



Best Practices for Control of Fats, Oils, & Grease (FOG)

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A Guide for Food Service

Fats, Oils, and Grease (FOG)

FOG are abundant in, and on, the foods we eat. When foods are prepared, oils and greases may cook out of foods or be added as ingredients or as non-stick remedies. The FOG ends up on cookware, dishware, and kitchen equipment, etc. When these items are washed, the FOG is washed off as well and enters the plumbing system. A short time after the FOG enters the drain, it cools and separate from the dishwater. FOG accumulates in drains, sewer pipes and sewer pump stations. Over time, this residue builds up and can restrict and eventually cause blockage in sanitary sewer pipes.

Borough FOG inspections

The Borough will be performing FOG inspections. Inspections will include a review of all waste handling practices, please make sure that all of your waste is properly stored, disposed of and that all FOG disposal activities are documented.

Food service establishments produce residual Fats, Oils, and Grease (FOG) by-products that should be constantly managed. Typically, FOG enters a facility's plumbing system from ware washing, floor cleaning, and equipment sanitation. The FOG passing the building sewer service has the potential to accumulate in the downstream wastewater collection system. The accumulation of FOG in the collection system will decrease pipe capacity requiring more frequent cleaning and in more severe cases pipes must be replaced. FOG can result in blockages and backups into service laterals for other residential and commercial properties. Oil and grease that travels through the collection system also reduces the effective wastewater treatment at the Kennett Square Wastewater Treatment Plant.

Grease in a warm liquid may not appear harmful. But, as the liquid and grease cool, the grease or fat congeals on the surface of settling tanks, digesters, and the interior of pipes and other surfaces which may cause a shutdown of wastewater treatment units. Wastewater collection systems are not designed to handle FOG that accumulates on the interior of system pipes.

Problems

The main issues caused by FOG are:

- Restricted or blocked pipes lead to overflows.
- Capacity reduction, increased maintenance efforts, reduced material lifecycle increase costs to the Borough and its customers.
- FOG has the potential to create foul odors within the sanitary sewer system.

In an effort to control the problems caused by wastes from food service and other grease-producing establishments Kennett Square passed an ordinance with regulations governing the discharge of FOG to the wastewater collections system. The ordinance requires the installation of preliminary treatment facilities, commonly known as grease traps and interceptors. The best way to manage FOG is to keep the material out of the plumbing systems. The following are suggestions for proper FOG management.



Methods of Control

FOG can be controlled by system customers using better cleaning methods and FOG control units such as grease traps and grease interceptors.

Grease Trap or Interceptor

What's the difference?

Grease traps are generally small, under the sink type units, installed inside the building. Grease interceptors are much larger (750 gallons or more), usually buried outside the building with access points for maintenance. Grease interceptors remove grease from wastewater more effectively.

So, which one do I need?

The short answer is, both. Inside, grease traps help to protect your building or facility drain piping from clogs and potential back-ups. By Borough Code of Ordinance Chapter 15 grease interceptors are required at all food preparation facilities to prevent grease from entering the sanitary sewer collection system.

Grease Traps

Grease traps are only effective if the units are properly sized, constructed, and installed in a location to provide adequate retention time for settling and accumulation of the FOG. If the grease trap is too close to the FOG discharge and do not have enough volume to allow amassing of the FOG, the emulsified oils will pass through the unit without being captured. For information on properly locating, constructing, and sizing grease traps, contact local plumbers and examine EPA guidance documents.

Ensure all grease-bearing drains discharge to the grease trap. These include mop sinks, woks, wash sinks, prep sinks, utility sinks, pulpers, dishwashers, pre-rinse sinks, can washes, and floor drains in food preparation areas such as those near a fryer or tilt/steam kettle. Toilet wastes should **NOT** be plumbed to the grease trap.

Grease Interceptors

Grease interceptors are required for new or modified food service establishments, any existing food service establishment upon the sale/transfer thereof, and any existing food service establishments or other user determined by the Borough to be discharging FOG in sufficient quantities to require control. All facilities required to install a grease interceptor must obtain prior approval from the Borough with respect to grease interceptor design, sizing, etc. prior to installation.

Contact the Borough regarding grease interceptor design and permitting.

Dry Cleaning

Remove food waste with “dry” methods such as scraping, wiping, or sweeping before using “wet” methods that use water. Wet methods typically wash the water and waste materials into the drains where it eventually collects on the interior walls of the drainage pipes. **Do not pour grease, fats or oils from cooking down the drain and do not use the sinks to dispose of food scraps.** Educate kitchen staff not to remove drain screens as this may allow paper or plastic cups, straws, and other utensils to enter the plumbing system during cleaning. The success of dry cleaning is dependent upon the behavior of the employee and availability of the tools for removal of food waste before washing. To practice dry cleaning:

- Use rubber scrapers to remove fats, oils and grease from cookware, utensils, chafing dishes, and serving ware.
 - Use food grade paper to soak up oil and grease under fryer baskets.
 - Use paper towels to wipe down work areas. Cloth towels will accumulate grease that will eventually end up in your drains from towel washing/rinsing.
 - Skim/filter fryer grease daily and change oil when necessary. Use a test kit available from grocery distributors rather than simply a “guess” to determine when to change oil. This extends the life of both the fryer and the oil. Build-up of carbon deposits on the bottom of the fryer act as an insulator that forces the fryer to heat longer, thus causing the oil to break down sooner.
 - Collect fryer oil in an oil rendering tank for disposal or transport it to a bulk oil rendering tank instead of discharging it into a drain.
 - Cleaning intervals depend upon the type of food establishment involved. Full-cleaning of grease traps and interceptors (removing all liquids and solids and scraping the walls) is a worthwhile investment. Remember, sugars, starches and other organics accumulate from the bottom up. If sediment accumulates, interceptors will need to be pumped more frequently.
 - Develop a rotation system if multiple fryers are in use. Designate a single fryer for products that are particularly high in deposits and change that one more often.
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Wet Cleaning

Use water temperatures less than 140° F in all sinks, especially the pre-rinse sink before the mechanical dishwasher. Temperatures in excess of 140° F will dissolve grease, but the grease can re-congeal or solidify in the sanitary sewer collection system as water cools. The food service establishment will reduce its costs for the energy, gas or electric for heating the water. Do not utilize biological agents for grease remediation without permission from the sanitary agency receiving the waste.

Spill Prevention

Preventing spills reduces the amounts of waste on food preparation and serving areas that will require cleaning. A dry workplace is safer for employees in avoiding slip, trips, and falls. For spill prevention:

- Empty containers before they are full to avoid spills.
 - Use a cover to transport trap contents to a rendering barrel.
 - Provide employees with the proper tools to prevent spilling.
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Maintenance

Maintenance is key to avoiding FOG blockages. Ensure that equipment is regularly maintained. All staff should be aware of and trained to perform correct cleaning procedures, particularly for under-sink traps that are prone to break down due to improper maintenance. A daily and weekly maintenance schedule is highly recommended.

Contract with a service company to professionally clean large hood filters. Small hoods can be hand-cleaned with spray detergents and wiped down with cloths for cleaning. Hood filters can be effectively cleaned by routinely spraying with hot water with little or no detergents over the mop sink that should be connected to a grease trap. After hot water rinse (separately trapped), filter panels can go into the dishwasher. For hoods to operate properly in the removal of grease-laden vapors, the ventilation system will also need to be balanced with sufficient make-up air.

Oil & Grease Collection/Recycling & Food Donations

FOG are commodities that if handled properly can be treated as a valuable resource.

- Begin thinking of oil and grease as a valuable commodity. Some rendering companies will offer services free-of-charge and others will give a rebate on the materials collected.
- Use 25-gallon rendering barrels with covers for onsite collection of oil and grease other than from fryers. Educate kitchen staff on the importance of keeping outside barrels covered at all times. During storms, uncovered or partially covered barrels allow storm water to enter the barrel resulting in oil running onto the ground and possibly into storm drains, and can “contaminate” an otherwise useful by-product.
- Use a 3-compartment sink for ware washing. Begin with a hot pre-wash, then a scouring sink with detergent, then a rinse sink.
- Make sure all drain screens are installed.
- Prior to washing and rinsing use a hot water ONLY (no detergent) pre-rinse that is separately trapped to remove non-emulsified oils and greases from ware washing. Wash and rinse steps should also be trapped.
- Empty grill top scrap baskets or scrap boxes and hoods into the rendering barrel.
- Easy does it! Instruct staff to be conservative about their use of fats, oils and grease in food preparation and serving.
- Ensure that edible food is not flushed down your drains. Edible food waste may be donated to a local food bank. Inedible food waste can be collected by a local garbage feeder that will use food discards for feeding livestock. Food donation is a win-win situation. It helps restaurants reduce disposal costs and it puts the food in the hands of those who can use it.

Best Management Practices

- Train kitchen staff and other employees about how they can help ensure BMPs are implemented. People are more willing to support an effort if they understand the basis for it.
- “Dry wipe” pots, pans, and dishware prior to dishwashing. By dry-wiping and disposing in the garbage, the material will not be sent to grease traps. This will reduce the amount of material collected in the grease trap/interceptors and will lessen cleaning and maintenance costs.
- Dispose of food waste by recycling and/or solid waste removal to divert food wastes away from grease trap/interceptors. Recycling or solid waste disposal will reduce the frequency and cost of grease trap/interceptor cleaning.
- Recycle waste cooking oil because cooking oil that ends up in grease trap/interceptors will have to be pumped, costing businesses money. Some companies will pay to haul used cooking oil and make it into new products.
- Cover outdoor grease and oil storage containers. Rainwater entering open containers can cause an overflow onto the ground leading to stormwater collection systems, creeks, and streams.
- **Do not pour grease down sinks or into toilets.** Grease poured into a toilet or sink can congeal, clog sewer pipes and cause backups.
- NEVER flush trap/interceptor with hot water or use drain cleaners, enzyme or bacteria agents. This only moves the Fats, Oils & Grease (FOG) into the sanitary sewer.
- Avoid or limit the use of garbage disposals. Garbage disposals grind large food particles into small pieces. These pieces can fill up a grease trap causing backups or may require more frequent pump outs of the grease trap.
- Inspect trap/interceptors with a capacity of 100 gallons or less weekly or more frequently if needed. Reason: Weekly (or more frequent) cleaning of the grease traps and interceptors will ensure proper operation of device and lower the risk of backups. Cleaning under-sink grease traps frequently will reduce maintenance costs of grease traps/interceptors and minimize potential for health risks and loss of business.
- Routinely clean kitchen exhaust system filters. If grease and oil escape through the kitchen exhaust system, it can accumulate on exterior surfaces, eventually entering the storm drain system when it rains.

