



STATE OF DELAWARE  
**DEPARTMENT OF NATURAL RESOURCES AND  
ENVIRONMENTAL CONTROL**  
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OFFICE OF THE  
SECRETARY

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**Secretary's Order No.: 2023-MULTI-0022**

**RE: Approval of Permit Applications of Bioenergy Development Company, LLC (“BDC”) for expansion of their existing organic waste composting operation to include an anaerobic digestion system, a wastewater pretreatment system and a biogas upgrading plant, located at 28338 Enviro Way, Seaford, Delaware, as follows: One (1) Division of Waste and Hazardous Substances Resource Recovery Permit; Two (2) Division of Air Quality 7 DE Admin. Code 1102 Natural Minor Permits; and Two (2) Division of Water Wastewater Facility Construction Permits**

**Date of Issuance: September 6, 2023**

**Effective Date: September 6, 2023**

Under the authority vested in the Secretary of the Department of Natural Resources and Environmental Control (“Department” or “DNREC”), pursuant to 7 *Del.C.* §§6003, 6004, 6006, and all other relevant statutory authority, the Department issues this Order, approving the following permit applications of Bioenergy Development Company, LLC (“BDC” or “Applicant”), for expansion of their existing organic waste composting operation to include an anaerobic digestion system, a wastewater pretreatment system and a biogas upgrading plant, located at 28338 Enviro Way, Seaford, Delaware, as follows:

- One (1) Resource Recovery Permit from the Division of Waste and Hazardous Substances (“DWHS”);
- Two (2) 7 DE Admin. Code 1102 Natural Minor Permits from the Division of Air Quality (“DAQ”); and
- Two (2) Wastewater Facility Construction Permits from the Division of Water (“DW”).

The above permit applications are necessitated by the Applicant's proposal to expand their existing organic waste composting operation to include an anaerobic digestion system, a wastewater pretreatment system and a biogas upgrading plant at BDC's property located at 28338 Enviro Way, Seaford, Sussex County, Delaware ("proposed project").

### **Background, Procedural History and Findings of Fact**

The Applicant's property, known as the Bioenergy Innovation Center ("BIC"), located at the physical address noted above, is identified as tax parcel: 1-32-11.00-41.00 & 41.02, 1-32-6.00-88.01 & 95.00. The BIC is currently permitted to accept organic waste from approved poultry industry sources for composting. The proposed expansion, as set forth in greater detail below, includes construction of an anaerobic digestion system, a wastewater pretreatment system and a biogas upgrading plant. There will also be an emergency generator. Byproducts from the process would include pipeline-grade renewable natural gas ("RNG") and digestate, which would be dewatered and is proposed for use in the adjacent compost facility or to be marketed, in the future, as a soil amendment (this would require a Distribution and Marketing permit, which is neither part of the Applicant's proposed project, nor one of the applications submitted to the Department by BDC currently pending before the Department at this time). The proposed facility would have the capacity to receive and process up to 250,000 tons per year ("TPY") of permitted organic waste.

The statutory and regulatory authority for the Department's review of the matters contained herein is established and provided for under 7 *Del C.* Chapter 60, as well as numerous State of Delaware Regulations, including, but not limited to:

- 7 DE Admin. Code 1102, *Permits*;
- 7 DE Admin. Code 1301, *Regulations Governing Solid Waste*;
- 7 DE Admin. Code 7103, *Guidance and Regulations Governing the Land Treatment of Waste*; and
- 7 DE Admin. Code 7201, *Regulations Governing the Control of Water Pollution*.

The following section of this Order provides a detailed description of what each permit application to be issued by the Department's permitting Divisions will allow with regard to the Applicant's proposed project:

**Division of Waste and Hazardous Substances ("DWHS"):**

The Resource Recovery Facility Permit, issued by the Department's DWHS ("DWHS Draft Permit"), will allow BDC to construct an anaerobic digestion system, biogas upgrading plant, and compost facility, located at the above referenced address. The facility will be designed to process poultry industry wastes into digestate, pipeline-grade RNG, and compost. Wastes the facility will accept include poultry litter, hatchery waste, dissolved air flotation ("DAF") solid cake and liquid sludge, offal, waste activated sludge, agricultural residuals (e.g., soybean husks, etc.) from feed operations, and fats, oils, and greases. As stated previously, the capacity of the proposed facility is 250,000 TPY of permitted organic waste. The original permit application received by DWHS had a limit of 256,000 tons which was inconsistent with the tonnage limits on the other permit applications. DWHS reduced the tonnage limit to reflect the correct 250,000 TPY limit for consistency with the other pending permit applications submitted to the Department for this proposed project and the resulting *revised* Draft Permits.

**Division of Air Quality ("DAQ"):**

The two 7 DE Admin. Code 1102 Natural Minor Permits, issued by the Department's DAQ ("DAQ Draft Permits"), will provide permission for BDC to construct one (1) natural gas fired emergency generator with a standby power rating of 1,082 KW (1,451 HP) and four (4) anaerobic digesters with associated biogas upgrade and air pollution control equipment at the above referenced address. The engine used in the proposed generator set is certified to comply with, and will be required to adhere to, the United States Environmental Protection Agency ("EPA") regulations under the provisions of 40 CFR 60, Subpart JJJJ, and the applicable emissions standards located therein. Construction of the generator will be completed in accordance with the requirements of Permit: APC-2022/0048-CONSTRUCTION.

The Applicant's facility is proposed to receive and anaerobically digest poultry industry liquid and solid cake DAF waste, poultry litter, and bioreactor sludge from the on-site wastewater plant. Biogas generated during the anaerobic digestion process will be filtered and conditioned to meet the standards required for use in the natural gas pipeline grid. The digestate produced will be dewatered and is proposed for use in the adjacent compost facility. A series of filtration equipment will be used to refine the gas and separate unwanted compounds from the product gas stream. The unwanted gas stream will be combusted by a regenerative thermal oxidizer ("RTO") or, in the event of equipment maintenance or excessive biogas production, a flare prior to emission into the atmosphere.

Emissions from the regenerative thermal oxidizer associated with the anaerobic digestion process will be permitted to emit 0.017 TPY of volatile organic compounds ("VOCs"), 1.104 TPY of nitrogen oxides ("NO<sub>x</sub>"), 0.023 TPY of particulate matter ("PM"), 0.002 TPY of sulfur oxides ("SO<sub>x</sub>"), and 0.258 TPY of carbon monoxide ("CO") by the DAQ Draft Permit. It should be noted that the NO<sub>x</sub> limit originally advertised in the Department's Public Notices in this matter was the limit that was proposed in BDC's initial application. During the Department's application review process, DAQ reviewed the calculations provided in BDC's original application and shared concerns with the Applicant regarding those calculations. Based upon the concerns raised by DAQ, BDC revised the emissions calculations, resulting in a higher NO<sub>x</sub> emission rate/limit. DAQ performs air dispersion modeling using a computer program called "AERSCREEN" prior to issuing a permit. AERSCREEN modeling utilizes scientifically sound worker exposure limits and DAQ applies a safety factor to ensure that results are protective of the general population and exposure times. That higher emission rate/limit was used in the AERSCREEN modeling that was performed by DAQ, but due to an oversight, the original lower values were mistakenly included by Department staff in the original DAQ Draft Permit and Public Notice. Accordingly, the NO<sub>x</sub> emissions section of the DAQ Draft Permit was updated on September 23, 2022, to reflect a change to the permitted annual air emissions for NO<sub>x</sub> from 0.037 TPY to the current 1.104 TPY. The revised NO<sub>x</sub> emission limit does not impact the short-term modeling or regulatory applicability review performed by DAQ for this Draft Permit.

### **Division of Water (“DW”):**

The two Wastewater Facility Construction Permits, issued by the Department’s DW (“Draft Water Permits”), will provide permission for BDC to construct (1) an anaerobic digestion system and (2) a wastewater pretreatment system as part of the proposed resource recovery facility.

The anaerobic digestion system and wastewater pretreatment system will include three (3) 0.208-million-gallon (“MG”) pretreatment tanks, and four (4) 1.95 MG fermentation tanks, a Membrane Bioreactor System (“MBR”), a 0.198 MG anoxic tank, a 0.412 MG aerobic reactor, a 0.198 MG ultrafiltration feeding tank, and ultrafiltration and reverse osmosis treatment systems. The treated wastewater will be pumped and hauled to the Seaford wastewater treatment and disposal facility. Additional construction phases may be proposed in the future by BDC to eliminate the need to transport the treated wastewater via truck; however, such proposals are not part of the Applicant’s permit applications currently pending before the Department in this matter. Any future construction activities proposed for the BDC facility would necessitate new permit applications to be submitted by the Applicant to the Department at that time.

The Department processed all the above permit applications received from BDC regarding this proposed project together, and held the Joint Virtual Public Hearing on October 26, 2022, to assure both efficiency and transparency, and to make sure the public was afforded the ability to provide meaningful comment on the proposed project in its entirety, as noted above.

Given the level of public interest on the Applicant’s proposed project, the Department made the decision to issue a Joint Public Notice on August 21, 2022, announcing (1) the above permit applications having been received by the Department; (2) a Joint Virtual Public Workshop (“public workshop”) to be held by DNREC on September 28, 2022; and (3) a Joint Virtual Public Hearing (“public hearing”) to be held by DNREC on October 26, 2022.

On September 23, 2022, DNREC issued an update to the Joint Public Notice to reflect an emission change for one of the Draft DAQ Permits, as noted above, and updated supporting documentation for one of the Draft Water Permits. The September 23, 2022, update to the Joint Public Notice was also translated to both Spanish and Haitian-Creole. The translated Joint Public Notices were made available on DNREC's website on October 13, 2022. Accordingly, the public hearing was held on October 26, 2022, as noted above.

Department staff, representatives of the Applicant, and members of the public attended the aforementioned public workshop and public hearing events held on September 28, 2022, and October 26, 2022, respectively. Both of these events were held virtually on the Zoom platform, resulting in not only a greater level of participation by members of the public (when compared historically to in-person attendance at such events), but also enabling the virtual attendees at both events to use automated closed captioning in their choice of over 20 languages to further enhance understanding of BDC's proposed project. There were approximately 110 virtual participants at the Department's public workshop held on September 28, 2022. The public workshop lasted approximately three (3) hours in duration, during which time members of the public were able to learn greater details about the Applicant's proposed project and ask questions about the same if they wished to do so. The public hearing, subsequently held by the Department on October 26, 2022, had approximately 160 virtual attendees and lasted approximately two and a half (2 ½) hours in duration.

The Department received a total of 189 comments from the public regarding this matter: twenty-seven (27) comments were received verbally at the time of the public hearing, and the remaining one-hundred-sixty-two (162) comments were received in writing, submitted to the Department either before or after the public hearing, during the time period in which the Hearing Record ("Record") remained open to receive public comment. All comments were posted on the DNREC public hearing web page dedicated to this matter upon their receipt. Proper notice of the hearing was provided as required by law.

Subsequent to the close of the public comment period on December 2, 2022, Hearing Officer Lisa A. Vest requested a Technical Response Memorandum (“TRM”) from the Department’s subject matter experts in the permitting Divisions identified above. That TRM, dated March 29, 2023, along with additional post-hearing memoranda received from the permitting Divisions in this matter, including, but not limited to, an Addendum TRM dated July 18, 2023, are discussed herein in greater detail below.

Subsequent to the receipt of the Department’s technical response memoranda referenced above, Hearing Officer Vest prepared her Hearing Officer’s Report (“Report”), dated September 5, 2023. Ms. Vest’s Report set forth the procedural history, summarized and established the record of information (“Record”) relied on in the Report, and provided findings of fact, reasons, and conclusions that recommend the approval of the Applicant’s proposed project currently pending before the Department, subject to the conditions set forth in the finalized *revised* Draft Permits. The Report, along with its Appendices, is incorporated herein by reference. The Report also addressed the public comments received in this matter in detail and concluded that the same did not warrant the Department’s denial of BDC’s pending permit applications, nor the delay of the decision regarding the same to receive any additional information.

### **Reasons and Conclusions**

Currently pending before the Department are the above-described permit applications submitted by BDC, necessitated by the Applicant’s proposal to expand their existing organic waste composting operation to include an anaerobic digestion system, a wastewater pretreatment system and a biogas upgrading plant located at 28338 Enviro Way, Seaford, Sussex County, Delaware. I find that the Applicant is required to obtain the aforementioned requisite permits, for the reasons noted above. I further find that BDC’s proposed project is subject to various state and federal regulatory requirements, as previously set forth herein, as well as provided for under 7 *Del.C.* Ch. 60.

In reviewing the applicable statutes and regulations, as well as weighing public benefits of this project against potential detriments, the Department's experts in the DWHS, DAQ and DW have concluded that the pending permit applications comply with all applicable federal and state laws and regulations. Further, the finalized *revised* Draft Permits that will be issued by the Department are reflective of the applications submitted in this matter by BDC and are appropriately conditioned to ensure continued protection of public health and the environment.

The Department's TRM and Addendum TRM, attached and incorporated into Ms. Vest's Report as Appendices "B" and "D," respectively, acknowledge the comments received from the public concerning the Applicant's proposed project, and provide a thorough and balanced response to the same, accurately reflecting the Record generated in this matter.

Rather than attempting to relay each of the public comments received in this matter, this Order will highlight the Department's responses to the same, as provided for in full within the Report's Appendices, as referenced above. During the Department's review of the Record generated in this matter, the subject matter experts in the DAQ, DWHS and DW grouped the comments received into areas of concern or support, and then offered responses to the same, as contained in both the TRM and Addendum TRM, as referenced above.

The following areas of concern listed below, as well as the multiple reasons offered as support for this proposed project, were found heavily throughout the public comments received by the Department in this matter, and for that reason are being expressly summarized herein. Again, all of the public comments received can be viewed in their entirety on the Department's hearing web page dedicated to this permitting matter.

In response to multiple comments expressing concern that the Applicant's proposed project represents a threat to public health, the Department's TRM notes that emissions from the facility's emission points were modeled by the DAQ using the AERSCREEN modeling program in order to calculate the Maximum Downwind Concentration ("MDC") of the anticipated criteria pollutants, VOCs, and hazardous air pollutants ("HAPs").

The modeling results were compared against pollutant-specific significant impact levels (“SILs”) and health-based screening levels and were determined to meet the Department’s screening criteria. The DAQ screening criteria uses scientifically sound worker safety exposure limits and applies a safety factor to be protective of the general population and longer exposure times. Because the modeling indicates that the health-based screening criteria was not exceeded, there is no indication that the public health, safety, and welfare will be adversely impacted by the proposed process at the Applicant’s facility. Furthermore, the Department will require increased air monitoring around joints for any gas leaks and monitoring of groundwater for potential nutrient migration.

With regard to the comments that suggested a Cumulative Health Impact Analysis be conducted prior to any permitting determinations being made by DNREC, the TRM notes that such a study is not required under Federal or State regulations. However, under 7 DE Admin. Code 1301, *Regulations Governing Solid Waste*, an Environmental Assessment (“EA”) was required and performed as part of the DWHS’ Resource Recovery application process. The results of the EA identified those factors that are critical to ensure permits are inclusive when written. In this case, each factor identified by the EA has been included in the Department’s finalized Draft Permits. Additionally, as part of the EA, DNREC has developed a baseline of conditions at and around the facility prior to the initial operation of any new equipment. As a result, DNREC will be able to determine if any environmental impacts from the Applicant’s operation are occurring and will require operational adjustments if needed.

Some of the public comments voiced concern that BDC’s proposed project contributes to climate change by generating methane gas to be used as a fuel, and that potential methane leaks will also contribute to climate change. In response, the TRM reiterates that the proposed project will anaerobically digest poultry industry liquid and solid cake DAF waste, poultry litter, and bioreactor sludge from the on-site wastewater plant. Biogas generated during the anaerobic digestion process would be filtered and conditioned to meet the standards required for use in the natural gas pipeline grid. While methane can be obtained from fossil fuels, the methane created from anaerobic digestion is biogenic.

Methane generation occurs naturally as organic wastes decompose. Harnessing this methane for a beneficial use may be a feasible strategy for low or zero carbon energy in the future. It also supports the strategy as set forth in Delaware's Climate Action Plan, specifically, to increase renewable natural gas production and incentivize markets for its use as a fuel. Finally, while methane does have a higher global warming potential when compared to carbon dioxide, it also has a shorter life in the atmosphere.

Additionally, the TRM notes that BDC's proposed project will be equipped with a computerized maintenance management system for preventative and routine maintenance. The facility will also be equipped with an automated methane detection system. The lines will be tested on a reoccurring basis to prevent methane leaks. The finalized *revised* DWHS Draft Permit includes additional language requiring BDC to conduct monthly real-time monitoring of the joints and potential leak areas to ensure that seals are operating properly.

Some comments voiced concerns that the Applicant's proposed project poses a fire and explosion risk. In response, the TRM notes that Section 112(r) of the Federal *Clean Air Act* requires facilities that use extremely hazardous substances to develop a Risk Management Plan that identifies (1) the potential effects of a chemical accident; (2) steps the facility is taking to prevent an accident; and (3) spells out emergency response procedures should an accident occur. Additionally, DNREC has an Accidental Release Prevention ("ARP") group that is responsible for facility compliance with implementation of the Federal Risk Management Program ("RMP") Rule. Applicability of this program is determined after construction of a facility. BDC will be evaluated to see if their process requires compliance with the RMP program. Upon completion of construction, this determination will be made and, if applicable, will be resolved before the *revised* finalized DWHS Draft Permit is changed to authorize operation of the facility.

The TRM further notes that methane and hydrogen sulfide detectors will be placed throughout the proposed facility. These detectors will continuously monitor for potentially dangerous levels of gas at the facility. The proposed project will follow emergency shutdown stop ("ESTOP") procedures when monitoring indicates a potential issue.

If an emergency shutdown is initiated, all biogas from the digesters will be routed to the flare until normal operation conditions can resume. Additionally, the facility is equipped with a fire suppression system that will include a 66,000-gallon water tank. Site plans for the proposed facility have been approved by the Delaware State Fire Marshall's Office. As noted previously, the *revised* finalized DWHS Draft Permit includes additional language requiring BDC to conduct monthly real-time monitoring of the joints and potential leak areas to ensure that seals are operating properly.

Numerous comments received from the public in this matter were concerned that activities associated with the proposed project will result in increased air emissions (and associated negative health impacts), and that the DAQ Draft Permits do not consider the emissions from all of the activities at the BDC facility. In response, the TRM notes that the Department conducts thorough technical reviews of all permit applications to ensure that the proposed sources comply with all State and Federal air quality rules and regulations. As noted previously herein, the requested permitted emissions were modeled by DAQ using the AERSCREEN modeling program in order to calculate the MDC of the anticipated criteria pollutants, VOCs, and HAPs. Those modeling results were compared against pollutant-specific SILs and health-based screening levels and were determined to meet the Department's screening criteria.

The TRM further notes that, since the proposed project is located at a natural minor source, each emission or process unit is permitted individually under 7 DE Admin. Code 1102, *Permits*. The facility wide emissions, including both existing and proposed stationary point sources, are considered in the associated technical memorandum from DAQ (attached to Ms. Vest's Report as Appendix "I"), and the same indicate that the facility is a true natural minor source. The potential to emit and emission limitations for the facility's emission sources were based on worst case scenarios and determined using a combination of EPA guidance documents, appropriate emission factors, and other information submitted in the Applicant's DAQ permit applications.

Moreover, the existing compost plan continues to operate under the requirements of **Permit: APC-2016/0093-Operation (Amendment 03)**. No changes to the compost plant's operations have been proposed to, or approved by, DNREC. Any changes in operation at the compost facility would be contingent upon DNREC receiving and approving a DAQ permit application to do so and the *revised* DWHS Draft Permit reflects this requirement. It should be noted that the facility's existing emergency generator has a rated capacity below the threshold for which a DAQ permit is required.

Some comments voiced concern that chemicals from the facility's process may be released into the groundwater and surface water, and a release of such chemicals would degrade water quality in the receiving watersheds. The Department's TRM responds to this concern by noting that the review of the Applicant's engineering report confirms that the water collected in the building and equipment drains will be sent to the wastewater treatment portion of the system, with the intention to eliminate unpermitted discharge of water. The proposed design incorporates a spill pad at the liquids receiving area that can contain 2,304 gallons and will connect to a trench drain that will route back to a sump that will be connected to the wastewater treatment system in order to handle potential maximum spill volumes. All process wastewater generated at the facility will be pretreated onsite and subsequently disposed of at the Seaford Wastewater Treatment Plant ("WWTP") for disposal. The facility will be required to generate a Storm Water Plan for DNREC review and approval and obtain National Pollutant Discharge Elimination System ("NPDES") Industrial Storm Water General Permit coverage prior to going into operation to assure storm water pollution best management practices ("BMPs") are in place to mitigate the potential for polluted storm water runoff from the facility.

In addition to the above, the TRM notes that, in consideration of the public comments received, the finalized *revised* DWHS Draft Permit now includes ongoing groundwater monitoring. As part of the initial hydrogeological assessment, DNREC required that five (5) wells be installed to determine a baseline impact. BDC will be required to provide ongoing monitoring of these five wells on a semi-annual basis to ensure that no migration of nutrients occurs off site.

Some of the comments also voiced concerns that the Seaford WWTP may not be able to handle the additional wastewater generated from the proposed treatment process. Additionally, questions were raised as to whether the Seaford WWTP would process the industrial waste that will be generated from the proposed process. In response, the TRM notes that the DW Draft Permit for the wastewater pretreatment membrane bioreactor (“MBR”) system has a Special Condition that states as follows:

*Construction of the wastewater Membrane Bioreactor (“MBR”) pretreatment system shall not begin until the permittee has submitted a letter from the wastewater treatment facility that will be receiving the treated effluent confirming the following: (1) that the receiving facility will accept responsibility for treating and disposing of the wastewater, and (2) that the receiving facility has capacity to accept the treated effluent and without causing violations of the receiving facility’s disposal permit or 7 Del.C. Chapter 60 and the regulations promulgated thereafter.*

Additionally, the City of Seaford has also provided documentation stating that 60,000 gallons per day of capacity has been reserved at the Seaford WWTP for the BDC’s proposed project. Moreover, the DWHS finalized *revised* Draft Permit also requires this agreement be in place prior to the operation of the facility.

Still other comments received in this matter voiced concern that the citizens of Delaware will be forced to pay to clean up any environmental pollution associated with BDC’s operations. In response, this Order reiterates the response contained in the TRM provided in this matter, namely, that in order to protect the citizens of Delaware from failures of solid waste facilities, the State of Delaware’s *Regulations Governing Solid Waste* (7 DE Admin. Code 1301, as referenced above) require that all permitted facilities carry financial assurance. Financial assurance is designed to provide DNREC with funding that can be accessed in the event the company fails and DNREC has to clean up the site. The Closure Plan created between BDC and DNREC outlines the different aspects of the facility that may need to be cleaned up and the costs associated with it. The Closure Plan must be updated annually and adjusted to keep up with inflation and other factors that could impact potential cleanup costs.

Lastly, in response to the concerns that the proposed project is located in/adjacent to Environmental Justice (“EJ”) communities, the TRM notes that DNREC places a high priority on engaging with stakeholders in a transparent and public process for reviewing permit applications. The Department is particularly interested in hearing concerns from residents who live in EJ communities. In this instance, DNREC heard from EJ advocates regarding concerns about this project and its potential impact on the EJ communities nearby.

Throughout this permitting process, the Department met with EJ advocates on numerous occasions prior to the time of the public hearing, including July 11, 2022; July 13, 2022; September 2, 2022; September 29, 2022; and October 11, 2022. Furthermore, the TRM details additional instances of the Department’s outreach efforts that were performed prior to the public hearing held in this matter, including, but not limited to:

- Providing advocates with a handout explaining the Department’s permitting process (in both English and Spanish);
- Outreach attempt to Ebenezer Haitian SDA Church in Seaford, Delaware, to offer support to ensure their congregation’s meaningful participation in the September 28, 2022 community workshop;
- Multiple visits to the area to gain a firsthand understanding of the local community;
- Posting of both the Public Notice and the public workshop presentations on DNREC’s website in both Spanish and Haitian Creole;
- Posting of the Public Notice at the mobile home park proximate to the site in English, Spanish and Haitian Creole;
- Holding the aforementioned public workshop on September 28, 2022, so that members of the public may learn more about this proposed project prior to the public hearing; and
- Enabling attendees of both the virtual public workshop and the virtual public hearing to use automated closed captioning in their choice of over 20 languages via the Zoom virtual platform, thus enhancing the public’s understanding of BDC’s proposed project.

The above instances are just some of the efforts DNREC undertook to ensure an accessible public process, with particular interest in reaching the Haitian Creole community proximate to the proposed project. The Department's public workshop and public hearing events, both being held virtually, resulted in not only a greater level of participation by members of the public (when compared historically to in-person attendance), but also an enhanced understanding of the Applicant's proposed project, given the hearing attendees' ability to utilize the Zoom platform's closed captioning of the event, as set forth above. The ability of the public to easily attend such events virtually (free of costs associated with travel to and from in-person meetings), and to receive closed captioning in the language of their choice while learning about various proposed projects and pending matters currently before the Department, are just two of the numerous benefits that have been realized with the use of virtual technology at Department-held events such as these.

Furthermore, in order to enhance information sharing between the facility and the surrounding communities in response to public comments, DNREC has added a permit condition to the finalized *revised* Draft Permits, requiring BDC to submit a Community Engagement Plan ("CEP") to the Department for approval. The CEP shall include, at a minimum: (1) a list of communities that will be included in engagement efforts; (2) goals of engagement efforts; (3) a meeting schedule for engagement events; and (4) a plan for meaningful engagement, including appropriate translation services. This condition goes into effect based on the first permit issued to BDC and requires that the plan be finalized prior to an operating permit being approved by the Department.

In addition to the above concerns voiced in the public comments received in this matter, the Department also received numerous public comments in support of the Applicant's proposed project. Multiple comments were received in support of the anaerobic digestion process proposed by BDC, with commenters noting that such a process is a proven technology with a track record of safety.

In response, the Department's Addendum TRM notes that anaerobic digestion has been used to produce energy in Europe, Asia, and the United States since World War I. Furthermore, such technology is supported under both state and federal environmental regulations and fits into the current regulatory structure that the Department uses to protect human health and the environment.

Additional supportive comments for BDC's proposed project opined that anaerobic digestion is a better way to manage agricultural waste in the Delmarva Peninsula and will reduce nutrient pollution in waterways when compared to current methods, including land application. The Department's Addendum TRM notes that the proposed anaerobic digestion facility will afford the Delmarva Peninsula an alternative disposal method to land application, and thus may result in a reduction in nutrient contributions to Delaware's watersheds and waterways.

The Department received other supportive comments noting that the Applicant's proposed project will create renewable energy and soil amendments from the agricultural waste. In response, the Department's Addendum TRM notes that Delaware's Climate Action Plan includes a strategy to increase renewable natural gas production that includes an action to review opportunities for anaerobic digestion projects to transform agricultural waste into renewable natural gas. Currently, solid waste facilities in the State of Delaware, including landfills, are capturing methane and other gases for renewable energy use. The process of collecting and purifying natural gas from organic decomposition opportunities allows Delaware to reduce reliance on fossil fuel sources of natural gas and reduces the overall need to extract these resources from the earth.

In consideration of the public comment received in this matter, revisions were made to the original Draft Permits developed by the Department's subject matter experts in the DWHS, DAQ and DW, as documented in the Department's TRM (incorporated into Ms. Vest's Report as Appendix "B") and as summarized herein above. Upon issuance of the finalized *revised* Draft Permits, the permittee will be required to update their operations plan accordingly.

Furthermore, all revisions to the original proposed Draft Permits were made to either add compliance monitoring conditions or render the Draft Permits as more restrictive than those originally advertised, based on the Department's review of the comments received from the public in this matter. Again, the finalized *revised* Draft Permits from the Department's DWHS, DAQ and DW have all been formally incorporated into the Record generated in this matter, as noted above.

I find that the Department's TRM and the Addendum TRM, incorporated into the Record in Ms. Vest's Report as Appendices "B" and "D," respectively, and prepared jointly by the DWHS, DAQ and DW, offer a thorough review of all aspects of the Applicant's pending applications, address the public comments germane to the subject matter of the aforementioned public hearing held by the Department in this matter, and provide full responses to the same in a balanced manner, accurately reflecting the information contained in the Record.

The Record developed in this matter indicates that the Department's experts in the DWHS, DAQ and DW have concluded that all permit applications associated with the proposed expansion of the BIC were reviewed and determined to be technically and administratively complete, and that the same comply with all statutes and regulations that govern such permitting actions. Furthermore, I find that the original Draft Permits have been *revised*, in consideration of the public comments received, to be protective of human health and the environment. The Department's experts have weighed public benefits of the issuance of the finalized *revised* Draft Permits against potential detriments and have recommended approval of the same, relevant to BDC's proposed facility expansion under their Program oversight, as detailed in the Record established in this matter.

The mission of DNREC is to engage stakeholders to ensure the wise management, conservation, and enhancement of the State's natural resources; protect public health and the environment; provide quality outdoor recreation; improve quality of life; lead energy policy and climate preparedness; and educate the public on historic, cultural, and natural resource use, requirements, and issues.

Furthermore, it is the policy of DNREC that no person shall, on the grounds of race, color, national origin, sex, age, or disability, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance, as provided by Title VI of the *Civil Rights Act of 1964*, the *Rehabilitation Act of 1973*, the *Civil Rights Restoration Act of 1987*, and all other related nondiscrimination laws and requirements.

The Record generated in this matter reflects that the Department's subject matter experts in each of the aforementioned permitting Divisions have consulted with DNREC's Environmental Justice Coordinator throughout this permitting process, have reviewed the Record generated in this matter in the light of potential Environmental Justice issues existing in the area surrounding the Applicant's facility, and have determined that the issuance of the finalized *revised* Draft Permits is consistent with the Department's Environmental Justice policy.

I find that the Record supports approval of the pending applications submitted to the Department's DWHS, DAQ and DW by BDC in this matter, as set forth above. The finalized *revised* Draft Permits to be issued by the Department will be reflective of the applications submitted by BDC, and consistent with the finalized *revised* Draft Permits prepared by the Department's experts in the permitting Divisions noted above, to ensure continued protection of public health and the environment, and consistent with the Record developed in this matter.

Accordingly, this Order approves the issuance of the following State of Delaware permits, necessitated by the Applicant's proposal to expand their existing organic waste composting operation to include an anaerobic digestion system, a wastewater pretreatment system and a biogas upgrading plant at BDC's property located at 28338 Enviro Way, Seaford, Sussex County, Delaware, consistent with the finalized *revised* Draft Permits prepared by the Department's subject matter experts, and consistent with the Record developed in this matter:

- One (1) Resource Recovery Permit, to be issued by the Department's DWHS;
- Two (2) 7 DE Admin. Code 1102 Natural Minor Permits, to be issued by the Department's DAQ; and
- Two (2) Wastewater Facility Construction Permits, to be issued by the Department's DW.

Further, the Department concludes and specifically directs the following:

1. The Department has jurisdiction, as provided for under 7 *Del.C.* Ch. 60, and all other relevant statutory authority, to make a final determination on the aforementioned pending permit applications submitted by the Applicant after holding a public hearing, considering the public comments, and all information contained in the Record generated in this matter;
2. The Department's permitting process included a significant amount of outreach to and from the community, provided proper public notice of the aforementioned permit applications submitted by the Applicant, and of the public hearing held on October 26, 2022, and held the hearing to consider any public comments that may be offered on the applications, in a manner required by the law and regulations;
3. The Department considered all timely and relevant public comments in the Record, as established in the Department's TRM, dated March 29, 2023, the Addendum TRM, dated July 18, 2023, and all TRM Appendices, including, but not limited to, the aforementioned finalized *revised* Draft Permits, all of which have now been expressly incorporated into the Record generated in this matter;
4. The Department has carefully considered the factors required to be weighed in issuing the permits necessitated by the aforementioned applications submitted by the Applicant, and finds that the Record supports approval of the same;

5. Furthermore, the Department has consulted with DNREC's Environmental Justice Coordinator throughout this permitting process, has reviewed the Record generated in this matter in the light of potential Environmental Justice issues existing in the area surrounding the Applicant's facility, and has determined that the issuance of the above-referenced permits is consistent with the Department's Environmental Justice policy;
6. The Department shall issue to the Applicant the aforementioned permits as set forth above, consistent with the finalized *revised* Draft Permits prepared by the technical experts in the Department's DWHS, DAQ and DW, and consistent with the Record developed in this matter:
7. Moreover, said permits shall include all conditions as set forth in the Department's TRM, along with the aforementioned finalized *revised* Draft Permits, to ensure that Delaware's environment and public health will be protected from harm;
8. The Department adopts the Report and all Appendices as further support for this decision;
9. The Department has an adequate Record for its decision, and no further public hearing is appropriate or necessary; and
10. The Department shall serve and publish its Order on its internet site.



Shawn M. Garvin  
Secretary