Buckingham Compressor Station Air Permit Comment:
Lakshmi Fjord, Ph.D.
Jan. 4, 2019

First, allow me to express my deep appreciation to the Air Board for your decision to allow a short public comment period on the “new information” on demographics and community engagement added by Dominion and DEQ to the air permit outside the public comment period. Rather than limits you set on comments to these submissions and Union Hill Community Research and Methods Report and SELC’s methods critiques, however, DEQ added historic cultural resource reports, emails between me and Marc Wagner of VDHR, one NAACP letter without the second one written to correct its assertions of Virginia Conference of the NAACP support for the Union Hill compressor station.

I was quite surprised at the Dec. 19 meeting when Mike Dowd responded to my Union Hill Community Study Report by replicating to a word the very misinformation given by Dominion on alternate site comparisons that were the bases of detailed critiques in this report. As if to foreclose any possible evidence of environmental injustice in Dominion’s site CS 2 choice based on my near four years of community research, Mr. Dowd then ventured into the historic cultural resources that were Part I of my community study. Misinterpreting the context and dialogic nature of emails between Marc Wagner and myself, he arrived at unfounded conclusions about the lack of historic significance of former slave and freedmen cultural resources in Union Hill. He does so without the expertise or understanding of distinctions in rural historic districts, cultural landscapes, and Traditional Cultural Places (TCP), as well as of historic register eligibility processes with which to draw such conclusions.

Thus, writing my public comment has posed a huge challenge in a context where DEQ seems focused not on evidence-based inquiry but on invalidating my demographic and cultural historic research that prove Union Hill to be an environmental justice community. I ask your forgiveness for providing more detailed information then to further critique this CS 2 site choice. For, the ACP is notable for its environmental justice issues at every site of its major infrastructure.
It is worthy of note that in the interim between the close of public comments on Sept. 21, 2018 and today, the State Corporate Commission has given Dominion a deadline to prove their claims of market needs for ACP public utility provision. This reflects the growing body of evidence that the ACP is solely self-serving. The new gas-fired power plants with which Dominion applied to FERC for a certificate are no longer to be built, because renewables are far cheaper to build, in their words.¹ We learned that instead of providing support for economic development, the ACP would contribute billions of dollars of redundant utility infrastructure indebtedness to captive residential and business consumers. In Virginia, ratepayers are allowed to bear Dominion’s corporate ACP indebtedness through higher utility costs. ACP will thus slow economic development in our state.

And, Buckingham County would be forced to bear the largest per Virginia county ACP impacts to future economic development because of its disproportionate burden of risks and hazards at this largest-toxic pollution emitting compressor station of the three. In this A1 Agricultural District, with no existing industrial sources of pollution, the people of Union Hill have been such good stewards of their air that the present higher than average ambient air at the CS 2 site allows Dominion to pollute at the highest levels of every form of toxic pollution related to unconventional gas compressor station “activities.”

ACP FEIS: TABLE.4.11.1-7, P. 4-557 Potential Emissions by Compressor Station

<table>
<thead>
<tr>
<th>Compressor Station</th>
<th>NOx (tons per year)</th>
<th>CO (tons per year)</th>
<th>VOC (tons per year)</th>
<th>SO₂ (tons per year)</th>
<th>PM10/PM2.5 (tons per year)</th>
<th>CO₂e (tons per year)</th>
<th>HAPs (tons per year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compressor Station 1²</td>
<td>42.5</td>
<td>70.7</td>
<td>30.3</td>
<td>7.08</td>
<td>12.2</td>
<td>277,688</td>
<td>5.22</td>
</tr>
<tr>
<td>(Lewie County, West Virginia)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compressor Station 2³</td>
<td>50.2</td>
<td>95.2</td>
<td>32.7</td>
<td>7.33</td>
<td>43.9</td>
<td>323,736</td>
<td>5.63</td>
</tr>
<tr>
<td>(Buckingham County, Virginia)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compressor Station 3²</td>
<td>19.7</td>
<td>31.1</td>
<td>21.8</td>
<td>3.10</td>
<td>18.4</td>
<td>129,243</td>
<td>3.42</td>
</tr>
<tr>
<td>(Northampton County, North Carolina)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

¹ ACP Kincheoie and SHP CNX M&R stations emissions are included in the emissions for Compressor Station 1, as the facilities would be collocated.

² The Woods Run M&R station emissions are included in the emissions for Compressor Station 2, as the facilities would be collocated.

Buckingham’s negative economic development impacts must be considered not arithmetically but geometrically more harmful to present and future generations solely because of the CS 2. This site choice has already devastated planned, sustainable economic development in Union Hill: a greenhouse complex not built across the street; a vineyard and winery not undertaken; a dairy and a cattle farm long since in operation now threatened by health impacts and toxic contamination). False promises of “revitalization” to specific individual “entrepreneurs” to accept Dominion money in exchange for living with the CS 2, presume that tourists or new businesses would seek to visit or move to Buckingham. Where the schools are already imperiled by lack of funds, where large swaths of internet deserts make home-based businesses nearly

¹ Reuters, May 24, 2018: “Vista Energy and Dominion Energy … are done building combined-cycle natural gas-
impossible, then further burdened by hazards to air and water by proximity to a huge toxic emitting industrial complex.

Our community study asked participants to respond confidentially to questions about pre-existing medical conditions in the close impact area. Buckingham is already drastically medically underserved. Union Hill’s population is already skewed disproportionately towards the very elderly and very young -- because of out-migration by young African American adults to more equitable access to well-paying jobs. Thus, the known impacts to health from emissions from far smaller, even single turbine engine compressor stations would fall most heavily upon already vulnerable populations within an identified environmental justice population.

As I will describe more fully later in my discussion of the historic cultural resources of Union Hill, when we consider these economic, health, and cultural costs vs. the so-called “benefits of the activity” of a huge compressor station, in Union Hill we are talking about destroying a traditional cultural place that by rights ought to be out of the question for new, discriminatory burdens after centuries of living with enslavement and its legacy here. Perhaps it is as difficult for Dominion, FERC, and DEQ staff to imagine how unusual a place Union Hill is today -- as it was for us to grasp when we moved to Buckingham to establish Yogaville Virginia in 1979. Where else in the U.S. right now do the descendants of white plantation owners still live near the descendants of people their ancestors enslaved? And, these are majorities not minorities of residents in Union Hill.

Over the years of working on the Union Hill community study together, we have grown closer across our different race and upbringing backgrounds. As we do so, each has learned more about the history of Union Hill once part of the “hidden and forgotten” record of black life in Buckingham. Silence and erasure became a means to prevent past violence from coming to the surface in the present. At the same time, even forgotten kinship through long past intermarriage surprises Union Hill freedmen descendants. First told to me that they are “unrelated by kinship, the network of property bought by ancestors after freedom list neighbors then who are also neighbors now. The names on headstone in the three historic black cemeteries at Union Grove Missionary Baptist Church (est. 1910) and Union Hill Baptist Church (est. 1868) record the same last names as those now sitting in the pews in our Friends of Buckingham meetings.

This cultural knowledge matters for a host of reasons. For the purpose of this comment that leads to my imploring the Air Board to deny this air permit, it matters because whatever costs to community the activities of the CS 2 cause, it is to a whole, interconnected web of kinship relationships. As I wrote in the Community Study Report, these Xs that mark households on a map, are of a historic cultural landscape, a “traditional cultural place” (TCP). Where webs of kinship over hundreds of years mean costs to health of new toxic emissions, costs to medical care, care-giving, even transportation in a medically underserved county would be borne by a social network of intermarried, related families while slowly (or quickly?) creating tears in the fabric of traditional cultural activities and enjoyments. To have a man camp across the street instead of a greenhouse complex, to have a recreation center where to venture out of one’s home risks exacerbating asthma, diabetes, heart conditions, migraines and more; to no longer be able to hold yearly huge black heritage family reunions of upwards of 250 people, un-knits the traditional cultural activities that have sustained Union Hill people through the hardships of enslavement and lives as freed people under segregation. Falsely named “community revitalization” represents perhaps the community’s death knell.
In what follows, I will ask you to read specific public comments made by others that will give further evidence to points in my comment below. **Please read SELC’s comment**, as they represent Friends of Buckingham, including in our request for further public comment time, sent on Dec. 1, 2018, to point out the serious flaws in the demographic methods used by DEQ, and misinformation about community engagement by both Dominion and DEQ. Further cited in our procedural complaint was the removal of two of the six Air Board members after the public hearings had taken place.

The ACP process has led to growing concerns about efforts by Dominion to interrupt by any means possible just and fair public participation in highly impactful permit decision-making processes – whether by last minute offer of an MOU for a “tap” into the ACP in Buckingham or a post-public comment “community engagement package” whose “revitalization” promises have proved as toxic to the community psychologically as the CS 2 may prove physiologically, if built. In Dominion’s “new submission” to the Air Board, they included an outdated Air Board policy -- as if current -- that restricted the Air Board’s capacity to consider site suitability, environmental justice, climate change impacts, and more. To this witness, their action gave the impression of a threat to the Air Board’s future independent air permit decision-making if you should deny ACP’s air permit against Dominion’s interests. Taken together, actions by our governor, by DEQ, and by Dominion represent direct interference in Virginia’s regulatory processes meant to ensure public engagement may provide independent expert and first person impact information as evidence needed in air permit decision-making.

Particularly troubling to a growing number of Virginians have been the efforts by VDEQ’s Air Division to use all means possible to serve Dominion’s need to “prove” there is neither a significant population of majority minority people at their chosen CS 2 site, nor that the minority in question is a community largely of former slave and freedmen ancestry whose cultural resources are “worth” preserving.

Yet, Mr. Dowd and his staff both know and acknowledge that Union Hill is an environmental justice community. On Sept. 20, 2018 – the day before the close of public comments on the air permit, DEQ invited FoB to a hotspot meeting, in which Mike Dowd informed us, “Union Hill will be our lessons learned about environmental justice going forward.” It was also at that meeting where Air Division staff reiterated how poorly written by Dominion was the Buckingham air permit, that it required 3-4 revisions over years, noting, “our experts at the agency ended up teaching them the regulations. We have people who try to leave out information so that the DEQ may miss it.”

To which we, and many Virginians, reply, DEQ has known about the environmental justice issues of this site choice since 2015-early 2016 when 71 residents wrote letters to DEQ about the community issues of the Union Hill site choice (see new comment by Chad Oba, President, Friends of Buckingham). That DEQ chose to never respond to our reaching out to inform DEQ and ask for dialogue immediately after this site choice -- is a total failure of their responsibilities toward community engagement, factual information gathering, and fair distributive uses of taxpayer funding. Now that the environmental injustices of this siting have become a politically charged issue, DEQ cannot now say they will use their failures and lapses to teach them the regulations for future reviews only.
For, now DEQ is using Dominion’s tactics by “trying to leave out information so that the [Air Board] may miss it.” In the case of environmental justice review of this air permit and its site [un]suitability for the “activities proposed,” we the professional social science and legal experts in this field and the most impacted people have been for 3 years DEQ’s teachers on the regulations they must follow to ensure environmental injustices in site choices are not permitted (please see Dr. Mary Finley-Brooks new comment).

Site Suitability: more critiques

Mr. Dowd’s restatements on alternate site analyses on Dec. 19th included the claim that it was FERC who “decided” on the far smaller, more densely populated, African American majority Union Hill CS 2 site located on a major N/S evacuation route. Yet, unlike in Dominion’s “failed” draft air permit iterations with missing information caught by DEQ, FERC relied solely on Dominion’s information to compare the Midlands Rd. vs. Union Hill site. Since missing information involved basically every characteristic that matters to the choice, FERC affirmed “the primary site” -- Dominion’s preference.

For Mr. Dowd to cite the .02-acre greater construction footprint and 1-mile longer pipeline as the only reasons to choose a site less than ½ the size of Midlands Rd. does not even meet the standards of common sense. The ACP project made continuous changes before this air permit was completed and placed online by DEQ for public comments. Since the FEIS was issued on July 17, 2017, Dominion has changed its pipeline route into and out of the 68.5-acre parcel at least 3 times. More significantly to the Air Board for site alternative comparisons, Dominion is actively seeking enlargement of the 68.5-acre site in order to “conduct the activities for which they applied.” Thus, this smaller site cannot encompass what their business plan requires for “the activity” of transmitting ACP gas along the Transco to Dominion’s Cove Point, MD LNG facility for export.

These changes in site size for activities desired, have taken place since the air permit was filed as complete for public comment by DEQ on Aug. 8, 2018. And, they will not be resolved by Jan. 8, 2019, when the Air Board makes its CS 2 air permit decision. Thus, the “construction footprint” in the air permit under review is not accurate, rendering absurd Mr. Dowd’s present reliance on site data given by Dominion to FERC for comparisons over 2.5 years ago.

I ask you to please read Mr. Richard Walker’s Harper Family public comment for details of Dominion’s injunction of eminent domain seizure of over .79 acres of their family heritage land at the Transco ROW. The surveyor who took the survey points explained to Mr. Walker that the points taken ensured ACP’s purpose “to intersect the ACP with the Transco.” And, the Harper family seizure is one of two new ones at the apex of the original 68.5-acre triangle-shaped site. Dominion also has seized part of the Haskins heritage land from Cora Perkins nearest to the ACP CS 2 boundary-line.

Missing but absolutely necessary information provided by Dominion has shaped the entire regulatory decision-making process from the first.

In fact, it was missing demographic and historic cultural data that led me to undertake the community study Parts I & II, to “call out” in the exact ways that DEQ called out Dominion’s missing technological and construction information on the air permit. At the hotspot meeting
referred to above, Mr. Dowd admitted that leaving decisions about new toxic emissions source site choices to local Boards of Supervisors is problematic, “since local decisions come first in the process, DEQ needs to work more closely with Boards of Supervisors who are writing the future with very little information.”

In my research report, I described some of the consequences of missing information not given by Dominion to the Buckingham Planning Commission and Board of Supervisors. To that missing yet vital information, I now add consistent omissions of two key pieces of information given to decision-makers at each step of the regulatory application process. First, is the omission of accurate total site descriptions of the facilities to be co-located on this 68.5-acre parcel, their construction footprints given in site drawings not available to the public, and all construction details for this far larger compressor station complex than ever built by Dominion. Yet, it is sited where more densely settled households would create higher impacts.

In the special use permit, Dominion neither gave information about chemicals other than ammonia to be stored in the 2 above ground and 1 underground storage tanks, nor divulges their location on the site. Consequentially at this intersection of 4 existing Transco pipelines with the ACP underground, we find missing the “M&R station” co-located with the 54,000+ hp turbines “compressor station” on a site less than ½ the size of the alternative. Since the M&R Metering and Regulatory stations require pressurizing pipeline contents at highest allowed psis of pressure in order to achieve transmission over 200 miles bi-directionally, this absence is highly problematic.

Whether by Dominion or FERC or both together, their co-location doesn’t exactly pop out at the reader. Nor was it ever presented to the Buckingham Board of Supervisors. FERC’s ACP FEIS addresses M&R stations and Compressor stations separately – as if it were possible to achieve the “activities” necessary without their infrastructural linkage.2

ACP FEIS: Table 2.1.2-1 Compressor Stations, P. 2-6

<table>
<thead>
<tr>
<th>Compressor Station 2 Buckingham</th>
<th>mile-marker Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>County, VA</td>
<td>191.5</td>
</tr>
<tr>
<td></td>
<td>Construct new 53,518 hp station that would move gas through the proposed AP-1 mainline and allow bidirectional flow with the existing Transco pipeline system. Install four gas-driven compressor units, filter/separators, gas coolers, inlet air filters, exhaust silencers, tanks, blowdown silencers, heaters, and auxiliary generators. Construct new compressor, office auxiliary, utility gas, drum storage, and storage buildings.”</td>
</tr>
</tbody>
</table>

NOTE: no mention of M & R station or underground storage and above ground storage “tanks” in CS 2 site facility description.

2 FERC FEIS, July 17, 2017: Compressor Stations Table 2.1.2-1 Compressor Stations, P. 2-6; ACP FEIS: Table 2.1.2-2 M&R Stations for the Atlantic Coast Pipeline, P. 2-8; ACP FEIS: TABLE.4.11.1-5 Estimated Construction Emissions for the Atlantic Coast Pipeline, P. 4-557
“ACP FEIS: Table 2.1.2-2 M&R Stations for the Atlantic Coast Pipeline, P. 2-8

**Woods Corner M&R Station**
Buckingham County, VA 191.6 Station would take natural gas from the proposed AP-1 mainline and the existing Transco pipelines and could discharge into these pipelines.”

Readers must be on the alert for different location names used: it’s Buckingham compressor station but Woods Corner M & R station. Neither description of activities and facility details includes the other. When it comes to emissions, it becomes Woods Run M & R station.

Are these minor grievances or do they point to deliberate patterns to confuse anyone not privy to the accurate site information? Why are these continuous “errors” and omissions always to Dominion’s benefit and taken together add up to extremely significant consequences? Don’t they actively disrupt laypersons’ understanding about what exactly the CS 2 will consist of? Making it hard to imagine the activities/operations taking place at this complex and their 365 24/7 effects?

The types and sizes of the component parts of the CS 2 facility proposed for Union Hill must be considered in toto -- not fragmented to the advantage of Dominion. Thus, I continue to aggregate the cumulative impacts that have been fragmented by “leaving out information” in the thousands of pages of ACP application details one must read to perform this service.

**Putting well water into the cumulative picture: Wetlands and single source aquifer at CS 2**
This site map of the proposed CS 2 68.5-acre site was given to those who attended Dominion’s “Buckingham Community Advisory Committee meeting” where I was an observer in 2016. On the white site rendering please note the large wetlands in the upper part of the triangle of this parcel or East, and a smaller one from Ripley Creek in the lower right or South.
Now, when zeroing in below to drawing of built facilities, we find Dominion intends to fill the entire north or left side of their 68.5-acre parcel from frontage on Rt. 56, a major N/S route to close to their boundary line. The grey lines are the existing Transco within a large wetlands.

FERC’s FEIS omits use of the national wetlands inventory database to locate wetlands. When comparing the Midlands Rd. alternative with “the primary” site (Union Hill), FERC reports 0.0 wetlands for both: “While neither site contains wetlands, there is a small intermittent water body on the periphery of the primary site.” This is the small one to the south of ROW, below.

Yet here is the national inventory inconveniently registering the wetlands on the Transco ROW in this image created by Stephen Metts with an overlay of the CS 2 development footprint imagery, and a LIDAR surface.
If we were not so fortunate to have a geospatial expert helping us, left to Dominion or FERC information, the risks posed to 100% of Union Hill’s drinking water, in a single source aquifer, would effectively disappear. Perhaps one imagines a municipal water supply that does not exist in Buckingham, except in Dillwyn? In their FEIS, FERC explains, “The EPA defines a sole source aquifer or principal source aquifer area as one that supplies at least 50 percent of the drinking water consumed in the area overlying the aquifer, where contamination of the aquifer could create a significant hazard to public health, and where there are no alternative water sources that could reasonably be expected to replace the water supplied by the aquifer (EPA, 2016a). ...There are only two EPA-designated sole source aquifers in Virginia, but neither is in proximity to ACP facilities.”4 As if by magic wand, the hazards posed by CS 2 to Union Hill’s water supply miraculously disappear.

In rebuttal, I copy below the summary provided by Pam Dodds, Ph.D., Licensed Professional Geologist, in her Buckingham County Aquifer Report submitted in my Atlantic Coast Pipeline: Technical Information Response, Nationwide 12 permit Specific Wetland and/or Stream Crossings public comment to DEQ Water Control Board on July 15, 2018.

“...The aquifer underlying the ACP construction corridor in Buckingham County is referenced by the U.S. Geological Survey (https://pubs.usgs.gov/ha/ha730/ch_g/G-text8.html#piedblurdge) as a crystalline rock aquifer underlying the Piedmont Physiographic Province. The Candler Formation bedrock, consisting predominantly of phyllite, schist, and marble, underlies the James River at the proposed ACP HDD crossing. To the east, the Candler Formation also underlies the proposed ACP gas pipeline construction corridor to the area including the proposed location of Compressor Station #2; however, metagraywacke is also predominant, along with phyllite, schist, and marble.

There will be deforestation, soil compaction, and dewatering during construction of the proposed ACP gas pipeline installation. When rainwater is intercepted by trees on forested ridges, the rainfall gently penetrates the ground surface and migrates downward through the soil to bedrock. The water then flows through bedrock fractures and along bedding planes to continue migrating downward or to form seeps and springs where the fractures or bedding planes intercept the ground surface. Deforestation results in increased stormwater runoff and decreased groundwater recharge. Deforestation facilitates greater rainfall impact, causing erosion. The increased stormwater discharge transports sediment to receiving streams. Where sediment is released to receiving streams during construction activities, the sediment accumulates in the stream beds, increasing embeddedness, which remains in the stream bed after construction has been completed. The increased stormwater discharge in the streams also results in downstream stream bank erosion, releasing additional sediment to the streams. Increased embeddedness, resulting from sediment accumulation in streams, fills in the spaces between cobbles and boulders on the streambed.

Soil compaction from heavy equipment in the construction corridor, and also from stockpiled soil in the sediment underlying the stockpiled soil, results in increased stormwater runoff and decreased groundwater recharge. Dewatering of the pipeline trench intercepts groundwater and directs the groundwater through pipes and/or French drains onto the ground surface. Trench dewatering thereby increases surface runoff while decreasing groundwater. The pipes and/or

4 FEIS 4.3.1.2 Sole Source Aquifers 4-78
French drains remain in place after completion of construction, causing continual interception of groundwater and directing of the groundwater onto the ground surface. Again, the increased surface runoff transports sediment to receiving streams and increases stormwater discharge, causing downstream stream bank erosion.

Construction of the proposed ACP gas pipeline in Buckingham County will result in degradation of the water resources, both groundwater and surface water resources” (Dodds, 2018). Nothing could be plainer than that.

As a point of reference to the household impacts on water wells at this site, I copy our household map of the people living on all sides of the 68.5-acre CS 2 site, each of which has only well water for all water uses, including drinking water. These wetlands represent above ground and below ground networks of water that would be devastated if one of the many possible leaks at this site occurs.

Why the methods used in Union Hill Community Study are necessary to environmental justice review

I will not reiterate my critiques of the flawed methods used by Dominion, FERC, and finally DEQ Air Division when using census tract data only to refute the findings of the Union Hill Community Study whose statistical significance is far higher because the methods are replicable on the ground. Stephen Metts, of the New School, is a professional geospatial analyst whose expertise lies in demographic analyses for unconventional gas infrastructure projects. For the Air Board’s benefit, Stephen agreed to replicate DEQ’s methods to discover why theirs led to such faulty data on environmental justice. Therefore, please read Stephen Metts’s public comment
on why the Air Board must not accept DEQ’s demographic methods to refute the findings from my Union Hill Community Study Research and Methods Report.

The comparisons I made in that report on why our door-to-door method is highly statistically significant when census tract data is cited by NEPA as highly “unreliable,” now gain further credence for Virginia projects. On Dec. 18, 2018, Governor Northam issued Executive Order 27 (2018) establishing the Virginia Complete Count Commission for the 2020 Census.

The timing of this EO in the midst of the Air Board decision-making on the site chosen by Dominion for their CS 2 could not be better. EO 27 notes, “Historically, the U.S. Census Bureau has experienced low survey response rates from many communities across the Commonwealth” … with particular concerns for counting minority children. Since federal money is allocated based on census, Gov. Northam has found there is economic benefit in statistically more accurate household data.5

This Executive Order has particular significance for Buckingham County. You may know that counties are responsible for raising the funds needed to digitize and publish online in accessible formats their county data. This includes courthouse records both historic and current. With the burning of the courthouse in 1869 by vigilantes and, previously, when British soldiers burned the Scottsville, VA courthouse during the Revolutionary War, Buckingham’s historic documents are sparse. And, what is available has not been digitized. From working with both Stephan Metts and SELC to review the methods used by DEQ to arrive at such low population density at the CS 2 site using census tract data only, I learn that Buckingham lacks customary accurate address data. This includes 911 records online. Nor, apparently, does Buckingham’s census data disaggregate, which allows researchers to find “pockets of minorities” in its census tracts. I’m certain Stephen Metts analysis will better explain this fundamental problem.

To better understand why the methods we used in the community are far more effective no matter if census tract data were digitized, I ask you to read the public comments made by Union Hill Community Study team leaders, Ruby and John Laury, Marie Gillespie, Chad Oba, and Heidi Dhivya Berthoud. Team leaders describe why our community designed, culturally appropriate participatory methods led to far more accurate demographic findings than by census takers in this same neighborhood -- for reasons outlined in my Research and Methods Report. Further, I ask you to read the expert comment on the participatory community methods used in the study as reviewed by Professor James Igoe, an internationally respected anthropologist who specializes in community-based action research in diverse global contexts.

During this comment period, in tandem with working with Stephen Metts on the mapping to geo-locate our study household address points, I revised the Community Study Statistics in-a-nutshell below, adding study data on family heritage and unmarked graves located in Union Hill.

Union Hill Household Study (01-02-2019)
Lakshmi Fjord, Ph.D.

100 households were identified by US postal service markers in the ¼-mile to 2-mile radius of Union Hill, Buckingham, Virginia -- site chosen for Atlantic Coast Pipeline Virginia compressor station. ACP used Buckingham County’s 2010 average person per square mile census data - 29.6 people - as the site population.

Our study teams reached 77 households of 100 households for a 77% response rate.

Weekday residents of 77 households: 200
Weekend, bi-monthly, and annual family reunion numbers add hundreds more frequent visitors.

Of the 67 households for which we have a full set of data, 42 or 62.6%, are known descendants of formerly enslaved people at nearby plantations.
8 households report unmarked slave and freedmen graves on their property or nearby.

Race by self-identification: Taken together minorities make up 83.5% of residents:

<table>
<thead>
<tr>
<th></th>
<th>African American</th>
<th>Native American and African American</th>
<th>White</th>
<th>Native American and White</th>
<th>Native American</th>
<th>Hispanic</th>
<th>Asian</th>
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<tr>
<td>Count</td>
<td>124</td>
<td>27</td>
<td>33</td>
<td>9</td>
<td>3</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>%</td>
<td>62</td>
<td>13.5</td>
<td>16.5</td>
<td>4.5</td>
<td>1.5</td>
<td>1.5</td>
<td>.5</td>
</tr>
</tbody>
</table>

Weekday residents’ ages: 32% are Children; 25% Elderly. Both age ranges mask actual ages that are disproportionately the very young and very old (age range used to protect confidentiality):

<table>
<thead>
<tr>
<th>Age Range</th>
<th>0-6</th>
<th>7-18</th>
<th>18-21</th>
<th>22-40</th>
<th>41-65</th>
<th>65+</th>
<th>Unknown</th>
<th>Total</th>
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</thead>
<tbody>
<tr>
<td>Count</td>
<td>28</td>
<td>36</td>
<td>5</td>
<td>36</td>
<td>43</td>
<td>50</td>
<td>2</td>
<td>200</td>
</tr>
<tr>
<td>%</td>
<td>14</td>
<td>18</td>
<td>2.5</td>
<td>18</td>
<td>21.5</td>
<td>25</td>
<td>1</td>
<td>100</td>
</tr>
</tbody>
</table>

Health Data: For the 67 households where we were able to have extensive questionnaire time, 35 responded with pre-existing medical diagnoses or 59.32% of reached households.

Highest levels of existing diagnosed health conditions are for autoimmune conditions (asthma, allergies, multiple sclerosis, lupus) and lung/respiratory conditions (COPD, asthma, chronic bronchitis & pneumonia, congestive heart failure), circulatory conditions (heart disease and heart conditions, stroke) and diabetes -- all known to be caused by environmental toxins and exacerbated by them. Other conditions include arthritis, bipolar disorder, cancers (brain and breast cancer), epilepsy, kidney condition. migraines, light sensitivity, noise sensitivity, and skin disease.