a future foreclosed on. Half of the acreage he would lose was in timber. “Once that timber is cut down for the pipeline it can never grow back,” he told a neighbor. Dominion would either mow or spray herbicides to make sure of it, as tree roots would threaten the integrity of its pipe. To add insult to injury, Dominion would take permanent ownership of an easement across his land, even as he and his descendants had to keep paying taxes on it.

John Ed Purvis had experienced eminent domain before—from both sides of the equation. As a member of the school board, he had been involved in building new elementary and middle schools, which required claiming land to expand roads and parking and for the buildings themselves. The Purvises had themselves lost pasture and hayfields years back when the state needed to widen a road. They gave it up willingly, as long as they were fairly compensated, because it served the public. To John Ed Purvis, it just seemed like common sense that eminent domain should be reserved for projects that everyone could benefit from. Roads and highways, schools and parks, water facilities and power lines. When it came to the pipeline, there was no public good in it that he could see.¹⁶

But he also saw this invasion as an affront to his heirs and ancestors alike. “It just tears me all to pieces to see this land, they’re going to desecrate so much of our property,” he told one neighbor. “We’ve got it running fairly close to the graveyard down here, best we can tell.”

Purvis and his wife Ruth had four children, all of whom had stayed in Virginia. His daughter Elizabeth lived a mile away and taught at the elementary school. Purvis’s overriding concern, she said, was “to be a good steward of the land.” He knew the contours of that land, how water flowed through it, where cattle liked to bed down, what species of timber grew in its folds, like few others.

She watched with concern as spring turned to summer and her father became more distraught. He began losing sleep. The pipeline was all he could think about. “He worried constantly.”¹⁷

He fretted about contamination of the family’s water—they drank

from a well, like just about everybody in Nelson. How would they irrigate fields and care for their cattle? “I’m concerned for my family,” he told a local reporter. Elizabeth and her family had built a home nearby on the family’s land; he feared for their water too. “I may kick the bucket anytime and be planted in that graveyard down there, and my concern is for the children and grandchildren.”¹⁸

Watching her 82-year-old father agonize was painful enough for Elizabeth.¹⁹ Their interactions with Dominion’s land agents hadn’t been all that friendly or helpful either. But what really steamed her was the response he got from some county officials, who appeared all too ready to give up. After one public meeting, she recalled, two of the five elected supervisors approached Purvis and told him, “We’re so sorry this is gonna happen to you. But you can’t stop it. Get the best price for your timber that you can.”

She knew they meant well, that they cared about her father—but she was incredulous that they didn’t plan to fight. “They were just rolling over.”²⁰

Rick Webb Goes Fishing

On a May morning in 2014, Rick Webb decided to go fishing. He had the time, after all.

After a career spent monitoring the recovery of brook trout in Appalachian streams, Webb was three months into retirement. He decided to try catching some brookies on Benson’s Run, one of his favorite streams in the George Washington National Forest.

He climbed into his Toyota pickup and drove down the long gravel driveway of the home that he shared with his wife Susan, the one he had built himself over many years, near the West Virginia border. Webb headed east through the heart of Highland County, along the distinctive folds of what geologists called the Valley and Ridge complex. In cross-section, that stretch of Virginia looks like a rough green sea, with parallel waves of long, heavily forested, north–south ridges cresting above troughs of lush valleys.²¹

Webb knew that folded terrain as intimately as just about anyone alive. Except for a stint in college at William and Mary, not far from

Jamestown, he had lived his entire life within the view that once lay at John Lederer's feet. He had grown up in Waynesboro, exploring and fishing the small, cold creeks that tumbled down the western slope of the Blue Ridge.

That passion had eventually led him to his life's work: leading two concurrent, long-term monitoring studies of Virginia's mountain streams. For twenty-five years, the shaggy-bearded, soft-spoken scientist had collected samples from remote headwaters all over the state. This work entailed hiking to a set of 65 streams every three months since 1987; once a decade, he and his colleagues fanned out to survey all 450 streams tracked in their larger study. Some required 20-mile round-trip hikes. Many had only been touched by human activity in the form of acid rain.²²

The data that Webb and his colleagues painstakingly gathered and analyzed told a clear story: in most streams, hard-hit brook trout populations were slowly recovering from decades of acid rain caused by air pollution from midwestern power plants. The 1990 amendments to the Clean Air Act had imposed limits on sulfur dioxide and other pollutants from power plants. Webb's work helped show that the law was, albeit gradually, working.²³

Now that he had finally handed the reins over to colleagues, he could focus on catching a few trout himself. After a few hours chasing the brookies of Benson's Run, he packed his rod and headed home. On the way, he stopped at the post office in Monterey, the tiny town—population 139, elevation 2,894 feet—that served as Highland's economic hub and county seat.

An acquaintance hailed him in the lobby with a question: "Hey, have you heard about the pipeline?"

Word was going around that Dominion Energy was planning to build a large gas pipeline through Highland County and central Virginia, all the way to the coast. Locals had been getting letters requesting permission for surveyors to come on their land. Not much other information had been made public. Confusion and apprehension reigned.

This was all news to Webb. Before he drove home, he asked around and managed to track down a hard copy of the map that Dominion

had sent to the county's board of supervisors. It was low resolution, depicting the entire route from West Virginia down through eastern North Carolina on one page. But Webb could see clearly enough that it crossed some of Highland's steepest ridges and remote watersheds, untrammelled areas in the Monongahela and George Washington National Forests, the Shenandoah Valley, and the Blue Ridge—the wild places he had dedicated his career to protecting.

Then he peered closer at the map in his hand. Sure enough, the route went right through the headwaters of the stream he had just spent the day fishing. *Well, I know what I'm going to be doing for the next year or two*, he said to himself.²⁴

Long-delayed carpentry projects would have to wait a while longer. Beekeeping, another passion, would have to take a back seat too. As it turned out, he was off by several years. It wouldn't be until the next decade that Rick Webb could focus on making honey or catching brook trout again.

Webb v. Fury

Webb devoted that first summer of his retirement to doing what he did best: research.

He pored over maps of the likely route. He read up on environmental regulations governing pipeline construction. He called experts and asked about industry techniques for controlling erosion and runoff on steep slopes. He even went up in a two-seater airplane with a pilot friend to peer down at other pipelines being built in similar terrain in West Virginia.

And he got up to speed on the nitty-gritty elements of the pipeline construction process. It sounded like a kind of large-scale open-heart surgery. First, crews would stake out the right-of-way. Then they would remove all trees, rocks, and debris within its boundaries. Operators of large backhoes or huge machines called "wheel trenchers" would scour out soil, rock, and gravel to a depth of 10 to 12 feet. If they hit shallow bedrock, they would hammer or blast deep enough that the pipe could be buried at least 3 feet beneath the finished surface. Truckers

would haul in 40-foot lengths of pipe and set them next to the trench. Welders would join them together. Each joint would be visibly inspected and x-rayed before being coated with anti-corrosion epoxy. Each “string” of pipe would then be lowered into the ground on a bed of sand or some other padding material. Then workers would backfill the trench, finishing with topsoil on top, roughly graded to the contour of the land. The pipe would be filled with locally sourced water at very high pressures and tested for leaks.²⁵ After that, the right-of-way would be seeded with grass and pollinator-friendly plants.

As a beekeeper, Webb could appreciate that last gesture. But everything else he was learning flashed warning signs. That standard process had been developed in relatively flat places like Oklahoma or Texas. Dominion’s pipeline would cross some wickedly steep terrain. Crews would need to blast and flatten narrow ridgelines to accommodate both the pipe trench and a workspace for their machines. *Where would they put all the material they removed?* To trench across streams, they would either build temporary dams or divert water through a hose while they dug. *How would they keep sediment-choked runoff from moving downstream?*

The more he studied the route, the more Webb feared for the region’s drinking water too. The whole area was underlaid by karst—a subterranean network of porous limestone riddled with hidden rivers, fissures, sinkholes, and caverns. Groundwater flowed throughout it all. Any contamination would move through it as through a sponge, spreading to private wells and municipal water supplies.

He realized that the pipeline could also spell disaster for the brook trout. The fish was finally bouncing back in remote streams around the region. But it was, he said, as if “the pipeline was routed to maximize the harm to the best of what remains” of remaining native trout habitat in Virginia.

All in all, it struck him as a terrible place to bury a large pipe full of methane—and a cockamamie way to spend several billion dollars. The terrain was just too tough, too erosion-prone, too laced with fragile streams in a region with weather that was too wet, to boot.

He was skeptical that anyone could lay a pipe through that landscape

in a way that complied with both existing laws and regulations *and* the laws of physics. It was as though Dominion were promising to build a road to the moon.

Webb couldn't help wondering if the map he had gotten hold of wasn't the result of some miscommunication: maybe the engineers simply hadn't informed Dominion's leadership about the challenges they would encounter. Once they studied those obstacles, like John Lederer turning back atop the Blue Ridge, they would surely abandon this risky venture.

His wife Susan wasn't surprised to see him working around the clock just a few months into retirement. "Rick's been like that since we married," she told me. "The world's going to hell, got to do something about it."

She didn't seem surprised by his conviction that the pipeline could be stopped either. Webb had gone toe to toe with a giant energy company before—and won. In the late 1970s the couple lived near Elkins, West Virginia, and ran a small nonprofit that sampled streams for pollution from nearby coal mining operations. Webb filed complaints with state and federal regulators claiming that 7 miles of native brook trout streams had been destroyed due to mining practices in the area. The coal company operating in that area sued him for defamation—a so-called SLAPP suit (for Strategic Lawsuit Against Public Participation), a popular corporate strategy to silence critics by weighing them down with crushing legal costs. The 31-year-old Webb fought it all the way to West Virginia's Supreme Court, which ruled in his favor.

The resulting decision, *Webb v. Fury*, sounds like a professional wrestling grudge match, but it would become a widely cited precedent, protecting the public's right to report potential violations of the law by coal companies, or any other companies. He hadn't set out to become a standard-bearer for the free speech rights of everyday citizens. He simply wanted to protect West Virginia's brook trout streams from becoming collateral damage of the fossil fuel industry.

Forty years later, the same principle applied when Webb studied Dominion's plans. "This is some of the best remaining wild landscape

in the East,” Webb would tell anyone who would listen. “And they are planning to cut right through the heart of it.”

But when he said as much to friends and neighbors he ran into, almost all of them offered the same two responses. The first was agreement: it seemed that no one in Highland—where most people’s livelihoods depended on farming or tourism—wanted a gas pipeline coming through their county.

The other sentiment Webb encountered over and over was resignation. “There’s no stopping it,” people would tell Webb ruefully, “because it’s being pushed by Dominion.”²⁶

This attitude reached to the top of the county government. When asked for comment by the *Recorder*—the plucky local newspaper that broke the news in May 2014 about the project before any other media outlet—one Highland County board of supervisors member responded: “Holy cow, what else can you say?”²⁷

“There might be nothing we can do,” he added. “It’s going to sock us.”

The Lords of Virginia

Dominion. In Virginia, the name was synonymous with power, in both senses of the word.

Dominion Energy was a Fortune 500 corporation, one of the biggest energy companies in the country, the second-largest utility holding company in the US by market valuation, and the second-most profitable.

Most knew Dominion as their only available source of electricity: it owned the monopoly power utility that served two-thirds of all Virginians. Fewer were aware that Dominion was a natural gas giant too. Under the leadership of Tom Farrell—its disciplined and demanding CEO and chairman—the company had grown rapidly, acquiring gas pipelines, storage facilities, and distribution utilities around the country. Dominion made its money from stringing both pipes *and* wires, from moving molecules *and* electrons.²⁸

Dominion claims a pedigree longer than any other energy company in America. Its corporate roots stretch back to 1787, when the Upper

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