December 2, 2022

Secretary Shawn M. Garvin
Delaware Department of Natural Resources and Environmental Control
89 Kings Highway SW
Dover, DE 19901

Submitted to Docket #2022-P-MULTI-0012

Dear Secretary Garvin,

Thank you for this opportunity to comment on the Bioenergy Development Company, LLC ("BDC") Bioenergy Innovation Center Project, proposed to be located at 28338 Enviro Way, Seaford, Sussex County, Delaware (the "Project"). The Assateague Coastal Trust, Delaware Working Families Party, Food & Water Watch, Johns Hopkins Center for a Livable Future, Latino Initiative on Restorative Justice, Inc., Methodist Action Program, Namati US Environmental Justice Program, Sierra Club Delaware Chapter, Socially Responsible Agriculture Project, and Sussex Health and Environmental Network ("Commenters") represent thousands of Delawareans deeply committed to protecting their environment, their climate, and the wellbeing

of their communities. Commenters request that the Delaware Department of Natural Resources and Environmental Control ("DNREC") deny BDC's permit applications for the reasons detailed herein. DNREC cannot allow the Project to proceed because it poses unacceptable risks to the natural environment and is contrary to the interests of Delawareans. Moreover, BDC comes before DNREC with a half-baked proposal strewn with gaps, contradictions, and missing information. BDC's failure to submit complete, coherent, and legally compliant applications and DNREC's failure to adequately review the applications and fashion draft permits that protect the environment and human health prohibit DNREC from issuing the permits as proposed.

BDC proposes to build a so-called "biogas" plant and refinery and to significantly expand its existing compost operation at the Bioenergy Innovation Center. BDC purchased the property from Perdue AgriBusiness, LLC for $10.00 (ten and 00/100 dollars) after Perdue abandoned its financial and operationally unsuccessful poultry waste pelletizer plant.[1] The Project would involve aggregating poultry waste from four states[2] – up to 200,000 tons per year ("tpy") – for use as "feedstock" in anaerobic digesters to produce methane, carbon dioxide, and other gases. BDC proposes to then "upgrade," or refine, the biogas mixture into nearly pure methane, requiring the venting or other disposal of the CO_2 and other constituents, so that it can be trucked to and injected into the regional natural gas pipeline. In addition to building and operating four large, above ground anaerobic digesters, a biogas refinery, and the many necessary accessory components, BDC also proposes to install a wastewater pre-treatment plant to treat liquid effluent generated by the gas production process before trucking it to the City of Seaford's wastewater treatment plant for discharge into the Nanticoke River.[3] Finally, BDC proposes to almost double its existing compost operation, from a maximum volume of 30,000 tpy to 56,000 tpy.

The Project would also further entrench and incentivize the factory farm industry in the region and the enormous amount of waste and pollution it generates.[4] By monetizing the very waste that is already causing widespread damage to Delaware's environment, the Project would attempt to create a new revenue stream for BDC, where others like Perdue have failed. BDC's proposal is entirely dependent on the continued generation of highly pollutive poultry industry waste. Delaware already leads the nation in wells contaminated with nitrates,[5] which have been linked to birth defects, miscarriages, various cancers, and what is known as "blue baby syndrome."[6] Processing waste through anaerobic digesters is known to exacerbate nutrient

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[1] RRFP: Proof of Ownership at 2 of 11. Commenters provide citation pages with reference to the full PDF documents provided on DNREC's website as of December 1, 2022, for the Project to avoid confusion because many of the PDFs have multiple, individually paginated documents within them.

[2] Section III.P of the draft Resource Recovery Facility Permit ("RRFP") would allow BDC to import poultry industry waste from various facilities throughout Delaware, Maryland, Pennsylvania, and Virginia.

[3] As discussed below, there appears to be no executed agreement between BDC and the City of Seaford allowing DNREC to conclude that BDC will in fact handle its wastewater in this manner.

[4] *See generally* Ron MacArthur, *Bioenergy Reveals Plans for Recycling Facility*, CAPE GAZETTE (Feb. 26, 2021), https://www.capegazette.com/article/bioenergy-reveals-plans-recycling-facility/215697 (quoting an attorney representing BDC as stating that the Project "is good for the poultry industry").

[5] U.S. Environmental Protection Agency, *Estimated Nitrate Concentrations in Groundwater Used for Drinking* (updated Aug. 3, 2022), https://www.epa.gov/nutrient-policy-data/estimated-nitrate-concentrations-groundwater-used-drinking (estimating that 53% of Delaware's groundwater contains nitrate concentrations above 5 mg/L).

[6] *E.g.*, Mary H Ward et al., *Drinking Water Nitrate and Human Health: An Updated Review*, 15 INT. J. ENV'T RES. PUB. HEALTH (2018), https://pubmed.ncbi.nlm.nih.gov/30041450/; Tim Chambers et al., *Nitrate in Drinking Water*

pollution like nitrate contamination because it chemically alters the waste, making pollutants more likely to run off into surface waters and leach into groundwater.[7] A 2022 study found that 97% of Delaware's waterways are designated as impaired under the Clean Water Act, the highest of any U.S. state.[8] Delaware also leads the U.S. in polluted estuaries – 100% of the state's assessed estuaries are impaired.[9] Poultry industry waste is a primary source of this pollution.[10] Importing – from Delaware and three other states – yet *more* waste and pollution to generate methane gas, and amplifying its potential to harm the environment and public health, will only make things worse for Delaware.

The Project is sited in an area otherwise reserved for agriculture and single-family homes.[11] Commenters have spent significant time and effort engaged in outreach with the communities closest to the Project, many of whom as late as November 19, 2022, had not even heard of the Project. Commenters include potentially impacted community members among our collective memberships. Further, some who are aware that a developer has proposed a project have had significant trouble understanding the Project due to limited English proficiency, limited internet access, and BDC's complicated and incomplete presentations of the Project. When Commenters informed residents that the Project is a new industrial gas production facility, they were immediately concerned. As one nearby resident stated,

> This is our home and we all feel that nothing should be done to our communities that impact our safety and livelihood. I am also pregnant and the construction of this plant makes me fear for the safety of my child.[12]

DNREC has an obligation to protect these Delawareans by conducting a robust review of the Project and ensuring rigorous oversight through strong permits if DNREC allows construction and eventual operation of the Project. Unfortunately, DNREC's review thus far and the proposed permits fail to meet this obligation.

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and Cancer Risk: The Biological Mechanism, Epidemiological Evidence and Future Research, 46:2 AUSTRALIAN AND NEW ZEALAND J. PUB. HEALTH 105 (2022), https://onlinelibrary.wiley.com/doi/epdf/10.1111/1753-6405.13222; JoAnn Burkholder et al., *Impacts of Waste from Concentrated Animal Feeding Operations on Water Quality*, 115 ENV'T HEALTH PERSPECTIVE 308, 310 (2007), https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1817674/.

[7] Natural Resources Conservation Service, 366-CPS-1, Conservation Practice Standard No. 366: Anaerobic Digester, at 6 ("Land application of digester effluent, compared with fresh manure, may have a higher risk for both ground and surface water quality problems. Compounds such as nitrogen, phosphorus, and other elements become more soluble due to anaerobic digestion and therefore have higher potential to move with water.").

[8] Environmental Integrity Project, The Clean Water Act at 50: Promises Half Kept at the Half-Century Mark at 7, 37 (Mar. 17, 2022), https://environmentalintegrity.org/wp-content/uploads/2022/03/CWA-report-3.23.22-FINAL.pdf.

[9] *Id.* at 25.

[10] *E.g.*, Community Engagement, Environmental Justice, & Health, University of Maryland School of Public Health, *Drinking Water Contamination and Child Development in Delaware* (May 13, 2021), https://www.ceejh.center/water-quality/delaware-groundwater-contamination-x-cafos-x-schoolchildren; Karen Holt, *Hazardous Wastewater Causes Health Issues for Delaware Residents*, DELAWARETODAY (Jan. 13, 2022), https://delawaretoday.com/life-style/health/mountaire-farms-wastewater-pollution/.

[11] In 2021, the Sussex County Council enacted a Conditional Use approval for the Project. Sussex County, *C/U 2258*, https://sussexcountyde.gov/LandUseApplications/cu-2258.

[12] Resident testimonials were collected by Food & Water Watch and the Working Families Party on October 8, 2022.

I. Interests of Commenters

Assateague Coastal Trust, a member of the global Waterkeeper Alliance movement, hosts the Assateague COASTKEEPER, working to assure our communities have access to swimmable, fishable and drinkable water. For over 50 years ACT has been working arm in arm with diverse community partners to protect and defend the health of Delmarva's coastal waters through advocacy, education, science and the enforcement of just and equitable clean water laws. ACT is concerned with the proliferation and management of waste in the Delmarva, which includes waste from facilities such as BDC.

Delaware Working Families Party is a progressive grassroots political party building a multiracial movement of working people to transform Delaware.

Food & Water Watch ("FWW") is a national, nonprofit membership organization that mobilizes regular people to build political power to move bold and uncompromised solutions to the most pressing food, water, and climate problems of our time. FWW uses grassroots organizing, media outreach, public education, research, policy analysis, and litigation to protect people's health, communities, and democracy from the growing destructive power of the most powerful economic interests. FWW has staff in Delaware and Maryland.

Johns Hopkins Center for a Livable Future is an interdisciplinary academic center based within the Bloomberg School of Public Health's Department of Environmental Health and Engineering and is a leader in public health research, education, policy and advocacy that is dedicated to building a healthier, more equitable and resilient food system.

Latino Initiative on Restorative Justice, Inc. promotes all the diverse applications of Restorative Justice as a way to live in a peaceful and just society, starting from home, religious communities, education, juvenile justice system, criminal justice system, prison system re-entry, and all the way to creating community and democracy.

Methodist Action Program works to promote social change through educating, organizing, and advocating. Environmental justice is one of our core areas of concern.

Namati's US Environmental Justice Program assists communities to advance environmental and economic justice. It also convenes the MidAtlantic Justice Coalition, a broad-based grassroots coalition working in Delaware, Maryland, Virginia, and Washington DC to address environmental and intersecting justice issues.

Sierra Club Delaware Chapter is an environmental advocacy group which formed in Delaware during the early 1970's. The Club primarily works in the areas of climate change and energy policy in Delaware, but also works on issues of local importance and in the space of conservation of our state's natural resources. We work with organizations and communities throughout the state to advocate for environmental and social justice and the protection of overburdened communities from dangerous and irresponsible development and industry. Our

membership spans all three counties in Delaware and some of our members live within the immediate communities surrounding the proposed biogas facility including Seaford.

Socially Responsible Agriculture Project ("SRAP") is a 501(c)(3) nonprofit organization incorporated in Delaware. SRAP has staff based in Delaware and Maryland. For more than 20 years, SRAP has served as a mobilizing force to help communities protect themselves from the damages caused by industrial livestock operations, and to advocate for a food system built on regenerative practices, justice, democracy, and resilience. SRAP offers free support, providing communities with the knowledge and skills to protect their rights to clean air, water, and soil and to a healthy, just, and vibrant future.

Across the U.S., SRAP has received requests for help from communities on the frontlines of industries streaming from industrial livestock business, notably large compost operations and methane production operations, like what BDC is proposing in Seaford. Educating public officials and the public regarding the environmental dangers of agricultural methane production has been a focus of SRAP's for several years.

Sussex Health and Environmental Network ("SHEN") is a coalition of stakeholders in Sussex County working to ensure a clean, healthy environment for current and future generations. SHEN brings attention to environmental health threats and environmental justice issues in Sussex County by partnering with local businesses, non-profit groups, community ambassadors, and residents to hold local, state, and federal governments accountable. Some members of SHEN live in proximity to the Project, an area already plagued with environmental injustices, and stand to be directly impacted by it.

II. The Project Poses Serious Environmental Injustice Concerns

Commenters have engaged in extensive research and community engagement, which shows that the Project poses serious environmental injustice concerns. The Project, though highly industrial, is located in an area otherwise reserved for agriculture and single-family homes. The nearest residential and commercial properties are located within 1 mile of the property.[13] Within one mile of the Project, community members are in the 80th percentile in Delaware for exposure to air toxics, meaning that the immediate area is already burdened by hazardous air pollutants with carcinogenic and other negative health impacts. Also, those living within one mile of the Project are in the 68th percentile for the state with respect to proximity to Superfund sites needing long-term clean up from emergency and hazardous wastes.[14] The Superfund statistic is even more disturbing when compared nationally; this area is in the 91st percentile nationally, meaning that only 9% of the U.S. population are more exposed to Superfund sites than the community impacted by BDC's proposal.[15] DNREC has not accounted for these existing and cumulative pollution burdens on the community in reviewing BDC's proposal.

[13] RRFP: Environmental Assessment at 9 of 16 (hereinafter "EA").
[14] U.S. EPA, EJ Screen (2022 Version) (report attached as Exhibit A).
[15] *Id.*

Within three miles of the Project, residents of color make up 32% of the population, but only account for 17% of the population in Sussex County. Residents living in poverty make up 34% of those living within three miles of the Project, whereas only 12% of the population in Sussex County lives in poverty.[16] And many community members near the site have limited English language proficiency. These disparities indicate environmental and economic injustices already exist, which must be accounted for in the Project's siting, DNREC's review process, and DNREC's draft permits.

This community is also already affected by health disparities and overburdened by pollution. Over a quarter (26%) of this community are children under the age of 5 and adults over the age 64,[17] segments of the population more vulnerable to risks from exposure to existing pollution. BDC's proposal would only compound these negative health impacts.[18]

So-called biogas production from factory farm waste is a known environmental justice issue where it has become established.[19] For example, in North Carolina where "factory farm gas" production has been embraced and fostered by state policies for years, the environmental justice harms have come into stark relief. The push to install anaerobic digesters and other technologies to address too much factory farm waste have been largely unsuccessful at mitigating local pollution problems, and instead have elicited strong opposition and legal actions from impacted community members.[20] In January of 2022, the U.S. Environmental Protection Agency agreed to investigate North Carolina for possible violations of the federal Civil Rights Act in permitting biogas operations at hog factory farms.[21] The experience in North Carolina is not unique; "impacted environmental justice communities around the country have organized

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[16] Food & Water Watch, Dirty Delaware Project to Turn Poultry Slaughterhouse Waste into Pipeline Grade Methane at 2–3 (Apr. 2021), https://www.foodandwaterwatch.org/wp-content/uploads/2022/11/FS_2104_DelawareDigesters-2210UpdWEB55.pdf.

[17] *See* Exhibit A

[18] In addition to the other issues raised herein, the California Air Resources Board and the Office of Environmental Health Hazard Assessment compiled a list of 12 trace components potentially present in biogas, at levels significantly above traditional natural gas, including carcinogens. Only one of the 12 components (H_2S) is addressed in BDC's permit application and DNREC's draft permits. California Office of Environmental Health Hazard Assessment, AB 1900 Biogas Recommendations: Biogas Constituents of Concern and Health-Protective Levels for Biomethane at 2–3 (updated Jan. 2020), https://oehha.ca.gov/media/downloads/air/report-document-background/biomethane010320.pdf. This report also identifies 10 biogas constituents that could pose a hazard to human health upon combustion, such as through flaring. *Id.* at 7.

[19] *E.g.*, Phoebe Gittelson et al., *The False Promise of Biogas: Why Biogas Is an Environmental Justice Issue*, ENV'T JUSTICE (2021), https://sraproject.org/wp-content/uploads/False-Promsies-FactoryFarmGas.pdf; Climate + Clean Energy Equity Fund, Biogas: A Polluting Source, Greenwashed (Oct. 2022), https://static1.squarespace.com/static/5fb58e0bd182a42ba80eabdd/t/6345dde43104d94958df7bca/1665523173237/CCEEF_Biogas+Policy+Brief+Oct+2022.pdf.

[20] *See, e.g.*, Shanya Hayes, *Hogwash: Biogas Is No Solution for Clean Energy, Hog Farm Pollution*, SIERRA CLUB NORTH CAROLINA (Oct. 18, 2022), https://www.sierraclub.org/north-carolina/blog/2022/10/hogwash-biogas-no-solution-clean-energy-hog-farm-pollution.

[21] Press Release, Southern Environmental Law Center, EPA to Investigate Discriminatory Harm from N.C. Hog Operations after Civil Rights Complaint (Jan. 14, 2022), https://www.southernenvironment.org/press-release/epa-to-investigate-discriminatory-harm-from-n-c-hog-operations-after-civil-rights-complaint/.

against the proliferation of biogas."[22] Yet, these warnings have not led DNREC to address environmental injustice in its review of BDC's application.

In the course of Commenters' outreach to community members near the Project, we heard statements that underscore the environmental injustice of allowing the Project to proceed. These community members are already negatively affected by the existing composting operation that BDC purchased from Perdue AgriBusiness, LLC. We have omitted speakers' names because many community members work for the poultry industry and did not feel safe going on the record with their full names. Six different community members told us:

- "If they tell you this isn't going to hurt anyone BS! As is, when their machines are running you can't even cook out with your family because the smell is so bad… and even when they're off if the wind is right the smell is too strong to even be outside. Now they're talking about 20,000 trucks right here where our kids get on the bus…I don't usually get involved, but this here involves too many people for me not too."
- "There has been a bad smell in the afternoons for a while now coming from the plant. Knowing this, I don't want a new waste plant brought to my community. I'm really hoping this proposal doesn't go through. Not only am I tired of the smell, but I am concerned about the threat this waste plant brings to my community's air and water."
- "I have lived here for 20 years and everything was normal, peaceful and I would like everything to stay the same. If we lose drinking the water, after that I don't know what will happen if they approve this plant. I would like it not to be approved. The children are free here and with this plant they will no longer be able to breathe that pure air...."
- "If the people in the community do not agree with the building of this plant they should not build it."
- "I don't like the idea of bringing the chicken waste near me and my kids. This gas could bring us harm in many ways. I don't like the idea of so many trucks transporting gas that could possibly explode, close to any of the many kids that walk these roads. And there are many, many kids."
- "No one wants anything to happen in their community that affects the health of their children. This is our home and we all feel that nothing should be done to our communities that impact our safety and livelihood. I am also pregnant and the construction of this plant makes me fear for the safety of my child. I hate to feel anxiety over the future of my child."

DNREC has a duty to protect the most vulnerable members of the community. Allowing the Project to proceed as proposed would run afoul of that duty.

III. DNREC's Public Process Has Fallen Short

[22] Ruthie Lazenby, Center for Agriculture & Food Systems, Rethinking Manure Biogas: Policy Considerations to Promote Equity and Protect the Climate and Environment at 28 (Aug. 2022), https://www.vermontlaw.edu/sites/default/files/2022-08/Rethinking_Manure_Biogas.pdf.

On top of the inherent environmental justice implications of the Project, DNREC's handling of the Project review thus far has been fraught with public participation failings, which particularly affect the procedural and substantive rights of environmental justice communities. Many community members are people of limited English proficiency and have limited internet access. DNREC's public process and engagement with potentially impacted residents has fallen short in at least the following ways, compromising the entire permitting process:

- Timely public notices were issued exclusively in English, to the detriment of limited English proficiency persons;[23]
- In many instances, adequate translation services were not provided;
- Translation services, when provided, were incomplete and untimely;
- Translation services, when provided, ignored key documents and technical aspects of the Project's proposal, including health and environmental analyses;
- Reasonable access to public meetings and the oral comment hearing was not provided;[24]
- English-speaking community members who spoke up for limited English proficiency people during public meetings had their microphones cut off by DNREC;[25]
- Reasonable access to participate in public hearings was lacking;
- DNREC refused invitations from the community to meet with limited English proficiency community members.

During this permit review and public notice process, DNREC has failed to take reasonable steps to ensure residents have notice, meaningful access to the process or fulsome and accurate information about the Project,[26] and to participate as provided by Delaware's Natural Resources Code and DNREC regulations.[27]

IV. DNREC Has an Obligation to Ensure the Project Does Not Harm the Public and That Any Permit Issuances Comply with the Delaware Administrative Procedure Act

[23] For example, DNREC also posted public notices in Spanish and Haitian Creole one month *after* the English public notice was issued, and only five days before the September 28, 2022, public "informational" meeting.
[24] For example, DNREC did not provide Spanish or Haitian Creole captions or translation for persons attending by telephone only or provide limited English proficiency speakers the opportunity to ask questions on September 28, 2022, or allow limited English proficiency speakers to provide comments in their language on October 26, 2022.
[25] For example, Maria Payan specifically attempted to raise the issue of environmental justice and access to the public meeting on September 28, 2022, but her microphone was cut off. SRAP submitted a public records request for any transcript of this meeting. DNREC responded that "there was no recording or transcript made." *See* DNREC FOIA Request No. 22-1145.
[26] For example, between July 2021 and March 2022, community members submitted public records requests to DNREC for information and communications between DNREC and BDC. In September 2022, after DNREC changed supporting documentation for the permits on public notice, Maria Payan submitted another FOIA request for information (No. 22-1131) seeking information and communications from April 1, 2022. DNREC denied this FOIA request on the grounds that, "Your request is not a valid FOIA request since this matter is the subject of a public hearing."
[27] *See* 7 Del. C. §§ 6004, 6006; 7 Del. Admin. Code §§ 1102-12 (air permitting), 1301-4.1.2 (solid waste permitting), 7201-4.5, -5.11, -5.12, -5.13, Part III (wastewater permitting).

DNREC has an obligation to ensure that facilities like the Project do not harm public health or the environment. DNREC's permitting regimes are intended to control "pollution of the land, water, underwater and air resources of the State to protect the public health, safety and welfare."[28] DNREC can only achieve its policy directive – to protect, conserve, and control the land, water, and air resources of the state "to assure their reasonable and beneficial use in the interest of the people of the State"[29] – through proper review, stringent permitting, and rigorous oversight. DNREC must ensure permittees comply with local, state, and federal laws, and must comply with its constitutional, legislative, and regulatory directives to protect water, air, land, and Delaware's communities.[30] Any activity conducted "[i]n a way which may cause or contribute to" pollution or contamination requires a permit from DNREC.[31]

Final issuance of permits to BDC, if upheld by the Delaware Environmental Appeals Board, are administrative adjudications and thus subject to the Delaware Administrative Procedure Act ("APA").[32] Permitting decisions will only be upheld if "the decision is supported by substantial evidence and is free from legal error."[33]

V. Issuing the Permits Would Be Unlawful

DNREC proposes to issue one Resource Recovery Facility Permit[34] ("RRFP") from the Division of Waste and Hazardous Substances, two construction permits from the Division of Air Quality,[35] and two construction permits from the Division of Water[36] to BDC. However, DNREC may not lawfully issue BDC's permits because the Project and BDC's applications are incomplete, inaccurate, or otherwise do not comply with Delaware law.

As explained below, each of BDC's permit applications and DNREC's proposed permits contain fatal flaws that either mandate denial or necessitate more information and more established project plans from BDC as well as more thorough review by DNREC. Greenlighting the Project on this record and with these proposed permits is not supported by substantial evidence and would violate Delaware law in numerous ways. Thus, Commenters request that DNREC deny the applications and withdraw the proposed permits to effectuate the essential protections set forth by the General Assembly and DNREC's own regulations.

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[28] 7 Del. C. § 6001(c)(2).
[29] *Id.* § 6001(b).
[30] 29 Del. C. §§ 8003 (DNREC powers, duties, and functions), 8014 (powers, duties, and functions of the Divisions of Air Quality, Waste and Hazardous Substances, and Water).
[31] *See* 7 Del. C. § 6003(a).
[32] 29 Del. C. §§ 10102(3), (5), 10161(a)(9); 7 Del. C. §§ 6008 (appeals to Environmental Appeals Board), 6009 (appeals to the Superior Court).
[33] *Keep Our Wells Clean v. Del. Dep't of Natural Res. & Envtl. Control*, 243 A.3d 441, 446 (Del. 2020) ("Substantial evidence is … more than a 'mere scintilla but less than a preponderance of the evidence.'").
[34] Resource Recovery Permit #SW 22/XX. BDC proposes to wrap an existing composting operation into this resource recovery facility permit, implicating at least 2 additional permits. APC-2016/0093-OPERATION (as amended); Composting Permit #SW-18/03, https://documents.dnrec.delaware.gov/dwhs/CAPS/Permits/Composting/BioEnergy-Development-Group-Seaford-Composting-Permit.pdf.
[35] APC-2022/0048-CONSTRUCTION; APC-2022/0049-CONSTRUCTION.
[36] WPCC 3005/22; WPCC 3007/22.

A. DNREC May Not Issue the Resource Recovery Facility Permit

DNREC may not issue the RRFP because BDC has failed to meet the regulatory requirements for receiving such a permit. The RRFP is the most important regulatory tool DNREC can use to appropriately regulate the Project. As explained above, resource recovery facilities are subject to an especially rigorous regulatory regime, which makes sense given that such facilities will often receive, handle, and dispose of waste streams that no one else wants to deal with, as is the case here. BDC proposes to aggregate, handle, and process 250,000 tpy of pollution laden waste on less than 35 acres of land.[37] As BDC notes, "[p]oultry companies continue to see rising costs for handling, transporting, and disposal, as well as reduced land application options for these wastes."[38] In other words, this waste has proven dangerous to the environment and difficult to manage by those generating it. The Project is exactly the kind of risky development that DNREC must ensure complies with the demanding standards found in the Delaware Regulations Governing Solid Waste ("DRGSW").

The General Assembly specifically identified solid waste handling as a unique risk to Delawareans and called upon DNREC to ensure that such activities are conducted in an "environmentally acceptable manner."[39] To satisfy this mandate, DNREC must more thoroughly review BDC's proposed activities before it can issue these permits, and it must fashion rigorous permit conditions, including mitigation measures, commensurate with the Project's environmental and public health risks through the RRFP.

In light of the General Assembly's mandate, the DRGSW contain essential and robust environmental safeguards when permitting a resource recovery facility. Section 9 of the DRGSW contains three key requirements: (1) a no degradation provision, (2) a siting screen, and (3) environmental assessment and mitigation provisions. First, the DRGWS require that all new and existing resource recovery facilities "be operated in a manner that will preclude degradation of land, air, surface water, or ground water."[40] This "preclude degradation" is deliberately strong language when compared with the analogous provisions for other solid waste facilities such as sanitary landfills, which DNREC holds to a "*prevent* degradation" standard.[41] To "preclude" is a more rigorous standard than to "prevent" and requires more from DNREC in the permitting process.[42] On this requirement alone, BDC and DNREC have

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[37] EA at 3 of 16, 8 of 16 (stating that the existing composting footprint is 25 acres, and an estimated 5 to 10 acres will be developed for the biogas production infrastructure).
[38] RRFP: Operations Plan at 6 of 54 (hereinafter "Operations Plan").
[39] 7 Del. C. § 6001(c)(6); *see also* 7 Del Admin. C. § 1301-1.2 (identifying the legislative purpose to ensure that such activities are conducted in an "environmentally acceptable manner").
[40] 7 Del. Admin. Code § 1301-9.4.1.1.
[41] *Id.* § 1301-5.9.1.1 (emphasis added).
[42] *Compare* "*Prevent*," MERRIAM-WEBSTER'S DICTIONARY (2021) ("to keep from happening" or "to hold back"), *with* "*Preclude*," MERRIAM-WEBSTER'S DICTIONARY (2021) ("to make impossible by necessary consequence"). Where a statue or regulation uses different terms in different sections, those different terms carry different meaning. *See, e.g.*, *Del. Dep't of Health & Soc. Servs. v. Jain*, 29 A.3d 207, 214 (Del. 2011) (finding that the court would be "ignoring the distinction" inherent in the use of different words to adopt an interpretation that rendered them the same); *Vonage Holdings Corp. v. FCC*, 489 F.3d 1232, 1240 (D.C. Cir. 2007) (holding that where different terms are used, "the court must presume … the terms to have different meanings"). *See also* Antonin Scalia & Bryan A. Garner, *Reading Law: The Interpretation of Legal Texts* 167 (Thomson/West, 2012) ("the judicial interpreter [must] consider the entire text, in view of its structure and of the physical and logical relation of its many parts").

not shown how the Project will *preclude* degradation.

Second, section 9 of the DRGSW requires that all resource recovery facilities be sited in areas "where the potential for degradation of the quality of air, land, and water is minimal."[43] This requirement is in addition to the requirement that an applicant provide "[p]roof that all applicable zoning approvals have been obtained."[44] While related, local zoning approval cannot displace the unique environmental safeguard found in the DRGSW designed to ensure appropriate siting for a project like this. In fact, during Sussex County's deliberations over whether to approve a Conditional Use for the Project, county officials relied on DNREC's permitting and oversight authority to address environmental impact concerns.[45] Therefore, reliance on local zoning approval not only impermissibly delegates DNREC's oversight obligations to local officials but also creates an oversight void where county officials are relying on DNREC and DNREC is relying on county officials. The losers in that scenario are the community members affected by the additional pollution and public health and safety risks the Project will cause. DNREC must independently assess and approve of the Project's siting under section 9.2.1 of the DRGSW.

Finally, section 9 of the DRGSW requires an applicant to produce and submit a "detailed analysis of the potential impacts of the proposed facility on the environment."[46] The regulations provide a non-exclusive list of factors that an applicant must assess. If BDC or DNREC identify any potential threats to human health or the environment, "the applicant must provide a written explanation of how he or she plans to mitigate the potential harm."[47] This environmental assessment requirement is a foundational piece of the overall application and DNREC's ability to determine if the Project is permittable as proposed.

Thus, the statute and controlling regulations make clear that DNREC is empowered, and in fact required, to rigorously review BDC's application for a RRFP and to deny it if it does not meet these rigorous standards. As explained below, BDC has failed to meet these requirements. But despite its broad authority and obligations and BDC's clear failure to follow the DRGSW, DNREC proposes to issue the RRFP without critically assessing the Projects potential impacts, developing permit terms and conditions necessary to protect public health and the environment, or imposing adequate requirements to monitor and report that enable enforceability of the law. In sum, DNREC would be violating Delaware law by issuing the RRFP as proposed, and the Agency has ample authority to deny the permits.

1. *BDC Has Not Completed a Detailed Environmental Assessment as Required by the DRGSW*

[43] 7 Del. Admin. Code § 1301-9.2.1.
[44] *Id.* § 1301-4.4.1.10.
[45] Sussex County Council Minutes of the Regular Meeting of February 11, 2021, https://sussexcountyde.gov/sites/default/files/minutes/PZ%202-11-2021%20FINAL.pdf. BDC representatives represented to the County Council that DNREC would protect the environment and public health and used this testimony to secure Conditional Use 2258. *Id.* at 15–17, 20 ("DNREC is rigorous with regulations").
[46] 7 Del. Admin. Code. § 1301-4.4.1.8.
[47] *Id.*

Aggregating 250,000 tons of poultry industry waste each year in an area already plagued by pollution to produce methane gas raises a host of environmental and public health concerns. Under the DRGSW, an applicant must complete a "detailed analysis of the potential impacts of the proposed facility on the environment."[48] And where BDC or DNREC "determines that the proposed facility may cause a threat to human health or the environment, the applicant must provide a written explanation of how he or she plans to mitigate the potential harm."[49] This requirement is the lynchpin for critical agency and public review and a necessary basis for DNREC to determine that a project will "be operated in a manner that will preclude degradation of land, air, surface water, or ground water,"[50] making an applicant's failure to comply fatal and requires that DNREC deny the RRFP unless the applicant completes such an assessment and provides the attendant mitigation statements.

The DRGSW requires a "detailed analysis." "Detailed" means "marked by abundant detail or by thoroughness in treating small items or parts."[51] And this detailed analysis is broad, covering "*potential* impacts" as well as those certain to occur. The subsequent written mitigation statement requirement underscores the breadth of this requirement, requiring mitigation of any "threat" a proposed facility "may cause."[52] DNREC cannot make a rational or supported determination that a resource recovery facility will "be operated in a manner that will preclude degradation of land, air, surface water, or ground water" as required by section 9.4.1.1 unless the applicant accurately identifies and discloses potential impacts that may cause threats to the environment and explains how the applicant will mitigate such impacts.

BDC submitted an Environmental Assessment ("EA") that falls far short of what the DRGSW requires. Instead of preparing and submitting a detailed assessment of all potential impacts, BDC submitted a cursory document that fails to provide meaningful detail, leaves out threatened environmental and public health impacts, and makes almost no attempt at providing mitigation statements.[53] BDC's document purports to cover the following environmental factors: air quality, stream flow, water supply, biological resources, water uses, land use, aesthetics, traffic, public health and safety, cultural recreational and natural areas, historic sites, social and economic factors, and soil quality. BDC's EA fails to sufficiently identify and/or assess and/or mitigate the following factors:

a. Air Quality

BDC's identification and assessment of air quality impacts fails to consider the true scope of air emissions and reaches an unreasonable and arbitrary conclusion that "operations of the

[48] *Id.*
[49] *Id.*
[50] 7 Del. Admin. Code § 1301-9.4.1.1.
[51] "*Detailed*," MERRIAM-WEBSTER'S DICTIONARY (2022). *See also Brannon Props., LLC v. Chesapeake Operating, Inc.*, 514 Fed. Appx. 459, 460–461 (5th Cir. 2013) (finding an 18-page drilling notice "insufficiently detailed" to satisfy "any commonly accepted definition of 'detailed'" in light of the purpose of the notice).
[52] 7 Del. Admin. Code. § 1301-4.4.1.8.
[53] To the extent that BDC may argue that some issues discussed here are addressed in *other* application documents, it is incumbent on BDC to explain as much *in the EA* and provide cross-references and detailed explanations of how separate documentation does what the EA is required to accomplish. Regardless, several critical assessments are absent from any of BDC's application paperwork.

facility are not expected to have a significant impact on air quality in the area."[54] According to the draft Air Quality permit for the proposed anaerobic digesters, the Project's flare and regenerative thermal oxidizer ("RTO") alone will be permitted to emit .018 tpy Volatile Organic Compounds ("VOCs"), 5.632 tpy nitrogen oxide, .025 tpy particulate matter, .003 tpy sulfur oxide, and 20.85 tpy CO_2. The existing composting operation is permitted to emit 2.67 tpy VOCs and 9.67 tpy ammonia.[55] These emissions limits are based on voluntary pollution controls and, as further identified here and *infra* at Section B., do not represent the full scope of the Project's potential to emit in the event of improper management, loss of market for produced biogas, or equipment failure.

BDC claims that the proposed expansion of the composting operation will have no associated air emissions.[56] BDC's air permit for the existing composting operation bases its testing and monitoring requirements off the overall weight of material composted.[57] Under the present application, BDC proposes to increase the composting cap from 30,000 tpy to 56,000 tpy while adding digestate as a feedstock. BDC fails to explain how an 87% increase in the total amount of composting would have no associated increase in air emissions when emissions are estimated on the amount of material composted. In fact, recent studies show that composting digested material results in increased ammonia emissions when compared with composting undigested material.[58] Alarmingly, ammonia emission from livestock operations alone account for over 12,000 premature deaths each year in the United States.[59] Yet, BDC does not mention this threat to local air quality or the threats posed by BDC's proposed expansion, nor does DNREC address it in any of the proposed permits.[60]

BDC also fails to identify or address the digestate storage bunker and its potential air emissions. According to the EA, all material that eventually enters the composting area is received "into an existing building with air positively vented through an existing biofilter" and then "transferred to one of 18 Covered Aerated Static Pile (CASP) bunkers and covered to contain moisture and odors."[61] But elsewhere in its RRFP application paperwork, BDC discloses a "storage bunker" where digestate will be "either marketed as a soil amendment product or transported to the adjacent compost facility for further processing."[62] BDC confirmed that this storage bunker will "be vented to the atmosphere" and admits that "[n]o potential emissions from

[54] EA at 5 of 16.
[55] Composting Permit #SW-18/03.
[56] EA at 5 of 16.
[57] APC-2016/0093-OPERATION (as amended) at 3, 6.
[58] Michael A. Holly et al., *Greenhouse Gas and Ammonia Emissions from Digested and Separated Dairy Manure During Storage and After Land Application*, 239 AGRIC., ECOSYSTEMS, & ENV'T 410 (Feb. 2017), https://www.sciencedirect.com/science/article/pii/S0167880917300701.
[59] Nina G. G. Domingo, *Air Quality-Related Health Damages of Food*, 118 PNAS (2021), https://www.pnas.org/doi/pdf/10.1073/pnas.2013637118.
[60] DNREC's Technical Memo for the proposed anaerobic digester air permit makes the inexplicable and unsupported claim that "much of the potential air pollutants from the material would be expected to have been released during the AD process, suggesting that the material to potentially be composted would be relatively inert from an air pollution perspective." Anaerobic Digester Air Permit: Technical Memo at 4 of 133. This is an arbitrary conclusion unsupported by substantial evidence, and is directly contradicted by the scientific studies provided above by Commenters.
[61] EA at 5 of 16.
[62] RRFP: Engineering Report at 12 of 313 (hereinafter "Engineering Report").

the storage bunker have been quantified."[63] BDC makes no mention of this design feature that directly contradicts its air quality impacts assessment.

Finally, BDC ignores other air pollution sources and the impacts associated with an increase in heavy truck traffic. The Project would include up to 199 vehicle trips per day or nearly 73,000 trips per year,[64] and Commenters expect many of those vehicle trips to be new heavy truck traffic associated with transporting waste in and gas, compost, digestate products, and wastewater out. BDC identifies the following, new vehicle traffic at the Project compared with existing operations: trucks to deliver up to 200,000 tpy of feedstock, trucks to remove finished compost and digestate products, trucks to remove pre-treated wastewater, and trucks to remove refined methane ready for injection into natural gas pipelines. Heavy truck traffic, often powered by diesel fuel, is a known and pervasive threat to air quality and public health.[65] BDC must identify and assess this additional heavy truck traffic's air quality impacts and must provide a written statement of mitigation measures.

b. Water Resources

BDC's assessment of impacts to water resources is woefully lacking. BDC identifies stormwater, wastewater, and groundwater as potential areas of impact. BDC recognizes that stormwater from the new digesters and refinery will be managed in such a way as to "continue to discharge to the Gum Branch."[66] BDC provides no estimation of stormwater quantity or quality, how the stormwater will be managed on-site, or any mitigation statement for these discharges. As for stormwater generated from the expanded composting operation, BDC states that it "plans to undertake monitoring of the stormwater pond that collects runoff from the composting area in order to quantify concentrations of nitrogen, phosphorus and other analytes. BDC is also developing a number of proposed measures and best management practices that could serve as offsets for potential discharges."[67] These statements taken together are striking. First, apparently BDC *does not even know* what pollutants are currently in or can be expected to end up in the composting operation's stormwater management pond, which is designed to discharge to state waters. Apparently, neither does DNREC. Second, instead of developing a ready-to-execute mitigation plan and including those details in the EA, BDC simply states that it will "propose[] measures and best management practices" sometime in the future. This puts the cart before the horse. The DRGSW require an applicant to "provide a written explanation of how he or she plans to mitigate the potential harm,"[68] and vague aspirations cannot suffice to meet the legal

[63] Air Permit: April 11, 2022 BioEnergy Response to March 30, 2022 Request for Additional Information. BDC claims, without any support or explanation, that based on "operating experience at other similar facilities, no emissions are expected." *Id.* When pressed by DNREC, BDC reversed course and claimed, "There is no separated solids storage bunker." Anaerobic Digester Air Quality Application: May 13, 2022 BioEnergy Response to May 5, 2022 Request for Additional Information. BDC appears to have accepted this contradiction, while allowing a storage bunker to remain part of system components. *See* Air Permit Technical Memo at 30–31 of 133, Tbl. 18. *See also* Air Permit: Engineering Report at 12–13 of 294.
[64] EA at 10 of 16.
[65] U.S. Environmental Protection Agency, *About Diesel Fuels* (updated Apr. 11, 2022), https://www.epa.gov/diesel-fuel-standards/about-diesel-fuels ("When diesel fuel is burned in engines, the emissions that result contributes to air pollution that has serious human health and environmental effects.").
[66] EA at 6 of 16.
[67] *Id.*
[68] 7 Del. Admin. Code. § 1301-4.4.1.8.

standards. These are the exact kind of details that must be included in an applicant's environmental assessment so that DNREC and the public can conduct an informed and rational assessment.

Regarding wastewater, the Project is expected to generate approximately 60,000 gallons of wastewater every day, which it intends to pretreat on-site and then hopes to truck to City of Seaford's wastewater treatment plant for disposal.[69] This quantity of wastewater is unclear because BDC's paperwork provides different numbers in different places.[70] BDC relies on the City of Seaford's expired wastewater treatment National Pollutant Discharge Elimination System permit, wastewater treatment plant, and desire for a new sewer district and force main to manage this volume of wastewater.[71] But as BDC acknowledges, any truck transfer of wastewater "is subject to an executed agreement with BDC," which to Commenters' knowledge does not yet exist. And BDC relies on a speculative future force main and sewer district for its long-term management option.[72] BDC cannot base its EA on speculative plans that may or may not materialize. And if they did materialize, BDC must reassess in detail the impacts of delivering polluted wastewater to the City of Seaford for discharge to the Nanticoke River, a river already seriously degraded and under strict pollution controls pursuant to the Clean Water Act.[73] Obviously an EA cannot provide a detailed assessment of yet-to-be established waste disposal plans.

Regarding groundwater, BDC asserts that the Project is "not expected to result in groundwater impacts."[74] BDC makes this conclusory statement without any analysis despite recognizing that the site sits atop "a high ground water table."[75] The Project involves importing up to 200,000 tpy of poultry industry waste loaded with pollutants that are known groundwater contaminants.[76] Delaware already leads the country in terms of nitrate contaminated

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[69] Draft Wastewater Pretreatment Permit at I.3.B; Wastewater Permit: Operations Plan at 22 of 48. Special Condition 8 of the Draft Wastewater Pretreatment Permit requires that BDC "submit a letter from the wastewater treatment facility that will be receiving the treated effluent" before construction, but this is a critical feature of the Project that must be included in *these applications noticed for public review and comment* and cannot be done behind closed doors. Nor can this condition excuse BDC's failure to assess impacts in the EA, especially when the "wastewater makeup" apparently is not yet known. *See* RRFP: Hydrogeological Assessment at 17 of 351 (hereinafter Hydrogeological Assessment) ("wastewater makeup is being finalized").

[70] *See* Hydrogeological Assessment at 17 of 351 ("total discharge to Sussex County is estimated to be 72,000 gallons per day").

[71] EA at 6 of 16. This portion of BDC's EA states that the City of Seaford may "accept up to 60,0000 gpd pretreated wastewater," which Commenters take as an error that should read "60,000 gpd."

[72] *Id.* at 6–7 of 16 ("Longer term plans call for conveying treated effluent offsite via force main to a local permitted municipal wastewater treatment plant."); Wastewater Permit: Operations Plan at 22 of 48 ("Ultimately, BDC will seek approval from Sussex County to form a sewer district and construct a pumping station and force main from the site directly to Seaford's wastewater treatment system."); Hydrogeological Assessment at 17–19 of 351 ("The [72,000 gpd of] wastewater is cooled and stored for discharge to Sussex County via a force main connection from the plant to the Sussex County wastewater system.").

[73] 7 Del. Admin. Code § 7406 ("the Nanticoke River and Broad Creek are highly enriched with nutrients nitrogen and phosphorus … [leading to] frequent phytoplankton blooms and large daily swings in dissolved oxygen levels.").

[74] EA at 7 of 16.

[75] EA at 6–7 of 16. *See also* Hydrogeological Assessment Report at 7 of 351 (showing depth to groundwater ranging from 2.36 feet to 11.91 feet), 133 of 351 (map of depth to groundwater).

[76] *E.g.*, Prafulla Kumar Sahoo et al., *Managing Groundwater Nitrate Contamination from Livestock Farms: Implications for Nitrate Management Guidelines*, 2 CURRENT POLLUTION REPORTS 178, 178–79 (2016), https://link.springer.com/article/10.1007/s40726-016-0033-5.

groundwater,[77] and the Project is surrounded by groundwater wells some of which serve residential properties.[78] In fact, the Project site already has areas of dangerous nitrate contamination.[79] Nitrates in drinking water are linked to a wide variety of cancers, developmental and birth defect issues, and reduced cognitive development.[80] BDC's unsupported, conclusory statement of no impacts is arbitrary and fails to satisfy the DRGSW; this is especially true when the groundwater at the site is admittedly vulnerable and the proposed operations would import large quantities of pollution known to adversely impact local groundwater quality.

A primary way groundwater gets contaminated with nitrates is through the disposal of nitrogen-laden waste onto fields.[81] And after the gas production process, this waste is especially dangerous to local water quality.[82] As explained below, BDC has not shown that it will be able to responsibly manage the vast quantities of waste that it will require to produce methane gas, and local land application of the uniquely hazardous digested waste is the likely outcome.

c. Stream Flow

BDC claims "there are not expected to be significant adverse impacts to water resources."[83] BDC reaches this conclusion because "calculations demonstrate that there will be no increase in peak discharge or volume at the points of analyses for the 10 and 100-year events."[84] Given that BDC plans to increase the amount if impermeable surfaces at the site to accommodate the methane production and wastewater management facilities while reducing the size of the existing stormwater management pond, Commenters dispute the accuracy of this conclusion. But equally important, the Project involves dramatically increasing the amount of

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[77] U.S. Environmental Protection Agency, *Estimated Nitrate Concentrations in Groundwater Used for Drinking* (updated Aug. 3, 2022), https://www.epa.gov/nutrient-policy-data/estimated-nitrate-concentrations-groundwater-used-drinking (estimating that 53% of Delaware's groundwater is contaminated with nitrates, exceeding any other state).

[78] RRFP: Site Maps at 13–17 of 29 (hereinafter "Site Maps"). According to BDC, "the nearest off-site supply wells serve residential properties approximately 1,500 feet south of the existing production/supply wells." Hydrogeological Assessment at 18 of 351.

[79] *See* Hydrogeological Assessment at 18 of 351 (disclosing nitrate levels at 10.7 mg/L at an existing monitoring well). The Project site also already has levels of manganese in the underlying groundwater that exceeds the Secondary Drinking Water Standard. *Id.*

[80] *E.g.*, Community Engagement, Environmental Justice, & Health, University of Maryland School of Public Health, *Drinking water Contamination and Child Development in Delaware* (May 13, 2021), https://www.ceejh.center/water-quality/delaware-groundwater-contamination-x-cafos-x-schoolchildren; JoAnn Burkholder et al., *Impacts of Waste from Concentrated Animal Feeding Operations on Water Quality,* 115 ENVTL. HEALTH PERSPECTIVE 308, 310 (2007), https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1817674/.

[81] *See, e.g.*, 7 Del. Admin. Code § 7103 (finding that such waste has "resulted in the contamination of the state's groundwaters and presented a threat to the public health, safety and welfare"); A. Scott Andres, Nitrate Loss Via Ground Water Flow, Coastal Sussex County, Delaware, in Animal Waste and the Land-Water Interface (1995) (ed. Kenneth Steele) ("Contamination is much more severe in areas with intensive poultry production than elsewhere.") (on file with Commenters).

[82] Natural Resources Conservation Service, 366-CPS-1, Conservation Practice Standard No. 366: Anaerobic Digester, at 6 ("Land application of digester effluent, compared with fresh manure, may have a higher risk for both ground and surface water quality problems. Compounds such as nitrogen, phosphorus, and other elements become more soluble due to anaerobic digestion and therefore have higher potential to move with water.").

[83] EA at 7 of 16.

[84] *Id.*

waste that will be imported to and handled at the site; waste that is already having dire impacts on local and regional water quality.[85] Commenters therefore expect that collected stormwater at the site will have higher concentrations of pollutants compared with current operations. BDC, and DNREC, ignore this increased quantity of pollution at the site.

The Project is sited in a place virtually surrounded by wetlands, emerging wetland, and freshwater ponds. The facility's stormwater collection ponds are designed to discharge into the Gum Branch, an already contaminated tributary of the already contaminated Nanticoke River. The Project's most basic features – increasing the amount of impervious surfaces, importing massive quantities of pollution-laden waste, and constructing and operating a new methane production plant – mean BDC's unsubstantiated conclusion of no significant adverse impacts is not credible.

d. Water Supply and Uses

BDC acknowledges that the Project would "require approximately 4 million gallons of startup water to initiate the digester process and anticipates utilizing up to 35,000 gallons per day to supply production water for operations."[86] BDC also notes that additional water will be needed during warmer weather.[87] Yet, BDC makes no attempt to assess or mitigate any qualitative or quantitative impacts this water usage may have on local water supply.

BDC briefly describes a "leachate collection system" for the composting area that will capture some unstated amount of runoff and mix it with incoming compost feedstock. BDC makes no attempt to assess how this reuse of potentially polluted runoff may affect long-term operations and pollution discharges. Additionally, the Project would apply approximately 3,200 gallons per day of highly concentrated effluent taken from the proposed wastewater pretreatment plant to the composting operation.[88] Commenters note that it is not chemically or physically possible to endlessly reuse polluted leachate and filtration concentrate without also accumulating ever greater concentrations of pollutants, unless the incoming feedstock contains commensurately lower concentrations of those pollutants. Yet, BDC again fails to address this in its analysis.

e. Biological Resources

BDC concludes the Project is not expected to adversely impact fish, wildlife, or threatened or endangered species.[89] The EA states "[i]t can be assumed that there will be negligible new disturbed areas."[90] This despite BDC's acknowledgment that the Project will

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[85] *E.g.*, Stefano B. Longo et al., *Nutrient Overloading in the Chesapeake Bay*, Sociology of Development 1 (2021), https://online.ucpress.edu/socdev/article-abstract/7/4/416/118975/Nutrient-Overloading-in-the-Chesapeake?redirectedFrom=fulltext ("Poultry production has been a principal contributor to [the Delmarva Peninsula's outsized proportion of nutrient inputs to the Chesapeake Bay]").
[86] EA at 8 & 9 of 16.
[87] *Id.* at 9 of 16.
[88] Engineering Report at 294 of 294 (showing "NF Concentrate" going to compost); Air Permit: Technical Memo at 29 of 133.
[89] EA at 8–9 of 16.
[90] *Id.* at 8 of 16.

disturb at least 5 to 10 acres at the site. Without detailed assessment or any support, Commenters reject such an assumption, and DNREC must as well.

BDC acknowledges that the Project is located on a parcel containing successional habitat for the state-endangered corn snake.[91] Because BDC claims "no plans to expand the project into this area," it concludes no impacts to this unique natural resource. BDC makes no attempt to assess pollution discharges or the operation of industrial scale "biogas" production and refining and a new wastewater treatment plant on this habitat. Nor does BDC make any attempt to assess air pollution from the Project on this habitat. Endangered species like the corn snake can be adversely impacted by more than wholesale removal of habitat through development – more nuanced impacts from water and air quality impacts are essential to identify and understand.

f. Land Use

Despite the Project's reliance on land disposal of digestate and compost, BDC ignores any impacts to Delaware or Sussex County land use laws and goals that may result from the Project. As discussed above, using lands for disposal of this kind of waste has significant adverse impacts. These impacts are especially concerning with the Project for two reasons: anaerobic digestion alters the chemical composition of the resulting waste, making it more hazardous to water quality;[92] and BDC elsewhere boasts that the Project "would allow for farms to apply more digestate."[93] In other words, the Project would increase the imported pollution's likelihood of contaminating local waters and will enable even more land application. These are just examples, not an exhaustive enumeration, of likely land use impacts BDC ignores.

g. Aesthetics

BDC ignores aesthetic impacts that may result from the Project. BDC relies on fencing and additional landscaping to "assist in maintaining the aesthetics of the site."[94] But such mitigation will have no impact on the aesthetic impacts of constructing massive concrete anaerobic digesters that are 39.5 ft high and 92 feet wide. Nor will they mitigate the aesthetic impacts of installing a flare that will be 30 feet high and emit a flame of burning gases. BDC also ignores the potential odor impacts from the Project's 87% increase in composting capacity.

h. Traffic

BDC states that total vehicle traffic "is estimated at less than 200 [trips] per day."[95] As discussed above, and *infra* at Section B., the quantity and nature of this traffic, and not just the number of trips, is important to what kinds of potential impacts it may have on the environment and local residents. This is especially true when a portion of the new heavy truck traffic will transport explosive gases away from the site, as well as wastewater, compost, and potentially

[91] *Id.* at 9 of 16.
[92] Natural Resources Conservation Service, 366-CPS-1, Conservation Practice Standard No. 366: Anaerobic Digester, at 6.
[93] RRFP: Recycling Analysis at 5 of 14 (hereinafter "Recycling Analysis").
[94] EA at 10 of 16.
[95] *Id.*

digestate products. But BDC offers no further identification or analysis, no details about the nature of the traffic, and no mitigation statement. Instead, BDC relies entirely on Delaware Department of Transportation ("DelDOT") requirements regarding when to conduct a traffic impact analysis. DelDOT only requires such an analysis if a project will involve 200 vehicle trips per day.

To reach the Project, trucks would have to travel 1.5 miles on Alternate Route 13, flanked by residential streets and passing at least two churches and several bus stops. The area is not, as the EA states, only an agricultural area.[96] The EA also dismisses the additional up to 200 trucks per day from BDC because "truck traffic is relative common."[97] No basis is provided for this statement. And, to the extent that statement may be correct, BDC must consider the impacts of adding of up to 200 trucks on top of existing truck traffic in terms of cumulative air quality, aesthetic, and public safety impacts.

BDC cannot avoid an environmental analysis under the DRGSW solely based on what DelDOT may or may not require. DelDOT's traffic impact analysis is focused on flow and accessibility concerns, not environmental and public health impacts.[98] The Project will bring a significant increase in heavy truck traffic, with attendant air quality and public safety impacts. BDC must assess these impacts and submit a mitigation statement.

i. Public Health and Safety

As the U.S. Department of Agriculture's Natural Resource Conservation Service has recognized, "Biogas is flammable, highly toxic, and potentially explosive."[99] BDC acknowledges serious public health and safety threats from the Project, including risk of fires, explosions, asphyxiation, hydrogen sulfide, trucks and heavy equipment, electrical shock, disease spread, and impacts from large equipment during installation.[100] But it merely affords each of these threats one sentence – all together their assessment occupies less than a single page without any detailed analysis. BDC also fails to provide mitigation statements – at best, it relies on aspirational statements that it hopes to one day develop an Environmental Health and Safety Plan and an Emergency Action Plan.[101] BDC entirely ignores the potential for anaerobic digesters to spill large amounts of waste, and the attendant health and safety ramifications. Digesters require a very high level of engineering management and oversight, they are extremely sensitive to environmental changes, and biological problems can take months to correct.[102] Digesters are not merely another piece of "agricultural" equipment. These facilities require high standards for

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[96] *Id.*
[97] *Id.*
[98] *See* DelDOT Development Coordination Manual (Apr. 2016), https://deldot.gov/Business/subdivisions/pdfs/changes/Development_Coordination_Manual-Chapter_2.pdf.
[99] Natural Resources Conservation Service, 366-CPS-1, Conservation Practice Standard No. 366: Anaerobic Digester, at 2.
[100] EA at 11 of 16.
[101] EA at 10 of 16.
[102] Don D. Jones et al., *Methane Generation from Livestock Waste*, ENERGY MGMT. AG., Purdue University Dept. of Agricultural Engineering Cooperative Extension Service, https://www.extension.purdue.edu/extmedia/AE/AE-105.html.

construction, maintenance, operation, and technical staff training beyond those applicable to any other CAFO waste management facilities.[103]

Incidents of digesters failing, and associated transportation, conveyances, or management of digester process, or otherwise malfunctioning and posing a threat public health and safety are numerous. For example, earlier this year a new anaerobic digester in Iowa spilled approximately 376,000 gallons of waste into local waterways, causing *E. coli* readings to spike.[104] In North Carolina, an anaerobic digester spilled an estimated three million gallons of gelatinous gray foam, with at least 37,000 gallons reaching a local wetland after spilling for six weeks.[105] In Oregon, 300,000 gallons of waste were spilled from an anaerobic digester, with an unknown quantity reaching local waterways.[106] And in Wisconsin, an anaerobic digester project was plagued by incidents including three spill totaling more than 400,000 gallons of waste discharges and an "explosion of methane gas [that] knocked the roof off one of the digesters."[107] In Michigan, a prized trout stream was turned "ink black" after at least 10,000 gallons of digested waste was applied on snow-covered and frozen ground.[108] Given these documented, major public health and safety issues associated with anerobic digesters and biogas production, BDC must conduct a detailed assessment of these risks and provide meaningful mitigation statements.

BDC's failure to comply with the DRGSW has forced DNREC to devise and incorporate mitigation measures on its own into the draft RRFP.[109] But these kinds of mitigation measures are what *BDC* is required to provide through the environmental assessment in relation to a detailed assessment. For example, the draft RRFP calls for a fire management plan and requires BDC to meet with the Blades Volunteer Fire Company to ensure their personnel are familiar with the site. BDC is supposed to provide a detailed assessment of this kind of risk and explain how it will mitigate threats. But BDC's EA makes no mention of a fire management plan, much less how it will or will not mitigate this threat.

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[103] *See, e.g.*, Agricultural Anaerobic Digesters: Design and Operation, PennState Extension (Dec. 1, 2016), https://extension.psu.edu/agricultural-anaerobic-digesters-design-and-operation (listing disadvantages of digesters including: complex equipment, the need for strict explosion-proof standards, precise temperature controls, and high standards of maintenance and management required); 40 C.F.R. § 412.4.

[104] Kavahn Mansouri, *Workers in Iowa Failed to Investigate Leak That Poured Manure Wastewater Into Creeks*, IOWA PUB. RADIO (July 6, 2022), https://www.iowapublicradio.org/2022-07-06/workers-in-iowa-failed-to-investigate-a-leak-that-poured-manure-wastewater-into-the-rock-river.

[105] Adam Wagner, *"Really Terrible Science Experiment" Leads to Weeks-Long Spill from NC Hog-Waste Lagoon*, CLEAN WATER FOR NORTH CAROLINA (Sept. 7, 2022), https://cwfnc.org/really-terrible-science-experiment-leads-to-weeks-long-spill-from-nc-hog-waste-lagoon-read-more-at-https-www-newsobserver-com-news-state-north-carolina-article264779224-htmlstor/.

[106] Hilary Dorsey, *Multiple Agencies React to Manure Spill at Port's Digester Operation*, TILLAMOOK HEADLIGHT Herald (updated Aug. 13, 2019), https://www.tillamookheadlightherald.com/news_paid/multiple-agencies-react-to-manure-spill-at-port-s-digester-operation/article_be4c4c40-b3b5-11e9-be0f-d3c4f211c14f.html.

[107] Lee Bergquist, *State-Financed Manure Digester Plagued by Spills, Explosion*, MILWAUKEE J. SENTINEL (Jan. 29, 2015), https://archive.jsonline.com/news/statepolitics/state-financed-manure-digester-plagued-by-spills-explosion-b99435123z1-290263421.html/.

[108] Michael Kransz, *Manure Spill Turns Portions of West Michigan Trout Stream 'Ink Black'*, MLIVE (Mar. 21, 2019), https://www.mlive.com/news/grand-rapids/2019/03/manure-spill-turns-portions-of-west-michig an-trout-stream-ink-black.html.

[109] *See* Draft RRFP at III.H.

BDC's assessment of the remaining safety hazards it identifies are equally useless. For example, regarding asphyxiation and hydrogen sulfide exposure (a potentially deadly incident), BDC's entire assessment and mitigation plan is as follows: "Requirements for confined space entry program, air quality monitoring and use of gas sensors, proper use of specific safety equipment and personal protective equipment (PPE) for work performance."[110] Commenters are left wondering what requirements, what kind of monitoring, and what kind of PPE? Given the threat here is death to employees or members of the public, BDC's terse and undetailed treatment is striking and patently inadequate. BDC and DNREC ignore the safety risks to the surrounding community, and do not make any proposals or plans for community notice, evacuations, or assessment of evacuation routes in the event of leaks or explosions. Without this information and plans in place, were DNREC to allow the permit, it would do so without protecting the public.

j. Cultural, Recreational, and Natural Areas

BDC ignores any potential impacts to culture, recreational, or natural areas because "[t]he Property does not contain any [such] known areas" and adjacent lands are privately owned.[111] BDC's Siting Criteria document limits this issue to within 1,000 feet of the Project boundary.[112] Yet, downgradient (groundwater) and downstream (surface waters) of the Property are Delaware State Natural Areas, and Delaware State Wildlife Areas.[113] As discussed above, the Project threatens groundwater and surface water through a variety of activities, including discharging polluted stormwater into the Gum Branch. BDC may not arbitrarily ignore these Areas when they are in relatively close proximity to the Project and BDC's own hydrogeological assessment identifies those Areas as in proximity to pollution pathways originating at the site.[114] Commenters' assessment concludes that both recreational and natural areas reasonably may be impacted by pollution from the Project. BDC must similarly conduct a detailed assessment.

Members of the public affected by the proposal include people who attend local churches, such as the churches attended by the Haitian Creole and Hispanic communities in the area. BDC must similarly conduct a detailed assessment for the impacts on these places of cultural importance.

k. Social and Economic Factors

Commenters reiterate the environmental justice concerns described above as social and economic impacts the Project may have. Instead of acknowledging these impacts, BDC uses this portion of its EA to engage in a marketing pitch, boasting about jobs and "unique energy and environmental services."[115] Commenters do not accept or deny these claims because they are not relevant to purpose of the EA requirement, which is to identify adverse impacts so that an application can state how it will mitigate such impacts and DNREC may ascertain whether the

[110] EA at 11 of 16.
[111] *Id.*
[112] RFFP: Siting Criteria at 7 (hereinafter "Siting Criteria"). It appears that BDC did not include the entire Property in its 1,000-foot mapping, instead opting for a more limited Project boundary.
[113] *Id.*
[114] Hydrogeologic Assessment at 7 of 351 ("the direction of groundwater flow is westerly"), 127 of 351 (showing the various tax ditch channels that pass through the Project flowing westerly).
[115] EA at 12 of 16.

proposal complies with the DRGSW. The regulations clearly do not contemplate an EA being filled with boasts regarding *positive* impacts of a proposal, given that the resulting mitigation statement (which is from missing from BDC's EA) "must provide a written explanation of how he or she plans to mitigate *the potential harm*."[116] Therefore, the EA's treatment of these factors is meaningless. As discussed herein, the Project (and its potential for adverse impact) is sited near houses of worship, commercial enterprises, and residential neighborhoods.

l. Soil Quality

BDC concludes "there is not expected to be a significant adverse impact to the soil quality on the site" because the Project supposedly "does not produce any hazardous byproducts that could adversely impact soil quality."[117] First, BDC has not provided any support for this claim. Second, BDC fails to identify or define what it means by "hazardous byproducts," which it uses to limit its analysis. Third, BDC has not conducted necessary sampling, monitoring, or analysis to reach such a conclusion. This failure is especially troubling in light of the site's recent history. This site is the subject of a 2019 DNREC Settlement Agreement with Perdue AgriRecycle, LLC under which the property was found to be contaminated with compost material containing Chromium VI, fecal bacteria, and *E. coli*.[118] In that settlement, Perdue admitted "that incorrect factual information regarding sampling and testing was transmitted by Perdue to DNREC."[119] While Perdue was to undertake certain corrective actions,[120] the status, completeness, or full/partial satisfaction of those obligations is unknown to the public and not mentioned in BDC's application materials or DNREC's draft permit conditions. It is hard to imagine a more glaring gap in BDC's proposal, DNREC's review, and DNREC's proposed permit framework than ignoring the site's history of contamination and the agency's own enforcement action history.

Also, as discussed below, BDC has apparently not done any testing or analysis regarding the presence or potential for presence of "forever chemicals," also known as per- and polyfluorinated alkyl substances, or PFAS. PFAS are known contaminants in other industrial sludge wastes and have emerged as a major concern regarding soil health.[121] In fact, the U.S. Environmental Protection Agency has been building tools for regulators and industries to better monitor for and control PFAS because of their harmful impacts to the environment and public health.[122]

Additionally, soil quality impacts may occur off-site by virtue of BDC selling or giving away its digestate and compost products for land application in Delaware. Such impacts would be a direct result of the Project and must be included in the EA. BDC may not arbitrarily ignore such impacts and limit its analysis to only the Project site.

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[116] 7 Del. Admin. Code. § 1301-4.4.1.8 (emphasis added).
[117] EA at 12 of 16.
[118] *See* DNREC-Perdue AgriRecycle, LLC Settlement Agreement at 2 (May 29, 2019), https://documents.dnrec.delaware.gov/Admin/Orders/20190529-settlement-agreement-perdue-agricycle.pdf.
[119] *Id.* at ¶ 12.
[120] *Id.* at ¶ 22–46.
[121] *E.g.*, Emiliano Panieri et al., *PFAS Molecules: A Major Concern for the Human Health and the Environment*, 10:2 TOXICS (Jan. 2022), https://www.mdpi.com/2305-6304/10/2/44.
[122] *See* EPA, *Per- and Polyfluoroalkyl Substances (PFAS)*, https://www.epa.gov/pfas.

m. Environmental and Public Health Factors Not Considered

In addition to the myriad deficiency outlined above, BDC's EA completely ignores other risks. While the DRGSW provide a list of factors that must be considered in an EA, the list is not exclusive.[123] These include climate impacts, a likely inability to market the waste generated by the methane production process, increased land application of imported pollution, and potential PFAS contamination.

i. Climate Impacts

Despite proposing to emit 483,288 tpy of carbon dioxide equivalent greenhouses gasses (nearly four times over the major source threshold),[124] bring in up to 200 trucks per day, and encourage the expansion of industrial animal agriculture, BDC frequently describes the Project as good for the climate. But BDC has made no attempt to substantiate those claims here, and DNREC has apparently made no attempt to review or substantiate in its permit review either.[125]

DNREC has not reviewed the Project's impacts for compliance or consistency with the state's Climate Action Plan, the Renewable Energy Portfolio Standards Act, the Regional Greenhouse Gas Initiative, DNREC's Evaluation, Measurement, and Verification regulations (setting procedures and standards for energy efficiency), or motor-vehicle related pollution.[126] At a minimum, the EA and DNREC's permit review must identify and analyze the Project's potential impacts in light of Delaware's own laws, regulations, and policies, and President Biden's push to reduce methane emissions by 2030. Commenters find it incomprehensible how constructing a methane gas production facility now, in 2022-2023, will help Delaware and the U.S. meet methane reduction goals only 7 years away.

Nevertheless, climate impacts are intertwined with the Project's purpose of generating and refining potent greenhouse gasses for sale and combustion and perpetuating harmful industrial poultry operations in the region. Commenters' research indicates that the Project would have serious, negative climate impacts. For example, end-user combustion of all the

[123] 7 Del. Admin. Code. § 1301-4.4.1.8 ("Factors to be considered include, but are not necessarily limited to:").
[124] *See* Air Permit: Technical Memo at 8 of 133.
[125] For example, neither the EA or the Air Permit Technical Memo identify any climate impacts of the Project. The Technical Memo identifies pollutants the facility has the potential to emit as greenhouse gases (at 8 & 80 of 133), but does not assess the *impacts* of these greenhouse gases. *See* 7 Del. Admin. Code 1301-4.4.1.8. DNREC dismisses GHGs as not subject to air permitting, but that does mean BDC and DNREC may ignore identifying and analyzing those potential impacts under the solid waste environmental assessment regulations. DNREC's refusal to identify and analyze GHG and methane production at BDC is also contrary to DNREC's Climate Action Plan, as well as Delaware's 2020 lawsuit pursuing the fossil fuel industry's contributions to climate change. *See, e.g*, DNREC, *Delaware's Climate Action Plan*, https://dnrec.alpha.delaware.gov/climate-plan/; DNREC, *Minimizing Emissions*, https://dnrec.alpha.delaware.gov/climate-plan/minimizing-emissions/; Mark Eichmann, *Big Oil Should Pay for Climate Change Damage, Delaware Lawsuit Says*, WHYY (Sept. 10, 2020), https://whyy.org/articles/big-oil-should-pay-for-climate-change-damage-delaware-lawsuit-says/; Randall Chase, *Fed Panel: Delaware Suit Against Oil Industry Is State Issue*, ASSOCIATED PRESS (Aug. 17, 2022), https://apnews.com/article/lawsuits-new-jersey-delaware-state-courts-3dbdae86900eaa2fd7e5f834c36beeb8.
[126] *See, e.g*, DNREC, *Delaware's Climate Action Plan*, https://dnrec.alpha.delaware.gov/climate-plan/; DNREC, *Minimizing Emissions*, https://dnrec.alpha.delaware.gov/climate-plan/minimizing-emissions/;

methane gas BDC intends to produce would be equivalent to driving 71 million miles in a passenger car every year.[127] And Commenters expect continuous methane leakage from the gas production plant and distribution infrastructure – in fact, researchers have found biogas production to be especially prone to leakage.[128] It defies logic that a plant designed to *maximize* methane gas production from waste, and then inject that gas into pipelines where it will leak into the atmosphere or be burned (releasing CO_2 and other pollutants), is somehow a climate benefit. The Project is an axiomatic false climate solution and contrary to local, state, and national policies. BDC and DNREC must identify, assess, and mitigate its detrimental climate impacts.

As the lowest-lying state in the U.S., Delaware is uniquely vulnerable to climate change and the attendant sea level rise.[129] Already 22,000 Delawareans face coastal flooding risks.[130] And DNREC estimates that the cumulative potential economic impacts of climate change total over $69 billion by then end of this century.[131]

Despite the Project's primary purpose to produce a collection of greenhouse gases, mostly methane that is 90 times more powerful than CO_2 at warming our climate over a 20-year span, BDC's EA entirely ignores climate impacts, including sea level rise. Moreover, in addition to the climate impacts from simply using all the methane the Project would produce, recent studies find that biogas production is particularly prone to methane leakage, resulting in significant fugitive emissions and with major climate impacts.[132]

ii. The Project May Increase Land Application or Stockpiling of Pollution-Laden Compost and Digestate "Products"

BDC claims it will export a portion of the waste it imports off the Delmarva, resulting in a net decrease of disposal via land application and therefore a reduction in nutrient pollution.[133] But BDC has no reliable means or methods for accomplishing this. In fact, to Commenters' knowledge BDC does not even have the requisite marketing permits necessary to sell or give away any of the digestate products it lists in its application paperwork.[134] At most, BDC claims to have offloaded 20,000 tons of compost per year and offers a list of "potential" customers that may purchase its products (if it ever secures the necessary permitting to do so).[135] But even this

[127] Food & Water Watch, Dirty Delaware Project to Turn Poultry Slaughterhouse Waste into Pipeline Grade Methane at 2 (Apr. 2021), https://www.foodandwaterwatch.org/wp-content/uploads/2022/11/FS_2104_DelawareDigesters-2210UpdWEB55.pdf.
[128] Semra Bakkaloglu et al., *Methane Emissions Along Biomethane and Biogas Supply Chains Are Underestimated*, 5 ONE EARTH 724 (June 2022), https://www.sciencedirect.com/science/article/pii/S2590332222002676.
[129] *E.g.*, University of Delaware Research Mag., https://www1.udel.edu/researchmagazine/issue/vol4_no1/slr_intro.html#:~:text=1,-st&text=Delaware%20is%20called%20the%20%E2%80%9CFirst,U.S.%20states%2C%20at%2060%20feet.
[130] States at Risk, *Delaware Coastal Flooding*, https://statesatrisk.org/delaware/coastal-flooding.
[131] Industrial Economics, Inc., An Economic Analysis of the Impacts of Climate Change in the State of Delaware at 5, https://documents.dnrec.delaware.gov/energy/Documents/Climate/Plan/Economic-Analysis-of-the-Impacts-of-Climate-Change-in-the-State-of-Delaware.pdf.
[132] Bakkaloglu et al., *supra* note 128.
[133] *E.g.*, RRFP: Operations Plan at 1.
[134] *See* Recycling Analysis 5–7 of 14 (listing liquid digestate, low phosphorus digestate, dewatered digestate cake, and blended soils with digestate as "recycled products").
[135] *Id.*

figure is questionable because BDC also states that it sold only "approximately 18,000 tons of compost" in 2020 with no explanation of the discrepancy.[136] BDC provides no support for this claim, nor does it provided a detailed assessment of how much compost or digestate products the Project would produce after expansion, the nature of those products, potential or existing customers for such products, or backup plans in the event that it is not able to effectively market these materials. Prior owners of the compost operation were unsuccessful in marketing compost, resulting in transfers of unsold waste 30 miles away to Blessings Draper Road in Milford, Delaware. Piles languished there for 5-10 years in 40-foot piles of compost on the property, which is within the Coastal Zone. There has been no concrete information provided to the public to ensure BDC won't encounter the same debacle, and if it does, how it will rectify the situation to protect the environment and public health at this site, and at sites BDC may have to transfer unsold waste to.

BDC also included in it RRFP application a letter from the Delaware Department of Agriculture expressing support "for the use of digestate produced by [the Project] as a soil amendment to be applied on farms in Delaware."[137] This, in addition to the risk that the Project will increase digestate land application as noted above, undermines BDC's claims of exporting harmful pollutants out of Delmarva after importing them.

iii. PFAS

Finally, BDC apparently has no idea if any of its waste, compost, or digestate products contain or may contain PFAS. There is growing attention and concern on PFAS contamination from the land application of sludges and other industrial wastes.[138] "Researchers across the globe have reported PFAS and related compounds in groundwater and soils following the application of PFAS-containing soil amendments including biosolids and compost."[139] As noted above, the U.S. Environmental Protection Agency is developing tools for regulators like DNREC to protect the public from these pollutants in water, air, and soils. Through this process, it has already completed analytical methods for monitoring 24 PFAS in wastewater as well as 50 PFAS in air emissions, and recommends that permit writers begin phasing in monitoring requirements.[140] DNREC must require that BDC assess potential PFAS contamination at the site through

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[136] *Id.* at 8 of 14. Commenters additionally note that BDC has apparently been giving away compost to anyone willing to take it from them even at the lower quantities currently being produced. *E.g.*, Cape Gazette, *Bioenergy Innovation Center to Host Public Events Oct. 22, 29* (Oct. 19, 2022), https://www.capegazette.com/article/bioenergy-innovation-center-host-public-events-oct-22-29/247767 ("Visitors can bring 5-gallon buckets to take home compost for their gardens.").

[137] Recycling Analysis at App. A.

[138] *E.g.*, Gwynn R. Johnson, *PFAS in Soil and Groundwater Following Historical Land Application of Biosolids*, 211 WATER RESEARCH (Mar. 2022), https://www.sciencedirect.com/science/article/abs/pii/S004313542101229X ("The potential impact of PFAS present in soil amendments including biosolids on overall soil and groundwater quality is of concern.").

[139] *Id.*

[140] EPA, *Status of EPA Research and Development on PFAS*, https://www.epa.gov/chemical-research/status-epa-research-and-development-pfas#exposure; *see* EPA Office of Water, Memorandum: Recommendations from the PFAS NPDES Regional Coordinators Committee *Interim Strategy for Per- and Polyfluoroalkyl Substances in Federally Issued National Pollutant Discharge Elimination System Permits* (2020), https://www.epa.gov/sites/default/files/2020-11/documents/pfas_npdes_interim_strategy_november_2020_signed.pdf;

feedstock analysis and monitoring of the soil and water and air discharges, detail the potential impacts from any such PFAS contaminated materials or emissions, and provide mitigation statements.

2. The Project Location Poses More than a "Minimal" Potential to Degrade the Environment

Section 9 of the DRGSW requires that all resource recovery facilities be sited in areas "where the potential for degradation of the quality of air, land, and water is minimal."[141] The Project is located in an area with significant potential to degrade the environment, and therefore DNREC may not issue the RRFP.

The proposed Project site is adjacent to freshwater forested/shrub wetlands, freshwater emergent wetland, and freshwater ponds.[142] It is also adjacent to and designed to discharge polluted stormwater into the Gum Branch, which is already impaired by nutrients and feeds into the Nanticoke River.[143] The site of the Project has no natural or manmade barriers that would preclude any of the 250,000 tons of pollution-laden waste BDC intends to handle each year from reaching these features and waterways. And as discussed above, Commenters expect, based on BDC's own statements and application documents, that much of the waste imported to produce methane will end up land applied in Delaware.

The Project is also located in an area otherwise reserved for agriculture and residential neighborhoods. In fact, a mobile home park is approximately half a mile from the proposed gas production facilities, and other neighborhoods and places of worship are nearby.[144] The Project site is also surrounded by groundwater wells, many of which are downgradient of the site and therefore vulnerable to contamination. Site Map at 13.

In sum, the Project does not satisfy § 1301-9.2.1's siting screen. Constructing and operating an industrial gas production and solid waste handling plant here, surrounded by sensitive natural features, designed to discharge pollution into already severely degraded waters, upgradient of many private wells, and close to families and their homes, is wrong and poses a substantial potential to degrade the environment.

3. The RRFP Conflicts with the Anaerobic Digester Air Permit Application

BDC's applications contain a fundamental contradiction that underscores the half-baked nature of the Project as proposed. While the RRFP permit is inclusive of the composting operation and the proposed 87% expansion there (treating the composting operation as part and parcel of the same facility and overall operational flow), BDC's anaerobic digester air permit

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[141] 7 Del. Admin. Code § 1301-9.2.1.
[142] Siting Criteria at 3 of 7.
[143] 7 Del. Admin. Code § 7430; DNREC, Total Maximum Daily Load (TMDL) Analysis for Tributaries and Ponds of the Nanticoke River and Broad Creek, Delaware (Dec. 2000), https://documents.dnrec.delaware.gov/swc/wa/Documents/TMDL_TechnicalAnalysisDocuments/17_NanticokeTribsTMDLAnalysis.pdf.
[144] *See* Exhibit B.

application and draft permit *ignore* even the use of digestate for composting or the expansion.[145] It is nonsensical and improper to ignore such fundamental aspects of the Project in any of the permits under consideration. DNREC must require BDC to submit *complete and coherent* permit applications that do not contradict each other.

4. BDC Selectively Treats the Project as a Unified Facility and As Separate Operations

Throughout BDC's application paperwork, the Project is characterized by BDC as a single facility or, conversely, as separate operations in an apparent attempt to reach BDC's preferred conclusions and avoid appropriate oversight. But the DRGSW require that BDC consistently describe the Project, its operations, and potential impacts together to include composting, biogas production, biogas refining, and wastewater treatment (and associated infrastructure and servicing equipment such as emergency generators).[146] As discussed above, BDC's RRFP application openly contradicts its air permit application (as do the draft permits) by selectively including or excluding the composting operation and proposed expansion. The Project is a single project with a related and interconnected functions. While BDC can and currently does operate the composting operate without anaerobic digesters and the rest, BDC proposes to change that process and wrap composting into a methane gas/digestate product production project. BDC may not rely on the interconnected nature of the Project on the one hand, for example to explain how it will manage the huge increase in waste imported to the site, and disaggregate them on the other, for example in its air permit.

B. DNREC May Not Issue the Proposed Anaerobic Digester Air Permit

DNREC may not issue BDC's construction air permit for the anaerobic digesters because the applications, DNREC's review, and the draft permit (1) do not satisfy the natural minor source permit requirements, (2) do not provide sufficient technical controls to address air pollution, (3) did not properly consider the major source permit requirements, and (4) did not properly consider the new source review requirements.

1. BDC Has Not Met Natural Minor Source Permit Application Requirements for the Project

DNREC accepted BDC's air emissions permitting applications under the natural minor source framework of 7 Del. Admin. Code § 1102. The § 1102 permit program is an "option" to "secure terms and conditions in a permit that effectively limits potential to emit for the purpose of avoiding applicability of a federal standard, regulation or other federal requirement."[147] DNREC's rationale for processing BDC's air permit applications under the natural minor source

[145] Air Permit: Technical Memo at 4 of 133 ("It should be noted that this application does not include a request to allow the use of the solid digestate in the adjacent compost facility, nor does it request permission to increase the compost facility's throughput capacity[,]" and noting such activities "will require modification" of the air permit). *See also* Section B., *infra*.

[146] *See* 7 Del. Admin. Code § 1301-3 ("'Facility' means all contiguous land, structures, other appurtenances, and improvements on the land, used in resource recovery and/or the treatment, handling, composting, storage, or disposal of solid waste. A facility may consist of several operational units (e.g., one or more landfills, cells, incinerators, compactors, or combinations thereof).").

[147] 7 Del. Admin. Code § 1102-1.2.

framework is that the combined emissions from the existing compost facility – which is not referenced at all in the draft air permits – and proposed sources (anaerobic digesters and emergency generator) do not have the potential to emit above the major source threshold for Sussex County.[148]

An applicant must submit "any relevant information" that DNREC may request.[149] When an applicant fails to do so, DNREC must deny the permit application or request the missing information before it may proceed.[150] Examples of how the information submitted does not satisfy the ten minimum description requirements[151] for a natural minor source application include:

- Equipment: A description of the equipment is required.[152] BDC's application and Engineering Report generally identified designs and plans but demanded flexibility in permitting for supply chain issues or changes in technology based on when construction was complete.[153] Similarly, the Engineering Report provided general estimated information on pre-tank design, expected daily biogas production, and methane production, but no specific equipment was identified for the anaerobic digestion portion of the project.[154] DNREC encountered many problems in obtaining equipment specifications from BDC during its permit review.[155] Even if *some* of these equipment specifications have been resolved, not all of them have been. This is important because air emission calculations, operational controls and limitations, and monitoring and reporting and permit enforcement are all tethered to the equipment BDC proposes to use, but significant gaps still remain. For example, in the updated September 23, 2022 Technical Memo, BDC *still* fails to specifically identify the anaerobic digester equipment and DNREC only generally discusses the *process* of anaerobic digestion based on DNREC's assumptions and independent internet searches, but not the equipment BDC will actually use.[156] Moreover, DNREC's discussion of the anaerobic digestion process was based heavily in part on information not even provided by BDC and thus not related to any specific equipment proposed by the applicant.[157] A company that regularly touts acquisition of between

[148] *See, e.g.*, DNREC PowerPoint Presentation at 9 (Sept. 28, 2022).
[149] 7 Del. Admin. Code § 1102-11.1.4.
[150] As the record shows, *e.g.*, in DNREC's Technical Memorandum, DNREC engaged in back-and-forth communications with BDC over the span of many months but did not request several pieces of essential information. Nor should this burden fall entirely on DNREC: BDC must submit *complete* applications to receive permits.
[151] *See* 7 Del. Admin. Code § 1102-11.2.1–11.2.10.
[152] 7 Del. Admin. Code § 1102-11.2.1, 11.2.2.
[153] *See* Air Permit: Technical Memo at 132–133 of 133.
[154] Engineering Report § 3.3.3. BDC was able to provide equipment-specific information for the backup emergency generator and the biogas conditioning portions of the project. *See* Air Permit Application at 330–339 of 509; Engineering Report § 3.3.3, Tbl. 8.
[155] Air Permit: Technical Memo at 2–3 of 133.
[156] *See* Air Permit: Technical Memo at 19–42 of 133.
[157] *See, e.g.*, Air Permit: Technical Memo at 33 of 133 (due to BDC's failure to provide adequate detail, "I wanted to better understand the process so I consulted the EPA's website which included a number of resources available through AgSTAR."), 33–36 of 133 (relying on AgSTAR generalities to make assumptions regarding "typical" digesters), 36–40 of 133 (general assumptions regarding digestion time and using information from a non-operational facility using a different waste stream than Seaford).

200 and 280 different anaerobic digestion facilities worldwide should be able to provide specific anaerobic digestion equipment information to DNREC to support a permit application. The air permits are site-specific permits, and DNREC should use site-specific information in reviewing the permit application, not generic information about digesters generally.

- Trade Waste: Neither BDC's application nor the Technical Memo identify the chemical composition and amount of any "trade waste" to be produced as a result of the construction, installation, or alteration of any equipment or apparatus covered by the application.[158] Trade waste "means any solid, liquid, or gaseous waste material or rubbish resulting from construction, land clearing for construction or development, building operations, or the prosecution of any business, trade, or industry including, but not necessarily limited to, plastic products, cartons, paint, grease, oil and other petroleum products, chemicals or cinders."[159] Relatedly, 7 Del. Admin. Code § 1106 requires controlling particulate matter air pollution from construction and materials handling. The air permit applications also do not adequately identify, estimate, or provide mitigation for any dust emissions associated with the proposed construction. The air permit contains a generic operational limitation requirement to "control dust emissions, when such activities could emit dust in quantities sufficient to cause air pollution,"[160] but particulate emission limits in the air permit focus primarily on the RTO and flare,[161] and bypasses dust caused by sources such as trucks.

- Descriptions of air emissions, controls, and effects: 7 Del. Admin. Code §§ 1102-11.2.4, 11.2.7, and 11.2.8 require applicants to describe equipment and facility emissions, the nature and frequency and amounts of emissions, the proposed means for preventing or controlling emissions, the projected effects of emissions, and to describe the nature and amount of emissions by "associated mobile sources." The application does not satisfy these requirements for at least the following reasons:

    - *Missing information*: Without accounting for the anaerobic digestion process equipment (discussed above), the existing compost operations (discussed below and *supra* in Section A.), the mobile sources (discussed below), the applicant cannot describe the nature and amount of emissions from the facility (§ 11.2.8); the method and expected frequency of occurrence of the start-up and shutdown of the equipment, including projected effects of emissions to the atmosphere and on ambient air quality (§ 11.2.7); or identify proposed means for the prevention or control of emissions or contaminants (§ 11.2.4).

    - *Missing facility emissions:* The draft air permit does not address certain components of emissions from the facility, their changes, or consider their compounded effects. As demonstrated in the examples below of missing facility emissions which BDC has not addressed in its application, BDC also

[158] 7 Del. Admin. Code § 1102-11.2.5.
[159] *Id.* § 1101-2.0.
[160] Anaerobic Digester Air Permit §§ 3.1.1, 3.1.7.
[161] *See id.* §§ 2.2, 4.

has not described its proposed means for prevention or control of the emissions and DNREC has not provided permit operational limitations or controls of these emissions in the permit.

- The existing composting operation, which DNREC has separately permitted to compost up to 30,000 tons of poultry litter, hatchery waste, and DAF cake and sludge and has the potential to emit 26.7 tpy of VOCs and 43.95 tpy of NH3 but is subject to emission limitations of 2.67 tpy for VOCs and 9.67 tpy for NH3.[162] The existing composting operation also has opacity and odor limitations.[163]

- The proposed expansion of the existing compost operation. BDC claims that the proposed expansion of the composting operation will have no associated air emissions.[164] BDC fails to explain how an 87% increase in the total amount of composting would have no associated increase in air emissions when emissions are estimated on the amount of material composted. In fact, recent studies show that composting digested material results in increased ammonia emissions when compared with composting undigested material.[165] See V.A.1.a. *supra.*

- The proposed permits contain no limitations on the percentage of feedstock, and contemplate wood feedstock in addition to DAF, poultry litter, and hatchery waste, but the overall quantity of feedstock for anaerobic digestion is an eight-fold increase.[166] This is an important factor in assessing potential air emissions because different feedstocks have different compositions, and will generate different mixes of pollutants like VOCs, NOx, Sox, CH4, and HAPs during pre-tank storage, digestion, and the gas production and refining processes.

- An existing emergency generator has the potential to emit 1.287 tpy NOx, 0.085 tpy SOx, 0.103 tpy VOCs, 0.091 tpy PM, and 0.277 tpy CO.[167] While, according to DNREC, the existing generator may no longer require a separate permit, it is an emissions source that should be considered with the other emission sources unless BDC is required to decommission the generator such that it would have no potential to emit;

- Storage of materials on-site. The air permits do not reference the storage or stockpiling of materials on-site and any associated air emissions. For example, the air permit application does not address

[162] Air Permit: Technical Memo at 3 of 133; Composting Permit #SW-18/03 at § 2.1.
[163] Composting Permit #SW-18/03 at §§ 2.3, 2.4.
[164] EA at 5 of 16.
[165] Michael A. Holly et al., *supra* note 58.
[166] *See* Draft Anaerobic Digester Air Permit at 3.1.2.
[167] Air Permit: Technical Memo at 3–4 of 133.

whether the DAF sludge, compost process water, or wood waste that are allowed under the RRFP § IV.C could have additional emissions.

- The applicant does not identify, describe, or account for how immature and mature gas may impact expected emissions at the facility and DNREC did not account for these differences in the draft permit. BDC also did not identify, describe, or account for the air pollution effects and controls for the timing of anaerobic processes and immature versus mature gas. The applicant proposes 3 days' time in pre-tanks and a longer time in digestion, but seems to suggest that different feedstocks will be input into a digester at different times. This will necessarily result in varying stages of breakdown during the digestion process, producing immature and mature gas at different points in the digestion process. Immature and mature gas would be expected to have different percentages of VOCs, NOx, SOx, and HAPs.

- Late-stage change in application information showing significant increases in RTO emissions requires additional due diligence. It was not until September 2022 during the public notice period that BDC changed its position from instead of "no emissions" of NOx, CO, VOCs, or PM expected from the RTO flare to admitting to emissions and that were higher than estimated. NOx increased from 0.307 tpy to 1.104 tpy, CO2 increased from 367.920 tpy to 12,176.40 tpy, and CH4 increase from 0.007 tpy to 3.336 tpy. See 9/23/22 Technical Memo Table 32 (as compared with 8/21/22 Technical Memo Table 29). With such significant increases in NOx, CO2, and CH4, DNREC should require BDC to conduct additional due diligence and document the same regarding pertinent calculations and estimations.

- Failure to account for flare use if there is a temporary loss of market for gas. Under BDC's Operations Plan, a temporary loss of market "would result in biogas from digesters temporarily flared." This issue is not addressed in air emission calculations, but should be. And, DNREC should provide parameters and limitations for the quantity of flare use for this purpose and emission limitations.[168]

- *Associated mobile sources*: There are at least four categories of trucks associated with this facility: trucks delivering feedstock material; trucks for conveying wastewater to Seaford (daily);[169] trucks conveying gas off-site; and trucks conveying compost off-site. The application focuses exclusively on

[168] Operations Plan at 51 of 54.

[169] The wastewater may or may not include other wastes that will need to be removed from the facility and which the Technical Memo identifies as needing to be trucked off-site. *See* Air Permit: Technical Memo at 29 of 133, 46 of 133, 52–53 of 133 (identifying RO permeate, RO super concentrate, and H_2S removal and carbon polishing saturated adsorbent). Not included in wastewater, these are additional truck categories have not been described in the permit application materials and their air emissions have not been accounted for or regulated in the draft air permits.

trucks delivering waste, but essentially ignores the potential to emit air pollutants from trucks conveying wastewater, gas, digestate products, and compost off-site, and the permits do not propose any timing, idling, tarping/covering, size/weight, or pollution restrictions on these latter truck categories. Nor does the application describe how all these other categories of trucks will interact with the backup queue area for trucks delivering feedstock material, or with the flow intended for solid and liquid feedstock deliveries, or identify any safety and spill measures for these other truck categories.

2. *Technical requirements and controls in the draft permit are insufficient to address pollution from the Project*

DNREC's administrative principles include the requirement to not interpret standards to allow significant deterioration of existing air quality in any portion of the state, to ensure a reasonable quality of air throughout the state for emission standards throughout the state, and, where "emission requirements are inadequate to attain or maintain the applicable air quality standard, the Department shall exercise its authority to require additional control measures."[170] Here, DNREC has failed to follow these principles in assessing BDC's permit applications and in preparing the draft permits.

DNREC sets air contaminant emission levels by applying 7 Del. Admin. Code Chapter 1101 and by limiting specific air emissions through permit terms. The permit focuses on the regenerative thermal oxidizer ("RTO") and the flare as emission points and identifies the potential to emit VOCs, NOx, Total PM, SOx, and CO. The permit identifies visible contaminants/opacity and odor as air contaminants from other sources. The permit does not identify or limit other air contaminants associated with the proposed facility, such as methane, hydrogen sulfide, or CO_2.[171] Nor does the draft permit address BDC's clear intention to expand the composting operation from 30,000 tpy to 56,000 tpy, which could nearly double associated air emissions. The potential to emit air pollution must therefore be re-assessed and re-calculated to account for all emissions sources, including the expansion of the compost operation.

The emission limitations in the draft permit, and the monitoring, are primarily based on DNREC's assumptions that the anaerobic digestion process will not release air pollutants, and only the RTO and flare will emit pollutants as part of the gas conditioning process. DNREC has made assumptions regarding what equipment will be used, yet BDC has expressed its desire to leave open equipment commitments in the permit depending on supply chain issues.[172] It does not appear either that DNREC has asked for equipment or emissions information from the nearly 280 other anaerobic digester and methane production facilities BDC owns and operates (through a subsidiary) across the globe. Studies actually point to the contrary, and suggest that fugitive

[170] *See* 7 Del. Admin. Code 1101 § 3.

[171] BDC's paperwork contains contradictory statements regarding the fate of CO_2 removed from the biogas during refining. *Compare* Air Permit: April 11, 2022 BioEnergy Response to March 30, 2022 Request for Additional Information (telling DNREC that it will "be sent to the regenerative thermal oxidizer"), *with* Recycling Analysis at 4 of 14 (stating that it "can be vented or captured for sale when there is a market"). DNREC should either deny the permits due to incomplete or inaccurate application materials, or otherwise assume the most impactful outcome when presented with a contradiction like this.

[172] *See, e.g.*, Air Permit: Technical Memo at 132 of 133.

emissions from methane production via anerobic digestion is underestimated.[173] Until this information is clarified, DNREC is not in a position to issue a permit that only addresses emissions from the RTO and flare, nor is DNREC able to confirm that any equipment changes will only have functional equivalency changes and will not increase the Project's potential to emit.

The focus on the RTO emissions raises another concern. BDC claims that its RTO functions at 93% efficiency, plus or minus 2%.[174] But BDC has not provided information to demonstrate it will achieve that efficiency rate. Achieving that rate depends on the equipment used and the feedstock inputs to the digestion and gas conditioning processes. If BDC exceeds the 93% efficiency estimate, which its own margin of error already suggests that it has the potential to do, the facility would become a major source for air permitting purposes. Again, until BDC can provide accurate information, the conversion rate is merely a math game using unsupported numbers. A natural minor source permit should not issue until it can be supported.

Should DNREC proceed with this permit, it must also require additional monitoring along the different flow paths of the anaerobic digestion process, the composting operation,[175] the storage bunker, and truck usage at the site - not just for the has conditioning process through the RTO and flare. Since DNREC is proposing emission calculations for the gas conditioning process based on the volume of gas combusted by the RTO and flare, at a minimum DNREC should propose emission calculations for the imported feedstock, anaerobic digestion process, the composted material and bunker, and trucks based on volume. Additionally, DNREC must require monitoring to occur at the Project's fence line and beyond to identify permit exceedances and protect local communities.

Some examples of where the draft permits' technical controls on air pollutants are insufficient include the following:

- H2S and methane

Delaware's ambient air quality standards for H_2S dictate that H_2S concentrations shall not exceed 0.06 ppm for any consecutive 3 minutes and 0.03ppm over any consecutive 60 minutes.[176] Commenters note that it is not even included in the Technical Memo Table 7 which summarizes all air pollutants facility wide.

Delaware does not have an ambient air quality standard for methane. Above, we raised the issue of immature versus mature gas production; immature gas is expected to be high in H2S and VOCs, which pose significant health risks should they be released.[177] Mature gas is expected to be mostly methane.

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[173] *See* Bakkaloglu et al., *supra* note 128.
[174] *See* Air Permit Application at 502 of 509.
[175] The existing air permit for the compost operation has emission limits for VOC and NH3. APC-2016/0093-OPERATION (as amended).
[176] 7 Del. Admin. Code § 1103-9.0.
[177] Am. Lung Assn., *Volatile Organic Compounds* (updated Nov. 17, 2022), https://www.lung.org/clean-air/at-home/indoor-air-pollutants/volatile-organic-compounds; Centers for Disease Control and Prevention, Nat'l Institute

DNREC must incorporate emissions limitations for H2S and methane into the draft permit and require accompanying monitoring at the anaerobic digestion and gas conditioning stages. We also recommend additional worker and public safety measures, such as alarms, regarding the potential release of these pollutants. Additionally, while the permit mentions Draeger tubes,[178] there are different degrees of sensitivity of Drager tubes and the permit should require BDC use the most sensitive Draeger tubes available. Also, BDC stated that using *both* Draeger tubes *and* gas pressure sampling methods "provides redundancy in monitoring breakthrough in the H_2S and VOC/siloxane removal vessels," however, the air permit only requires Draeger tubes *or* a gas analyzer.[179] The permit does not provide for sufficient methods to monitor whether the digesters are working properly, and given the dangerous and explosive nature of H_2S and methane, monitoring for these air pollutants should be required.

- Nitrogen oxide emissions change and missing emissions

The § 1102 natural minor source permit program applies when equipment without an air contaminant control device that has actual emissions of a contaminant, in the aggregate, during each and every day that are equal to or greater than 0.2 pounds per day.[180] The draft permit sets the NOx emissions limitations at 0.252 lbs/hour and 1.104 tpy from the RTO and 3.687 lbs/hour and 4.528 tpy from the flare. During the public notice period, BDC and DNREC issued revised nitrogen oxide air emissions from the RTO and a revised Technical Memo. The change nearly quadrupled the nitrogen oxide air emissions from the RTO from 0.307 tpy to 1.104 tpy. DNREC decided this change did not impact short-term modeling or its review of the anaerobic digester air permit application. Use of the RTO is part of BDC's proposed "routine" activities, so the change is not inconsequential for the facility's NOx emissions. The major source threshold for nitrogen oxide is 100 tpy in Sussex County; other counties like New Castle and Kent are 25 tpy.

However, as pointed out above, BDC failed to identify and account for several truck-related activities at the facility. NOx primarily enters the air from the burning of fuel, such as emissions from trucks. In order to properly estimate the facility's NOx emissions, DNREC must require BDC to account for all NOx sources.

For comparison purposes, Del. Admin. Code 7-1000-1112 is the nitrogen oxide standard for major sources. Under § 3.0 Standards, the equipment used at a facility and the facility's industrial processes and power sources determine what nitrogen oxide standard applies. Here, BDC and DNREC are proposing to leave several components of the equipment used "open" for the time being so they cannot properly estimate the nitrogen oxide emissions to evaluate whether BDC in fact requires a major source permit. Additionally, the draft permit ignores other sources NOx, such as the truck traffic. At a minimum, BDC and DNREC need to re-assess the NOx emissions, using the actual equipment and facility functions, and more accurate traffic emissions, and evaluate whether BDC should in fact be permitted as a major source for NOx.

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for Occupational Safety and Health, *Hydrogen Sulfide* (reviewed June 21, 2019), https://www.cdc.gov/niosh/topics/hydrogensulfide/default.html.

[178] *See* Draft Anaerobic Digester Air Permit at §§ 4.7.4.3, 5.2.9.2.2.

[179] *See* Air Permit: Technical Memo at 45 of 133; Draft Anaerobic Digester Air Permit at 4.7.4.3.

[180] 7 Del. Admin. Code §§ 1102-2.1.1, 2.2.

- CO_2 and CO2e

In the Technical Memo, DNREC takes the position that BDC's potential to emit air contaminants, while almost five times above 100,000 tpy for CO2e equivalent at a whopping 483,288 tpy (this does not include downstream combustion of methane gas produced as discussed above), does not make the facility a major source for air permitting purposes. As a result, the draft permit does not address CO2 or CO2e at all. Regardless of whether the facility meets the major source requirements, BDC does not identify how much in excess of the 100,000 tpy threshold the facility would be for CO2e, for all sources. Generally speaking, fuel combustion, industrial processes, natural gas processing, and decomposing biomass are the largest sources of CO2 emissions. All of these activities are planned for the BDC facility, but as discussed above, only some of them are accounted for. At a minimum, the public is entitled to know *how much more above* the 100,000 tpy threshold the facility will emit CO2e when all sources are accounted for. The uncontrolled and entirely unregulated greenhouse gas emissions proposed by the BDC – and which DNREC would allow - are astronomical when compared to other industrial facilities. Also see Section V.A.1.m.i. *supra*.

- Lacking Substantial Evidence Regarding Emissions from Equipment and Other Sources, So Other Air Pollutants Cannot Be Estimated and Subjected to Air Permit Controls and Limitations, So Air Permit Cannot Be Issued.

BDC proposes to produce VOCs, siloxanes, particulate matter, sulfur dioxide, and carbon monoxide through its anaerobic digestion and methane production processes. The Anaerobic Digester Air Permit addresses emissions of these air pollutants from the RTO and the flare, but not from other sources such as the anaerobic digester, expanded compost operations, or truck traffic. These air pollutants are important for DNREC to fully consider; VOCs for example, contribute to odors, siloxanes have health and environmental impacts, particulate matter

VOCs, particulate matter, sulfur dioxide, and carbon monoxide have numerical limitations in Delaware and Sussex County-specific regulations, but without accounting for all of the sources of these air pollutants, DNREC cannot estimate the quantities or insist on controls and limitations in the air permit that DNREC, or the public, can enforce. Additionally, accounting for these missed sources has the potential to push BDC over the "major source" threshold for at least one of these pollutants, and DNREC must fully assess the potential to emit air pollutants by evaluating all of the equipment and other sources of air pollutants.

- Visible emissions, odors, dust, vector controls

For all stationary sources, visible emissions are to be measured using Ringelmann values or opacity percentages, or alternative and more restrictive methods.[181] The draft permit assumes that only the RTO and flare are sources of visible emissions; however, given the proximity of residences to the facility, and the eight-fold increase in the quantity of imported feedstock, and potential for stockpiling of compost on-site, DNREC should require BDC to use the more

[181] 7 Del. Admin. Code § 1114-1.2, 3.0.

stringent measurement visible emissions method and expand the number and kinds of points at the facility where visible emissions must be monitored.

The draft permit completely misstates the regulatory requirement for odors, and proposes a lower standard than the regulations.[182] The odor limitation is clear – "[n]o person shall cause or allow the emission of an odorous air contaminant such as to cause a condition of air pollution."[183] The regulation also requires monitoring including, but not limited to, scentometer tests, air quality monitoring, and affidavits from affected residents and investigators.[184] The draft permit only requires "qualitative odor surveys" and instructs the operator to focus on specific areas, and to reassess the scope and frequency of odor surveys. In order to comply with state regulations, monitoring requirements must follow the requirements of 7 Del. Admin. Code § 1119-1.2. To prevent odor emissions from places like the feedstock receiving building, BDC should not be permitted to only rely on rolling doors up and down and negative pressure (which cannot work if doors are rolling up and down multiple times an hour), so additional odor measurement tools must be required. The permit also ignores existing odor issues, does not identify what measures are not currently working, and does not provide adequate protections for the community.

- Stack height

The RTO stack is specified to have a 25' height. The function of the RTO stack is to house filters to purify the biogas as part of the biogas conditioning portion of the process. The filters do not control air emissions and thus do not function as air contamination control devices as defined by 7 Del Admin. Code § 1101.

The carbon filters are expected to be 36' tall and 9' in diameter. The draft permit does not address the stack height criteria in 7 Del Admin. Code § 1127, which the public is specifically invited to comment on.[185] More information is needed on the effects of these large stacks in the community. Additionally, BDC does not appear to provide estimates and calculations for determining when use of this equipment is appropriate or not, and DNREC does not establish any permit limits based on meteorological conditions. The potential emission and transport of pollutants from the RTO stack and carbon filters beyond the property boundaries are issues that must be addressed in the permit.

- Public safety

The draft permit does not contain any instructions or provisions on air pollution alerts or emergency plans for the surrounding community, as required by Del. Admin. Code 7-1000-1115.

Additionally, BDC and DNREC ignore the risks of leaks and explosions that have the potential to occur by conducting this project as a two-phase project. Phase I (construction only) may have some risks, but Phase II (operation and construction) has greater risks for potential for

[182] *See* Draft Anaerobic Digester Air Permit 2.3.
[183] 7 Del. Admin. Code § 1119-2.0.
[184] *Id.* § 1119-1.2.
[185] *Id.* § 1119-4.0.

leaks and explosions. The space BDC is working in is not very big, it is already a tight space for trucks to operate and turn around. The risks of accidents happening in Phase II, when a digester & gas production facility is operational *and* additional construction is going on, should not be ignored by DNREC in the permit evaluations.

3. *DNREC Must Reassess Whether a Major Source Permit Is Required*

A facility is a major source if it emits or has the potential to emit any criteria pollutant or hazardous air pollutant at levels equal to or greater than the major source thresholds. This determination also accounts for the attainment status of the area. Sussex County is a non-attainment area (2008) for ozone.[186] Major sources are subject to 7 Del. Admin. Code § 1125 preconstruction review requirements, which are more comprehensive than natural minor source review. Given the missing components of DNREC and BDC's emission calculations noted in the public comment process, including in these Comments, BDC and DNREC need to re-calculate the potential air emissions from the facility and re-evaluate whether in fact a major source permit is required.

4. *New Source Review Is Required Because the Project Has the Potential to Emit More Than 5 TPY*

As shown above and in the Technical Memo, BDC's proposal, even without accounting for the missed emissions discussed in public comments, will exceed 5 tpy for NOx and VOCs. BDC should be required to go through new source review.

The new source review program requires industrial facilities - whether they are major or minor sources - to install modern pollution control equipment when they are built or when making a change that increases emissions significantly. The program accomplishes this when owners or operators obtain permits limiting air emissions before they begin construction. For that reason, NSR is commonly referred to as the "preconstruction air permitting program." The purpose of the NSR program is to protect public health and the environment, even as new industrial facilities are built and existing facilities expand. Specifically, its purpose is to ensure that air quality: does not worsen where the air is currently unhealthy to breathe (*i.e.*, nonattainment areas); and does not significantly degrade where the air is currently clean (*i.e.*, attainment areas).[187] Delaware integrates new source review preconstruction requirements in its air permitting framework for major and minor sources.[188]

NSR has three permitting approaches: the prevention of significant deterioration (PSD) program; the nonattainment NSR program; and the minor new source review program. The PSD program regulates NSR pollutants including NAAQS and some other pollutants – including hydrogen sulfide, VOCs or nitrogen oxide. This is notable because Sussex County is in non-

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[186] *See, e.g.*, EPA Region 3, Current Nonattainment Counties for All Criteria Pollutants (as of Oct. 31, 2022), https://www3.epa.gov/airquality/greenbook/ancl.html; *see also* Air Permit: Technical Memo at 102 of 133, 108 of 133.

[187] *See* EPA, Fact Sheet: New Source Review (NSR), https://www.epa.gov/sites/default/files/2015-12/documents/nsrbasicsfactsheet103106.pdf.

[188] 7 Del. Admin. Code § 1125-4.0.

attainment for 8-hour ozone (2008), and Delaware PSD regulations state that a "major stationary source that is major for volatile organic compounds or nitrogen oxides shall be considered major for ozone."[189] The nonattainment program regulates the NAAQS pollutants only; and the minor NSR program applies to new minor sources in attainment and nonattainment areas.

The minor NSR program regulates the potential to emit equal to or greater than 5 tpy of VOCs, NOx, SO2, SO3 (or SOx), PM 2.5, or the potential to emit equal to or greater than 5 tpy in the aggregate of any hazardous air pollutants listed in the Clean Air Act § 112.[190] NSR permits will require emission control technology that meets the LAER or BACT requirements, or as otherwise approved by DNREC.[191] Under Delaware regulations, minor new source review is required for persons applying for Del. Admin. Code 7-1000-1102 permits (which BDC is applying for) and subject to § 11 application requirements (see discussion above), and the construction has the potential to emit the air pollutants referenced in the regulation. Again, BDC should be required to account for its equipment, and all sources of emissions, and DNREC should require review under a more stringent permit review and insist on an enforceable permit framework with operational controls and monitoring to better protect the public.

C. DNREC May Not Issue the Proposed Wastewater Permits

DNREC may not issue BDC's wastewater permits for the anaerobic digesters wastewater pretreatment plant and the membrane bioreactor pretreatment system because they are incomplete or otherwise not properly prepared. The two wastewater draft permits are simply not ready for public notice and comment. In their present version, they are essentially nothing more than an outline of *some* topics wastewater permits should cover. None of the specific pollutants of 40 C.F.R. Part 403 are referenced in the draft wastewater permits, nothing specific to pollutants generated by BDC's wastewater processing from either the anaerobic digestion process or the membrane treatment system are referenced, and neither permit address PFAS. The two draft permits essentially are a cut and paste of each other, neither containing any operational controls, equipment maintenance or equipment inspection requirements, effluent limitations, or monitoring or sampling parameters. Despite covering completely different EPA NPDES programs (industrial wastewater and pretreatment programs), different equipment, functions, processes, handling, pollutants, and discharges, the draft wastewater permits are the same. The pretreatment permit covers the anaerobic digestion process, and the wastewater permit covers the membrane bioreactor pretreatment system. Part I of each draft permit very generally and broadly identifies the covered equipment permit applies to, Part II of each draft permit has identical management and responsibility requirements, and Part III Special Conditions differs only in that the Pretreatment Permit requires the City of Seaford to accept responsibility for BDC's wastewater, the draft permit only authorizes Phase 1 construction, and Phase 2 construction will require DNREC approval of specifications.[192]

Even the most basic protections are not provided for. For example:

[189] 7 Del. Admin. Code § 1125-3.1.
[190] 7 Del. Admin. Code § 1125-4.1.4.
[191] 7 Del. Admin. Code § 1125-4.3.1.
[192] *See* Pretreatment Draft Permit Part III.A.6–.8.

- The draft wastewater permits estimate 60,000 gallons per day will be discharged, but do not have any monitoring or controls to enable BDC, DNREC, Seaford, or the public to verify this estimate. By Delaware's definition, the NPDES program covers the issuance, modification, revocation, reissuance, *monitoring*, and enforcement of permits for the discharge of any pollutant or combination of pollutants and enforcing pretreatment … requirements."[193]

- The draft wastewater permits only refer to 40 C.F.R. Part 403, which provide general pretreatment regulations for effluent limitations. There is nothing specific to the nature of the unique wastewater streams BDC anticipates generating identified in the draft permits. Pretreatment facilities are required to develop and enforce specific limits to implement the prohibitions of 40 C.F.R. § 403.5. The regulation contains general and specific limitations, none of which are identified in the draft permits or set forth in sampling protocols. Several of these pollutants should be of particular concern to DNREC given the nature of the equipment, activity, and process at BDC.[194] Nor do the draft permits address operational controls within the system to prevent, for example, unwanted solids from entering the system.

- At a minimum, the effluent streams should be sampled regularly before transfer to the City of Seaford. As a public body, the City cannot accept this wastewater – and the associated responsibility and costs of treating BDC's wastewater - on behalf of the public without knowing what it is accepting.

- BDC has indicated it executed a 20-year organics supply agreement with Perdue Farms, to deliver wastewater residuals, litter, and hatchery waste on the Delmarva. The management, sampling, or conveyance of these residuals are not addressed in the draft wastewater permits.

- Noncompliance measures only need to be reported to DNREC within 5 days.[195] There is no requirement to alert nearby communities of any wastewater spills or discharges.

- In April 2022, EPA issued a PFAS wastewater roadmap with enhanced monitoring provisions, the use of new analytical methods, and implementation of pollution prevention and BMPs to address PFAS discharges.[196] But PFAS are not mentioned in the draft wastewater permits.

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[193] 7 Del. Admin. Code § 7201-2.0 (defining NPDES Permits); 7 Del. Admin. Code § 7201-6.40.1 ("To ensure compliance with permit terms and conditions, all permittees shall monitor as specified in the permit…."); *see also infra* at Section V.A.1.b.

[194] 40 C.F.R. § 403.5(b)(1)–(8) (pollutants which create fire or explosion hazards, heated waste streams, corrosive pollutants, low pH pollutants, solids in amounts which will cause obstructions, oils, toxic gasses or vapors or fumes, and truck or hauled pollutants).

[195] Pretreatment Draft Permit at II.A.2.

[196] *See* EPA Memorandum, Addressing PFAS Discharges in EPA-Issued NPDES Permits and Expectations Where EPA is the Pretreatment Control Authority (April 28, 2022), https://www.epa.gov/system/files/documents/2022-04/npdes_pfas-memo.pdf.

Even in its draft form that fails to provide the basic necessary information, DNREC did include the reference to a proposed, unfunded, unbuilt force main and future pump station in the Pretreatment Draft Permit. This concept is nothing more than a proposal BDC has made, and should be stricken from the draft permit and should not be something DNREC can rely on in considering factors related to its review or made a part of the wastewater system's operation, control, or management provisions in the permits.

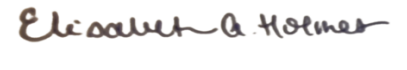
There are also technical problems with the draft wastewater permits and digestion process permits. For example, the wastewater pretreatment piping appears to have utilities running underground. This should have triggered additional land use review, but did not. Additionally, the construction of this equipment appear to be very close to the existing pelletizing facility. There should be protections and monitoring to prevent collapse, leak detection, etc. with utility lines, including gas lines, so close, both during construction and operation phases of the Project.

DNREC has improperly processed the wastewater permit applications based on deficient information, and drafted wastewater permits that do not address the specific requirements of 7 Del. Admin. Code § 7201-4.11.7 (discharge limitations, performance standards, monitoring and reporting, etc.), do not address the processes at BDC that will generate industrial wastewater or the specific pollutants. DNREC should deny the wastewater permit applications and withdraw the draft wastewater permits.

VI. Conclusion

Based on the forgoing, Commenters respectfully request DNREC deny BDC's permit applications and withdraw the draft permits. The Project poses an alarming environmental injustice and will harm the health and welfare of Delawareans. The Project will exacerbate climate change and pervasive factory farming pollution already overburdening Delaware's soil, air, and water. BDC has failed to submit compliant applications, rending DNREC unable to fulfill its statutory and regulatory obligations, and DNREC's review of the permit applicants does not satisfy the applicable laws. Were DNREC to issue these permits, it would violate Delaware law and the agency's obligations to Delawareans.

Respectfully,



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On Behalf of:

Assateague Coastal Trust
Delaware Working Families Party
Food & Water Watch
Johns Hopkins Center for a Livable Future
Latino Initiative on Restorative Justice, Inc.
Methodist Action Program
Namati US Environmental Justice Program
Sierra Club Delaware Chapter
Socially Responsible Agriculture Project
Sussex Health and Environmental Network

Exhibit A

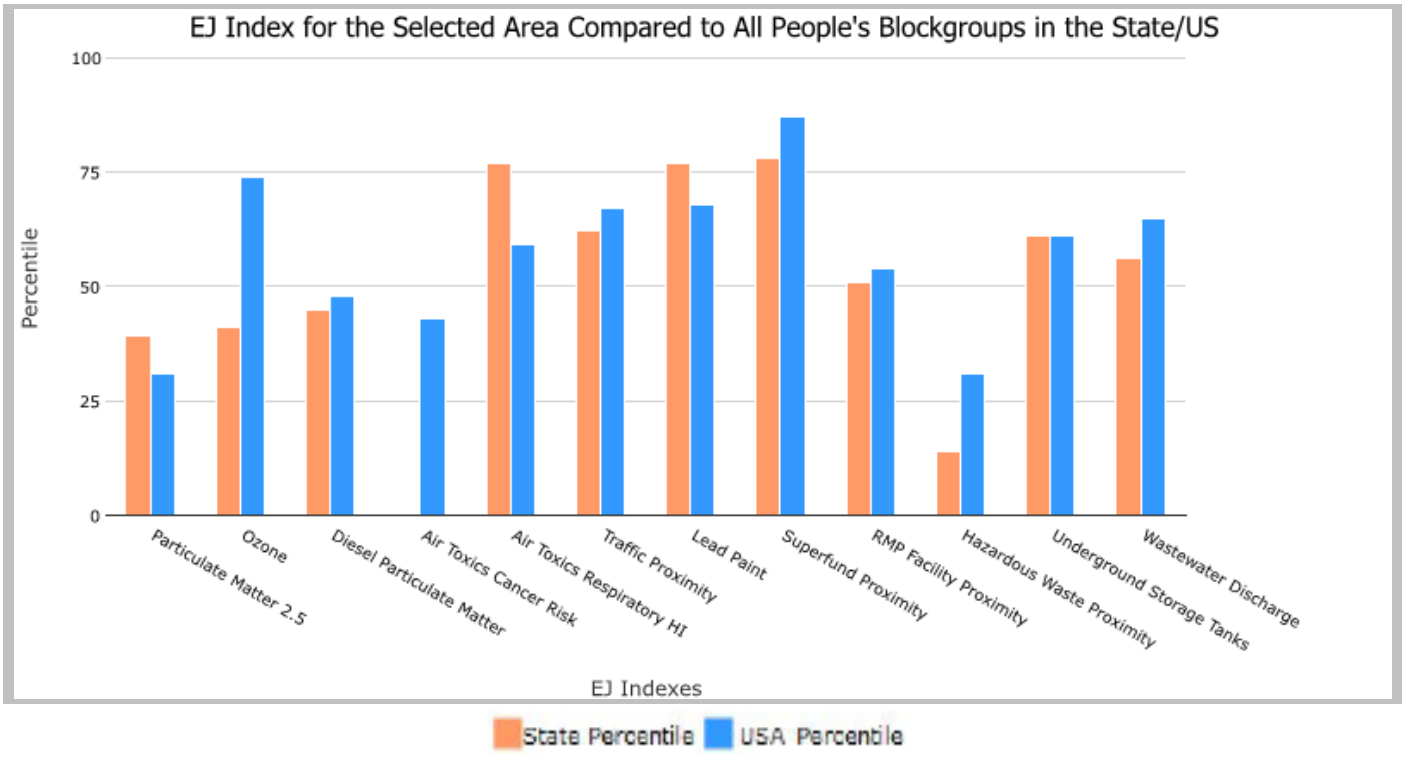
EJScreen Report (Version 2.1)

1 mile Ring Centered at 38.599835,-75.603790, DELAWARE, EPA Region 3

Approximate Population: 1,095

Input Area (sq. miles): 3.14

Selected Variables	State Percentile	USA Percentile
Environmental Justice Indexes		
EJ Index for Particulate Matter 2.5	39	31
EJ Index for Ozone	41	74
EJ Index for Diesel Particulate Matter*	45	48
EJ Index for Air Toxics Cancer Risk*	0	43
EJ Index for Air Toxics Respiratory HI*	77	59
EJ Index for Traffic Proximity	62	67
EJ Index for Lead Paint	77	68
EJ Index for Superfund Proximity	78	87
EJ Index for RMP Facility Proximity	51	54
EJ Index for Hazardous Waste Proximity	14	31
EJ Index for Underground Storage Tanks	61	61
EJ Index for Wastewater Discharge	56	65



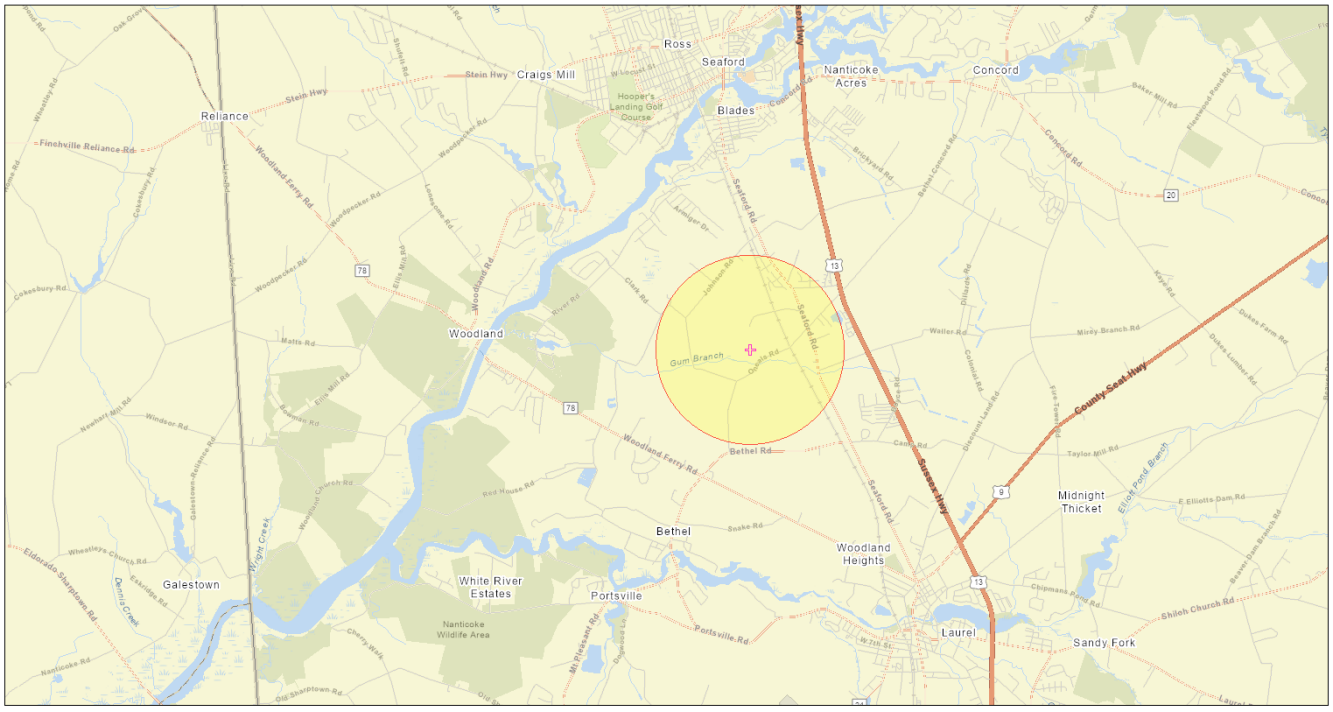
This report shows the values for environmental and demographic indicators and EJSCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

EJScreen Report (Version 2.1)

1 mile Ring Centered at 38.599835,-75.603790, DELAWARE, EPA Region 3

Approximate Population: 1,095

Input Area (sq. miles): 3.14



Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	0

EJScreen Report (Version 2.1)

1 mile Ring Centered at 38.599835,-75.603790, DELAWARE, EPA Region 3

Approximate Population: 1,095

Input Area (sq. miles): 3.14

Selected Variables	Value	State Avg.	%ile in State	USA Avg.	%ile in USA
Pollution and Sources					
Particulate Matter 2.5 (µg/m^3)	6.96	7.82	19	8.67	13
Ozone (ppb)	42.4	42.7	20	42.5	52
Diesel Particulate Matter* (µg/m^3)	0.134	0.252	18	0.294	<50th
Air Toxics Cancer Risk* (lifetime risk per million)	20	26	0	28	<50th
Air Toxics Respiratory HI*	0.3	0.29	80	0.36	<50th
Traffic Proximity (daily traffic count/distance to road)	220	640	38	760	49
Lead Paint (% Pre-1960 Housing)	0.17	0.23	53	0.27	44
Superfund Proximity (site count/km distance)	0.32	0.33	68	0.13	91
RMP Facility Proximity (facility count/km distance)	0.17	0.56	28	0.77	31
Hazardous Waste Proximity (facility count/km distance)	0.065	1.9	4	2.2	12
Underground Storage Tanks (count/km^2)	0.43	2.3	36	3.9	38
Wastewater Discharge (toxicity-weighted concentration/m distance)	0.00039	1.7	33	12	41
Socioeconomic Indicators					
Demographic Index	46%	31%	78	35%	71
People of Color	50%	38%	70	40%	67
Low Income	42%	26%	81	30%	71
Unemployment Rate	9%	6%	78	5%	79
Limited English Speaking Households	0%	2%	0	5%	0
Less Than High School Education	16%	9%	80	12%	73
Under Age 5	6%	6%	67	6%	63
Over Age 64	20%	19%	61	16%	68

*Diesel particular matter, air toxics cancer risk, and air toxics respiratory hazard index are from the EPA's Air Toxics Data Update, which is the Agency's ongoing, comprehensive evaluation of air toxics in the United States. This effort aims to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that the air toxics data presented here provide broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. Cancer risks and hazard indices from the Air Toxics Data Update are reported to one significant figure and any additional significant figures here are due to rounding. More information on the Air Toxics Data Update can be found at: https://www.epa.gov/haps/air-toxics-data-update.

For additional information, see: www.epa.gov/environmentaljustice

Exhibit B


Sussex Manor Mobile Home Park
Ebenezer Haitian Seventh-Day Adventist Church, 26988 Bethel Concord Rd, Seaford, DE 19973
Frederick Ford
Pine Ridge Mobile Home Park
Bioenergy Devco/Perdue
Gum Branch
Rd 480
Victory Tabernacle Church Of God
Gum Branch
Mercury Refunds
Rd 487
Mt Zion United Methodist Church
Skateworld
Google Earth