

Managing Fats, Oils, and Grease in Wastewater

Fats, oils, and grease are problems for the wastewater system. When hot oil is poured down a drain, or greasy wastewater enters the drain from a dishwasher, the oil cools and can coat the inside of drain pipes, causing slow drainage or blocked pipes. Limits are set by wastewater treatment authorities on how much fat, oil, and grease (abbreviated as FOG) wastewater generated by restaurants and food products manufacturers can contain. Building codes also require the installation of grease traps in restaurants.

The best way to avoid problems with FOG is to avoid disposal in the wastewater system. Large amounts of oil such as from fryers should never be poured down the drain. The used oil should be collected and recycled. Used cooking oil is actually a valuable material that can be processed into products used in animal feeds, fuels, and chemicals. Accounts can be arranged with reputable FOG collectors to periodically pickup used oil. Usually, a container is placed outside of the restaurant for collection. Smaller amounts of oil, such as that poured from frying pans or skimmed from boilers, can also be placed in the waste oil recycling container. Oil should be poured from cookware before placing into a dishwasher. Oil should not be allowed to drain into a sink or floor drain. Check the local telephone directory under **Rendering Companies** for companies that can accept FOG from food preparation.

It is possible to strain or filter oil in deep fryers to extend the life of the cooking oil. Controlling the temperature of deep fryers so that the oil does not scorch will also extend the life. Extending the life of oil means that less oil is recycled or disposed. It also means that less new oil is purchased. The benefit is that money is saved in addition to improving food quality and taste.

Storm Water Concerns -- Outdoor grease storage containers can affect storm water. Containers must be covered so that rain does not enter the tank and overflow. Keep hinged and free lids on the containers closed except when filling. Spills should be cleaned with absorbent clay or pigs, and never washed down a storm drain. Areas around storage containers should never be cleaned with hoses or pressure washers unless all of the wastewater is contained and disposed in the sewer system. Grease should never be poured into storm drains. If storage tanks require cleaning, they should never be cleaned outside and allowed to drain into storm drains or to contaminate soil or paved surfaces. It is a good idea to place used oil storage containers in curbed areas so that major spills are contained and flowing stormwater is diverted away.

Managing Grease Traps -- Grease traps are very useful in collecting FOG from kitchen wastewater, but they must be periodically serviced in order to be effective. Grease traps are usually above ground or in ground tanks that allow water draining from a kitchen to slow down. When the water slows, oil can float to the surface and solids can fall to the bottom as sludge. The wastewater between the top layer of FOG and the bottom layer of sludge can exit the grease trap and flow into the sewer system. Grease traps are usually sized so that after two weeks to a month, they have collected as much FOG and sludge as they can hold. If they are not cleaned, FOG will simply pass through the trap and into the sewer system.

Grease traps can be cleaned by restaurant workers or the service can be provided by companies specializing in grease trap service. Such companies can be found by looking under **Grease Traps** in the telephone directory. Contract with a reputable service company to insure timely service and good advice on managing and maintaining grease traps.

Grease traps are sized based on the expected flow and grease levels in wastewater. For example, a 4' x 4' x 2' trap might be sufficient for a grocery store bakery, but the meat department of a grocery store would require a much larger unit. Restaurant grease traps are usually sized according to the number of seats. Local building codes and wastewater treatment systems may have grease trap ordinances that require minimum sizes for grease traps, periodic cleaning, and inspections.

There are various designs of grease traps. Grease traps can be purchased preformed or they can be designed according to plumbing code standards. Usually water enters the influent side of the tank which is divided from the effluent side with a baffle located 2/3 of the way from the influent end. Water flows through the baffle via an opening about 1/3 of the distance down from the top of the tank. One vendor sites a general rule of thumb for determining clean out frequency by measuring the grease layer thickness. The rule of thumb is that a grease trap needs cleaning when the floating grease mat exceeds 3/4" to 3" in depth or when the sludge layer exceeds several inches in depth. The free water layer between the grease mat and the sludge layer should make up the majority of the depth of the grease trap. If a grease trap has dimensions of 4' wide x 4' long and several feet deep, the maximum volume of grease that the tank can hold is about 30 gallons. Tracking the thickness of the

grease mat will allow the restaurant operator to determine clean out frequency. The grease mat thickness can be measured by using a broom handle to push through the grease layer and then measuring the grease mat thickness by inspecting the handle after it is removed.

Other Grease Trap Tips

- Inspect grease traps to determine if they are installed correctly. One grease trap cleaning service has found that about 25% of all grease traps are installed backwards.
- Waste food grinders generally should not be installed ahead of a grease trap since the ground food will fill the trap with sludge. Many restaurants have installed grinders to allow disposal of food waste in the drainage system.
- Small automated traps can be installed downstream of dishwashers and sinks that automatically drain FOG into a container for recycling.
- Install strainers on sinks, dishwashers, and floor drains to prevent solids from entering grease traps.
- Never dispose of FOG by pouring down the drain. Recycle FOG with a reputable vendor.
- If a grease trap is undersized, it will not retain FOG. If no grease mat is forming, have the trap evaluated to determine if it is properly sized, properly installed, and meets building codes.
- Never dispose of solid waste by placing in the drain.
- Keep records of when and how much used oil is collected, when grease traps are inspected, when and who cleaned the grease trap, and where the material from the trap was taken.
- Disposal of used oil and residue from grease trap cleaning is regulated. Some landfills will not accept FOG. Recycling is the best method.
- Grease traps should be designed and located so that water leaving the trap has had an opportunity to cool, thus allowing grease to solidify.
- Grease traps and the use of good grease management practices are still required if you have a septic tank. FOG buildup in septic systems may require costly repairs. Building and sanitation codes often require grease traps to be installed even when disposing of wastewater in on-site septic systems.