



*Fats, Oils, and Grease  
Best Management Practices*

*Pollution Prevention and  
Compliance Information for  
Publicly-Owned Treatment Plants*



## Acknowledgements

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The information in this manual can also be found at the Oregon Association of Clean Water Agencies website at: <http://www.oracwa.org>

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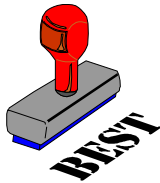
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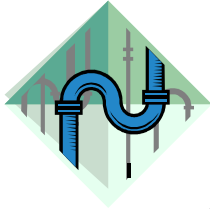
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## Chapter 1

# Introduction

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Fats, oils, and grease—also called FOG in the wastewater business—can have negative impacts on wastewater collection and treatment systems. Most wastewater collection system blockages can be traced to FOG. Blockages in the wastewater collection system are serious, causing sewage spills, manhole overflows, or sewage backups in homes and businesses.

Two types of FOG pollutants are common to wastewater systems. Petroleum-based oil and grease (non-polar concentrations) occur at businesses using oil and grease, and can usually be identified and regulated by municipalities through local limits and associated pretreatment permit conditions. Animal and vegetable-based oil and grease (polar concentrations) are more difficult to regulate due to the large number of food service establishments (FSE's) in every community.

This manual is written to provide municipal pretreatment staff—along with FSE managers and owners—with information about animal and vegetable-based oil and grease pollution prevention techniques focused on their businesses, effective in both reducing maintenance costs for business owners, and preventing oil and grease discharges to the sewer system.



Many of the nation's FSE chains participate in FOG recycling programs. Ensuring that hydromechanical grease interceptors (HGI's) and gravity grease interceptors (GGI's) are properly installed—and most importantly, properly maintained—is more difficult.

This manual focuses on proper maintenance of HGI's and GGI's, and includes inspection checklists for municipal pretreatment inspectors.

Manual contents include:

- Frequently Asked Questions about Fats, Oil, and Grease
- Best Management Practices (BMPs)
- Prohibitions Relating to Discharge of Fats, Oil, and Grease
- HGI and GGI Maintenance
- Fats, Oil, and Grease Haulers and Recyclers
- How HGI's and GGI's Work
- Compliance Inspection and Installation Checklists

Knowledgeable municipal pretreatment staff, working with business owners, can effectively prevent oil and grease buildup, and associated problems, for both the sewerage agency and the FSE owner.

## Chapter 2



# Frequently Asked Questions about Fats, Oil, and Grease

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### **Is grease a problem?**

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

*Large amounts of oil and grease in the wastewater cause trouble in the collection system pipes. It decreases pipe capacity and, therefore, requires that piping systems be cleaned more often and/or some piping to be replaced sooner than otherwise expected. Oil and grease also hamper effective treatment at the wastewater treatment plant.*

Grease in a warm liquid may not appear harmful. But, as the liquid cools, the grease or fat congeals and causes nauseous mats on the surface of settling tanks, digesters, and the interior of pipes and other surfaces which may cause a shutdown of wastewater treatment units



Problems caused by wastes from FSE's and other grease-producing establishments have served as the basis for ordinances and regulations governing the discharge of grease materials to the sanitary sewer system. This type of waste has forced the requirement of the installation of preliminary treatment facilities, commonly known as hydromechanical or gravity grease interceptors.

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

An HGI is a small reservoir built into the wastewater piping a short distance from the grease producing area. Baffles in the reservoir retain the wastewater long enough for the grease to congeal and rise to the surface. The grease can then be removed and disposed properly. See *How Hydromechanical and Gravity Grease Interceptors Work* for a description of how the various components of an interceptor function.

### **What is a gravity grease interceptor?**

A GGI is a vault with a minimum capacity of between 500 and 750 gallons that is located on the exterior of the building. The vault includes a minimum of two compartments, and flow between each compartment is through a 90-degree fitting designed for grease retention. The capacity of the interceptor provides adequate residence time so that the wastewater has time to cool, allowing any remaining grease not collected by the traps time to congeal and rise to the surface where it accumulates until the interceptor is cleaned. See *How Hydromechanical and Gravity Grease Interceptors Work* for a description of how the various components of a GGI function.

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

Refer to *Maintenance of Hydromechanical and Gravity Grease Interceptors*.



## **Can you recommend a grease interceptor maintenance schedule?**

All grease interceptors should be cleaned at least four times each year. All HGI's should have a minimal service at least once a week. If the establishment has to clean it too often, the owner should consider installing a larger HGI or GGI.

## **Do I have a grease interceptor?**

If the establishment is uncertain whether it has a grease interceptor, the owner should contact the local sewer agency for the community served.

## **Do I need a grease interceptor?**

Any establishment that introduces fat's, oil's or grease into the drainage and sewage system in any amount is required to install a grease interceptor. Whether the FSE installs a HGI or a GGI will be determined by the Administrative Authority for the community served.



### Is the grease interceptor I have adequate?

The Uniform Plumbing Code (UPC) requires that no grease interceptor have a capacity less than 20 gallons per minute (gpm) or more than 500 gpm. The size of the interceptor depends upon the number of Drainage Fixture Unit (DFU) connected to it. The following tables provide criteria for sizing grease traps and calculating the DFU's (*see Table 7-3 in the Oregon Plumbing Specialty Code to determine the correct DFU count*).

HGI Sizing Chart	
DFU	HGI Flow Rate (gpm)
8	20
10	25
13	35
20	50
35	75
172	100
216	150
342	200
428	250
476	350
720	500

Drainage Fixture Unit Values (DFU)	
	DFU Value
Service or Mop Basin	3
Floor Drain	2
Kitchen Sink Commercial	3



The size will also depend largely upon the maintenance schedule. If a HGI or GGI is not maintained regularly it will not provide the necessary grease removal. The establishment should work out a specific cleaning schedule that is right for the establishment. All grease interceptors need to have the grease cleaned out periodically and no one likes to do the job. It is a dirty job. Running extremely hot water down the drain only moves the problem downstream. It does not go away. Catch the grease at the source! This is the most economical means to reduce all costs.

### **What if I don't install a grease interceptor?**

If an establishment discharges fats, oils, and grease, it will eventually encounter a maintenance problem with a plugged building sewer line. The blockage can create a sewer backup situation and ultimately a potential health problem in the establishment. Someone will have to pay for removing the blockage. If the problem is in the building sewer line, then the establishment has direct responsibility for paying for the cleanup and maintenance. If the blockage or restriction is in the public sewer main and it can be proven that the establishment is the cause of the blockage, then the establishment may have to pay for the public sewer to be maintained to prevent further problems. Blocking a sanitary sewer line is also a violation of the federal Clean Water Act.

### **Who determines if I need a hydromechanical or gravity grease interceptor?**

When waste pretreatment is required by the Jurisdiction Having Authority, an approved HGI or GGI shall be installed according to the UPC. All administrative authorities prohibit the discharge of materials that can solidify and create blockages in the wastewater collection system or treatment plants. The Health Department also makes periodic inspections to see that no health problems exist due to improperly maintained grease interceptors. These rules will be enforced if a problem exists.



## How can I get in compliance?

The establishment should contact its local jurisdiction. The establishment will be asked to purchase a permit for the grease interceptor installation. This will enable the proper jurisdiction to assist the establishment in cleaning schedules and advise them of a problem showing up in the wastewater collection system.

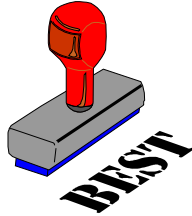
## What are the criteria for inspecting grease traps?

All FSE's suspected of discharging fats, oils, and grease to the collection system or treatment facilities will be inspected. Some agencies use the following criteria to inspect hydromechanical grease interceptors:

Percent of hydromechanical interceptor filled	Trap condition
25	Good
25–50	Fair
>50	Poor

If the HGI is in fair condition, the establishment should be advised to keep an eye on the maintenance schedule. The cleaning frequency may need to be increased. If the HGI is in poor condition, the establishment should be issued a compliance order to have it cleaned immediately. The establishment should then be required to contact the issuing authority within 30 days to verify that the grease interceptor has been properly cleaned.

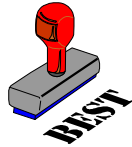
## Chapter 3



# Best Management Practices (BMPs)

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Fats, oils, and grease can be managed effectively in the food service industry to minimize adverse impacts on municipal wastewater systems and the environment. Municipal pretreatment staff and food service industry workers have developed BMPs that, when implemented, will minimize the adverse impacts of FOG. This chapter summarizes these BMPs, and other important information, including the reason for BMPs, the benefit of BMPs to the food service industry, and inspection tips for municipal pretreatment staff to determine if the BMPs are being implemented.



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### ***Train kitchen staff***

<b>BMP</b>	Train kitchen staff and other employees about how they can help ensure BMPs are implemented.
<b>Reason For</b>	People are more willing to support an effort if they understand the basis for it.
<b>Benefit to food service establishment</b>	All of the subsequent benefits of BMPs will have a better chance of being implemented.
<b>Pretreatment inspection tips</b>	Talk to the establishment manager about the training program that he/she has implemented.

### ***Post “No Grease” signs***

<b>BMP</b>	Post “No Grease” signs above sinks and on the front of dishwashers.
<b>Reason For</b>	Signs serve as a constant reminder for staff working in kitchens.
<b>Benefit to food service establishment</b>	These reminders will help minimize grease discharge to the HGI and GGI and reduce the cost of cleaning and disposal.
<b>Pretreatment inspection tips</b>	Check appropriate locations for “No Grease” signs.



### ***Use water temperatures less than 140°F***

---

**BMP**

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 UPC prohibits discharging the dishwasher to HGI's.

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**Reason For**

Temperatures in excess of 140° F will dissolve grease, but the grease can re-congeal or solidify in the sanitary sewer system as the water cools.

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**Benefit to food service establishment**

The food service establishment will reduce its costs for the energy—gas or electric—for heating the water.

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**Pretreatment inspection tips**

Check boiler or hot water heater discharge temperature.

Measure the temperature of the hot water being discharged from the closest sink.

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### ***Use a three-sink dishwashing system***

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**BMP**

Use a three-sink dishwashing system, which includes sinks for washing, rinsing, and sanitizing in a 50 to 100 ppm bleach solution. Water temperatures are less than 140° F.

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**Reason For**

The three-sink system uses water temperatures less than 140° F where a mechanical dishwasher may require a minimum temperature of 160° F.

Note: The UPC prohibits the discharge of dishwasher water to HGI's.

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**Benefit to food service establishment**

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.

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**Pretreatment inspection tips**

Measure the temperature of the hot water at the three-sink system.

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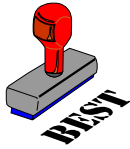


### ***Recycle waste cooking oil***

<b>BMP</b>	Recycle waste cooking oil.
<b>Reason For</b>	There are many waste oil recyclers throughout Oregon. This is a cost recovery opportunity.
<b>Benefit to food service establishment</b>	The food service establishment will be paid for the waste material and will reduce the amount of garbage it must pay to have hauled away.
<b>Pretreatment inspection tips</b>	Obtain the name of the recycler used. Review recycling records. Confirm records with the recycler.

### ***“Dry wipe” pots, pans, and dishware prior to dishwashing***

<b>BMP</b>	“Dry wipe” pots, pans, and dishware prior to dishwashing.
<b>Reason For</b>	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 HGI and GGI.
<b>Benefit to food service establishment</b>	This will reduce the amount of material going to HGI and GGI, which will require less frequent cleaning, reducing maintenance costs.
<b>Pretreatment inspection tips</b>	Observe dishwashing practices.



***Dispose of food waste by recycling and/or solid waste removal***

**BMP**

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Dispose of food waste by recycling and/or solid waste removal.

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**Reason For**

Some recyclers will take food waste for animal feed. In the absence of such recyclers, the food waste can be disposed as solid waste in landfills by solid waste haulers.

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**Benefit to food service establishment**

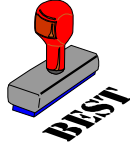
Recycling food wastes will reduce the cost of solid waste disposal.  
Solid waste disposal of food waste will reduce the frequency and cost of grease trap and interceptor cleaning.

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**Pretreatment inspection tips**

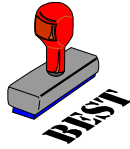
Inspect HGI's and GGI's for food waste accumulation.  
Confirm the recycler or solid waste removal company with the establishment manager.

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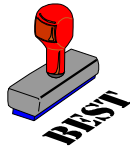
***Witness all hydromechanical or gravity grease interceptor cleaning and maintenance***

<b>BMP</b>	Witness all HGI or GGI cleaning and maintenance activities to ensure that the device is properly operating.
<b>Reason For</b>	Grease waste haulers and recyclers may take shortcuts. If the establishment manager inspects the cleaning operation and ensures it is consistent with the procedures in <i>Hydromechanical and gravity grease Interceptor Maintenance</i> they are more assured of getting full value for their money.
<b>Benefit to food service establishment</b>	The establishment will ensure it is getting value for the cost of cleaning the HGI and GGI. Otherwise the establishment may be paying for cleaning more often than necessary.
<b>Pretreatment inspection tips</b>	None.



## ***Clean hydromechanical grease interceptors weekly***

<b>BMP</b>	<hr/> <p>If an HGI is more than 50 percent full when cleaned weekly, the cleaning frequency needs to be increased.</p> <hr/>
<b>Reason For</b>	<p>Hydromechanical grease interceptors have less volume than gravity grease interceptors.</p> <p>Weekly cleaning of HGI's by the establishment's own maintenance staff will reduce the cost of cleaning the grease interceptor.</p> <p>If the establishment does not have a GGI, the HGI is the only means of preventing grease from entering the sanitary sewer system. If the HGI is not providing adequate protection, the local sewer agency may require installation of a gravity grease interceptor.</p> <hr/>
<b>Benefit to food service establishment</b>	<p>This will extend the length of the cleaning cycle for grease interceptors that the establishment maintains.</p> <hr/>
<b>Pretreatment inspection tips</b>	<p>Visually inspect the contents of the hydromechanical grease interceptor.</p> <p>Inspect cleaning records.</p> <hr/>



## ***Clean gravity grease interceptors routinely***

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### **BMP**

Clean gravity grease interceptors routinely.

---

### **Reason For**

GGI's 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.

---

### **Benefit to food service establishment**

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.

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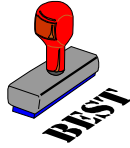
### **Pretreatment inspection tips**

GGI's should have no more than 1/3 the depth as grease, **AND**

GGI's should have no more than 1/4 the depth as sediment, **AND**

No more than 50 percent of the depth should be a combination of grease (top) and sediment (bottom).

---



## ***Keep a maintenance log***

---

**BMP**

Keep a maintenance log.

---

**Reason For**

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 HGI/GGI maintenance is performed on a regular basis.

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**Benefit to food service establishment**

The maintenance log serves as a record of cleaning frequency and can help the establishment manager optimize cleaning frequency to reduce cost.

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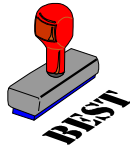
**Pretreatment inspection tips**

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.

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## ***Cover outdoor grease and oil storage containers***

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### **BMP**

Cover outdoor grease and oil storage containers.

Some local jurisdictions will have BMPs in place for storm water also.

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### **Reason For**

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.

---

### **Benefit to food service establishment**

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.

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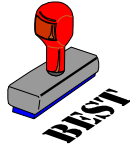
### **Pretreatment inspection tips**

Observe storage area for signs of oil and grease.

Inspect containers for covers.

Remove covers to ensure containers have not overflowed and do not have excess water.

---



***Locate grease dumpsters and storage containers away from storm drain catch basins***

**BMP**

---

Locate grease dumpsters and storage containers away from storm drain catch basins.

---

**Reason For**

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.

---

**Benefit to food service establishment**

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.

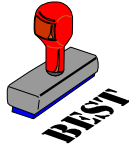
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**Pretreatment inspection tips**

Observe storage area for signs of oil and grease.

Inspect the closest catch basin for signs of accumulated grease and oil.

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***Use absorbent pads or other material in storm drain catch basins***

**BMP**

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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.

---

**Reason For**

Absorbent pads and other materials can serve as an effective barrier to grease and oil entering the storm drain system.

---

**Benefit to food service establishment**

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.

Also, discharge of grease and oil to the storm drain may result in legal penalties or fines.

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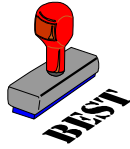
**Pretreatment inspection tips**

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***

**BMP**

---

Use absorbent pads or other material to clean up spilled material around outdoor equipment, containers or dumpsters.

Do not use free flowing absorbent materials such as “kitty litter” or sawdust that can be discharged to the storm drain.

---

**Reason For**

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.

---

**Benefit to food service establishment**

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.

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**Pretreatment inspection tips**

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.”

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## ***Routinely clean kitchen exhaust system filters***

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**BMP**

Routinely clean kitchen exhaust system filters.

---

**Reason For**

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.

---

**Benefit to food service establishment**

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.

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**Pretreatment inspection tips**

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.

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## Chapter 4

# Prohibitions Relating to Discharge of Fats, Oils, and Grease

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Certain activities relating to discharges of fats, oils, and grease are prohibited. These activities, if allowed, would interfere with the proper operation of hydromechanical and gravity grease interceptors and potentially have an immediate, negative effect on the municipal wastewater system or the environment. This chapter provides a list of prohibited activities and the basis for each prohibition.

Prohibitions	Basis
Do not discharge fats, oils, and grease in any amount. Discharges will cause an obstruction to the flow in a sanitary sewer system, or cause interference at a wastewater treatment facility.	Grease can solidify and trap other solid particles to completely plug the wastewater collection system.
Do not discharge grease, improperly shredded garbage, animal guts or tissues, paunch manure, bones, hide, hair, fleshings, or entrails.	These materials in combination or alone can cause blockages and other operations and maintenance problems in the wastewater collection and treatment system.



<b>Prohibitions</b>	<b>Basis</b>
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<p>Do not discharge wastewater with temperatures in excess of 140° F to any hydromechanical grease interceptor. This includes water from a “Hot Water” mechanical dishwashers that have a minimum required temperature of 160° F.</p>	<p>Temperatures in excess of 140° F will dissolve grease, but the grease can re-congeal and cause blockages further downstream in the sanitary sewer collection system as the water cools.</p> <p>Note: High temperature water, such as from a “Hot Water” dishwasher, is discharged to the remotely-located grease interceptor, if there is one. The remote location and the high volume of the interceptor allows the water time to cool so that there is not a problem with dissolving grease and moving it further downstream. The high volume also provides dilution of the detergents in the dishwasher waste.</p>
<p>Do not discharge waste from a food waste disposal unit to any hydromechanical interceptor.</p>	<p>The food waste will greatly reduce the capacity of the hydromechanical interceptor for retaining grease and can cause worse problems with blockages.</p>



<b>Prohibitions</b>	<b>Basis</b>
Do not discharge caustics, acids, solvents, or other emulsifying agents.	Though emulsifying agents can dissolve solidified grease, the grease can re-congeal further downstream in the sanitary sewer collection system. Caustics, acids, and solvents can have other harmful effects on the wastewater treatment system and can be hazardous to those working in the wastewater collection system.
Do not discharge fats, wax, grease or oils containing substances that will become viscous between 32° F (0°C) and 150°F (65°C).	The temperatures shown are temperatures that can occur in the wastewater collection and treatment system. If these substances congeal, solidify, or become too viscous, they can cause blockages and other operations and maintenance problems.
Do not utilize biological agents for grease remediation without permission from the sewerage agency receiving the waste.	The biological agents may disrupt the biological treatment process at the wastewater treatment plant.
Do not clean equipment outdoors in an area where water can flow to the gutter, storm drain, or street.	Grease and dirt will be washed off the equipment and enter the storm drain system and flow to nearby streams.



## Chapter 5

# Hydromechanical and Gravity Grease Interceptor Maintenance

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The hydromechanical and gravity grease interceptors used by food service establishments must be cleaned on a regular basis to ensure that they work properly. Regular cleaning of grease traps and interceptors can improve their efficiency and effectiveness. This chapter describes step-by-step maintenance actions that can be used to clean these devices.

HGI maintenance is usually performed by maintenance staff, or other employees. GGI maintenance, which is usually performed by permitted haulers or recyclers (See *Fats, Oil, and Grease Haulers and Recyclers*), consists of removing the entire volume (liquids and solids) from the GGI and properly disposing of the material in accordance with all Federal, State, and/or local laws. When performed properly and at the appropriate frequency, GGI and HGI maintenance can greatly reduce the discharge of FOG into the wastewater collection system.

The required maintenance frequency for GGIs and HGIs depends greatly on the amount of FOG a facility generates as well as any BMPs implemented to reduce the FOG discharged into the sanitary sewer system. In many cases, an establishment that implements BMPs will realize financial benefit through a reduction in their required GGI and HGI maintenance frequency. Refer to *Best Management Practices* for examples of BMPs that FOG generating establishments should implement.

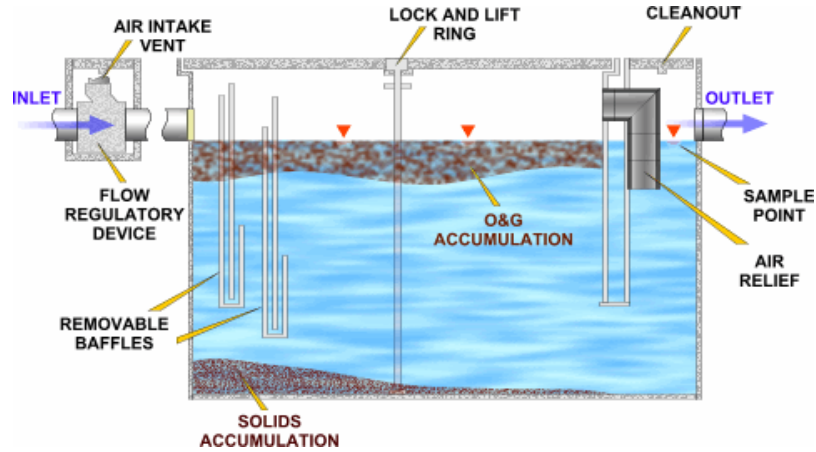
## **WARNING!**

Do not use hot water, acids, caustics, solvents, or emulsifying agents when cleaning grease traps and interceptors.



## ***Hydromechanical Grease Interceptor Maintenance***

A proper maintenance procedure for a gravity grease interceptor is outlined on the following page:



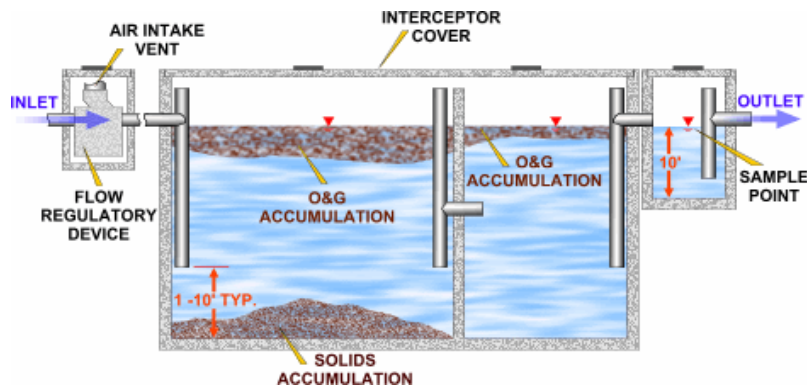
Step	Action
1.	Bail out any water in the interceptor to facilitate cleaning. The water should be discharged to the sanitary sewer system.
2.	Remove baffles if possible.
3.	Dip the accumulated grease out of the interceptor and deposit in a watertight container.
4.	Scrape the sides, the lid, and the baffles with a putty knife to remove as much of the grease as possible, and deposit the grease into a watertight container.
5.	Contact a recycler for grease pick-up.
6.	Replace the baffle and the lid.
7.	Record the volume of grease removed on the maintenance log.



## ***Gravity Grease Interceptor Maintenance***

Gravity grease interceptors, due to their size, will usually be cleaned by grease haulers or recyclers. Licensed septic haulers can also pump out grease interceptors and haul the waste to the treatment plant. The hauler must notify DEQ when hauling grease. A proper maintenance procedure for a grease interceptor is outlined below:

NOTE: Since the establishment is liable for the condition of their pretreatment devices, the establishment owners/representatives should witness all cleaning/maintenance activities to verify that the interceptor is being fully cleaned and properly maintained.





Step	Servicing Action
1.	Contact a grease hauler or recycler for cleaning. See <i>Fats, Oil, and Grease Haulers and Recyclers</i> .
2.	Ensure that all flow is stopped to the interceptor by shutting the isolation valve in the inlet piping to the interceptor.
3.	Remove the lid and bail out any water in the interceptor to facilitate cleaning. The water should be discharged to the sanitary sewer system.
4.	Remove baffles if possible.
5.	Dip the accumulated grease out of the interceptor and deposit in a watertight container.
6.	Pump out the settled solids and then the remaining liquids.
7.	Scrape the sides, the lid, and the baffles with a putty knife to remove as much of the grease as possible, and deposit the grease into a watertight container.
8.	Replace the baffle and the lid.
9.	Record the volume of grease removed on the maintenance log.





## **Chapter 6**

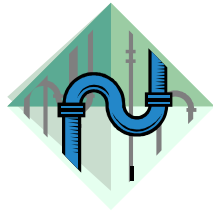
# **Fats, Oils, and Grease Haulers and Recyclers**

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Regular cleaning of HGI's and GGI's requires that the accumulated fats, oils, and grease be physically removed from an HGI or GGI and properly disposed or recycled. Please refer to the local jurisdictions Preferred Pumper Program if applicable for a list of those companies that properly pump, haul, and dispose of interceptor waste. Approved participants found on those lists agree to pump out and dispose of HGI and GGI waste to the local jurisdictions standards and in accordance with all applicable Local, State, and federal regulations.

Preferred Pumper Programs are usually voluntary and not a requirement to service HGI/GGI's in the local jurisdictions service area. Participants that fail to meet the jurisdictions Preferred Pumper criteria and program standards may be removed from the program.

NOTE: DEQ licensed septic haulers not included on this list can also pump out grease traps and interceptors and haul the waste to a wastewater treatment plant. The hauler must submit a written request to the appropriate regional DEQ office for every new site that they wish to haul from and the DEQ region will approve this action by letter.

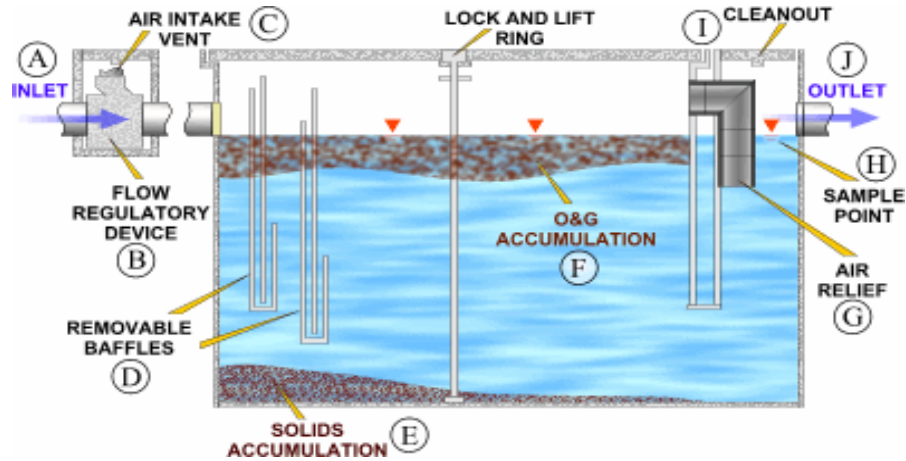


## **Chapter 7**

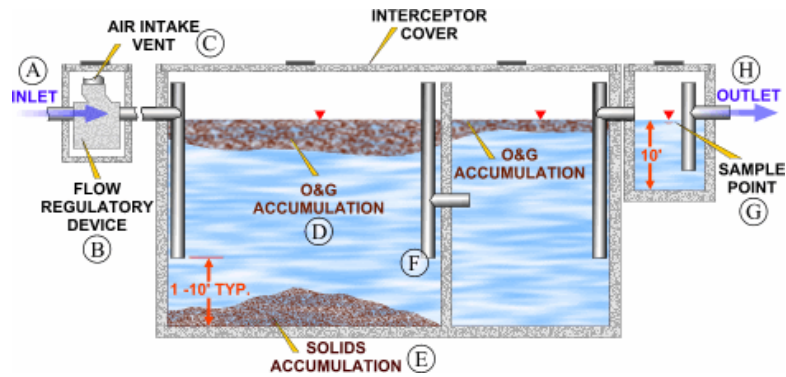
# How Hydromechanical and Gravity Grease Interceptors Work

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This chapter explains how HGI's and GGI's work. Understanding how treatment devices work improves operation and maintenance. The chapter uses a graphic of each device, with a description keyed to each element of the graphic. The description is designed to follow the flow of wastewater through the hydromechanical or gravity grease interceptor.



Item	Hydromechanical Interceptor Description
A	Flow from four or fewer kitchen fixtures enters the grease trap.
B	An approved flow control or restricting device is installed to restrict flow to the HGI to the rated capacity of the interceptor.
C	An air intake valve allows air into the open space of the HGI to prevent siphonage and back-pressure.
D	Baffles help to retain grease toward the upstream end of the HGI since grease floats and will generally not go under the baffle. This helps to prevent grease from leaving the interceptor and moving further downstream where it can create blockages.
E	Solids in the wastewater that do not float will be deposited on the bottom of the HGI and will need to be removed during routine HGI cleaning.
F	Oil and grease floats on the water surface and accumulates behind the baffles. The oil and grease will be removed during routine HGI cleaning.
G	Air relief is provided to maintain proper air circulation within the HGI.
H	Some HGI's have a sample point at the outlet end of the interceptor to sample the quality of the effluent.
I	A cleanout is provided at the outlet or just downstream of the outlet to provide access into the pipe to remove any blockages.
J	The water exits the HGI through the outlet pipe and continues on to the gravity grease interceptor or the sanitary sewer system.



Item	Gravity Grease Interceptor Description
A	Flow from HGI or directly from plumbing fixtures enters the GGI. The UPC requires that all flow entering the interceptor enter through the inlet pipe.
B	An approved flow control or restricting device is installed to restrict the flow to the GGI to the rated capacity of the interceptor.
C	An air intake valve allows air into the open space of the GGI to prevent siphonage and back-pressure.
D	Fats, oils, and grease floats on the water surface and accumulates behind the grease retaining fittings and the wall separating the compartments. The fats, oils, and grease will be removed during routine GGI cleaning.
E	Solids in the wastewater that do not float will be deposited on the bottom of the GGI and will need to be removed during routine interceptor cleaning.
F	Grease retaining fittings extend down into the water to within 12 inches of the bottom of the interceptor. Because grease floats, it generally does not enter the fitting and is not carried into the next compartment. The fittings also extend above the water surface to provide air relief.
G	Some interceptors have a sample box so that inspectors or employees of the establishment can periodically take effluent samples. Having a sample box is recommended by the UPC but not required.
H	Flow exits the interceptor through the outlet pipe and continues on to the sanitary sewer system.



## **Chapter 8**

# Compliance Inspection and Installation Checklists

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A role of municipal pretreatment staff is to determine compliance with ordinances, regulations, or BMPs designed to protect wastewater systems and the environment. This chapter provides checklists for pretreatment staff to use when visiting food service establishments. Two checklists are provided:

- Compliance inspection
- Installation

Each checklist can be used as a reminder during site visits and as file documentation for compliance of each establishment inspected.



## ***Compliance Inspection Checklist***

### **Form Instructions:**

1. Completely fill out general information.
2. For items that require some measurement of field data, the inspector should obtain the necessary data or information and record it under the column titled, "Field Data."
3. For all items marked in violation, note the fact that the establishment contact was notified of the violation and the contact's response.



# ROGUE VALLEY SEWER SERVICES

## F.O.G INSPECTION FORM

Location: 138 West Vilas Road, Central Point, OR  
 Mailing Address: P.O. Box 3130, Central Point, OR 7502-0005  
 Tel. (541) 664-6300, Fax (541) 664-7171 [www.rvss.us](http://www.rvss.us)

### General Information

**Date:** \_\_\_\_\_

**Business Name:** \_\_\_\_\_

**Site Address:** \_\_\_\_\_

**Sewer Account #:** \_\_\_\_\_

**Owner's Names:** \_\_\_\_\_

**Number of Fixtures:** \_\_\_\_\_

### F.O.G Annual Inspection Check List

<u>Check</u>	<u>Item</u>	<u>Comment</u>	<u>Pass</u>	<u>Fail</u>
<input type="checkbox"/>	<i>GGI and/or HGI Properly Installed -</i>		<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<i>GGI and/or HGI Cleaning Log Book Updated -</i>		<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<i>HGI is less than 50% full of Grease-</i>		<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<i>GGI is less than 30% full of grease or 25% full of sediment-</i>		<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<i>Evidence of potential grease overflow into storm sewer-</i>		<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<i>Discharge Water 140°F or less-</i>		<input type="checkbox"/>	<input type="checkbox"/>



## ***Installation Checklist***

### **Form Instructions:**

1. Completely fill out general information.
2. For all items marked in violation, note the fact that the establishment contact was notified of the violation and the contact's response.

Inspector: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Time Inspection Started: \_\_\_\_\_

Time Inspection Completed: \_\_\_\_\_

Establishment: \_\_\_\_\_

Address: \_\_\_\_\_

Contact Name: \_\_\_\_\_

Phone: \_\_\_\_\_



No.	Item description	Compliance status <sup>1</sup>
1.	HGI is sized based upon the number of fixtures discharging to it. See <i>Frequently Asked Questions about Fats, Oil, and Grease</i> .	
2.	HGI has a water seal of not less than two inches in depth or the diameter of its outlet, whichever is greater.	
3.	No food waste disposal unit or dishwasher is connected to or discharges into any HGI.	
4.	Waste from toilets and urinals does not discharge to any HGI or GGI.	
5.	Waste in excess of 140° F is not discharged to any HGI or GGI.	
6.	The vertical distance between the fixture outlets and grease trap weirs is as short as practical.	
7.	GI is as close as practical to the fixtures served.	
8.	Devices shall be designed so that the flow through the device or devices at no time exceeds the rated capacity of the HGI or GGI.	
9.	Each fixture discharging into a HGI or GGI is individually trapped and vented in an approved manner.	
10.	Each HGI and GGI is properly vented to allow air circulation throughout the entire drain system.	

<sup>1</sup> An entry should be made for each item using the following codes:

"C" – Compliance with the item

"V" – Violation of the item (provide explanation in the notes)

"NA" – Not applicable (provide explanation in the notes)

"NC" – Not checked (provide explanation in the notes)



No.	Item description	Compliance status <sup>1</sup>
11.	GGI is easily accessible for inspection and cleaning and access does not require the use of ladders or the removal of bulky equipment.	
12.	There is a minimum of one access point into each compartment of the interceptor and no access points are greater than 10 feet apart. Each access opening is leak-resistant and cannot slide, rotate, or flip.	
13.	Location of GGI is shown on approved building plans. Drawings of interceptor are complete and show all dimensions, capacities, reinforcing and structural design calculations.	
14.	GGI is not installed in any part of a building where food is handled. Location shall meet the approval of the Administrative Authority.	
15.	GGI serves a single business establishment.	
16.	GGI has a minimum of two compartments and 3-inch diameter fittings designed for grease retention. The compartments shall be separated by partitions or baffles that extend at least 6 inches above the water level. The inlet compartment shall be two-thirds of the total interceptor capacity. The length of the inlet compartment shall be longer than the inside width of the interceptor.	
17.	The inlet and outlet fittings shall be a baffle tee (or similar flow device) that extends at least 4 inches above the water level to within 12 inches of the bottom of the interceptor. The outlet tee out of a sample box shall extend at least 6 inches below the water surface. Flow between the separate compartments is through a baffle tee or bend that extends down to within 12 inches of the bottom of the interceptor.	

<sup>1</sup> An entry should be made for each item using the following codes:  
"C" – Compliance with the item  
"V" – Violation of the item (provide explanation in the notes)  
"NA" – Not applicable (provide explanation in the notes)  
"NC" – Not checked (provide explanation in the notes)



No.	Item description	Compliance status <sup>1</sup>
18.	All waste enters the interceptor through the inlet pipe.	
19.	GGI cover is gastight and has a minimum opening of 30 inches in diameter.	
20.	GGI's located in areas of pedestrian or vehicle travel are adequately designed to support the imposed loads. Review of structural calculations may be required to verify adequacy.	
21.	A sample box is provided on the outlet side of the GGI. This is recommended and may be required by the UPC so that the administrative authority can periodically sample the effluent quality.	

<sup>1</sup> An entry should be made for each item using the following codes:

"C" – Compliance with the item

"V" – Violation of the item (provide explanation in the notes)

"NA" – Not applicable (provide explanation in the notes)

"NC" – Not checked (provide explanation in the notes)

