

THE STATUS AND IMPACT OF THE MOUNTAIN VALLEY PIPELINE

(Updated August 2023)



Aerial image of MVP construction by Mountain Valley Watch

INTRODUCTION

Nine years after the Mountain Valley Pipeline was proposed, some members of Congress resuscitated the flailing project through legislation that circumvents judicial process and forces federal agencies to approve permits for MVP — ignoring federal environmental laws and giving the company a free pass to pollute. Though this legislation failed in 2022, certain members of Congress continued this effort in 2023 and succeeded in inserting the free pass for MVP into an unrelated debt ceiling bill, the Fiscal Responsibility Act. Pipeline developer MVP, LLC, and its backers claim the company has nearly completed construction of the pipeline, but this claim is misleading. The project is far from finished, and in fact the most challenging and risky work is yet to be done.

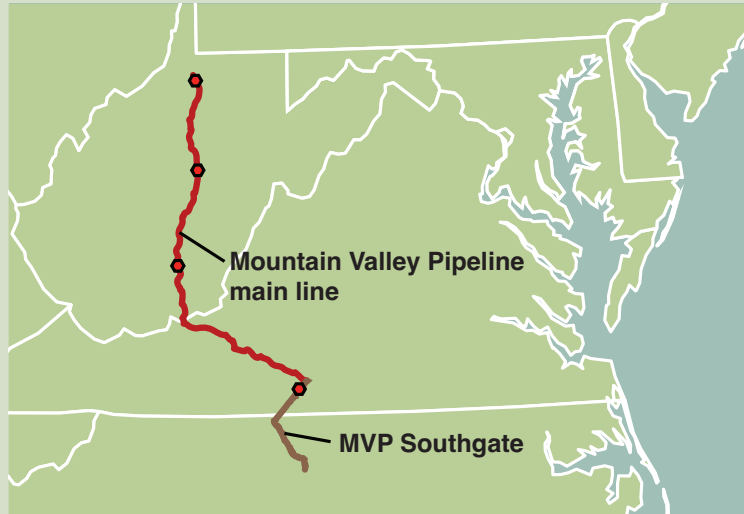
The MVP's repeated inability to comply with environmental laws is a result of the project's poor design and irresponsible project construction. As a result, the project has amassed more than 500 violations of permit conditions, state environmental laws and regulations to date during construction, resulting in numerous enforcement actions. **The fact that legal and regulatory challenges are a barrier to project completion is not the fault of the environmental laws that protect people's water and land, but rather the fault of MVP, LLC, who appears either unwilling or unable to comply with these laws and regulations.**

The following report describes the characteristics of MVP's project design and the Appalachian landscape that have led to the pipeline's long delays, and counters assertions by MVP and its boosters that the project is nearly complete. Even with congressional interference, construction may take years to finish. This report also outlines the status of the MVP and the many factors impacting whether the project will be completed, the impact it would have on surrounding communities, and how the MVP's operation would hobble the fight against climate change.

MOUNTAIN VALLEY PIPELINE BACKGROUND

Mountain Valley Pipeline is a 303-mile, 42-inch diameter proposed fracked-gas pipeline routed through steep slopes and the pristine water resources of West Virginia and Virginia.¹ Announced in 2014, its original projected cost was \$3.5 billion and estimated completion date was late 2018.² As of April 2023, it had an estimated cost of \$6.5 billion and a proposed completion date of late 2023.^{3,4} This is despite the fact that, at the company's request, the Federal Energy Regulatory Commission (FERC) recently granted MVP four more years — until 2026 — to finish the project.⁵

The project owner, Mountain Valley Pipeline, LLC, is a joint venture between EQM Midstream Partners, LP (a conglomerate gas and drilling company from Pittsburgh that will operate the pipeline); NextEra Capital Holdings, Inc. (a conglomerate energy company from Florida); Con Edison Transmission, Inc. (a New York-based electric and natural gas transmission company); WGL Midstream (a DC-based energy services company); and RGC Midstream, LLC (the parent company of Roanoke Gas Company in Virginia).⁶ The intended purpose of this massive pipeline was to transport fracked gas from West Virginia to the Williams Company Transcontinental Gas Pipeline (or "Transco Pipeline"), a major supplier of gas for the East Coast.^{7,8} The project received its certificate of public convenience and necessity from FERC in 2017.⁹



Red dots indicate compressor stations. The southernmost dot represents a proposed compressor station on the MVP Southgate line. Map by Jimmy Davidson / Appalachian Voices

The project design raised significant questions and concerns from the start, given the steep, mountainous terrain and the hundreds of stream crossings proposed. It should not be surprising that the project has had multiple federal authorizations vacated since construction began in 2018 and has accrued more than 500 violations of water quality-related protections enforced by state agencies, described in more detail below.¹⁰

MVP, LLC, has also proposed an extension known as MVP Southgate that would traverse 73 miles from MVP's terminus in Pittsylvania County, Virginia, to Alamance County, North Carolina. Operator EQM Midstream Partners intends to sell the gas to Dominion Energy (formerly PSNC Energy) in North Carolina, but state regulatory authorities in both North Carolina and Virginia have denied essential permits for the project and construction has not begun.^{11,12}

Mountain Valley Pipeline is **NOT 94% complete.**

AN UNNECESSARY PROJECT

The Mountain Valley Pipeline is not necessary, as regional gas demand is currently declining, and the project does not contribute to national security or support the United States' European allies.¹³ Proponents of the Mountain Valley Pipeline have made numerous unsubstantiated claims to justify the project, stating the project will “enhance the Nation’s critical infrastructure for energy and national security”¹⁴ and that “completion of the pipeline will certainly help to meet increasing domestic demand for natural gas and unlock other supplies of natural gas to send to our allies.”¹⁵

However, in approving the Mountain Valley Pipeline’s Certificate of Public Convenience and Necessity, the Federal Energy Regulatory Commission has never provided a legitimate analysis of “market need.” Instead, it justified the certificate by relying only on the existence of shipping contracts for the pipeline’s capacity — but four of the five companies that MVP contracted as shippers were corporate affiliates of the pipeline’s sponsoring companies.¹⁶ Analysts have noted that “in situations in which a pipeline developer contracts with an affiliate company to ship gas through a new pipeline, this is strong evidence that it is doing so because of the financial advantage to the parent company from building the pipeline, but not necessarily that there is a need for the pipeline.”¹⁷

Generally, FERC uses an outdated process for evaluating the need for pipelines, which does not consider the evolving natural gas market.¹⁸ In fact, U.S. natural gas consumption reached multi-year lows this past winter,¹⁹ and consumption is expected to decline in the U.S. Energy Information Administration’s short-term forecasts.²⁰

In the MVP region, forecasts of natural gas demand are now lower than projections that the pipeline sponsors used as their justification for the pipeline in 2016. The EIA predicts natural gas demand will decline from 2019 to 2030 in the southeastern and mid-Atlantic regions, and current pipeline capacity in the region already exceeds production.²¹ Longer-term, as the U.S. transitions to more renewable energy, the National Energy Renewable Energy Lab analysis of the feasibility of reaching 100% clean energy finds that the grid can operate reliably with little or no natural gas — meaning additional pipeline infrastructure is not needed long-term.²²



Furthermore, it is unlikely that the pipeline could provide gas to export to Europe, which some project proponents claim as a potential benefit. MVP is not connected to an export terminal. European natural gas demand has declined,²³ and European natural gas storage is at its maximum capacity in 2023.²⁴ Because of the high costs set by U.S. exports, demand is falling in other international markets²⁵ and other international suppliers are racing to provide lower-cost natural gas compared to the U.S.²⁶ Additionally, new export terminals in the Gulf are able to obtain gas from other parts of the U.S. like the close-by, active basins in Texas, Louisiana and New Mexico; all these factors mean that, if completed, MVP would be underutilized.²⁷

WHAT WORK REMAINS FOR MVP?

In its public statements, MVP references a completion percentage in terms of the miles of pipe in the ground — more than 90%. This number is misleading because the remaining work to be done is some of the most difficult and complex construction work, and also excludes the final stage of construction — the process known as “restoration.”

As detailed below, **Mountain Valley Pipeline is currently only 55.8% complete to full restoration.**²⁸ Furthermore, with 429 water crossings yet to complete, and construction on steep terrain across the Jefferson National Forest still pending, the project cannot be completed quickly.

Hundreds of Stream Crossings

According to combined data from Table 15 of the pipeline’s Clean Water Act Section 404 application and an MVP-produced project map, the first incomplete stream crossing is at milepost 0.7; the project cannot even move the fracked gas one mile before encountering the first of hundreds of incomplete water crossings.²⁹ A total of 429 water crossings remain, 236 (55%) of which are in Virginia, with the remaining 193 in West Virginia.^{30,31}



Georgia Haverty is a landowner in Pembroke, Virginia, whose Doe Creek Farm and businesses have been disrupted for seven years by the Mountain Valley Pipeline. In a February 15, 2022, filing to FERC she shared, “We have lost so much already and arguing that our land has already been injured and because more destruction is now inevitable we should just let it continue does not make sense. It makes stopping this destruction more urgent.” Portrait by Matthew Pickett / Loud Valley Productions, LLC

Water body crossings are among the most difficult and complicated parts of a pipeline to construct. Researchers have noted, “[b]ecause of the static nature of pipes and the dynamic nature of many streams, there are inherent risks at many of these crossing locations to aquatic species and habitats.”³² Careful construction and planning is required, as buried pipelines are at risk of exposure (and subsequent rupture) when streambeds are altered. According to the Bureau of Land Management, pipeline exposures can happen as a result of channel degradation and/or channel scour.³³ Channel degradation can occur as a result of changes in upstream watershed or channel conditions that change water flow and sedimentation in the watershed, and channel scour occurs as a result of one or more flood events or other changes to hydraulic conditions (with natural or human causes).³⁴

There are trench and trenchless methods for crossing waterways, with trenchless crossings having the least amount of impact on the stream and wildlife, but requiring more time for construction.^{35,36} Trenchless crossings can take three to four weeks to complete, whereas trench methods are a much faster installation process.^{37,38} MVP originally proposed trench methods for every water crossing along the route except one, but was unable to comply with a 72-hour construction timeframe for each crossing enforced by West Virginia law, which led to their Nationwide Permit 12 authorization being overturned in 2018.³⁹ MVP has since amended 120 of the remaining 429 crossings to be trenchless with approval from FERC, but is still opting to use the cheaper trench methods for the other 309 crossings.⁴⁰ Each trench crossing will be 4.5 feet wide and up to 9 feet deep, putting communities and sensitive bodies of water more at risk.⁴¹ Regardless of the method, these hundreds of stream crossings represent an enormous amount of work remaining before the pipeline is completed.

One water crossing under the Greenbrier River could take at least 14 weeks of drilling with no weather delays or unexpected challenges, requiring 24-hour-a-day operation at a shallower depth under the riverbed than normal direct drilling.⁴² Several endangered species, such as the candy darter and Roanoke logperch, are found only in the watersheds crossed by the Mountain Valley Pipeline and could be irreparably harmed by pollution from construction.^{43,44}

Remaining Restoration Work

MVP states in their June 2023 monthly status report that the pipeline is 55.8% complete to full restoration.⁴⁵ This percentage is a more accurate reflection of project completion, instead of defining surface disturbance, the digging of trenches, or pipe stringing as “completion.”

Full restoration refers to the process of burying the pipeline and restoring the contours of the earth as best as the company is able. This process can involve replacing topsoil, regrading, revegetation, fencing and removing debris such as felled trees, rocks and construction materials. Poor restoration work can impact soil drainage and crop productivity, negatively impacting the land owners, waterways and farmers.⁴⁶ Full restoration involves final stabilization of the slopes along the route, as well as testing the integrity of the entire pipeline, a process that can take more than a year to complete.⁴⁷

THE IMMENSE CHALLENGES AND IMPACTS OF MVP’S REMAINING WORK

The most challenging sections for MVP to complete lie ahead, and that work is disproportionately difficult. The company’s prior record of violations and need for numerous variances and extensions raises questions about the ability of MVP, LLC, to complete the remaining work in a responsible and timely manner that does not necessitate further delays. The financial uncertainty of project developers compounds those challenges.

Mountain Valley Pipeline’s route is uniquely risky

Since construction began on the project, MVP has struggled to maintain the stability of the slopes along the route. MVP has made hundreds of variance requests, which are official alterations of the route and management plan, related to slips where the stabilization of the terrain has failed.⁴⁸ The federal Pipeline and Hazardous Materials Safety Administration issued an

updated bulletin on June 2, 2022, to remind pipeline operators of the serious potential dangers related to facilities due to “earth movement in variable, steep and rugged terrain.”⁴⁹ Almost 75% of the project’s route is through “moderately high” or “high” landslide risk terrain, **the highest total percentage for any pipeline of its diameter.**^{50, 51}

According to hydrologist Jacob Hileman:

“Based on a comprehensive review of gas transmission pipelines approved by FERC from 1997 to present, it is obvious the 42-inch diameter, 303-mile long MVP is a radically different breed of pipeline. Examination of the environmental impact statements for large-diameter gas pipelines over 100 miles long reveals that **no other 42-inch diameter gas pipeline has ever been approved across more miles of steep slopes and high landslide risk areas**; disturbingly, neither has a 36-inch, nor a 30-inch, nor even a 24-inch diameter gas pipeline.”⁵²

The amount of landslide-prone terrain that the MVP would be constructed through and the difficulties the company has already faced raise concerns about the potential for explosions if MVP is placed into service. The Leach XPress Pipeline exploded in 2018 in Marshall County, West Virginia, just north of MVP’s starting point. The explosion was large — it was seen and heard for miles. The MVP route has more than four times the amount of slopes greater than 30% compared to the Leach XPress Pipeline.⁵³



Don Jones, a seventh-generation farmer in the historical district of Newport, Virginia, holds an image of his late father George Jones, who was also opposed to the MVP.

“Common sense tells me you wallow around with equipment near a creek, wetlands, whatever — you are going to have contamination. And, so why are we going to let this company come in here potentially pollute, contaminate our waters, is beyond me. What benefit is it for us, for the citizens of Virginia?” Don Jones testified before the Virginia State Water Control Board in September 2021.

“I know my Dad always said that’s why he liked this family farmland, that’s why we settled there, because it’s clean water,” Don Jones continued, describing the muddy runoff coming down his property after the grass seed MVP planted failed to take root due to lack of topsoil. Portrait by Matthew Pickett / Loud Valley Productions, LLC

Additionally, portions of buried pipe have experienced slippage along the route in West Virginia, raising additional concerns of future risk of explosion.^{54,55} Especially concerning is that the portion of the route in Giles County, Virginia, is within a seismic zone.⁵⁶ Several of the counties that the MVP route runs through are also laden with karst formations unique to the Appalachian Mountain range.⁵⁷ Karst landscapes are developed in limestone or other soluble rocks where dissolving of the bedrock creates sinkholes, sinking streams and caves.⁵⁸ This topography presents difficulties for the drilling technology required for the project's many remaining water crossings, due to the complexity of rock formations and the high likelihood for karst collapse — the sudden formation of sinkholes.⁵⁹ In fact, the karstland of the Greenbrier River Valley in Monroe County is one of the densest sinkhole plains in the world, with an average of over 46 sinkholes in every square mile.⁶⁰ Destruction of karst formations during construction of the MVP has led to water pollution and sedimentation problems, and has also caused flood events on local, historic farms by impeding cave structures where water normally flows.⁶¹

The Impacted Communities

Construction of the project has wrought significant harm on local environments, damaged Indigenous cultural and sacred sites, and negatively impacted elderly and rural communities and residents' livelihoods.⁶² MVP is routed through many counties with low-income, elderly and medically underserved populations. FERC found in its Environmental Impact Statement that eight of the 17 counties through which MVP would pass have poverty rates higher than state-wide rates⁶³ and 14 of the counties have more elderly populations than the state average.⁶⁴ The route is predominantly rural, and FERC identified five census blocks as environmental justice communities. Additionally, two of the MVP's three West Virginia compressor stations are sited in counties where one in five people live below the poverty line, counties "considered environmental justice communities."⁶⁵



According to **Maury Johnson** (right), the well water on his family farmland in Monroe County, West Virginia, was severely damaged by MVP construction in 2018, and now his sediment-laden water is unfit for drinking. His farmland was also degraded by pipeline construction. But he's worried the damage won't stop there, since his land is close to the seismic zone in neighboring Giles County, Virginia.

"There's so much that could possibly happen here," Johnson told WV MetroNews in 2018. "This is a constantly-shifting valley. The earthquake that happened in September, I found earthquake damage [and] rockfall. We also have highly erodible and sliding soils in this area."

Johnson and fellow West Virginians **Herman** (center) and **Paula** (left) **Mann** remain firmly opposed to the MVP.

Portrait by Matthew Pickett / Loud Valley Productions, LLC

Construction of the MVP has already impacted sites on the traditional homeland of the Monacan Indian Nation (federally recognized in 2018), and Occaneechi, Saponi and Tutelo tribes, including a burial mound near Roanoke, Virginia, dating back several thousand years.⁶⁶ Requests by tribes for consultation with FERC to ensure cultural resources were protected were largely ignored.⁶⁷ The pipeline and its proposed 73-mile Southgate extension roughly follow the Native American Great Trading Path through Virginia and North Carolina, and tribal representatives continue to be concerned the projects would desecrate sacred sites.⁶⁸

The project's construction has had lasting impacts on those along the route, as landowners have suffered damage to property, water resources and operational farms. Personal wells have been damaged by construction, resulting in loss of clean drinking water, and generational farms have been rendered unusable.^{69,70}

Hundreds of Violations

MVP developers' track record includes hundreds of violations of state permit conditions, laws and regulations related to water quality documented by state agencies.

The West Virginia Department of Environmental Protection (DEP) and the Virginia Department of Environmental Quality (DEQ) employ or contract inspectors to monitor MVP's construction, who then file ongoing reports of their observations. If the agency determines there were likely violations of law, regulation, or permit conditions, the agency sends the company a letter called a Notice of Violation. The state environmental agency may then work with the company to resolve the violations, but if violations are egregious in number or scope, or the company does not appear to be fixing the violations, the agency may file a legal complaint.



From left to right: Failed erosion and sediment control along the MVP route in Giles County, Va., during MVP construction in October 2018. Sediment escapes the construction site through failed sediment control measures. A stream is impacted by sediment deposition and increased streambank erosion. Photos courtesy of Mountain Valley Watch

Virginia Violations

As listed in Virginia's 2018 legal complaint, the office of the Virginia attorney general alleged **375 violations**, including hundreds of water quality protection violations.⁷¹ The violations include unpermitted discharges into waterways, failure to maintain and repair erosion and sediment controls, violations related to road crossings over streams, and violations related to water diversions and drains. That matter was resolved with a negotiated consent decree, or settlement, which required MVP, LLC, to pay a \$2.15 million penalty and pay for third-party environmental auditing going forward.⁷² Since the consent decree was entered in 2019, Virginia DEQ has cited MVP, LLC, for an additional 51 violations.⁷³

West Virginia Violations

In West Virginia, there have been two consent decrees: one in 2019⁷⁴ with 27 Notices of Violation; and one in 2020⁷⁵ including 29 Notices of Violation. Each Notice of Violation identifies numerous permit violations, totaling nearly 200 permit violations. In total, West Virginia DEP

has cited MVP, LLC, for nearly 50 violations of water quality standards for sediment deposits on streambeds and visible suspended pollutants, as well as 139 water pollution permit violations. In 2019, the consent decree resulted in the WVDEP fining MVP, LLC, \$265,972. In 2020, WVDEP fined MVP, LLC, \$303,706.

These only represent the violations that were egregious enough that the state agencies took some sort of enforcement action against the company. Citizen water quality monitors argue that this represents only a fraction of actual violations, as citizen monitoring has alleged more than 1,500 in Virginia alone.⁷⁶ **The numerous violations do not illustrate the need for changes to environmental laws that protect people's water and land, but rather demonstrate that MVP, LLC, is either unwilling or unable to comply with the regulations.**

How Sedimentation from Construction Harms Local Communities

Ahead of the granting of any federal- or state-level permits, hydrologists, geologists, scientists and soil specialists warned of the risk of degradation to water resources along the route of the MVP. Specifically of concern were high-quality streams, water bodies already experiencing impairment and the cumulative impacts from crossings in close proximity.⁷⁷

In Roanoke County, experts raised significant concerns about the proposed crossing on the Roanoke River approximately 1.1 miles upstream from a drinking water intake for the Western Virginia Water Authority.^{78,79} The authority provides drinking water to approximately 69,000 customers in the city of Roanoke and Roanoke, Franklin and Botetourt counties.⁸⁰ Additional sedimentation and turbidity in waterbodies complicates drinking water treatment. In its 2018 lawsuit, the Virginia attorney general noted that the Department of Environmental Quality observed approximately 350 square feet of wetland containing sediment in Roanoke County where the MVP did not possess a permit to discharge into the waters.⁸¹



Heavy sediment from Little Creek flows into the Blackwater River in October 2019. Little Creek is crossed several times by the Mountain Valley Pipeline in Franklin County, Va. Photo courtesy of Mountain Valley Watch.

Sedimentation from construction has subsequently impacted the water resources of several other counties along the route. In Virginia, construction has produced significant sedimentation into Little Creek (which feeds into Blackwater River) in Franklin County, Virginia.⁸² Little Creek was vulnerable to new sources of sedimentation as it was already considered impaired before construction began.⁸³

Sedimentation has also impacted local road access, with an acute example occurring after significant rainfall in May 2018, when Cahas Mountain Road in Boones Mill, Franklin County, Virginia, was blocked and shut down by about a foot of mud escaping from the construction site.⁸⁴

Climate Impacts

At a time when communities in Appalachia, the United States, and the world are facing natural disasters gravely exacerbated by climate change, completing the MVP would unwisely and unnecessarily commit billions of dollars towards new methane gas resources in the Southeast.

As originally proposed, MVP has the potential to emit greenhouse gasses on a scale comparable to approximately 26 coal-fired power plants annually,⁸⁵ yet the pipeline's developers have already stated that they intend to expand the pipeline's capacity.⁸⁶ If MVP's capacity were expanded and the Southgate extension were also placed into service, the total project emissions are projected to be 128.7 million metric tons, which is comparable to more than 35 coal-fired power plants or 27.3 million passenger vehicles annually.⁸⁷



Karolyn Givens lives on a farm in Giles County, Virginia, that is bisected by the Mountain Valley Pipeline, and she has spoken out about the damage to her land. "MVP does not do their homework in careful preparation for altering the land they want to use," Givens testified before the Virginia State Water Control Board on Sept. 28, 2021. She explained that water from a spring higher up on her farm flows into a cave that runs along the ridge, and MVP decided to route the pipeline over that steep ridge. In the process, MVP blasted open part of a cave with dynamite and filled it with clay.

"Filling that cave up with clay has proven problematic because typically snowmelt as well as rainwater runs into karst, into caves and other openings in the karst, through its waterways," Givens testified. "When you destroy those waterways, the water flows in places it never has before. Last week, the 5.5 inches of rain we experienced had nowhere to go into the ground ... so it poured down the mountainside along with mud and rocks."

Portrait by Matthew Pickett / Loud Valley Productions, LLC

These estimates take into account the full life-cycle of the project's emissions, from extraction and processing, to methane leakage during transportation and storage, to emissions from compressor stations, and ultimately end-use combustion. By contrast, FERC merely reported end-use combustion estimates in its Final Environmental Impact Statement, reporting 40 million metric tons of greenhouse gas emissions annually.⁸⁸ Even under this incomplete assessment, this lower number would be roughly equivalent to the annual emissions from 10 coal-fired power plants.⁸⁹ If completed and if placed into operation, the pipeline could be responsible for nearly 1% of all U.S. energy sector greenhouse gas emissions.⁹⁰

In filings to FERC, MVP stated that the pipeline would replace coal-fired electric generation. However, analysis shows that in order to offset greenhouse gas emissions enough to meet U.S. climate goals, MVP would need to displace at least 20 — and possibly as many as 35 — coal-fired power plants by 2030.⁹¹ Conservatively, that would require MVP to displace at least every coal-fired power plant in North Carolina and Virginia in the next eight years.

Additional Safety Hazards

With the passage of the Fiscal Responsibility Act, forced issuance of permits and the resumption of construction, community members are concerned about the company's use of degraded construction materials, which may pose danger to people living along the MVP's route and within the blast or incineration zones. Of immediate concern is the pipe that has sat above ground and exposed to direct sunlight, in some cases for more than six years. Industry experts recommend against pipes being exposed to direct sunlight for more than six months because it can



Red Terry and her family have been adamantly opposed to the Mountain Valley Pipeline's plan to build across their land on Virginia's Bent Mountain. A federal judge allowed MVP to use eminent domain in March 2018 to take possession of portions of the Terrys' land and that of 300 other landowners who had refused offers from MVP. In a May 2018 interview with WVTF, Terry described how she refused offers from pipeline developers to purchase a 14-acre easement through her mountain backyard. "I said you know this mountain has been in this family for seven generations. It's the most beautiful place in the world, and it's like my fourth child, so what kind of price do you ask for your fourth child?"

Portrait by Matthew Pickett / Loud Valley Productions, LLC

degrade the pipe's protective coating. Degraded pipe means greater risk of leak or explosion.

On August 11, 2023, the Pipeline and Hazardous Safety Materials Administration, the agency tasked with monitoring the pipeline, weighed in on the situation by expressing significant safety concerns about MVP. (PHMSA, an agency under the Department of Transportation, was created in 2004 to oversee 3.4 million miles of pipeline in the United States and regulate the shipment of hazardous materials.) PHMSA officials indicated they spent over 200 days in the field observing MVP's developers.

In their "Notice of Proposed Safety Order," the agency said MVP requires a "comprehensive evaluation to identify and remediate integrity issues, mitigate the risk and protect public safety, property, and the environment." Specific concerns with Mountain Valley Pipe are that segments have been buried without cathodic protection installed, and without other corrosion control processes and inspections at different junctures, and that pipe staged along the pipeline right-of-way has been exposed to the elements and ultraviolet radiation for long periods of time.⁹²

MVP'S REGULATORY, LEGAL AND FINANCIAL HURDLES

In addition to the challenges MVP faces in safely and lawfully crossing the remaining 429 water bodies and completing restoration work, the pipeline and its proposed extension **has had authorizations from federal and state agencies vacated or denied repeatedly** and faces legal and financial hurdles. These regulatory and legal challenges, and the related financing concerns, are caused by the inability of MVP to comply with existing environmental laws.

A History of Vacated Federal Permits

In recent years, the U.S. Court of Appeals for the Fourth Circuit has found permits authorizing the construction and operation of MVP to be noncompliant with federal environmental laws: the National Environmental Policy Act, the National Forest Management Act, the Mineral Leasing Act, the Endangered Species Act and the Clean Water Act, as described below. These laws play a critical role in protecting communities, waterways and endangered species, and are the only line of defense between industry and frontline communities.

U.S. Forest Service and the Bureau of Land Management: On January 25, 2022, the U.S. Court of Appeals for the Fourth Circuit vacated MVP's authorizations from the U.S. Forest Service and the Bureau of Land Management for the second time, finding that the agencies "erroneously failed to account for real-world data suggesting increased sedimentation," and thus failed to comply with the National Environmental Policy Act, the National Forest Management Act and the Mineral Leasing Act.⁹³

The Forest Service issued a revised, draft environmental impact statement in December 2022 with an accompanying public comment period. On April 14, 2023, the agency released a final environmental impact statement selecting "alternative 2," allowing construction through the Jefferson National Forest. A Record of Decision allowing construction through the Jefferson National Forest was released by the Forest Service on May 15, 2023 and from the Bureau of Land Management on May 17, 2023.^{94, 95, 96, 97, 98}

U.S. Fish and Wildlife Service: On February 3, 2022, the U.S. Court of Appeals for the Fourth Circuit vacated the Biological Opinion and Incidental Take Statement issued to MVP, LLC, by the U.S. Fish and Wildlife Service — also for the second time — citing "serious errors" in the agency's analysis supporting its determination that endangered species would not have been jeopardized by MVP.⁹⁹ In reference to the near-extinct candy darter, the court opined "if a species is already speeding toward the extinction cliff, an agency may not press on the gas."¹⁰⁰

On February 28, 2023, the U.S. Fish and Wildlife Service issued a Biological Opinion and Incidental Take Statement for the Mountain Valley Pipeline. The FWS declined to consider recently submitted filings and acknowledged that “FERC and the other action agencies will need to assess whether the materials contain any new information that might prevent them from relying on this Opinion...”¹⁰¹

Notably, the U.S. Fish & Wildlife Service admitted that it did not “meaningfully consider[]” information submitted by environmental advocates before the permit was published.¹⁰² USFWS warned that “the other action agencies will need to assess whether the materials contain any new information that might prevent them from relying on this Opinion to meet their obligations under Section 7 of the ESA .”¹⁰³

In June 2023, environmental and community organizations filed a response opposing efforts by the U.S. Department of Justice and Mountain Valley Pipeline, LLC, to dismiss the environmental groups’ pending challenge to the latest biological opinion and incidental take statement under the Endangered Species Act, but the U.S. Court of Appeals for the Fourth Circuit dismissed the case on August 11, 2023. The motions to dismiss the groups’ challenges follow the passage of the Fiscal Responsibility Act, which sought to expedite the MVP, enshrining congressional overreach over the courts and setting a dangerous precedent that could encourage future congressional action to force through other controversial fossil fuel projects.¹⁰⁴

U.S. Army Corps of Engineers: After the U.S. Court of Appeals for the Fourth Circuit vacated the U.S. Army of Engineers’ verification of the pipeline’s coverage under Nationwide Permit 12,¹⁰⁵ MVP, LLC ultimately withdrew its Nationwide Permit 12 request and applied for an individual permit under the Clean Water Act. Under the Clean Water Act, the federal government



Mark Jarrell: “You work your entire life to save up for something, you have plans and dreams and you start in. Somebody shows up and just throws a monkey wrench in it,” Mark Jarrell told the Mountain State Spotlight in August 2022. Jarrell’s 90 acres in Summers County, W.Va., would be bisected by the MVP, which would take land he intended to serve as family home sites. Portrait by Matthew Pickett / Loud Valley Productions, LLC

shares responsibility with the states for ensuring water quality standards are met. MVP received certifications from both West Virginia and Virginia under Clean Water Act Section 401, but environmental groups challenged these decisions in court. On March 29, 2023, the court upheld Virginia's certification, but the court vacated West Virginia's certification on April 3, 2023.^{106, 107}

West Virginia DEP re-issued the certification on June 8, 2023, but did include a number of required conditions.¹⁰⁸

As a result of the passage of the Fiscal Responsibility Act of 2023, which required federal agencies to issue missing permits for the MVP, the U.S. Army Corps of Engineers issued a Clean Water Act Section 404 permit on June 23, 2023.¹⁰⁹ Environmental and community organizations, including Appalachian Voices challenged the constitutionality of Fiscal Responsibility Act and efforts by the U.S. Department of Justice and Mountain Valley Pipeline, LLC, to dismiss the environmental groups' challenge, but the U.S. Court of Appeals for the Fourth Circuit dismissed the cases on August 11, 2023.¹¹⁰

Regulatory Hurdles for MVP Southgate

MVP also faces challenges regarding its 73-mile Southgate extension.

The proposed MVP Southgate extension received a Certificate of Public Convenience and Necessity from FERC in February 2020¹¹¹ and recently applied for a three-year extension to that certificate, but it is missing multiple required permits and cannot begin construction. The North Carolina Department of Environmental Quality denied MVP Southgate's request for certification under Clean Water Act Section 401 in August 2020.¹¹² After MVP appealed this decision, the U.S. Court of Appeals for the Fourth Circuit requested that the NC DEQ provide additional clarity on its decision. In April 2021, the agency published additional reasoning and reaffirmed its denial of the certification.¹¹³ At this time, MVP has not reapplied for a Clean Water Act Section 401 permit.

Meanwhile, Virginia's State Air Pollution Control Board denied an air quality permit under the Clean Air Act for MVP Southgate's proposed Lambert Compressor Station in December 2021. Air board members cited the negative health impact this additional industrial facility would have on air quality in the region, as well as lack of compliance with the state's environmental justice policy.¹¹⁴ At this time, no new permit application is pending. The Southgate project also lacks a Clean Water act Section 404 permit from the U.S. Army Corps of Engineers.

Numerous Renewals Required

MVP's initial Certificate of Public Convenience and Necessity was granted for three years by FERC, first expiring October 13, 2020, as project developers initially estimated an in-service date of late 2018.¹¹⁵ MVP, LLC, applied for and received a two-year extension to its original certificate in 2020, but FERC did not issue a supplemental environmental impact statement even though the real-world impacts of construction varied from application estimations. The lack of a supplemental environmental impact statement is at issue in the D.C. Circuit Court, which is still considering a challenge to the 2020 certificate extension.

In June 2022, MVP, LLC, submitted a request for an additional four-year extension, which FERC approved on August 23, 2022, despite overwhelming public opposition. When issuing its decision, FERC acknowledged that the "validity of our conclusions and environmental conditions cannot be sustained indefinitely."¹¹⁶ This means that FERC has extended the Certificate of Public Convenience and Necessity it granted the project in 2017 for an unprecedented total of nine years, with the new expiration date of October 13, 2026.¹¹⁷ Meanwhile, due to the passage of

the Fiscal Responsibility Act, Sierra Club's challenge to MVP's 2020 FERC certificate extension in the D.C. Circuit Court has been dismissed.

The fact that MVP has needed multiple extensions and continues to contemplate changes to its design illustrates the project's poor design and planning, and the company's likely inability to complete the remaining, most difficult work in a timely and responsible manner.

Financial Uncertainty

MVP is also currently facing numerous financial challenges, casting further doubt on the project's viability and usefulness.

RGC Resources, parent company of Roanoke Gas and 1% owner in the project, announced a \$29.6 million impairment charge on MVP on May 11, 2022, becoming the most recent MVP backer to lose money on the value of its investment in the project.¹¹⁸

On February 18, 2022, NextEra, a 31% owner of MVP, LLC, announced an \$800 million loss, and stated that it was reevaluating its investment in the proposed MVP.¹¹⁹ In 2021, NextEra had written off \$1.2 billion of the value of its investment in the pipeline.¹²⁰

NextEra's Securities and Exchange Commission filing for December 31, 2021, financial statements read: "As a result of this evaluation, it was determined that the continued legal and regulatory challenges have resulted in a very low probability of pipeline completion."¹²¹ These "legal and regulatory challenges" refer to MVP, LLC's inability to comply with regulations, and do not justify a change to the regulations.

In August 2020, Consolidated Edison, Inc, which holds 10% ownership, indicated that it is moving away from gas transmission investments, has capped its investment in the project and is considering selling its stake in the project.¹²²

The Institute for Energy Economics and Financial Analysis also notes that a "combination of factors increases the risk that MVP's capacity will be underutilized." These factors include (1) lower natural gas demand in the MVP region; (2) MVP's inability to provide lower-cost gas; and (3) Appalachian pipeline capacity currently exceeds production.¹²³

These factors all point to the real probability that the gas capacity that the MVP could provide will be underutilized and less financially viable than existing supply.¹²⁴

CONCLUSION

Mountain Valley Pipeline faces unique, complex and compounding obstacles as a result of the steep terrain, karst topography and many ecologically sensitive waterways along its route. Though the company claims that the project is nearly complete, that is far from the truth. MVP has lost multiple federal authorizations under various environmental laws, which demonstrates that MVP's developers are not up to the task. MVP is a challenging pipeline to build on steep terrain, and it has hundreds of water crossings remaining. Nine years in, pipeline developers still have not shown that they can build this project while complying with environmental laws and protecting communities. The company's record of environmental violations offers no assurance that MVP can protect communities in harm's way. MVP should not have been given special exemptions and accommodations from Congress given the seriousness of its numerous shortcomings.

This report was developed by Appalachian Voices, with contributions from the POWHR Coalition and the Sierra Club.



NOTES

- 1 Mountain Valley Pipeline. <https://www.mountainvalleypipeline.info/>.
- 2 "EQM raises cost, delays timing of Mountain Valley natural gas pipeline." Reuters. 17 June 2019. <https://www.reuters.com/article/equitrans-mid-mountain-valley-natgas-pip-idUKL2N230006>.
- 3 Hammack, Lawrence. "Estimated Cost of Montain Valley Pipeline increased to \$4.6 billion." The Roanoke Times. 25 Sep. 2018. https://roanoke.com/business/estimated-cost-of-mountain-valley-pipeline-increased-to-4-6-billion/article_1b615993-cf0f-5082-bf59-c2f37e365fa9.html.
- 4 Tony, Mike. "Mountain Valley Pipeline targeted in-service-date pushed back again as projected cost soars to \$6.6 billion." The Charleston Gazette-Mail. https://www.wvgazettemail.com/news/energy_and_environment/mountain-valley-pipeline-targeted-in-service-date-pushed-back-again-as-projected-cost-soars-to/article_16454900-3655-5e32-8bd4-a73eab4b0c77.html.
- 5 Paullin, Charlie. "Federal regulators grant Mountain Valley Pipeline four-year extension." The Virginia Mercury. 24 Aug. 2022. <https://www.virginiamercury.com/2022/08/25/federal-regulators-grant-mvp-four-year-extension>.
- 6 Mountain Valley Pipeline. <https://www.mountainvalleypipeline.info/overview/>.
- 7 Mountain Valley Pipeline. <https://www.mountainvalleypipeline.info/>.
- 8 Williams. "Transco." <https://www.williams.com/pipeline/transco/>.
- 9 U.S. Federal Energy Regulatory Commission. "Order Issuing Certificates and Granting Abandonment Authority." 13 October, 2017. "<https://www.ferc.gov/sites/default/files/2020-08/CP16-10.pdf>.
- 10 Hammack, Lawrence. "Future of Mountain Valley Pipeline clouded by court decisions." *The Roanoke Times*. 6 Feb. 2022. https://roanoke.com/news/local/future-of-mountain-valley-pipeline-clouded-by-court-decisions/article_dc04c40e-874f-11ec-9556-df2de7896075.html.
- 11 MVP Southgate. <https://www.mvpsouthgate.com/>.
- 12 Vogelsong, Sarah. "Equitrans says it's still committed to Mountain Valley Pipeline but completion date uncertain," Virginia Mercury. 22 February 2022. <https://www.virginiamercury.com/blog-va/equitrans-says-its-still-committed-to-mountain-valley-pipeline-but-completion-date-uncertain/>.
- 13 <https://www.politico.eu/article/europe-is-out-of-the-immediate-energy-crisis/>
- 14 https://elibrary.ferc.gov/eLibrary/filelist?accession_num=20230424-4000
- 15 <https://www.capito.senate.gov/news/press-releases/capito-manchin-mckinley-miller-send-letter-to-ferc-in-support-of-the-mountain-valley-pipeline>
- 16 <https://ieefa.org/resources/mountain-valley-pipeline-project-confronts-another-reality-check-and-found-wanting>
- 17 <https://ieefa.org/resources/risks-associated-natural-gas-pipeline-expansion-across-appalachia>
- 18 <https://ieefa.org/resources/mountain-valley-pipeline-faces-financial-plunge>
- 19 <https://www.eia.gov/todayinenergy/detail.php?id=56140>
- 20 <https://www.eia.gov/outlooks/steo/images/Fig26.png>
- 21 <https://ieefa.org/resources/mountain-valley-pipeline-faces-financial-plunge>
- 22 <https://www.nrel.gov/docs/fy22osti/81644.pdf>
- 23 <https://www.iea.org/commentaries/europe-s-energy-crisis-what-factors-drove-the-record-fall-in-natural-gas-demand-in-2022>
- 24 <https://www.bruegel.org/dataset/european-natural-gas-imports>

- 25 <https://www.iea.org/news/natural-gas-markets-remain-tight-as-uncertainty-persists-around-chinese-lng-demand-and-further-supply-cuts-by-russia>
- 26 <https://www.ogj.com/pipelines-transportation/lng/article/14289169/eia-growth-in-global-lng-export-capacity-will-be-limited-in-2023>
- 27 <https://ieefa.org/resources/mountain-valley-pipeline-faces-financial-plunge>
- 28 Mountain Valley Pipeline, LLC submits Monthly Status Report for the period April 1-30, 2023 under CP16-10, 5 May 2023. Appendix A: Construction Status. eLibrary U.S. Federal Energy Regulatory Commission. https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20230505-5199&optimized=false
- 29 Tetra Tech, Inc. "Mountain Valley Pipeline Project Individual Permit Application." February 2021. https://www.mountainvalleypipeline.info/wp-content/uploads/2021/03/aa_Individual-Permit-Application-Text-and-Tables_PUBLIC.pdf.
- 30 CHANGE Environmental. "Mountain Valley Pipeline (MVP) Project; Individual Permit Application – Virginia and West Virginia; Stream Crossing Cost Evaluation". 24 April 2021. eLibrary U.S. Federal Energy Regulatory Commission. <https://elibrary.ferc.gov/eLibrary/filedownload?fileid=020d9612-66e2-5005-8110-c31fafc91712>.
- 31 Hammack, Lawrence. "A pipeline runs through it: Stream crossings by the Mountain Valley Pipeline." 11 December 2021. The Roanoke Times. https://roanoke.com/news/local/a-pipeline-runs-through-it-stream-crossings-by-the-mountain-valley-pipeline/article_524c40f0-5934-11ec-b0bc-bf0fc3b2c93f.html.
- 32 Castro, J., A. MacDonald, E. Lynch, and C.R. Thorne. "Risk-based approach to designing and reviewing pipeline stream crossings to minimize impacts to aquatic habitats and species." 2014. River Research and Applications. <https://acwi.gov/sos/pubs/3rdJFIC/Contents/8F-Castro.pdf>.
- 33 "Hydraulic Considerations for Pipelines Crossing Stream Channels." 2007. <http://www.remarkableriparian.org/pdfs/pubs/Hydraulic%20Considerations%20for%20Pipeline%20crossingsTechNote423.pdf>
- 34 "Hydraulic Considerations for Pipelines Crossing Stream Channels." April 2007. <http://www.remarkableriparian.org/pdfs/pubs/Hydraulic%20Considerations%20for%20Pipeline%20crossingsTechNote423.pdf>
- 35 Enbridge. "Crossing rivers and streams: Minimizing the impact." Feb. 2022. <https://www.enbridge.com/-/media/Enb/Documents/Factsheets/US-GTM-fact-sheets-fall-2019/20190927FSCrossingRiver-sandStreamsUSGTM.pdf>
- 36 Coastal GasLink. "Water: Protecting a Valuable Resource." <https://www.coastalgaslink.com/sustainability/water-crossings/>
- 37 Enbridge Energy. "Summary of Construction Methods and Procedures." January 2020. https://www.mvp.usace.army.mil/Portals/57/docs/regulatory/Enbridge/Revised%20Plans/Enbridge_Environmental_Protection_Plan_AppA_NEW.pdf?ver=2020-02-03-121744-047https://www.mvp.usace.army.mil/Portals/57/docs/regulatory/Enbridge/Revised%20Plans/Enbridge_Environmental_Protection_Plan_AppA_NEW.pdf?ver=2020-02-03-121744-047
- 38 Transcontinental Gas. "Trenchless Crossing Analysis Atlantic Sunrise Project Central Penn Line Susquehanna County, Pennsylvania." 2016. https://files.dep.state.pa.us/programintegration/PA%20Pipeline%20Portal/AtlanticSunrise/Chapter105SusquehannaCounty/Attachment%20P/P6_Att%20P%20SUSQ_APP%20P-2_SUSQ_Trench_v1.pdf.
- 39 Ridder, Kevin. "Mountain Valley Pipeline's Latest Challenges: Water-crossing Permits and Compressor Station Hearing." 5 Feb. 2021. The Appalachian Voices. <https://appvoices.org/2021/02/05/mvp-permit-challenges/>.
- 40 U.S. Federal Energy Regulatory Commission, Office of Energy Projects. "CP-2157 MVP Amendment Project EA" August 2021. <https://cms.ferc.gov/media/cp21-57-mvp-amendment-project-ea>.
- 41 U.S. Federal Energy Regulatory Commission, "Mountain Valley Project and Equitrans Expansion Project

- Final Environmental Impact Statement." June 2017. https://cms.ferc.gov/sites/default/files/2020-05/Final-Environmental-Impact-Statement_1.pdf
- 42 Federal Energy Regulatory Commission, Office of Energy Projects. "CP-2157 MVP Amendment Project EA" August 2021. <https://cms.ferc.gov/media/cp21-57-mvp-amendment-project-ea>.
- 43 Federal Energy Regulatory Commission. "Biological Assessment for Mountain Valley Pipeline, LLC." Docket No. CP16-10-000" 7 July 2017. https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fse-prd565174.pdf
- 44 Clontz, Lauren. "Underwater Rainbow: Can the Candy Darter Survive the MVP?" Blue Ridge Outdoors. 10 Sep. 2018. <https://www.blueridgeoutdoors.com/environment/underwater-rainbow-can-the-candy-darter-survive-the-mvp/>
- 45 Mountain Valley Pipeline, LLC submits Monthly Status Reports for the period of May 1, 2023 to May 31, 2023 and June 1, 2023 to June 30, 2023 for the Mountain Valley Pipeline Project under CP16-10., 1 August 2023. Appendix A: Construction Status. eLibrary U.S. Federal Energy Regulatory Commission. https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20230720-5097&optimized=false
- 46 "Restoring the pipeline's pathway." Penn State John A. Dutton E-Education Institute. <https://www.e-education.psu.edu/marcellus/node/857>
- 47 Enbridge. "Post-construction: The land restoration process." <https://www.enbridge.com/projects-and-infrastructure/land-restoration-post-construction>
- 48 Protect Our Water, Heritage, Rights. "Master List of MVP Variance Requests Through FERC." 19 April, 2022. <https://powhr.org/master-list-of-mvp-variance-requests-through-ferc/>
- 49 Federal Register Doc. 2022-11791. 2 June 2022. Docket No. PHMSA-2022-0063 <https://www.govinfo.gov/content/pkg/FR-2022-06-02/pdf/2022-11791.pdf>
- 50 U.S. Federal Energy Regulatory Commission. Final Environmental Impact Statement, Table 4.1.1-10. June 2017. https://www.ferc.gov/sites/default/files/2020-05/Final-Environmental-Impact-Statement_1.pdf.
- 51 Hileman, Jacob. "Despite rosy projections, all is not well with the Mountain Valley Pipeline." 2 Sep. 2020. The Virginia Mercury. <https://www.virginiamercury.com/2020/09/02/despite-rosy-projections-all-is-not-well-with-the-mountain-valley-pipeline/>.
- 52 Hileman, Jacob. "Despite rosy projections, all is not well with the Mountain Valley Pipeline." 2 Sep. 2020. The Virginia Mercury. <https://www.virginiamercury.com/2020/09/02/despite-rosy-projections-all-is-not-well-with-the-mountain-valley-pipeline/>.
- 53 Tony, Mike. "Mountain Valley Pipeline's high risk of landslides, other WV pipeline failures fuel safety fears." 10 Sep. 2022. West Virginia Gazette Mail. https://www.wvgazettemail.com/news/energy_and_environment/mountain-valley-pipelines-high-risk-of-landslides-other-wv-pipeline-failures-fuel-safety-fears/article_54d88e08-3d7a-54be-8028-7aa380612282.html
- 54 U.S. Federal Energy Regulatory Commission. Environmental Compliance Monitoring Report for the Mountain Valley Project for the period of May 8 through 14, 2022. https://elibrary.ferc.gov/eLibrary/filelist?accession_num=20220607-4000
- 55 Hammack, Laurence. "Report of pipeline slips in West Virginia under investigation, raises concern." 3 May 2020. Roanoke Times. https://roanoke.com/news/local/report-of-pipeline-slips-in-west-virginia-under-investigation-raises-concern/article_05d9ea1e-8944-5a10-a9e9-acad9d709e92.html.
- 56 Bollinger, G.A., Russell L. Wheeler. "The Giles County, Virginia, Seismic Zone." U.S. Geological Survey Professional Paper 1355. 1988. <https://pubs.usgs.gov/pp/1355/report.pdf>
- 57 Weary, David. "Preliminary Map of Potentially Karstic Carbonate Rocks in the Central and Southern

- Appalachian States." 2008 U.S. Geological Survey. https://pubs.usgs.gov/of/2008/1154/index_files/Appalachian_karst.pdf.
- 58 Virginia Department of Conservation and Recreation. "Introduction to Virginia's Karst." <https://www.dcr.virginia.gov/natural-heritage/document/introvakarst.pdf>.
- 59 Zhao, Jingyuan; Ning Li; and Fengyin Liu. "Geological survey and drilling technology of karst land." May 2020. Desalination and Water Treatment. https://www.deswater.com/DWT_articles/vol_187_papers/187_2020_144.pdf.
- 60 West Virginia Department of Environmental Protection. "Monroe County Karst." 28 July 2010. <https://dep.wv.gov/oil-and-gas/GI/Documents/OOG%20Program%20Review/MonroeCountyKarst.pdf>
- 61 Comments of Karolyn Givens under CP16-10 et. 29 July 2022. eLibrary U.S. Federal Energy Regulatory Commission. https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20220729-5303&optimized=false
- 62 "Petition For Rehearing and Immediate Stay of the order of The Rosebud Sioux Tribe, The Cheyenne River Sioux Tribe, The Blue Ridge Environmental Defense League, and Affected Individual Landowners." eLibrary U.S. Federal Energy Regulatory Commission. https://elibrary.ferc.gov/eLibrary/filelist?document_id=14666892&optimized=false
- 63 Federal Energy Regulatory Commission, Final Environmental Impact Statement, 4-374 (June 2017).
- 64 Federal Energy Regulatory Commission, "Mountain Valley Project and Equitrans Expansion Project Final Environmental Impact Statement." June 2017. https://cms.ferc.gov/sites/default/files/2020-05/Final-Environmental-Impact-Statement_1.pdf
- 65 U.S. Federal Energy Regulatory Commission, "Mountain Valley Project and Equitrans Expansion Project Final Environmental Impact Statement." June 2017. https://cms.ferc.gov/sites/default/files/2020-05/Final-Environmental-Impact-Statement_1.pdf
- 66 "Petition For Rehearing and Immediate Stay of the order of The Rosebud Sioux Tribe, The Cheyenne River Sioux Tribe, The Blue Ridge Environmental Defense League, and Affected Individual Landowners." eLibrary U.S. Federal Energy Regulatory Commission. https://elibrary.ferc.gov/eLibrary/filelist?document_id=14666892&optimized=false
- 67 "Comments of Monacan Indian Nation under CP21-57." eLibrary U.S. Federal Energy Regulatory Commission. https://elibrary.ferc.gov/eLibrary/filelist?document_id=14948366&optimized=false
- 68 Armao, Marc. "North Carolina tribes fear pipeline will damage waterways, burial grounds." Grist. 15 October 2021. <https://grist.org/article/mountain-valley-pipeline-and-indigenous-land/>
- 69 "Motion to Intervene of Paula L. Mann under CP16-10." eLibrary U.S. Federal Energy Regulatory Commission. https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20220801-5017&optimized=false
- 70 Adams, Mason. "They care about corporations: Landowners demonstrate pipeline project's toll." Virginia Mercury. 12 June 2019. <https://www.virginiamercury.com/2019/06/12/they-care-about-corporations-landowners-demonstrate-pipeline-projects-toll/>
- 71 Circuit Court of Henrico County, Paylor and State Water Control Board v. Mountain Valley Pipeline, LLC. 07 December 2018. https://drive.google.com/file/d/1TNzIN1S-fAkqRecd9ZWdGeKH_sa5PLQ/view
- 72 Circuit Court of Henrico County, Paylor et al. v. Mountain Valley Pipeline, LLC. Consent Decree. 23 October 2019. <https://drive.google.com/file/d/1aL0bCFpqcBKNvARibXdCWOHzvawbSk4D/view>
- 73 Hammack, Laurence. "A Pipeline Runs through It: Stream Crossings by the Mountain Valley Pipeline." Roanoke Times. 11 December 2021. https://roanoke.com/news/local/a-pipeline-runs-through-it-stream-crossings-by-the-mountain-valley-pipeline/article_524c40f0-5934-11ec-b0bc-bf0fc3b2c93f.html.

- 74 West Virginia Department of Environmental Protection, Consent Order with Mountain Valley Pipeline, LLC. 08 May 2019. https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20220310-5170
- 75 West Virginia Department of Environmental Protection, Consent Order with Mountain Valley Pipeline, LLC. 17 December 2020. https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20220310-5171
- 76 Wild Virginia letter to Members of the Virginia State Water Control Board. 13 December, 2021. <https://drive.google.com/file/d/1kwHwp2TFiCC63tAaGekkWPpKkbvuMx7u/view?usp=sharing>
- 77 Downstream Strategies. "Threats to Water Quality from Mountain Valley Pipeline and Atlantic Coast Pipeline Water Crossings in Virginia." 16 Feb. 2018. <http://www.downstreamstrategies.com/wp-content/uploads/2019/04/Threats-to-Water-Quality-from-Mountain-Valley-Pipeline-and-Atlantic-Coast-Pipeline-Water-Crossings-in-Virginia-%E2%80%93-NRDC-2018.pdf>
- 78 Downstream Strategies. "Threats to Water Quality from Mountain Valley Pipeline and Atlantic Coast Pipeline Water Crossings in Virginia." 16 Feb. 2018. <http://www.downstreamstrategies.com/wp-content/uploads/2019/04/Threats-to-Water-Quality-from-Mountain-Valley-Pipeline-and-Atlantic-Coast-Pipeline-Water-Crossings-in-Virginia-%E2%80%93-NRDC-2018.pdf>
- 79 Jones, Irisha. "Mountain Valley Pipeline could have impact on parts of Roanoke River." 7 Sep. 2017. WSLs 10. <https://www.wsls.com/news/2017/09/07/mountain-valley-pipeline-could-have-impact-on-parts-of-roanoke-river/>
- 80 Western Virginia Water Authority. <https://www.westernvawater.org/about-us/general-information>
- 81 Circuit Court of Henrico County, Paylor and State Water Control Board v. Mountain Valley Pipeline, LLC. 07 December 2018. https://drive.google.com/file/d/1TNzIN1S-fAkqRecd9ZWdGeKH_sa5PLQ/view
- 82 Adams, Mason. "They care about corporations: Landowners demonstrate pipeline project's toll." 12 June 2019. <https://www.virginiamercury.com/2019/06/12/they-care-about-corporations-landowners-demonstrate-pipeline-projects-toll/>
- 83 Downstream Strategies. "Threats to Water Quality from Mountain Valley Pipeline and Atlantic Coast Pipeline Water Crossings in Virginia." 16 Feb. 2018. <http://www.downstreamstrategies.com/wp-content/uploads/2019/04/Threats-to-Water-Quality-from-Mountain-Valley-Pipeline-and-Atlantic-Coast-Pipeline-Water-Crossings-in-Virginia-%E2%80%93-NRDC-2018.pdf>
- 84 Wickline, Alison. "Report of mudslide in Franklin County near Mountain Valley Pipeline construction." 18 May 2018. WSLs 10. <https://www.wsls.com/news/2018/05/19/report-of-mudslide-in-franklin-county-near-mountain-valley-pipeline-construction/>
- 85 Oil Change International. "The Mountain Valley Pipeline: Greenhouse Gas Emissions Briefing." Feb. 2017. https://priceofoil.org/content/uploads/2017/02/mountain_valley_pipe_web_final_v1.pdf.
- 86 Gough, Paul. "Equitrans plans capacity expansion on Mountain Valley Pipeline." 4 Aug. 2020. Pittsburgh Business Times. <https://www.bizjournals.com/pittsburgh/news/2020/08/04/equitrans-capacity-expansion-mvp.html>
- 87 Oil Change International. "New Money Behind the Mountain Valley Pipeline." Nov. 2020. https://priceofoil.org/content/uploads/2020/11/Mountain_Valley_Pipeline_Update_2020.pdf.
- 88 FERC. Final EIS at 4-620 (June 2017).
- 89 See U.S. Env'tl. Prot. Agency, Greenhouse Gas Equivalencies Calculator (last viewed Sept. 18, 2022), <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator#results>.
- 90 Environmental and Social Impacts of GHGs, Mountain Valley Pipeline. 22 March 2021. https://elibrary.ferc.gov/eLibrary/filelist?accession_num=20210322-5387.
- 91 Oil Change International. "Why Everything Manchin says about the Mountain Valley Pipeline is Wrong." Sep. 2022. https://priceofoil.org/content/uploads/2022/09/OCI_mvp_manchin_screen_9-1-22.pdf.

- 92 <https://www.phmsa.dot.gov/sites/phmsa.dot.gov/files/2023-08/PHMSA%20Notice%20of%20Proposed%20Safety%20Order%20-%20Equitrans%20Midstream%2008112023.pdf>
- 93 U.S. Court of Appeals for the Fourth Circuit. *Wild Virginia et al. v. U.S. Forest Service*, intervenor Mountain Valley Pipeline, LLC. 25 January 2022. <https://www.sierraclub.org/sites/www.sierraclub.org/files/blog/MVP%20Jefferson%20National%20Forest%20opinion%202022.pdf>.
- 94 https://roanoke.com/news/local/amended-forest-service-guidelines-could-remove-mountain-valley-pipeline-roadblock/article_a23f0bb0-82e1-11ed-be34-3351f7d5d1e9.html
- 95 <https://usfs-public.app.box.com/v/PinyonPublic/file/1097125865467>
- 96 <https://www.federalregister.gov/documents/2023/04/14/2023-07923/environmental-impact-statements-notice-of-availability>
- 97 <https://www.fs.usda.gov/project/?project=50036&exp=overview>
- 98 <https://eplanning.blm.gov/eplanning-ui/project/2022707/570>
- 99 *Appalachian Voices v. U.S. Dept. of Interior*, 25 F. 4th 259, 279 (4th Cir. 2022).
- 100 *Id.*
- 101 United States Fish and Wildlife Service. "Biological Opinion- United States Fish and Wildlife Service." 1 March, 2023. https://elibrary.ferc.gov/eLibrary/filelist?accession_num=20230301-3033
- 102 Memo dated 03/01/2023 forward the United States Fish and Wildlife Service's Biological Opinion for the Mountain Valley Project under CP16-10, 1 March 2023. eLibrary U.S. Federal Energy Regulatory Commission. https://elibrary.ferc.gov/eLibrary/filelist?accession_num=20230301-3033
- 103 Memo dated 03/01/2023 forward the United States Fish and Wildlife Service's Biological Opinion for the Mountain Valley Project under CP16-10, 1 March 2023. eLibrary U.S. Federal Energy Regulatory Commission. https://elibrary.ferc.gov/eLibrary/filelist?accession_num=20230301-3033
- 104 https://www.sierraclub.org/sites/www.sierraclub.org/files/2023-06/23-1384_Petitioners%20Opposition%20to%20Motions%20to%20Dismiss_with%20Exhibit_6-26-23_FILED.pdf
- 105 *Sierra Club v. U.S. Army Corps of Engineers*, 909 F.3d. 635 (4th Cir. 2018). <https://www.ca4.uscourts.gov/Opinions/181173.P.pdf>.
- 106 *Sierra Club v. State Water Control Bd.*, No. 21-2425 (4th Cir. Mar. 29, 2023).
- 107 *Sierra Club v. W. Va. Dept. Evtl. Protection*, No. 22-1008 (4th Cir. April 3, 2023).
- 108 <https://dep.wv.gov/WWE/Programs/Documents/MVP%20401%20June%208,%202023.pdf>
- 109 <https://www.energy.senate.gov/services/files/15A0ED14-182D-4D73-88DB-475C15999E86>
- 110 https://www.sierraclub.org/sites/www.sierraclub.org/files/2023-06/23-1384_Petitioners%20Opposition%20to%20Motions%20to%20Dismiss_with%20Exhibit_6-26-23_FILED.pdf
- 111 U.S. Federal Energy Regulatory Commission. "Order Issuing Certificate." 18 June, 2020. <https://ferc.gov/sites/default/files/2020-06/C-6-061820.pdf>.
- 112 N.C. Department of Environmental Quality. "State Denies Water Quality Certification for MVP Southgate Pipeline." 11 August, 2020. <https://deq.nc.gov/news/press-releases/2020/08/11/state-denies-water-quality-certification-mvp-southgate-pipeline>.
- 113 N.C. Department of Environmental Quality. "Reissuance of Denial of 401 Water Quality Certification and Jordan Lake Riparian Buffer Authorization Application with Supplement MVP Southgate Project." 29 April, 2021. <https://files.nc.gov/ncdeq/pipelines/2018-1638v3-MVP-Southgate-04292021.pdf>.

- 114 Vogel song, Sarah. "Virginia Regulatory Board Denies Mountain Valley Pipeline Compressor Station Permit." Virginia Mercury. 3 December, 2021. <https://www.virginiamercury.com/2021/12/03/virginia-regulatory-board-denies-mountain-valley-pipeline-compressor-station-permit>.
- 115 Tony, Mike. "Mountain Valley Pipeline targeted in-service-date pushed back again as projected cost soars to \$6.6 billion." The Charleston Gazette-Mail. https://www.wvgazette.com/news/energy_and_environment/mountain-valley-pipeline-targeted-in-service-date-pushed-back-again-as-projected-cost-soars-to/article_16454900-3655-5e32-8bd4-a73eab4b0c77.html.
- 116 Federal Energy Regulatory Commission. "Commissioner Danly Concurrence Regarding Mountain Valley Pipeline, LLC." 23 August 2022. <https://www.ferc.gov/news-events/news/commissioner-danly-concurrence-regarding-mountain-valley-pipeline-llc>.
- 117 Natural Resources Defense Council. "Protest of Natural Resources Defense Council to Mountain Valley Pipeline, LLC's Second Extension of Time Request." 29 July 2022. <https://sustainableferc.org/wp-content/uploads/2022/08/NRDC-Protest-MVP-Second-Extension-Request.pdf>.
- 118 Hammack, Lawrence. "Parent company of Roanoke Gas records \$29.6 million impairment on pipeline." 11 May 2022. The Roanoke Times. https://roanoke.com/news/local/parent-company-of-roanoke-gas-records-29-6-million-impairment-on-pipeline/article_fb3b2ef4-d154-11ec-9add-dbe4cad1f9b6.html.
- 119 NextEra, Inc. US Securities and Exchange Commission. 17 Feb. 2022. Form 8-K. <https://www.sec.gov/ix?doc=/Archives/edgar/data/0000753308/000075330822000015/nee-20220217.htm>.
- 120 Gough, Paul. "NextEra Energy writes down \$1.2B on Mountain Valley Pipeline." 26 Jan. 2021. Pittsburgh Business Times. <https://www.bizjournals.com/pittsburgh/news/2021/01/26/next-era-mountain-valley-pipeline.html>.
- 121 NextEra, Inc. and Florida Power and Light Company. US Securities and Exchange Commission. Form 10-K. Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 For the fiscal year ended December 31, 2021. <https://www.sec.gov/ix?doc=/Archives/edgar/data/0000753308/000075330822000014/nee-20211231.htm>.
- 122 Good, Allison. "ConEd may sell pipeline stakes as it reconsiders gas transmission investments." 26 Aug. 2020. S&P Global Market Intelligence. <https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/coned-may-sell-pipeline-stakes-as-it-reconsiders-gas-transmission-investments-60093361>.
- 123 Institute for Energy Economics and Financial Analysis. "Mountain Valley Pipeline Faces Uphill Struggle to Financial Viability." March 2021. https://ieefa.org/wp-content/uploads/2021/03/Mountain-Valley-Pipeline-Faces-Uphill-Struggle-to-Financial-Viability_March-2021.pdf.
- 124 *Id.*