

August 11, 2016

Secretary Bose
FERC Chairman
888 First Street, NE
Washington, DC 20426
Re: Docket CP15-558-000 – Proposed PennEast Pipeline Project

Dear Secretary Bose,

Hopewell Township Citizens Against the PennEast Pipeline, Inc. is an intervenor on the PennEast docket #CP15-558-000 and has received a copy of the draft environmental impact statement (DEIS) in the above referenced docket. We are writing to you with our concerns regarding reliability and safety and strongly urge you to withdraw the Penn East Pipeline DEIS. The CEQ regulations concerning a DEIS are crystal clear. *If the information is obtainable and relevant to the project, the agency must wait and take steps to obtain the incomplete, missing information. 40 C.F.R. 1502.22.* The information that we are providing in this comment shows that readily available information was not included by PennEast for the DEIS and therefore the DEIS is in violation of NEPA and should be withdrawn.

Safety document Addressing 5.1.11 Reliability and Safety

Background on the Size and potential impact of PennEast Design

The Proposed PennEast pipeline at 36" diameter and a maximum allowable operating pressure of 1480 psi, would be the highest pressure pipeline in New Jersey with, not surprisingly, the largest blast zone. UGI has never built an interstate pipeline before.

Pipeline safety needs to be given the highest priority by the DEIS.

PHMSA considers the PIR of PennEast to be within 950 ft. This is where you have a 1% chance of mortality at 30 seconds, and a 50% chance of mortality at 60 seconds. If you are within 1500 ft of a ruptured and ignited pipeline with Penn East's parameters, you have about 40 seconds to get to shelter from the radiant heat or you will suffer blister burns.

(see attachment 1 on PIR prepared by Dr. Robert Goldston)

HCA's Missed - Schools, Parks, Places of Worship, and Public Places:

- The DEIS should be withdrawn because PennEast does not adequately identify areas of high consequence, provide a design that is a high enough class location to protect our communities, or avoid high risk scenarios. It violates NEPA and does not use the best information available to protect the public.

DEIS states: "PennEast routed the pipeline to minimize risks to local residents and vulnerable populations (e.g. prisons, hospitals, schools, daycare facilities, retirement facilities) and would follow federal safety standards for pipeline class locations based on

population density.” Section 5.0 CONCLUSIONS AND RECOMMENDATIONS

However, PennEast does not accurately list all areas that should be identified as High Consequence Areas (HCAs), and the class location that is assigned to the listed HCAs is still below the Class 4 location that is regulated in NJ. It is difficult to align the rationale that PennEast gives for the selected HCA areas because no specificity of the site is given. See table G-21

PHMSA guidelines defines HCAs as:

“The HCAs may be defined in one of two ways. In the first method, an HCA includes: current Class 3 and 4 locations; any area in Class 1 or 2 where the potential impact radius²³ is greater than 660 feet and there are 20 or more buildings intended for human occupancy within the potential impact circle²⁴; or any area in Class 1 or 2 where the potential impact circle includes an identified site. An “identified site” is an outside area or open structure that is occupied by 20 or more persons on at least 50 days in any 12-month period; a building that is occupied by 20 or more persons on at least 5 days a week for any 10 weeks in any 12-month period; or a facility that is occupied by persons who are confined, are of impaired mobility, or would be difficult to evacuate.”

An HCA is any location that is deemed especially sensitive or important, or where evacuation may be difficult (a school, a busy and often crowded park, a hospital).

The DEIS does not state any of the additional Integrity Management plans that will be in place for HCAs or show any change of, or rationale for, maintaining the low class locations for these sites.

Below is a list of all schools/public facilities that are *not* listed as HCAs and are within .75 miles of the proposed route centerline. To be clear, these are locations that PennEast has missed and has NOT proposed elevating their status to an HCA.

School	Nearest Approx. Mile Marker	To Centerline	To Centerline (Miles)	To 100' Construction ROW	To 100' Construction ROW (Miles)
Lawrenceville Montessori Pennington	114.02	2,800 ft	0.53 miles	2,750 ft	0.52 miles
Stony Brook Elementary School, Pennington	114.02	3600	0.68 miles	3,550 ft	0.67 miles
Mercer County Equestrian Center	113.7	3000	0.57 miles	2,950 ft	0.56 miles
Making Waves Swim School Pennington	113	1,300 ft	0.25 miles	1,250 ft	0.24 miles
Hopewell Township Municipal Ball Fields	110.6	375	0.07 miles	325 ft	0.06 miles
Hopewell Valley Schools Pennington	110.1	6,300 ft	1.19 miles	6,250 ft	1.18 miles

Timberlane Middle Pennington	109.8	3,850 ft	0.73 miles	3,800 ft	0.72 miles
Hewitt Park West Amwell	103.5	875	0.17 miles	825 ft	0.16 miles
West Amwell Twp Elementary Lambertville	101.3	1,500 ft	0.28 miles	1,450 ft	0.27 miles
South Hunterdon Library South Branch	101.3	515 ft	0.1 miles	465 ft	0.09 miles
Halfpint Day Care and Preschool, West Amwell	101.3	500	0.09 miles	450 ft	0.09 miles
E.S.C. School Lambertville	101.1	1,500 ft	0.28 miles	1,450 ft	0.27 miles
Kingwood Township School Frenchtown	90.7	3,900 ft	0.74 miles	3,850 ft	0.73 miles
Frenchtown Public School Frenchtown	87.2	2,500 ft	0.47 miles	2,450 ft	0.46 miles
Secret Garden Montessori, Frenchtown	87.1	2150	0.41 miles	2,100 ft	0.4 miles
Grace Fellowship Church	83.6	1550	0.29 miles	1,500 ft	0.28 miles

Below is the full list of all schools/churches/parks within 1 mile of the proposed pipeline centerline which are not mentioned by name in the DEIS. It is clear from this list that any stated attempt to “minimize risks to local residents and vulnerable populations (e.g. prisons, hospitals, schools, daycare facilities, retirement facilities)” is lip service only.

School	Nearest Approx. Mile Marker	To Centerline	To Centerline (Miles)	To 100' Construction ROW	To 100' Construction ROW (Miles)	To 400' Survey Corridor	To 400' Survey Corridor (Miles)	Notes
Lawrenceville Montessori Pennington	114.02	2,800 ft	0.53 miles	2,750 ft	0.52 miles	2,600 ft	0.49 miles	
Stony Brook Elementary School, Pennington	114.02	3600	0.68 miles	3,550 ft	0.67 miles	3,400 ft	0.64 miles	Distance to ball fields; not on original list
Mercer County Equestrian Center	113.7	3000	0.57 miles	2,950 ft	0.56 miles	2,800 ft	0.53 miles	Not on original list

Making Waves Swim School Pennington	113	1,300 ft	0.25 miles	1,250 ft	0.24 miles	1,100 ft	0.21 miles	
Pennington Children's Academy Pennington	112.9	4,080 ft	0.77 miles	4,030 ft	0.76 miles	3,880 ft	0.73 miles	
The Learning Experience, Pennington	112.6	2300	0.44 miles	2,250 ft	0.43 miles	2,100 ft	0.4 miles	Not on original list
Bright Horizons Day Care Pennington	111.5	275 ft	0.05 miles	225 ft	0.04 miles	75 ft	0.01 miles	Distance to parking lot
Hopewell Township Municipal Ball Fields	110.6	375	0.07 miles	325 ft	0.06 miles	175 ft	0.03 miles	Not on original list
Hopewell Valley Schools Pennington	110.1	6,300 ft	1.19 miles	6,250 ft	1.18 miles	6,100 ft	1.16 miles	
Timberlane Middle Pennington	109.8	3,850 ft	0.73 miles	3,800 ft	0.72 miles	3,650 ft	0.69 miles	Distance to ball fields
Washington Crossing Nature Center, Washington Crossing	108.1	5,400 ft	1.02 miles	5,350 ft	1.01 miles	5,200 ft	0.98 miles	
Howell Living History Farm, Hopewell	105.6	725 ft	0.14 miles	675 ft	0.13 miles	525 ft	0.1 miles	Not on original list
Hewitt Park West Amwell	103.5	875	0.17 miles	825 ft	0.16 miles	675 ft	0.13 miles	Not on original list
The Jesus School, Lambertville	102.4	4700	0.89 miles	4,650 ft	0.88 miles	4,500 ft	0.85 miles	Not on original list
Lambertville Public School, Lambertville	102.3	4,900 ft	0.93 miles	4,850 ft	0.92 miles	4,700 ft	0.89 miles	Distance to ball fields; not on original list
West Amwell Twp Elementary Lambertville	101.3	1,500 ft	0.28 miles	1,450 ft	0.27 miles	1,300 ft	0.25 miles	Bracketed on two sides, second side is 2,100' from school grounds

South Hunterdon Library South Branch	101.3	515 ft	0.1 miles	465 ft	0.09 miles	315 ft	0.06 miles	
Halfpint Day Care and Preschool, West Amwell	101.3	500	0.09 miles	450 ft	0.09 miles	300 ft	0.06 miles	Not on original list
E.S.C. School Lambertville	101.1	1,500 ft	0.28 miles	1,450 ft	0.27 miles	1,300 ft	0.25 miles	
Sarah Dilts Park Stockton	98.2	5,300 ft	1 miles	5,250 ft	0.99 miles	5,100 ft	0.97 miles	
Kingwood Township School Frenchtown	90.7	3,900 ft	0.74 miles	3,850 ft	0.73 miles	3,700 ft	0.7 miles	
Frenchtown Public School Frenchtown	87.2	2,500 ft	0.47 miles	2,450 ft	0.46 miles	2,300 ft	0.44 miles	
Secret Garden Montessori, Frenchtown	87.1	2150	0.41 miles	2,100 ft	0.4 miles	1,950 ft	0.37 miles	Not on original list
Alexandria Park Milford	85.1	4,650 ft	0.88 miles	4,600 ft	0.87 miles	4,450 ft	0.84 miles	
Grace Fellowship Church	83.6	1550	0.29 miles	1,500 ft	0.28 miles	1,350 ft	0.26 miles	Not on original list; distance to ball fields

Industrial HCA risks CXST Crossing:

- Due to the high safety risks of the CSXT crossing, geotechnical investigations need to be fully implemented prior to the end of the DEIS period, not right before construction, in order to ensure public safety and properly evaluate the risks of the project.
- In addition, we insist that a detailed plan be submitted by PennEast prior to the end of the DEIS period that includes alternatives to all HDD crossings if and when HDD fails. Given the recent difficulties of the Transco Leidy line Southeast Expansion to successfully complete HDD drilling in rock that is part of the same formation - moderately fractured Hornfels (fine-grained metamorphic rock formed by contact

between mudstone, shale and other rock types and hot magma). Additionally, the steep slopes that will be encountered will exacerbate potential HDD problems.

- Depth of CSXT crossing needs to be evaluated for accident and terrorist risks (more on terrorism later in the comment)
- The recent major changes to the DEIS submitted to FERC in the reports sent 8/31/16 warrant a 45 day extension for the public comment period. A DEIS should not be like an ongoing resource report but released as a finished and complete product to which the public can have ample time to reply.

The CSXT rail line crossing in Hopewell Township New Jersey is an area that is listed as an HCA, but not listed by name in the table. It was originally proposed in the DEIS to be an HDD crossing, but now ‘bore method’ crossing is proposed for under the CSXT railroad line. This is of particular concern because it is a transit line for the highly inflammable Baakan Oil trains commonly referred to as “bomb trains”. The combination of a combustible pipeline under a high terrorist threat train presents a very high risk to Hopewell Township. There is no actual drilling plan submitted as yet in the *Responses to DEIS Recommended Conditions* submission sent to FERC on 8/31/16. It does not say how deep or for how far. Is it 7’? Is it 8’? This is a far cry from the 58’ that was originally proposed for this dangerous crossing. No DEIS can be complete or reach any conclusions about public safety without this information. FERC needs to amend the following statements to address the newly proposed drilling changes. The incomplete and ever changing HDD investigation by PennEast brings the safety of this crossing into serious question.

As stated in: 4.1.7 Geotechnical Investigations for the Proposed HDDs

“Some field analysis is incomplete due to lack of permission to access the right-of-way to install borings, changes in the proposed alignment and design, and variation in geologic materials encountered requiring modifications in the drilling program.”

Some of the survey information that *was and is available should have been collected prior to the DEIS being released* and certainly prior to the DEIS’s conclusions of ‘no significant impacts’ was reached. The oil train crossing area is listed as only a “partially complete” location. Clearly PennEast could have mobilized to gather the important information it needed. Not gathering available information goes against NEPA guidelines to use the best information available.

From TABLE 4.1.7-1 Status of Geotechnical Investigations for HDD Locations
111.4-111.9 CSXT Railroad Mercer *Partially Complete* (emphasis added)

FERC concludes that:

Prior to construction, PennEast should file with the Secretary the results of all outstanding geotechnical investigations and final planned design of each HDD crossing. 4.1.7

As mentioned in our recommendations, prior to construction is far too late for the geotechnical investigations to be submitted. They are an essential part of the safety consideration for the project and should be part of the DEIS.

Swan Creek Reservoir:

The lack of any information on the Swan Creek Reservoir in the DEIS is, at best, a major error on PennEast's part. This omission of known and available information is a gross violation of NEPA and the DEIS needs to be withdrawn immediately.

Swan Creek and DEIS Facts:

- Nowhere in the DEIS is the SUEZ Swan Creek Reservoir mentioned.
- The Swan Creek Reservoir and dam at mile post 102.5- 103 and is not listed as a HCA
- Swan Creek is already listed as a High Hazard Dam by NJDEP – defined as a dam that failure would lead to probable loss of life of human beings and/or cause extensive property damage. In this case, the City of Lambertville is downhill.
- Swan Creek is the drinking supply for over 1,500 residents of Lambertville. According to Suez Water Company executives, PennEast met with them once (last year?) and had only given them access for surface surveying and no geological borings were allowed, and that they had not heard from PennEast (or FERC, or any other agencies, companies, or organizations) about PennEast since that one meeting.
- The Division of Dam Safety of NJDEP was never contacted about risks to the dam by PennEast. (HTCAPP knows this because we asked the head of the division John Moyle and he was completely unaware of it and asked us to send him information.)
- The reservoir and water treatment plant constitutes Critical Infrastructure for the City of Lambertville.
- There is no mention of how the PennEast pipeline affect the hazard classification of the dam.
- There is no mention of how PennEast should be responsible for all dam modifications.
- A Dam breach analysis has not been performed for all upstream dams to determine impacts to the pipeline. Climate change is creating dramatic shifts in rainfall intensity and a dam breach could erode and undermine the pipeline.
- The Division of Dam Safety within NJDEP needs to be included in all dam evaluations and was NOT contacted by PennEast prior to the DEIS being released.
- The area around the dam is steep slopes with bedrock and will in all likelihood require blasting

Safety Risks of Karst Assessment Inadequacies

- The DEIS should be withdrawn as missing information on Karst locations, impacts, and remediation plans are missing and the safety impacts to the public are far too grave to allow for any FERC evaluation to be made without this information.

Point 14 in the DEIS conclusions and Recommendations states that *“Prior to construction, PennEast shall file with the Secretary a final Karst Mitigation Plan that incorporates the results of all outstanding geophysical and geotechnical field investigations in karst areas including stream crossings proposed with the HDD method.”*

(Section 4.1.5.4)

This is because the *“risk of sink holes has been commented on by many people.”* (Section 4.1.5.4)

The DEIS is not adequate as it does not include accurate information on karst locations along the route. In New Jersey, karst danger areas of Holland Township are not mentioned on the DEIS. There is a history of many documented sinkholes in the exact area where the route begins in Holland Township, on river Road, and continues till it crosses both 627/Riegelsville Rd. and Church Road.

Sinkholes can impair travel and timely responsiveness to emergencies. If the valve at the Gilbert Interconnect does not work, becomes flooded, or compromised for any reason, the residents between the two crossings and the NRG Gilbert Power Plant are completely shut off with no access to exit roads or for emergency crews to access the area as 627/Riegelsville Rd. and would be shut off at the southern end as well by potentially the Gilbert Lateral and the Warren Glen (which crosses 627/Riegelsville Rd. twice).

Susquehanna River Crossing Risks (see attached previously submitted attachment #2)

- The DEIS should be withdrawn until and IF safe crossing of the Susquehanna at the chosen site can be determined.

Prior to the end of the draft EIS comment period, PennEast should file with the Secretary the results of its ongoing evaluation of potential presence of working and abandoned mines near the proposed crossing of the Susquehanna River. The evaluation should include documentation of coordination with the Pennsylvania Bureau of Abandoned Mine Reclamation, and should identify any specific design or mitigation measures. (Section 4.1.5.4)

Yet, the recent *Attachment 1 in Responses to DEIS Recommended Conditions* submission sent to FERC on 8/31/16 states *“PennEast has conducted and continues to gather, review, and complete a thorough investigation via inspection of historical mine records, records of past remediation activities, and discussions with the Pennsylvania Department of Environmental Protection (PADEP) Bureau of Abandoned Mine Reclamation.”*

This is not **results** of an investigation. This is currently still an ongoing investigation. Phrases like *‘are not likely to find’* or *“Where the Pipeline has the potential to intersect historic mine workings,”* or *“PennEast plans to conduct field investigations where necessary to validate the historic information gathered”* *Attachment 1 in Responses to DEIS Recommended Conditions* should NOT be counted

as acceptable safety standards for a crossing that threatens everyone downstream, the future integrity of the pipeline, and the safety of the pipeline workers themselves.

PennEast itself states that the area is riddled with mines from as far back as the 1920s. It is highly unlikely that all historic data from that time is an accurate template for current conditions or that data was recorded to 100% accuracy.

PennEast used Abandoned Mine Lands Inventory System (AMLIS) data and admits that *“These AMLIS locations are a generalized indication of the vicinity and types of hazards which exist, however, it should be noted their coordinates do not indicate the precise location of a hazardous feature, but rather an area.”* Attachment 1 in Responses to DEIS Recommended Conditions Taking a puzzle piece approach that uses imprecise information to guess at what’s underground is reckless and FERC needs to hold PennEast to a higher standard that protects public safety.

There is also no mention of the high risk of ice scouring in the river and how the depth of pipe needed to avoid mines correlate with a depth low enough to avoid the thick ice formations that are typical to the Susquehanna River. More data on that needs to be provided and included in the crossing information.

And, nowhere in the recent data submissions is there any information, even vague speculation, on how the construction impacts and blasting would impact existing mine shafts 50 or 100’ away. Because, THERE IS NO SUBMITTED BLASTING PLAN.

Lastly, the experts hired by PennEast – Vatsal Shah, a newly minted Ph.D, P.E., is a geotechnical engineer, not an abandoned mine specialist or geologist. The possible dire consequences of accidents at this site make this the inappropriate time and place for on-the-job training by someone from a related but vastly different field with a different perspective and agenda. Tetra Tech needs to hire experienced abandoned mine experts and geologists to evaluate this site further.

Blasting and Rock Removal

- Having no completed blasting plan included in the DEIS is unacceptable. Considering that much of the route, especially in Hunterdon and Mercer County NJ will require blasting because of the hard bedrock, not submitting a completed blasting plan prior to FERC making a decision about the impacts of the pipeline on the DEIS is negligent of PennEast and irresponsible of FERC. The DEIS should be withdrawn until a complete and detailed blasting plan is in place.

The DEIS states:

“ Rock removal would be accomplished through conventional backhoe excavation, ripping

with a bulldozer, pneumatic hammering, or blasting. The technique utilized would be dependent on the hardness of the bedrock, fracture susceptibility, volume, and location. PennEast would perform all blasting according to federal and state safety standards and in accordance with their Blasting Plan to be implemented by the blasting contractor. Excess rock would be hauled off-site to an approved quarry for disposal.” 2.0 – Description of Proposed Action - Page 2-13

- There is no blasting plan submitted the DEIS is grossly incomplete.

and...

Prior to construction, PennEast shall file with the Secretary, for review and written approval by the Director of the OEP, a revised Blasting Plan that includes a review of potential effects on cultural resources, including caves, rockshelters, and aboveground historic structures, and how those impacts will be addressed. (Section 4.9.5)

- We request that this review be submitted prior to the end of the DEIS period, not construction, so that FERC can assess the application.

and...

If blasting must occur to remove bedrock, timing restrictions would be put into effect and may include blasting prohibition during breeding season(s) and/or other restrictions as detailed in the Blasting Plan, which includes pre- and post-blast surveys. 4.1.6 Rock Removal and Blasting

- Timing restrictions must be **mandatory** and follow all Department of Fish and Wildlife requirements regarding proper surveying time periods and breeding/nesting/and migratory seasons appropriate to the species.

Quarries

- Considering the limitations of using PPV as a distance safeguard predictor, we ask that the DEIS be withdrawn, and that PennEast be required to further examine the potential stresses to pipelines by pre-testing the specific sites using a smart micro seismic monitoring system. Any pipeline in the quarry area should implement a permanent on site smart micro seismic monitoring system to assure continued safety and alert to any potential danger of excessive pipeline strain.
- The Hatch Mott MacDonald information that forms the basis of the mathematical conclusions for safe blasting distance is flawed in that it minimizes the explosive charge weight per delay, W, to 1 lb/delay, which is at least 1000 times smaller than actual charge weights used in commercial blasting at the Trap Rock Quarries.
- The Table 1 of the report in the DEIS imprudently relies on a Siskind paper regarding particle velocities (PPV) caused by blasting. Siskind et al. in the US Bureau of Mines RI 952A This report only reviewed macroscopic results of pipe damage over a short timeframe of blasting exposure in sand and clay, rather than long term, microscopic results of

continued blasting and its associated scatter in diabase rock conditions that would actually lead to the corrosive damage and pipe strain that befall PennEast.

- No accurate review of conditions of the Trap Rock Quarries and PennEast have been made and the DEIS is incomplete and to date, false.

The DEIS states:

In New Jersey, the damage-limiting threshold is based on a PPV of 2 inches per second¹⁴. By rearranging the scaling relationship equation to solve for the minimum separation distance based on a PPV limit of 2 inches per second, a safe separation distance of 32 feet between the pipeline and blasting should be maintained to avoid pipeline safety concerns. 4-5 DEIS

There is gas industry research, such as a report by Southwest Research Institute, that shows that using peak particle velocity (PPV) as developed by as a marker for the impacts on underground infrastructures such as pipelines is an incomplete method for determining Pipeline strain and safety integrity. PPV is designed for measuring impacts to above ground structures such as historic buildings, and assessing blast-generated ground vibrations on buildings. Crandell (1949), not below ground high pressure pipelines. Stating the obvious that “a pipeline is not a building” the report shows how PPV measures do not accurately correlate with pipeline strain.

As the Southwest Research Institute writes in their paper, “After a review of several particle velocity equations in the literature, it is shown that the velocity data from actual blast sites, such as that recorded in this study and in many others, exhibit considerable scatter. Consequently, with the kind of scatter that is possible in peak velocity and pipe stress data, any correlation attempted between these two parameters would have a low level of accuracy and confidence.” Pipeline Response to Blasting in Rock, Pipeline Council International, Inc., Edward D. Esparza, P.E., September 1991

Additionally, different types of rock and different sites convey seismic waves differently. One cannot in a lab accurately predict on sight conditions. Pipeline Response to Blasting in Rock, Pipeline Council International, Inc., Edward D. Esparza, P.E., September 1991

PennEast uses a mathematical formula to determine a 32 foot blasting distance for what would be the highest pressure pipeline in New Jersey. This “in the lab” approach shows just how out of touch, and frankly inexperienced with on the ground safety realities PennEast really is. The blasting weight that PennEast has used in its analysis is 1000x less than Trap Rock Quarry uses. The bedrock is diabase, not sand or clay that is the basis of the calculations upon which the formulas are based. That means the force travels farther than PennEast’s formulas predict. Where are the multiple variables for different soil and rock types that may be encountered? And, the short 6-month timeframe in the Siskind et al. report that is the basis for PennEast’s conclusions is not an appropriate measure when compared to the long term effects on the PE pipeline over decades from blasting. In addition, it is the multiple microscopic events such as localized oxidation of the metals (rusting) that can cause crack formation and failure under otherwise safe stresses. PennEast only based its findings on a macroscopic, short-term model.

And we need to ask, where is the room for human error? Why is a safe margin not included or even thought of for that? Is the public supposed to trust that UGI, a pipeline company that has

NEVER built an interstate pipeline and wants to build PennEast to only class 2 specifications with less weld inspections than NJ requires for in-state pipelines, can safely anticipate the blasting impact of nearby quarries using a incorrect formulas?

Landslides

- FERC must request that PennEast present and thoroughly analyze alternative routes that would have lower safety risks and similar or lower environmental impacts, by avoiding the complex safety issues and environmental sensitivity of the Very High Hazard Slopes at MP 80.8R in Holland Township NJ. PennEast has not proven that they can safely transverse this site and the DEIS violates NEPA if this available information is not provided.

The DEIS states that even under much higher ground vibrations, the main risk to pipelines would be where the pipeline is buried along a hillside coupled with saturated unstable soils that could become displaced laterally during an earthquake. PennEast has identified areas to perform additional field work to assess this potential and it is discussed further in Section 4.1.5.2.

DEIS Conclusions and Recommendations states in point #13:

Prior to construction, PennEast shall file with the Secretary results of the outstanding Phase 2 and 3 portions of the Geohazard Risk Evaluation Report and include the following in its pipeline design geotechnical report:

- a) an evaluation of liquefaction hazards along the pipeline route and at the proposed compressor station site;
- b) a final landslide hazard inventory;
- c) any specific measures and locations where specialized pipeline design will be implemented to mitigate for potential liquefaction or landslide hazards; and
- d) a post-construction monitoring plan. (Section 4.1.5.2)

There are serious landslide Safety Risks at Holland Township MP 80.8R:

The Map in the DEIS on page 4-8 fails to show any mentioned landslide risks found in NJ yet, in the DEIS – Alt 4 Geohazard Evaluation Rev B Part 2, Table 5a

Very High Hazard Slope ID# 76 and 77 are shown at the highest risk levels.

The Inline inspection (“ILI”) tools that PennEast would use to check on the pipeline cannot discover the most serious threats to pipeline integrity that most likely would be introduced by the risks of falling rocks and loose stones inherent in high landslide areas.

While various ILI technologies have advanced over the past four decades to varying degrees depending on the class of anomaly to be identified and sized, the ability to reliably identify and evaluate certain imperfections will depend on the type of anomaly and the tool’s technical approach, development and various tolerances. For the most likely and unfortunately insidious anomaly threats that can be introduced from landslides; dents with stress concentrators (i.e., dents with cracks, corrosion or gouges) and just plain surface gouges, ILI tools are not reliable at either accurately identifying or sizing (i.e., discovery). R.Kuprewicz, Evaluation of Transco’s 42-inch Skillman Loop submissions to FERC concerning the Princeton Ridge, NJ segment, June 26, 2014

Falling rocks like those from the Holland Township ‘narrows’ would definitely qualify as an anomaly threat to pipelines that would be hard to detect before an unfortunate incident would occur.

Contaminated Soils

- The DEIS should be withdrawn until such time as a contamination plan can be designed.
- The DEIS should be withdrawn because readily available information on existing ground contamination in Hopewell Township is not included in DEIS.

The DEIS states:

If contaminated soils or groundwater are encountered during construction, PennEast would follow protocol in its Unexpected Contamination Encounter Procedures. This plan includes procedures to test for contaminants if suspect soils are encountered as well as management and disposal of contaminated soils at a licensed disposal facility. From 5.0 – Conclusions and Recommendations

and...

Prior to construction, PennEast shall file with the Secretary an updated Unanticipated Discovery of Contamination Plan for the Project to identify the management and field environmental professionals responsible for notification for contaminated sites. (Section 4.3.1.7)

Given the serious consequences to ground water, a ‘Unanticipated Discovery of Contamination Plan for the Project’ should be submitted prior to the DEIS being finalized. Leaving such an important factor to the last minutes puts communities at risk.

TABLE 4.3.1-6 Sites with Potential Groundwater Contamination crossed by the Project.

Missing from the DEIS is readily available data on the site at mile marker post 112.8R (a.k.a. Station 5955+84 of contamination at the Pennington circle at route 31 related to leakage from the fuel tanks for the former Mobil Gas Station that was formerly located at the now Lukoil site.
*LNA Service Station #57703
 NJDEP case #87-10-27-1632 (aka #90-03-07-0900)
 PI#003785*

This site has the potential to contaminate the well water of many local Hopewell Township residents. PennEast needs to reroute to avoid this site. Negative impacts are not unanticipated, but rather, very predictable. The existence of 3 gas stations at a pipeline crossing should have alerted PennEast to the possibility of ground contamination and triggered an investigation and a discussion with the DEP for that possibility. Failure to do that and obtain the readily available information is yet another instance of PennEast failing to follow NEPA. It is a violation of NEPA that this information is not included in the DEIS and the DEIS should be withdrawn.

Traffic Management Plan

- Road safety is a priority that must be assessed before the DEIS reaches any conclusions about the impacts of the project.

The DEIS states that:

“Prior to construction, PennEast shall file with the Secretary its final Traffic Management Plan, developed in conjunction with local public transportation and safety officials along the Project pipeline route.” (Section 4.7.1.6)

There are towns all along the route in New Jersey that have written about the small size of their roads that would be at risk of collapse from large construction vehicles, congestion problems along their highways, and negative impacts to commuters and businesses from road delays. Not having a plan in place that takes all of these impacts into account and provides safe alternatives to the current problems is unacceptable. PennEast and the DEIS have NOT acknowledged the many comments that were put on the docket concerning traffic issues and road damage. These present not only a socio-economic hardship for communities (as witnessed by a letter signed by 70 local businesses opposing the PennEast pipeline) but a safety hazard to anyone driving on our roads – including slow downs of emergency vehicles. A traffic safety plan is not a minor detail to be filled in later.

Risk assessment for emergency services

- The DEIS should be withdrawn because an Emergency Response Plan has not yet been submitted for review by FERC. It is imperative that PennEast accurately determine *all* High Consequence Areas (they have *not* to date) and include these sites in a plan to protect communities in the event of an incident. Because the DEIS is missing important HCA information as well as a written Emergency Response Plan, it is incomplete.

*In addition, in accordance with 49 CFR 192.615, PennEast **would** prepare an Emergency Response Plan that would identify the coordination between PennEast and local emergency response and management personnel that would occur in the event of an incident. Section 4.8.4*

The DOT prescribes the minimum standards for operating and maintaining pipeline Section facilities, including the requirement to establish a written plan governing these activities. Each pipeline operator is required to establish an emergency plan that includes procedures to minimize the hazards in a natural gas pipeline emergency. Key elements of the plan include procedures for: receiving, identifying, and classifying emergency events, gas leakage, fires, explosions, and natural disasters; establishing and maintaining communications with local fire, police, and public officials, and coordinating emergency response; emergency system shutdown and safe restoration of service; making personnel, equipment, tools, and materials available at the scene of an emergency; and protecting people first and then property, and making them safe from actual or potential hazards, including evacuating individuals and rerouting traffic as necessary to avoid any area that is deemed to be unsafe. Reliability and Safety 4-258

Terrorist Threats

- The DEIS should be withdrawn because it does not adequately address any detailed issues of terrorism by identifying high risk areas or consult with any law enforcement agencies for advice.

The DEIS is incomplete in that it does not answer any detailed questions about risks to people who live along the route, identify any areas of concern such as critical infrastructure it passes, or discuss coordination with and advice from with any other law enforcement agencies such as Homeland Security, NJ or PA State troopers, or county or town law enforcement officials. PennEast simply waving its hands in the air and saying “its unpredictable” is not taking responsibility for the potential terrorist targets it would be creating.

The DEIS on Terrorism: *“The Likelihood of future acts of terrorism or sabotage occurring that the Project facilities or at any of the myriad of natural gas pipeline or energy facilities throughout the United States is unpredictable given the disparate motives and abilities of terrorist groups. DEIS Section 4.11.4*

PennEast would be the Highest pressure pipeline in NJ with the biggest blast zone. It crosses multiple gas and oil infrastructure sites and travel corridors and its terminus, a highly visible 2 ½ acre site sits in the middle of a residential housing development. PennEast has refused to share the plans for the terminus with Hopewell Township, citing national security concerns. The question FERC needs to seriously consider is how a site that is such a high threat that its construction details cannot be shared, be located in people’s backyards?

Safety differences between Federal and New Jersey Regulations

There is an inequity that exists in the current Federal class location system. In New Jersey, the most densely populated state in the country with 1215.4 people per Square mile as of 2014, the New Jersey Board of Public Utilities determined that:

The State system for designing pipelines based on the class location in relation to population density, found at N.J.A.C. 14:7-1.3, requires all pipelines installed after the effective date of the proposed amendments to be designed to Class 4 pipeline location standards, the highest standard for similar pipelines designed under the Federal classification system at 49 CFR 192.5. This may result in some costs for pipeline operators, although most have voluntarily chosen to meet higher standards than Federally required. The State of New Jersey has determined that the safety of all of it’s residents is important and that while this may result in some costs for pipeline operators, to the extent that costs are incurred, the Board of Utilities has determined that these costs are justified in order to ensure safety.”

http://www.nj.gov/bpu/pdf/rules/NGPRreadoption_20090212.pdf

While we are aware that we cannot currently enforce New Jersey’s higher safety standards on

transmission pipelines like PennEast that want to enter our state, we want to express that we are of the opinion that the lower federal standards that PennEast are employing are too weak to protect our citizenry and environment. Furthermore, we believe that the current federal class location system is a violation of people's 11th Amendment Constitutional right to Equal Protection Under the Law. A person living in a rural home has as much right to safety as a person living in a city, or suburbia, or anywhere in the United States. The state should not be in the business of enacting regulations that deny anyones' rights to safety. Class locations designations should not be based on actuary tables that determine how much it will cost to repay for damages, but instead based on protecting the inestimable value of each and every human life.

Sincerely,

Patty Cronheim

On behalf of:

Hopewell Township Citizens Against the PennEast Pipeline

204 Penn View Drive

Pennington NJ 08534

Penn East Pipeline Danger Zones
Prepared for HTCAPP

Heat Intensity Equation

The Gas Research Institute’s report GRI-00/0189 gives the radius at which a given intensity of heat flux will be experienced as:

$$r = \frac{2348 p d^2}{I_{th}} \quad (\text{ft})$$

where I_{th} = threshold heat intensity (Btu/hr/ft²);

p = line pressure (psi); and

d = line diameter (in).

Heat Flux Intensity Thresholds

The GRI report table 2.1 (below) indicates that at 2000 Btu/hr/ft² 18.1 to 60.4 seconds of exposure will result in blister burns. The average of these two values is 39.5 seconds. Call it 40 seconds for simplicity. At 8000 Btu/hr/ft² one has a 50% chance of mortality after 31.4 seconds. Call it 30 seconds for simplicity. PHMSA considers the “High Consequence Area” around a pipeline to extend to where the heat flux falls to 5000 Btu/hr/ft², where the probability of mortality within 27 seconds is estimated to be 1%, and within 58.7 seconds is 50%. Call these 30 seconds and 60 seconds for simplicity. Note that if you want to use the equations in the column headers yourself, such as $t^*I^{1.33} = 2300$ for time to 50% mortality, you must use Radiation Intensity or Heat Flux in kW/m², shown in the second column.

Radiation Intensity or Heat Flux (Btu/hr ft ²)	Radiation Intensity or Heat Flux (kW/m ²)	Time to Burn Threshold (Eisenberg et al. 1975) $t^*I^{1.15} = 195$	Time to Blister Threshold - lower ¹ (Hymes 1983) ² $t^*I^{1.33} = 210$	Time to Blister Threshold - upper ¹ (Hymes 1983) ² $t^*I^{1.33} = 700$	Time to 1% Mortality (Hymes 1983) ² $t^*I^{1.33} = 1060$	Time to 50% Mortality (Hymes 1983) ² $t^*I^{1.33} = 2300$	Time to 100% Mortality ³ (Bilo & Kinsman 1997) $t^*I^{1.33} = 3500$
1600	5.05	30.3	24.4	81.3	123.1	267.1	406.4
2000	6.31	23.5	18.1	60.4	91.5	198.5	302.1
3000	9.46	14.7	10.6	35.2	53.4	115.8	176.2
4000	12.62	10.6	7.2	24.0	36.4	79.0	120.2
5000	15.77	8.2	5.4	17.9	27.0	58.7	89.3
8000	25.24	4.8	2.9	9.6	14.5	31.4	47.8
10000	31.55	3.7	2.1	7.1	10.8	23.3	35.5
12000	37.85	3.0	1.7	5.6	8.4	18.3	27.9

Note: 1) Hymes gives a thermal load range (210 to 700) rather than a single value for blister formation
 2) the thermal load values given by Hymes are based on a revised interpretation of the results obtained by Eisenberg et al.
 3) Bilo and Kinsman assume that 100% mortality corresponds to a lower bound estimate of the thermal load associated with the spontaneous ignition of clothing

Table 2.1 Effects of thermal radiation on people.

Friday, July 17, 2015

Distance to these Heat Flux Intensities

For Penn East values of 36" diameter and 1480 psi, we have

2000 Btu/hr/ft² radius = 1500 ft

5000 Btu/hr/ft² radius = 950 ft

8000 Btu/hr/ft² radius = 750 ft

In Sum

If you are within 1500 ft of a ruptured and ignited pipeline with Penn East's parameters, you have about 40 seconds to get to shelter from the radiant heat or you will suffer blister burns.

If you are within 750 ft, you will have about 30 seconds to find shelter or you will have a 50% chance of mortality.

PHMSA considers the high consequence area to be within 950 ft for Penn East. This is where you have a 1% chance of mortality at 30 seconds, and a 50% chance of mortality at 60 seconds..

Prepared by:
Dr. Robert Goldston
Princeton University
Prof. Plasma Physics

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street NE, Room 1A
Washington, DC 20426

Dear Ms. Bose,

Subject: PF15-558 PennEast's Susquehanna River Plans

We are writing to protest the proposal and lack of information that PennEast has presented in their DEIS regarding their plans to cross the Susquehanna River. Crossing the Susquehanna in the Wyoming Valley in the vicinity of abandoned coal mines has the potential of creating a major environmental disaster. FERC would be responsible for this accident should they grant PennEast any construction permissions without first demanding thorough evaluation and proof that it would do no harm to the environment and the health of local communities.

In July, after being made aware of the danger of horizontal directional drilling under the Susquehanna because of riverbed instability and honeycomb of abandoned mines some of which have been dug beneath the river, PennEast announced plans to temporarily dam half the Susquehanna at a time and do an open crossing. Very few details have been provided and PennEast has not proven that this is a safe way to cross the river during and after construction.

From the minutes of a joint PADEP and PennEast meeting:

- PennEast proposed crossing the Susquehanna River using an open cut, dry crossing method.
- A horizontal directional drill at this location is too risky and would likely result in an inadvertent return of drilling fluid due to the approximately 100 feet of unconsolidated material under the river's bed and the presence of abandoned mines along this reach of the river.
- The engineering team is currently designing the crossing, but the general approach will be to install a Portadam at the upstream tip of Monocanonck Island, which is located in the center of the river, to divert flow to one side of the river. Bladder dams will be installed adjacent to the pipeline trench for further dewatering. After the pipe is installed under half of the river, the flow diversion, dewatering, and pipeline installation will be completed on the other half of the river.

Permitting PennEast to file or be given conditional permits without full details of their plans and the robust testing to ensure safety would be highly irresponsible.

Where are the comprehensive geological studies that demonstrate that they can SIMULTANEOUSLY:

- (1) Bury 36" pipe deeply enough to withstand damaging scour from debris in the famously flood and ice jam prone Susquehanna
<http://www.wyofile.com/rivers-of-oil-standards-for-burying-oil-pipelines-prove-insufficient/>

<http://insideclimatenews.org/news/06022015/yellowstone-oil-spills-expose-threat-pipelines-under-rivers-nationwide>

- (2) Yet not trench so deeply, nor weigh too heavily upon, unstable mines with collapsing roofs that might be below the riverbed or its banks?

The Wyoming valley was mined extensively since the mid-1800s. Maps are missing. Wildcat miners left a legacy of unmapped mines. Coal seams beneath the river were indeed mined. PennEast's planned crossing is just two miles downriver from scene of the 1959 Knox Mine Disaster.

Additionally:

- (3) Coal waste was routinely dumped into the river creating sediment piles 15-25 deep. Floods have probably washed out most, but buried deposits could still persist in deeper sediments.
- (4) More recently waste haulers dumped oil and contaminated toxic waste into several boreholes in the valley. Boreholes vent a interconnected networks of mines shafts, caverns, and waterways. Many are flooded. The core of the 5 square mile Butler Mine Tunnel drainage Superfund site is just a few miles upstream from planned PennEast crossing. Even though borehole is over .25 miles away, PennEast should be sharing maps of these mines and drainage areas since their exact boundaries are often unknown and miles apart. Released toxins from Butler could persist in downstream sediments that would be released by trenching.

"During mining operations, boreholes were drilled into the mines to serve as air vents for the mines. Many individuals and companies used the boreholes to dispose of various wastes, including, residential and commercial wastes containing hazardous substances and waste oil. One such borehole was in Pittston, PA at a gas station and auto repair shop called the Hi-Way Auto Service Station ("HWAS"), located over two miles from the Tunnel discharge point."

<http://www.epa.gov/reg3hwmd/super/sites/PAD980508451/fyr/03-2194197.pdf>

<http://www.epa.gov/reg3hwmd/npl/PAD980508451.htm>

That tunnel has been linked to a Luzerne Cancer cluster:

<http://www.casey.senate.gov/newsroom/releases/casey-calls-on-agencies-to-coordinate-investigation-of-disease-clusters>

“All mines that once operated from Pittston south to Wilkes-Barre, on the east side, are sources of water that flows from boreholes”

<http://citizensvoice.com/news/five-boreholes-installed-in-solomon-creek-1.1638675>

(5) PCBs from the Lehigh Electric and Engineering EPA site could persist in Susquehanna River sediments downstream from where Lackawanna empties into the Susquehanna: *“Contamination of the groundwater and the Lackawanna River was possible because the PCB-contaminated soil located on site is highly permeable, and the site is located in the river's flood plain.”*

<http://www.epa.gov/reg3hwmd/npl/PAD980712731.htm>

6) Acid Mine Drainage is a huge issue for the Wyoming Valley.

<http://thetimes-tribune.com/news/compared-to-colorado-spill-local-mine-drainage-extensive-1.1926893>

“In western Colorado, a discharge of millions of gallons of yellow-orange drainage from an abandoned mine is cause for an emergency. Here in the former coal fields of Northeast Pennsylvania, it's just another day. As with other Pennsylvania regions with past coal mining, drainage from abandoned mines is one of the most significant water quality issues affecting the watersheds of Scranton, Wilkes-Barre and their suburbs... the volume of the Colorado spill — 3 million gallons, according to the U.S. Environmental Protection Agency — is tiny compared to the local problem.”

Studies need to be conducted to determine the content of sediment, the stability of the river bed and the risks to the Susquehanna River and EVERYONE WHO LIVES DOWNSTREAM. Where is the environmental data on the floods risks? Where is the data on the impact to fish, bird and all wildlife from the accidental release of acidic water pooled in underground pockets? Where is the data that should be coordinated with the Luzerne County Flood Protection Authority? And, where is the data to support that crossing the Susquehanna is safe for PennEast's workers? These are just some questions to consider as so much is still unknown about what is under the

river at that location. The bottom line is that PennEast does not know what will happen when they try to cross, and it appears from their lack of communications that they have not been doing due diligence to find out. Recent PennEast meeting minutes show that the last time PennEast had contact with the Susquehanna River Basin Commission was July 24th! Two months have passed and we have not seen any further details of PennEast's river crossing plans or studies exploring the immense risks.

Just like this summer's Colorado Gold King Mine disaster, the Susquehanna could be a ticking time bomb of toxic sediments and PCBs. The public, especially citizens who live in Pennsylvania's Wyoming Valley, deserve a thorough review of all the risks this crossing would pose - not boilerplate, vague promises with no hard, on the ground evidence to back it up.

We are not encouraged to date by PennEast's ineptitude and fast and loose relationship with the truth as shown in their resource reports and DEIS. Missing data, manipulated data, and out and out falsehoods have colored their FERC communications (test the truth of this by examining their blanket statement that no wells would be at risk with the pipeline and the blasting its construction would require when almost EVERYONE along the route in NJ has a private well and many landowners' wells are within 100 feet of the line). PennEast irresponsibly planned their route without doing the research or even being aware of the many abandoned mines until informed by the Eastern Pennsylvania Coalition for Abandoned Mine Reclamation (EPCAMR).

The executive director of EPCAMP, Robert Hughes, brought this issue to FERC's attention at a February 12, 2015 open house in Wilkes-Barre, PA, and he wrote a letter to FERC emphasizing the potential danger of what lies underground. As a newspaper article about this explained:

"We mentioned to them that they (PennEast) really, seriously need to take a look at this," said Robert E. Hughes, executive director of the Eastern PA Coalition for Abandoned Mine Reclamation.... We want to make it known they should consider the underground workings. Even people in the Valley forget how extensively mined this area was."

One problem is that mine mapping in the region is incomplete. In some cases, maps don't even exist: Coal operators went "wildcatting," mining in areas without properly documenting what they were doing.

The depth of the pipeline is crucial. The top 100 feet beneath the river consists of alluvial material — rock, sand and coarse gravel. If PennEast doesn't go deep enough, the pressure of the water, particularly during a flood, could wreak havoc with the pipeline. If PennEast goes too deep, there is the danger of hitting the abandoned mines, which can be extremely unstable."

<http://citizensvoice.com/news/river-concerns-surface-about-pipeline-1.1845246>

This spring, EPCAMR received a \$5,000 grant from PennEast as part of PennEast's "community connector" program. While I applaud EPCAMR's mission and work, it is disturbing that PennEast is NOW OFFERING MONEY TO THOSE IN A POSITION TO EVALUATE AND DETERMINE THE VIABILITY AND SAFETY OF THEIR PROJECT. Even the pro-gas Marcellus Drilling News decries the giving of money by FERC applicants to interested parties before a certificate is issued and calls it "payola" and "borderline sleazy". <http://marcellusdrilling.com/2015/06/more-pipeline-payola-williams-does-out-2-5m-in-pa-grants/>

I ask FERC to bar the practice of applicants' giving grants to stakeholders unless a certificate has already been issued. I have not seen a public comment from EPCAMR since their initial comments in March.

Other agencies have weighed in on the dangers of crossing the Susquehanna. In 2008 the US Army Corps of Engineers denied a permit for a portable dam on the Susquehanna at Wilkes-Barre to the Luzerne County Flood Protection Authority for an economic development project, citing that "the proposed dam was not the least environmentally damaging practical alternative and was contrary to the overall public interest" under the Clean Water Act. <http://timesleader.com/archive/269994/stories-feds-flatten-inflatable-dam100753>

Even without the present risk of toxic contaminants being released, damming a major river creates a myriad of concerns that PennEast must be required to fully address and take the time to study. Rushing to file is no excuse for incomplete data and slipshod research.

These are just some of the specific concerns that need to be addressed:

Structural:

- Riverbed reportedly unstable — 100 ft deep glacial deposits on top of buried valley
- Wyoming Valley is riddled with abandoned coalmines (many unmapped and wildcat) on both sides with some beneath the river
- Risk of sinkholes in city from mines
- Some mines are still burning – determine precise distance from route
- Two miles south of Knox Mine Disaster in 1959 where miners dug too close to underbelly of the river (15 ft below) and river broke through creating 150 ft whirlpool drowning 12 miners.
- Most flood-prone river east of Ohio—crested at 42 feet in 2011.
- Most ice-jam prone river east of Mississippi. There was an 11-mile long ice jam this March. That means PE needs to bury pipe deeper than usual because ice can scour riverbeds damaging pipelines as occurred with the oil pipeline in Yellowstone this past winter.

Ecological:

- Acid Mine Drainage in streams and coalmines in the Wilkes-Barre vicinity

- Likely contaminated
- Fish kill possible from release of toxins

Gravesites:

- The bodies of the 12 miners who drowned in 1959 were never recovered. There is a marker memorializing them upstream at the epicenter of the disaster.
- The Wyoming Monument remembering the Revolutionary War Wyoming Massacre is approximately 300 feet from the proposed crossing.

If FERC green lights this project without the comprehensive testing that the 16th largest river in the US and the largest contiguous US river requires, you may be squarely responsible for a massive environmental disaster

We agree with FERC's DEIS comment:

Prior to the end of the draft EIS comment period, PennEast should file with the Secretary the results of its ongoing evaluation of potential presence of working and abandoned mines near the proposed crossing of the Susquehanna River. The evaluation should include documentation of coordination with the Pennsylvania Bureau of Abandoned Mine Reclamation, and should identify any specific design or mitigation measures. 4.1.5.4

However, we are of the opinion that there is no 'safe' crossing in the proposed route possible. Please do not allow PennEast and their lack of proper planning to make the public the latest canary in the coal mine.

Sincerely,

Patty Cronheim
Hopewell Township, NJ

Fairfax Hutter
Lawrenceville, NJ

Document Content(s)

Comment on DEIS - Safety.PDF.....1-16

Attachement 1 Heat Intensity Equation Penn East.PDF.....17-18

Attachment 2 Susquehanna RIVER Crossing Comment.PDF.....19-24