BIOENERGY DEVCO, LLC

RESOURCE RECOVERY FACILITY
PLAN OF OPERATION

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Project No. 12393.ED

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EXHIBITS

1.0 **FACILITY OVERVIEW**

1.1. PURPOSE AND OVERVIEW

This Plan of Operation (the "Plan") has been prepared pursuant to the requirements specified in Section 4.4.1.3. of Delaware's Regulations Governing Solid Waste ("DRGSW") for the proposed Resource Recovery Facility ("RRF") to be operated by Bioenergy DevCo, LLC. (BDC) under the former name Bioenergy Development Group, LLC for the operation of a compost and anaerobic digestion facility to located at 28338 Enviro Way, Seaford, DE 19973 under a new permit issued by the Department which will include requirements of the existing Permit No. SW 18/03.

The BDC compost operation is permitted to accept poultry industry organic waste including hatchery, liquid and solid cake dissolved air flotation ("DAF") ("single-stream"), fats, oils, greases (FOG) and chicken litter. The Facility was acquired from Perdue AgriRecycle, LLC with the composting permit transferred to Bioenergy Development Group in February 2020. BDC has been operating this facility since February 6th of 2020.

BDC is expanding services at this location to include an anaerobic digestion (AD) plant to add and enhance resource recovery from a greater volume of poultry industry liquid and solid cake DAF waste, poultry litter, and other organic waste materials, minimizing the amount of micronutrients in Delaware and the region. We are submitting the following request to operate these combined plants (Facility) under a new Resource Recovery Facility Permit.

The AD will also be located at 28338 Enviro Way, Seaford, DE 19973 and be constructed in the area of the former pelletizing plant formerly owned and operated by Perdue AgriRecycle. The location comprises approximately 225 acres located west off of US-13 Alternate Route, between Oneals Road (Rd 485) and approximately the intersection of and Easter Ln. This Plan of Operation provides detailed information on the controls and procedures that have been or will be implemented at the facility in support of the planned expansion. This Plan of Operation has been developed to ensure that all operations conducted are in compliance with all applicable Federal, State, and local laws and regulations pertaining to Resource Recovery Facilities.

Unless otherwise specified when used in this document, Facility is used as a term to describe the entire facility operations inclusive of the AD Plant and the Composting Plant. The permit will apply to the Facility which has two distinct operations that are interconnected.

BDC will continue to own the Facility through a wholly owned subsidiary company who is responsible for the design, engineering and construction of the expansion as well as the ongoing operations and maintenance of the overall Facility.

BTS Biogas, a wholly owned subsidiary of BDC, will supply process technology and equipment for the AD Facility and assist in training BDC employees in the operations of the AD Facility. In its 21-year history, BTS has built more than 220 AD plants throughout the world, and currently operates more than 150 of these facilities, with well-developed and proven technology identical to the technology to be used in the BDC AD Facility to process organic wastes from the poultry industry.

1.2. GENERAL DESCRIPTION

The BDC Facility is currently permitted to accept 30,000 tons per year of poultry industry hatchery waste, liquid, and solid cake DAF.

This Plan of Operation addresses BDC expansion operation of the current Composting Facility and with the addition of Anaerobic Digestion Facility to digest process poultry industry hatchery waste, liquid, and solid cake DAF, WAS, fats, oils, greases (FOG), and chicken litter.

The land mass in which the compost facility and anaerobic digester will reside encompasses approximately 225 acres of land that is a largely agricultural with growth of grasses and trees inclusive of Tax Parcels #132-6.00-95.00, #132-6.00-88.01, #132-11.00-41.02, and 132-11.00-41.00. The property shown on the Overall Site Plan, Exhibit 1, includes two existing structures: the proposed Anaerobic Digestion Process building, formerly the pelletizing plant (61,000 square feet) and the Compost Mixing building (15,000 square feet). These structures will house the Facility operations equipment and support functions for both the AD and Composting Plants.

The BDC Facility is designed to receive and process up to 200,000 tons per year (tpy) of fresh incoming feedstock for the AD Plant and 11,000 tpy for the Compost Plant for a total Facility capacity 211,000 tpy of fresh incoming feedstock. The AD Plant will produce 48,000 tpy of bioreactor sludge in an industrial wastewater pre-treatment process that will be recycled back into the AD Plant. The AD Plant will have a total capacity of up to 250,000 tpy. The AD Plant also produces 45,000 tpy of separated solids digestate that will be recycled by composting such that the Composting Plant will have a total capacity of 56,000 tpy. The Facility will produce marketable products or commodities that include:

1. Biomethane gas transformed into commercial grade renewable natural gas; and

2. Compost, a natural soil amendment that includes the recycled digestate from the anerobic digestion.

1.3. STATE AND LOCAL PERMITS

A copy of all applicable state and local permits required to operate the facility will be kept in the Facility Manager's office. This information will be made available for review by the Department upon request.

1.4. RECYCLABLE WASTES MARKETPLACE OVERVIEW

Delmarva's poultry industry generates large quantities of organic waste that are currently land applied, disposed of in landfills, or transported great distances offshore. Poultry companies continue to see rising costs for handling, transporting, and disposal, as well as reduced land application options for these wastes. The industry is actively seeking less expensive and more environmentally sustainable alternatives, which will also remove micronutrients from the soils and from leaching or washing into waterways.

Anaerobic digestion and associated composting processes provide a well-tested and proven method to meet the demand for a more economical and environmentally sustainable method of disposal for organic wastes generated by the poultry industry.

BDC has executed a 20-year organics supply agreement with Perdue Farms, where they are required to transport and deliver the entirety of their wastewater residuals, litter, and hatchery waste on the Delmarva. This waste commitment represents approximately 32% of the 200,000 tons of incoming feedstock and 26% of the total AD Plant processing capacity.

The remaining capacity will be provided by other poultry processing companies operating on the Delmarva, with discussions already taking place with such companies as Mountaire, Amick, and Tyson.

1.5. END MARKET USES

1.5.1. Soil Amendment

The anaerobic digestion process creates approximately 45,000 tons per year of dewatered digestate cake with about 23% total solids. The remaining effluent from the digester as centrate from the separation process is treated on site by an industrial wastewater pre-treatment system. After being removed from the digester tanks, the liquid digestate passes through the dewatering system and the resulting product is an organic soil amendment that can be used to amend agricultural fields and by the horticultural industry to add nutrients and organic matter to soils. This digestate material will be used as a pre-processed feedstock for the Composting Plant.

BDC will continue to sell finished compost to our current list of customers including Scotts, Coast of Maine, and Blue Hen, and it is also being distributed to retail garden centers, farms, landscapers, and others in the horticultural industry.

1.5.2. Renewable Natural Gas

The AD Plant will produce 2,304,000 scf of raw biogas once cleaned and scrubbed will produce approximately 1,428,480 scf per day of renewable natural gas (RNG). BDC will own and operate the biogas cleaning and scrubbing system and is expected to enter into agreement (s) with an energy provider that will collect the RNG from the Facility and provide the necessary truck transportation to an interconnection for pipeline injection of the RNG for use with their current and future customers in the region.

1.5.3. Residual Waste

The primary objective of our proposed expansion of the facility is to maximize resource recovery and ensure that the separated commodities sold to various end users are of high quality with no residual waste expected due to the kinds of feedstocks being processed, systems used, and programs in place.

The Composting Plant should never have failed compost material that is unusable and cannot be sold. Should there be such an occurrence, the material will be sent to landfill in accordance as a permit requirement.

The by-products of the AD processing are:

- Digestate solids cake of 23% total solids content that is blended with the composting materials;
- Wastewater which is recycled into the process or treated for discharge to a permitted facility;
- Residual sludge from the wastewater treatment process which is recycled to the anaerobic digesters;
- Salts and minerals from the reverse osmosis water treatment will be disposed of in accordance with all applicable laws and regulations, and rules of the disposal facility.
- Biogas which is treated and sold to an energy services provider and upgraded to renewable natural gas; and

- Spent media from the biogas treatment process which is removed and replaced, sent off-site to be regenerated, and returned to be used in the next replacement cycle.

2.0 FACILITY SETTING AND DESCRIPTION

2.1. SITE LOCATION

The proposed site is located at 28338 Enviro Way, Seaford, DE 19973 and comprises approximately 225 acres consisting of several parcels located west of Seaford Rd (US-13 Alternate Route). The parcels lay between Oneals Road (Rd 485) and approximately the intersection of Seaford Rd and Easter Ln. and west from Seaford Rd to near Rd 487. An aerial map of the site is provided in Exhibit 3.

2.2. SURROUNDING LAND USE AND TOPOGRAPHY

The existing site is located in an area zoned as a Sussex County Agricultural Residential District and is surrounded by agricultural and residential lands.

A U.S.G.S. topographic map of the area surrounding the site is attached as Exhibit 4.

2.3. WATER RESOURCES

2.3.1. On-Site Water Supplies

The facility is served by an existing private well which provides water for both potable uses and fire protection. Up to an estimated 35,000 gallons per day of water from existing on site wells is required for the operations of the Facility and a portion of the treated wastewater is also recycled for use in the Facility. During the testing, start-up and commissioning of the Facility, stormwater stored in the on-site lagoons is expected to be used and recycled through the Facility to eliminate the need for fresh water.

2.3.2. Surface Water Drainage

See Hydrologic Assessment Report

2.3.3. Groundwater

See Hydrologic Assessment Report

2.3.4. Stormwater

See Hydrologic Assessment Report

3.0 FACILITY DESCRIPTION, MANAGEMENT AND CONTROLS

3.1. PROCESS FLOW

The AD and Composting operation process flow diagram is attached as Exhibit 6. The Composting plant is more fully described in Section 3.51. and consists of:

- Outdoor wood receiving area;
- Enclosed building for receiving feedstock materials and mixing with the wood;
- 18 covered aerated static pile bunkers;
- Product storage, loading and shipping area.

The AD process is more fully described in Section 3.5.2 and consists of the following:

- Organic waste is received either through the solid feedstock receiving area inside the AD Process Building or through the liquid feedstock receiving station;
- Solid feedstocks are macerated and blended into a pumpable slurry mixture and pumped to the pre-tanks;
- In the pre-tanks, solid and liquid feedstocks are mixed by agitation and heated to maintain a constant temperature;
- From the pre-tanks, the feedstock mixture is pumped to the anaerobic digesters with continuous mixing and the temperature is maintained;
- The AD process takes place in the anaerobic digesters and biogas is produced which is collected in the membrane roofs;
- The biogas is pulled from the membrane storage roof into the biogas upgrading system where impurities and moisture are removed to produce renewable natural gas suitable for pipeline injection into the natural gas pipeline system;
- The liquid digestate from the AD process is stored in a short-term surge tank and pumped to the dewatering system;
- The dewatering system utilizes a screw press in series with a centrifuge to separate the liquid digestate into a solids digestate cake and a liquid wastewater;

- The solids digestate cake is used as a soil amendment or composted;
- The solids digestate and or the composted material is loaded in truck trailers for hauling off-site for sale; and
- The liquid wastewater can be recirculated as process water, used as make up, or mixing water or sent to the on-site wastewater pre-treatment system based on county wastewater discharge standards.

3.2. FACILITY LAYOUT AND DESIGN CAPACITY

3.2.1. Facility Design Capacity

The Facility is designed to receive 211,000 tons per year of fresh material with approximately 200,000 tons per year to be processed by the AD plant and 11,000 tons per year processed at the Composting plant.

3.2.2. Composting Plant

The Compost plant is designed to process a total of 56,000 tons per year inclusive of the 11,000 tons per year of fresh material and 45,000 tons per year of digestate material recycled from the AD plant.

No additional expansion of the Composting plant is required and a site layout is attached as Exhibit 5. The Composting plant consists of an office and parking area, a wood storage open area, liquid feedstock receiving tanks, a fire suppression tank, a building for solid feedstock receiving and tipping floor, and a biofilter connected to the solid feedstock receiving building for odor control.

The compost windrows to the west are organized into a series of rows including bunkers, compost v-covers in three stages from initial compost to final screen product. In all stages from north to south, the product rests on concrete with roadway between each product area.

3.2.3. Anaerobic Digestion Plant

The AD plant is designed to process up to 250,000 tons per year inclusive of the 200,000 tons per year of fresh material and approximately 50,000 tons per year of recycled bioreactor sludge from the industrial wastewater pre-treatment process.

The Anaerobic Digestion (AD) plant proposed layout is shown in Exhibit 4. The proposed AD plant will use the existing building, originally the Perdue pelletizing plant and now known as the AD Process Building, to house proposed feedstock receiving and processing, digestate solids separation and dewatering equipment, and other related support equipment. The building is divided into three sections that will have the following functions listed from southeast to northwest: 1) Solids receiving area and feed systems (two complete 100% redundant systems); 2) Center Section processing equipment and electrical plantroom; 3) Dewatering, and digestate solids loadout/storage.

The AD process tanks will be built southwest of the AD Process Building within a fenced area. The fenced process area includes:

- Equalization tanks (pre-tanks, three total) where feedstock received will be mixed to provide a consistent feed to the anaerobic digesters;
- Anaerobic digesters, four total, where bacteria will digest feedstocks and produce a methane rich biogas and nutrient rich digestate effluent; and
- Biogas upgrading system, single system with lead-lag vessels, that will clean, scrub, and dry the biogas into a pipeline quality, renewable natural gas. The biogas is cleaned of particulate matter captured in the filters and removed with a high-pressure cycle of waste gas sent to the thermal oxidizer. Moisture is also removed and sent to the wastewater treatment plant as a process water waste. The filtration system separates the CO_2 from the biogas which can be vented or captured for sale when there is a market. VOCs and H_2S are trapped in specialty activated carbon medias, which are packaged for removal by truck and taken offsite to be regenerated for reuse in replacement of the media in subsequent changeouts. Packaging and trucking of the spent media is in compliance with DOT requirements and although not consider a hazardous waste is handled in much the same way to ensure there are no issues during transport of the materials to the manufacturer.
- The final product is a renewable natural gas of the same quality as pipeline natural gas and is sold accordingly.

Northeast of the tank farm and adjacent to the AD Process Building is a liquid receiving and offloading station for liquid feedstock to be pumped into the storage tanks that feed into the digester pre-tanks.

3.3. FACILITY ACCESS, TRAFFIC MANAGEMENT, FEEDSTOCK RECEIVING

3.3.1. Operating Hours

The facility will be operational seven days a week (Monday through Sunday) 24 hours a day. Receiving hours will typically be 7am – 5pm Monday through Saturday, with allowances made for emergency deliveries around outside hours on an as needed basis.

3.3.2. Site Security

The facility will only be accessible to authorized individuals. Site security will consist of perimeter and interior area fencing, gate access controls, and cameras located in areas where access should be controlled and monitored.

All incoming truck traffic will access the site from Seaford Road and turn onto Enviro Way. All Trucks leaving the site will use Enviro Way and turn onto Seaford Road.

A separate administrative entrance is planned to be constructed to allow access to the site from Oneals Road. This administrative entrance will be used by all visitors and employees, and thus limit the Seaford Road entrance to commercial truck traffic.

3.3.3. Traffic Volumes and Potential Impacts

Approximately 40 trucks per day of organic feedstock material will be delivered to the Site for both the anaerobic digester and the composting facility. It is anticipated another five to ten trucks per day will move finished digestate solids to the Composting Plant and/or remove composted material from the Facility to buyers.

The Site truck traffic entrance was previously upgraded to serve the former pelletizing facility and included the installation of a right-turn in lane.

Non-truck traffic, employees, visitors and others entering or exiting the Facility will use the new entrance from Oneals Road. It is expected that there will be no more than a total of 30 other vehicles entering or leaving the Facility via this entrance.

3.3.4. Internal Traffic and Waste Receiving Procedures

3.3.4.1 Signs and Directional Routing

There will be signage located throughout the Facility directing traffic. Roadways will be striped painted to provide lanes, directions, and turn arrows as needed to provide additional directions at key locations.

3.3.4.2 Acceptable Waste Receiving and Recycling

All incoming feedstocks are subject to assessment and evaluation via incoming feedstocks visual inspections and sampling. Long-term feedstock agreements are in place with suppliers to ensure the regular delivery of a high-quality feedstock. Each feedstock agreement includes minimum quality standards for acceptance and feedstock randomly tested to ensure compliance.

3.3.4.1. Vehicle Receipt / Log-in

Vehicles will enter the site and check-in with the Facility control room or scale house operator and be directed to the truck weigh scale or queue. When weighed a transfer custody ticket is created identifying the truck, the amount or weight of waste received, the date and time received, and originator or source of the waste. This information will be kept on file at the Site.

If for any reason the scales become inoperable or the ticketing system is not working, the system will be repaired and made operational as soon as possible. Any wastes received during this time will be logged using the daily and truck load averages from the source or originator from the past seven days. DNREC will be notified of the period the weigh system was not operable and provided the averages used in calculating the waste received during the period.

3.3.4.2. Vehicle Unloading and Inspection Procedures

Liquid feedstocks will be unloaded outside the building in a liquid receiving and offloading station and pumped into agitated storage tanks. The delivery is supervised by a BDC employed operator and the operator will make a visual inspection and take samples during the offload of the delivered waste.

Solid feedstocks will be tipped inside the building directly into the feed bin hopper of the feed system. The feedstock is visually inspected by a BDG operator and samples taken randomly.

3.3.4.3. Rejection of Unacceptable Wastes

Wastes on a rare occasion may need to be rejected or removed from the Facility if the waste received does not meet the standards for acceptable waste as set forth in the permit and our operations manual. Whenever possible, incoming waste originator samples documentation will be reviewed to determine if the waste is acceptable to receive before it is offloaded. When in doubt or documentation is not available, the BDG operator will collect a sample for the onsite lab analysis to determine if waste meets acceptable standards.

Any non-conforming waste loads will be rejected immediately and be returned to the originator.

3.3.4.4. Vehicle Staging and Truck Queuing

Drivers will check in at the Facility Control Room or with the scale house operator. If the truck cannot be immediately offloaded, the truck driver may be directed to a queue location before entering a building to unload. Sufficient roadway before the weigh scales and after will be allowed for queuing of trucks as needed. The facility is designed to continually receive and process feedstock therefore minimal, or no queuing is expected.

3.3.4.5. Processing General Overview

Once solid feedstocks have been received and visually inspected, the solid feedstocks are prepared through grinding, maceration and slurry for pumping to the pre-tanks. Once mixed into a slurry and drawn by the pump, the feedstock remains completely enclosed within piping and tanks throughout the AD process. After digestion, the digestate, now significantly reduced in organic matter through production of biogas, undergoes dewatering.

3.3.4.6. Segregation of Residual Waste

The feedstocks are not being segregated and will be used in full, so no residual waste is expected. In the rare event of minimal amounts of residual waste being rejected from the process, these wastes will be managed separately and sent off-site for disposal to an approved facility or sent off-site for further recycling or recovery. Filters used in the air ventilation system for the Solids Receiving Area will also be managed similarly and sent off-site to an appropriate disposal facility.

3.4. FACILITY NUISANCE DUST, ODORS AND VECTOR MANAGEMENT

3.4.1. Dust Management

Gravel roads will be wetted by truck throughout as required during construction and operations of the Facility to minimize and control dust.

Feedstock for both the AD and Composting plants including chicken litter is offloaded and handled inside closed buildings with dust mitigation and environmental controls to facilitate collection of air born dust and odors in the air.

3.4.2. Odor Control

Odor control is a critical consideration during the design and operation of any organic waste processing facility. Odor has been documented as a primary reason for the closure of some composting facilities and has caused shutdowns of anaerobic digestion plants. During the design phase, the design team evaluated odor control with a holistic approach to reduce and contain odors at the source, within the enclosed building(s), facility processes and the inbound or outbound trucks.

3.4.2.1. Building Air

The Composting Plant receives all waste into an existing building with air positively vented through an existing bioreactor to capture dust, particulate and odors. The AD facility feedstock will be received in an enclosed Process Building with an air ventilation system that will provide and maintain a negative air pressure inside the building at all times, especially in and around the Solids Receiving Area. The air ventilation system will contain odors from escaping outside the process building. As the solid feedstock will be delivered by trucks, quick acting rollup doors will be utilized to minimize the amount of time these areas of the building are open when trucks are being received, unloading, or when they are exiting the Process Building. The rollup doors are only opened for brief periods of time to allow a truck to enter or exit the building and will remain in the closed position at all other times.

The air ventilation system is designed to remove odors from the building and the elimination or the sufficient dilution of odors prior to being released into the surrounding environment. Design requirements and the selection of equipment is based on equipment with a proven history of eliminating odors in similar applications while also considering reliability, operational, and maintenance requirements, critical spare parts, and required space. Biofilters and dilution exhaust fans are proven technologies that are currently used in the design of the Facility.

The design of the Solids Receiving Area includes operational considerations of how trucks deliver and dump out organic waste. The unloading area will be equipped with a receiving hopper that will eliminate the need to dump the organic waste feedstock directly on the tipping floor. This operational approach will reduce odors by keeping the receiving tipping floor and vehicle tires free of organic waste.

A primary design objective is to accommodate receiving operations that allow feedstocks to be continually received, processed, and directed to their respective storage tanks while minimizing the time the material is being handled. In the event a load requires inspection and needs to be dumped on the tipping floor, the receiving area will be equipped with hose stations and trench drains to accommodate quick wash downs of the areas once the material has been removed. Process drains and trench drains in the tipping floor are recycled back into the process. The receiving area tipping floor will be washed down daily into the receiving hopper to ensure there is never a buildup of waste on the floor from the dump out process.

3.4.2.2. *Process Air*

The AD Facility equipment will include process odor control from the pre-tanks, digesters, , feed-tank decanters, and centrifuge decanters. Equipment will have process filters to eliminate odors.

3.4.2.3. *Inbound/Outbound Vehicles*

Inbound and outbound vehicles transporting material to the facility will be required to tarp and/or containerize feedstock, digestate, and other material loads from the point of origin to the facility, during queuing at the facility, following loading at the facility and upon exit to the facility to the point of destination. This approach will reduce the potential for fugitive odors and or dust exterior to the building and process areas.

3.4.3. Facility Vector Attraction Reduction

The Facility will implement a vector control plan to eliminate and/or minimize the potential for vectors. This approach will include a regular washing and cleaning schedule for the Solid Receiving Area tipping floors for both the AD and Composting Plants as well related process equipment as necessary. Inbound and outbound vehicles will also be required to tarp loads while outdoors and not in the enclosed receiving buildings (i.e. the rolldown tops being maintained in the “down” position) to minimize odors, which might otherwise attract vectors. As discussed in Section

3.4.2, systems are in place to minimize the time the material is being handled which reduces time for vectors to potentially be attracted to the organic waste.

The vector control plan will include measures for contracting with a local pest control service to perform regular inspections and baiting of the facility. Bait stations will be checked for activity and rebaited as necessary. In addition, site landscaping will be regularly maintained to prevent overgrowth of vegetation, which could otherwise provide cover and nest sites for vectors.

3.4.4. Facility Litter & Contamination Control

The waste is received from covered truck loads and tanker trucks. Unloading of the waste materials received into the AD and Composting plant is done in enclosed buildings to minimize litter and cross contamination to other operations. The wastes received consist of poultry industry wastes and no municipal waste nor fruits and vegetables will be received at the Facility.

Covered litter bins will be located around the facility and throughout the inside of the Process Building.

The roads will be swept regularly by the loader vehicle with a brush attachment.

3.5. PROCESS AND CONTROLS

The Facility is comprised of two integrated plant process areas, the Composting plant and the AD plant, each described in separate sections below.

3.5.1. Composting Plant

3.5.1.1. Composting Plant Operation

The composting facility, comprised of approximately 25 acres, will receive and process 56,000 tons per year of organic waste consisting of 11,000 tons per year of fresh DAF sludge and cake, hatchery waste, and poultry litter and 45,000 tons per year of recycled digestate material produced by the AD plant. This feedstock is combined with an appropriate amount of ground wood to create a feedstock blend optimal for composting. Raw feedstocks are brought into the Compost Mixing Building where material is dumped onto the floor and mixed with a large wheel loader. The mixed material is transferred to one of 18 Covered Aerated Static Pile (CASP) bunkers and covered to contain moisture and odors. Each bunker is built with below grade aeration and equipped with a

blower that pushes atmospheric air into the piles, maintaining optimal pore-space O_2 levels for rapid decomposition.

The covers used are Micropore Membrane compost covers made of ePTFE (Expanded Polytetraflourethylene). They are specifically designed for the aerated static pile (ASP) composting method. The Cover is a three-layer laminate consisting of an outer, protective, polyester fabric with an ePTFE membrance. This three-layer combination creates a sem-permeable breathable cover that reduices odor and volatile organic compound (VOC) emissions while allow moisture vapor and air to pass through the cover. The covers have been tested by an independent third party and have shown VOC reduction or more than 90%.

The CASP control system, manufactured by Managed Organic Recycling, Inc. (MOR), includes PLC controllers for independent control of each of the 18 blowers. A separate computer, located in the Compost Administrative Office, is used to program the frequency, duration, and speed of each blower.

Two wireless temperature probes are inserted in each CASP bunker, logging temperature data that is transmitted to the CASP control system via a radio antenna mounted on the Compost Mixing Building.

Composting material is processed in the CASP system for a minimum of 45 days, after which it is transferred to an asphalt pad, organized in long linear rows and allowed to further mature to increase product quality and value. Temperature and moisture are monitored manually while the compost is finishing on the asphalt pad.

3.5.1.2. Compost Packaging and Loading

The finished compost of BIC is sold bulk without packaging. Compost is loaded into a truck by a wheel loader.

3.5.1.3. Compost Bulk Storage

Compost is stored outside in long linear piles called windrows. Moisture content in the finished compost is managed by covering to protect from precipitation.

3.5.1.4. Compost Storage Duration

It is intended that the finished compost is not stored more than 30 days on site before being sold, but market demand and seasonal fluctuations might require some of the finished compost be stored for a longer period of time up to one year, subject to permitting requirements.

3.5.1.5. Compost Inventory Control

The BDC compost facility utilizes a first-in-first-out inventory management system to minimize product storage time.

Product that has been approved for sale is stored in the Finished Compost Storage Area, located on the southern portion of the compost pad. The area has space for sixteen linear rows, each measuring 165 feet long, 16 feet wide, and 6 feet tall. Finished product is monitored and managed to maintain exceptional product quality prior to be loaded for transport off-site to customers.

3.5.1.6. Compost Loading and Shipping

Finished product is loaded into trucks at the Finished Compost Storage Area using a wheel loader. Finished product is either picked up by the customer, or transportation is arranged by BIC using either third party transportation or BIC trucks. Regardless, all trucks are weighed empty and again full. The net weight is calculated by subtracting the empty weight from the full weight.

3.5.2. Anaerobic Digestion (AD) Plant

3.5.2.1. AD Tipping Floor and Receiving Areas

The AD tipping floor and solids receiving area is enclosed in the southeastern section of the AD Process Building. This area is designed so that trucks bringing feedstock back into the building, tip (dump) out the solid feedstock directly into the feeding system hopper bin. There are two fast acting roll-up doors for two lanes, allowing for handling two trucks simultaneously. The feeding system macerates the feedstocks while mixing with recycle process wastewater to create a pumpable slurry that is pumped to the pre-tanks.

3.5.2.2. AD Feedstock Storage and Mixing

Liquid feedstock will be stored in two storage tanks with agitators when received. The solid waste slurry from the tipping floor and the liquid feedstock stored in thanks are pumped to the pre-tanks for mixing by agitator into a homogenous mix to feed the anaerobic digesters. Continuous agitation ensures no settling occurs in the pre-tanks or in the liquid storage tanks.

3.5.2.3. Anaerobic Digestion

Prepared feedstocks from the pre-tanks are pumped to four anaerobic

digesters, each 92 feet in diameter and 40 feet in wall height with membrane roofing systems.

In the oxygen free environment of the digesters organic material is broken down biologically to form biogas. Biogas contains roughly 50-70% methane, 29-49% carbon dioxide, and trace amounts of other gases and impurities. The biogas is completely moisture saturated when in the tank, as it collects and in the piping until moisture removal that takes place with the biogas treatment system.

The biogas is captured, cleaned, scrubbed and dried to create a non-fossil based renewable natural gas. This product can be injected into the natural gas pipeline system to be used anywhere in the United States as a natural gas replacement or as a compressed natural gas fuel for transportation. The organic material left from the AD process is discharged as a liquid digestate average 4% - 8% total solids.

The anaerobic digestion process is a completely enclosed process and monitored continuously with instrumentation reporting to a plant wide integrated controls and automation system and by daily visual inspections.

Sampling ports allow operators to collect samples of the materials in the digester for lab analysis to ensure the digester is operating correctly.

3.5.2.4. AD Solids Separation

As mentioned in section 1.5.1, the liquid digestate produced from the AD process will be dewatered to produce separated solids suitable to be sold as a soil amendment or for composting with other organic waste. The digestate effluent leaving the digester is first stored for a short duration in a surge tank. From the surge tank, the liquid digestate is pumped to the dewatering or solids separation process consisting of screw presses and a centrifuge in series.

The liquid digestate enters the screw press where the initial dewatering is performed. The liquid concentrate from the screw press enters a high-speed centrifuge further separating additional solids. The solids cake from the screw press and from the centrifuge are combined and conveyed to a storage truck trailer to be removed when full and added to the facility composting operations. There is an estimated 48,000 to 54,000 tons/year of solids cake at 23% total solids consisting of about 0.0121% nitrogen, 0.0176% phosphorous, and 0.0035% potassium.

A portion of the liquid fraction of the digestate from the centrifuge may be recycled back into the process as makeup water for mixing feedstock or directly into the digester. The remaining liquid fraction is treated on site as described in the next section.

3.5.2.5. AD Wastewater Treatment

The wastewater or liquid fraction from the digestate, if not recycled back into the anaerobic digestion process, is pre-treated before discharge using a membrane bioreactor and ultrafiltration. The wastewater treatment program consists of two equally sized systems when fully built out and are each designed to treat approximately 30,000 gallons per day. The wastewater passes through a mix tank and into an anoxic reactor via screening and micro-screening to remove particulate or suspended solids. After the anoxic reactor, the wastewater passes through two aerobic reactor tanks in parallel where antifoam sprayers are used as needed and then is stored in the ultrafiltration feed tank for a short duration. From the UF feed tank, the liquid is pumped into and treated by an ultrafiltration unit followed by treatment with a reverse osmosis unit.

Initially, the pre-treated wastewater will be hauled to the City of Seaford for disposal. 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. BDC has a commitment from Seaford (Appendix G in the Engineering Report) to accept up to 60,000 gpd pretreated wastewater that meets Seaford's discharge standards. The Seaford commitment is subject to an executed agreement with BDC.

The wastewater makeup from the pretreatment facility is being finalized but is expected to be consistent with the characteristics of domestic wastewater. The total discharge from the pretreatment facility is estimated to be 30,000 gallons per day when the plant is fully built out with the remaining amount recycled back into the anaerobic digestion process. Discussions with various official indicate these totals are well within manageable limits for the town. .

All processed wastewater, including buildings and equipment drains, will be collected and treated through an in-house water treatment facility for discharge to the treatment system.

Sanitary wastewater at the facility is currently treated and discharged to an on-site sanitary wastewater treatment system, and recycling of this product to the AD is currently being explored as is potential treatment through the central collection system

3.5.2.6. AD Separated Solids (Digestate) Storage and Loadout

Inside the Process Building, the water effluent with undigested solids is pumped to an equalization feed tank for a centrifuge on a platform mezzanine above the finished floor of the building. The centrifuge will separate the solids. The separated solids digestate will be conveyed and

discharged directly into roll off containers inside the processing building for storage. As these containers fill up (twice or more daily), the containers will be hauled to the compost facility to be integrated into the composting operation. In addition to the incorporation of this product into the compost, additional research and work with State agencies and the University of Delaware will be used to determine markets and approvals for the direct sale of the digestate solids as an organic soil amendment or possible fertilizer product.

In addition to our logistics management program, where BDC works directly with its clients on a weekly basis to determine if there have been changes in the process such as a change in polymer use, testing of all feedstocks coming to the AD will take place before unloading. These tests are used to determine possible contamination and when identified, the load is refused at the gate.

Given the high temperatures and associated hydraulic retention time (HRT) of more than 30 days in which this input is treated within the tank, concentrations of fecal coliform are greatly reduced and will generally fall below permitted limits.

Digestate will be sent to the compost facility where it will be combined with such allowable products as chicken litter and hatchery waste undergoing pasteurization. Testing will continue to take place on final compost product, consistent with permitting requirements to ensure that metals and other constituents are within standards. BDC's long history of processing material from these sources indicate that bacteria are typically reduced through the AD and further composting ensures pasteurization to meet required limits.

3.6. ADDITIONAL MANAGEMENT CONDITIONS AND CONTROLS

3.6.1. Unanticipated Facility Outages

Facility power is supplied by the local utility power provider, Delmarva Power. In the event of a total loss of power short-term or long-term, the process defaults through controls running on uninterruptible power to a safe condition. An emergency engine generator provides back up power for critical loads that may be required in the event of an extended outage. Given the more than 15 year history of the site and a 20 year history of outage reports supplied by the local utility, outages are not expected to last for more than one hour. The system is designed such that a power outage of several hours will not adversely impact operations nor the safety of personnel, environment, or other equipment. In the event of a longer term outage, material receiving can be curtailed or halted and the Facility idled into a safe operating mode until power is restored.

Safe shutdown procedures are automatically controlled and there is an emergency flare to burn the biogas when the biogas upgrade system is down or without power.

Storage of incoming feedstocks is available on a limited basis for one to one and a half days of the total volume.

In case of a catastrophic event, such as a major storm, the facility relies on the on-site power generation from the emergency generator system and the AD Facility can operate normally through a short or long-term event.

Facility Outages will be reported to DNREC within 24 hours of occurrence as well as any impacts to the normal operation of the Facility.

3.6.2. Equipment Failure or Breakdown

The plant has flexibility built into the process to allow for the plant to run at normal or limited load during periods of equipment failure or breakdowns.

Operations and maintenance staff will carry out regular preventive maintenance to reduce breakdowns and be available to respond on short notice to make breakdowns repairs. Critical spare parts will be stored on-site to facilitate timely repairs.

4.0 FACILITY INSPECTION AND MAINTENANCE PROCEDURES

4.1. ROUTINE INSPECTION OF PROCESS AND STORAGE AREAS

4.1.1. Daily Inspections

Operators will make visual inspections once per shift, recording Plant readings on electronic shift logs and making note of any unacceptable or abnormal conditions. Particular attention and vigilance by operators will provide earliest possible detection of mal odors, vermin, and pests or other conditions that may adversely affect operations of the Facility. Shift logs are stored, passed on to the next shift, and read by the Shift Supervisor, Plant Operations Manager, and Plant Manager on a daily basis. These logs and data collected by the plant automation system will be used to satisfy all reporting requirements for the Facility

4.1.2. Unsatisfactory Conditions

Unsatisfactory conditions which require immediate attention as they pose an immediate threat to the safety of personnel or the plant, environment, or process will be addressed by the operations staff on shift, secured, and

made safe until repairs can be made. Repairs that can be made immediately to restore plant safety and normal functionality/operations will be made by on-shift operators or day maintenance staff at the earliest possible time, even if it is necessary to call out someone or obtain assistance from outside the Facility operations staff.

4.2. ROUTINE MAINTENANCE OF PROCESSING EQUIPMENT

Operations will implement and utilize a robust CMMS (computerized maintenance management system) for preventive and routinely schedule maintenance of all plant equipment. The program will track and automatically schedule for all assets, systems and equipment routine maintenance tasks, operating conditions, and any other work orders related to equipment maintenance and repairs.

The maintenance program for the equipment will follow recommendations made by the manufacturers of the equipment including BTS (the manufacturer and supplier of the process equipment), industry standards and the experience of BDC/BTS engineers and personnel in operating more than 150 similar facilities.

Routine maintenance includes periodic filter changes and replacements, lubrications of moving parts, electrical testing, and similar tasks as provided by equipment manufacturers and will be carried out on a scheduled basis.

5.0 **TRAINING**

5.1. GENERAL OVERVIEW

All operators will participate in and must successfully complete an intensive plant-specific training program covered by both in-house and external providers. Training will be ongoing, and records will be kept for each operator.

5.2. ENVIRONMENTAL, HEALTH, AND SAFETY (EH&S)

BDC is committed to the protection of the environment and the health and safety of employees and visitors to the Facility and to the local community. A comprehensive EH&S Plan for the Company and specific to the Facility is being developed by an outside consultant to be complete and implemented prior to Facility operations start. The Plan can be provided once completed. This section is intended to provide a general overview of the EH&S Plan expectations.

Company required Health and Safety procedures and practices are routinely discussed with training provided during employee hiring and refresher training every year by a Certified Safety Professional through the Board of Certified Safety Professionals.

Visitors will be required to sign in at the Administration offices when visiting the site and sign out when leaving. Prior to leaving the Administration area, visitors will receive a site-specific and visit-specific safety briefing outlining the dangers that may be present in the operational areas to be visited. Visitors will be escorted at all times by an employee in order to ensure safety.

The EH&S program is established to comply with OSHA requirements, local, state, and federal requirements. Use of personal protective equipment while on site includes as a minimum a hard hat, safety glasses, steel toed shoes, and a safety vest.

First aid equipment will be maintained in the Facility Administrative area, Plant Control Room, and in plantrooms. Emergency response and key contact information for local police, sheriff, fire and rescue, hospital, and ambulance services will be prominently displayed in appropriate work and administrative areas of the site. A Contingency and Emergency Response Plan will be in place, and drills will be conducted at least quarterly to ensure all personnel are familiar with the procedures in the plan.

Basic first aid and CPR will be taught by certified Red Cross or in-house trainers to all employees on site at all levels to aid in life saving first response. In addition, accident prevention training, use of fire extinguishers, and general practices and procedures safety training appropriate to the operations of the Facility will be taught to employees annually.

Compliance with environmental regulations and permits for the Facility is regarded as an important requirement for all employees at all levels. Compliance requirements will be routinely discussed in employee meetings, posted in process or related areas for ease of reference and reported in Facility reports at least monthly. Compliance auditing will be conducted at least annually each year of operation and more frequently when required to correct deficiencies.

5.3. OPERATIONAL

All employees who are required to utilize, operate, or maintain equipment or systems will be appropriately trained in the operation and maintenance of the equipment prior to use. Employees will also receive training on workflow, process documentation procedures, facility inspection procedures, and on the instrumentation and controls of each system or equipment to be operated and maintained. Training led by experienced staff from BTS (manufacturer of the process equipment and technology) and BDC takes the form of on-site classroom training and field training at existing operating plants to ensure employees are capable of operating and maintaining the Facility.

Specialty systems manufacturers for systems such as wastewater treatment and biogas upgrade will provide operator and maintenance training as a condition of the equipment supply agreement. Training to take place on-site prior to and during commissioning and startup.

Refresher training will be provided to employees annually, or as otherwise recommended by the equipment manufacturer.

5.4. ADMINISTRATIVE

General administrative training will be provided to new employees during orientation with refresher training provided to all employees when practices or procedures are changed or annually. Topics will include timekeeping, benefits, accrual and utilization of personal time off, training opportunities, recordkeeping, and other topics as may be deemed appropriate.

6.0 CONTINGENCY AND EMERGENCY RESPONSE PLAN PROCEDURES

The Facility Contingency and Emergency Response Plan Procedures are provided in Exhibit 7 attached.

7.0 RECORDKEEPING

7.1. OPERATING RECORDS

Each incoming vehicle that arrives at the facility will be weighed-in and the following information will be collected and recorded:

- Vehicle and driver identification;
- Type and quantity or weight of the waste received;
- Name, address, and phone number of transporter;
- Transporter's solid waste transporter number; and
- Name, address, and phone number of the originator or customer.

Records for rejected loads, including the reason for rejection, will be maintained at the Facility.

Records of shipments of commodities to off-site end markets will be recorded and maintained electronically and can be provided as requested. The records will include:

- Vehicle and driver identification;
- Type and quantity or weight of the waste received;

- Name, address, and phone number of transporter; and
- Name and address of the end market recycling or reuse facility.

Although the electronic recordkeeping system utilized by BDC maintains an electronic file of all scale transactions, hard copies of records will also be available on a bi-monthly basis (electronic copies are available upon request). The facility will maintain, and make available, all records outlined in this Plan of Operation for DNREC's review upon request.

7.2. EH&S RECORDS

Records relating to permits, discharges, excursions will be maintained with an incident report filed with DNREC as required by the specific permit.

Accidents, injuries and incidents will be recorded and reported as required by OSHA.

7.3. MISCELLANEOUS AND ADMINISTRATIVE RECORDS

Other records to be maintained and available upon request include but not limited to:

- Daily inspections and operator logs;
- Training records; and
- Fire and safety inspections.

7.4. PERIODIC REPORTS

7.4.1. Quarterly Facility Report

BDC will submit to DNREC quarterly reports summarizing Facility operations for the preceding calendar quarter in accordance with Section 9.4.4 of DRGSW. The report will summarize all processing and monitoring activities conducted in the previous calendar quarter. The quarterly report will include:

- Quantity of each type of recyclable waste accepted at the Facility by date;
- Quantities of any prohibited wastes delivered (or attempted to be delivered) to the Facility, to include the type of prohibited waste, delivery date or attempted delivery date, generator name and address, transporter with corresponding Delaware solid waste transporter number, disposition of prohibited waste, and date of disposition;
- Daily total quantity of stored wastes, processed wastes, and rejected or non-processable wastes, incidental wastes and residues;

- Types and daily quantity of processed wastes sent off-site and the corresponding name and address of the end market user;
- Daily quantity of rejected or non-processable wastes, incidental wastes and residues sent off-site, to include the disposal location(s) and transporters with corresponding Delaware solid waste transporter numbers;
- Summary of the percentage of rejected or non-processable wastes, incidental wastes and residues generated each month;
- Summary of all non-routine incidents whether notification was made as required or not;
- Detailed description of any deviations, whether intentional or accidental, from the approved Plan of Operation; and
- Summary of all instances of non-compliance with the permit.

Reports will be submitted by the 15th of the month after the quarter end.

7.4.2. Annual Facility Report

BDC will submit to DNREC an annual report summarizing facility operations for the preceding calendar year in accordance with Section 9.4.4 of DRGSW. The report will summarize all processing and monitoring activities conducted in the previous calendar year. The report will include the following information:

- Types and weight or volume of wastes received at the site;
- Types and weight or volume of recycled commodities sent off-site and the identification of the end market user;
- Weight or volume of rejected or non-processable wastes, incidental wastes and residues sent off-site and the location and ultimate disposal of the waste;
- A description of any unintentional or accidental deviation from the approved Plan of Operation; and
- A description of any construction or corrective work conducted at the site that was completed in accordance with an approved plan or to comply with a requirement under DRGSW.

7.4.3. Annual Financial Assurance Review

Annually, BIC will submit to DNREC a review of its conceptual closure plan for the facility. In the event that the annual review indicates that the conceptual closure plan is not consistent with current facility operations, BIC will submit an updated conceptual closure plan. In addition, BIC will annually recalculate estimated closure costs to compensate for

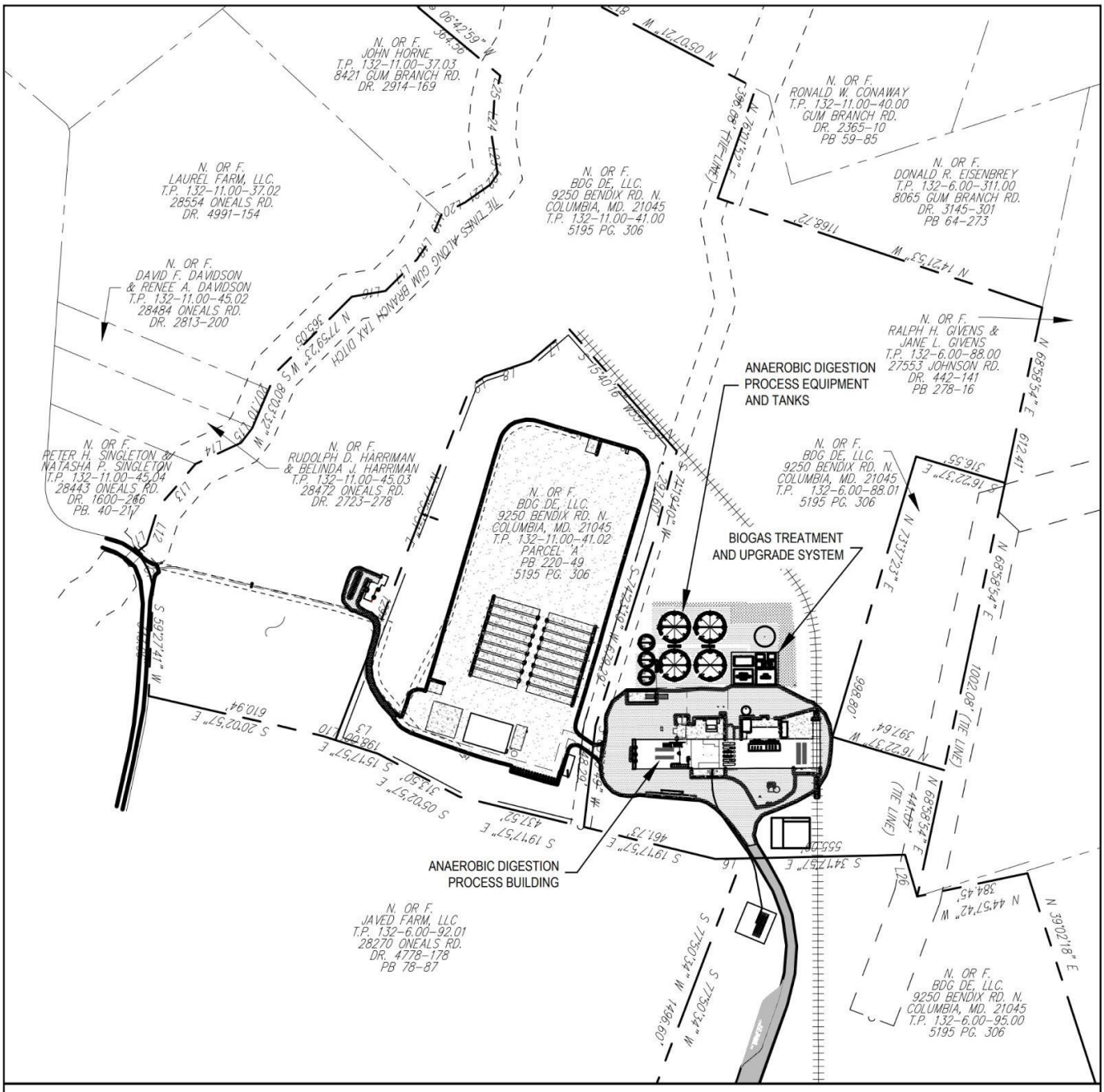
modifications to the conceptual closure plan and/or to adjust for common economic variables. The update will include adjustments for facility expansion, wage rates, equipment rental rates, and any other applicable requirements which impact the cost of closure. DRGSW provides multiple mechanisms to furnish Financial Assurance to the State. Concurrent with the annual review of its conceptual closure plan and estimate closure costs, BDC will either extend or enhance the current program in place that support the compost facility of review and consider its selected financial assurance mechanism with regard to the variety of financial assurance options available.

7.4.4. Annual Recycling Report

In accordance with the Universal Recycling Law, the facility will submit an annual report to DNREC no later than February 15th of each year. The report will include all recycling activities pursuant to the reporting guidelines established by DNREC and the Recycling Public Advisory Council.

EXHIBIT 1

OVERALL SITE PLAN



Barton & Loguidice	**BIC Site Plan** Property Lines EXHIBIT 1		Exhibit Number 1
Date MAY 2020	Scale AS SHOWN	SEAFORD SUSSEX COUNTY, DELAWARE	Project Number 2163.001.001

EXHIBIT 2

AD FACILITY CONCEPTUAL SITE PLAN

TRUE OR CALLED NORTH

HOT WATER
DIGESTATE
BIOGAS
NAT. GAS
WATERLINE
FORCE MAIN
LIQUID TRUCKS
SOLID TRUCKS

50' 0 50' 100'
1"=50'

PROPOSED SWM POND-2 EXPANSION

FERMENTERS (TYP.)
TENT ROOF
INSIDE DIAMETER 92 FT (28.00 M)
HEIGHT 39.5 FT (12.00 M)
TOTAL VOLUME 260,940 FT³ (7,389 M³)
FERMENTATION VOLUME 245,720 FT³ (6.958 M³)
▼ ± 0,00

PRETANKS (TYP.)
CONCRETE SLAB
INSIDE DIAMETER 33 FT (10.00M)
HEIGHT 33 FT (10.00M)
TOTAL VOLUME 27,722 FT³ (785M³)
FERMENTATION VOLUME 25,780 FT³ (730M³)
▼ +/- 0,00

EXISTING NATURAL GAS LINE SECTION NEAR DIGESTERS (DEMO/ TO BE RELOCATED)

DEMO EXISTING CONCRETE PAD

LIQUIDS RECEIVING/ OFFLOADING FACILITY

PUSH WALL

FEED PUMP BIOMIX (TYP.)

FEEDER (TYP.) AROUND 70M³
▼ +/- 0,00

SOLIDS RECEIVING/ OFFLOADING FACILITY (19,000 SF)

FEEDER 3 AROUND 70M³
▼ +/- 0,00
(PHASE 2)

FEED PUMP 3 BIOMIX (PHASE 2)

INBOUND SCALE

EXISTING NATURAL GAS LINE

EXISTING 3" FORCE MAIN

VEGETATIVE FILTER STRIP

UTILITY FLARE (35 FT RADIUS)

UPGRADING COMPRESSOR SKID

FLARE BLOWER & CONTROL SKID

RAIL LINE

UPGRADING MEMBRANE CONTAINER

TOX

CHILLER & AFTERCOOLER

BIOGAS CONDITIONING SKIDS

CHP SYSTEMS

APPROX. LOCATION OF SW SETTLING CHAMBER & ELECTRICAL JUNCTION BOX (DEMO/TO BE RELOCATED)

EMERGENCY GENERATOR

CENTRIFUGE TANK

FUTURE AMMONIA SCRUBBER/STRIPPER

BOILER

HEAT EXCHANGER 1

POLYELECTROLYTE-PREPARATOR (PHASE 2)

CONTAINER FOR HYGIENIZATION 1

FEEDTANK FOR HYGIENIZATION

HYGIENIZATION 1

9,500 SF

FEEDTANK FOR DECANTER (PHASE 2)

SEPARATOR 1-4 (PHASE 2)

FEEDTANK FOR HYDROTECH

POLYELECTROLYTE-PREPARATOR

DECANTER 3-4 (PHASE 2)

DECANTER 1-2

FEEDTANK FOR DECANTER (PHASE 1) FOR SEPARATOR (PHASE 2)

HYGIENIZATION 2 (PHASE 2)

32,033 SF

CONTAINER FOR HYGIENIZATION 2 (PHASE 2)

HEAT EXCHANGER 2 (PHASE 2)

EXISTING RAIL LOADING FACILITY (2500 SF)

DIGESTATE LOAD OUT AREA (DRIVE-THRU LANES)

WW PRETREATMENT

UF SKID

BIOREACTOR

MATCH LINE A

PLAN
SCALE: 1" = 50'

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REVISIONS

BIOENERGY DEVCO – BIOENERGY INNOVATION CENTER
ANAEROBIC DIGESTION AND BIOGAS IMPROVEMENTS

BIC CONCEPTUAL SITE PLAN

SUSSEX COUNTY, DELAWARE

SEAFORD

Barton & Loguidice

Date
MAY, 2020

Scale
1" = 50'

Sheet Number
1 OF 2

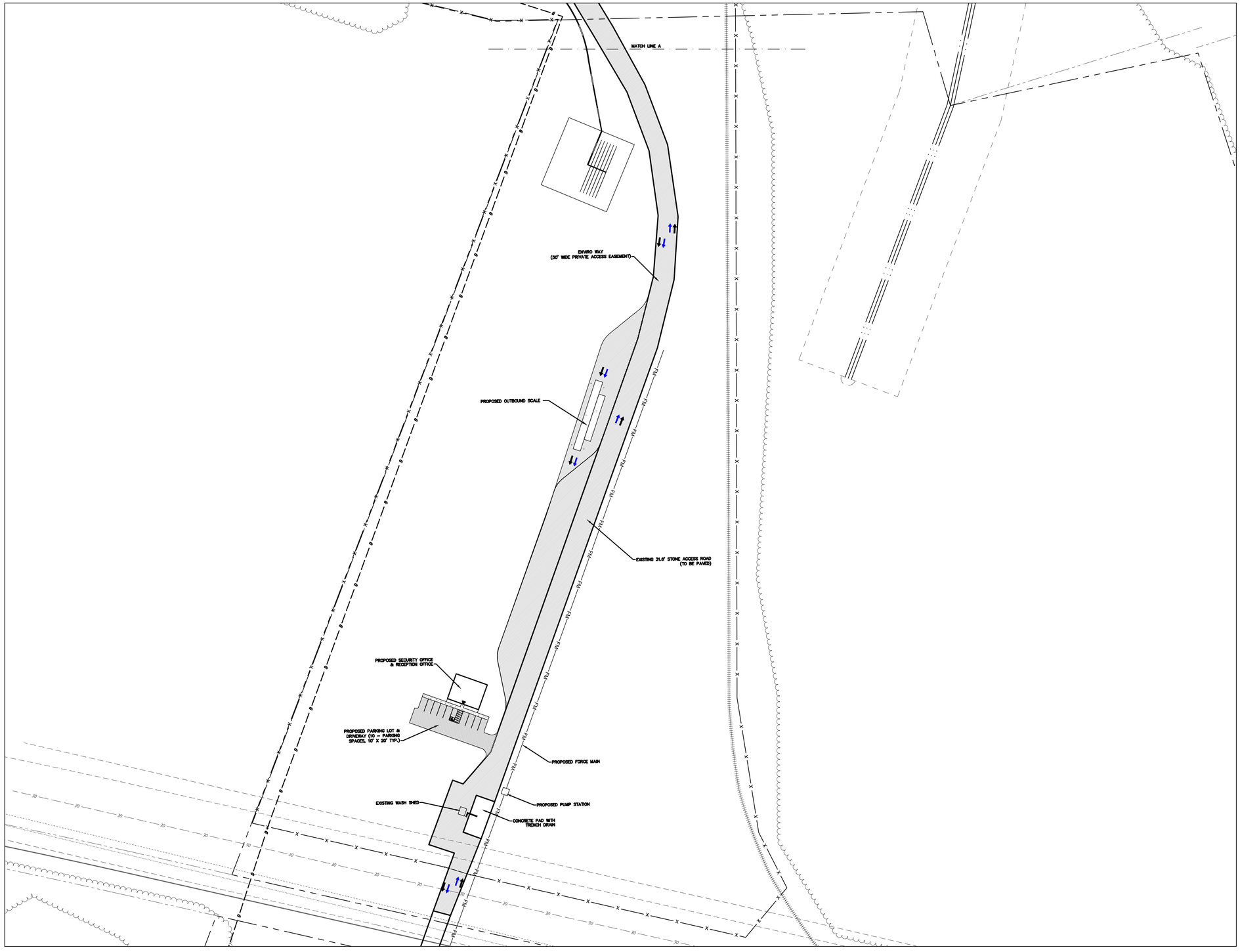
File Number
2163.001.001

TRUE OR CALLED NORTH

N

HOT WATER — HW — HW — HW — HW —
DIGESTATE
BIOGAS
NAT. GAS
WATERLINE
FORCE MAIN
LIQUID TRUCKS
SOLID TRUCKS

70' 0 70' 140'
1"=70'



PLAN
SCALE: 1" = 70'

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REVISIONS

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ANAEROBIC DIGESTION
AND BIOGAS IMPROVEMENTS

BIC CONCEPTUAL SITE PLAN

SUSSEX COUNTY, DELAWARE

SEAFORD

Barton & Loguidice

Date
MAY, 2020

Scale
1" = 70'

Sheet Number
2 OF 2

File Number
2163.001.001

EXHIBIT 3

AERIAL MAP

N

LEGEND:

PROPERTY BOUNDARY

FORMER PELLETIZATION PLANT

RAILROAD SPUR

DUMP SITE

STORMWATER POND 1

STORMWATER POND 2

OFFICE TRAILER

COMPOST SITE

STORMWATER POND

FORMER OFFICES

APPLIANCE DUMP SITE

600' 0 600' 1200'
1"=600'

BIC Aerial

SITE PLAN

SUSSEX COUNTY, DELAWARE

TOWN OF SEAFORD

Barton & Loguidice

Date
APRIL 2019

Scale
1" = 600'

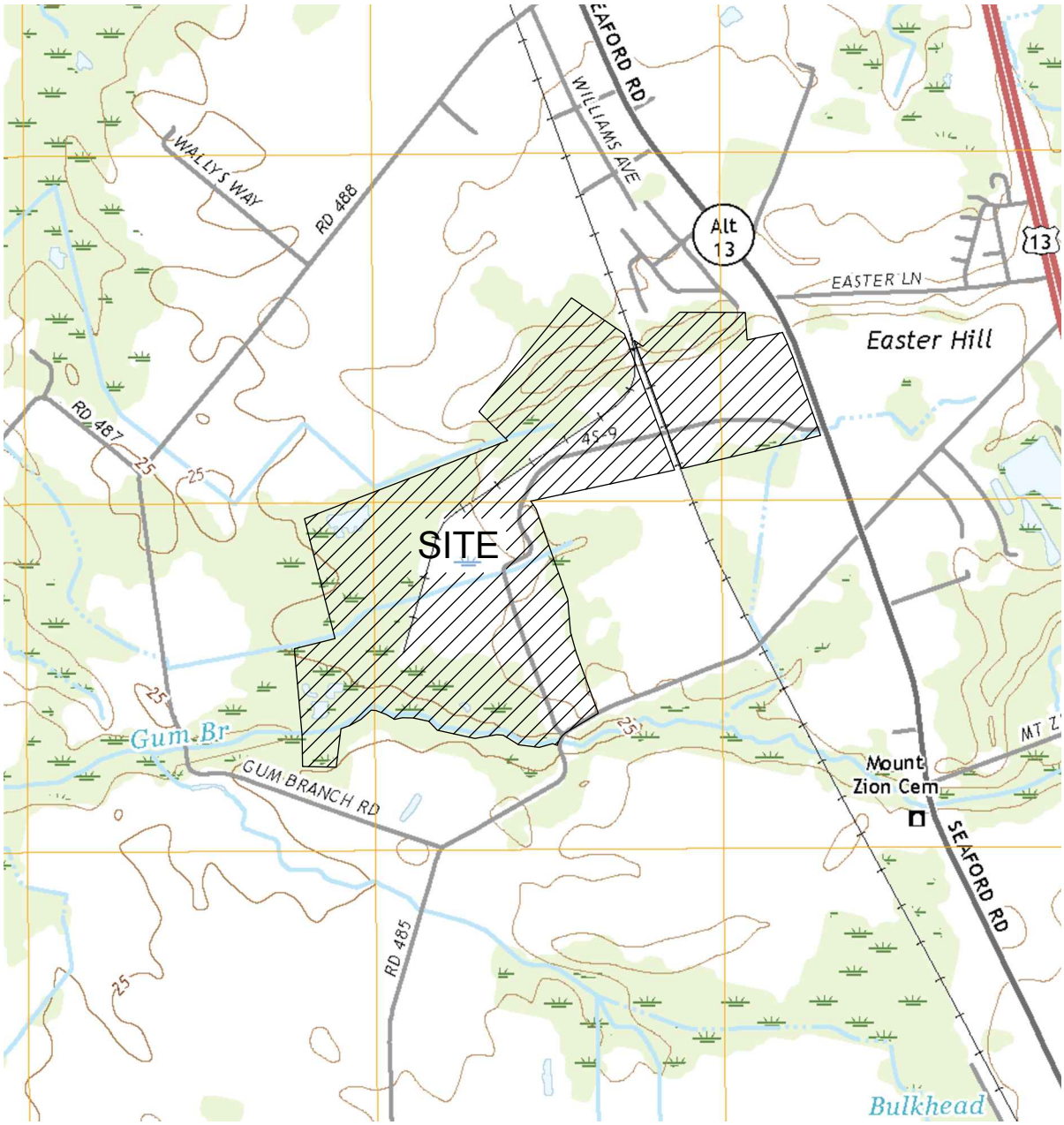
Figure Number
2

Project Number
2163.001.001

Plotted: Apr 01, 2019 - 12:57PM SYR By: dsp
Z:\BL-Vault\D2\18217AD2-1C71-4823-8927-99D5C4054147\0\1707000-1707999\1707625\L\L\2163.001.001_Fig 2_Site Plan (ID 1707625).dwg

EXHIBIT 4

USGS MAP



NOTE:
THIS LOCATION SKETCH IS ADAPTED FROM THE U.S.G.S TOPOGRAPHIC MAP, 7.5 MINUTE SERIES, FOR LAUREL QUADRANGLE, 2019

1600' 0 1600' 3200'

DRAWING SCALE 1" = 1600'

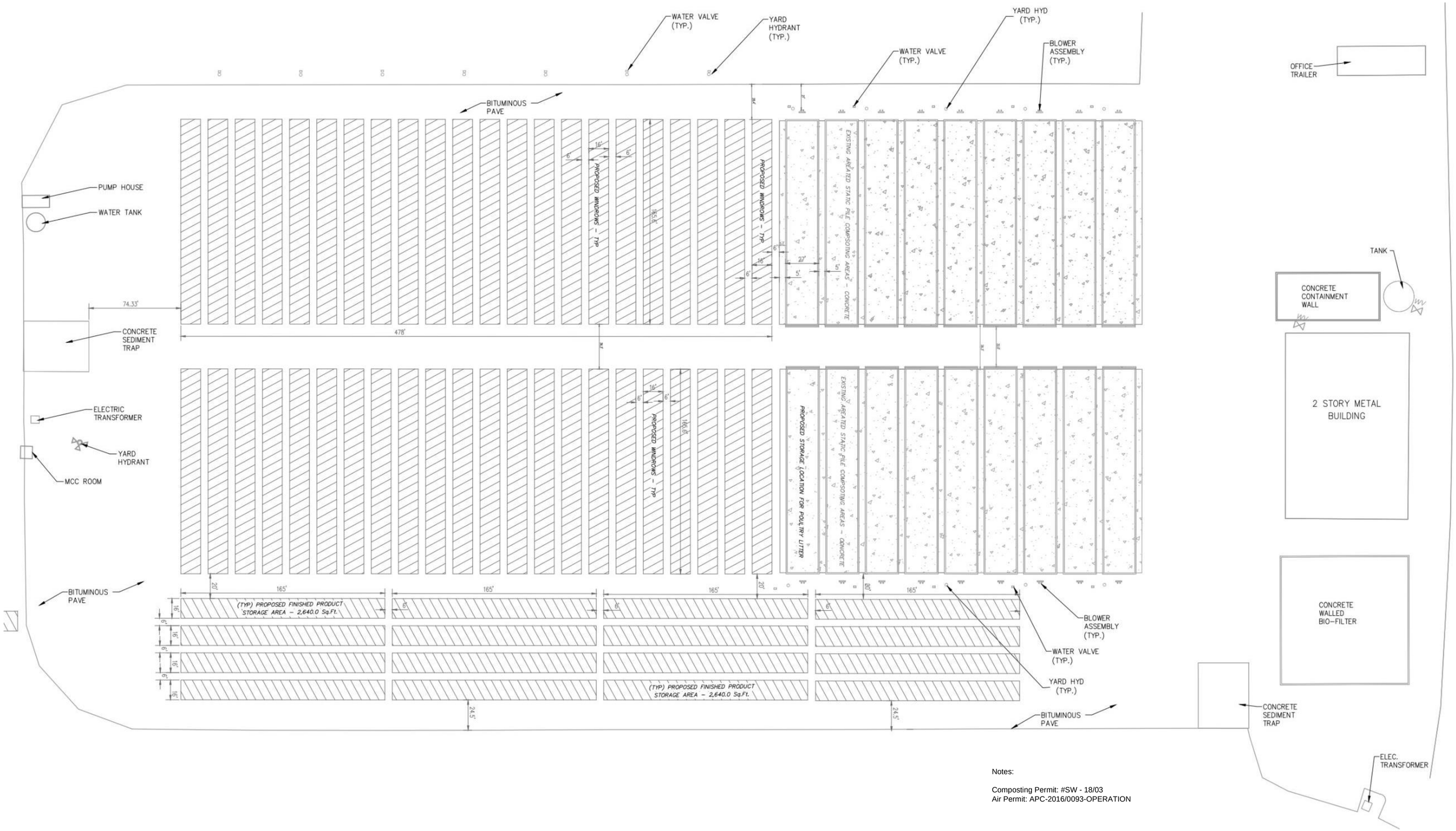
DATE: 2 JUNE 2020	USGS IMAGE	**DESIGNED BY: JTO**	DUFFIELD ASSOCIATES Soil, Water & the Environment
SCALE: 1' = 1600'	LANDS SURRONDING PROJECT SITE	**DRAWN BY: JTO**	5400 LIMESTONE ROAD WILMINGTON, DE 19808-1232 TEL. 302.239.6634 FAX 302.239.8485
PROJECT. NO. 12393.ED	**BIOENERGY DEVELOPMENT GROUP**	**CHECKED BY: SCH**	OFFICES IN DELAWARE, MARYLAND PENNSYLVANIA AND NEW JERSEY
SHEET: ATTACHMENT B	CITY OF SEAFORD ~SUSSEX COUNTY ~ DELAWARE	**FILE: SAS12393ED**	E-MAIL: DUFFIELD@DUFFNET.COM

EXHIBIT 5

COMPOST FACILITY LAYOUT

Compost Facility Site Layout

May 31, 2020



Notes:

Composting Permit: #SW - 18/03
Air Permit: APC-2016/0093-OPERATION

EXHIBIT 6

PROCESS FLOW DIAGRAM

Bioenergy Innovation Center – Process Flow Diagram

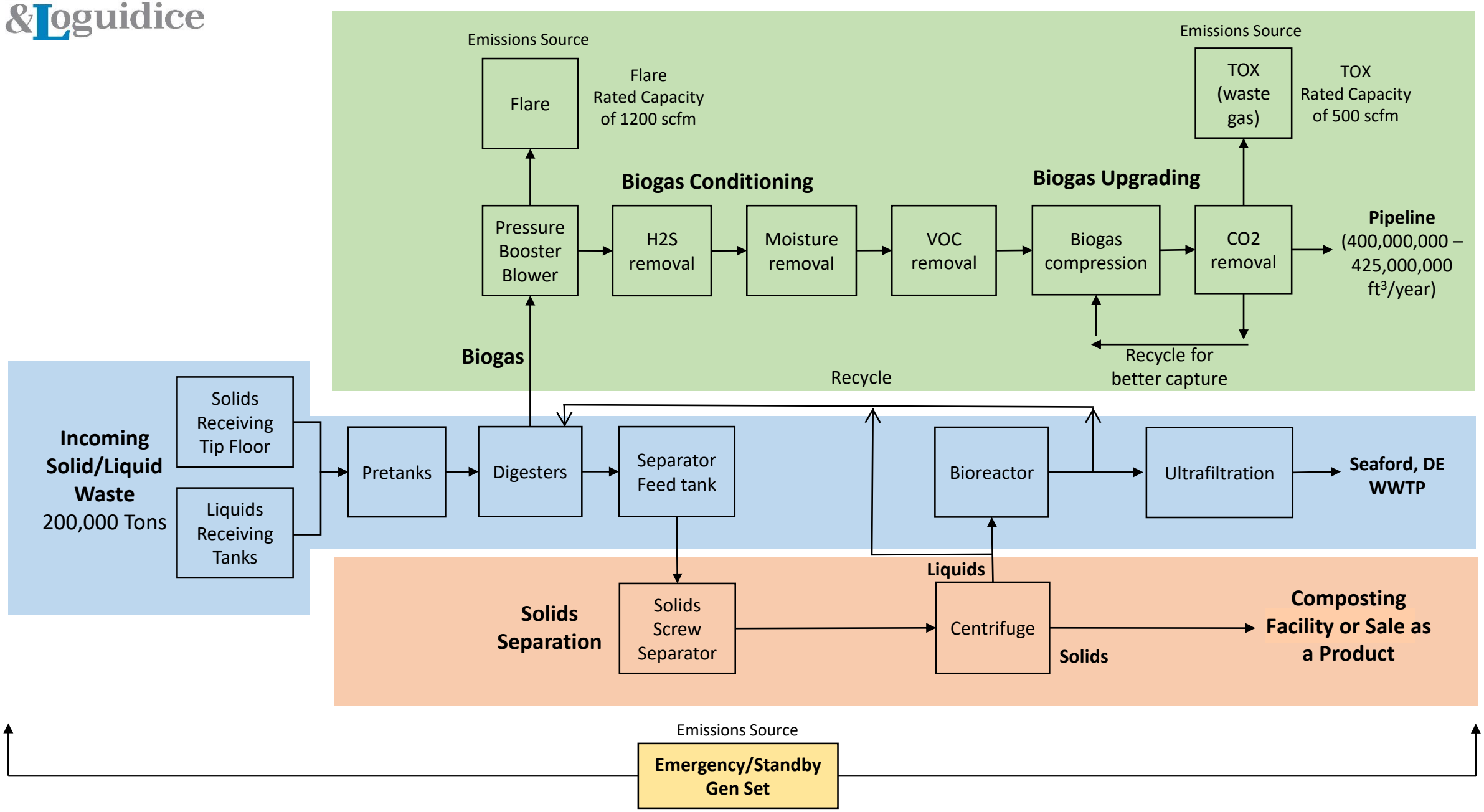


EXHIBIT 7

CONTINGENCY AND EMERGENCY RESPONSE PLAN AND PROCEDURES

BIOENERGY DEVCO, LLC

CONTINGENCY AND EMERGENCY PLAN

May 2022

Prepared for:

BioEnergy DevCo, LLC
50 State Circle
Annapolis, MD 21401

Prepared by:

BioEnergy DevCo, LLC
50 State Circle
Annapolis, MD 21401

Project No. 12393.ED

TABLE OF CONTENTS

1.0 PURPOSE AND OVERVIEW

The purpose of this Contingency and Emergency Response Plan and Procedures is to clearly delineate a response plan and procedures in case of emergencies that may occur during the operations of the Bioenergy Innovation Center Anaerobic Digester and Compost Facility. It is also intended to comply with the requirements specified in Section 4.4.1.3. of Delaware's Regulations Governing Solid Waste ("DRGSW") for the proposed Resource Recovery Facility ("RRF") to be operated by Bioenergy Devco, LLC (BDC).

The welfare of our employees and protecting our Facility from damage is paramount to BDC as well as protecting the environment during emergency conditions. This document provides for the safe operation of the Facility during emergency conditions so as to protect our employees, safeguard Facility equipment and systems, and provide for the protection of the environment.

A member of the Bioenergy Innovation Center (BIC) management team will be assigned the responsibility of Site Emergency Coordinator to monitor for conditions that require implementation of this Plan and the Procedures described below. The Site Emergency Coordinator will serve as point of contact for the facility to coordinate activities with designated agencies as appropriate and direct employees in preparing the Facility to handle the emergency conditions expected.

2.0 STATE OF EMERGENCY

A member of the Bioenergy Innovation Center (BIC) management team will be assigned the responsibility of Site Emergency Coordinator to monitor the declaration of any federal or state State of Emergency affecting operations and will serve as point of contact for the facility to coordinate activities with designated agencies as appropriate. It will be the responsibility of the Site Emergency Coordinator will communicate actions under a State of Emergency that may affect BIC employees in the execution of their duties.

Site Emergency Coordinator will evaluate conditions and take appropriate actions to protect citizens, customers and employees by modifying, curtailing or terminating operations or sheltering in place during a State of Emergency.

In the event of the implementation of driving restrictions established under a State of Emergency, the Site Emergency Coordinator will be responsible for identifying "essential employees" for BIC consistent with Delaware Code. "Essential personnel" for purposes of this shall mean those employees and/or personnel who are necessary to maintain the core functions of a government body or entity, and to maintain the health and safety of the people in Delaware by providing services provided by public utilities, health-care services, and food and fuel deliveries during a state of emergency, regardless of whether they are employed by a public or private entity.

In the event of the issuance of a Level 1 Driving Warning, all BIC employees shall exercise extra caution in the operation of their motor vehicle.

BIC shall operate in accordance with all other applicable requirements established under a State of Emergency.

3.0 SEVERE WEATHER AND NATURAL DISASTERS

Severe weather and natural disasters cannot always be predicted and certainly can impact normal operations of the AD and Compost Facility. Severe weather and natural disasters include: earthquakes, hurricanes, tornadoes, floods, blizzards and major winter storms.

Although some of these have a low probability of occurrence given the location of the Facility, contingency planning and emergency procedures to maintain safe operation of the Facility are still necessary and will be followed in the event of an occurrence of a natural disaster.

At the onset of a natural disaster that is not predicted with sufficient warning time to prepare, emergency shutdown of the Plant will be initiated immediately by the Senior Operator on site. Management staff will be notified and operations personnel necessary to implement the safe shutdown will be recalled to work as required as long as they can safely proceed to the Facility. When there is sufficient warning of a natural disaster, the Plant Management team will decide when to implement emergency shutdown procedures and direct preparations accordingly to make the Facility ready for the impending natural disaster.

The emergency shutdown of the Facility encompasses the following steps:

1. Safe shutdown of all equipment and systems not necessary or needed to finish processes to a safe condition.

2. Cessation of all feedstock receiving and notifying customers to divert waste and or not transport waste to the Facility until it is safe to do so once operations resume.

3. The composting operations will be made safe and essentially shutdown.

4. The tipping floor will be immediately cleared of all material in process.

5. Wood materials and other loose items that may become a hazard in high winds that occur with hurricanes or tornadoes will be removed or moved indoors to the tipping floor.

6. Operation of the AD Facility digesters will continue as the process cannot be interrupted except for discontinuing the feeding of the tanks once all materials in process are in the digester. However, material once in the digesters, will remain in the digesters until normal operations resume.

7. Downstream processing systems will be shutdown once all materials in process have been processed through including solids separation and wastewater treatment. Once materials in process have completed through the process, equipment will be shutdown or put into a safe condition.

8. Plant systems and equipment will continue to be visually inspected and monitored as long as it is safe to do so.

9. Emergency generators will be checked and made operational to provide continuous power to critical operating equipment and life safety systems.

10. The Facility will remain in a reduced state of operations until emergency conditions have passed and it is safe to resume normal operations.

3.1 EARTHQUAKES

During an earthquake, operations personnel and any one on site will be directed to the nearest safe area of the Facility which would be inside the Processing Building in the center of the building and away from the walls or any overhead equipment. Personnel on site will be directed by the Site Emergency Coordinator to the designated safe location.

Once clear and earthquakes are no longer present, and it is safe to do so, plant operations staff will make visual inspections of all equipment, tanks, piping, and the Facility make noting all damage to the Facility. Any hazardous or life-threatening condition will be immediately addressed and made safe. Other damages will be prioritized and repair plans made according to priority. Highest priority will be given to systems, equipment or other damage that impacts the safety of personnel, the equipment and to preventing or mitigating damage to the environment.

Notifications to Management staff, emergency responders, and authorities will be made as necessary. DNREC and or other authorities will be notified of any damage that causes or could potentially cause a violation to a permit condition including the action plan to correct the damage and mitigate the impact.

3.2 HURRICANES

Hurricanes can be predicted, monitored and prepared for days in advance of making landfall or before damaging winds and heavy rains occur. Management staff through the Site Emergency Coordinator will direct preparations of the Plant accordingly implementing the emergency procedures outlined above at the appropriate times to ensure the Facility is prepared. Additional precautions include:

- Securing all loose material;
- Monitoring and making best efforts to lower the stormwater pond level through aeration, pumping to temporary storage tanks or if necessary removal by tanker truck;
- Discontinuing receiving operations and clearing the tipping floor at least a day before damaging winds and rain are expected;
- Closing up and or boarding up or reinforcing areas of the Facility that can be easily damaged by high winds, rain or blowing debris;
- Securing rolling stock in a safe location;
- Preparing emergency supplies such as water, food, first aid supplies, additional pumps and other equipment, batteries, portable generators, flashlights, etc. as may be needed;
- Preparing employees, training and briefing of what to do, what to expect and how best to prepare;
- Designating safe areas and ensuring all personnel can be accounted for before, during and after the event.

3.3 TORNADOES

Although not likely, if notified or weather conditions are such that a tornado might occur or in the event of tornado warnings sirens, similar preparations as would be implemented for a hurricane would be implemented and employees notified of the emergency shelter location nearest them. All non-essential activities will be shutdown and non-essential personnel asked to evacuate to the nearest shelter location. On site staff remaining will be directed by the Site Emergency Coordinator to shelter inside the Process Building in the center section of the building.

3.4 FLOODS

Floods may result from heavy rains over a short period of time. If there is sufficient time before the flooding begins, the tipping floor will be cleared and all material receiving suspended until flood conditions subside. The wood pile and composting areas will be cleared or covered or other means necessary to prevent flood waters from carrying away material into the stormwater pond will be implemented as quickly as possible.

3.5 BLIZZARDS AND MAJOR WINTER STORMS

Before predicted blizzard conditions and major winters storms, emergency preparations will be undertaken as described above. During a blizzard or major winter storm, personnel will be instructed where to shelter on-site by the Site Emergency Coordinator. Outdoor activities will be suspended for the duration of

the blizzard or storm until it is safe to be outdoors. Other preparations that will be undertaken prior to the storm or blizzard include:

- Ensuring heating systems in shelters are working and emergency generator power is available to maintain heating and life safety systems;
- Additional fuel for the emergency generator is available if needed and the emergency generator has been tested and is ready to operate if needed;
- Shelter areas will be sealed off as much as possible from intrusion of cold air and weather from outside. Towels and rags may be used to block cracks around windows and doors;
- Additional supplies shall be stored in shelter areas including: warm clothing, blankets, water, food, first aid supplies, additional pumps and other equipment, batteries, portable generators, flashlights, etc. as may be needed or required.

4.0 CATOSTROPHIC EQUIPMENT FAILURE

The plant has flexibility built into the process to allow for the plant to run at normal or limited load during periods of equipment failure or breakdowns. Operations and maintenance staff will carry out regular preventive maintenance to reduce breakdowns and be available to respond on short notice to make breakdowns repairs. Critical spare parts will be stored on-site to facilitate timely repairs.

In the event of a catastrophic equipment failure impacting the ability to maintain normal operations, Facility management will make an assessment of the failure, impacts of the failure and direct damage control to mitigate danger to personnel, other equipment or damage to the environment. Damage control, spill or leakage containment, and all other reasonable measures will be undertaken. Once contained, equipment repairs or replacement will begin immediately to restore normal operations in the shortest amount of time.

The Facility Manager will make immediate notifications to DNREC or other authorities as required of the impacts of the catastrophic equipment failure and provide a plan to mitigate further damage resulting from the failure.

5.0 TEMPORARY LOSS OF MARKET

If there is a temporary loss of market for incoming feedstocks, the BIC will process remaining feedstocks until fresh supply of feedstock resumes. The Plant operates normally at a reduced volume or output for up to 60 days until a shutdown is necessary. Given the available quantities of feedstock local to the BIC, there is a very low risk of a temporary or lasting loss of market.

If there is a temporary loss of market for composted material, the Facility has the ability to store compost for several months while curtailing production of new compost material until new markets are identified or existing markets restored.

Temporary loss of market for the renewable natural gas would result in biogas from the digesters temporarily flared while the digester production is reduced to minimum output levels and until biogas production ceases subject to allowances in the Air Permit conditions to operate. It is not expected that a temporary loss of market would required a complete shutdown nor would the biogas be flared for a long period of time. Should that become the case however, DNREC would be notified according to permitting requirements and provided with of the estimated duration of flaring operations and provided with emissions calculations estimating the total emissions during the period the flare is operated and until operations have ceased producing biogas or resume normally.

6.0 FIRE OR EXPLOSION

Immediately upon detection of a fire or explosion, the Plant emergency shutdown stop (ESTOP) will be activated by the plant monitoring and controls system to begin the shutdown to a safe condition of the Plant. The ESTOP can also be manually activated with a double action, covered, mushroom button located in the central control room, electrical plant rooms and in other critical locations throughout the plant. The emergency stop (E-stop) is the fail-safe button/switch that is part of a circuit that will immediately deenergize nearby equipment in order to prevent equipment damage or injury. E-stops are normally a part of moving equipment that could be a potential hazard. The E-stop can be located on the equipment itself or nearby on a panel or wall. In the event of fire or explosion, our fire alarm will send a global signal to all subsystems in the plant. This will initiate an emergency shutdown sequence of all subsystems. When emergency shutdown is initiated, all biogas from the digesters will be routed to the flare until normal operating conditions resume. The gas scrubbing system will be shutdown. This E-stop would not shut down any life safety equipment. The Site Emergency Coordinator will direct staff to evacuate and help others that may be injured or trapped evacuate to safe areas well away from the fire or explosion if it is safe to do so. Using the Site Logs and personnel duty roster, a muster of personnel on-site will be made at the designated safe area to ensure everyone has been evacuated or to identify those who cannot be accounted for and might still be trapped or injured in the area of the fire or explosion. Site personnel are trained in the use of fire extinguishers and emergency fire fighting equipment that is kept on site and may be called on to assist in containing fires until emergency responders can arrive. Employees receive training under a Standard Operating Procedure for the facility which is used for training personnel in techniques in identifying the conditions which pose a risk for fire and techniques for controlling and extinguishing a compost fire. The SOP is reviewed and updated as needed.

Emergency notification will be made to by calling 9-1-1 and personnel dispatched to key areas of the site to direct emergency responders arriving on the scene to the fire or

explosion. The Site Emergency Coordinator will coordinate with emergency responders to assist the injured and provide any information about personnel that have not yet been accounted for and may still be in the area of the explosion or fire.

Emergency responders may direct additional actions or request assistance from the Facility staff in locating missing or injured personnel, or in actions needed to contain the fire to prevent additional damage.

Once the area is safe and emergency responders have provided an all clear to the Site Emergency Coordinator, the Site Emergency Coordinator with the management team will direct the assessment of damages and repairs required for the Facility. Notifications to DNREC and authorities having jurisdictions over the Facility will be made providing details of the incident, cause if known, damage assessments, steps to mitigate risks to personnel, equipment and the environment.

7.0 VEHICULAR ACCIDENTS

Bioenergy Innovation Center prevents vehicular accidents and emergencies by providing employee training on safe use of vehicles, maintaining vehicles for safe operation, and responding to vehicle accidents with a priority for human safety, to prevent damage to equipment and operating systems, or to prevent an environmental issue or spill of a potential contaminant.

Employees are only allowed to use equipment, including vehicles, with proper training by a supervisor. This training emphasizes safe operation, personal protective equipment, and pre-operation safety checks.

All equipment is regularly maintained and, including inspected for safe operation. If equipment is found to be not safe for operation, it is locked out and not available for use until the problem is fixed.

If a vehicular accident does occur, operations will be suspended and the emergency is assessed. Medical first responders are called if needed. Vehicles are inspected for safety prior to reuse. An internal investigation as to the cause of the accident is conducted, and any operational or safety changes are made to prevent a similar accident from re-occurring.

8.0 PERSONAL ILLNESS OR EPIDEMICS

In keeping with OSHA guidelines, BIC will maintain records of serious work-related illnesses and follow requirements and guidelines to prevent spread of illnesses amongst employees, visitors to the site or from other incidental contacts. A formal corporate and site policy is being implemented for the Prevention of Injuries and Illnesses to comply with federal, state and local requirements.

The major elements of this plan include the following:

1. Company and Site management will take reasonable measures to protect the safety and health of employees and visitors;

2. Training will be provided to all employees in how to prevent workplace illnesses and prevent spread of an illness once identified;

3. Communication of potential hazards to employees and visitors;

4. Employees will be encouraged to remain home when ill and should seek treatment if symptoms are severe enough to warrant;

5. Sanitizing stations and washrooms will be provided for washing hands frequently;

6. Touched surfaces and objects will be cleaned and sanitized;

As a result of COVID-19, BDC and the BIC Facility have implemented stringent procedures to prevent exposure and or spread of COVID-19 in keeping with federal, state, and local guidelines as well as recommendations from the CDC. Further information. Similar procedures would apply to any epidemic or pandemic to minimize exposures and spread of an illness.

The plan requires as a minimum the following:

1. Telecommute or work from home whenever possible and specifically if an employee is symptomatic;

2. Employees are required to report if symptomatic and will be requested to get tested before returning to the workplace;

3. Temperature checks of employees as they arrive on site and a form on which to record their name, date, time and temperature;

4. Wearing of an approved mask;

5. Washing of hands or use of a hand sanitizer when entering or re-entering the workplace;

6. Wearing gloves when operating common or shared equipment;

7. When using restrooms and washing hands with soap, avoid touching with your clean bare hands, instead using a paper towel or tissue or gloves to turn off faucets and open doors if not hands free;

8. Social distancing and maintaining at least a 6’ distance from fellow employees and visitors;

9. Modifying workspaces to provide distancing and providing physical barriers where spacing cannot be provided;

10. Physical contact such as hand shaking is prohibited;

11. Employees should regularly clean workspaces, cleaning services will sanitize work areas and common areas each work day at the end of the business day;

12. Travel shall be limited to essential travel only and employees will be advised of precautions and restrictions that will be in force for the duration of their travel.

9.0 PERSONAL INJURIES

In keeping with OSHA guidelines, BIC will maintain records of serious work-related injuries and follow requirements and guidelines to prevent injuries to employees, visitors to the site or from other incidental contacts. A formal corporate and site policy is being implemented for the Prevention of Injuries and Illnesses to comply with federal, state and local requirements.

In the event of a personal injury to someone at the Facility, and if it is safe to do so, apply first-aid. Assign someone to call for an ambulance if further treatment is required. First-aider or designate will assign an employee to meet and direct the ambulance to the injured employee. If the accident or injury involves exposure to a chemical substance, make sure the send the appropriate Material Safety Data Sheet (MSDS) along to the hospital.

In any emergency situation where emergency services are called (fire department, ambulance, law enforcement), make sure clear directions on how to get to your location are given to the emergency dispatcher. If necessary, have someone go out to the nearest road and lead them to the site. Never hang up on a 911 call unless the 911 responder specifically tells you to do so. Remain calm; a calm, clear mind makes better decisions regarding any situation.