

**IN THE UNITED STATES COURT OF APPEALS
FOR THE FOURTH CIRCUIT**

FRIENDS OF BUCKINGHAM; CHESAPEAKE BAY FOUNDATION, INC.,
Petitioners,

v.

STATE AIR POLLUTION CONTROL BOARD; RICHARD D. LANGFORD,
Chair of the State Air Pollution Control Board; VIRGINIA DEPARTMENT OF
ENVIRONMENTAL QUALITY; DAVID K. PAYLOR, Director, Virginia
Department of Environmental Quality,

Respondents,

and

ATLANTIC COAST PIPELINE, LLC,

Intervenor.

On Petition for Review of Approval and Issuance of Stationary Source Permit
No. 21599 by the State Air Pollution Control Board and the Virginia Department
of Environmental Quality

**AMICUS CURIAE BRIEF OF VIRGINIA STATE CONFERENCE NAACP,
UNION GROVE MISSIONARY BAPTIST CHURCH, SIERRA CLUB,
VIRGINIA INTERFAITH POWER & LIGHT, AND
KAIROS CENTER FOR RELIGIONS, RIGHTS, AND SOCIAL JUSTICE
IN SUPPORT OF PETITIONERS**

Elizabeth F. Benson
Sierra Club
2101 Webster Street, Suite 1300
Oakland, CA 94612
Telephone: (415) 977-5723
elly.benson@sierraclub.org

Counsel for Amici Curiae

TABLE OF CONTENTS

TABLE OF AUTHORITIES.....	ii
IDENTITY AND INTEREST OF <i>AMICI CURIAE</i>	1
STATEMENT OF COUNSEL.....	3
INTRODUCTION.....	3
ARGUMENT.....	6
I. DEQ and the Board Improperly Relied on Census-Based Analyses that Obscured the Existence of the Union Hill Environmental Justice Community.....	6
A. DEQ and the Board Relied on Three Separate Demographic Analyses Based on Over-broad Census Data Even After Their Results Were Invalidated.....	6
B. DEQ and the Board Improperly Relied on the Federal Energy Regulatory Commission’s Arbitrary Environmental Justice Analysis.....	11
II. DEQ and the Board Wrongly Assumed that Anticipated Compliance with Air Quality Standards Obviates Environmental Justice Concerns.....	16
A. Compliance with Air Quality Standards Does Not Guarantee that a New Facility Will Not have a Disproportionate Impact.....	16
B. The Compressor Station Would Emit Harmful Air Pollutants that Pose a Health Risk to Nearby Residents.....	18
C. Environmental Justice Communities Are Often Particularly Vulnerable to Increased Pollution.....	24
D. The Compressor Station Poses Additional Risks that Would Fall Disproportionately on the Union Hill Community.....	26
CONCLUSION.....	28

TABLE OF AUTHORITIES

Cases

<i>Am. Trucking Ass'ns v. EPA</i> , 283 F.3d 355 (D.C. Cir. 2002).....	20, 22, 23
<i>Calvert Cliffs' Coordinating Comm. v. U.S. Atomic Energy Comm'n</i> , 449 F.2d 1109 (D.C. Cir. 1971).....	17
<i>Cmtys. Against Runway Expansion, Inc. v. FAA</i> , 355 F.3d 678 (D.C. Cir. 2004).....	13
<i>Myersville Citizens for a Rural Cmty. v. FERC</i> , 783 F.3d 1301 (D.C. Cir. 2015).....	3
<i>Mid States Coal. for Progress v. Surface Transp. Bd.</i> , 345 F.3d 520 (8th Cir. 2003).....	13
<i>Sierra Club v. FERC</i> , 867 F.3d 1357 (D.C. Cir. 2017).....	15
<i>Standing Rock Sioux Tribe v. U.S. Army Corps of Eng'rs</i> , 255 F. Supp. 3d 101 (D.D.C. 2017).....	8

Statutes

Va. Code Ann. § 67-102(A)(11).....	17, 18
------------------------------------	--------

Other Authorities

Barbara Gottlieb & Larysa Dyrszka, MD, Physicians for Social Responsibility, <i>Too Dirty, Too Dangerous: Why health Professionals reject natural gas</i> (2017).....	19, 20, 27
Bryce Payne, Jr., et al., <i>Characterization of methane plumes downwind of natural gas compressor stations in Pennsylvania and New York</i> , 580 Science of the Total Environment (2017).....	19

EPA, <i>Health and Environmental Effects of Particulate Matter (PM)</i> , https://www.epa.gov/pm-pollution/health-and-environmental-effects-particulate-matter-pm	21
EPA, <i>Integrated Science Assessment for Oxides of Nitrogen Health Criteria</i> (2016).....	22
EPA, <i>Limitations and Caveats in Using EJSCREEN</i> , https://www.epa.gov/ejscreen/limitations-and-caveats-using-ejscreen	6, 10
EPA, <i>Ozone Pollution and Your Patients' Health</i> , https://www.epa.gov/ozone-pollution-and-your-patients-health/course-outline-and-key-points-ozone	23, 25
EPA, <i>What is EJSCREEN?</i> , https://www.epa.gov/ejscreen/what-ejscreen	9
Federal Interagency Working Group on Environmental Justice and NEPA Committee, <i>Promising Practices for EJ Methodologies in NEPA Reviews</i> (2016).....	9
Lambertville East Expansion Project, Environmental Assessment, FERC Docket No. CP18-26-000 (2018).....	14
Lesley Fleischman & Marcus Franklin, NAACP & Clean Air Task Force, <i>Fumes Across the Fence-line</i> (Nov. 2017).....	25
National Ambient Air Quality Standards for Ozone, 62 Fed. Reg. 38,856 (July 18, 1997).....	23
National Ambient Air Quality Standards for Particulate Matter, 78 Fed. Reg. 3,086 (Jan. 15, 2013).....	22
Southeast Market Pipelines Project, Final Environmental Impact Statement, FERC Docket No. CP14-554-000 (2015).....	13
Southwest Pennsylvania Environmental Health Project, <i>Summary on Compressor Stations and Health Impacts</i> (Feb. 24, 2015).....	19, 23

Stephen Metts, *An environmental justice and proximity review utilizing independent spatial analyses for the proposed Dominion Energy Buckingham Compressor Station, Virginia* (2019).....9

U.S. Environmental Protection Agency, *Final Guidance for Incorporating Environmental Justice Concerns in EPA’s NEPA Compliance Analyses* (1998).....4, 6, 8, 9, 10, 11, 24

Va. Exec. Order No. 73 (Oct. 31, 2017).....4, 5

Virginia DEQ, *Glossary*,
<https://www.deq.virginia.gov/Resources/Glossary/GlossaryE.aspx>.....4, 17

IDENTITY AND INTEREST OF *AMICI CURIAE*

Amici are environmental, civil rights, and faith-based groups that support environmental and public health protections for all, as well as inclusive decision-making processes. Some of the amici have members that live, work, and worship near the compressor station site in Buckingham County, Virginia.

Virginia State Conference NAACP is a nonprofit organization dedicated to ensuring the political, educational, social, and economic equality of rights of all persons, and to eliminating racial hatred and discrimination. This includes a focus on environmental justice and eliminating the disproportionate placement of industrial facilities and polluting infrastructure in communities of color. The organization also is committed to preserving African-American heritage. For these reasons, it has spoken out often against the proposed compressor station in the historic African-American community of Union Hill.

Union Grove Missionary Baptist Church is a historic African-American church dedicated to the teachings of Jesus Christ, including stewardship of the earth. It is located in the Union Hill community in Buckingham County, less than two miles from the compressor station site.

Sierra Club is a non-profit organization dedicated to practicing and promoting the responsible use of the earth's ecosystems and resources; educating and enlisting humanity to protect and restore the quality of the natural and human

environment; and using all lawful means to carry out these objectives. Its activities include working to protect communities from the effects of gas pipelines and associated infrastructure, including the Buckingham compressor station.

Virginia Interfaith Power & Light is a nonprofit organization that participates in statewide environmental justice and climate strategy and mobilization, advocates for climate justice, and provides resources and support to faith communities across the Commonwealth. Its activities include training members of faith communities on the theological foundations of “Creation care,” which centers on humanity’s responsibility to be a caretaker of the Earth and all living creatures.

Kairos Center for Religions, Rights, and Social Justice is an initiative that aims to strengthen and expand transformative movements for social change that can draw on the power of religions and human rights. It works with grassroots, community, and religious leaders at the forefront of economic and social justice efforts related to housing, health care, jobs and income, water, racial and gender justice, and more.

Amici support the Petitioners’ petition for review because, *inter alia*, the Virginia Department of Environmental Quality and the State Air Pollution Control Board approved the air permit for the Buckingham compressor station without adequately assessing the suitability of the proposed location in Union Hill. Some of

the amici called on these agencies to properly analyze the disproportionate risk of harm faced by the predominantly African-American community that lives near the proposed compressor station, which would emit dangerous air pollutants and pose other safety risks. The agencies nonetheless issued the permit without adequately assessing environmental justice considerations.

Amici submit this brief pursuant to Rule 29 of the Federal Rules of Appellate Procedure.

STATEMENT OF COUNSEL

No party or their counsel in this litigation authored any part of the brief. No person other than Amici or their undersigned counsel contributed money to fund preparing or submitting the brief.

INTRODUCTION

The owners of the proposed Atlantic Coast Pipeline plan to build three compressor stations along the pipeline’s 604-mile route—including one in Union Hill, a historic African-American community in Buckingham County, Virginia, that was founded by emancipated slaves. These massive industrial facilities “compress gas [and] move it through the system at high speeds.” *Myersville Citizens for a Rural Cmty. v. FERC*, 783 F.3d 1301, 1307 (D.C. Cir. 2015). Compressor stations pose numerous threats to human health and safety, including emitting air pollutants known to cause serious adverse effects such as respiratory,

cardiological, and neurological problems, lung damage, cancer, and premature death.

Environmental justice means “the fair treatment and meaningful involvement of all people regardless of race, color, faith, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.” Va. Exec. Order No. 73 (Oct. 31, 2017).¹ Fair treatment, in turn, “means that no group of people, including racial, ethnic, or socioeconomic group should *bear a disproportionate share of the negative environmental consequences* resulting from industrial ... operations....” U.S. Environmental Protection Agency, *Final Guidance for Incorporating Environmental Justice Concerns in EPA’s NEPA Compliance Analyses*, § 1.1.1 (1998) (emphasis added) (hereinafter “EPA Guidance”).²

Here, a predominantly African-American community would bear a disproportionate share of the negative consequences resulting from the Buckingham compressor station. And it is “reasonable to assume” that African-

¹ Virginia Department of Environmental Quality (“DEQ”) staff appears to misquote this as “the fair and meaningful involvement of all people,” omitting the word *treatment*. Dec. 19, 2018 Hearing Transcript at 54:25–55:1 (AR011715–16). But DEQ itself defines Environmental Equity/Justice as “*Equal protection from environmental hazards* for individuals, groups, or communities regardless of race, ethnicity, or economic status.” Virginia DEQ, *Glossary*, <https://www.deq.virginia.gov/Resources/Glossary/GlossaryE.aspx> (emphasis added).

² https://www.epa.gov/sites/production/files/2014-08/documents/ej_guidance_nepa_epa0498.pdf.

American populations, who suffer from high rates of asthma, have a “disproportionate” risk of adverse health effects from increased air pollution. Atlantic Coast Pipeline, Final Environmental Impact Statement (“Final EIS”) at 4-513–14 (AR012077–78).

Siting this massive polluting facility in the Union Hill community is a textbook example of environmental injustice. The Virginia Department of Environmental Quality (“DEQ”) and the State Air Pollution Control Board (“Board”) attempted to evade this plain reality in two ways. First, they relied on census tract-based analyses that obscured the very existence of the African-American community in Union Hill—and inexplicably continued to afford great weight to those analyses even after they were invalidated by a comprehensive door-to-door study demonstrating the actual demographics of the surrounding community. Second, DEQ and the Board irrationally assumed that environmental justice concerns only arise if a new polluting facility would cause violations of state or federal air quality standards. But such a facility would not receive a permit in the first place. And contrary to DEQ and the Board’s unsupported assumptions, compliance with air quality standards does not provide a guarantee “that no segment of the population, especially individuals most impacted and vulnerable, [will] bear disproportionately high or adverse effects from pollution.” Va. Exec. Order No. 73.

ARGUMENT

I. DEQ and the Board Improperly Relied on Census-Based Analyses that Obscured the Existence of the Union Hill Environmental Justice Community

A. DEQ and the Board Relied on Three Separate Demographic Analyses Based on Over-broad Census Data Even After Their Results Were Invalidated

A fundamental first step for addressing environmental justice concerns “is *identifying* minority and/or low-income communities that may bear disproportionately high and adverse effects as a result of a proposed action.” EPA Guidance at § 5.0 (emphasis added). At the December 2018 hearing, DEQ staff explained that DEQ considered numerous census-based tools when “assessing environmental justice in this case,” including a demographic analysis prepared by Environmental Systems Research Institute (ESRI), an environmental justice screening tool called EJSCREEN, and the environmental justice analysis in the Federal Energy Regulatory Commission’s (FERC) final environmental impact statement. Dec. 19, 2018 Hearing Transcript at 55:24–56:17 (AR011716–17).³ *See*

³ The Board’s Decision Statement states that the Board based its decision to approve the permit on, *inter alia*, the staff presentations and the additional documents submitted to the Board related to demographics. *See* State Air Pollution Control Board Decision at 1 (AR013982). *But see* EPA, *Limitations and Caveats in Using EJSCREEN*, <https://www.epa.gov/ejscreen/limitations-and-caveats-using-ejscreen> (“it is generally not appropriate to rely on any screening tool as the basis for a key decision”).

also id. at 68:9–11, 68:17–19 (AR011729) (noting that the ESRI, EJSCREEN, and FERC analyses all relied on census data).

The ESRI analysis concluded that the minority population in the area surrounding the compressor station is only in the 22–29% range (using intervals of 0.5, 1, and 2 miles). *Id.* at 68:17–25 (AR011729). Accordingly, like the FERC analysis (*see* section I.B, *infra*), the ESRI analysis used census data to conclude “that the area surrounding the compressor station is not an environmental justice area” for minority populations. *Id.* at 69:18–21 (AR011730). *See also* Final EIS at 4-513 (AR012077) (concluding the compressor station site is not located in a “designated minority environmental justice” population). The EJSCREEN results showed the “minority population around the compressor station to be in the range of 37 to 39%.” Dec. 19, 2018 Hearing Transcript at 69:24–70:1 (AR011730–31). *But see* Nov. 9, 2018 Hearing Transcript at 60:14-15 (AR010969) (acknowledging that EJSCREEN is a screening mechanism that should not be relied upon).

DEQ and the Board relied on these census-based results when considering the environmental justice implications of siting the compressor station at the proposed location in Union Hill. *See, e.g.*, Dec. 19, 2018 Hearing Transcript at 55:24–56:17 (AR011716–17). But as EPA has recognized:

[t]he fact that census data can only be disaggregated to certain prescribed levels (*e.g.*, census tracts, census blocks) suggests that *pockets of minority or low-income communities*, including those that may be experiencing

disproportionately high and adverse effects, *may be missed in a traditional census tract-based analysis.*

EPA Guidance at § 2.1.1 (emphasis added). *See also id.* (“Additional caution is called for in using census data due to the possibility of distortion of population breakdowns . . .”).

That is precisely what happened here. Although it is located in a majority-white census tract and county, the Buckingham compressor station site is surrounded by the predominantly African-American community of Union Hill. The census data underlying the ESRI, EJSCREEN, and FERC analyses covers a much larger area and does not reflect the demographics of this environmental justice community, where the health risks from the compressor station would be concentrated. For example, the three census tracts that FERC considered to be the relevant area for analysis encompass almost 500 square miles, but only approximately 0.6% of that area is within a mile of the Buckingham compressor station site.⁴ As a result, the census tract-based analyses effectively “diluted” the affected minority population in Union Hill. *See Standing Rock Sioux Tribe v. U.S. Army Corps of Eng’rs*, 255 F. Supp. 3d 101, 137 (D.D.C. 2017) (“the ‘unit of geographic analysis’ for the environmental-justice assessment should ‘be chosen so as not to artificially dilute or inflate the affected minority population’”) (quoting

⁴ *See* Final EIS at 4-513 (AR012077); U.S. Census Bureau, *American FactFinder*, <https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=bkmk> (last visited June 6, 2019).

Council on Environmental Quality, *Environmental Justice Guidance Under the National Environmental Policy Act*, 26 (Dec. 10, 1997)).⁵

Because “‘pockets’ of low-income [or minority] individuals may be masked by aggregated data” and “there are often many gaps associated with the [census] information..., it may be necessary ... to validate this information with the use of additional sources.” EPA Guidance at § 2.1.2. *See also id.* at § 2.1.1 (agencies “should attempt to identify whether high concentration ‘pockets’ of minority populations are evidenced in specific geographic areas”); EPA, *What is EJSCREEN?* (cautioning EJSCREEN users that “there is substantial uncertainty in demographic and environmental data, particularly when looking at small geographic areas”).⁶

Given the limitations of over-broad census data, federal guidance recommends using “local demographic data” when available. Federal Interagency Working Group on Environmental Justice and NEPA Committee, *Promising Practices for EJ Methodologies in NEPA Reviews*, 21 (2016).⁷ *See also* EPA

⁵ The census-based tools also failed to detect the “significant ‘hotspot’ of largely residential density within 1 mile of the proposed action.... This ‘hotspot’ is 51% more dense when compared to the county at large.” Stephen Metts, *An environmental justice and proximity review utilizing independent spatial analyses for the proposed Dominion Energy Buckingham Compressor Station, Virginia* (2019) at 10, 18 (AR013449, AR013457).

⁶ <https://www.epa.gov/ejscreen/what-ejscreen>.

⁷ https://www.epa.gov/sites/production/files/2016-08/documents/nepa_promising_practices_document_2016.pdf.

Guidance at § 2.1.2 (“Local resources should be sought for local and up-to-date knowledge of a given area and its inhabitants as well as a lead to other sources of information.”); EPA, *Limitations and Caveats in Using EJSCREEN* (“It is often very useful to obtain ... local knowledge, data and concerns.”).⁸

Here, just such an “additional source” of “local demographic data” was available: Dr. Lakshmi Fjord’s door-to-door survey showing that more than 83.5% of community members residing within a 1.1-mile radius of the proposed compressor station are people of color. Jan. 2019 SELC Comments at Attachment D (AR012724). The comprehensive study unambiguously established that “the minority population percentage of the affected area is ‘meaningfully greater’ than the minority population percentage in the general population.” EPA Guidance at § 2.1.1. DEQ and the Board nonetheless continued to rely on the ESRI, EJSCREEN,⁹ and FERC analyses, even after Dr. Fjord’s study invalidated the results of these census-based tools. *See* Dec. 19, 2018 Hearing Transcript at 55:24-56:17 (AR011716–17).

⁸ <https://www.epa.gov/ejscreen/limitations-and-caveats-using-ejscreen>.

⁹ DEQ staff acknowledged that “EJSCREEN should only be used as a screening tool, and is an indicator if further investigation is warranted.” Dec. 19, 2018 Hearing Transcript at 57:3-5 (AR011718). Here, further investigation had already occurred, and it showed that the EJSCREEN results did not reflect the demographics of the community near the Buckingham compressor station site.

B. DEQ and the Board Improperly Relied on the Federal Energy Regulatory Commission’s Arbitrary Environmental Justice Analysis

In addition to utilizing over-broad census tract data, FERC engaged in an entirely arbitrary analysis to arrive at its conclusion that the Buckingham compressor station would not be located in a minority environmental justice community.¹⁰ *See* Dec. 19, 2018 Hearing Transcript at 67:24–68:1 (AR011728–29) (noting that FERC concluded the area surrounding the compressor station “can not quali[f]y for the minority population indicator”). Given the unsupported and unreasoned nature of FERC’s analysis, DEQ and the Board should not have given it any weight. Instead, it was one of the main factors that they relied on. *See id.* at 55:24-56:17 (AR011716–17).

FERC claims it considered environmental justice impacts under the EPA Guidance’s three-step approach. Final EIS at 4-512 (AR012077). But the EPA Guidance actually has two steps: (1) “Does the potentially affected community include minority and/or low-income populations?” and (2) “Are the environmental impacts likely to fall disproportionately on minority and/or low-income members of the community and/or tribal resources?” EPA Guidance at § 3.2.1. Here, the answer to both questions is yes.

¹⁰ FERC’s EIS and certificate of public necessity and convenience for the Atlantic Coast Pipeline project are the subject of several petitions for review currently pending in the D.C. Circuit, including one filed by Friends of Buckingham, Chesapeake Bay Foundation, and Sierra Club. *Atl. Coast Pipeline, LLC v. FERC*, No. 18-1224 (D.C. Cir.).

FERC utilized a flawed methodology seemingly designed to avoid this conclusion. First, FERC designated three large census tracts in Buckingham County, ranging from 23.7 to 42.7% African-American, as the relevant area for its analysis. *See* Final EIS at 4-513 (AR012077), App. U, Table U-1 (AR012036). FERC found that a low-income population exists if the “percentage of all persons living below the poverty level” in a census tract was “*more than the percentage* for the *state* where the census tract is located.” Final EIS at 4-512 (AR012076) (emphasis added). Yet FERC inexplicably used a different test for minority environmental justice populations, finding that such a population exists if the percentage of minorities was “more than 50 percent of the tract’s population” or “at least *10 percentage points more* than in the comparison group, which was the *county* in which the census tract was located.” *Id.* at 4-512 n.30 (AR012076) (emphasis added).

This inconsistent approach meant that low-income populations in the three census tracts at issue were compared against the demographics of Virginia, while minority populations in those tracts were compared against the demographics of Buckingham County. But Buckingham County only has four census tracts. Because at least three of those tracts have a higher percentage of African-Americans than the state, it is not surprising that the county also does. Using the county as the comparison group thus decreased the likelihood that FERC would

identify minority environmental justice populations. *See Mid States Coal. for Progress v. Surface Transp. Bd.*, 345 F.3d 520, 541 (8th Cir. 2003) (“an agency must compare the demographics of an affected population with demographics of a more general character (for instance, those of an entire state)”).

FERC itself has recognized that using the *state* as a comparison group (instead of the *county* in which a census tract is located) can provide a “more equitable basis for identification of environmental justice populations within census tracts,” and did so here for low-income populations—but not for minority populations. Southeast Market Pipelines Project, Final Environmental Impact Statement, FERC Docket No. CP14-554-000 at 3-215 n.14 (2015). *See Cmtys. Against Runway Expansion, Inc. v. FAA*, 355 F.3d 678, 689 (D.C. Cir. 2004) (stating that an agency’s methodology must be “reasonable and adequately explained”). FERC’s arbitrary decision to use the county’s demographics as the denominator resulted in areas with high percentages of minorities not being designated as environmental justice communities.

Census Tract 9302.01 in Buckingham County demonstrates the arbitrary nature of FERC’s approach. The tract has a minority population of 45.6%. Final EIS at App. U, Table U-1 (AR012036). This is only 7.9 *percentage points* higher than Buckingham County’s minority population (37.7%) and therefore falls short

of the threshold set by FERC.¹¹ But the tract’s minority population is *14.8 percentage points* higher (and 48 percent higher) than the minority population statewide (30.8%). And using FERC’s flawed methodology meant that this tract was not designated a minority environmental justice population even though the percentage of African-Americans living there (42.7%) is more than double the statewide percentage (19.3%).¹²

Unsurprisingly, FERC’s arbitrary approach, including using over-broad census tract data and an inappropriate comparison group, failed to identify minority environmental justice communities located in the immediate vicinity of the Atlantic Coast Pipeline and the Buckingham compressor station. The Union Hill community surrounding the compressor station site is 83.5% minority, which under any sensible definition is “meaningfully greater” than the state minority population (30.8%) – and even the county (37.7%). FERC’s environmental impact

¹¹ It is 21 *percent* higher. In other cases, FERC has identified a minority environmental justice community when the population is “ten percent” higher than the reference population. *See, e.g.*, Lambertville East Expansion Project, Environmental Assessment, FERC Docket No. CP18-26-000 at 34 (2018). “Ten percentage points higher” and “ten percent higher” are not equivalent tests—and the former decreases the likelihood that environmental justice populations will be detected (as demonstrated by the Census Tract 9302.01 example).

¹² The African-American population in Census Tract 9302.01 is 8 percentage points higher than the county (34.7%), but more than 23 percentage points higher than the state (19.3%). Final EIS at App. U, Table U-1 (AR012036).

statement also failed to include any discussion whatsoever of the characteristics of the predominantly African-American community of Union Hill.¹³

These failures skewed FERC's selection of alternatives. FERC considered an alternative site for the compressor station near Midland Road but concluded it did "not offer a significant advantage." Final EIS at 3-58 (AR011155). But because it failed to designate Union Hill as an environmental justice community, FERC's decision-making did not take into account that the Midland Road alternative may have offered the advantage of being a "feasible alternative[] with a lower environmental-justice impact." *Sierra Club v. FERC*, 867 F.3d 1357, 1370 (D.C. Cir. 2017). Had FERC properly considered these factors, it could have potentially chosen a less damaging site for the compressor station. Instead, FERC failed to grapple with the differences in population density and demographics of the areas surrounding the Midland Road and Union Hill sites. DEQ then relied on FERC's flawed alternatives analysis. *See* Dec. 19, 2018 Hearing Transcript at 37:21–22, 44:14–22, 46:25–48:24 (AR011698, AR11705, AR11707–09).

¹³ In *Sierra Club v. FERC*, 867 F.3d 1357 (D.C. Cir. 2017), FERC similarly used over-broad census tract data and consequently failed to designate a neighborhood surrounding a compressor station site in Albany, Georgia as a minority environmental justice community—even though 82% of the residents within a one-mile radius were African-American. But in that case, the court found that FERC "recognize[d] the existence and demographics of the neighborhood in question, and discussed the neighborhood extensively." *Id.* at 1370. Here, in contrast, FERC "refused entirely to discuss the demographics" and characteristics of the Union Hill community. *Id.* at 1369. *See* Final EIS 4-512 to 4-515 (AR012076–79).

In considering the environmental justice consequences of siting the proposed compressor station in Union Hill, DEQ and the Board should not have relied on FERC’s arbitrary analysis or other similarly flawed census-based results.

II. DEQ and the Board Wrongly Assumed that Anticipated Compliance with Air Quality Standards Obviates Environmental Justice Concerns

A. Compliance with Air Quality Standards Does Not Guarantee that a New Facility Will Not have a Disproportionate Impact

DEQ concluded that “[r]egardless of the demographics of the area surrounding the compressor station, [it] will not cause a disproportionate adverse impact to the community” because, *inter alia*, modeled concentrations of air pollution do not exceed air quality standards. Jan. 8, 2019 Hearing Transcript at 17:25–18:4, 18:15-18 (AR013878–79). *See also* Nov. 9, 2018 Hearing Transcript at 85:14-16 (AR010994) (“Our view is that if ... all the health-based standards are being complied with, then there really is no disproportionate impact...”).¹⁴

But DEQ’s own definition of environmental justice recognizes that the pertinent inquiry is whether any population of people would be “forced to *shoulder a disproportionate share* of negative environmental impacts of pollution or

¹⁴ FERC articulated this notion in the Final EIS, concluding that “air emissions would not exceed regulatory permissible levels” and, “[a]s a result, no disproportionately high and adverse impacts on environmental justice populations as a result of air quality impacts ... would be expected....” Final EIS at 4-514 (AR011385). *See also* Dec. 19, 2018 Hearing Transcript at 67:3-19 (AR011728) (DEQ staff reciting this conclusion); *id.* at 26:3-5 (AR011687); *id.* at 47:25–48:5 (AR011708–09); *id.* at 70:2-6 (AR011731).

environmental hazard....” Virginia DEQ, *Glossary* (emphasis added).¹⁵ *See also* Va. Code Ann. § 67-102(A)(11). And meeting required standards is not equivalent to having no impact. *See, e.g., Calvert Cliffs’ Coordinating Comm. v. U.S. Atomic Energy Comm’n*, 449 F.2d 1109, 1123 (D.C. Cir. 1971) (meeting “prescribed standards” only means that a polluting source has met a minimum condition; “there may be significant environmental damage (*e.g.*, [air] pollution), but not quite enough to violate applicable (*e.g.*, [air] quality) standards.”). The compressor station would contribute substantial amounts of air pollution (including pollutants with no known safe exposure level), and would have adverse health and safety impacts. *See* sections II.B-D, *infra*. These impacts would fall on the surrounding, predominantly African-American community.

In other words, whether a proposed facility will cause a violation of air quality standards is a distinct inquiry from whether it will have a disproportionate adverse impact on an environmental justice population. Otherwise, consideration of environmental justice issues would be limited to facilities that cannot lawfully obtain air permits. *See, e.g.*, Jan. 8, 2019 Hearing Transcript at 13:4-9 (AR013874) (“All Virginia Air permits require ... assurance the source will not cause any violation of EPA’s health-based national ambient air quality standards, or Virginia State air toxic standards.”).

¹⁵ <https://www.deq.virginia.gov/Resources/Glossary/GlossaryE.aspx>.

This illogical stance is also at odds with the “policy of the Commonwealth” to “[e]nsure that development of new ... energy ... facilities does not have a disproportionate adverse impact on economically disadvantaged or minority communities.” Va. Code Ann. § 67-102(A)(11). Here, a new energy facility would have adverse health and safety impacts (including increased emissions of harmful air pollutants), and those impacts would fall disproportionately on the predominantly African-American community of Union Hill. There can be no doubt that this policy of the Commonwealth applies to new facilities that are being developed in accordance with applicable legal requirements. Yet DEQ and the Board’s view that compliance with applicable standards resolves environmental justice concerns would render this policy superfluous. They adopt the untenable position that only a proposed energy facility that would cause violations of air quality standards—*i.e.*, a proposed facility that would not receive an air permit in the first instance—can have a disproportionate impact on environmental justice communities.

B. The Compressor Station Would Emit Harmful Air Pollutants that Pose a Health Risk to Nearby Residents

Compressor stations pose serious health and safety risks to the communities in which they are located. Air pollution associated with the Atlantic Coast Pipeline includes “compressor station emissions, which include carbon monoxide (CO), carbon dioxide (CO₂), methane, and nitrous oxide (NO_x); volatile organic

compounds (VOCs); and particulate matter with an aerodynamic diameter less than or equal to 2.5 microns (PM_{2.5}).” Final EIS at 4-513 (AR012077).¹⁶ *See also* Barbara Gottlieb & Larysa Dyrszka, MD, Physicians for Social Responsibility, *Too Dirty, Too Dangerous: Why health professionals reject natural gas*, 22 (2017) (“Air samples collected around compressor stations have shown elevated concentrations of many of the dangerous substances associated with fracked gas, including volatile organic compounds, particulate matter and gaseous radon, among others.”) (footnote omitted) (hereinafter “Physicians Report”).¹⁷

The national ambient air quality standards (NAAQS) that DEQ and the Board rely on to conclude there will be no disproportionate impacts “address regional air quality concerns ... [but] do not adequately assess risk to human health for residents living in close proximity to polluting sources..., where emissions can be highly variable.” Southwest Pennsylvania Environmental Health Project, *Summary on Compressor Stations and Health Impacts* 6 (Feb. 24, 2015)¹⁸ (cited in Final EIS at 4-514 (AR012078)). *See also id.* at 6-7 (“Current protocols used for

¹⁶ *See also* Bryce Payne, Jr., et al., *Characterization of methane plumes downwind of natural gas compressor stations in Pennsylvania and New York*, 580 *Science of the Total Environment*, 1214-1221 (2017).

¹⁷ <https://www.psr.org/wp-content/uploads/2018/05/too-dirty-too-dangerous.pdf>.

¹⁸ <https://www.environmentalhealthproject.org/sites/default/files/assets/downloads/summary-compressor-station-emissions-and-health-impacts-02.24.2015.pdf>.

assessing compliance with ambient air standards do not adequately determine the intensity, frequency or durations of the actual human exposures” to air pollutants released by compressor stations). And for ozone and particulate matter, there is no “threshold concentration below which these pollutants are known to be harmless.” *Am. Trucking Ass’ns v. EPA*, 283 F.3d 355, 360 (D.C. Cir. 2002). *See also* Stationary Source Permit to Construct and Operate at 21 (AR013958) (acknowledging possibility of “[e]xceedances of emissions limitations or operational restrictions”).

As a result of this pollution, “[p]eople living near compressor stations have experienced a range of symptoms ranging from skin rashes to gastrointestinal, respiratory, neurological and psychological problems.” Physicians Report at 22 (footnotes omitted).¹⁹ FERC acknowledged that “[t]hese air pollutants are known

¹⁹ The Physicians Report cites two health consultations conducted by the federal Agency for Toxic Substances and Disease Registry. The first found that people living near a compressor station in Pennsylvania “were exposed to levels of chemicals in the air at which ‘some sensitive subpopulations (e.g. asthmatics, elderly) may experience harmful effects....’” Physicians Report at 23 (footnote omitted). The agency “noted that the air quality studies conducted at the site ‘may not have adequately captured uncommon but significant incidents when peak emissions (e.g. unscheduled facility incidents, blowdowns or flaring events) coincide with unfavorable meteorological conditions (e.g. air inversion).’” *Id.* (footnote omitted). The agency also examined air quality near a different compressor station in Pennsylvania and found fine particulate matter at levels where short-term exposure can harm sensitive populations like those with respiratory problems or heart disease, and long-term exposure can cause an increase in mortality, respiratory problems, hospitalizations, preterm births, and low birth weight. *Id.*

to increase the effects of asthma and may increase the risk of lung cancer,” and that:

When considering the health impacts associated with compressor station emissions, increased rates of lung cancer were identified associated with the compounds emitted by compressor station operations (Nafstad et al., 2003). Studies have shown that several different cancer-related compounds and chemicals are present in the air in proximity to construction and operation of compressor stations, and that some of these have documented health effects on the general and vulnerable populations (Southwest Pennsylvania Environmental Health Project, 2015).

Final EIS at 4-514 (AR012078).

The Buckingham compressor station would release hundreds of tons of pollutants into the air—including pollutants for which there is no known safe exposure level. For example, the facility is permitted to release 43.2 tons per year of PM_{2.5}. Intra-Agency Memorandum, Jan. 9, 2019, at 11 (AR013974).²⁰ The EPA has linked particulate matter “to a variety of problems, including: premature death in people with heart or lung disease; nonfatal heart attacks; irregular heartbeat; aggravated asthma; decreased lung function; [and] increased respiratory symptoms, such as irritation of the airways, coughing or difficulty breathing.” EPA, *Health*

²⁰ ACP estimated that the compressor station would cause the PM_{2.5} concentration (24-hour averaging period) to increase by 44 percent, from 15 micrograms per cubic meter to 21.6 micrograms per cubic meter. July 2018 Air Quality Analysis at 2 (AR001995). Exposure to concentrations as low as 10 micrograms per cubic meter, which is lower than the current federal standard, is associated with a 2% increase in premature deaths for exposure as brief as two days, and a 7-9% increase in the long term. Jan. 2019 SELC Comments at 8 (AR012695).

*and Environmental Effects of Particulate Matter (PM).*²¹ See also Jan. 8, 2019 Hearing Transcript at 43:9-11 (AR013904) (“Numerous studies have linked PM2.5 to many health problems, increased asthma to hospital visits.”). Particulate matter may “cause[] adverse health effects at any non-zero atmospheric concentration.” *Am. Trucking Ass’ns*, 283 F.3d at 359-60. See also National Ambient Air Quality Standards for Particulate Matter, 78 Fed. Reg. 3,086, 3,098 (Jan. 15, 2013). Chairman Langford recognized that particulate matter “does not have ... a threshold” below which it has no discernible impact, such that “any concentrations have some impact.” Jan. 8, 2019 Hearing Transcript at 39:20–40:1 (AR013900–01). This further undermines DEQ and the Board’s assumption that there can be no disproportionate impact absent a violation of air quality standards.

The increase in emissions due to compressor station operation also includes 34.2 tons per year of NOx and 9.79 tons per year of VOCs. Intra-Agency Memorandum at 11 (AR013974). Short-term exposure to nitrogen oxides can trigger asthma attacks, and may be related to chronic obstructive pulmonary disease and other respiratory diseases. EPA, *Integrated Science Assessment for Oxides of Nitrogen Health Criteria*, lxxxiii (2016). Some VOCs, such as benzene

²¹ <https://www.epa.gov/pm-pollution/health-and-environmental-effects-particulate-matter-pm>.

and formaldehyde, are carcinogens.²² Compressor stations can have highly variable emissions, including large spikes of VOC emissions.²³

Ozone forms when nitrogen oxides react with VOCs. Ozone exposure can result in “respiratory symptoms, reduced lung function, and airway inflammation, as well as more serious effects such as increased hospital admissions and increased daily mortality.” EPA, *Ozone Pollution and Your Patients’ Health*.²⁴ Like particulate matter, ozone can cause adverse health effects at levels below the national ambient air quality standards. *See* National Ambient Air Quality Standards for Ozone, 62 Fed. Reg. 38,856, 38,863 (July 18, 1997) (“Nor does it seem possible ... to identify [an ozone concentration] level at which it can be concluded with confidence that no ‘adverse’ effects are likely to occur.”); *Am. Trucking Ass’ns*, 283 F.3d at 360.

In sum, there will be “[h]ealth impacts from compressor station emissions,” Final EIS at 4-514 (AR012078), and those adverse impacts will fall disproportionately on the predominantly African-American community living in close proximity to the compressor station site.

²² The compressor station may emit 4.25 tons/year of formaldehyde. Stationary Source Permit to Construct and Operate at 24 (AR013961).

²³ *See, e.g.*, Southwest Pennsylvania Health Project, *Summary on Compressor Stations and Health Impacts*, 6-9 (Feb. 24, 2015).

²⁴ <https://www.epa.gov/ozone-pollution-and-your-patients-health/course-outline-and-key-points-ozone>.

C. Environmental Justice Communities Are Often Particularly Vulnerable to Increased Pollution

DEQ and the Board's reliance on air quality standards also ignores that environmental justice populations are likely to be "more susceptible to pollution and environmental degradation (*e.g.*, reduced access to health care), and are often less mobile or transient than other populations (*e.g.*, unable to relocate to avoid potential impacts)." EPA Guidance at § 5.0. *See also* Final EIS at 4-513 (AR012077) ("Due to high rates of asthma within the overall African American community, we consider this community especially sensitive."). These factors "can contribute to minority and/or low-income communities bearing disproportionately high and adverse effects." EPA Guidance at § 5.0. *See also id.* at § 3.2.2 (noting that even impacts that "are not significant in the NEPA context" can nonetheless be "particularly disproportionate or particularly severe on minority and/or low-income communities").

FERC found it "reasonable to assume" that African-American communities have a "disproportionate" risk of experiencing adverse health effects from increased air pollution. Final EIS at 4-514 (AR012078). *See also id.* ("Due to ... compressor station emissions, African American populations near ACP ... could experience disproportionate health impacts due to their susceptibility to asthma.");

EPA, *Ozone Pollution and Your Patients' Health*²⁵ (“People with pre-existing respiratory diseases such as asthma are especially susceptible to ozone exposure”); Lesley Fleischman & Marcus Franklin, NAACP & Clean Air Task Force, *Fumes Across the Fence-line*, 4 (Nov. 2017) (“As a result of ozone increases due to natural gas emissions during the summer ozone season, African American children are burdened by 138,000 asthma attacks and 101,000 lost school days each year.”).²⁶ But as a result of its arbitrary methodology, *see* section I.B, *supra*, FERC did not identify a minority environmental justice community near the Buckingham compressor station.

Here, many of the elderly residents who participated in Dr. Fjord’s survey reported suffering from asthma, chronic obstructive pulmonary disease, bronchitis, pneumonia, diabetes, heart disease and other respiratory and heart ailments. Jan. 2019 SELC Comments at Attachment D (AR012724). DEQ and the Board’s bare reliance on anticipated compliance with air quality standards did not account for the heightened vulnerability of this population to increased levels of air pollutants, some of which do not have a safe exposure level. Their increased susceptibility to pollution due to these pre-existing health conditions is one reason why community

²⁵ <https://www.epa.gov/ozone-pollution-and-your-patients-health/course-outline-and-key-points-ozone>.

²⁶ https://www.naacp.org/wp-content/uploads/2017/11/Fumes-Across-the-Fence-Line_NAACP-and-CATF-Study.pdf.

members requested (but did not receive) a health assessment *before* DEQ and the Board issued a permit for the compressor station.

DEQ and the Board erred in adopting the unsupported position that anticipated compliance with air quality standards obviates environmental justice concerns, and in ignoring that environmental justice populations like the Union Hill community are often more susceptible to increases in air pollution than the general population.

D. The Compressor Station Poses Additional Risks that Would Fall Disproportionately on the Union Hill Community

The compressor station’s adverse impacts on Union Hill residents are not limited to the permitted increases in air pollution. FERC acknowledged that “[h]ealth risks related to ACP ... would be associated with an unanticipated ... compressor station failure, gas leaks, and blowdowns at compressor stations.” Final EIS at 4-514 (AR012078). *See also* Stationary Source Permit to Construct and Operate at 26 (AR013963) (directing permittee to “calculate the amount of hexane exhausted during any venting event”); Dec. 19, 2018 Hearing Transcript at 41:9-10 (AR011702) (acknowledging that other risks include “gas leak, fire or other danger”); Nov. 9, 2019 Hearing Transcript at 77:7-9 (AR010986) (noting with regard to leaks that “[t]here’s just such a variety of things that could occur....”).

In addition to potentially catastrophic events such as an explosion or fire, there would be adverse impacts due to noise and lighting from this massive industrial facility. *See* Jan. 8, 2019 Hearing Transcript at 33:15-19 (AR013894) (Chairman Langford acknowledging that “[s]ocial value may be diminished in the local area due to possible noise or light issues.”); Dec. 19, 2018 Hearing Transcript at 44:8-9 (AR011705) (acknowledging there are “safety, emergency response and quality of life issues”).

The predominantly African-American community living near the compressor station would be forced to bear the burden of increased air pollution, constant noise, and heightened safety threats. And these same residents would be exposed to adverse health and safety impacts from additional polluting infrastructure associated with the compressor station. *See, e.g.*, Dec. 19, 2018 Hearing Transcript at 21:3-6 (AR011682) (“the proposed compressor station is located where the Atlantic Coast Pipeline will intersect the existing Transcontinental gas pipeline, a major north-south pipeline”); *see also* Physicians Report at 21-22 (describing health risks associated with pipelines). DEQ and the Board’s flawed environmental justice assessment also failed to account for these cumulative impacts on the Union Hill community.

CONCLUSION

For the reasons discussed above, Amici respectfully request that the Court grant the petition for review, and vacate and remand the air permit.

DATED: June 7, 2019

Respectfully submitted,

/s/ Elizabeth F. Benson
Elizabeth F. Benson
Sierra Club
2101 Webster Street, Ste. 1300
Oakland, California 94612
(415) 977-5723
elly.benson@sierraclub.org

Counsel for Amicus Curiae

CERTIFICATE OF COMPLIANCE

This brief complies with the type-volume limitations of Fed. R. App. P. 29(a)(5) and 32(a)(7)(B) because this brief contains 5,990 words, excluding the parts of the brief exempted by Fed. R. App. P. 32(a)(7)(B)(iii).

This brief complies with the typeface requirements of Fed. R. App. P. 32(a)(5) and the type style requirements of Fed. R. App. P. 32(a)(6) because this brief has been prepared in a proportionately spaced typeface using Microsoft Word in 14-point Times New Roman font.

DATED: June 7, 2019

/s/ Elizabeth F. Benson
Elizabeth F. Benson
Counsel for Amicus Curiae

CERTIFICATE OF SERVICE

I hereby certify that on June 7, 2019, I electronically filed the foregoing brief with the Clerk of the Court by using the appellate CM/ECF System and served copies of the foregoing via the Court's CM/ECF system on all ECF-registered counsel.

DATED: June 7, 2019

/s/ Elizabeth F. Benson
Elizabeth F. Benson
Counsel for Amicus Curiae