Town of Plymouth
Public Health
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Fats, Oil, Grease Program Guidelines and Manual

For Food Establishments in Plymouth, MA

Acknowledgement

The Town of Plymouth Public Health Department and Board of Health wish to extend gratitude to the Pinehills LLC., specifically John Judge and Deborah Sedares, for their permission to allow us to utilize their existing Fats, Oil, and Grease (FOG) guidance. We'd also like to extend gratitude toward the Town of Billerica Health Department's Director Richard Berube and their Board of Health for collaborating with our agency to improve upon our FOG program. Also, this document would not have been realized without interdepartmental collaboration with the Town's Department of Public Works, Sewer Division. All the efforts from those mentioned are much appreciated for this program.

This document will help the Town of Plymouth achieve optimal health for all who will use this to protect the sewer system and private wastewater systems (i.e. septic systems) from FOG damage. Ultimately, this manual will serve to provide the tools to residents and visitors to practice prevention on the frontend in order to avoid catastrophe on the backend that is costlier to rate payers, citizens, and visitors of the Town in a myriad of ways.

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GETTING ACQUAINTED WITH FATS, OILS, AND GREASE

This document provides municipal pretreatment staff, restaurant and fast food businesses, and any other FOG producing businesses with information about animal and vegetable-based oil and grease pollution prevention, sewer use regulations and best management practices. This program was developed to reduce sewer maintenance by reducing oil and grease discharges into the sewer system and to prevent sanitary sewer overflows due to FOG.

1. WHAT IS FOG?

FOG refers to **F**ats, **O**il and **G**rease found in most residential and commercial kitchens and food service establishments. Waste FOG is a semisolid, viscous liquid that is generated during the food cooking process or during cleaning, maintenance, and sanitizing processes. Many foods that are processed and served contain FOG, including meats, sauces, gravy, dressings, deep-fried foods, baked goods, cheeses, butter and others. Residential users and many different businesses generate FOG wastes by processing or serving food, including; eating and drinking establishments, caterers, hospitals, nursing homes, day care centers, schools and grocery stores.

1.1 WHAT IS THE PROBLEM WITH FOG?

FOG that is dumped down the sewer can coagulate and congeal into a hardened layer on the inside of building sewers, within the sewers under roadways, and can accumulate within pumping stations. This causes a reduction in the effectiveness of these collection lines to transport wastewater away from residences and businesses to the wastewater treatment plant. Wastes containing FOG can accumulate on the inside of these pipes and collection lines to such an extent that the building sewers and wastewater collection lines become blocked with FOG. When building sewers and wastewater collection lines become blocked, the flow of wastewater is obstructed, causing wastewater to back up into your business and possibly into residences and/or businesses within the vicinity of the blockage. These blockages can result in significant public health hazards that may lead to the development of disease causing pathogens in waterbodies as well as physical and property damages.

If the FOG causing the wastewater collection line blockage originates from your business, you may likely be the first one affected. When wastewater backs up into a business, a significant public health hazard is present for the owner, employees and customers, the business becomes disrupted, and physical damages to the business property and assets can result. When sewers become blocked with FOG, untreated wastewater may also overflow out of the sewers into streets, parking lots, storm sewers, and ultimately to the environment.

1.2 WHAT CAN BE DONE?

The Town of Plymouth has revised the Sanitary Sewer Rules & Regulations and the Board of Health Rules & Regulations set in place regulations pertaining to FOG primarily for Food Service Establishments (FSEs) and other facilities from which quantities of grease can be

expected to be discharged. The Regulations require that FOG producing establishments install and maintain grease traps and other preventative measures in order to prevent FOG from entering into the sanitary sewer.

2. REGULATIONS AND BY-LAWS

Regulations including the Uniform State Plumbing Code, the Plumbing and Discharge Institute Standards, as well as local town regulations incorporate requirements for FOG capture, removal and best management practices. FSE's shall comply with the most stringent of all applicable State and Town regulations, which are further described in the sub-sections below. The Town of Plymouth Director of Public Health reserves the right to develop and implement more stringent requirements in accordance with the Board of Health Regulations or to require additional procedures on a case-by-case basis.

2.1 STATE REGULATIONS

The Uniform State Plumbing Code (248 CMR 10.00) references *Grease Traps & Interceptors when Installed Inside of Buildings* and *Grease Interceptors Installed Outside of the Buildings* in Section 10.09 (2) and (3), respectively. The code defines a grease trap as a passive interceptor designed for less than 50 gpm, which is typically located inside a building; and a grease interceptor as a passive interceptor designed for greater than 50 gpm, typically located outside of a building. The code describes the requirements for grease trap installation, maintenance, approval, sizing, testing, rating, as well as other regulations regarding grease traps when installed inside of buildings and outside of buildings. The state plumbing code further references the Plumbing and Drainage Institute (PDI) Standard G101, and mandates that all devices conform to the requirements outlined in the PDI Standard. Plumbing and Drainage Institute Standard G101 establishes the detailed requirements for grease traps, including criteria to properly size the traps, installer requirements, and management requirements. These requirements are enforceable by the Uniform State Plumbing Code.

2.2 TOWN REGULATIONS AND BY-LAWS

In addition to the relevant state codes, the sanitary sewer system in Plymouth is also governed by the Town of Plymouth Board of Health (BOH) FOG regulations and the Town of Plymouth Sanitary Sewer Rules, Regulations, and By-laws. This Town of Plymouth FOG body of laws are in line or may exceed the Massachusetts State Environmental Code, Title 5, 310 CMR 15, and Water Pollution Control Regulations, 314 CMR 12.08. FOG discharge requirements must be in compliance with all applicable regulations at the local and state level, including those listed in the Town of Plymouth Sanitary Sewer Rules and Regulations. The Town of Plymouth Public Health Department is responsible for the protection of the public health, welfare, and environment of the Town via implementation and use of both the BOH Regulations and applicable parts of MGL CH. 111. The Town of Plymouth's BOH Rules and Regulations were developed to supplement those of the Massachusetts General Laws. The Town's Board of Health regulations describe general requirements for food service establishments, including regulations on sanitary waste and grease disposal.

2.2.1 Permissions for Inspection

The Town of Plymouth's Rules, Regulations, and By-laws grant employees or agents of the Town permission to enter all properties for the purposes of inspection, observation, measurement, sampling, testing, and determining whether the user is complying with all requirements of the regulations, the Wastewater Treatment Plant wastewater discharge permit, or any order issued hereunder without any prior notification. This includes inspection of any records required by the Sewer Use Rules & Regulations. Records for the previous three years should be available to inspectors.

3. GREASE TRAPS

The installation and maintenance of a grease trap is an important measure in ensuring that a food service establishment does not contribute to problems with the wastewater treatment system.

The Uniform State Plumbing Code (248 CMR 10.00) defines a grease trap as a passive interceptor designed for ≤ 50 gallons per minute (gpm), and a grease interceptor as a passive interceptor designed for > 50 gpm. The Town's Regulations indirectly define grease traps as an interior device and a grease interceptor as an exterior grease trap. For the purposes of simplicity, this document will use grease trap as a general term where interior grease traps are located inside the building and exterior grease traps are grease interceptors located in the ground outside the building.

All grease traps and interceptors in Massachusetts must have an approval by the Board of Plumbers and Gas in order to be installed in Massachusetts. An online database of the Board's accepted plumbing products can be found here: http://license.reg.state.ma.us/pubLic/pl__products/pb_pre_form.asp.

4. BEST MANAGEMENT PRACTICES

Best Management Practices (BMPs) are schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters. For purposes of this manual, best management practices include procedures and practices that reduce the discharge of Fats, Oil and Grease (FOG) to the building drain and ultimately to the Wastewater System.

The following BMPs are provided for municipal pretreatment staff, along with restaurant, fast food, and other food service businesses with information about animal and vegetable-based oil and grease pollution prevention techniques focused on their businesses. Following these BMPs will prove to be effective in both reducing maintenance costs for business owners and preventing oil and grease discharges into the sewer system.

Some of the following BMPs are sourced from the following:

- Massachusetts Department of Environmental Protection (www.mass.gov/dep)
- New Hampshire Department of Environmental Services (www.des.state.nh.us)
- Oregon Association of Clean Water Agencies (www.oracwa.org/Pages/bmp.htm)
- Georgia Pollution Prevention Assistance Division, Department of Natural Resources, Atlanta, Georgia (www.dnr.state.ga.us/p2ad/dl/definitions.pdf)
- Colorado Springs Utilities Industrial Pretreatment Program (www.csu.org/files/general/2770.pdf).

4.1 PREVENTING BLOCKAGES IN THE SEWER SYSTEM

4.1.2 Commercial Cooking Exhaust System Cleaning

Grease and oily sludge removed from hoods, grease removal devices, fans, ducts, and other appurtenances shall be prevented from entering the sewer system. The Massachusetts Board of Fire Prevention Regulations includes cleaning frequency standards (http://www.mass.gov/eopss/docs/dfs/osfm/cmr/cmr-secured/527011.pdf.)

Hood cleaners must be approved and certified by the State Fire Marshall's Office. A list of the companies that are currently certified can be found here: http://elicense.chs.state.ma.us/DFS_Verification/Search.aspx.

All waste grease and oily waters resulting from said cleaning shall be collected in appropriate containers and removed by an approved Septage and Offensive Substances Hauler approved by the Town of Plymouth Public Health Department.

4.1.3 Training of Staff

It is important to train kitchen staff and other employees who may encounter or dispose of FOG so that they can help ensure that BMPs are being implemented. Managers and owners will not always be present, so proper training for employees is necessary in order to fully achieve the benefits of the BMPs. Inspectors can talk to the establishment manager about the training program that they have implemented and offer suggestions.

4.1.4 "No Grease" Signs

Post "No Grease" signs above sinks and on the front of dishwashers. These signs will serve as a constant reminder for staff working in kitchens and help to minimize grease discharge to the traps and reduce the cost of cleaning and disposal. Inspectors should check appropriate locations of "No Grease" signs.

Per the Uniform State Plumbing Code 10.09(1)(m)3:
*A laminated sign shall be stenciled on or in the immediate area of the grease trap or interceptor in letters one-inch high. The sign shall state the following in exact language: "**IMPORTANT: This grease trap/interceptor shall be inspected and thoroughly cleaned on a regular and frequent basis. Failure to do so could result in damage to the piping system, and the municipal or private drainage system(s).**"*

4.1.5 Dry Wipe

"Dry wipe" pots, pans, and dishware prior to dishwashing. By "dry wiping" the grease out of pots, pans, and dishware and disposing in garbage receptacles, the grease and other materials will not be sent to the grease traps. This will reduce the amount of material going to the grease traps, reduce the frequency of cleaning, and reduce the amount of maintenance costs.

The following are some tips that can be used for dry wipe clean up:
 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 drain from towel washing.

 Use kitty litter to absorb liquid spills. Sweep and dispose of the litter in the trash, as long as the spilled material is not hazardous.

4.1.6 Dishwashing and Equipment Cleaning

Proper dishwashing and cleaning methods can reduce the entry of solids and FOG into the Wastewater System. These methods include:

- Pre-washing dishes and cookware with hot water and no soap, prior to use of the dishwasher or three-compartment sink, can reduce the discharge of FOG discharge by 25 percent. Pre-wash sinks used for this purpose must be connected to a Grease Trap.

- Prior to washing deep fat fryers, use a rubber spatula to squeegee down the sides, while grease and oil are still warm, and then wipe the fryer with paper towels. Dispose of the paper towels in the garbage.

- Before washing grill and roaster/broiler drip pans, empty their contents into a waste grease container and then wipe them with paper towels. Dispose of the paper towels in the garbage.

- Pour all liquid grease and oil from pots and pans into a waste grease container that is stored at the pot-washing sink, and then scrape out the solidified grease, if

present. Capture accumulated oil, during the cleaning of stoves and ventilation/exhaust hoods, and dispose of it in the garbage, after absorbing all free liquid.

4.1.7 Spill Prevention and Clean-up

Preventing spills reduces the amount of waste in food preparation and serving areas that will require clean up. In addition, a dry workplace is safer for employees in avoiding slips, trips, and falls. For spill prevention:

- Empty containers, before they are full, to avoid spills.
- Use a cover when transporting materials that may spill, particularly liquid wastes containing fats, oils, and grease.
- Provide employees with proper tools (e.g., ladles, ample containers, etc.) to transport materials without spilling.

Practice effective spill containment and clean up. Spills of dry ingredients should be swept-up or vacuumed to prevent washing them into sinks or floor drains. For FOG spills:
Block off all sinks and floor drains near the spill.

- Cover the spill with absorbent material (e.g., sand, saw dust, kitty litter, salt, paper towels, etc.).
- Remove spilled material and place it in the garbage.
- Use wet clean-up methods only to remove trace residues.
- Food Service or Cooking Establishments that use large amounts of cooking fats (e.g., deep fat fryers) should develop and post their spill response procedure and maintain spill containment and absorbent supplies.

4.1.8 Extend Oil Life

Skim/filter fryer grease daily and change oil when necessary. Use a test kit provided by your grocery distributor rather than simply “guess” to determine when to change the 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. Also, 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.

4.1.9 Recycling

Think of oil and grease as a valuable commodity. When using deep fat fryers or any process that requires or produces large amounts of plant or animal byproducts, collect the oils and fats. Recycle the oils and fats through one of the area's recycling companies if feasible. This is the preferred method of disposal for food service establishments that produce any volume of food waste. To practice recycling:

- Never dispose of fryer-vat, waste oils and fats down the drain, as this material is usually clean enough to be recycled.
- Collect and store fryer-vat waste in a rendering tank. Most recycling companies will provide outside receptacles for storage until pickup. Some companies will offer services free-of-charge, and others will give a rebate on the materials collected.

4.2 PROPER Installation and Maintenance of Grease Trap

The Plymouth Sanitary Sewer Rules & Regulations contain installation specifications. The Board of Health Regulations state specific requirements for grease trap maintenance and cleaning. To ensure compliance with all requirements or for specifics, please refer to the Plymouth Sanitary Sewer Rules & Regulations.

All grease traps should be installed so that they are accessible for cleaning and inspection. Grease traps should be inspected regularly and cleaned by a licensed waste grease hauler whenever the level of grease (including both bottom solids and floating grease and solids) exceeds 25% of the effective depth of the trap, or at least every three (3) months, whichever is sooner. If a remote monitoring device is used to measure grease and water levels in the grease trap, inspections may be made at a reduced frequency as approved by the Public Health Department. This activity shall be noted on a monthly pumping report submitted to the Public Health Department.

4.2.1 Procedure for Trap Cleaning

Grease trap maintenance, which is usually performed by permitted haulers or recyclers, consists of removing the entire volume (liquids and solids) from the trap and properly disposing of the material in accordance with all Federal, State, and/or local laws. When performed properly and at the appropriate frequency, grease trap maintenance can greatly reduce the discharge of FOG into the wastewater collection system. For reference, the typical procedure for trap cleaning is outlined below.

1. The permitted hauler or recycler will pump out any water in the trap to facilitate cleaning. They generally ensure that the water being pumped out is not over 100 mg/L FOG. However, the hauler or recycler will have the proper storage to contain the grease/waste found in the grease trap when it is pumped.

2. Remove baffles if possible.

3. Dip the accumulated grease out of the trap and deposit in a watertight container.

4. Scrape or hose down the sides, the lid, and the baffles with a putty knife or scraper to remove as much of the grease as possible, and deposit the grease into a watertight container

5. Contact an approved hauler or recycler for grease pick-up, if one is not performing the cleaning.

6. Refill the trap with water.

7. Replace the baffle and the lid.

8. Record the volume of grease removed in the grease trap cleaning and disposal log provided in the FOG Resources for Restaurants section at the end of this manual.
WARNING: Do not use hot water, acids, caustics, solvents, or emulsifying agents when cleaning grease traps.

Any other maintenance that may need to be performed to the grease trap other than cleaning and disposal should also be recorded using the grease trap maintenance log provided in the FOG Resources for Restaurants section at the end of this manual.

4.2.2 Witness Trap Cleanings

Witness all grease trap cleaning and maintenance activities to ensure that the device is properly operating. Grease trap maintenance and cleaning personnel may take shortcuts and not perform the job properly. If the establishment manager inspects the operation and ensures it is consistent with the maintenance procedures provided in this document, they are more assured of getting full value for their money and having a properly operating and clean grease trap.

NOTE: The establishment is liable for the condition of their pretreatment devices.

4.2.3 Keep a Maintenance Log

It is required by the Town Regulations to ensure that grease trap maintenance is performed on a regular basis. Keeping a maintenance log serves as a record of the frequency and volume of cleaning the trap. The maintenance log can also serve as a tool for the establishment manager to use in order to optimize cleaning frequencies and reduce costs (see the FOG Resources for Restaurants section at the end of this manual).

Maintenance logs are required by the Town Regulations to be kept on record for three years for inspection by the Town at all times.

Pump out schedules should be properly established and strictly followed to prevent excessive oil and grease loading to wastewater. It is important that these pump outs are complete, i.e., the grease caps are removed, the sides are scraped or hosed down, and the trap refilled with water.

4.2.4 Fats, Oil, and Grease Haulers

The FOG Resources for Food Service Establishments section at the end of this manual has a current list of waste grease haulers, as provided by the Plymouth Department of Public Health. These businesses will come and pick up grease and transport it to a grease processing facility.

4.3 GREASE MONITORING SYSTEMS

Grease monitoring systems use transducers similar to that of a fish finder and an embedded microprocessor to continuously sense the positions of the floating solids, bottom solids and the liquid level within the tank. This data is then digitally transmitted to a monitoring or control unit. Monitoring systems must comply with PDI G-102.

Once a monitoring system is installed by a qualified professional, it typically provides continuous monitoring of the sludge, scum and liquid levels in the grease trap. Systems provide real-time information on actual changes as a percent of permissible floating solids, bottom solids and total solids and can also provide the immediate status of the liquid level within the tank in inches.
The Town of Plymouth encourages FSE owners to purchase and install a grease trap monitoring system to continuously monitor sludge, scum and liquid levels in grease traps. If FSE owners chose to purchase and install a remote monitoring device, manual inspections may be made at a reduced frequency as approved by the Plymouth Department of Public Health.

The GREASEwatch™ and Drain-Net monitor are two examples of grease monitoring systems. These monitors control units can be easily programmed to alert the owner when it is time to pump the tank. It also warns of emergency conditions in the tank before failure due to overflow occurs. And because the control unit's memory keeps an ongoing record of tank measurements, these monitoring systems are a valuable management tool over time. For more information, see http://greasewatch.com, and http://www.greasemonitor.com.

FOG Fact Sheets:

Treatment

Pollution Prevention

Reporting and Record Keeping

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FOG Fact Sheet 1

TREATMENT REQUIREMENTS –
OUTDOOR IN-GROUND GREASE INTERCEPTORS

Grease interceptors must be installed with a dedicated sewer line servicing kitchen flows and must be connected to fixtures or drains that discharge waters containing fats, oils, and grease (FOG). These fixtures include:

- Pot sinks
- Pre-rinse sinks
- Any sink into which fats, oils, or grease are likely to be introduce
- Soup kettles or similar devices
- Work stations
- Floor drains or sinks into which kettles may be drained
- Automatic hood wash units
- Dishwashers without pre-rinse sinks[1]
- Any other fixtures or drains that are likely to allow FOG to be discharged

Please note that food grinder or food pulpers should not discharge to a grease interceptor. Additionally, wastewater flows connected to the grease interceptor must be screened to prevent solids from entering the treatment unit.

An outdoor, in-ground grease interceptor must have a minimum depth of four feet and a minimum volume:

- Equal to the maximum daily flow over a 24-hour period from all fixtures connected to the grease interceptor, or
- 1,000 gallons, whichever is greater

Grease trap interceptors must meet the following specifications:

- Constructed using watertight durable material or concrete
- Accessible for convenient inspection and maintenance
- Designed to accommodate traffic loading if installed in areas of traffic
- Equipped with clean out covers over the inlet and outlet of the unit

- Fitted with cleanout ports with manhole extensions
- Constructed with inlet and outlet piping as follows:
  - Minimum diameter of 4 inches
  - Be comprised of tee-pipe fittings that extend within 12 inches of the bottom and at least 5 inches above the liquid level of the tank
- Constructed on a level and stable base
- Constructed with outlet piping directly connected to a sanitary sewer

Additionally, no fixture or drain other than those listed above may be connected to the grease interceptor unless approved by an authorized agent.

Please note that other more detailed requirements such as concrete construction specifications and public health code requirements apply. Review the General Permit for details prior to designing and installing a grease interceptor.

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[1] Food service establishments should either have a pre-rinse sink or follow Best Management Practices to eliminate FOG in discharge waters from dishwashers.

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FOG Fact Sheet 2

TREATMENT REQUIREMENTS –
AUTOMATIC GREASE RECOVERY UNITS (AGRU)

An Automatic Grease Recovery Units (AGRU) must be installed immediately downstream of each fixture(s) listed below:

- Pot sinks
- Pre-rinse sinks
- Any sink into which fats, oils, or grease are likely to be introduced
- Soup kettles or similar devices
- Work stations
- Floor drains or sinks into which kettles may be drained
- Automatic hood wash units
- Dishwashers without pre-rinse sinks[1]
- Any other fixtures or drains that are likely to allow FOG to be discharged

Please note that food grinder or food pulpers should not discharge to AGRU. Additionally, wastewater flows connected to the grease interceptor must be screened to prevent solids from entering the treatment unit.

An AGRU must meet the following requirements:

- Designed and installed in accordance with the manufacturer's specifications
- Sized to properly pre-treat the measured or calculated flows for all connected fixtures or drains
- Constructed using corrosion-resistant material such as stainless steel or plastic
- Equipped with an internal or external strainer mechanism to intercept and separate solids from the effluent flow
- Include a skimming device, automatic draw-off, or other mechanical means to automatically remove separated fats and oils. Such skimming device must be:
  - Hard wired or cord & plug connected electrically and controlled using a timer or level control
  - Field adjustable

- Fitted with an internal or external flow control device
- Located so as to permit easy access for maintenance

No fixture or drain other than those listed above must be connected to the AGRU unless approved by an authorized agent. Additionally, the AGRU must be operated no less than once per day.

Please note that other more detailed requirements such as unit installation and public health code requirements apply. Review the General Permit for details prior to designing and installing an AGRU.

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[1] Food service establishments should either have a pre-rinse sink or follow Best Management Practices to eliminate FOG in discharge waters from dishwaters.

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FOG Fact Sheet 3

POLLUTION PREVENTION –
BEST MANAGEMENT PRACTICES (BMP)

The following is a list of pollution prevention and Best Management Practices (BMPs) that should be performed and/or implemented by Food Service Establishments (FSEs):

- Bypass equipment that could circumvent wastewater from entering treatment equipment is not permitted
- Renderable fats, oils, and grease (FOG) must be disposed of in separate storage containers for recycling by a renderer
- Renderable fats, oils, and grease must not be discharged into treatment units, sanitary sewers, dumpsters or storm sewers
- The contents of all grease interceptors, AGRUs and other approved units must be disposed of at a regional collection/transfer/disposal site
- Inspections of all grease interceptors must be performed quarterly
- Outdoor in-ground grease interceptors shall be completely emptied by a cleaner when:
  - Twenty-five percent of the operating depth of the grease interceptor is occupied by fats, oils, grease and settled solids, or
  - Once every 3 months, whichever is more frequent

Approval for a less frequent cleaning interval from the authorized agent may be granted based on the results of quarterly inspections performed by the FSE:

- Insure contractors hired to service the units and haul FOG and food-related wastesfor disposal do so in an environmentally acceptable manner
- All AGRUs must be maintained in accordance with the manufacturer's recommendations
- Hot water, steam, chemicals, or biological additives may not be used by FSEs to remove FOG from collection or treatment systems

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FOG Fact Sheet 4

REPORTING & RECORD KEEPING REQUIREMENTS RECORDING & REPORTING VIOLATIONS

Record Keeping Requirements for Grease Interceptors

A written log of all grease interceptor inspections is required and must be maintained for each discharge subject to the General Permit. Information recorded in the log should include:

- Date of the inspection
- Inspector's name, title and signature
- Depth, as measured at the time of the inspection, of fats, oils, grease (FOG) and food waste located within the grease interceptor; and any maintenance work or changes in equipment associated with such discharge that has taken place at the site since the last inspection

****Please note that the operating depth of the grease interceptor occupied by FOG and settled solids must be less than 25 percent of the total depth.**

The Food Service Establishment (FSE) must maintain the following documents onsite for a minimum of 5 years:

- A written log on-site of grease interceptor cleaning and maintenance
- Copies of contractor cleaning receipts
- A copy of approval from the authorized agent to reduce the frequency of grease interceptor cleaning
- Analytical results, if effluent quality samples are collected

****Note that maintenance of the required records as well as installation of a grease interceptor is sufficient to demonstrate compliance with the effluent limits of the General Permit.**

Record Keeping Requirements for AGRUs

All AGRUs are to be maintained in accordance with the manufacturer's recommendations. As such, maintenance records comprising of mechanical inspections and manufacturer's recommended service records, including any analytical results, must be maintained onsite for a minimum of 5 years. Note that maintenance of the required records as well as installation of an AGRU is sufficient to demonstrate compliance with the effluent limits of the General Permit.

Recording and Reporting Violations

Immediately upon learning or having reason to believe that the discharge may cause or has caused a sewer blockage or may adversely affect the receiving water pollution control facility, the FSE must notify the Sewer Authority.

If monitoring data or other information indicates that a violation of the General Permit, the FSE must take steps to identify and correct the conditions causing the violation. A log of such violations must be maintained on site and include the following information:

- The permit condition(s) or effluent limitation(s) violated
- The analytical results or other information demonstrating the violation
- The cause of the violation, if known
- Dates and times during which the violation continued
- If the violation was not corrected immediately upon being discovered, the anticipated time it is expected to continue; and upon correction, the date and time of correction
- Steps taken and planned to reduce, eliminate and prevent a reoccurrence of the violation, and the dates such steps have been or will be executed
- The name, title and signature of the individual recording the information and the date and time of such recording

The FSE must immediately notify the Sewer Authority if the pH exceeds the permitted range (5.5 – 9.5) by more (or less) than one standard unit or FOG exceeds the 100 milligrams per liter permit limit.

Kitchen FOG Training Resources

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Kitchen Staff Training

Introduction

Back-of-the-house operations and kitchen staff are the front line of FOG control.

FOG control **equipment** is important, but kitchen **staff** ***make it work*.**

The **Kitchen Manager** is also key:

- **Conveys the importance of FOG control**
- **Trains staff on BMPs (Best Management Practices)**
- **Interferes with back-of-the-house operations**

The problem

Fats, oil and Grease (FOG) cause blockages, floor drain back-ups, flooded floors.

-In the kitchen and outside the kitchen-

If not taken care of accordingly it may become:

- **Local Public Health and Public Works Department issue**
- **State Government issue**

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FOG Sources and Issues

1. **Obvious**:
   - **A.** Grease from cooking (bacon, chickens, roasts)
   - **B.** Used fryolator oil should **NEVER** go down any drain or disposal system. Both should go into secure recycling/disposal containers.
2. **Less obvious:**

A. Ensure that there is a flow limiter is installed ahead of grease traps and sample ports installed after grease traps.

B. Food Waste to include 1) Food Prep and 2) Food Clean-up

All grease traps have a limited storage capacity. The more you flush it you can expect (flush does not mean pump):

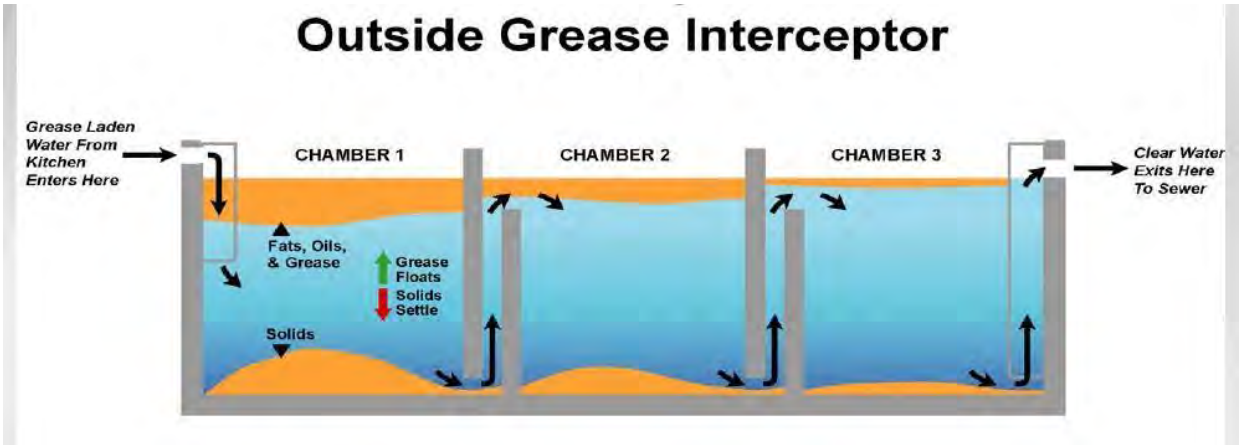
- More frequent cleanings
- Frequent presence of an unpleasant odor
- Increased failure rate of your grease trap

…And if you are not doing the cleaning on a regular schedule it could look like this:

C. Issues: FOG in the food waste (e.g. butter, mayo, olive oil, grease) and Bulk Solids in the food waste (food scraps and other solids that may include 'flushable' wipes)

Bulk solids should not enter grease traps. When you allow these bulk solids to enter grease it can lead to a grease trap reaching its maximum capacity at a faster rate and:

- Becomes full of food scraps and/or solids
- The grease trap becomes 'plugged up'
- The grease trap loses the ability to properly catch grease



If the Grease Trap doesn't catch the grease…

- it collects and builds up in the sewer system or septic system
- It can also slowly flow downstream and inhibit proper septic system discharge and lead to blockages – so…DO NOT DISPOSE INTO A SEPTIC SYSTEM --
- It may also inhibit proper sewer system discharge at an outlet pipe and lead to blockages
- Notify the Town of Plymouth Department of Public Works
- Notify Town of Plymouth Department of Public Health
- Ensure you take appropriate cleaning precautions according to manufacturer's instructions and BMPs

Remember…Follow the BMPs

FOG Best Management Practices (BMPs) and National Restaurant Association Program Toolkit

Prevent Blockages in the Sanitary Sewer System			
BMP	**Reason For**	**Benefits to Food Service Establishment**	**Pretreatment Inspection Tips**
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.	All of the subsequent benefits of BMPs will have a better chance of being implemented.	Talk to the establishment manager about the training program that he/she has implemented.
Post "No Grease" signs above sinks and on the front of dishwashers.	Signs serve as a constant reminder for staff working in kitchens.	These reminders will help minimize grease discharge to the traps and interceptors and reduce the cost of cleaning and disposal.	Check appropriate locations of "No Grease" signs.
Use water temperatures less than 140° F in all sinks, especially the pre-rinse sink before the mechanical dishwasher. The mechanical dishwasher requires a minimum temperature of 160°F, but the Uniform Plumbing Code (UPC) prohibits discharging the dishwasher to grease traps.	Temperatures more than 140° F will dissolve grease, but the grease can re-congeal or solidify in the sanitary sewer collection system as the water cools.	The food service establishment will reduce its costs for the energy – gas or electric – for heatingthe water.	Check boiler or hot water heater discharge temperature. Measure the temperature of thehot water being discharged from the closest sink.
Use a three-sink dishwashing system, which includes sinks for washing, rinsing, and sanitizing in a 50-100 ppm bleach solution. Water temperatures are less than 140° F.	The three-sink system uses water temperatures less than 140° F where a mechanical dishwasher requires a minimum temperature of 160° F. Note: The Uniform Plumbing Code (UPC) prohibits the discharge of dishwasher water to greasetraps.	The food service establishment will reduce its costs for the energy - gas or electric - for heating the water for the mechanical dishwasher and for operating the dishwasher.	Measure temperature of the hot water at the three-sink system.

Recycle waste cooking oil.	There are many waste oil recyclers throughout Mass. This is a cost recovery opportunity. See *Haulers and Recyclers* list in the FOG Resources for Food Service Establishments section.	The food service establishment will be paid for the wastematerial and will reduce the amount of garbage it must pay to have hauled away.	Obtain name of recycler used. Review recycling records. Confirm records with recycler.
"Dry wipe" pots, pans, and dishware prior to dishwashing.	The grease and food that remains in pots, pans, and dishware will likely go to the landfill. By "dry wiping" and disposing in garbage receptacles, the material will not be sent to the grease traps and interceptors.	This will reduce the amount of material going to grease traps and interceptors, which will require less frequent cleaning, reducing maintenance costs.	Observe dishwashing practices.
Dispose of food waste by recycling and/or solid waste removal.	Some recyclers will take food waste for animal feed. In the absence of such recyclers, the food waste can be disposed as solid waste inlandfills by solid waste haulers.	Recycling of food wastes will reduce the cost of solid waste disposal. Solid waste disposal of food waste will reduce the frequency and cost of grease trap and interceptor cleaning.	Inspect grease traps and interceptors for food waste accumulation. Confirm the recycler or solid waste removal company with the establishment manager.

Properly Maintain Grease Traps and Interceptors to Prevent Introduction into the Sanitary Sewer System

BMP	Reason For	Benefits to Food Service Establishment	Pretreatment Inspection Tips
Witness all grease trap or interceptor cleaning/maintenance activities to ensure the device is properly operating.	Grease trap/interceptor pumpers may take shortcuts. If the establishment manager inspects the cleaning operation and ensures it is consistent with the procedures in the section on *Grease Trap and Interceptor Maintenance,* they are more assured of getting full value for their money.	The establishment will ensure it is getting value for the cost of cleaning the grease trap or interceptor. Otherwise the establishment may be paying for cleaning more often than necessary.	None.
Clean under-sink grease traps weekly. If grease traps are more than 50% full when cleaned weekly, the cleaning frequency needs to be increased. Clean grease interceptors routinely.	Under-sink grease traps have less volume than grease interceptors. Weekly cleaning of under-sink grease traps by the establishment's own maintenance staff will reduce the cost of cleaning the grease interceptor. If the establishment does not have a grease interceptor, the under-sink grease trap is the only means of preventing grease from entering the sanitary sewer system. If the grease trap is not providing adequate protection, the local sewer agency may require installation of a grease interceptor. Grease interceptors must be cleaned routinely to ensure that grease accumulation does not cause the interceptor to operate poorly. The cleaning frequency is a function of the type of establishment, the size of the interceptor, and the volume of flow discharged by the establishment.	This will extend the length of the cleaning cycle for grease interceptors that the establishment maintains. Routine cleaning will prevent plugging of the sewer line between the food service establishment and the sanitary sewer system. If the line plugs, the sewer line may back up into the establishment, and the business will need to hire someone to unplug it.	Visually inspect the contents of the under-sink grease trap. Inspect cleaning records. Interceptor should have no more than 1/4 the depth as grease, **and,** Interceptor should have no more than 1/4 the depth as sediment, **and** No more than 25% of the depth should be a combination of grease (top) and sediment (bottom).
Keep a maintenance log.	The maintenance log serves as a record of the frequency and volume of cleaning the interceptor. It is required by the pretreatment program to ensure that grease trap/interceptor maintenance is performed on a regular basis.	The maintenance log serves as a record of cleaning frequency and can help the establishment manager optimize cleaning frequency to reduce cost.	Inspect maintenance log. Provide the establishment with a sample maintenance log if it does not have one. Confirm the maintenance log with the grease hauler identified.

Prevent Fats, Oil, and Grease from Entering Creeks and Streams Through the Storm Drain System

BMP	Reason For	Benefits to Food Service Establishment	Pretreatment Inspection Tips
Cover outdoor grease and secure oil storage containers. Some local jurisdictions will have BMPs in place for storm water also.	Uncovered grease and oil storage containers can collect rainwater. Since grease and oil float, the rainwater can cause an overflow onto the ground. Such an overflow will eventually reach the storm water system and nearby streams. Non-secure storage can lead to vandalism of the storage containers and lead to a grease spill that will lead to the closure of your food service establishment for a period of time, indefinitely, or permanently.	The discharge of grease and oil to the storm drain system will degrade the water quality of receiving streams by adding biological and chemical oxygen demand to the stream. Discharge of grease and oil to the storm drain might also result in legal penalties or fines.	Observe storage area for signs of oil and grease. Inspect containers to ensure that covers are present and secured on the storage container. Remove covers to ensure containers have not overflowed and do not have excess water. Place secure covers back on containers and ensure they are secure (preferably with a lock).
Locate grease dumpsters and storage containers away from storm drain catch basins.	The farther away from the catch basin, the more time someone has to clean up spills or drainage prior to entering the storm drain system. Be aware of oil and grease dripped on the ground while carrying waste to the dumpster, as well as oil and grease that may "ooze" from the dumpster.	The discharge of grease and oil to the storm drain system will degrade the water quality of receiving streams by adding biological and chemical oxygen demand to the stream. Discharge of grease and oil to the storm drain might also result in legal penalties or fines.	Observe storage area for signs of oil and grease. Inspect the closest catch basin for signs of accumulated grease and oil.
Use absorbent pads or other material in the storm drain catch basins if grease dumpsters and containers must be located nearby. Do not use free flowing absorbent materials such as "kitty litter" or sawdust.	Absorbent pads and other materials can serve as an effective barrier to grease and oil entering the storm drain system.	The discharge of grease and oil to the storm drain system will degrade the water quality of receiving streams by adding biological and chemical oxygen demand to the stream. Discharge of grease and oil to the storm drain might also result in legal penalties or fines.	Check the nearest catch basin and drainage paths for signs of grease and oil. Require absorbent pads if the basin is within 20 feet of grease dumpsters or containers, or if there are signs of grease in the catch basin at any distance. Do not permit the use of free-flowing absorbent material such as "kitty litter."

Use absorbent pads or other material to clean up spilled material around outdoor equipment, containers or dumpsters.	Absorbent pads or materials can help clean up grease and oil that is spilled on the ground and prevent it from flowing to the storm drain system. If grease and oil escape through the kitchen exhaust system, it can accumulate on the roof of the establishment and eventually enter the storm drain system when it rains.	The discharge of grease and oil to the storm drain system will degrade the water quality of receiving streams by adding biological and chemical oxygen demand to the stream. The discharge of grease and oil to the storm drain system will degrade the water quality of receiving streams by adding biological and chemical oxygen demand to the stream. Discharge of grease might also result in legal penalties or Board of Health fines.	If grease and oil are observed on the ground in the storage area, recommend the use of absorbents to minimize movement of the grease and oil. Do not permit the use of free-flowing absorbent material such as "kitty litter." Inspect roof (if safely accessible) for signs of oil and grease. Require a maintenance schedule and records for cleaning exhaust filters. Cleaning is usually by washing, which will discharge the grease to the interceptor where it can be controlled.

Town of Plymouth
Public Health
Prevent. Promote. Protect.

BEST MANAGEMENT PRACTICES (BMPs)

Daily Practices to Prohibit Oil or Grease from entering any Drain*

"Dry Wipe" all utensils prior to dishwashing.

Sweep kitchen floors before washdown

Recycle FOG waste in secured recycle containers in a secure area

Water temperature is 140ºF max in the rinse sink and pot sink

Recycle area clean and covered – no spills/overflows

Display Signs to say "NO GREASE" in sinks, drains, dishwashers

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Weekly Practices to Prohibit Oil or Grease from entering any Drain*

Check the placement of your grease traps (under sink or floor units)

Clean out your grease trap weekly at a minimum.

Store your used Oil (usually has a "brownish" appearance) in a secure grease container

Dispose of remaining watery liquids (not the oils!) in a wastewater sink

Check to see if there are solids (grease & sludge) and dispose of them in the trash

Verify this weekly practice on your log and enter it on maintenance sheet (posted by unit)

Notify your manager if > 25% full and contact your pumping company

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Quarterly Practices to Prohibit Oil or Grease from entering any Drain*

Grease Interceptors (in ground units) only

Pump the interceptor grease trap every 90 days minimum, unless waiver

Ensure that an employee verifies that it is: emptied, inspected, no liquid remains

Document on the receipt and inspection form that the pumping company provides

Verify this quarterly practice on your log and enter it on maintenance sheet (posted by unit)

Notify your manager if > 25% full and contact your pumping company

Review the BMPs with staff and check their understanding of them

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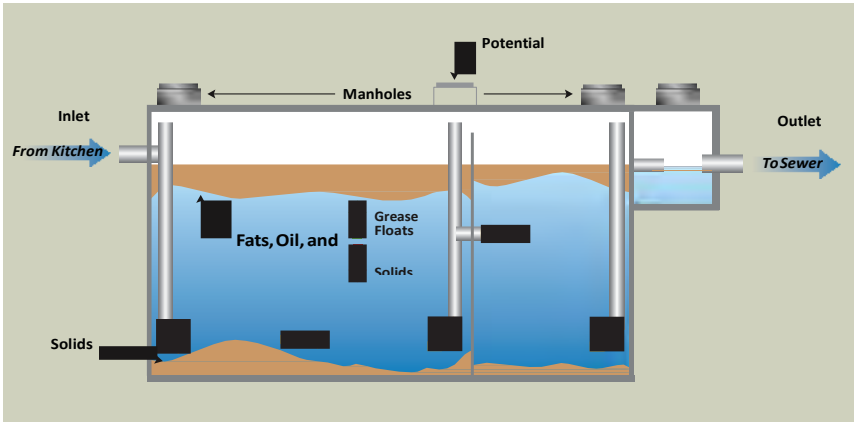
National Restaurant Association

FATS, OILS AND GREASE CONTROL

PROGRAM TOOL KIT

As of April 2018



[1]

[1] Photo courtesy of Monterey Regional Water Pollution Control Agency

Issue Overview/History

Cooking grease in wastewater discharged from apartment buildings, homes, restaurants, and hotels is causing fats, oil, and grease (FOG or grease) blockages in sewer lines. These grease blockages, located in either the property owner's sewer lateral or the public agency's sanitary sewer system, can cause back-ups into kitchens or basements, or can lead to sanitary sewer overflows (SSOs) which can cause untreated sewage to flow onto streets and travel to storm drains, creeks, and other surface waters. SSOs have become the focus of many large lawsuits and a Report to Congress by the EPA in 2004. This has made the control of grease blockages a high priority for the EPA and many states which are now requiring municipalities to adopt FOG Control Programs that include controlling the FOG discharge from restaurants.

In September 2005, Connecticut issued a General Permit requiring restaurants and other food service establishments to install grease interceptors. In May 2006, California adopted a state law to reduce SSOs that requires each sewer agency to adopt a FOG Control Program and to regulate restaurants and other food service establishments. Other states have adopted or are considering similar regulations.

The National Restaurant Association supports efforts to reduce grease blockages and SSOs which will protect the environment and help keep restaurant drain lines clear. As with any new environmental program, we also have a concern that some new regulations may negatively impact restaurants without substantial benefit in reducing grease blockages.

This paper has been developed to provide State Restaurant Associations and individual restaurants with a general understanding of the FOG blockage problem, new FOG control regulations, logical FOG control practices, and guidance for evaluating FOG control requirements. This Tool Kit should be used by State Associations and individual restaurants to work together with sewering agencies to develop logical and technically based FOG Control Programs that are effective and fair.

TERMINOLOGY

The following terms are often used interchangeably throughout the United States, but for the sake of the readers of this Tool Kit, these terms are defined as follows:

Conventional Grease Interceptor

A large grease control tank, typical- ly installed outside and in-ground, cleaned by a pumping company

Grease Trap

A small grease control device with manual grease removal, typi- cally installed inside and above ground, generally cleaned and maintained by restaurant staff

Grease Removal Device (Automatic Grease Trap)

A small grease control device with automatic grease removal, typical- ly installed inside and above ground, generally cleaned and maintained by restaurant staff

Grease Control Device

General term used for any conventional grease interceptor, grease trap, grease removal device, or alternative technology used to separate oil and grease from kitchen wastewater.

Note: Many plumbing codes and agency ordinances are now using the term "grease interceptors" for all grease control devices.

Elements of grease control programs

Due to new State regulations, EPA enforcement, or SSO lawsuits, your local sewer agency may have already contacted your restaurant to explain their FOG Control Program or to issue your restaurant a wastewater discharge permit. You may have been asked to install a grease interceptor or grease trap. At the very least, you have probably been issued a flyer or poster encouraging you to reduce your FOG discharge through kitchen Best Management Practices (BMPs) such as scraping plates or recycling your fryer grease.

The following grease control program elements may soon be required for your restaurant, if they haven't been required already:

PERMITS Some agencies are issuing or are requiring restaurants to apply for a wastewater discharge permit in order to regulate their grease dis- charge. This allows the agency to spell out the restaurant's responsibilities, but the permitting process can be very complicated and burdensome for both the agency and the restaurant. The National Restaurant Association recognizes that some agencies may choose to permit restaurants, but the permits should be simple and straightforward. Many agencies have developed a brief and easy to understand permit that refers to an agency's ordinance or other policy documents. This permit process works well for the agency and the restaurant.

IMPLEMENTATION OF KITCHEN BEST MANAGEMENT PRACTICES (BMPS) Although many restaurants have already implemented Kitchen Best Management Practices (BMPs) to prevent grease from being dis- charged down the drains, some agen- cies are requiring restaurants to imple- ment specific Kitchen BMPs as a con- dition of their FOG Control Program. The National Restaurant Association supports BMPs that will prevent grease blockages; however, the BMPs should be practical and cost effective.

GREASE CONTROL DEVICE INSTALLATION REQUIREMENTS Grease control devices have been in use for years at many restaurants. However, many agencies are looking to require more restaurants to install grease control devices. Although these devices are a logical requirement for many restaurants, the National Restaurant Association is concerned that some agencies may require restaurants that discharge little or no grease to unnecessarily install expensive grease control devices.

GREASE CONTROL DEVICE CLEANING AND MAINTENANCE REQUIREMENTS Grease control devices must be cleaned or maintained regularly in order to function properly. Quarterly cleaning is sufficient for most conventional grease interceptors and weekly cleaning or maintenance is sufficient for most grease traps and grease removal devices, particularly if Kitchen BMPs are implemented. However, some agencies are requiring mandatory monthly cleaning of conventional grease interceptors or daily cleaning or maintenance of grease traps or grease removal devices. This is excessive at a vast majority of restaurants. The National Restaurant Association recognizes that more frequent cleaning or maintenance may be warranted for specific restaurants, but this should only be a requirement if there is evidence to justify these frequencies.

WASTEWATER DISCHARGE–OIL AND GREASE CONCENTRATION LIMIT REQUIREMENT Some agencies are sampling and analyzing the wastewater discharge from restaurants (or their grease control devices) and requiring that the wastewater contain less than a prescribed concentration limit of oil and grease. Oil and grease limits can vary from 100 milligrams per liter (mg/L) to 500 mg/L. These limits can also be stated as parts per million (ppm). Because the laboratory test used for this analysis measures both emulsified and non-emulsified oil and grease, these limits are not a true indication of the effectiveness of grease control devices or the grease blockage potential of the restaurant discharge. For this reason, many agencies are moving away from oil and grease limits and relying instead on inspection of grease control devices to confirm proper maintenance and in some cases closed circuit television (CCTV) monitoring of the sewer line. The National Restaurant Association does not support oil and grease limits, but does support any monitoring efforts by agencies that provide a true indication of the impact of grease discharges by restaurants.

Kitchen best management practices (BMPs)

There are many ways in which restaurants can prevent or reduce the amount of grease that is discharged into kitchen drains. Based on researching Kitchen BMPs throughout the country, the National Restaurant Association has prepared the following list of helpful Kitchen BMPs that are consideredpractical and cost effective for most restaurants:

1. KEEP GREASE OUT OF THE DRAINS/COLLECT AND RENDER YELLOW GREASE Prevent pouring excess oil or grease down the drain. This "yellow grease" should be collected and rendered. The more yellow grease that is collected and rendered, the less grease that ends up in drains, or in grease interceptors or grease traps.

2. SCRAPE GREASE AND FOOD FROM PLATES AND COOKWARE BEFORE WASHING Using gloves or rubber spatulas, grease and greasy food scraps should be scraped off plates and cookware before washing. This material should be added to the trash or recycled as part of a food waste recycling program.

*Photos 1, 2 and 4 courtesy of East Bay Municipal Utility District.

3. USE DRAIN SCREENS Using drain screens, particularly on sink drains, will prevent much of the grease and greasy food particles from ending up in the drains.

4. WIPE UP GREASE SPILLS BEFORE USING WATER Grease spills and grease drippings should be wiped up with a paper or cloth towel or through the use of other adsorbent materials such as kitty litter before using water to minimize the amount of grease ending up in the drains.

5. LIMIT GARBAGE DISPOSAL USE TO NON-GREASY FOOD MATERIALS For restaurants that have garbage disposals, they should be limited to processing non-greasy food materials such as lettuce in food preparation areas to minimize the amount of grease ending up in the drains.

6. EMPLOYEE TRAINING Employees must be trained to implement the kitchen BMPs and/or to properly clean out grease control devices such as grease traps.

Benefits to the restaurant of improving fog control

Whether a restaurant is part of a FOG control program or not, improved FOG control provides multiple benefits for restaurants:

FOG Control Practice	Benefit
Improved Kitchen BMPs (less grease down the drain)	• Reduced drain line blockages and cleaning • Reduced cost of drain line cleaning and jetting • Reduced SSOs • Reduced odors • Reduced non-renderable waste grease generation
Increased cleaning or maintenance of grease control devices	• Reduced drain line blockages and cleaning • Reduced SSOs • Reduced odors
Overall compliance with the FOG control program	• Avoidance of non-compliance fees or fines • Benefit the environment and the community

Requirements to install a grease control device

Most agencies consider the requirement to install grease control devices to be the most important part of their FOG control program. The general thinking is that even if Kitchen BMPs are not fully implemented, the grease control device(s) will capture the grease and protect the sewer. Sewer use ordinances based on national plumbing codes provide the authority for agencies to require certain restaurants to install grease control devices. However, determining which restaurants require grease control devices and which grease control device(s) is the most appropriate for a specific restaurant provides a challenge for every agency.

Requirements for New Restaurants

Most new restaurants are required to install a grease control device to prevent grease from flowing into the agency's sanitary sewer system. This is a logical requirement for new restaurants that are expected to discharge grease due to their menu or kitchen fixtures. Examples include restaurants that prepare significant quantities of steak, pork, chicken, fish, pasta, soup, or fried food using grills, fryers, rotisseries, woks, and tilt kettles. Conversely, many new restaurants should not be required to install a grease control device if they are not expected to discharge much grease due to their menu or kitchen fixtures. For example, the requirement to install a conventional grease interceptor is most likely unnecessary for sandwich shops, coffee shops, juice shops and other non-grease generating restaurants.

Concerning new non-grease generating restau- rants, some sewering agencies believe that they should require the installation of conventional grease intercep- tors. This requirement may be due to the agency's con- cern that the next owner or tenant may convert the busi- ness into a restaurant that will discharge a significant amount of grease. The National Restaurant Association recognizes this concern and encourages sewering agen- cies to not require the current restaurant to incur the cost of installing and maintaining a conventional grease interceptor for grease that may or may not be discharged by a future restaurant. One logical solution is to require these new restaurants to plumb the kitchen waste piping separately from the sanitary waste piping and to provide outdoor space for a conventional grease interceptor in case a retrofit is needed in the future. Indoor grease control devices may also be installed in the restaurant, if space is not available outside.

Requirements for Existing Restaurants

Many existing restaurants already have grease control devices installed. If these devices are properly maintained, they should provide sufficient grease control and no other devices should be needed for these restaurants in most cases. Due to new grease control requirements in many areas of the country, existing restaurants without grease control devices are being required to install a grease control device(s). However, many agencies are "grandfathering" (i.e., removing or postponing the requirement) existing restaurants due to the potential significant cost of purchasing the device or retrofitting the facility. Logical reasons why some agencies may not "grandfather" certain existing restaurants and may require grease removal devices are: 1) when a significant remodel occurs; 2) non-adherence to FOG Control Program requirements; or 3) discharging to a portion of the sewer system that has a history of grease blockages.

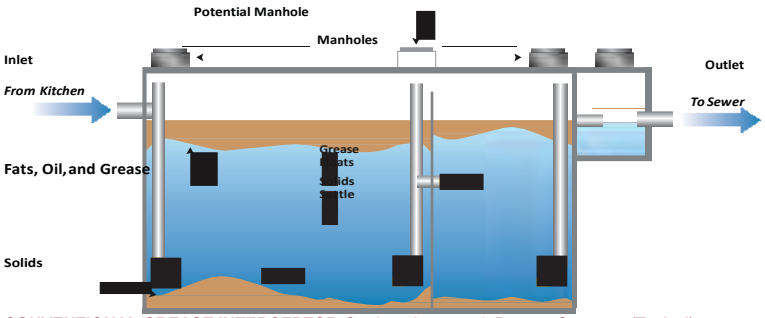
Plumbing and Sizing Requirements

Grease control device plumbing and sizing requirements vary throughout the United States based on differing plumbing codes and agency preferences. The National Restaurant Association is planning to provide more information in this area through future literature or on our Web site.

Cleaning and/or maintenance of grease control devices

CONVENTIONAL GREASE INTERCEPTORS

Conventional grease interceptors operate by gravity separation. Given sufficient space and time, floating grease and settled solids separate from the kitchen wastewater and slowly accumulate in the interceptor (see the figure below).



CONVENTIONAL GREASE INTERCEPTOR Outdoor, In-ground–Precast Concrete (Typical)

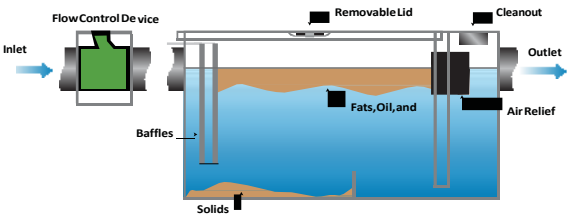
For the interceptor to perform correctly, the floating grease and settled solids must be removed before they accumulate beyond a certain level to avoid clogging the plumbing in the interceptor or significantly reducing the overall space in the interceptor, which affects the ability of the interceptor to separate the waste material from the wastewater. The standard maintenance level for floating grease and settled solids accumulation is "The 25% Rule." According to "The 25% Rule," if the combined accumulation of floating grease and or settled solids exceeds 25% of the capacity of the interceptor, the interceptor must be cleaned (pumped) by a waste hauler. The "25% Rule" or a similar standard has been adopted and is now being enforced by many sewering agencies around the country.

Many agencies require that conventional grease interceptors be cleaned at a mandatory minimum frequency to prevent the over-accumulation of floating grease and settled solids. Minimum quarterly cleaning is perhaps the most common requirement, but some agencies require more frequent cleaning (e.g., monthly cleaning). Although more frequent cleaning may be appropriate for some restaurants with unusually high grease discharge, this is likely overkill for a vast majority of restaurants.

It is important that conventional grease interceptors be pumped out completely when they are cleaned. Otherwise the settled solids will accumulate and eventually clog the internal plumbing in the interceptor. At the very least, the decay of the solids over time will generate hydrogen sulfide gas and unpleasant odors (rotten egg smell). Many agencies require that conventional grease interceptors be fully pumped out every time due to these concerns.

GREASE TRAP[1]

Grease traps also operate by gravity separation; however, grease traps use a flow control device and baffles to allow the separation of floating FOG and settled solids in a much smaller tank (see the figure below).



GREASE TRAP Indoor, Above Ground (Typical)

Like a conventional grease interceptor, in order for a grease trap to perform correctly, the floating FOG and settled solids must be removed regularly. However, since grease traps are significantly smaller than conventional grease interceptors, the necessary frequency of cleaning is much greater. Minimum weekly cleaning is required by some agencies. Some restaurants may have to clean out their grease trap more often than weekly due to unusually high grease discharge from specific fixtures. It is reason- able for most restaurants to conduct weekly checks or cleaning of the grease trap to ensure proper operation.

Grease trap cleaning is typically conducted by restaurant staff; however, some agencies require that pumping companies conduct the cleaning. This is problematic for most restaurants since the cost of using a pumping company for such a frequent basic cleaning practice may discourage the restaurant from cleaning the grease trap as often as it is needed.

[1] Grease Removal Devices (GRDs) are very similar to grease traps in terms of their size and how they separate the oil and grease from the wastewater. Due to their automatic grease removal design, grease removal devices do not require as much cleaning as grease traps, but they typically require more frequent maintenance.

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Town of Plymouth
Public Health
Prevent. Promote. Protect.

How to Clean Your Internal Grease Trap

Fats, Oils, and Grease (FOG) Reduction Program

Recommendation

Professional waste haulers have more experience with grease trap maintenance and are better equipped to remove and dispose of the materials which accumulate in your grease trap. Because of this, it is recommended to utilize the services of a certified professional for both internal and external grease trap maintenance.

Should you decide to handle the unpleasant task of internal grease trap maintenance on your own, we provide the following procedures.

Why Clean Your Trap?

- **Prevent backups into your establishment or the surrounding neighborhood.**
- **Frequent cleaning reduces odors, makes the trap easier to clean, and reduces the amount of time it takes complete this unpleasant task.**
- **Current regulations, enforceable through the EPA Clean Water Act, require grease traps to be cleaned a minimum of every 90 days or if the total depth of grease and solids exceeds 25%.**

A Picture is worth a thousand words…

Poorly Maintained & Malfunctioning Grease Trap

Grease Accumulating in Sewer Manhole

Same Grease Trap After Repairs and Cleaning

Sanitary Sewer Overflow Caused by Grease Accumulation

Materials

Before you get started you will need the following items…

- A large trash can
- Several **heavy**-duty trash bags (Industrial strength lawn & leaf bags work best and **always** double bag)
- Floor/oil dry (purchased from an auto parts store) or kitty litter
- Tools and safety equipment
  - **Allen wrench set**
  - **Tape measure**
  - **Wooden dowel**
  - **Screw driver**
  - **Pry bar**
  - **Scraper**
  - **Scoop or small bucket**
  - **Wet/dry vacuum**
  - **Rubber gloves**
  - **Safety glasses**
  - **Paper or cloth towels**

Getting Started...

- **Prepare your work area. Clear area of all materials, debris and equipment not being utilized for the cleaning of your grease trap.**
- **Line the trash can with garbage bags. <u>Always</u> double bag.**
- **Place enough floor/oil dry or kitty litter in the bottom of the lined trash can to absorb <u>all</u> liquid waste.**

Note: Due to the odors that may be produced, it is strongly recommended you schedule grease trap maintenance during non-business hours. Always make sure the area is well ventilated when the grease trap is going to be opened. Frequent cleaning will help minimize odors.

Dig **In...**

- **Remove the lid of the grease trap**
  - **Grease trap lids are often heavy. Carefully use a pry bar to lift lid. Use caution to avoid damaging the gasket and keep fingers clear of "pinch points."**
- **Note how parts are installed because you must properly re-install them when you have finished cleaning the trap.**
  - **Missing, damaged, or misaligned internal parts will cause a discharge of FOG into the sanitary sewer system which could cause a backup into your facility or obstruct sewer lines.**
- **Examine the gasket for damage.**
  - **Never use tube silicone as a gasket.**
- **If the rubber gasket has fallen into the trap, remove and clean prior to replacing the lid.**
- **Using wooden dowel and tape measure determine the amount of grease and solids built up in the trap. Record these measurements on the FOG pump-out report.**
- **Begin removing contents of the grease trap by**
  - **Dipping with bucket or scoop**
  - **Vacuuming the contents with a wet/dry vacuum**
- **Do not use…**
  - **Hot water**
  - **Degreasers**
  - **Soaps to clean the internal parts of the grease trap**
- **Scrape the inside walls and baffles.**
- **Flush screens to ensure movement of water through unit.**
- **Use dipper or vacuum to remove scrapings and other residual materials from trap.**
- **Make sure internal components are properly placed and seated.**
- **Reseat gasket and replace lid.**
- **Ensure all liquids have been absorbed by drying material. You may need to add more of this material at this time.**
- **Securely tie bag so it does not leak and place in solid waste receptacle.**
- **Complete and mail your FOG pump out report and update your maintenance record.**

Vent Hood Cleaning

Procedure for Food Service Establishments (FSE)

1. Vent hood cleaning should be done by a properly trained and certified company or person(s).

2. A certificate showing date of cleaning and company employed shall be maintained on the premises.

3. Flammable solvents or cleaning aids shall not be used.

4. Liquid waste can be drained to the grease interceptor. Solids must go to solid waste.

5. A complete pump-out of the interceptor should be scheduled following vent hood cleaning and prior to any additional discharge from the FSE (ex. Before the establishment reopens for business).

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FOG Resources for Food Service Establishments: Evaluation Checklist, Cleaning and Maintenance Record, Staff Training Record, Unit Registration, and List of Approved Septage/Grease Trap Pump Haulers

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FOG Self-Evaluation Checklist

All non-compliance issues will be discussed with Person-In-Charge

Date:	Time:
Establishment:	Inspector/Evaluator:
Street Address:	Phone Contact:
Unit:	Email Contact:

Item	General	Specifics	Code	Notes
		Kitchen and FOG Issues experienced		
1		Residue with Kitchenware		
2		Significant Menu Change Contributions		
3		Equipment/Plumbing Issues		
		Copy of Records Pumping Records and Manifests		
4		Maintenance Log + MFG O&M (+ parts)		
5		Rendering pick-up records		
6		Fume Hood maintenance records		
7		FOG training (material, attendance)		
		Visual Appearance of Housekeeping and related FOG issues		
8		Posters (No grease, Dry Wipe, etc.)		
9		Additive systems		
10		Sink residues		
11		Drains/Screens condition (Interior/Exterior)		
12		Operations (follow BMPs?)		
		Physical environment that prevents FOG related issues (e.g. spills, fires, foodborne illness)		
13		Secured Stored FOG Containers		
14		Water temp checks, ~ 140F		
15		Condition of Roof/Exhaust Area		
		Visual Assessment: Grease Trap Condition		
16		Cleaning equip: avail, condition		
17		Odor(s)		
18		Surcharge		
19		Baffles/tees		
20		Measure Float and Solids < 25%		
21		Downstream MH condition		

Codes: C - Compliant V - Violation NA - Not Applicable NC - Not Checked

Grease Trap and/or Grease Interceptor Cleaning & Maintenance Record

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Facility Name: _____

Facility Address: _____

* Recommended cleaning frequency for Grease Trap (under-sink unit usually 20 gal to 50-gal capacity) is every 2 weeks
* Recommended cleaning frequency for Grease Interceptor (underground unit usually 500 to 1500-gal capacity) is Minimum of every 90 days. During the interceptor cleaning, the complete contents (including bottom solids & top grease layer) should be removed.

Date	Cleaned by:	Estimated Gallons	Condition of Device, other maintenance, comments	Signature of Manager or Authorized Representative

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FOG Staff Training Record

Training Topic examples:
BMPs, How To clean/inspect, FOG Minimization Other: FOG Regulations

Date	Staff Name	Topic(s)/Issues	Manager

Town of Plymouth Public Health Department and Sewer Divsion
FATS, OILS AND GREASE (FOG) Trap Unit Registration

Food Establishment Name: Street Address:

FACILITY OPERATIONAL CHARACTERISTICS

1. Please indicate the quantity of each item that you currently have in your facility or will install.

____ Grill	____ Deep Fryer	____ 3 Bay Pot Sink
____ Oven	____ Floor Drains	____ 2 Bay Pot Sink
____ Dishwasher	____ Hand Sink	____ Single Bay Sink
____ Pre Rinse Sink	____ Tilt Kettle/Crock Pot	____ Other Equipment
____ Mop Sink	____ Garbage Disposal	

DISCHARGE INFORMATION

2. Fill in the following information about your current wastewater flow.

_____ Maximum Daily Flow (gpd)	_____ Average Daily Flow (gpd)
_____ No. of hours per day discharge occurs	_____ Start Date of Discharge

3. Identify the Best Management Practices (BMPs) to be implemented by the permittee to minimize the adverse environmental effects of activities authorized under this permit. (See Town of Plymouth Public Health Department and Sewer Division FOG Control Program Guidance Manual for BMPs)

☐ Train Kitchen Staff	☐ Post "No Grease" signs
☐ Recycle waste cooking oil	☐ Clean grease traps routinely
☐ Cover outdoor grease & oil storage containers	☐ Keep a maintenance log
☐ Dispose of used oil through a licensed grease hauler	☐ Dry wipe pots, pans, and dishware prior to dishwashing
☐ Use absorbent pads or other material to clean up spilled material	☐ Witness all grease trap cleaning and maintenance
☐ Routinely clean kitchen exhaust system filters	Utilize grease trap monitoring system
☐ **Reviewed BMP's List (Available on www.PlymouthPublicHealth.com)**	☐ **Reviewed Guidance Manual (Available on www.PlymouthPublicHealth.com)**

GREASE TRAP INFORMATION

ID #	Location	Make, Model & Size	New or Existing

Licensed Grease Recycler Information

Name of Recycler _____ Phone _____

Licensed Grease Disposal / Hauler Information

Name of Hauler _____ Phone _____

Monitoring System

Type of Monitoring System (ultrasonic, etc.) _____
Manufacturer _____ Phone _____
Model/Serial No. _____ Date of installation: _____

Note: Monitoring Systems must comply with PDI G-102.

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List of Approved Septage & Grease Trap Pump Haulers

This is a listing of companies available to contact about pumping your grease trap

They may or may be able to assist with the direct cleaning; You must verify that capability with them

WIND RIVER ENVIRONMENTAL

WASTE WATER SERVICES INC.

WARREN BUSH

VEOLIA SUPPORT SERVICES NORTH AMERICA

UNITED SITE SERVICES NORTHEAST INC.

CASOLI SAND & GRAVEL

SOARES SANITATION PUMPING

SMITH EXCAVATING

SEA STAR/BOUSEFIELD SEPTIC PUMPING

ROSANO DAVIS SANITARY PUMPING

B&E EXCAVATING

RICHARD M CAPEN

READY-ROOTER

RAGGS SEPTIC SERVICE INC.

PUREFLO, LLC

PUMPRITE SANITATION

PLYMOUTH SEPTIC SERVICE

PAGE CORP

B. GILPIN SEPTIC SERVICE

ALL-TOWN

BAY STATE SEWAGE

NEIGHBORHOOD WASTE WATER SERVICES

MURPHY BROS. EXCAVATING, LLC

MIDDLEBORO/LAKEVILLE CESSPOOL SERVICES

ADAMS SANITARY SERVICE

MCGONAGLE SEPTIC SERVICES

CAPE COD SEPTIC SERVICES INC.

J.P. NOONAN TRANSPORTATION INC.

STEWARTS/ANDOVER/STRATHAM HILL SEPTICS

HOWLAND DISPOSAL SERVICES

UNITED SITE SERVICES

GELLAR'S REPAIR SERVICE

GARY & JERAMIAH RICHMOND

FRED E NAVA & SON

FLOWMASTER CORP.

GIBBS SEPTIC SERVICE

RAGGS SEPTIC SERVICE, INC.

DRK MOBILE TOILETS & SEPTIC PUMPING

CLAUDE DUBORD & SON INC.

CHURCHILL'S PUMPING SERVICE

CAPEWAY ACTION CESSPOOL

BOLDUC SANITATION & EXCAVATION

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