DNR SUMMARY DOCUMENT 4/2/2019
RE: Town of Holland, Parcel HL-367, Application for CUP

DRAFT Version 6

BC Organics Digester Project Description

The BC Organics Project is a community manure digester system which includes wastewater treatment following the digestion process. The plant is designed to process manure from neighboring farms and substrates and convert it into renewable natural gas, a soil amendment product, fiber for bedding and a liquid fertilizer product. The facility is anticipated to produce 1,800 MMBtu/day of renewable natural gas and treated water for reuse or discharge. The goal of the project is to produce renewable energy while reducing the impact of manure on the environment.

BC Organics will process manure from the Wiese Brothers Dairy, Country Aire Farms, Rueden Beef, Thompson's Gold Dust Dairy, New Horizons Dairy, Brickstead Dairy, and Wall Dairy facilities. Force mains will deliver manure from the Wiese Brothers Dairy and Country Aire Farms facilities. Liquid manure from the other farms will be trucked to the facility and unloaded in an enclosed Receiving Building. The manure will flow by gravity to two 1 MG below-grade raw manure storage tanks adjacent to the Receiving Building (*Figure 1A*). As currently designed, approximately 83% of the manure volume will be pumped and 17% will be trucked to the site.

Liquid wastes/co-substrates (food and beverage by-products from industries) will be delivered to the site and unloaded to one (1) of two (2) 100,000 gallon bolted stainless steel storage tanks located next to the Receiving Building. The substrates will be processed separately in the Substrate Digester. From the storage tanks, the manure and substrates will be fed to the digesters on-site. Both the manure and substrates will pass through the Process Building where the flow will be measured. The manure will be directed to the fifteen (15) manure digesters and the substrates will be directed to the (1) substrate digester. The process building will also house the hot water boilers that will be utilized to provide the heat for the digesters and electrical/controls (*Figure 1A*).

Additionally, the manure and substrate receiving building will also have (2) 50,000 gallon above ground stainless steel storage tanks for the concentrates from the ultrafiltration and forward osmosis processes. These tanks will allow the trucks that are transporting the manure to the site to be reloaded with concentrates for delivery back to the farm without having to move their trucks while on site. It will also allow the forward osmosis concentrated nutrients to get pumped back to the neighboring farms or for the ultrafiltration concentrate to be recycled back into the process (*Figure 1B*).

Each of the 16 digesters consists of a 1,378,000 gallon above ground bolted stainless steel tank that has a series of internal mixers, stainless steel tubes inside the digester with hot water flowing through them to maintain the 95-100˚F temperature required to maintain the biological activity inside the digester, a dual membrane roof in which the outer membrane remains fully inflated for weather protection while the inner membrane is allowed to raise and fall to provide variable biogas storage space, a stainless steel pipe to remove the biogas from the top of the tank, and insulation and siding around the outside of the tank. The digesters are designed to provide a hydraulic retention time of 20 to 25 days. During this period, the volatile organics in the manure and substrates are broken down by bacteria inside the digesters which produces biogas. Following the digestion process, the manure digester effluent (digestate) will be pumped from the digesters, through the process building where the flow will be measured and then directed to the two (2) 100,000 gallon digestate storage tanks (*Figure 1A*).

The manure digestate will be pumped to a bank of nine (9) screw press separators to separate the coarse solids from the liquid. The substrate digestate will be pumped directly from the substrate digester to a single screw press separator (*Figure 1A*). The solids from all the screw press separators will be processed through a pair of rotary drum dryers to reduce the moisture from approximately 70% to about 40% (*Figure 1B*). This process will also significantly reduce the pathogens in the solids. The solids will be conveyed to the Fiber Storage area of the Fiber Building. The solids will be available for use as bedding or transported to a horticultural wholesaler for use as a soil amendment product.

The liquids from the screw presses will flow by gravity into three pressate storage tanks, one which is reserved for industrial waste (substrates) pressate. The liquid pressate will be pumped from these tanks to a stainless steel ultrafiltration (UF) system. The UF system is comprised of ¾" tubular membranes with an average pore size of 0.02 microns. The liquid pressate is pumped through the inside of the tubular membranes, which retain nearly all suspended solids, phosphorus, organic nitrogen, and pathogens. The liquid that passes through the wall of the tubular membranes is a transparent fluid called the UF permeate and is collected in the UF permeate storage tank. The material which does not pass through the wall of the tubular membranes is a slurry called the UF concentrate. The UF concentrate is collected in the UF concentrate storage tank adjacent to the manure receiving building in order to be recycled back through the digestion process or supplied back to the farms for storage and land application (*Figure 1B*).

The UF permeate from the storage tank is pumped through a forward osmosis (FO) system comprised of membrane elements arranged into groups called stacks. As the UF permeate flows through each membrane element, water is extracted through the membrane and into a salt water solution. The concentrated UF permeate which exits the stacks is called the FO concentrate and is collected in a storage tank for later evaporation to create sellable fertilizer rich in ammonia nitrogen and potassium (*Figure 1B*).

The salt water solution is pumped into a high-pressure reverse osmosis (RO) system, which is comprised of spiral-wound RO membranes in horizontal fiberglass housings. The RO system produces a clean water product called RO permeate and a brine called RO reject. The RO permeate is collected in the RO permeate storage tank and the RO reject is pumped back to the FO system to recycle the salt water solution (*Figure 1B*).

The RO permeate is processed prior to final discharge to ensure it meets all WPDES permit standards. First, the RO permeate is aerated to remove unwanted dissolved gases and increase the concentration of dissolved oxygen. During this process, an oxidizer such as hydrogen peroxide may also be added. Next, the aerated water will be pumped through a low-pressure RO system which generates a second RO permeate and RO reject. This RO reject will go back to the UF permeate tank to be processed by the FO system again. The RO permeate from the low-pressure RO system will pass through an ion-exchange system to remove any remaining ammonia nitrogen. Finally, the water temperature will be adjusted, and some hardness will be added. The final clean water will be stored in a tank that will allow the facility to re-use the water onsite, send a portion of it back to the participating farms to offset their groundwater usage, or discharge it (*Figure 1B*).

The evaporation process removes water from the FO concentrate as water vapor, which is then condensed and collected in the RO permeate storage tank. The concentrated product from the evaporator is stored in a 1,370,000 gallon above ground bolted stainless steel tank which will utilize a digester roof to prevent rain or snow from entering the tank and diluting the product (*Figure 1B*).

The biogas that is produced by the digester tanks is stored in the headspace of the tanks at a pressure of 2" - 4" of water column until it is ready to be processed by the biogas upgrading system. A hydrogen sulfide removal system removes the hydrogen sulfide from the biogas and converts it into an elemental sulfur cake that can be blended with the fiber or provided to the farms as a micronutrient supplement. The carbon dioxide is vented from the system and the methane is captured and sent to a drying process. This drying process ensures the methane gas meets the water requirements of the interstate natural gas pipeline. The water from the drying process will be directed to the digestate storage tank. In the event the biogas upgrading system is down, the biogas can be combusted in an enclosed flare. The flare can also combust any renewable natural gas produced by the system that does not meet the specifications of the natural gas pipeline if necessary.

Biogas contains approximately 55 to 65% methane while natural gas is typically 95 to 99% methane. By removing the carbon dioxide and trace contaminants from the biogas, it can be upgraded to pipeline quality natural gas. The renewable natural gas is piped to the injection point at the interstate natural gas pipeline where it is tested for quality, compressed to pipeline operating pressure, and injected into the natural gas pipeline system.

The goals for the project are to convert the manure into soil amendment products, a liquid organic nitrogen and potassium fertilizer, and water. The neighboring farms intend to use a portion of the RO water to meet their needs in place of using groundwater. By recycling this water through the system and back to the farms, it will reduce the demand for groundwater from the local aquifer. Following the digestion process, the pathogens and odor in the manure will be significantly reduced providing a safer and less offensive fertilizer product. Also, by removing the water and concentrating the nutrients, less can be applied per acre, reducing the risk of surface runoff or infiltration to groundwater. Finally, the ultimate goal of the project is to convert a majority of the manure into an organic fertilizer product that can be exported from the watershed.

Below is a summary of topics considered during the department's review and the most common questions and comments from the public regarding this project:

1. *DNR authorities regarding this project*:

    - Wisconsin Pollutant Discharge Elimination System (WPDES) Construction Site Storm Water Runoff Discharge General Permit(s) – ch. NR 151, Wis. Adm. Code.

    - Discharges into wetlands General Permit(s) – s. ch. 281.36, Wis. Stats.

    - Air Construction Permit – s. ch. 285, Wis. Stats., and ch. NR 400-499, Wis. Adm. Code.

    - Air Operations Permit – s. ch. 285, Wis. Stats., and ch. NR 400-499, Wis Adm. Code.

- Wastewater WPDES Industrial Permit and Water Quality Trading to comply with Lower Fox TMDL – ss. 283.31 and 283.84, Wis. Stats.

- Plan and specifications approval - s. 281.41, Wis. Stats.

2. *Wastewater Program Actions Related to WEPA ch. NR 150, Wis. Adm. Code*

The following actions do not require environmental analysis under ch. NR 150, Wis. Adm. Code because they are considered minor actions:

- s. NR 150.20(1m)(k), Wis. Adm. Code: Approval action associated with a permit. An example of this minor action is approval of industrial substrate clients.

- s. NR 150.20(1m)(t), Wis. Adm. Code: Approval of construction plans and specifications under s. 281.41, Stats.

- s. NR 150.20(1m)(ug): Approval of land application management plan. A management plan is required pursuant to ss. NR 214.17(6) and 214.18(6), Wis. Adm. Code for industrial permittees with landspreading operations. NR 214 landspreading limits are nitrogen and chloride based and do not include phosphorus-based requirements similar to the NRCS 590 Standard or ch. NR 243, Wis. Adm. Code.

- s. NR 150.20(1m)(ur): Approval of land application sites. Although considered a minor action, the Wastewater Program has considered exempting BC Organics of the site approval requirements in ss. NR 214.17(2) and 214.18(2), Wis. Adm. Code if BC Organics can justify an exemption in accordance with s. NR 214.06, Wis. Adm. Code. It's assumed many of the participating farms are already operating under NRCS 590 NMPs which is one of the driving factors for the exemption. A variance to Department rule requirements could be considered a minor action in accordance with s. NR 150.20(1m)(jg), Wis. Adm. Code.

There are a few other minor actions related to the Wastewater Program functions that could occur but are not listed because they are not considered to be potentially controversial.

The following action does not require environmental analysis under ch. NR 150, Wis. Adm. Code because it is considered an integrated analysis action.

- s. NR 150.20(2)(a)(3g.), Wis. Adm. Code: Issuance of a WPDES permit for new source discharges subject to an antidegradation review. The Water Quality Based Effluent Limits (WQBEL) process would calculate the appropriate limits in accordance with ch. NR 207, Wis. Adm. Code for the receiving water to assimilate the pollutants in the effluent from BC Organics.

3. *Air Program Actions related to WEPA ch. NR 150, Wis. Adm. Code.*

An air pollution control construction permit that does not require review under chs. NR 405 or 408, Wis. Adm. Code, is considered a minor action under s. NR 150.20(1m)(o), Wis. Adm. Code and as such, is compliant with WEPA and does not require a determination prior to permit issuance.

The issuance of an initial operation permit under ss. 285.60, and 285.62 Wis. Stats., is considered an integrated analysis action under s. NR 150.20(2)(a)4., Wis. Adm. Code. For further discussion on environmental impacts, please see the attached Environmental Analysis Questionnaire. Actions specified under s. NR 150.20(2), Wis. Adm. Code, require a WEPA compliance determination under s. NR 150.35, Wis. Adm. Code, but do not require any separate environmental analysis under ch. NR 150, Wis. Adm. Code. The Department has determined that this type of proposal is not expected to have the potential to cause significant adverse environmental or secondary effects.

4. *A digester of this size does not exist in Wisconsin where such a significant volume of manure is processed. The project scope involves processing 50,000 gpd of manure via pipeline and 113,000 gpd via truck. Additionally, 50,000 gpd of other substrates will be processed by the facility.*

   While this may be the largest of its size, there are facilities in Wisconsin operate in a similar function.

5. *Concerns have been raised that this project needs to include substrates (non-manure agricultural waste) in addition to manure to be economically viable and because of this the applicant may opt to reduce the amount of manure it accepts in favor of accepting additional Substrates.*

   The department does not have the authority to consider the economic viability of the proposed project when making permit decisions. Based on discussions with and the information submitted by the applicant, the applicant recognizes that the amount of energy needed to process manure exceeds the energy output, however the applicant has stated the cost of the energy needed for processing manure is not the same as the revenue generated from the sale of the generated biofuel. Therefore, comparing the processing costs for processing a volume of manure to the amount of biofuel generated from that volume is not an accurate way to determine the economic viability of the project. There are additional revenue streams included in the project as proposed other than the sale of biofuel.

   The applicant has proposed to limit the amount substrates it will process to 7% monthly of the total materials digested.

6. *What types of substrates will the applicant accept? If the applicant proposes to change the type of substrates it accepts the facility may need to be rezoned according to the Town ordinance.*

   The department typically allows any industrial waste that meets s. NR 214.02(1), Wis. Adm. Code to be accepted. Permits of this nature include conditions that outline the requirements to accept new waste streams. Conditions of the permit do not allow acceptance of toxic and

hazardous pollutants. The Department typically would not arbitrarily limit the amount of industrial waste that can be processed at a facility like this. Storage of mixed waste is acceptable to the Department as long as the storage tanks/units are designed to the more restrictive of the applicable codes to store each waste.

The applicant may propose to limit the volume of substrates accepted in order to justify exemptions from chs. NR 213 and 214, Wis. Adm. Code. Wastes regulated would typically align with the ones listed in s. NR 214.02(1), Wis. Adm. Code. The permittee is considered an industrial WPDES permittee and not an animal feeding operation WPDES permittee.

The applicant has specified the types of substrates it will accept to include dissolved air flotation (DAF) waste from milk, cheese, yogurt, butter, and ice cream processing plants, whey and whey permeate out of cheese plants, spoiled/contaminated milk products, off specification yogurt and butter products, fruit and vegetable waste from food processors, potato peels and potato waste from potato processing plants, spent grains from local breweries and distilleries, and by-products out of the malting industry.

The Town of Holland controls Town ordinances and will make a zoning determination for the facility.

7. *Air Construction Permit Review.*

When the air program issues an individual construction permit we include a written summary of all applicable requirements and how emissions were calculated in a document called the Preliminary Determination. While the Preliminary Determination will not be open for comments as it is considered a final document it will be available for reference. The permit will include all applicable state and federal requirements and undergo air quality modeling to ensure the emissions meet the national ambient air quality standards.

8. *This project has the potential to generate objectional odors.*

The Wisconsin Administrative Code air pollution rules state that any source of air pollution must minimize, or control odors produced by its activities. Chapter NR 429 of the Wisconsin Administrative Code says that no one can create or release any emissions with odors that are considered "objectionable." If a business does cause any objectionable odors, it must control or minimize those emissions to the greatest extent feasible. The department has put together an information sheet regarding odor control, which is available here: https://dnr.wi.gov/files/PDF/pubs/am/AM462.pdf.

9. *Wetlands and Waterway Impacts associated with this project.*

s. Ch. 30, Wis. Stats. regulates waterway impacts and s. Ch. 281, Wis. Stats. regulates discharges into wetlands. There has been no permit application for waterway impacts submitted and a wetland General Permit (GP) application for wetland impact was submitted on January 16, 2019. The department reviewed the GP application and determined the project met the conditions of the Wetland General Permit and issued the GP coverage letter (GP-NE-2019-5-00174) on

February 6, 2019, which approves 1762 square feet of degraded wetland impacts in the roadside ditch. The wetland impacts are for an improved access of an existing driveway access.

10. *Storm Water permitting requirements associated with this project.*

Under the storm water program, landowners of construction sites with one or more acres of disturbance are required to obtain coverage under a Wisconsin Pollutant Discharge Elimination System (WPDES) Construction Site Storm Water Runoff Discharge General Permit. This includes implementing all applicable portions of NR 151 Wis. Adm Code, such as a site-specific erosion control plan and a post-construction storm water management plan.

BC Organics, LLC submitted storm water permit application materials to the Department on October 26, 2018. The application materials were reviewed by the Department, and The Construction Site Storm Water Runoff General Permit No. WI-S067831-5 was issued on November 13, 2018 for land disturbances associated with construction of the main facility. The applicant has informed the Department that manure pipeline plans will be submitted under a separate application once locations are finalized.

11. *How does this proposal affect Nutrient Management Plans*?

Nutrient Management Planning (NMP) is a complex permitting issue. Most of the manure sources for this facility will be from Concentrated Animal Feeding Operations (CAFO), which have nutrient management plans as part of their permit from the department. CAFO permits include specific requirements for nutrient management plans with which permittees are required to comply. All nutrient management plans submitted by CAFOs are reviewed by department staff to ensure compliance with permit and administrative code requirements. Any changes in farming practices or operations that may affect the management and/or generation of manure requires revision of the nutrient management plan and a subsequent review by department staff. Unpermitted agricultural operations are regulated under the authority of the Brown County Land and Water Conservation Department. Per Brown County's animal waste management ordinance, all agriculture operations are required to have a nutrient management plan according to USDA-NRCS Technical Standard 590. A component of this plan is a map highlighting where application of nutrients on agriculture fields is restricted or prohibited. Compliance with the nutrient management plan requirements is the responsibility of the agricultural operations as they consider providing manure to this facility; permitted operations are required to notify and work with department staff and unpermitted operations should contact Brown County staff to update nutrient management plans accordingly.

The applicant, as an industrial WPDES permitted facility, is subject to the requirements of ch. NR 214, Wis. Adm. Code which includes a land management plan (s. NR 214.18(6)(c) Wis. Adm. Code). This plan will likely include a description of how the material will be provided back to contributing farms (permitted and non-permitted), sold as commercial fertilizer, or transported to fertilizer markets. Material distributed back to contributing farms is required to be incorporated into the farm's NMP. The applicant will only be permitted to provide material to farms with updated NMPs that account for this material. This would be articulated under any s.

NR 214.06 exemptions to site approvals and approval for the facility's s. NR 214.18(6)(c), Wis. Adm. Code land management plan.

12. *Receiving water's water quality.*

The Department of Natural Resources conducted a stream assessment during 2017 on the Unnamed Tributary (UNT) to the East River (WBIC 121300) on Lamers Clancy Road in the Town of Holland, Brown County. The UNT has a default classification as a fish and aquatic life supporting stream as defined in ch. NR 102 Wis. Adm. Code. The stream has a modeled natural community classification as a macroinvertebrate stream. Department staff collected fish, habitat, and macroinvertebrate data that provides valuable information on the physical, chemical, and biological condition of the stream. The indices reported respond to watershed scale impacts from agricultural and urban land uses, local riparian stressors, nutrient enrichment, and instream habitat degradation including sedimentation and scouring.

On June 1, 2017, a fish and habitat survey was completed to collect contemporary conditions within the UNT, verify the natural community classification, and assess overall water quality conditions of the stream. The fish survey was conducted using standardized wadeable stream sampling techniques for fish and 133 individuals representing 8 species were captured. A natural community verification was completed to correctly assign an index of biotic integrity score (IBI). The UNT was verified as a cool-warm transitional headwater stream using the methodology to correct natural community mis-classification (Lyons 2013). Cool-warm transitional headwater streams are small, sometimes intermittent with cool to warm summer temperatures and variable flows. Based on the verified natural community and the index of biotic integrity score for fish assessed using the small stream IBI, the UNT scored a 90 and rated in excellent condition. The habitat condition within the sample reach was surveyed using the Department's standardized quantitative habitat assessment methodology. The habitat score was 50 and rated good. Looking closer into the individual metric scores of the habitat, the overall score was bolstered by undisturbed buffer width and numerous bends throughout the sample station. Habitat within the sample station is impacted by unstable, eroding banks, deposition of fine sediment and lack of fish habitat.

On October 12, 2007, a macroinvertebrate sample was collected, preserved and processed for the purposes of calculating a macroinvertebrate index of biotic integrity (MIBI) and other descriptive metrics. The MIBI was calculated to be 3.2 with a rating of fair. This indicates the stream is likely impacted by watershed wide impacts from land use. The Hilsenhoff Biotic Index (HBI) is another calculated index which identifies more specifically organic loading and nutrient enrichment in streams. The HBI score was 6.76 which rated as fairly-poor. This indicates the stream is most likely impacted by organic loading from agricultural sources.

The Unnamed Tributary to the East River is a 2.61-mile long tributary to the East River. The headwaters of this tributary originate as a series of high gradient channels coming down across

the Niagara escarpment through agricultural land use. Limited buffers exist in this location and agricultural land uses are likely contributing to impacts observed in the stream. As it flows west and north and approaches the confluence with the East River the gradient decreases and a small sinuous stream is encountered. In isolated locations, adequate undisturbed buffer widths exist, however condition of these buffers could be improved upon and a comprehensive strategy to provide stable bank conditions should be developed. Improvements to the bank stability and buffer quality will serve to improve fish cover such as overhanging vegetation and course woody debris within the stream while reducing sedimentation within riffles and pools of the stream. Additionally, upland practices to improve infiltration to slow the rate of delivery to the stream will significantly improve overall conditions for aquatic organisms.

Based on information submitted by the applicant the applicant estimates that roughly 20 lbs. Phosphorus/year and 1,827 lbs. Total Suspended Solids (TSS)/ year will be discharged to the waterway.

13. *Separation of liquid and solid manure with ultra-filtration (UF) and reverse osmosis (RO) membranes and discharging separated liquids to surface water.*

The Wastewater Program is aware of a few CAFOs that have implemented or are planning to implement similar technologies as proposed by the applicant. While UF and RO are established technologies for wastewater treatment, use for separating manure solids and liquids started ~2008-2009. Also note, that BC Organics has proposed 10 screw presses that will remove larger solids prior to the UF/RO modules.

These technologies generally do the same things. The process ultimately refines the original waste stream in to more marketable/beneficial products.

- Majestic Meadows Dairy – Digested Organics LLC Integrated Manure Management System (IMMS). Installed in 2015. Has a surface water discharge.

- Emerald Dairy (Now Emerald Sky) – Integrated Separation Solutions (ISS) NuWay System. ISS is now called AQUA Innovations. Installed in 2009. Was the first system in Wisconsin. No longer in use because equipment was destroyed in a 2009 fire.

- Robinway Dairy – Livestock Water Recycling LWR System. Installed in 2015. Reclaimed water used onsite. No surface water discharge.

- Shiloh Dairy – Livestock Water Recycling LWR System. Installed in 2014. Reclaimed water used onsite. No surface water discharge.

- Son Bow Farms – AQUA Innovations NuWay System. Facility has not discharged yet. Permit went on public notice January 30, 2019.

- Springfield Clean Water – AQUA Innovations Nutrient Concentration System (NCS). Facility has not discharged yet. Permit issued April 1, 2018.

It's been ~10 years since the technology was first introduced for manure solids separation. The Department's plan approval letters include the following language:

> "Approval of plans and specifications is not to be construed as a Department determination on the issuance of a Wisconsin Pollutant Discharge Elimination System permit, an opinion as to the ability of the proposed system to comply with effluent limitations in such permit, an approval of the environmental analysis that may be prepared for this project, or an approval for any activities requiring a permit under chs. 30, 31, or 281, Wis. Stats."

It is ultimately the permittee's responsibility to design and operate a system that complies with the limits in its WPDES permit.

14. *Land application of the solids portion of the wastes generated at the facility.*

Solids generated at the facility will need disposal options. If the facility accepts manure from farms within the watershed, the solid and liquid separation process will significantly reduce the volume of manure solids needed to be land applied which may reduce phosphorus runoff to surface water. The submittal received by the department indicates that a portion of the dried solids will be used as animal bedding or hauled to a horticultural wholesaler. Liquid fertilizer from the evaporation process is also intended to be sold on the market. These have potential to remove the phosphorus from the watershed depending on where they are sold and used. If the market for wholesale soil amendment product, bedding, or liquid fertilizer falls through, then there is greater need for land application within the watershed. Note that need for land application would then be returned to current levels.

15. *Impacts to water quality from the discharge of "dead water".*

The WPDES permit will include water quality based effluent limits to protect water quality. It can be difficult however to determine limits for new dischargers as site specific data is not yet available. Project design flows and data from similar systems are used to help determine initial limits. After a 5-year permit term, site specific effluent data is available to adjust limits as needed. One of the concerns with the RO filtration technology is that the membranes remove most of the hardness in the water, making it more susceptible to metals toxicity. Hardness will generally return to the effluent upon mixing with surface water. Hardness will also be added to the effluent stream to reduce the toxicity potential. Whole Effluent Toxicity (WET) tests will be required in the permit for determining aquatic toxicity.

The facility's discharge is located in the Lower Fox TDL area that has an EPA-approved total maximum daily load (TMDL), which divides up the total mass of phosphorus (TS) and total suspended solids (TSS) which may be discharged to the basin among the discharges. The TMDL does not include wasteload allocations for BC Organics and no reserve capacity is available, so the applicant will have to offset all its suspended solids and phosphorus load to the receiving water. The applicant intends to do by using water quality trading (WQT). The amount of the

offset will be the difference between the masses of the phosphorus and TSS in the discharge (based on measured effluent concentrations) and zero-mass discharge for TSS and TP. Since the permittee is considered a new discharge they cannot receive a compliance schedule to achieve compliance with a water quality based effluent limitations. Until a WQT plan is submitted and approved, the department is unable to speculate if the permit conditions will require the applicant to track as many metrics or parameters that meet the intent of the Town Board.

As currently proposed, both permitted and non-permitted farms would still be responsible for compliance with their NMPs. BC Organics is not directly subjected to NMP requirements; however, Dynamics has preemptively offered to assist nonpermitted farms that accept material back to the farm in developing or updating an NMP. The permit may not be able to capture the landspreading data sought by the Town Board.

16. *While the quantity of manure will be reduced the total nutrients of phosphorus (P), nitrogen (N), and potassium (K) will go back to customers in the State of WI. How does this reduce P, N, K going into waters of the State?*

The reduction in nutrient loading from agricultural sources from this project would result from less volume of liquid manure spreading on the landscape rather than a total reduction in nutrient use in cropping. The manure treatment process will produce solids that can be used as animal bedding or a soil amendment product. The liquid produced by the treatment process will consist of concentrated nutrients that can be used as a fertilizer product. The amount of this product transported to fertilizer markets will reduce the volume of manure that would need to be spread on local fields. The portion sold as a commercial fertilizer will be more concentrated than untreated liquid manure, so the volume applied to a field would be less to achieve the same nutrient loading. This may further reduce the runoff risk of excess liquid applied to the fields to surface waters.

17. *Facility's Spill Prevention Control and Countermeasure Plan requirements.*

Spill reporting and cleanup requirements are a part of CAFO permits. Spill response plans are reviewed with CAFOs as part of the permitting process and as needed based on changes at the operation. Regulatory requirements applicable to spills in s. NR 292, Wis. Adm. Code, also apply to CAFO spills. The Industrial WPDES permit applicable to BC Organics includes standard conditions for spill reporting

Pursuant to s. NR 213.15(2)(d), Wis. Adm. Code the department may require a containment dike around storage tanks in locations where a spill could result in water pollution. WPDES permits typically do not include requirements for spill prevention/emergency response plans.

18. *Permit documentation and reporting procedures.*

There has been requests for the applicant to use an independent engineering consultant for permit documentation. The department's Wastewater Program has received requests for 3rd party sampling and reporting before. The Department does not have the authority to require this. Permittees are responsible for compliance with their permits whether they choose to staff or

contract out their reporting. The Department verifies compliance with sampling procedures, reporting requirements through regular reviews and compliance inspections.

19. *If the facility is zoned agricultural the Fire Department does not have the authority to conduct inspections. There may be equipment costs to the Fire Department as a result of this project.*

The department does not have jurisdiction over local zoning issues. The applicant has proposed that they would grant the Fire Department access to the site on a biannual basis to conduct inspections and provide up to $20,000 for additional equipment costs. In addition to access for the Fire Department the applicant proposes the Zoning Administrator, town Building Inspector or designee may enter the premises of the operation to inspect those premises with reasonable advance notice to ascertain compliance or to investigate an alleged violation.

20. *Potential impacts to the surrounding roadways – Will there be increase truck traffic, how will this truck traffic affect the roads, and how will spill potential be handled?*

The department does not have authority over roadways. The Town of Holland owns and maintains the town roads. Brown County owns and maintains the county roads and the State of WI Department of Transportation owns and maintains the state roads.

Manure from two CAFOs will be directly discharged to the digester via pipelines. Trucks are required for land application of manure on agricultural fields. Due to the pipelines and waste treatment proposed at the digester facility, the initial thought is that there will be a reduction in truck traffic, at least from the two farms with the pipelines. The other farms that will transport manure via trucks would have those trucks on the road for land application anyway, so there would likely be no change in the volume of trucks. There will likely be changes in trucking routes as the trucks will be transporting manure to the digester site rather than to fields in the farms' nutrient management plans. At this time, an analysis has not been performed to identify specific truck routes to verify this information.

The applicant claims that this facility will reduce approximately 20,000 manure trucks from the roadway each year.

Pursuant to ss. NR 214.17(6)(a) and NR 214.18(6)(a), Wis. Adm. Code, vehicles used for transporting or landspreading waste shall be maintained to prevent spillage. A discharge not authorized by the permit or violating the permit may be considered a hazardous substance spill and shall be reported the Department pursuant to s. 292.11(2)(a), Stats. Standard Conditions in the "Reporting and Monitoring Requirements" section in WPDES permits include other spill reporting requirements.

21. *Noise impacts from this project.*

The proposed facility will generate noise and the public has raised concerns regarding the level of noise that may be generated during operations. Based on information submitted by the applicant they propose to limit repairs, construction, or maintenance activities which generate

more than 75 dB of sound at the property line to occur between 7:00 AM and 6:00 PM Monday through Friday.

22. *Light impacts from this project.*

The proposed facility will likely use external lighting around the facility. Effects from the external light are generally not regulated by the department however it may be possible for local ordinances to address external lights.

23. *Will the dried manure byproducts be suitable for bedding material?*

Dairy farms use a variety of materials for animal bedding, including manure solids that result from the drying process of liquid manure produced into a reusable bedding product, and many CAFO's in the state have implemented this process.

24. *Payment in Lieu of Taxes.*

The parcel of land being leased by the applicant is owned by Brown County, which is tax-exempt, and the proposed improvements are exempted from real or personal property taxes. The applicant has proposed to pay $50,000 on an annual basis to the Town of Holland as payment in lieu of taxes.

25. *Compatibility with adjacent land use.*

The current zoning for this parcel of land is agriculture. Much of the surrounding land use is also agricultural. Depending on the operations of the facility it may need to be rezoned as industrial. The Town of Hollands Conditional Use Permit will consider land use compatibility of proposed facility with the surrounding land use.

26. *Does the grant for this facility affect the departments review*?

Permits for this facility will be issued or denied per current applicable state law.

27. *How would the department handle closure of the facility?*

The WPDES permit for the facility is only required so long as there is a discharge of pollutants to waters of the state. If the facility closed and ceased discharging, the WPDES permit would be discontinued. If the facility was purchased, the permit could be transferred to a new owner/operator that would be responsible for operating within the permit conditions. BC Organics would be required to notify the department the discharge and landspreading ceased and the WPDES permit is no longer applicable. The permit would then be discontinued when all appropriate permit requirements were met. In the case of a permit transfer, the department would need to be notified as well. The department would request verification that the operation and

associated discharge has ceased upon facility closure. Removing the pipelines or other structures is not likely an authority provided to the WPDES permit program.

The air permits could be revoked if requested, or the permit could remain active and transferred to a buyer. If the permit remains active, then any recordkeeping and compliance demonstrations would need to continue and be documented. BC Organics would need to notify us if they would like the permits revoked or if a transfer will occur. As noted above BC Organics would need to continue recordkeeping to demonstrate compliance with the air permit. Typically, for stationary sources, a compliance engineer or representative will visit the site and add a memo to the permit file if the source wishes to shut down and revoke permits.

Participating CAFO farms may need to modify their current WPDES permit to incorporate language that addresses the proposed activities involving the digester. If the BC Organics facility closed, the CAFOs that would remain in operation would likely be required to cap the pipeline at the CAFO facility sites to ensure that manure would not inadvertently discharge to the digester facility while it was not in operation. Prior to closure, it would be ensured that the pipeline was properly cleaned so that no residual manure remained in the pipeline that could pose a discharge risk. The modified language added to the CAFO permits as a result of involvement with the digester would remain in the permits for the remainder of the CAFO permit terms and not cause adverse effects to any other applicable regulatory requirements. The digester-specific language would be removed during the next permit issuance if the digester remained closed.

28. *How would the department handle permit violations?*

The WPDES permit for the facility has enforcement actions under s. 283.89 Wis. Stats., for violations of the permit conditions. Permits written under Wis. Stats. have the force of the law that they are written under, and alleged violations may be pursed within the penalty range specified in the statute. The department does not normally notify other agencies or municipalities unless they have had involvement in the case. In some instances, for landspreading issues, the county conservation office has been notified due to involvement with the impacted farm or waterways. The wastewater program is open to sharing information if the township is involved with complaints or other issues associated with the facility.

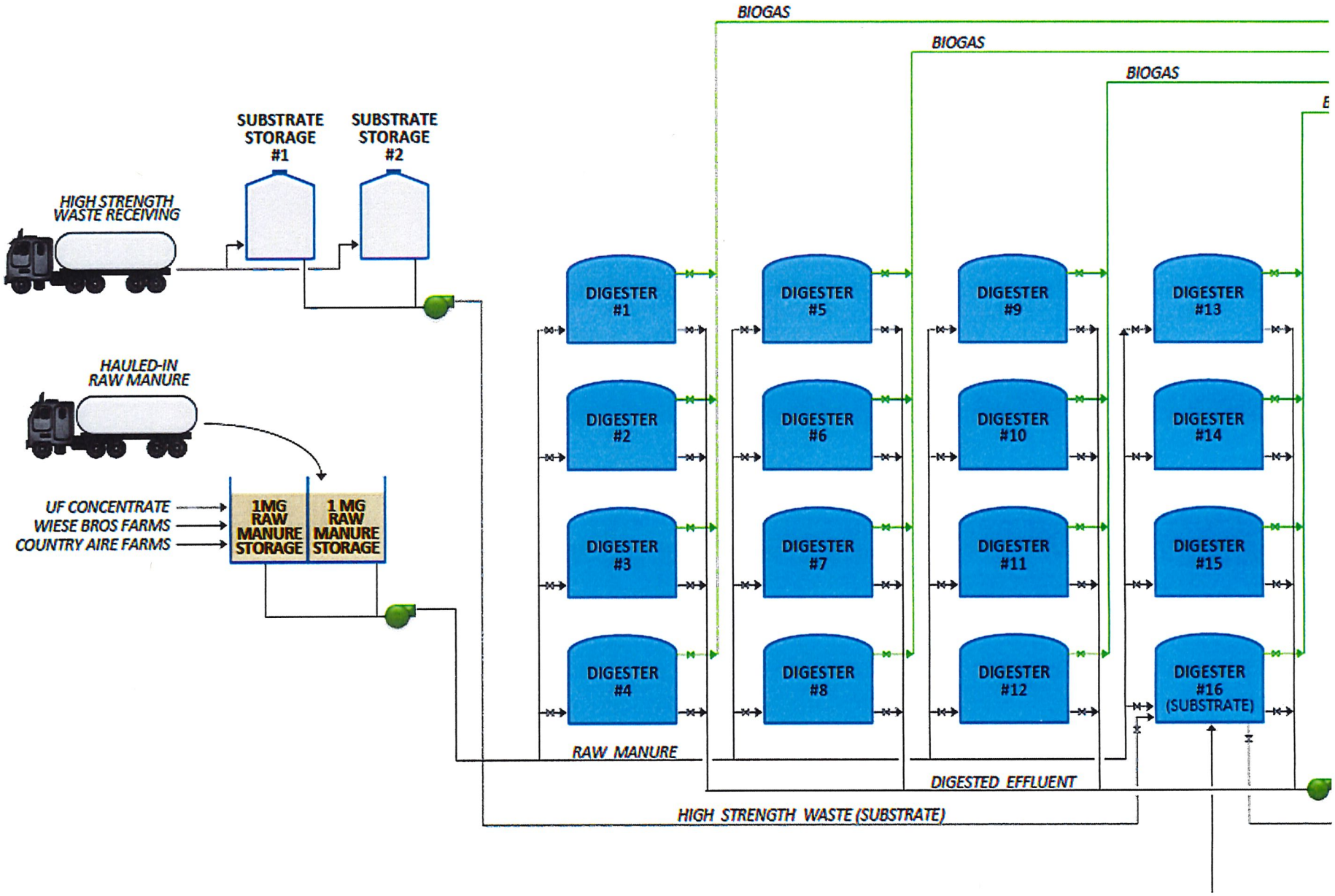
The department uses the stepped enforcement process, where we resolve violations at the lowest level appropriate for the circumstances. Steps may include verbal corrections, letters, notices of noncompliance, notices of violation, administrative and consent orders, referral to the Department of Justice, and in some cases citations and forfeiture orders.

The department may take enforcement actions against a person for alleged violation of Wisconsin Statutes, Wisconsin Administrative Code, and permits issued under the statutes; a violation can be doing something that is prohibited or failing to do something a person is required to do.

Potential penalties are specified under each chapter of the applicable statute and forfeitures generally range from not less than $10 nor more than $10,000 for each day of violation to as

much as $25,000 for each violation. Further, a few statutes allow for criminal sanctions such as fines and imprisonment for willful violations.

The department has found that the most efficient use of strained resources is to take the enforcement actions appropriate for the alleged violation. Serious violations are met with higher levels of enforcement than rather minor infractions.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UF CONCENTRATE
WIESE BROS FARMS
COUNTRY AIRE FARMS
1MG RAW MANURE STORAGE
1 MG RAW MANURE STORAGE
DIGESTER #1
DIGESTER #2
DIGESTER #3
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DIGESTER #12
DIGESTER #13
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DIGESTER #16 (SUBSTRATE)
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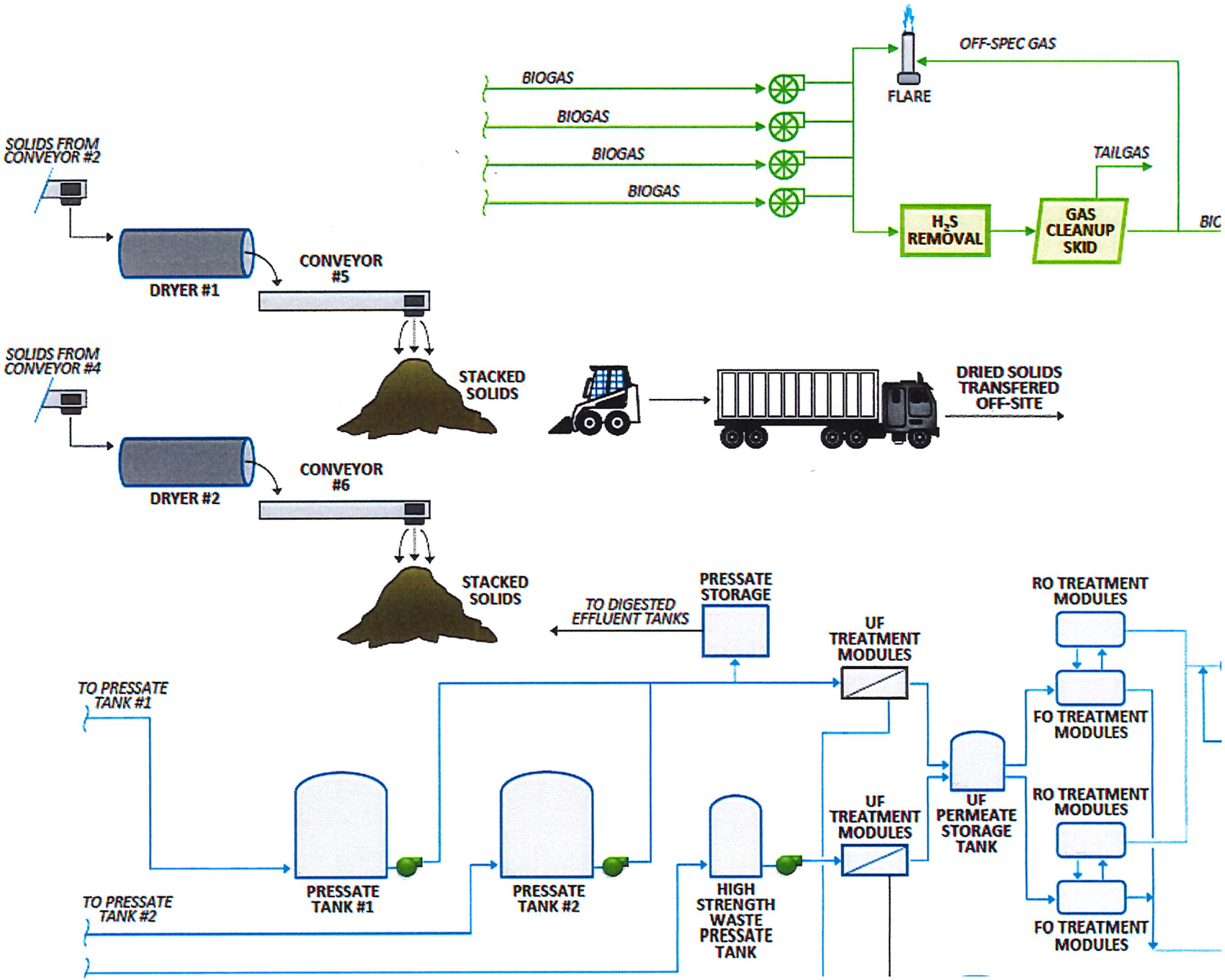
DIGESTED EFFLUENT
HIGH STRENGTH WASTE (SUBSTRATE)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DRYER #1
CONVEYOR #5
SOLIDS FROM CONVEYOR #4
DRYER #2
CONVEYOR #6
STACKED SOLIDS
STACKED SOLIDS
DRIED SOLIDS TRANSFERED OFF-SITE
PRESSATE STORAGE
TO DIGESTED EFFLUENT TANKS
UF TREATMENT MODULES
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