Saratoga Biochar Public Hearing: Applicant Statements 5-12-2022

Delivered by Raymond Apy, CEO
Saratoga Biochar Solutions

Who we are:

Saratoga Biochar and its parent company Northeastern Biochar Solutions is a small, startup, "main street USA" environmental company with owners from Saratoga County and the Glens Falls area. Saratoga Biochar seeks to remediate biosolids waste management problems and simultaneously create a clean and safe fertilizer product that is 100% recycled and MADE IN THE USA by locally hired and fully trained employees. We, I, care deeply about the health and safety of our neighbors and the local, regional, and global environment. **That is why we are in this business!**

Accountability: with Moreau and NYS DEC.

Saratoga Biochar will **happily** be subjected to permit compliance monitoring, testing and recordkeeping of all equipment operation of course including the air emissions treatment system. DEC has not issued our air permit yet so therefore we don't know yet what testing and monitoring they will require but I do expect it will be comprehensive and full of certain conditions we must meet, especially in the first year of operation as we prove that the system works as designed. We expect to test emissions and fertilizer product even more than required because we want to know our business inside and out with 100% certainty, and we desire to achieve a gold star from NYS DEC because that will really help us expand our business in other areas of NY and in other states.

NYS DEC has become arguably the toughest environmental regulatory agency in the country and our goal is to make them very happy with us, and to make Moreau also very happy with us. If anything is not working properly, we will stop operations immediately to address the issue. That is exactly what we would want to do because we want this project to be a flagship facility for the entire nation. We intend to replicate our technology in other places because our solution to the biosolids problem is the best and most comprehensive ever created in the world. You may not see or believe this yet, but this is American innovation and problem solving at its best. We are committed to success.

We will have a local phone number published for the town and residents to contact us with any concerns 24/7 and we will guarantee same day response and action as necessary.

We are also communicating and planning with the local fire department and with Saratoga County emergency response so that both of those entities have full knowledge of the layout and inner workings of our facility, and 24/7 unrestricted access if ever there were an emergency such as a fire. We will also offer the county 24/7 access to our video surveillance system as well if they would deem that helpful.

Biosolids and Odors:

Biosolids are not hazardous. Biosolids are "dewatered" solids, they are not liquid. Our facility will not and cannot receive any hazardous materials as feedstock for our fertilizer process. (Sulfuric acid for air treatment is addressed below) Biosolids are not raw sewage – they are the treated solids from publicly owned wastewater treatment plants. Again, biosolids are not hazardous, but yes, biosolids do contain trace amounts of undesirable contaminants such as PFAS and they do not smell good.

That is why biosolids are transported in sealed dump trucks that are heavily regulated by the NYS DOT. And to be clear these trucks travel all over the place already today. Well over 1,000,000 tons of biosolids are transported in NYS away from wastewater treatment plants to landfills, incinerators, direct land application and compost facilities every day. Everyone in this room has at one or more times been close to or seen a biosolids hauling truck but you probably did not know it. When you've seen what looks like a large tractor trailer garbage hauling truck with a loose tarp and nasty smelly liquid dripping out of it, that was probably not a biosolids truck - that was indeed a garbage truck.

Everyone in this room flushes a toilet every day as well and many are not on a private septic system, so we all play a part in this. By the way don't be so sure septic is a great way to go because PFAS travels from most nonstick cookware and many forms of food related packaging and eating products and down the drain or through your body and ends up in your leach field and ultimately your groundwater, totally untreated and still in its original compound form.

Let's all acknowledge that trash, recycling, liquid propane, asphalt, manure and other smelly, undesirable, or concerning materials are already hauled by trucks and tractors around the roads of Moreau every day. I am confident that our low quantity of daily biosolids truck deliveries will go relatively unnoticed amidst the existing traffic. The key is to keep the biosolids material moving and get it inside our facility where it can be properly treated with our advanced odor management systems.

On that note, the biosolids receiving and drying components of our facility are designed to contain and treat doors, not to release them. Everything happens inside the building

under constant negative air pressure. Our receiving area is designed after a 7-year-old biosolids drying facility in Zion, IL that is in the middle of a large suburban development of $1M+ homes. There have not been any odor complaints about that facility since the day it opened.

We bring trucks in one or two at a time and use rapid open/close bay doors. Once inside the trucks can un-tarp, dump into a sealed concrete receiving pit which opens only for dumping and is immediately closed. Trucks are then re-tarped and rinsed off inside the building and sent on their way. Wastewater from the truck rinse area is drained to the sanitary sewer system. All the ambient air in the building is drawn into the facility process air treatment system. The facility is expressly designed to contain fugitive odors and this model has already been well proven in Zion, IL. The Zion facility however does not further process the biosolids – they just dry it and send it out to be used as fertilizer without removing the contaminants in the material. We take the **major** extra treatment step of thermally processing the dried biosolids to create carbon fertilizer which removes the contaminants to get them out the human food chain versus recycling them back into the food chain.

Sulfuric acid:

The **only** hazardous material we will receive is a monthly or bi-monthly delivery of sulfuric acid which is used by the air treatment system to remove ammonia and its associated odors from our exhaust air. This is a very commonly used chemical that can be purchased in small quantities at the retail level – such as at Home Depot or Lowe's for use in such things as etching new concrete floors - or in larger volumes for commercial applications. Our sulfuric acid tank is small by comparison to industrial manufacturing standards and will be permitted by NYS DEC. It will be housed in a safe area of the facility with a full capacity spill retention area around it. Deliveries for refill will come from a certified and permitted provider that employs a professional commercial driver just like any other chemical delivery which occurs all the time pretty much everywhere. Saratoga County Emergency Response is already aware of this as well.

Trucks and Truck Route:

The truck route for the Moreau Industrial Park was already pre-established and approved over twenty years ago as part of the Park's generic environmental impact statement and related studies. That process undertook a third party, professional truck and traffic engineering study which deemed the route capable of safely routing many hundreds of

trucks per day to and from the industrial park. We would only use a small fraction of that capacity, up to 50 trucks per day **at most** if we ever build all three phases and of that number, only about 40 would be biosolids delivery trucks. The truck route passes approximately 240 businesses and private residences. The current daily traffic averages for the route are

>3,700 vehicles per day on Bluebird Rd.
>3,400 vehicles per day on Ft Edward Rd.
>8,500 vehicles per day on Reynolds Rd.
>20,400 vehicles per day on Rt 9

Our biosolids hauling partner is Casella Organics. Their professional drivers will deliver biosolids to the Moreau Industrial Park and are of course expected to obey all local and state traffic laws, signs and signals and to operate safely. Their track record is excellent. In the extremely unlikely event that a truck should overturn anywhere along the route, nearby resources will deploy immediately to clean up and remove the material and repair any damaged property. Again, biosolids are not hazardous and they are not liquid. They can be manually shoveled back into a truck if need be. We can assure that if such a thing were to ever occur, the clean-up would be 100% effective and complete. We, along with Casella will take full accountability for that. Again, the likelihood of a truck overturning is extremely low.

Delivery schedules: Biosolids deliveries to the facility will be carefully scheduled and staggered such that trucks are on the move and never idle or waiting for long at the facility. We are required to turn away biosolids deliveries if we are for any reason unable to accept them. The facility's dual receiving pits allow for two trucks to enter and dump simultaneously. The facility's driveway and parking layout with automated weigh station is designed to allow for safe, smooth truck traffic flow with extra space and wide turn radiuses. Delivery trucks will not be backed up and waiting along the truck route to the park.

In Ground Temporary Storage of Biosolids:

Again, biosolids are not hazardous and they are not liquid. Our dual in-ground receiving pits are designed to strictly contain solids and any liquids from escaping, and to repel ground water from intruding. The groundwater table below our proposed facility is 10-12 feet below grade. The pits will be constructed for high integrity with very thick, sealed concrete walls and are scheduled to be cleared once per year for integrity inspection and

reporting by a third-party, professional engineer. The receiving pits will be installed below grade and fully enclosed. The dump opening to each pit will be kept covered by a steel trap door except during dumping. Each pit will also be covered by a grate with 8" openings for human safety, only to be removed for pit and conveyance system maintenance. The pits will be kept under constant negative air pressure with all exhaust air routed through the facility's multi-stage air emissions cleaning system. The pits will be equipped with 4x redundant, open, centerless screw type conveyors that constantly pull material into the closed processing system. Again, no leachate will exit the pit and no groundwater will enter the pit. The engineering design behind this is extensive and has not yet been completed. We will of course share the final design with the town building department for observation, comment, and construction approval before we build it.

Our Process and the Remediation of Biosolids Contaminants:

Our process uniquely destroys PFAS, VOCs, pathogens, microplastics, and numerous other trace contaminants which are thermally removed from the solids and then thermally oxidized. Our presence helps avoid such potentially harmful compounds from being released into the region's air, water and soil from current biosolids disposal methods such as direct biosolids incineration, land application and composting.

We have not proposed incineration. Incineration combusts everything at very high temperature, so solids are burned and sent up into the atmosphere with most of the exhaust material being cleaned in an air scrubber but still with dangerously high emissions. Our process has very, very low and much safer emissions by comparison. We thermally treat the solids to remove the contaminants and are left with clean fertilizer – potentially clean enough to achieve a USDA organic certification. Our fertilizer product is mostly carbon (about 30%) which is so much better for soil health versus salt bonded chemical fertilizers which are corrosive to soils.

Contaminants such as PFAS that are separated and removed from the solids in our process are then in a gaseous/oil form and are immediately sent to a thermal oxidizer and combusted at 1600-1800 degrees F which is hot enough to break the bonds that hold those compounds together – even the carbon fluorine bonds that make PFAS such a long-lasting compound (a "forever chemical" as it is often referred to as). I'm here to tell you if you get PFAS in its gaseous state hot enough, it is not a forever chemical anymore. This has been proven – it is not theoretical. If you're into the technical understanding of all this, plenty of research is available on our website saratogabiochar.com and we can provide much more if needed.

So once again, we do not propagate pollution, we remediate pollution problems. We will not contaminate air, water and soil around Moreau or anywhere else. Our carbon fertilizer product - wherever it gets used - is worlds apart from the current practice of spreading biosolids directly on crop lands as is done today.

Noise:

Saratoga Biochar has proposed to construct and operate an industrial facility in an industrial park that was zoned and approved for such uses over 20 years ago. We cannot promise the closet neighbors will never hear us. What we can promise is that we are putting everything noisy inside the building – all indoors. We don't expect to be any louder than our neighbor Hexion on average. We are also buffered from residential neighbors by a thickly forested area.

The components of our facility that are most likely to be heard nearby are first and foremost our wood chopper. This machine will be housed inside, will not be operated more than 8 hours per week Mon-Fri and never at night or on weekends or holidays. To attenuate noise from this machine, we have designed it inside and we are buying a much higher horsepower machine than needed which oddly has the effect of grinding materials more quickly and less noisily. The machine we have selected utilizes electrical motor versus diesel engine, reducing its decibel output even more. If additional noise attenuation is needed, we know our closest neighbor will let us know. If necessary, we are fully committed to install open cell spray foam insulation or the like on the inside the walls and ceiling for sound absorption, and ensure that when running, it is within four walls fully enclosed with doors closed.

Secondly, we expect our stack exhaust will produce a constant, low decibel air movement sound, similar to the exhaust sound Hexion produces currently.

Third, inside the building will be housed high-capacity dry cyclone fans and wet venturi scrubbers that that are critical components of our air treatment system. These devices will likely be heard from very close by the facility and will sound like big fans.

Lastly, deep inside each processing area of the plant we will be running a pug mill. This machine will produce a low hum and thrum noise. The pug mills will be used to mix biosolids and wood feedstocks and to churn those materials into a consistent form that is appropriate for the next stage of treatment which is the dryer.

Air treatment

We have sparred no expense in our air treatment design and we expect an excellent outcome from this system. Our air treatment system treats the emissions from the thermal oxidizer and dryer along with all the ambient air inside the facility and its biosolids receiving area. High-efficiency dry cyclones remove dust and recycle it back into the process. Wet venturi scrubbers further remove fine particles which are sent back to a publicly owned treatment plant with our wastewater. A hydrated lime scrubber removes sulfur dioxide (SO_2) and numerous odor compounds and discharges to sewer. The ammonia scrubber removes ammonia (NH_4) and recycles the byproduct, ammonium sulfate, into the Carbon Fertilizer™ to recycle its nutrient value. Dual-stage bio-scrubbers further polish odors and remove SO_2.

Our selected air treatment supplier, CondorChem Envitech, is one of the most prominent and successful air treatment manufacturers globally and will provide emission guarantees for sulfur dioxide (SO_2), ammonia (NH_4), particulates, and odors. PFAS and NOx emissions are mitigate by thermal oxidation of the synthesis gas generated in the pyrolysis kiln.

Other regulated air emissions from the facility, such as nitrous oxide (NOx), sulfur dioxide (SO_2) and particulates will not exceed the very restrictive Climate Leadership and Community Protection Act (CLCPA) permitted thresholds which are designed to protect human health. Furthermore, we are only installing one-third of our intended and permitted capacity in the first project phase, which ensures that our emissions will be materially below any regulatory threshold that would trigger any concerns. This phased approach allows us to validate all of our air emissions expectations prior to achieving anywhere near our desired full production capacity. This is an extremely conservative and safe way to do this, and we are taking this approach because we want to prove ourselves to Moreau, to the NYSDEC, and to our industry before going “all in.”

Our ask is simply that you give us the chance to prove ourselves. I’m not asking you to trust us today. I’m asking that you to give us the chance to earn your trust over time.