



### Fats, Oils, and Grease (FOG) . . . What are they?

Fats, oils and greases (FOG) are defined as a material, either liquid or solid, composed primarily of fat, oil and grease from animal or vegetable sources. Fats are mixtures of various triglycerides with a small percentage of monoglycerides and diglycerides. Oil is often defined as triglycerides that are liquid at room temperature. Grease is a general classification for fats, oils, waxes and soaps that have a negative effect on the wastewater collection and treatment system.

### Where does FOG come from?

Most of us know grease as the byproduct of cooking or preparing food. FOG is found in such things as:

- Shortening
- Butter
- Dairy products
- Food scraps
- Cooking oils
- Lard
- Meat fats
- Baking goods
- Bacon grease
- Margarine
- Sauces

FOG is generated by facilities that cook, prepare and/or package food or beverages for sale or consumption, on or off-site. Waste fats, oils, and grease are frequently poured down the sink drain. Grease also routinely enters the sanitary sewer system as a result of normal kitchen operations, including food service facility washing of dishes, silverware, and pots and pans.

Some of the industries who generate FOG include, but are not limited to:

- Restaurants
- Food Packagers
- Schools
- Bakeries
- Caterers
- Hotels
- Grocery Stores
- Hospitals
- Meat processors
- Lounges
- Nursing Homes
- Beverage Manufacturers
- Food Manufacturers
- Churches

Whenever food is cooked in oils there is a need to get rid of the cooking oils and greases. The most undesirable place to get rid of these wastes is by pouring them down the drain. This method of disposal creates significant problems as the next section will discuss.

### Is FOG a problem?

In the sewage collection, transmission, and treatment business, the answer is an emphatic **YES!** Grease is singled out for special attention because of its poor solubility in water and its tendency to separate from the liquid solution.

### How does FOG cause a problem?

FOG generated from food service operations poses a serious threat to the City's sanitary sewer collection and transmission system. Large amounts of oil and grease in wastewater cause trouble in the City's sewer collection system pipes. As mentioned in a prior section some of the typical fats are triglycerides. They are the same chemicals that clog arteries in people.

In a wastewater system, the water flows from the sinks, drains, and toilets through a series pipelines to the wastewater



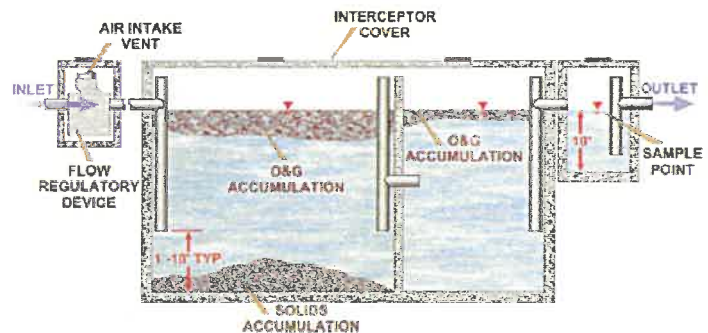
treatment facility. These pipelines operate just like the arteries of our body, which transport blood, and they too can become clogged. While grease in warm wastewater may not appear harmful, as the liquid cools, the grease solidifies and clings to the interior of the pipes, accumulating into a hardened mass. This buildup of grease on the interior of the pipes restricts the flow of sewage and causes blockages in the pipes.

Pipes blockages can result in sanitary sewer overflows or sewage backups into homes and businesses, which can cause public health hazards, damage to the interiors of structures, and threaten the environment. Raw sewage overflowing in streets, and even into homes and yards, requires an extensive, unpleasant, and costly cleanup by City staff. In addition, sewage overflows also have the potential to place the City in a position of non-compliance with environmental regulations and can result in municipalities, such as the City of Tarpon Springs being subjected to fines imposed by the Florida Department of Environmental Protection. The best way to prevent these overflows is to keep the FOG out of the sewer system.

Problems caused by wastes from restaurants and other grease-producing establishments have served as the basis for ordinances and regulations governing the discharge of grease materials to the sanitary sewer system in many municipalities and county's in our area. This type of waste has forced the requirement of the installation of preliminary treatment devices in Pinellas County, commonly known as grease traps or interceptors.

#### What is a grease interceptor and how does it work?

A grease interceptor looks very much like a septic tank. Multi-compartment sinks, pot sinks, dishwashers, and similar fixtures discharge their wastewater through a separate plumbing pipeline into a grease interceptor. Grease interceptors are typically sized with a minimum capacity of 750 gallons and no greater than 1,250 gallons and are generally located on the exterior of the building. The grease interceptor includes a minimum of two compartments, and flow between each compartment is through a 90° fitting designed for grease retention. The capacity of the interceptor should be such that it provides adequate residence time. Upon entering the interceptor the wastewater flow slows, which allows the lighter grease to separate from the wastewater and float to the top of the interceptor where it cools. The grease will tend to collect and rise to the surface where it accumulates until the interceptor is cleaned.



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Over a period of time, the grease will build up to a point where it needs to be removed. If not removed, the grease will work itself into the sewer system. Once grease enters the drain lines, it will clog pipelines and cause failure of the system.

#### How do I clean my grease interceptor?

Grease interceptor maintenance consists of removing the entire volume (liquids and solids) from the grease interceptor and properly disposing of the material in accordance with all Federal, State, and/or local laws. When performed properly and at the appropriate frequency, a grease interceptor can greatly reduce the discharge of fats, oil, and grease (FOG) into the wastewater collection system.

Grease interceptors, due to their size, will usually be cleaned by grease haulers or recyclers. There are a number of companies who are permitted to haul grease wastes in Pinellas County.

Since the food service establishment is liable for the condition of their pretreatment devices, the establishment owners or



representatives should witness all cleaning and maintenance activities to verify that the interceptor is being fully cleaned and properly maintained.

The required maintenance frequency for grease interceptors depends greatly on the amount of FOG a facility generates as well as any best management practices (BMP's) that the establishment implements to reduce the FOG discharged into its sanitary sewer system. In many cases, an establishment that implements BMP's will realize financial benefit through a reduction in their required grease interceptor maintenance frequency.

The City of Tarpon Springs recommends that establishments with grease interceptors enter into a maintenance contract with a licensed pumper/hauler. The contract should specify that the hauler will make periodic inspections of grease accumulation and that the trap/interceptor will be pumped at whatever intervals are necessary to ensure that the layer of grease does not exceed six inches (6") on the top of the interceptor and a solids layer of less than eight inches (8") on the bottom of the interceptor. At a minimum, all grease interceptors **MUST** be cleaned at least once each month in accordance with Pinellas County Code. Some establishments will find it necessary to clean their interceptors more often than once per month.

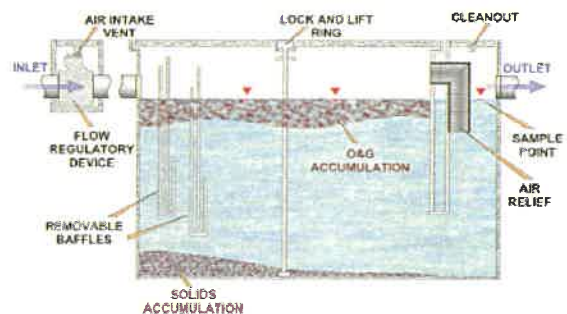
#### What is a grease trap and how does it work?

A grease trap is a small reservoir, ranging in size from 40 to 100 pound capacity, built into the wastewater piping a short distance from the grease producing area. Grease traps have flow control valves to limit the rate of discharge to the trap. Baffles in the reservoir retain the wastewater long enough for the grease to congeal and rise to the surface. The grease can then be removed and disposed properly. traps are limited to handle discharges from a maximum of four fixtures, not to exceed 50 gallons per minute combined discharge rate. Dishwashers, sanitizers and garbage disposals/grinders can not drain to traps.

#### How do I clean my grease trap?

Grease trap maintenance is usually performed by the food establishment's maintenance staff, or other employees of the establishment. When performed properly and at the appropriate frequency, grease trap maintenance can greatly reduce the discharge of FOG into the wastewater collection system.

The required maintenance frequency for grease traps depends greatly on the amount of FOG a facility generates as well as the best management practices (BMP's) that the establishment implements to reduce the FOG discharged into its sanitary sewer system. In many cases, an establishment that implements BMP's will realize financial benefit through a reduction in their required grease trap maintenance frequency. At a minimum, all grease traps **MUST** be cleaned at least once each week in accordance with Pinellas County Code or more often as necessary to prevent pass-through of grease and other food solids.



#### How is Grease Managed?

Regular maintenance, consisting of routinely checking the grease level and periodically pumping the tank, is essential. Due to the threat of stoppages, spills and environmental degradation, it is a Pinellas County code violation to operate a food service establishment which has a malfunctioning or full grease trap/interceptor. Therefore, grease trap/interceptor maintenance becomes a very important aspect of food service management.

Excess food or grease from meal preparation should never be dumped into a sink, grease trap/interceptor, or any other part



of the plumbing system. An environmentally sound method of managing this grease is to have it picked up by a rendering company to be recycled.

**Do I need a grease trap or grease interceptor?**

Any food service establishment that introduces FOG into the City's collection and transmission is required to have or install a grease trap or interceptor in accordance with Pinellas County code.

**Do I have a grease trap or grease interceptor?**

If the establishment is uncertain whether it has a grease trap or grease interceptor, the owner or representative should contact the City of Tarpon Springs Industrial Pretreatment Program at (727) 942-5616.

**What if I don't have a grease trap?**

If the establishment generates FOG in food preparation, it will eventually encounter a maintenance problem with a plugged building sewer line. The blockage can create a sewer backup situation and ultimately a potential health problem in the establishment. Someone will have to pay for removing the blockage. If the problem is in the building sewer line, then the establishment has direct responsibility for paying for the maintenance. If the blockage or restriction is in the City's sanitary sewer main and it can be proven that the establishment's discharge is the cause of the blockage, then the establishment may have to pay for the City's sewer to be maintained. Blocking a sanitary sewer line is also a violation of the federal Clean Water Act.

**How can I get in compliance?**

The establishment should contact the City of Tarpon Springs Industrial Pretreatment Program at (727) 942-5616 for guidance on grease interceptor and grease trap requirements, design criteria, and maintenance requirements.

**What is the City of Tarpon Springs doing about FOG?**

The City of Tarpon Springs has developed a brochure with tips for controlling the introduction of FOG into its sanitary sewer system and is asking for the cooperation of all food service establishments in training their staff and implementing these practices. In addition, the City of Tarpon Springs will also provide education to all food service establishments and residents of the City about what FOG is, what it does, and how to properly dispose of FOG. You can learn more about controlling the discharge of FOG by contacting the City's Industrial Pretreatment Program at (727) 942-5616.

**What can you do about FOG?**

There are a variety of DO's and DON'Ts that you should observe to ensure that the minimum amount of FOG gets into the wastewater system. Please review the enclosed brochure outlining Best Management Practices for the Control of Fats, Oil, and Grease with your establishment's staff and conspicuously post the enclosed "No Grease" signage over sinks, near floor drains, near dishwashers, and anywhere else where water may enter a drain to the City's sanitary sewer. Additional brochures and signs are available upon request.

City of Tarpon Springs  
Industrial Pretreatment Program



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