



FOOD SERVICE ESTABLISHMENT (FSE) EMPLOYEE TRAINING

Hampton Roads Planning District Commission
REGIONAL FOG PROGRAM

FOG CERTIFICATION

www.HRFOG.com

OBJECTIVE

- To provide education and awareness to Food Service Establishment (FSE) employees about Fats, Oils and Grease (FOG), the background and purpose of the local FOG Programs and to understand the responsibility of the FSE for preventing illicit FOG discharges.
- To provide education and understanding on how using kitchen Best Management Practices (BMPs) to control FOG, can prevent sewer blockages and Sanitary Sewer Overflows (SSOs).
- To provide education and proper techniques for FSE employees who have obtained approval from the local FOG program manager to clean and maintain a grease control device (GCD) in house.
- Upon successful completion, this training provides the required certification with the regional FOG programs and is valid for (3) three years.

BACKGROUND

- In 2007, Special Orders of Consent were entered into between Virginia Department of Environmental Quality (DEQ), HRSD and area localities to resolve sanitary sewer overflows (SSOs).
- Fats, Oils and Grease (FOG) contribute to two-thirds of all SSOs in our region.
- Management, Operations and Maintenance (MOM) Programs were established to efficiently resolve SSOs.
- FOG programs were developed with MOM principles to monitor and regulate FOG waste.
- Food service establishments (FSEs) and grease hauler certification programs were established to teach FSE employees and haulers about the ordinances and their responsibilities.

WHAT IS FOG?



- Fats, Oils, and Grease
- Any combination of animal fats and/or vegetable oils that are used to prepare food, or are naturally found in food. May also be referred to as Brown Grease.

FOG SOURCES IN AN FSE

- Fatty Foods
- Cooking Oils
- Food Scraps
- Utensils, Dinnerware
- Salad Dressings
- Deep Fried Foods
- Dairy Products
- Batters, Icing
- Ice Cream, Frozen Yogurt



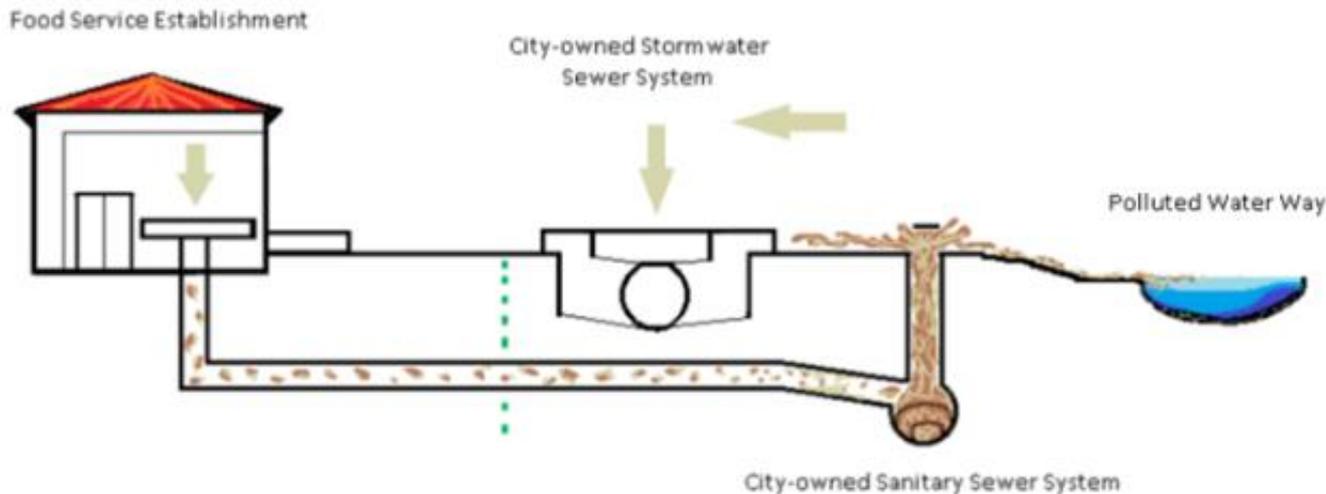
THE FOG PROBLEM



- When discharged into sewer lines, FOG accumulates and sticks to pipe walls causing blockages and backups in the sanitary sewer system.
- Significant sources of FOG are: residential homes, high-density housing complexes, and commercial kitchens in FSEs.

SANITARY SEWER OVERFLOWS (SSOs)

- Sanitary Sewer Overflows are violations of state and federal law and are associated with civil penalties.
- SSOs pose a threat to the environment and public health.



YELLOW GREASE (USED COOKING OIL)

HANDLING & STORAGE



Used cooking oil should be collected and stored in indoor and/or outdoor recycling storage containers clearly labeled with the restaurant name.



Oil storage containers should be stored away from storm drain openings and should remain covered with a securely fitting lid to avoid spills or overflows.



Only used cooking oil from frying (not grease control devices) should go in the oil storage container.



Routinely inspect storage containers for open lids, spills, or illegal dumping.



Train kitchen staff routinely on best management practices for safely handling and disposing of used cooking oil.



YELLOW GREASE (USED COOKING OIL)

SERVICE



Used cooking oil is picked up by vendors/haulers who reuse or recycle it into other products.



Before the oil storage container is full, call your vendor for service.



Keep a log on site to record the date of each disposal by the vendor and the approximate volume of cooking oil removed.



HANDLING OIL SPILLS

Spills can happen during deposits or withdrawals from a cooking oil recycling container. If there is a spill, follow these steps to assess the situation and clean it up immediately:

- 1 Stop/contain the spill and prevent it from reaching storm drains with absorbent pads and socks. (Do not attempt to clean up spills by rinsing/hosing or using degreasers.)
- 2 If you cannot absorb the spill, call a professional cleanup and recovery company to collect and remove the grease and wash water to prevent it from entering the storm drain.

KITCHEN BEST MANAGEMENT PRACTICES (BMPs)



NEVER pour cooking residue directly into the drain.

NUNCA vierta residuos de cocina directamente en el drenaje.

切勿将烹饪残渣直接倒入下水道。



NEVER dispose of food waste into the garbage disposal.

NUNCA eche restos de comida en la trituradora de basura.

切勿将食物残渣倒入垃圾处理器中。



ALWAYS wipe pots, pans, and work areas prior to washing.

SIEMPRE limpie con un paño las ollas, sartenes y áreas de trabajo antes de lavarlas.

请务必在清洗之前擦净厨具并清洁工作区域。



ALWAYS dispose of food waste directly into the trash can.

SIEMPRE elimine los restos de comida directamente en el contenedor de basura.

请务必将食物残渣直接倒入垃圾桶。

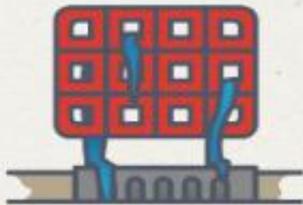
KITCHEN BEST MANAGEMENT PRACTICES (BMPs)



NEVER pour waste oil down the drain.

NUNCA vierta restos de aceite en el drenaje.

切勿将废油倒入下水道。



NEVER wash floor mats where water will run off directly into the storm drain.

NUNCA lave tapetes de piso en sitios donde el agua corra directamente hacia el drenaje de lluvias.

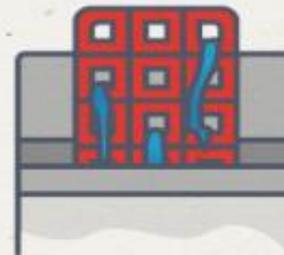
切勿在水可直接流入雨水排水沟的地方清洗地垫。



ALWAYS collect waste oil and store for recycling.

SIEMPRE recolecte los restos de aceite y guárdelos para su reciclaje.

请务必收集废油并存储以进行循环再利用。



ALWAYS clean mats inside over a utility sink that is connected to a grease control device.

SIEMPRE lave los tapetes de piso en un fregadero de lavado que esté conectado a un atrapagrasas.

请务必在接好油控装置的公用水槽中清洗地垫。

KITCHEN BEST MANAGEMENT PRACTICES (BMPs)



Post “no grease” signs and scrape the plate signs above all sinks to ensure employees are always reminded of best kitchen practices.

GENERAL GCD INFORMATION



Hampton Roads localities have or are developing ordinances that require FSEs to maintain GCDs and dispose of FOG waste properly.



Any person cleaning GCDs must be certified under the HR FOG Program. Cleaning of GCDs by FSE employees must be approved by the local FOG Program Manager.



Any person pumping, collecting and hauling must dispose of FOG waste at an approved disposal site and have all applicable permits.



Most localities require that a GCD be sized and selected in accordance with the Hampton Roads Regional Technical Standards for Grease Control Devices.



The FSE is required to keep GCD cleaning/maintenance records on site for three (3) years. Documentation requirements vary based on the type of GCD on site.

GREASE CONTROL DEVICE (GCD) TYPES



Gravity Grease Interceptor (GGI) -
outside, concrete



Hydro-mechanical Grease Interceptor (HGI)
- In floor or under a sink



Automatic Grease Removal Device –
plugged in



High Capacity Hydro-mechanical Grease Interceptor

- GCDs are the last line of defense against FOG discharge.
- GCDs are passive devices that use retention time and/or gravity to separate FOG and solids from kitchen wastewater.
- All GCDs must be installed, registered and regularly maintained according to the FSE's local FOG Program.

GRAVITY GREASE INTERCEPTOR (GGI)



- Gravity Grease Interceptors (GGIs) are traditionally made from concrete with sizes commonly ranging from 250 - 2,000 gallons.
- Because there is no evidence to support their effectiveness for FOG retention, new installations may be discontinued in some localities.
- These devices require a large footprint for installation and are typically located outside of an FSE in the ground.

HYDRO-MECHANICAL INTERCEPTOR (HGI)



flow control

- HGIs (often referred to as “legacy” units) were previously referred to as “grease traps.” They are traditionally made of acid-resistant enamel or epoxy-coated metal.
- These devices are tested and rated to a flow rate in gallons per minute (gpm) and a grease capacity in pounds. Typically lbs of grease retention is double its flow rate. i.e. 25gpm / 50lbs
- They are typically approved for inside installation and are usually found underneath a 3-compartment sink or in the floor of a commercial kitchen. All HGIs require a flow control device.
- Check with your local FOG Program Managers for specific requirements and information on installing and cleaning HGIs.

HYDRO-MECHANICAL INTERCEPTOR rated for HIGH GREASE CAPACITY RETENTION



- These devices differ from “legacy” HGIs. They are typically made from high-grade durable plastic and are tested and certified to retain a higher amount of grease.
- These devices come in a variety of sizes in gpm and pounds of grease retention and can be rated for inside and outside installation.
- HGIs must be cleaned by a certified grease hauler, unless otherwise approved. HGI cleaning frequency will be determined by the local FOG Program Manager.
- Check with local FOG program managers for specific requirements and information on installing and cleaning HGIs.

AUTOMATIC GREASE REMOVAL DEVICE (AGRD)



- AGRDs are active, automatic devices that separate and remove FOG by an electromechanical apparatus.
- These devices are typically rated for inside installation of a commercial kitchen.
- AGRDs must be plugged into an electrical supply at all times.
- **Check with local FOG program managers for specific requirements and information on cleaning AGRDs.**

CLEANING GREASE CONTROL DEVICES

Gravity Grease Interceptor (GGI)	Must be cleaned by a certified grease hauler. Typical cleaning is every 90 days or when 25% full of FOG and solids, whichever occurs first. Cleaning frequency is determined by the local FOG Program Manager.
"Legacy" Hydro-mechanical Grease Interceptor (HGI)	Must be cleaned by a certified grease hauler, unless otherwise approved. HGI cleaning frequency is based on the FSEs grease factor and determined only by the local FOG Program Manager and must be cleaned at a minimum when 25% full of FOG waste and solids.
Hydro-mechanical Interceptor rated for High Grease Capacity Retention	Must be cleaned by a certified grease hauler, unless otherwise approved. HGI cleaning frequency will be determined by the local FOG program manager.
Automatic Grease Removal Device	Must be cleaned as recommended by the manufacturer with approval from the local FOG Program Managers. Most require daily emptying of the external grease bucket and internal solid basket.

THE ISSUE WITH CONCRETE, EPOXY OR ENAMEL COATED GCDS



Wastewater becomes acidic and eats away at metal and concrete. Once the epoxy or enamel coating is chipped, the corrosion process begins.

GENERAL GCD CLEANING PROCEDURES



Decanting (discharging of the removed waste back into the GCD) procedures are prohibited throughout the region.



GCDs may have two or more compartments and each side must be pumped and cleaned thoroughly. Check to make sure both sides are accessible for cleaning.



Once GCD is completely emptied, hydro-jetting services may be performed (semi-annual service is recommended).



Line jetting from the FSE to the GCD can be used to remove and collect FOG buildup as a preventative maintenance measure. *(Be sure the contractor collects contents from line jetting so it does not enter the sanitary sewer system.)*

GREASE HAULER REQUIREMENTS FOR CLEANING GCDS

In most localities, grease haulers must have the following:

- Proper permits for waste hauling with the Virginia Department of Health and Virginia DEQ
- A permit from an approved disposal facility (i.e. HRSD)
- A certificate from the HR FOG Program (www.hrfog.com)

To service an FSE in Hampton Roads, the grease hauler must have:

- HR FOG Program certification ID number
- FOG removal and GCD cleaning equipment
- Disposal site information
- Manifest documentation

***Check with your local FOG Program for specific grease hauler requirements**



GREASE HAULER SERVICE BEST MANAGEMENT PRACTICES

- The hauler and FSE should coordinate service dates and time for GCD cleanings.
- The hauler and FSE should maintain open communication regarding the GCD and GCD maintenance, including:
 - GCD structural condition and capacity
 - Anticipation of seasonal changes that may impact cleaning frequency
 - Compliance with proper cleaning frequency as determined by the local FOG Program Manager

Check with local FOG program managers for specific requirements.



GREASE HAULER SERVICE BEST MANAGEMENT PRACTICES



Your grease hauler must use a sludge judge or other appropriate measuring tool to determine the amount of FOG waste and settled solids prior to cleaning any type of GCD.

If greater than 25%, the cleaning must be scheduled more frequently.



SLUDGE JUDGE MEASUREMENTS FOR GCDS

The measurements in this example are:

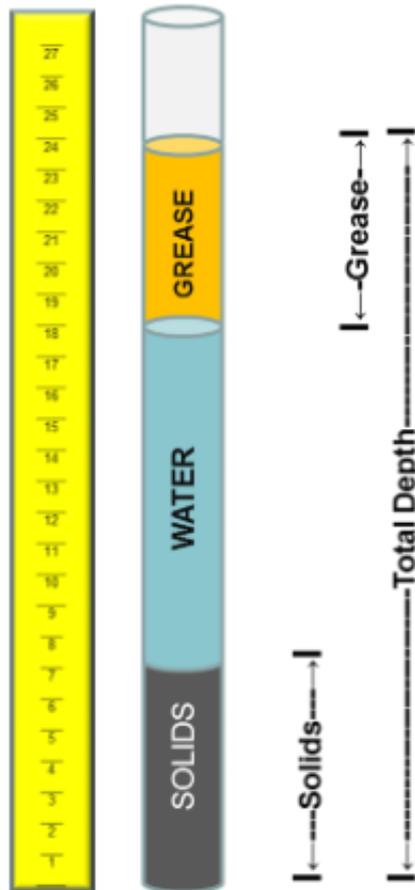
Solids - 7"

Grease - 6"

Total Depth - 24"

For GGLs, see local FOG Program Manager for guidance on taking proper sludge judge measurements.

**These numbers are only an example; you will have to measure each time a GCD is cleaned.*



- Document the following three measurements (in inches) on the service ticket to be left with the FSE.
 - Solids
 - Grease
 - Total Depth
- Accuracy is important and will be spot checked.
- Record sludge judge readings (as illustrated) and a condition report on every service ticket.

SLUDGE JUDGE MEASUREMENTS FOR GCDS CALCULATING FOG %

The measurements in this example are:

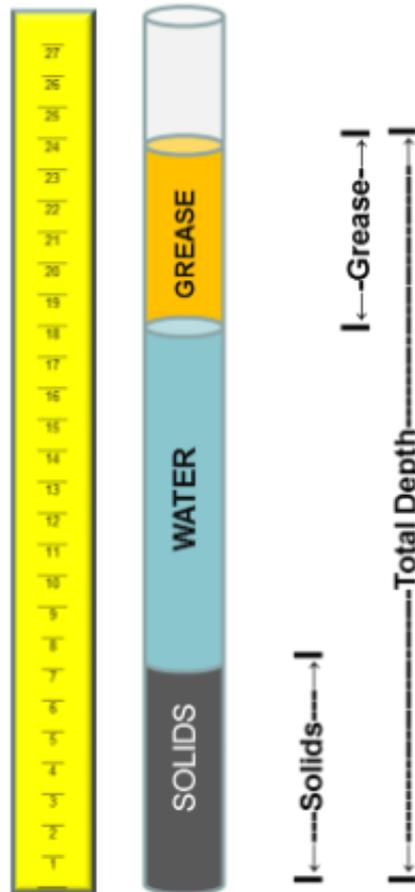
Solids - 7"

Grease - 6"

Total Depth - 24"

For GGIs, see local FOG Program Manager for guidance on taking proper sludge judge measurements.

**These numbers are only an example; you will have to measure each time a GCD is cleaned.*



After measuring, use the following formula to calculate the FOG %

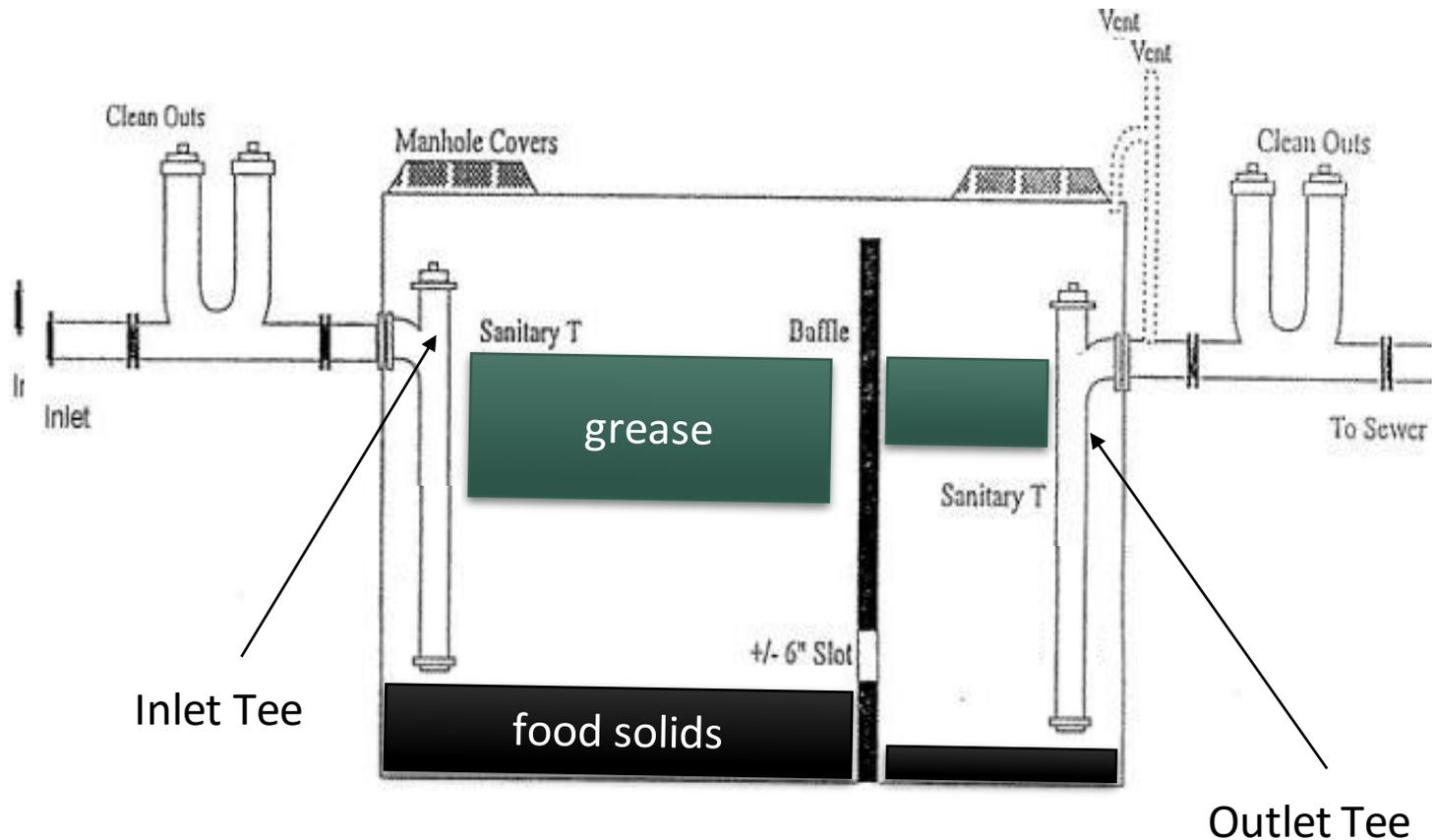
$(\text{Solids} + \text{Grease}) / \text{Total Depth} \times 100$

$$(7 + 6) / 24 \times 100 = \mathbf{54.16\%}$$

**54% exceeds the 25% rule for FOG accumulation and would require more frequent cleaning if not a high capacity HGI. If high capacity HGI, compare depths to manufacturer-approved depths*

GRAVITY GREASE INTERCEPTOR (GGI) PUMPING/ CLEANING AND INSPECTION PROCEDURES

Generic Sample Gravity Grease Interceptor



GRAVITY GREASE INTERCEPTOR (GGI) PUMPING/CLEANING AND INSPECTION PROCEDURES



Tee Missing



Tee in place



Deteriorated
Baffle

The certified grease hauler should be doing the following, when performing the GGI cleaning and inspection:

- Locate and note condition of all manhole covers, lids, and cleanout covers.
- Take a core measurement (sludge judge reading) of the settled solids, water level, and grease layer.
- Pump the entire contents out of the GGI into an approved disposal container/truck. *Decanting is prohibited throughout the region.*
- Scrape or pressure wash interior walls.
- Locate Inlet and Outlet Tees and ensure proper depth.
- Note any visible holes or leaks in tank, or signs of corrosion/rust. Visually check condition of baffle(s) and location of baffle opening.
- Record any findings on cleaning manifest and notify FSE management of any maintenance issues.

HYDRO-MECHANICAL INTERCEPTORS (HGI)* CLEANING AND INSPECTION PROCEDURES

To properly clean your HGI, you will need the following tools. For step-by-step instructions on how to clean your HGI, visit <http://hrfog.com/Home/Learn>



A trash can and multiple trash can liners/bags (heavy duty) or sealable containers



Absorbent material (floor dry, unscented kitty litter, saw dust, etc.)



Proper hand tools and safety equipment for opening trap (Allen wrench, screw driver, rubber gloves, etc.)



Tools for removing contents:
1. Scoop for water and solids
2. Scraper (putty knife)
3. Wet/dry vacuum



Paper towels or cloth rags



Measuring device (small sludge judge or clear plastic cup marked in inches, etc.)



Safety eyewear

***Self-cleaning of HGIs is subject to approval by your local FOG Program Manager. Check before cleaning.**

GCD MAINTENANCE RECORDS



Hauler Information

- Driver information (printed name, signature, and HR FOG Program hauler certification number)
- Type of waste (details on mixed waste)
- Anticipated disposal site information



FSE Information

Name & Address
of FSE



Sludge Judge Measurements

Including total
depth, grease and
solids
measurements,
not just total
volume of FOG
removed



Condition Report

Tees, baffle
wall, overall
tank condition.

FSE and grease haulers must retain maintenance records for three (3) years.

FSE TRAINING HIGHLIGHTS



Proper documentation and accurate measurements are critical to properly maintain.



GCDs shall be completely cleaned with all contents removed entirely.



All records shall be retained for a minimum of 3 years.



Following appropriate cleaning schedules and procedures help to eliminate FOG discharge into the sanitary sewer system.



NEVER use hot water, acids, caustics, solvents, enzymes, or emulsifying agents in place of cleaning GCDs.



Discharging brown and/or yellow grease into the sanitary sewer or stormwater system is prohibited.



For more information regarding the Regional FOG program, contact:

Hampton Roads Planning District Commission

Regional FOG Program

www.HRFOG.com

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