

**Summary of Public Comments to the Virginia Department of Environmental Quality
and Air Pollution Control Board on the Draft Air Permit
for the proposed Buckingham Compressor Station**

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Executive Summary of Public Comments on the Draft Air Permit for the Proposed Buckingham Compressor Station

Thousands of Virginians, from every part of the state submitted thoughtful comments in opposition to the Buckingham compressor station air permit expressing deep concerns about environmental justice, air quality, climate change, creation care, and protection of vulnerable populations.

- Over 5,600 Virginians submitted comments on the proposed Buckingham Compressor Station, over 3,400 of whom in opposition to the air permit.
- Comments covered a wide range of topics, including the sufficiency of the technology and air quality controls of the compressor station, health impacts and environmental justice, climate change, and the overall need of the station and Atlantic Coast Pipeline.
- Residents of Union Hill and Buckingham asked for protection of their air, quality of life, and health. More Virginians cited long term impacts on air quality and climate change. Supporters of the station (mostly through single page post card petitions), cited general approval of the air permit and support of the ACP.
- Community health impacts was the leading concern among commenters both in favor of and against the compressor station (over 1,600 comments cited this as a concern). Also highlighted frequently in the comments were concerns related to overall need of the ACP and station, climate change, risks of emergencies and environmental justice.
- Experts in engineering, public health, medicine, anthropology, environmental justice, and the law found flaws and weakness in the air permit. The overwhelming majority of all technical, legal, and scientific memoranda comments submitted argued against the compressor station.

Friends of Buckingham and allies highlight key insights from expert and citizen comments beginning on Page Four of this document. Links are provided in the text to the source documents on the DEQ website and important legal and technical public comments are provided separately on the VCN website.

None of the flaws identified in the air permit have been addressed by the DEQ. The DEQ rejected additional BACT, monitoring, suggestions for making the permit enforceable, and left completely unaddressed the health and safety concerns of Buckingham residents, as well as the overwhelming public concern about environmental justice and climate change.

Among the most critical issues raised by the public that remain unaddressed by DEQ include the following:

1. The State Air Pollution Control Board has the legal authority in the Constitution of Virginia and in the Code of VA, Section 10.1-1307(E) to deny the permit.

2. DEQ rests its recommendation to approve the permit on regional measures of air quality and in response to environmental justice concerns, claims that the National Ambient Air Quality standards are for everyone.
3. DEQ ignored the expert comments that detailed the known negative health impacts to people living near compressor stations.
4. As a major new source of greenhouse gas emissions, the Buckingham Compressor Station should be subject to greater scrutiny from DEQ and the State Air Pollution Control Board. It undermines initiatives in Virginia and the world to limit greenhouse gas.
5. The public asked for continuous emission monitoring systems (CEMS).
6. The community asked for advance notification of blowdowns so nearby residents could take action to protect their health.
7. The public requested community health impact assessments, with baseline data collected prior to construction.
8. The public requested easy and quick access to emissions data to independently verify conditions. DEQ still allows months to pass before Atlantic is required to provide data and it is not making the data easily accessible to the public.
9. In the face of public concern about odorless, tasteless and colorless emissions, DEQ maintains that it has no authority to require use of industry standards to allow all to recognize when natural gas is in their immediate environment.
10. Like FERC and Atlantic, DEQ erases the environmental justice community of Union Hill.
11. DEQ denies the authority of the State Air Pollution Control Board to consider the siting of this industrial project in an agricultural community.
12. DEQ believes that it has adequately involved, consulted, and communicated with the affected citizens. One meeting with the affected community in three years and a limited public comment period denied the public adequate consultation.
13. Substantial critiques were made of the air modeling conducted by Atlantic as well as the BACT analysis accepted by DEQ.
14. The public believes that a detailed emergency action plan and extensive support of the existing small volunteer emergency response are required. DEQ dismisses these concerns.

15. The public continues to question the need for this infrastructure finding no benefit to the community, Virginia, and ratepayers that justifies the harm and costs to air, water and earth that the pipeline will cause.
16. In a time when climate change is of great public concern around the globe, approval of this permit will allow construction of an additional significant polluter that will negatively affect the environment for generations to come. DEQ denies that this will extend the negative impacts of climate change.

Thus thousands of Virginia citizens from across the Commonwealth have requested that the Virginia Air Control Board deny the proposed Air Permit.

Key Insights from Public Comments on the Draft Air Permit for the Proposed Buckingham Compressor Station

From every part of the Commonwealth, thousands of Virginians submitted comments in opposition to the Buckingham Compressor Station air permit expressing their deep concerns about lack of environmental justice; existing health conditions and health impacts reviews; its significant contribution to climate change and specific insufficiencies to protect air quality; inadequate monitoring and compliance levers that would ensure that the community is immediately alerted about large emissions or other incidents and requirements for these to be acted upon swiftly enough to stop direct harms.

Residents of Union Hill and Buckingham asked for protection of their air, quality of life, and health. Many cited findings of the door-to-door household study in 2016-17 of 99 Union Hill households: a 650% higher population than Dominion and the Virginia Department of Environmental Quality (DEQ) reports that is 83% minority, and the Former Slave and Freedmen culture and history at the Buckingham compressor station site. Hundreds commented on the lack of time given by DEQ to community participation -- a 30-day comment period where few have access to internet and computers, one information session in Buckingham vs. years of work with Dominion to fix "the only air permit DEQ has ever failed" according to DEQ Air Division's Mike Dowd at the info session -- Dominion's for this compressor station.

Experts in environmental justice, public health, engineering, public anthropology, environmental justice, and the law submitted detailed comments on the consequences of such factual omissions and lack of community participation, errors, technical flaws and loopholes used in the air permit as written. Experts found unenforceable conditions in the permit; erasures of population and history to receive permits; disproportionate health and safety impacts to a minority community; no enforcement of environmental justice policies and acts; flaws in the air modeling methods; insufficient attention to greenhouse gas emissions; lack of meaningful monitoring of emissions and omissions of key emissions protections; and, no consideration of the impacts on the Chesapeake Bay from this site in its watershed.

The following extracts from the public comments illustrate the depth and breadth of information the public submitted to the State Air Pollution Control Board for its consideration of the application for a massive gas compressor station in Buckingham County.

Citation System and Links to full comments. All comments are cited with DEQ date of receipt hyperlink + page number. Comments made at 9/11/18 public hearing cite “official transcript.” The Executive Summary of data and key issues, this Key Issues Quotations document, and links to full comments made by VA NAACP, Southern Environmental Law Center, Chesapeake Bay Foundation, Dr. Larysa Dyrszka, Dr. Mary Finley-Brook, Dr. Lakshmi Fjord, Thomas Hadwin, Ruby Laury, and Appalachian Voices are located at: Virginia Conservation Network: vcnva.org
Friends of Buckingham: friendsofbuckinghamva.org.

Impacted Community of Union Hill and Close Environs

Ruby Laury, Union Hill resident: “I am retired and spend most of my time in this community; breathing the clean air that is here and using water from our private well. My friends, children, and grandchildren like to visit here – where the Union Hill ancestors owned the land. I did not ask for the ACP to come through our community. I cannot see any way that we will benefit from it. I also am not convinced that either Dominion, the ACP, or the government will protect us and our environment” ([9/21/2018:357](#)).

John Laury, Union Hill resident: “From [DEQ info meeting] about the leaks -- certain leaks, you say, will be allowed up to fifteen days to repair. How would we know, since we're the ones living in the community, that these leaks will be taken care of? Who will be informing us? Will we receive any information as to what is really taking place inside?” ([official transcript: 40](#))

Chad Oba, impacted resident, President, Friends of Buckingham: “Buckingham schools are a mere eight miles from the site of the compressor station. So the children who go to school will be impacted. They'll be on the playground, breathing this air in their smaller lungs, which does have a greater impact” ([official transcript: 84-85](#)).

Pastor Paul Wilson, unified Union Hill Baptist and Union Grove Missionary Baptist Churches: “We are in the Union Hill community where the proposed compressor station for the Atlantic Coast Pipeline is being considered. Our church is adamantly opposed against the compressor station and the Atlantic Coast Pipeline” ([official transcript:33](#)).

Dhyani Simonini, nearby Yogaville resident: “One of the easiest things in the world to do is to promise perfection and compliance and scrutiny. We have a tiny, little volunteer department of both fire people and rescue people, who would have to come from -- our county is 573-some square-miles of mass. They have to come from that far to some station, and then be asked to go to an emergency” ([official transcript:67](#)).

Heidi Dhivya Berthoud, local resident, project manager, Union Hill air, water, and health assessment to establish pre-ACP baselines: “I went to the local, then regional health departments to ask for assessments. They sent me on to you, the DEQ, who also said no. We were left to defend for ourselves. Thus we did the right thing, taking up the huge project of testing 30 well water sites close to the 26 miles of proposed ACP in Buckingham. We have done air monitoring for PM, VOC's, formaldehyde and H2S in 8 homes around the compressor station site and are in process with detailed health assessments of 40. We are also monitoring the 36 stream crossings by the ACP, including 7 floodplains, which is part of our collaborative Pipeline Compliance Surveillance Program.

This testing should be a standard requirement for any potentially polluting industry. But for this to be a regulatory requirement, would be an admission of the dangers” (9/21/2018:63).

Georgiana Stinnett, local resident, former EPA environmental scientist: “Why is there no mention of controlling air emissions in the event of explosions? How about escape routes for individuals who would need to reach clean air in this event? The system for measuring emissions does not account for the actual impact of the emissions on human health. The samples are averaged on a regional scale, and include times when fewer pollutants are being emitted” (official transcript:77).

Dr. Irene Leech, Virginia Tech, impacted Buckingham family farm: “It is not sufficient to only make air data available to citizens via FOIA of DEQ. A quick, transparent, and affordable means needs to be provided to the community to monitor what occurs using dependable and defensible data...Further, impact on animals, both wild and domestic, must be documented” (9/21/2018:364).

Marie Flowers, nearby resident: “I just feel like we’re all part of the human family and we breathe the same air” (official transcript:25).

Environmental Justice: Demographic, Cultural and Historical Erasures at BCS Site Virginia Chapter NAACP and Buckingham NAACP: “We ask that all activities associated with constructing the pipelines are halted until accurate demographic, cultural and historic data are submitted by the applicant....Since the applicant did not accurately list the actual population living within close proximity to the compressor station site, the undercount allows the applicant to avoid adhering to federal and state mandated regulations used to identify and prevent disproportionate adverse impacts to minority and elderly populations.

Furthermore, we ask that the applicant work collaboratively with all local residents and property owners to make sure the community’s intrinsic resources are included, particularly those with significant historic and cultural value (i.e. unmarked graves). The portion of Union Hill which was omitted from the application submitted to the Federal Energy Regulatory Commission (FERC), is predominately African-American and consists of approximately 99 unreported homes, and several historic sites; including 2 historic black churches and cemeteries. Established by freed enslaved families after the Civil War, the Union Hill/Woods Corner Rural Historic District, was listed as a “Most Endangered Historic Place in Virginia” by Preservation VA in 2016” (9/21/2018:87-89).

Dr. Mary Finley-Brook, U Richmond, Advisory Council on Environmental Justice: “The Environmental Protection Agency defines Environmental Justice as the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. The term has its roots in Civil Rights law, specifically Title VI of the 1964 Civil Rights Act.

The situation in Union Hill is in direct contrast to the stated objectives of state leaders during the creation of ACEJ. Executive Order 73 states, “The Commonwealth requires a consistent, aile blast zone. There is no evacuation plan and there has been inadequate attention to the need for emergency responders. Hospitals are located more than an hour away” (9/21/2018:236).

Dr. Lakshmi Fjord, UVa anthropologist, Union Hill household and historic research, Yogaville community member: “The legacy of slavery in Virginia is a living reality in Buckingham. And, it manifests in the complete capitulation by the Buckingham Board of Supervisors (BoS) to

Dominion's insistence at the CS special use permit hearing that there would be no "bond held in escrow" for direct impact costs to Union Hill residents; no money given for extra safety equipment or emergency responders in an all-volunteer fire department; no willingness to even listen to Union Hill requests to somehow link into the 125 ft wifi tower in an "internet desert," among just a few of the list for this CS site proposed to the Buckingham Planning Commission and Board of Supervisors based on community input" ([9/21/2018:274](#)).

David Neal and Charmayne Staloff, Southern Environmental Law Center: "VDEQ and the Air Pollution Control Board should not follow the mistakes made by the Federal Energy Regulatory Commission ("FERC") when it ignored the historical and cultural significance of the cohesive Union Hill community. When FERC completed its draft environmental impact statement ("draft EIS") for the ACP, it ignored the Union Hill community" ([9/21/2018:17](#)).

Governor's Advisory Council on Environmental Justice: "We also recommend that a review of permitting policies and procedures take place and that the governor direct the Air Pollution Control Board, DEQ, and DMME to stay all further permits for ACP and MVP to ensure that predominantly poor, indigenous, brown and/or black communities do not bear an unequal burden of environmental pollutants and life-altering disruptions. These actions would ensure that environmental justice has meaningful influence in all current and future energy projects" ([9/21/2018:246](#)).

Jon Mueller, The Chesapeake Bay Foundation also finds the environmental justice issues compelling and notes that "in spite of citizens of Buckingham repeatedly providing oral and written comments in opposition to the compressor station the DEQ has failed to consider or evaluate those concerns in the context of Article XI, Section 1 of the Constitution of Virginia or Code of Virginia § 10.1-1307(E)...The Board should comply with EO 73, DEQ's Environmental Justice policies as well as those of the EPA and deny the permit" ([9/21/2018:491](#)).

Peter Anderson, Appalachian Voices: "If the Department cannot demonstrate that the Buckingham Compressor Station will not have a disproportionate adverse impact on an environmental justice community, the Department and Board must reject the Draft Permit in order to act in a [matter] consistent with the Commonwealth Energy Policy" ([9/21/2018:23](#)).

Rebecca Deeds on behalf of Preservation Piedmont Board of Directors: "We are writing to express opposition to the location of the compressor station related to the Atlantic Coast Pipeline Project in the historic neighborhood of Union Hill in Buckingham County. We believe that criteria like historic significance should factor into this decision-making" ([9/21/2018:154](#)).

Legal Authority of the SAPCB and Location: Reasonableness, Degrees of Injuries, and Suitability of Activities for the Site

Southern Environmental Law Center and Chesapeake Bay Foundation cited the Air Pollution Control Board's legal authority according to Code of VA, Section 10.1-1307(E):

"The Board is legally obligated when approving permits to consider facts and circumstances relevant to the reasonableness of the activity involved and the regulations proposed to control it, including: 1. The character and degree of injury to, or interference with, safety, health, or the reasonable use of property which is caused or threatened to be caused; 2. The social and economic value of the activity involved; and 3. The suitability of the activity to the area in which it is located. Thus, if the air regulations governing the proposed compressor station do not adequately control its emissions, the Board must deny the permit" ([9/21/2018: 486](#)).

Chesapeake Bay Foundation: “The social and economic value of the compressor station is offset by the harm it will cause to human health, reasonable property use, and the environment. Further, the location of the proposed compressor station is not suitable to the rural, agricultural nature of Buckingham County. **Thus, the Board has the authority to deny the air permit** regardless of whether emissions from the station will comply with National Ambient Air Quality Standards” (9/21/2018: 486).

Dr. Lakshmi Fjord: “Cost/benefit analyses related to suitability of site for activities included in the CS 2 air permit need to include the costs of environmental injustice and existing health conditions -- social and economic costs to be paid by individuals and communities not ACP LLC. Dominion has consistently used misinformation about the Union Hill compressor station location - population size, majority race, Freedmen history -- that has shaped decision-making at every level of ACP’s permit processes. Accepting the misinformation in ACP’s application, the local Board of Supervisors, FERC and now DEQ has allowed cost benefits to the developer at the expense of impacted residents which must not go on” (9/21/2018:282).

DEQ maintains ACP misinformation: In Oct. 24, 2018 “Response to Public Comments” (p.16), “Project Site” is Union Hill Compressor station. In cell, “Pop. per square mile” 29.6/52.6. 29.6 is rural Buckingham’s average and 52.6 from an uncited “informal survey.” Yet, the Union Hill household study reported 199 residents in BCS site 1-mile radius from 75 of 99 households reached. Not only did scores of comments to this air permit cite those findings but they have been filed with FERC and DEQ continuously since 2016.

<i>Monitor Station Location</i>	<i>2014 NEI (tons NOx)</i>	<i>2014 NEI (tons CO)</i>	<i>2014 NEI (tons PM2.5)</i>	<i>2014 NEI (tons PM10)</i>	<i>County Pop.</i>	<i>Pop. per Square Mile</i>
<i>(Project Site)</i>	<i>540</i>	<i>4,057</i>	<i>440</i>	<i>1,834</i>	<i>17,048</i>	<i>29.6 / 52.6</i>

Climate Change

Environmental Justice Collaborative letter to DEQ: “Climate justice advocates assert harm from climate change disproportionately affects communities of color, low-income populations, and the elderly and children.” (9/21/2018:251)

Southern Environmental Law Center: “The Buckingham Compressor Station would be a major new source of greenhouse gas pollution and is unsuitably sited in an environmental Justice community. According to the Atlantic permit application, the facility-wide potential greenhouse gas (“GHG”) emissions include 291,812 tons per year of carbon dioxide (“CO2”), 70.9 tons per year of methane (which is roughly 30 times more potent as a greenhouse gas than CO2), and 7.05 tons per year of nitrous oxide (which is roughly 300 times more potent as a greenhouse gas than CO2). Atlantic identifies the facility-wide potential CO2 equivalent emissions of the Buckingham Compressor Station as 295,686 tons per year.

Allowing an additional 295,686 tons per year of CO2 equivalent emissions with the Buckingham Compressor Station will frustrate the Commonwealth’s proposed plans to reduce CO2 emissions from the electric sector. VDEQ is proposing to allow the construction and operation of the Buckingham Compressor Station, **which would negate a little less than one-**

third (i.e., about 296,000 tons of CO2 emissions) of those planned CO2 emissions reductions per year” ([9/21/2018](#):595).

Virginia League of Conservation Voters, Michael Town and Virginia Conservation Network, Mary Rafferty: We respectfully urge you to reject this permit ... Moving forward with this permit has the potential to negatively impact the public health and safety of the surrounding community in Buckingham County and would contribute further to the commonwealth’s long-term greenhouse gas emissions at a time when we are working to lower air pollution and transition away from fossil fuels” ([9/11/2018](#): 29)

No Need for the ACP for Domestic Use

Southern Environmental Law Center: “This [Air Pollution Control Board] statutory mandate to consider ‘facts and circumstances relevant to the reasonableness of the [BCS] activity involved...including ... the social and economic value of the activity’ includes not only a consideration of the GHG emissions from the Buckingham Compressor Station, but also the lack of demonstrated need for the ACP as a whole. This massive, \$6.5 billion project is owned by a conglomeration of energy companies, including Dominion Energy. Affiliates of those same companies have contracts to purchase nearly all of the gas from the ACP, which, according to Atlantic’s FERC filings, will be used to generate electricity for monopolized markets in Virginia and North Carolina. At the end of the day, Dominion will seek to recover its costs, along with a 14% return on equity, from its captive ratepayers in the Commonwealth” ([9/21/2018](#):596).

Thomas Hadwin, former gas and oil executive: “This air quality permitting activity must take into account the fact that there is no net economic benefit to the general public that would offset the harm that would result from the development of this mammoth compressor station” ([9/10/2018](#):13-17).

Engineering/BACT/Emissions

VA NAACP: The air modeling used by the applicant is not adequate. African Americans are exposed to 38% more polluted air than Caucasian Americans, and they are 75% more likely to live in fence-line communities than the average American. The proposed compressor station, the largest to be built in the Commonwealth of Virginia, will be constructed within a few hundred feet of existing homes and is expected to pump hazardous air pollutants and particulate into the environment” ([9/21/2018](#):87-89).

Southern Environmental Law Center: “The National Ambient Air Quality Standard (NAAQS) Modeling Analyses for the Buckingham Compressor Station contains significant flaws; and Atlantic has not adequately demonstrated that the Buckingham Compressor Station will not cause or contribute to any concentration that may exceed a significant ambient air concentration for air toxics.

- “The best available control technology (“BACT”) analysis relied on by VDEQ is inadequate because it failed to consider the “maximum degree” of Nitrogen Oxide emissions reduction;
- VDEQ did not consider electric motor compressor turbines in its BACT analysis;
- VDEQ should require BACT for fugitive emissions ([9/21/2018](#):594)

Appalachian Voices: “The permit fails to prohibit operation below 50% capacity and does not include low load emissions increases in the PTE (potential to emit) calculations.

- The other regulated pollutants limited during operation (CO, NOx, PM, PM10, PM2.5, SO2 should be limited during start-up and shutdown” ([9/21/2018](#):20-21)

Chesapeake Bay Foundation: “The NOx emissions from the compressor will represent an illegal new load of nitrogen to the Chesapeake Bay. We estimate that the station will contribute an additional 13,297 pounds of nitrogen deposition per year.

- The permit contains unenforceable terms. The terms “good air pollution control practices for minimizing emissions,” “maximum extent possible,” “manufacturer’s written protocol,” and “best engineering practices for minimizing emissions” are not defined in the permit.
- The definition of startup and shut down is too broad and should be narrowed. The permit excuses the operator from running NOx controls during start-up and shutdown, and the CO/VOC (oxidation catalyst) during start-up.....Consequently, the permit creates a large start-up and shutdown loophole that can simply eviscerate the permit requirements” ([9/21/2018:487-488](#))

Dr. Lakshmi Fjord: “Nowhere I believe does the DEQ address Transco’s additional pipelines in this mix of comprehensive injuries to safety, health, and climate change and more of this intersection of 5 pipelines at CS 2 site. Has DEQ included Transco’s 4-pipelines’ emissions in their figures? Considered their increased chance of leaks and breaks? Where Dominion’s “activity” involves threats posed by a large fracked gas compressor station’s necessary operations to pressurize gas to the highest allowed psis of pressure to transmit gas over 200 miles to the next compressor station CS 3 in Northampton or along the Transco pipelines to Cove’s Point LNG facility and offshore markets?” ([9/21/2018: 275](#))

C.Flint Webb, PE: “Ammonia [stored above-ground at BCS site, used as part of BCS “activities”]: In the draft permit ammonia is not ‘a regulated air pollutant.’ Ammonia is considered a PM2.5 precursor and could be considered a criteria pollutant precursor like NOx and therefore would be a regulated air pollutant: Does the Virginia DEQ not recognize ammonia as a PM2.5 precursor? ([9/11/2018:84](#)).

Monitoring

Scores of public health and engineering comments related to the omissions of protections and monitoring of key types of emissions and flaws in the proposed monitoring systems. DEQ allows some tests to take place only at start up and 2 years later; all are averages, not hour by hour to detect large-scale emissions incidents. Little monitoring will be done at the fenceline of the facility. No plan is required to alert residents of large emissions’ releases or blowdown. There is no requirement to even the use of odorant for nearby residents to detect danger by smell.

Appalachian Voices: “The Department should replace the proposed stack tests for regulated pollutants with a requirement for continuous emission monitoring systems (CEMS) .. The performance tests set out in Condition 29 of the Draft Permit for emissions of nitrogen oxides (NOx), carbon monoxide (CO), volatile organic compounds (VOC), and particulate matter (PM10 and PM2.5) are only required to be performed upon initial operation and then repeated once every two years thereafter. The Draft Permit states that emissions will be derived from the estimated overall emission contribution from operating limits, rather than direct measurement of pollutant emissions” ([9/21/2018:20](#)).

Dr. Curt Nordgaard, Boston Children’s Hospital:

- ACP should notify local authorities prior to each venting event.
- Odorant should be added so that local residents know venting has occurred.
- DEQ should require regular analysis and reporting of natural gas composition.
- DEQ should require the most recent and stringent emissions controls for pigging operations. ([9/21/2018:117-119](#))

Calls for independent monitoring and testing by experts not affiliated with the company:

- This third-party monitoring should share results with the community and the company, include the raw data collected and the analysis;
- Air Monitors should be placed in areas in the community, selected by community
- Methods to alert areas that have high risk individuals, such as schools, care facilities, elderly and more densely populated neighborhoods (Appalon: [9/21/2018:40](#))

Compliance

Dr. Mary Finley-Brook: “Compliance best practice (on parity with attempts at BACT in the technical realm) would include 1) legal representation or at least legal counsel for impacted residents, and 2) monitoring and compliance guidance and coordination by Jerome Brooks (or another state agency Environmental Justice Coordinator). Given federal and state claims to advance environmental justice, it would be advisable to include one or more members of the National Environmental Justice Advisory Council (NEJAC) or state Advisory Council on Environmental Justice (ACEJ) in a support role” ([9/21/2018:240](#)).

Eleanor Amidon, community member: “The time limits for certain reports required by the draft permit are far too long. If you receive a report half a year after dangerous levels of toxins are emitted into the air around the compressor station, is that timely enough to warn residents of the danger? Obviously not” ([official transcript:35](#))

Public Health and Medicine

Suzanne Keller, retired epidemiologist, Virginia Dept. of Health: “What matters from a health perspective is the content and intensity of exposures at the individual level. The critical questions are: What is a person in a given household exposed to? How high do those exposures climb? How often is that resident exposed to these high levels? What happens physiologically when a particular toxin comes in contact with the human body?” ([official transcript:86](#)).

Dr. Lakshmi Fjord: Conducted the door-to-door household study of Union Hill: “Of 67 households with extended interviews, 35 answered the question of known pre-existing diagnoses at Union Hill, which include diabetes, asthma and other lung conditions, chronic bronchitis and pneumonia, heart conditions, breast and other cancers, COPD, lupus, kidney disease, epilepsy, multiple sclerosis, brain tumor, migraines ... in a population that skews both towards the elderly and the very young” ([9/21/2018:281](#)).

Dr. Larysa Dyrszka, Physicians for Social Responsibility and New York Concerned Scientists: “The National Ambient Air Quality Standards (NAAQS) used as a benchmark for air quality [by DEQ] were not created to assess the air quality and safety in a small geographic area with fluctuating emissions.

Health risks from relevant air contaminants receive inadequate treatment. An EPA ATSDR report established there were levels of exposure around [compressor stations] that raise health concerns. In particular, acetaldehyde, benzene, formaldehyde, carbon tetrachloride, chloroform, 1,2-DCA and 1,1,2-trichloroethane, crotonaldehyde, and 1-methoxy-2-propanone exceeded their respective comparison values (CVs).

Mixtures and sequential exposures: at this [BCS] compressor station a very large number of chemicals are released together. Medical reference values are not able to take the complex nature of the shale environment, its multiple emissions and interactions into full consideration. Some mixtures like PM and VOCs act synergistically to increase the toxicity of the chemicals. The VOCs and HAPs shown in the tables will be emitting air mixtures with high

levels of fine particulate matter. Inhaled particulate matter increases transport of the soluble VOCs into the deep lung by a factor of 10 or more.

Radioactive waste products are typically removed from the pipelines after “pigging.” How this toxic waste product is removed, handled, stored, transported and disposed of should be made clear to the public” ([9/21/2018](#):123,125).

Dr. Curt Nordgaard: “Criteria pollutants are harmful at concentrations or time intervals that do not violate NAAQS... DEQ should require regular analysis and reporting of natural gas composition” ([9/21/2018](#):117-119).

Chesapeake Bay Foundation cites Dr. George Thurston, New York University School of Medicine, who concludes that operation of the compressor station will cause an increase risk of adverse health effects locally and will contribute to increases in health risks to downwind communities. He estimates the adverse health impacts risk of short term exposure to PM2.5 will rise by 44% and adverse impacts of the long term exposure to PM2.5 will rise by 44%. Dr. Thurston concurs with others that “any increase in air pollution will increase the risk of adverse effects, even when the NAAQS are not violated” ([9/21/2018](#): 494).

Virginia Clinicians for Climate Action, Benjamin Hoyne: “We know that exposure to air pollution leads to excess asthma events, excess respiratory and cardiovascular disease and diminished quality of life. We ask you to consider the health and safety of the residents of Union Hill and take appropriate action to protect their health by denying the permit or including requirements for fence line monitoring to insure that the air quality standards are achieved on an hourly basis year round” ([9/11/2018](#): 41).

Conclusions

Chesapeake Bay Foundation: “The proposed air permit is deficient in numerous ways; from its failure to require clearly defined and enforceable terms and its failure to fully evaluate human health impacts to its failure to consider the impacts of emissions from the plant on the minority community and the Chesapeake Bay. Thus, in adherence to the Constitution of Virginia and Virginia law, the Board should deny the permit or, at the least require that it be severely modified to consider the deficiencies discussed above and re-noticed for public comment” ([9/21/2018](#): 498).

Southern Environmental Law Center: “Because of the errors in the Draft Permit, as well as the unanswered questions about risks to human health, greenhouse gas pollution, and environmental justice, the Virginia DEQ should withdraw the Draft Permit and require supplemental information from Atlantic. In the event VDEQ nevertheless submits the Draft Permit to the Air Pollution Control Board, we respectfully ask that the Board deny the permit” ([9/21/2018](#): p. 642).

VA NAACP: “On behalf of the Buckingham County NAACP and the Virginia State Conference NAACP, we are writing to express our opposition to the granting of an air permit for the Atlantic Coast Pipeline Compressor Station in Buckingham County, Virginia” ([9/21/2018](#):87-89).