U.S. Department of Transportation
Pipeline and Hazardous Materials Safety Administration
1200 New Jersey Avenue, SE
Washington, DC 20590
Attn: Howard Elliott, Administrator

Re: Atlantic Coast Pipeline Threats to Public Safety

June 10, 2019

Administrator Elliott:

I am writing to you regarding significant threats to public safety from the Atlantic Coast Pipeline (ACP). I am requesting that PHMSA allow no further work on the ACP until these threats can be fully assessed and remedied. As you may know, the ACP is currently voluntarily stopped due to legal issues, except for stabilization and pipe repair work in West Virginia. This pause in construction is an appropriate time to review public safety concerns from this project, and require additional safety reviews and measures.

I will concentrate primarily on the threat to public safety from the ACP from landslides and earth movement, but other public safety concerns exist as well. These include risks from flooding, karst terrain, difficult construction in extreme terrain, and degradation of the pipe exterior corrosion protection from excessive exposure to sunlight during storage.

I have been in contact with a number of your employees regarding these issues. All have been friendly and reasonably responsive. I believe that they sincerely want to protect the public safety through their public service at PHMSA. Nevertheless, they have been constrained in providing important safety information to me due to PHMSA's restrictive public participation policies, and what I see as strong industry influence in regulations and policy. I have registered for the PHMSA workshop to be held on June 12th and 13th at your headquarters, and hope to have the opportunity to address those restrictive policies at that time.

I am aware that FERC approves the siting of interstate natural gas pipelines, and that FERC allows an operator's hired consultant to perform a geohazard assessment. This puts PHMSA in the unenviable position of insuring public safety on a project that PHMSA neither approves nor assesses for geohazards. That, along with the current proliferation of new natural gas pipelines, and your limited staff makes your job a difficult one. Nevertheless, I believe that you have the authority to adequately protect the public safety if you act aggressively, use all of the tools at your disposal, and do not allow the industry to control your agenda.

I appreciate the recent PHMSA Advisory Bulletin ADB-2019-02 regarding the threat to pipelines from landslides, earth movement, and other geological hazards. The bulletin lists a large number of recent pipeline failures. These failures indicate that current practices are not sufficient to protect the public safety., especially from a project as

fraught with peril as the ACP. I applaud the comprehensive list of suggestions to operators in the bulletin to improve safety. Nevertheless, I believe that most operators will not act on PHMSA suggestions. I believe that PHMSA needs to require operators to make safety upgrades, or they won't be done.

I also watched the recent congressional hearings on PHMSA rule making, and appreciate your comments.

Landslides and Land Movement

The ACP would traverse the entire Appalachian Mountain Chain, and be constructed on extreme slopes. Per FERC's Environmental Impact Statement, it would include over 160 miles where a significant landslide threat exists, and over 120 miles where a high incidence of landslides has already occurred.

On my property, and within one mile of my property in Little Valley, Bath County, Virginia, 4 significant landslides occurred just 4 years ago. All are within several hundred feet of the proposed ACP right of way. The largest of these is 500 feet long, 35 feet wide, and up to 7 feet deep. It is on a 62% slope 250 to 300 feet below a ridgeline where extensive blasting would be required through large exposed bedrock to construct the ACP, and several hundred feet north of where the ACP would traverse a 60% slope on the side of Little Mountain, where distorted tree growth in the proposed right of way already shows slippage. There is evidence of a much older landslide in this same area as well.

The ACP geohazard consultant has greatly understated the threat to public safety, private property, and the environment from this project.

The ACP's consultant advised FERC that this recent large landslide, in close proximity to the proposed pipeline, is a low level hazard. Upon my questioning, he advised me that he wrote his report, and came to this conclusion without ever inspecting the landslide. He finally made a cursory inspection of this landslide at my insistence, and in my presence, and repeated his assessment of low hazard. PHMSA inspectors have seen this landslide.

The ACP geoconsultant referred to this slide, and the other recent slides on my property, and in Little Valley as minor surficial slips, and similar to others that he has seen in Western Virginia. A slide of this significance is not a minor surficial slip, and significantly threatens the proposed pipeline, public safety, and the environment. He has likely done the same with other significant slides and geohazards.

The ACP has proposed what they call "Best In Class" steep slope stabilization techniques in order to reduce the risk of landslides in the most vulnerable areas. They include a number of engineering proposals. However, these proposals are not site specific, and their use will be determined in the field, rather than be determined by prior engineering studies. This risks installation of an inadequate engineering practice being

installed by field personnel without proper engineering analysis, and subject to time constraints, and available on site materials.

Additionally, no cut and fill sheets have been submitted for the extensive excavation and blasting needed to install the pipeline on steep slopes and narrow ridges. The ACP is proposed to traverse over 3,000 feet through my property on our narrow and steep Miracle Ridge, where an average 30 foot cut would be required for that entire distance, with excavation and blasting through 28 feet of bedrock to install the pipeline. The enormous amount of spoil material during construction would need to be placed on sideslopes averaging 66% to the north and 39% to the south for that distance. This would leave these areas vulnerable to sliding as well. The geohazard consultant also stated that our property was a low hazard.

The Fourth Circuit Court of Appeals in Richmond found that the US Forest Service permit allowing the ACP to be constructed through the George Washington and Monongahela National Forests was illegal, in part, because the Forest Service failed to adequately analyze the risk of landslides, land movement, and sedimentation. I believe that FERC has done the same, and in fact, completed less analysis than the US Forest Service.

Recent aerial surveillance and imagery gathered by the Compliance Surveillance Initiative, and further revealed by FERC inspection reports, indicate a large number of areas of land slippage that have already occurred just in the first few miles of ACP construction. Twenty slope failures have been documented, with thirteen of those in the first 18 miles of pipeline construction.

Additional images reveal failing temporary wooden retaining walls, and other primitive and ineffective attempts to control this land movement. Slopes in this area are not nearly as steep or as long as most of the western portion of the project, including my property, and Little Valley.

These current early failures in controlling land movement on the ACP indicate a fundamental and dangerous miscalculation in the ability of the ACP to adequately mitigate risk from land movement, landslides, and other geohazards. They also indicate that the “Best In Class” steep slope stabilization techniques are not adequate.

ACP Inadequate Landslide Surveillance and Mitigation Plans

The ACP Slip Avoidance, Identification, Prevention, and Remediation - Policy and Procedures (SAIPR) as shown on page 4-30 of FERC’s environmental impact statement for the ACP is grossly inadequate, and will not prevent landslides from occurring following construction.

This plan relies on infrequent inspections finding an indication of potential slope failure, and then involves a long series of notifications to further evaluate, and act upon that potential failure. In reality, there are many cases of landslides with no advance

indication that a landslide is imminent, and increasingly intense precipitation events could trigger a landslide with no prior visual indication of slope failure. Additionally, the excessive notification procedures and subsequent evaluations in the plan may not be completed quickly enough to prevent a landslide, if some indication of imminent failure is found.

Flooding

Climate scientists and weather records indicate that the eastern United States is experiencing more flooding, and more intense flooding. In fact, the last 12 months were the wettest 12 months ever recorded for the United States, excluding Alaska and Hawaii. Storms are more intense, and they are moving more slowly. This results in heavier amounts of precipitation occurring for a longer period of time in any one location. As our climate warms further, more intense flooding in inevitable.

Heavy flooding occurred in Little Valley in 2015. This was the same flood that caused the numerous large landslides. This flood permanently relocated Little Valley Run 50 feet to the west, and deposited boulders up to 5 feet in size in the floodplain just 200 feet downstream from the proposed ACP crossing. It scoured the channel, collapsed the stream banks, and created a plunge pool where the relocated channel re-enters the original channel.

This was only a 4 inch rainfall event, although it was of short duration. Other record breaking floods occurred along the proposed route of the ACP in West Virginia in 2016, and in Eastern North Carolina in 2018.

There will be worse flooding in the not too distant future, and flooding poses a significant risk to the ACP in Little Valley, and elsewhere along the proposed route.

Karst

The ACP would traverse large areas of karst terrain, including Little Valley. The right of way would cross five sinkholes on my neighbor's property alone, including a large sinkhole directly on the center line. These sinkholes are within 200 feet from where Little Valley Run was relocated and the floodplain covered in boulder debris. It is possible that more sinkholes are hidden by the boulder debris.

Sinking streams flank both sides of the proposed route along Miracle Ridge on my property.

Karst terrain poses a significant threat to pipeline integrity, should a sinkhole be undetected, or a new sinkhole develop under the pipeline. In fact, it is well known that new sinkholes can develop in karst areas as a result of stormwater diversions, or changes in groundwater patterns. Pipeline construction would divert stormwater, with underdrains bringing groundwater to the surface, and diversions forcing surface water

away from the right of way for long distances on steep mountain slopes.

Construction Difficulties and Dangers in Extreme Terrain

Large areas of the ACP would be constructed on extreme slopes, and steep narrow ridges. This includes my property, Little Valley, and a large portion of the northern and western portions of the project. Many of these areas, including my property, and both sides of Little Valley, would require that construction equipment be anchored at the top of the ridge, and cabled to equipment working below on the steep slopes to prevent that equipment from falling down the slopes. Parts of the proposed right of way on my property and elsewhere in Little Valley are too steep for many people to walk upright.

These extreme slopes make pipeline construction dangerous, and difficult to perform correctly. Lowering a 40 foot section of 42 inch pipe into a ditch blasted out of bedrock on a 60% slope with even steeper side slopes in possible adverse weather conditions, while preventing damage to the pipe and coating, and achieving a proper weld is extremely difficult.

External Corrosion Protection Degradation

The pipes for the ACP are coated with 3M Scotcthkote Fusion Bonded Epoxy 6233, which is subject to UV degradation and progressive thinning through chalking. These pipes have already been stored outside, and subject to this degradation for over 3 years at this time. This is well beyond the manufacturer's recommendations. I have consulted with a number of pipeline coating experts on this issue, and they uniformly have advised that two years of storage is probably okay, but anything beyond that is increasingly risky. The ACP is on hold at this time, and the pipes will continue to be degraded, unless they are covered, or further coated with a UV resistant coating. The ACP is currently optimistically stating that the project will be completed in 2021. By then, at least some of the pipes will be exposed for 5 years.

I have requested information about the condition of the pipes from your staff, but that information has been withheld from me. Except for telling me that the pipes are okay, and are being periodically inspected by a consultant hired by the operator, I have received no specific information confirming the condition of the coating. Your staff further advises me that no inspection information will be made available to the public until the project is complete, and only through a FOIA request at that time.

Despite their numerous shortcomings, at least FERC provides environmental inspection reports to the public on a weekly basis. PHMSA should do the same regarding safety inspections and tests.

In addition to concerns about pipe coating overexposure, the FERC environmental reports reveal that a number of pipes that have been placed in the ground, just in the first few miles of the project, have required re-excavation for repair of anomalies in the

external coating. The anomalies were discovered by a direct current voltage gradient (DCVG) test.

PHMSA regulations require that each section of pipe be visually inspected for external coating anomalies just prior to the pipe being placed in the ground, and then again prior to backfilling. So, either the visual inspections were not conducted, or the visual inspections did not find the anomalies. Neither is acceptable.

A full accounting of the condition of these pipes, and the fusion bonded epoxy coating should be made available to the public. This should include the coating thickness at the factory, and current coating thickness, pipe storage procedures pertaining to UV coating impacts, coating inspection results, and the number and percent of pipes that require recoating from visual inspection, and from the DCVG test.

Suggested Requirements To Improve Safety on the ACP

I am convinced that the ACP will not implement the actions that PHMSA recommends in Advisory Bulletin (ADB-2019-02) unless PHMSA orders, or otherwise requires that they do so. The ACP is already well over budget, and behind schedule, and they will resist further delays and expense. Accordingly, PHMSA should use their legal authority to make sure that this project is safe by requiring safety upgrades.

I hereby offer the following suggestions for safety upgrades to the ACP. A number of these suggestions come directly from your Advisory Bulletin.

(1) Complete an independent assessment of geohazard risks.

The United States Geological Survey (USGS) has advised that they could make this assessment. The USGS is our country's premier agency regarding geologic hazards, including landslides. They are an independent agency that is not beholding to a company that hires them, therefore eliminating the conflict of interest inherent in a pipeline operator hired consultant. There are other private consultants who could complete an independent assessment as well, including Appalachian Landslide Consultants, who have done extensive work in Western North Carolina, and were presenters in a recent USGS webinar on landslide risks.

(2) In consultation with FERC, require re-routing away from areas determined by USGS or a private independent consultant to be at risk of landslides, karst or mine subsidence, or flooding hazards.

(3) Require site specific steep slope stabilization techniques approved by a qualified engineer, and approved by PHMSA for all areas exceeding a 30% slope, or already showing signs of land movement.

(4) Require cut and fill sheets approved by a qualified engineer, and approved by PHMSA for all areas exceeding 30% slope, already showing signs of land movement, or

excavation of ridges with sideslopes in excess of 20%. Do not allow construction spoil material to be placed on slopes exceeding 20%, or create a temporary fill slope exceeding 20%.

(5) Conduct random and unannounced testing for the pipe. Issue substantial penalties for pipe, or welds that do not meet current safety requirements.

(6) Conduct random and unannounced inspections for external coating integrity, backfilling, welding, and hydrostatic testing. Issue substantial penalties for inspections that reveal findings that do not meet current safety requirements.

(7) Require monitoring for earth movement every three months by foot patrol or aerial mapping light detection and ranging on all areas exceeding 30% slope, or previously showing signs of land movement. Require remedial actions approved by PHMSA to be made within 14 days for any area showing new land movement.

(8) Require geodetic monitoring points, slope inclinometers, standpipe piezometers, strain gauges, and in-line inspection devices equipped with Inertia Mapping Unit technology, and High Resolution Deformation inline inspection for pipe bending and denting for all areas exceeding 30%, or already showing signs of land movement.

(9) Stop construction under unusually wet conditions, and take measures to prevent earth movement or scouring at stream crossings when unusually wet conditions are predicted.

(10) Issue penalties for the high number of land slippage locations, and pipes that have needed to be excavated for protective coating repair. Require a written explanation of why these instances have occurred, and detailing procedural changes to prevent reoccurrence.

I can honestly tell you that my wife and I, and many others along the route of the ACP, and the MVP as well, do not feel safe. I have heard a number of parents ask how they could put their children to bed at night, knowing that they are in danger from a catastrophic pipeline explosion. Citizens shouldn't have to fear for their lives, or the well being of their loved ones.

My wife and I will not live next to the ACP, if it is constructed as proposed. We will be forced to abandon our retirement home, and never return. Besides the incredible emotional loss of losing our place of refuge in an ever crowded and disruptive world, our biggest investment of our lives will become our biggest loss. No one will buy our property with the ACP at their doorstep.

Others are not as "lucky". They will be forced to live out their lives, through no fault of their own, in permanent fear of a possible catastrophic explosion.

We know full well the power that the natural gas industry has exerted over our public

agencies. We are also aware that industry friendly elected officials have approved the watered down laws and regulations that these these public agencies enforce. We all know this is not right, but it is, unfortunately, our current reality.

I am asking you to use the authority that you have to maximize public safety under current laws and regulations, and to minimize that negative industry influence. As a public servant in your position, you should also let your voice be heard if you believe that those laws and regulations need to be changed to better protect the public safety.

Thank you for taking the time to listen to my concerns and suggestions, and thank you for your public service.

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