NOTICE OF ADOPTION OF FINAL RULE

NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION

Notice is hereby given pursuant to the authority vested in the Commissioner of the Department of Environmental Protection ("Department" or "DEP") by Section 1043(a) of the New York City Charter and section 24-523(e) of the Administrative Code of the City of New York that the Department promulgates and adopts amendments to 15 RCNY Chapter 19, Section 19-01 to define "food waste liquefier," and Section 19-03(b) to prohibit the use of devices that break down food waste for the purpose of discharging it into the sewer system, except for food waste disposers within dwelling units. This amendment will protect the sewer system, public health, and the waterways from a new potential cause of sewer backups and overflows, while ensuring that those who have already invested in the banned devices will not lose their investment.

Statement of Basis and Purpose

The New York City Department of Environmental Protection ("DEP" or "Department") is amending Title 15, Chapter 19 of the Rules of the City of New York ("RCNY") to prohibit the use of devices that break down food waste for the purpose of discharging it into the sewer system, except for food waste disposers within dwelling units. Food waste liquefiers can cause backups of sewage into homes and businesses, creating hazardous and unsanitary conditions, which can jeopardize health and wellbeing and cause property damage. Such blockages could also threaten the health of the general public, wildlife, and the environment by leading to combined or sanitary sewer overflows into water bodies.

On December 18, 2015, the New York City Department of Sanitation (DSNY) published in the City Record rules governing organic waste generated by designated commercial establishments. Under 16 RCNY § 1-11(b) such establishments must either hire a private carter to haul away their organic wastes for the purpose of beneficial organic waste use, transport their own organic wastes to an organic waste processing facility or authorized transfer station, or provide for a beneficial organic waste use on-site at their premises.

Having chosen the last option, a number of establishments have installed devices that manufacturers may call "digesters," but which rely heavily on breaking down food waste into smaller solids by mechanical means and dilution with water, and then discharging it into the public sewer. This rule amendment designates such devices as "food waste liquefiers" and "biological liquefaction systems," because the terms "biodigesters" or "digesters" do not accurately represent the amount of digestion that takes place in the systems. While some aerobic digestion occurs in some of these devices, aided by the addition of enzymes or other additives, it is only partial digestion and is part of the process of liquefying the food waste, over the course of several hours to up to 48 hours for a full load, to discharge it into the sewer. (Northeastern University, 2013; California Department of Resources Recycling and Recovery, 2018; BioCycle Magazine, 2013).

Full digestion is a much longer process. For example, in an anaerobic digester (in contradistinction to aerobic digestion in a food waste liquefier), full digestion would require a minimum 15-day retention time, as shorter retention times are not conducive to proper digestion of food waste. (USEPA, 2008; Metcalf and Eddy, 1991). Properly digested food waste is also not suitable for discharge to the sewer, as the water drains out of it over the course of the digestion process, resulting in a solid waste product that must be removed from the digester for off-site uses or disposal, rather than put down the drain.

The waste stream discharged from food waste liquefiers is high in total suspended solids, oil and grease as revealed by DEP sampling. Discharging such substances is contrary to the prohibitions in 15 RCNY 19-03(a)(1) against, amongst other things, "fats, oils, grease, or any solids or viscous substances capable of causing obstruction to the flow in sewers or other interference with the proper operation of the sewerage system." The DSNY rule at 16 RCNY § 1-11(b)(3)(iii) requires that establishments that install organic waste processing systems ensure that such systems are installed in accordance with "all applicable laws and rules governing the discharge of waste and waste water, including section 19-11 of title 15 of the rules of the city of New York governing the discharge of grease into the city sewer system, and any other applicable regulations enforced by the department of environmental protection or the New York state department of environmental conservation."

DEP conducted sampling of the discharge from various devices that are claimed by their manufacturers to be digesters, and that have been installed to meet the requirements in 16 RCNY § 1-11(b). Most of the results revealed oil and grease concentrations in the hundreds of milligrams per liter, with several in the thousands. Eighty percent of the results were above the oil and grease limit of 300 mg/L that DEP applies in the Industrial Wastewater Discharge Permits it issues to industrial users of the public sewer. For total suspended solids (TSS), all of the results were above the 350 mg/L limit that DEP imposes in Industrial Wastewater Discharge Permits. Most of these results were in the thousands of milligrams per liter. A properly sized grease interceptor could theoretically handle the high fat, oil, and grease (FOG) component of the discharge, if the establishment frequently maintained the interceptor and if the TSS were low. However, the TSS numbers are so high that solids would very rapidly fill a grease interceptor and even a solids interceptor. It is not realistic to think that establishments would clean out the solids from the grease and/or solids interceptor as frequently as needed and incur the heavy costs of transporting them offsite on such a frequent basis.

The reason that the FOG and TSS numbers are so high is that these devices break down solids by mechanical means such as turning, agitation, maceration, shredding, or grinding. They commonly employ motor driven paddles that churn the food waste while water is added, until the waste is broken down into smaller particles that get discharged down the drain and into the sewer. Some manufacturers sell enzymes or other additives to add to the food waste for the stated purpose of accelerating the process of breaking down the food. All of the food waste is discharged into the sewer.

Both FOG and TSS can cause blockages in the sewer. Either of them can cause blockages on their own, but together the effect is even greater because FOG and TSS can adhere to each other, thereby increasing the size of the obstruction to the flow in the sewer. This obstruction can cause

backups of sewage into homes and businesses, creating hazardous and unsanitary conditions, which can jeopardize health and wellbeing and cause property damage. Such blockages could also threaten the health of the general public, wildlife, and the environment by leading to combined or sanitary sewer overflows into water bodies.

For this reason, DEP is prohibiting the use of devices that break down food waste for the purpose of discharging it into the sewer system, except for food waste disposers within dwelling units (which are permitted under Plumbing Code § 413.1 and Administrative Code § 24-518.1(b)). Under the amendment, a definition for "food waste liquefier" is being added to the definition section at 15 RCNY § 19-01 because most of the devices that have been installed in the City that would fall under the ban can be properly identified as such. An entry for "biological liquefaction system" is also inserted in the definition section which refers back to "food waste liquefier," as both terms are synonymous.

Then at 15 RCNY § 19-03(b), a new subsection (2) is added after the existing prohibition against food waste disposers that are not in dwelling units. The new subsection 15 RCNY § 19-03(b)(2) prohibits any device that breaks down food waste (except for food waste disposers within dwelling units), by whatever means, for the purpose of discharging it into the sewer system, including but not limited to food waste liquefiers.

The same subsection also provides for the grandfathering of installations that before the effective date of the amendment have been registered with the Department of Sanitation, are connected to a grease interceptor as a result of an order issued by DEP, or appear on engineering plans approved by DEP. However, when any such device reaches the end of its useful life, if it is replaced, it may only be replaced with on-site processing methods that do not break down food waste for the purpose of discharging it into the sewer system, and which comply with all applicable federal, state, and local requirements. These provisions will ensure that establishments that have either obtained permission from the City to have these devices, or have expended money to connect them to grease interceptors by order of the City, will be able to keep them until they are no longer serviceable. After that time, they may not be replaced by another such device.

The addition of food waste from these devices to the already constrained wastewater conveyance and treatment system would require significant expenditures on system upgrades, and would jeopardize water quality standards. The amendment will protect the sewer system, the public health, and the waterways from a new potential cause of sewer backups and overflows, while ensuring that those who have already invested in the banned devices will not lose their investment.

A minor amendment to correct a typographical error in 15 RCNY § 19-11(o) is also being made by removing the last sentence in that subsection, which had been inadvertently left in, at the time of the 3/19/20 amendments, from an earlier draft.

A public hearing on the proposed rule was held on May 28, 2021. Comments were submitted either orally or in writing from six commenters, four of which were on behalf of two manufacturers of food waste liquefier devices opposing the proposed rule. After careful review

and consideration of these comments, DEP has decided to go forward with the rule for the reasons stated above.

The comments in opposition to the proposed amendment rely heavily on the issue of reducing the amount of trucked food wastes going to landfills and greenhouse gas emissions, while failing to refute DEP's concerns over the potential impact to the sewer from high FOG and TSS.

One commenter asserted that his company's device uses a minimum amount of water. While sampling these devices, DEP sampling staff encountered a food waste liquefier installed at a hotel where the manager informed DEP that the device being used was initially discharging a thick slurry which would clog the discharge pipes. After complaining to the manufacturer, the manufacturer fixed the problem by increasing the use of water as a means of diluting the discharge to achieve better flow. The manager said that after that, the problem was solved. The necessity of using large amounts of water to thin out the discharge demonstrates the heavy solids and FOG loading that is present in the discharge from food waste liquefiers, and which was confirmed by DEP sampling.

The same commenter also asserted that his company exercises a level of care that avoids waste generators that produce greasy foods. DEP cannot rely on manufacturers' assurances that they will screen out dischargers that are heavily laden with grease.

Another commenter cited rodent infestation problems in New York City which could be helped by using food waste liquefiers to dispose of food waste through the sewer rather than waiting to have it transported off-site which can attract rodents. Problems with rodents should not be addressed through improper disposal of food wastes to the sewer.

The commenter also stated that a biofilm that is formed by the microorganisms used in their company's food waste liquefier has been shown to improve the cleanliness of the sanitary system. Although evidence has not been submitted to substantiate this, DEP could not in any event, legally carve out an exception for a particular manufacturer's product.

The aforementioned commenters also said that the literature cited by DEP is outdated, and that the technology has changed a lot in the past decade. However, the literature presented which was from the relatively small amount of available information on food waste liquefiers was referenced only for general background information about these devices. Also, these commenters did not explain how food waste liquefiers are fundamentally different now than they were a decade ago.

Another commenter stated that this rule phases out grease interceptors. The rule does no such thing. In the statement of basis and purpose DEP explained that establishments are unlikely to clean out their rapidly filling grease and solids interceptors that are tributary to food waste liquefiers with the frequency necessary to continuously keep them properly maintained. However, there is no mention of grease interceptors in the proposed amendment.

The same commenter asked what has a greater impact, trucks for cleaning grease interceptors or vehicles to haul solid wastes. If grease and solids interceptors tributary to food waste liquefiers

were cleaned out with the frequency needed to capture and properly dispose of 90 percent of the grease and other extractable matter - as required under 15 RCNY 19-11(f), the amount of hauled waste should be comparable to what it would be without the devices. That would defeat the purpose of even having a food waste liquefier.

One company representative asserted that such company has over 100 devices throughout New York City and that there are no reports of sewage backups, and that DEP has not presented any data. Another commenter also asked for data showing the strain on the public sewer. Notably, one of the manufacturer representatives admitted that the effluent from food waste liquefiers is high in TSS and FOG, but said it is a small contribution compared to the 1.3 billion gallon daily flow through the public sewers. Sewer blockage data specific to actual food waste liquefiers is difficult if not impossible to attain given the many sources of discharge in a city like New York and the still relatively small number of devices.

Nevertheless, DEP should not wait until the number of devices grows before addressing the issue. It is sufficient that the devices discharge high levels of FOG and TSS which already fall under the discharge prohibition of 15 RCNY 19-03(f), which prohibits in pertinent part: *(1) Construction materials, concrete or concrete contaminated water, ashes, cinders, sand, mud, straw, shavings, metal, glass, rags, feathers, tar, plastic, wood, paunch manure, coffee grounds, fur, wax, power wash waste, building wash waste,* ***fats, oils grease, or any solids or viscous substances capable of causing obstruction to the flow in sewers or other interference with the proper operation of the sewerage system.*** *[emphasis added]* Therefore, as a matter of compliance with City regulations, DEP cannot allow food waste liquefiers to continue to be installed.

For the above-stated reasons, DEP did not find the public comments critical of the proposed amendment to have provided sufficient reason for changing or withdrawing it.

REFERENCES

Northeastern University (2013) "On-Site Systems for Processing Food Waste – A Report to the Massachusetts Department of Environmental Protection," Isaac Griffith-Onnen, Zak Patten, and Jennifer Wong, Northeastern University, Boston, Mass.

California Department of Resources Recycling and Recovery – CalRecycle (2018) https://www.calrecycle.ca.gov/Organics/food/commercial/Liquefiers/

BioCycle Magazine (2013) "Analysis of Biodigesters and Dehydrators to Manage Organics On-Site," Zoë Neale.

USEPA (2008) "Anaerobic Digestion of Food Waste" U.S. Environmental Protection Agency," Prepared by East Bay Municipal Utility District.

Metcalf and Eddy (1991) "Wastewater Engineering Treatment, Disposal, and Reuse, Third Edition."

Material being deleted is shown below in [brackets] and material being added is underlined.

Section 1. Section 19-01 of Chapter 19 of Title 15 of the Rules of the City of New York is amended by adding the following definitions in alphabetical order to read as follows:

Biological liquefaction system. See "food waste liquefier."

Food waste liquefier. "Food waste liquefier" also known as "biological liquefaction system" means a device that breaks down food waste into liquefied form typically, but not exclusively, by mechanical turning, agitation, maceration, shredding, grinding, and/or aerobic digestion, as well as dilution with water, and may use additives such as microorganisms, enzymes, vitamins, and/or minerals. The resulting liquefied food waste is discharged into the drainage system.

Section 2. Subdivision (b) of Section 19-03 of Chapter 19 of Title 15 of the Rules of the City of New York is amended to read as follows:

(b) (1) Food waste disposers shall be permitted only within dwelling units. Under no circumstances will the discharge of garbage or refuse whether shredded or unshredded, other than ground putrescible food waste from food waste disposers in dwelling units, be permitted into a combined or sanitary sewer.

(2) Except for food waste disposers within dwelling units, any device that breaks down food waste by whatever means for the purpose of discharging it into the sewer system, including but not limited to food waste liquefiers, is prohibited in both residential and non-residential premises unless such device, prior to the effective date of this paragraph, either was connected to a grease interceptor as a result of an Order issued by the Department, appeared on engineering plans approved by the Department, or was registered with the New York City Department of Sanitation. When any such device reaches the end of its useful life, if it is replaced, it may only be replaced with on-site processing methods that do not break down food waste for the purpose of discharging it into the sewer system, and which comply with all applicable federal, state, and local requirements.

Section 3. Subdivision (o) of Section 19-11 of Chapter 19 of Title 15 of the Rules of the City of New York is amended to read as follows:

(o) Discharges from the cleaning of kitchen hoods which may extract grease from cooking operations must be made to receptacles or floor drains that are connected to a grease interceptor or automatic grease removal device. The minimum flow rate of the required grease interceptor or automatic grease removal device as per Table II for an automatic hood wash unit shall be equivalent to such unit's discharge rate in gallons per minute, as indicated on the manufacturer's specification sheet or based on the number of gallons of water the device uses per wash cycle, or based on the length of the hood system (0.7 gallons per minute per foot), whichever is greater.

The minimum flow rate of the required grease interceptor or automatic grease removal device as per Table I for an electrostatic precipitator shall be equivalent to the precipitator's discharge rate in gallons per minute, as indicated on the manufacturer's specification sheet, or based on the number of gallons of water the precipitator uses per wash cycle, whichever is greater. [The minimum grease retention capacity in pounds shall be that which corresponds to such flow rate in Table II.]