



**FATS, OILS, AND GREASE (FOG)  
BEST MANAGEMENT PRACTICES MANUAL  
AND COMPLIANCE INFORMATION  
FOR THE  
CITY OF MOUNT VERNON WASTEWATER DEPARTMENT**

Fats, oils, and grease, also called FOG in the wastewater industry, 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, overflow at manholes, or sewage backups in homes and businesses. FOG may also pass through the treatment process at the wastewater plant causing violations of the operating permit issued by the Ohio Environmental Protection Agency.

Two types of FOG pollutants are common to wastewater systems. Petroleum-based oils 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 restaurants, fast-food outlets, and other food-service operations in every community.

This manual is written to provide municipal pretreatment staff, along with restaurant and fast food business 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 fast food restaurant and food service facilities participate in FOG recycling programs. Ensuring that grease traps and interceptors are properly installed, and most importantly, properly maintained, is more difficult. This manual focuses on proper maintenance of grease traps and interceptors, and includes inspection checklists for the city pretreatment inspectors.

More information and forms are available on the City of Mount Vernon's website: [www.mountvernonohio.org](http://www.mountvernonohio.org) and clicking on the "City Links" and "On Line Forms" pages or by calling the Wastewater Treatment Plant at (740)393-9502.

**OCTOBER 2008**

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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 restaurant owners.

*Information contained in this manual was obtained from a research manual produced by Brown and Caldwell for the Oregon Association of Clean Water Agencies.*

## **SECTION 1: Definitions**

**Administrator:** The Administrator of Treatment and Distribution, also known as the Plants Administrator.

**Cooking establishments (also known as Food Service Establishments or FSEs):** Those establishments primarily engaged in activities of preparing, serving, or otherwise making available for consumption foodstuffs, and that use one or more of the following preparation activities: cooking by frying (all methods), baking (all methods), grilling, sautéing, rotisserie cooking, broiling (all methods), boiling, blanching, roasting, toasting, or poaching. Also included are infrared heating, searing, barbecuing, and any other food preparation activity that produces a hot, non-drinkable food product in or on a receptacle that requires washing. Examples include, but are not limited to: restaurants, hotels, motels, hospitals, nursing homes, jails, schools, cafeterias, churches, camps, group homes, and caterers.

**Department:** City of Mount Vernon, Water and Wastewater Department.

**Fats, Oils, and Grease:** Organic polar compounds derived from animal and/or plant sources that contain multiple carbon chain triglyceride molecules. These substances are detectable and measurable using analytical test procedures established in 40 CFR 136, as may be amended from time to time. All are sometimes referred to herein as FOG.

**Grease Laden Waste:** Effluent discharge that is produced from food processing, food preparation or other commercial source where fats, oils, and grease enter automatic dishwasher pre-rinse stations, sinks, or other appurtenances.

**Grease Trap or Interceptor:** A device for separating and retaining waterborne fats, oils and greases prior to the wastewater exiting the trap and entering the sanitary sewer collection and treatment system. These devices also serve to collect settleable solids generated by and from food preparation activities, prior to the water exiting the trap and entering the sanitary sewer system collection and treatment system.

**Grease Recovery Device:** An active automatic device, which separates and removes fats, oils, and greases from effluent discharge, and cleans itself of accumulated fats, oils, and greases at least once every twenty-four (24) hours, utilizing electromechanical apparatus to accomplish removal.

**Minimum Design Capability:** The design features of a Grease Interceptor and its ability or volume required to effectively intercept and retain fats, oils and greases from grease-laden waters discharged to the public sanitary sewer.

**Non-cooking Establishments:** Those establishments primarily engaged in the preparation of pre-cooked foodstuffs that do not include any form of cooking. These include cold dairy and frozen foodstuffs preparation and serving establishments.

**Solids Transfer/Grease recovery Device:** An active automatic pretreatment device, which macerates coarse solids and separates/recovers free floating fats, oils, and grease from effluent. The device cleans itself of accumulated fats, oils, and greases at least once every twenty-four (24) hours utilizing electromechanical apparatus to accomplish removal.

**User:** Any person, including those located outside the jurisdictional limits of the city, who contributes, causes, or permits the contribution or discharge of wastewater to the sanitary sewer collection system or wastewater treatment plant, including persons who contribute such wastewater from mobile sources, such as those who discharge hauled wastewater.

## **SECTION 2: Administration**

- 1. Permit Requirements:** All commercial establishments that are required to install a fats, oils, and greases removal system shall be issued a permit from the City of Mount Vernon Wastewater Department. Permits will be issued for a two-year period. The Department shall provide the owner with a permit indicating the requirements that the establishment must meet in order to comply with FOG Best Management Practices.
- 2. Fees:** A fee of \$50.00 shall be assessed to each permit issued and shall be payable within 30 days of request. Failure to pay fees will result in termination of services.
- 3. Owner responsibility:** The owner shall be responsible for cleaning and maintaining the fats, oils, and grease removal system located on their property and shall maintain accurate records of the dates of cleaning and means of disposal of fats, oils, and greases, subject to inspection and review by the Department. Any removal and hauling of fats, oils, and greases shall be performed by a licensed waste disposal or rendering firm. All costs incidental to the building sewer installation and registration shall be borne by the owner.
- 4. Biological or Chemical Treatment Agents:** The introduction of additives containing surfactants and/or enzymes into the trap, interceptor, or sanitary sewer is prohibited. Biological treatment using grease-consuming bacteria for fats, oils, and greases control is conditionally permitted by submitting a written request to the Administrator and receiving written approval prior to use.
- 5. Grease Interceptor Maintenance, Record Keeping and Grease Removal**
  - a. Grease traps or interceptors shall be installed by users as required by the City of Mount Vernon Water and Wastewater Department. Grease traps or interceptors shall be installed at the User's expense, where the discharge of grease laden waste, from food preparation or food processing or other commercial establishment, into the City sewer may cause an impediment or

obstruction of the City sanitary sewer main. No user shall allow wastewater discharge concentration from subject grease interceptor to exceed 50 mg/l as identified by EPA method 1664. All new and/or renovated grease interceptors shall be of a type, design and capacity approved by current Mount Vernon Water and Wastewater Department standards and shall be readily and easily accessible for User cleaning and inspection by City inspectors. All existing and new grease interceptors shall be serviced and emptied of accumulated waste content as required in order to maintain minimum design capability or effective volume of the grease interceptor, but not less than every 180 days. Users shall:

- i.** Properly operate and maintain grease interceptors so that no more than 25% of the capacity of the interceptor is filled with grease and/or solids.
- ii.** New Food Service Establishments shall be required to submit three copies of facility site plans, mechanical and plumbing plans and details to show all locations and connections, FOG control devices, grease interceptor or other pretreatment equipment and appurtenances by size, location, and elevation for evaluation. The submittal shall be directed to the City of Mount Vernon Engineering Department in a form and content acceptable to the City for expeditious review prior to construction. The review shall in no way relieve the FSE of the responsibility of modifying the facilities or procedures in the future, as necessary to produce an acceptable discharge, and meet the requirements of this rule or other applicable Regulatory Agencies.
- iii.** Remove any accumulated grease cap and sludge pocket as required, but at intervals of not longer than 180 days at the User's expense. Grease interceptors shall be kept free of inorganic solid materials such as grit, rocks, gravel, sand, eating utensils, cigarettes, shells, towels, rags, etc. which could settle into this pocket and thereby reduce the effective volume of the grease interceptor.
- iv.** Accept the following conditions: if any skimmed or pumped wastes or other materials removed from the Grease interceptor are treated in any fashion on site and reintroduced back into the Grease interceptor as an activity of and after said on-site treatment, the User shall be responsible for the attainment of established Grease numerical limit consistent with and contained in (5) (a) on all discharges of wastewater from said grease interceptor into the City of Mount Vernon sanitary sewer collection and treatment system.
- v.** Operate the Grease interceptor in a manner so as to maintain said device such that attainment of the grease limit shall be subject to terms of numerical limit attainment described in (5) (a).
- vi.** Understand and agree that: The use of biological additives as a method of grease control is conditionally permissible, upon prior written approval by the Administrator. Any establishment using this method of grease abatement shall maintain the trap or interceptor in such a manner that attainment of the grease wastewater limit, as measured from the

trap's outlet, is constantly achieved.

**vii.** Understand and agree that: The use of automatic grease removal systems is conditionally permissible, upon prior written approval of the Water and Wastewater Commission. Any establishment using this equipment shall operate the system in such a manner that attainment of the grease wastewater discharge limit, as measured from the unit's outlet, is constantly achieved.

**viii.** Understand and agree that: The Administrator reserves the right to make determinations of grease interceptor adequacy and need, based on review of all relevant information regarding grease interceptor performance, facility size and building plan review, and to require repairs to, or modification or replacement of such interceptors or traps:

- b. The User shall maintain a written record of trap and interceptor maintenance for a minimum of three (3) years. All such records will be available for inspection by the Department at all times.
- c. No grease-laden sources are allowed to be connected to sewer lines intended for grease interceptor service.
- d. If an obstruction of the City's sewer main occurs that causes a sanitary sewer overflow or failure of the collection system to convey sewage can be attributed in whole or in part to grease in the City's sewer main(s), the City of Mount Vernon will take appropriate enforcement action, as stipulated in the City's Sewer Use Ordinance 911.08 (i), against the generator or contributor of such grease.
- e. In all new or renovated installations, access manholes, with a minimum diameter of 24 inches, shall be provided over each chamber and sanitary tee. The access manholes shall extend at least to finished grade and be designed and maintained to prevent water inflow or infiltration. The manholes shall also have readily removable covers to facilitate inspections, grease removal and wastewater sampling activities.
- f. Waste that does not contain fats, oils, and greases and that does not otherwise require treatment shall not discharge into the fats, oils, and greases removal system.
- g. Food waste grinders shall not discharge into the building drainage system through the grease interceptor, trap, or grease recovery device. In addition, the installation and operation of any garbage grinder equipped with a motor of three-fourths Horse Power of greater shall be subject to the review and approval of the Water and Wastewater Commission.

### **SECTION 3: Compliance**

- 1. Best Management Practices:** All permitted dischargers shall comply with Best Management Practices in the operation and maintenance of their grease trap device.
- 2. Sewer Use Ordinance (SUO):** All Users of the City of Mount Vernon Wastewater Department sanitary sewer system shall comply with all the requirements of the Sewer Use Ordinance, as amended, and are subject to all applicable enforcement action as mandated in the ordinance.
- 3. Duty to Comply:** The permittee must comply with all the conditions of the permit issued to them by the Department. Any permit noncompliance constitutes a violation of the SUO and is grounds for enforcement actions, including but not limited to: termination of service, revocation, re-issuance or modification of the permit, or denial of a permit renewal.
- 4. Signatory Requirements:** All forms, reports, or other correspondence where a signature is required shall be signed by an authorized representative of the permittee prior to submitting the document to the Department.

## **SECTION 4: Frequently Asked Questions About FOG:**

**Is grease a problem?**

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

**What is a grease interceptor?**

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

**Can you recommend a maintenance schedule?**

**Do I have a grease trap?**

**Do I need a grease trap?**

**Is the grease trap I have adequate?**

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

**Who determines if I need a grease trap or interceptor?**

**How can I get in compliance?**

**What are the criteria for inspecting grease traps?**

*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 restaurants and other grease-producing establishments have served as the basis for ordinances and regulations governing the discharge of grease materials to the sanitary sewer system. This

type of waste has forced the requirement of the installation of preliminary treatment facilities, commonly known as grease traps or interceptors.

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

A trap 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 It Works](#) for a description of how the various components of a grease trap function.

*What is a grease interceptor?*

An interceptor is a vault with a minimum capacity of 500 gallons that is located on the exterior of the building. The vault includes a minimum of two compartments; flow between each compartment is through a 90° 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 It Works](#) for a description of how the various components of a grease interceptor function.

*How do I clean my grease trap?*

Refer to [Grease Trap and Interceptor Maintenance](#).

*Can you recommend a maintenance schedule?*

All grease interceptors should be cleaned *at least twice each year*. Some establishments will find it necessary to clean their traps *more often than twice per month*. If the establishment is required to clean it too often, the owner should consider installing a larger trap or interceptor.

*Do I have a grease trap?*

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

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

Any establishment that introduces grease or oil into the drainage and sewage system in quantities large enough to cause line blockages or hinder sewage treatment is required to install a grease trap or interceptor. Interceptors are usually required for high volume restaurants (full menu establishments operating 16 hrs/day and/or serving 500+ meals per day) and large commercial establishments such as hotels, hospitals, factories, or school kitchens. Grease traps are required for small volume (fast food or take-out restaurants with limited menus, minimum dishwashing, and/or minimal seating capacity) and medium volume (full menu establishments operating 8-16 hrs/day and/or serving 100-400 meals/day) establishments. Medium volume establishments may be required to install an interceptor depending upon the size of the establishment. **All new installations and renovations to existing buildings must adhere to the current City of Mount Vernon design specifications.**

### *Is the grease trap I have adequate?*

The Uniform Plumbing Code requires that no grease trap have a capacity less than 20 gallons per minute (gpm) or more than 55 gpm. The size of the trap depends upon the number of fixtures connected to it. The following table provides criteria for sizing grease traps:

Total number of fixtures connected	Required rate of flow, gpm	Grease retention capacity, lbs
1	20	40
2	25	50
3	35	70
4	50	100

The size will also depend largely upon the maintenance schedule. If a grease trap or interceptor 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 traps 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 down stream. 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 trap?***

If the establishment uses grease and oil in food preparation, it will eventually encounter a maintenance problem with a plugged building sewer line. The blockage can create a sewer backup situation and ultimately a potential health problem in the establishment. Someone will have to pay for removing the blockage. If the problem is in the building sewer line, then the establishment has direct responsibility for paying for the maintenance. If the blockage or restriction is in the 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. Blocking a sanitary sewer line is also a violation of the federal Clean Water Act.

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

When waste pretreatment is required by the Administrative Authority, an to Approved grease trap or interceptor shall be installed according to the rules of the Mount Vernon Water and Wastewater Department. All administrative authorities prohibit the discharge of materials that can solidify and create blockages in the wastewater collection system or treatment plants. The City of Mount Vernon Wastewater Department makes periodic inspections to see that no sanitary sewer 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 trap. 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. A grease interceptor permit is required regardless of whether the establishment has an existing interceptor or trap or is installing a new one.

*What are the criteria for inspecting grease traps?*

All food service establishments suspected of causing problems to the collection system or treatment facilities will be inspected. Some agencies use the following criteria to inspect grease traps:

<b>Percent of Trap Filled</b>	<b>Trap Condition</b>
25	Good
25 — 50	Fair
>50	Poor

If the trap 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 trap 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.

## Section 5: Best Management Practices (BMPs)

- **Prevent Blockages in the Sanitary Sewer System**
- **Properly Maintain Grease Traps and Interceptors to Prevent Introduction into the Sanitary Sewer System**
- **Prevent Fats, Oil, and Grease From Entering Creeks and Streams Through the Storm Drain System**

<b>Prevent Blockages in the Sanitary Sewer System</b>			
<b>BMP</b>	<b>Reason For</b>	<b>Benefits to Food Service Establishment</b>	<b>Pretreatment Inspection Tips</b>
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 in excess of 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 heating the water.	Check boiler or hot water heater discharge temperature.  Measure the temperature of the hot 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. (See above)	The three-sink system uses water temperatures less than 140° F where a mechanical dishwasher requires a minimum temperature of 160° F. (See above)  Note: The Uniform Plumbing Code (UPC) prohibits the discharge of dishwasher water to grease traps.	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 Ohio. This is a cost recovery opportunity. See <u>Haulers and Recyclers</u> .	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.	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 in landfills 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
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<p>Witness all grease trap or interceptor cleaning/maintenance activities to ensure the device is properly operating.</p>	<p>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 <i>Grease Trap and Interceptor Maintenance</i> they are more assured of getting full value for their money.</p>	<p>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.</p>	<p>None.</p>
<p>Clean undersink grease traps weekly.</p> <p>If grease traps are more than 50% full when cleaned weekly, the cleaning frequency needs to be increased.</p>	<p>Undersink grease traps have less volume than grease interceptors.</p> <p>Weekly cleaning of undersink grease traps 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 grease interceptor, the undersink 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.</p>	<p>This will extend the length of the cleaning cycle for grease interceptors that the establishment maintains.</p>	<p>Visually inspect the contents of the undersink grease trap.</p> <p>Inspect cleaning records.</p>
<p>Clean grease interceptors routinely.</p>	<p>Grease interceptors must be cleaned routinely to ensure that grease accumulation does not cause the interceptor to operate poorly.</p> <p>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.</p>	<p>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.</p>	<p>Interceptor should have no more than 1/3 the depth as grease, <u>and</u>,</p> <p>Interceptor should have no more than 1/4 the depth as sediment, <u>and</u></p> <p>No more than 25% of the depth should be a combination of grease (top) and sediment (bottom).</p>
<p>Keep a <i>maintenance log</i>.</p>	<p>The maintenance log serves as a record of the frequency</p>	<p>The maintenance log serves as a record of</p>	<p>Inspect maintenance log.</p>

	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.	cleaning frequency and can help the establishment manager optimize cleaning frequency to reduce cost.	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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### Prevent Fats, Oil, and Grease From Entering Creeks and Streams Through the Storm Drain System

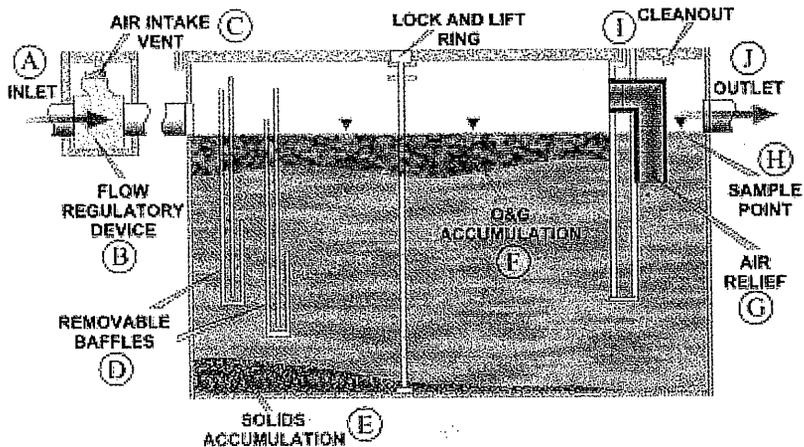
BMP	Reason For	Benefits to Food Service Establishment	Pretreatment Inspection Tips
Cover outdoor grease and oil storage containers.  Some local jurisdictions will have BMPs in place for stormwater also.	Uncovered grease and oil storage containers can collect rainwater. Since grease and oil float, the rainwater can cause an overflow onto the ground. Such an overflow will eventually reach the stormwater system and nearby streams.	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 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.	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	Absorbent pads and other	The discharge of	Check the nearest catch basin

<p>or other material in the storm drain catch basins if grease dumpsters and containers must be located nearby.</p> <p>Do not use free flowing absorbent materials such as "kitty litter" or sawdust.</p>	<p>materials can serve as an effective barrier to grease and oil entering the storm drain system.</p>	<p>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.</p> <p>Discharge of grease and oil to the storm drain might also result in legal penalties or fines.</p>	<p>and drainage paths for signs of grease and oil.</p> <p>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.</p> <p>Do not permit the use of free flowing absorbent material such as "kitty litter."</p>
<p>Use absorbent pads or other material to clean up spilled material around outdoor equipment, containers or dumpsters.</p> <p>Do not use free flowing absorbent materials such as "kitty litter" or sawdust that can be discharges to the storm drain system.</p>	<p>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.</p>	<p>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.</p> <p>Discharge of grease and oil to the storm drain might also result in legal penalties or fines.</p>	<p>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.</p> <p>Do not permit the use of free flowing absorbent material such as "kitty litter."</p>
<p>Routinely clean kitchen exhaust system filters.</p>	<p>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.</p>	<p>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.</p> <p>Discharge of grease and oil to the storm drain might also result in legal penalties or fines.</p>	<p>Inspect roof (if safely accessible) for signs of oil and grease.</p> <p>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.</p>

## SECTION 6: Prohibitions Relating to Discharge of Fats, Oil, and Grease

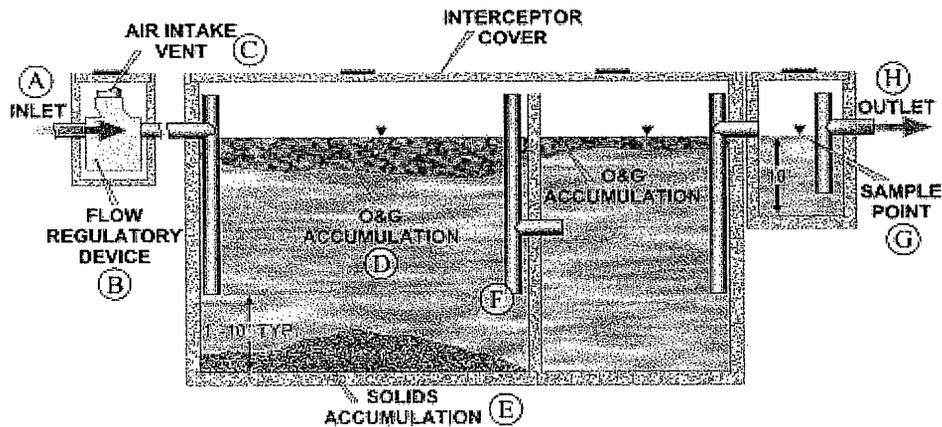
DO NOT...	Basis
Do not discharge fats, oil, and grease in concentrations that will cause an obstruction to the flow in a sewer, or pass through or interference at a wastewater treatment facility.	Grease can solidify and trap other solid particles to completely plug the wastewater collection system.
Do 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.
Do not discharge wastewater with temperatures in excess of 140° F to any grease traps. This includes water from mechanical dishwashers that have a minimum required temperature of 160° F.	<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 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>
Do not discharge waste from a food waste disposal unit to any grease traps.	The food waste will greatly reduce the capacity of the grease trap for retaining grease and can cause worse problems with blockages.
Do not discharge caustics, acids, solvents, or other emulsifying agents.	<p>Though emulsifying agents can dissolve solidified grease, the grease can re-congeal further downstream in the sanitary sewer collection system.</p> <p>Caustics, acids, and solvents can have other harmful effects on the wastewater treatment system and can be a hazard to employees working in the wastewater collection system.</p>
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 sanitary 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.

## SECTION 7: Grease Trap: How It Works



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

## SECTION 7: Grease Interceptor: How It Works



A	Flow from undersink grease traps or directly from plumbing fixtures enters the grease interceptor. The UPC requires that all flow entering the interceptor must enter through the inlet pipe
B	An approved flow control or restricting device is installed to restrict the flow to the grease interceptor to the rated capacity of the interceptor.
C	An air intake valve allows air into the open space of the grease interceptor to prevent siphonage and back-pressure.
D	Oil and grease floats on the water surface and accumulates behind the grease retaining fittings and the wall separating the compartments. The oil and grease will be removed during routine grease interceptor cleaning.
E	Solids in the wastewater that do not float will be deposited on the bottom of the grease interceptor and will need to be removed during routine grease 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.
H	Flow exits the interceptor through the outlet pipe and continues on to the sanitary sewer system.

## SECTION 8: Grease Trap and Interceptor Maintenance

- Grease Trap Maintenance
- Grease Interceptor Maintenance

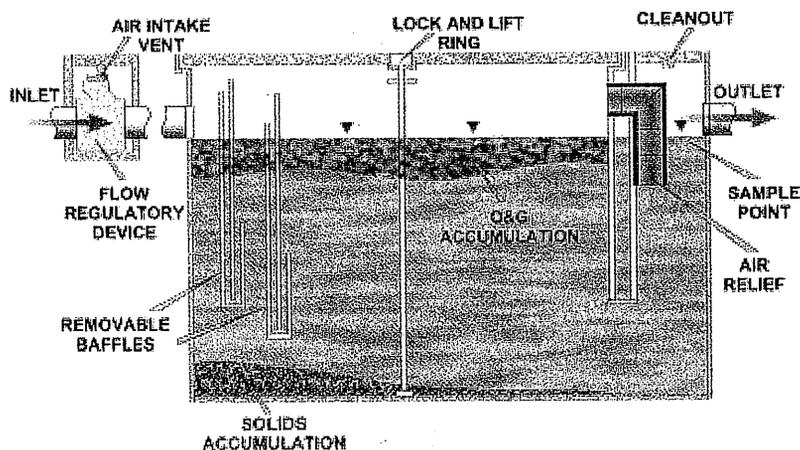
Grease trap maintenance is usually performed by maintenance staff, or other employees of the establishment. Grease interceptor (GI) maintenance, which is usually performed by permitted haulers or recyclers (See *Fats, Oil and Grease Haulers and Recyclers*), consists of removing the entire volume (liquids and solids) from the GI 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 interceptor and trap maintenance can greatly reduce the discharge of fats, oil, and grease (FOG) into the wastewater collection system.

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

### Grease Trap Maintenance

A proper maintenance procedure for a grease trap is outlined below:



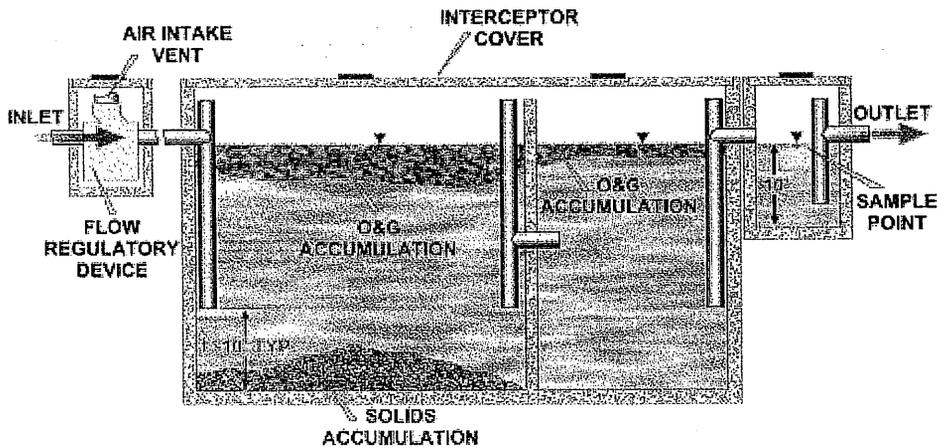
Step	Action
1.	Bail out any water in the trap or interceptor to facilitate cleaning. The water should be discharged to the sanitary sewer system.
2.	Remove baffles if possible.
3.	Dip the accumulated grease out of the interceptor and deposit in a watertight container.
4.	Scrape the sides, the lid, and 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 hauler or recycler for grease pick-up.
6.	Replace the baffle and the lid.
7.	Record the volume of grease removed on the <i>maintenance log</i> .

## Grease Interceptor Maintenance

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 a treatment plant that will accept such waste.

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	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 trap or 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 <i>maintenance log</i> .

*Fats, Oil, and Grease Best Management Practices Permit*



**FOOD SERVICE OPERATIONS AND FOOD ESTABLISHMENTS**

**PERMIT YEARS:**

**PERMITTED ESTABLISHMENT:** \_\_\_\_\_

---

*The above listed establishment is hereby authorized to discharge waste into the City of Mount Vernon Sanitary Sewer System in accordance with the requirements below:*

**Requirements:**

1. All food service operations and food establishments are responsible to submit to the City of Mount Vernon Wastewater Department, every six months, a report of inspection and details on cleaning grease interceptors or traps. The form must be completed and signed by an owner or authorized person of record.
2. Reports must be submitted by July 15<sup>th</sup> for the first six month period of the year, January through June, and by January 15<sup>th</sup> following the second six month period of the year, July through December. Reports shall be mailed to:  
Mount Vernon Wastewater Department  
FOG Program  
3 North Gay Street  
Mount Vernon, Ohio 43050
3. A permit fee of \$50.00 is due and payable by January 31, the first year of the two-year permit cycle.
4. The materials removed in the cleaning of any devices shall be removed from the premises for disposal and not deposited into the building sewer or sanitary sewer system.
5. All grease traps, interceptors, and other removal systems must be operated in compliance with Mount Vernon Sewer Use Ordinance, Chapter 911, as well as guidelines developed for this program by the Mount Vernon Wastewater Department in the FOG Best Management Practices Manual.

**Owner or authorized signatory representative:** \_\_\_\_\_

**Permit Expiration date:** \_\_\_\_\_

*Fats, Oil, and Grease Cleaning Form*



FOOD SERVICE OPERATIONS AND FOOD ESTABLISHMENTS

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

**Owner/Manager:** \_\_\_\_\_

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

**Phone Number:** \_\_\_\_\_ **Mobile Number:** \_\_\_\_\_

**Fax Number:** \_\_\_\_\_ **E-Mail:** \_\_\_\_\_

**Contact Person:** \_\_\_\_\_

**Title:** \_\_\_\_\_

**Interceptor Capacity (gallons):** \_\_\_\_\_

**Number of Pits:** \_\_\_\_\_

**Date (s) Pumped:** \_\_\_\_\_

**Pumping Company:** \_\_\_\_\_

**Personnel Name:** \_\_\_\_\_

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

**Phone Number:** \_\_\_\_\_

**Disposal Location:** \_\_\_\_\_

**Form Completed By:** \_\_\_\_\_

**Send to: Mount Vernon Wastewater Department (Due January 31 and July 31)**  
**FOG Program**  
**3 North Gay Street**  
**Mount Vernon, Ohio 43050**

# SECTION 11: Inspection Form

## Inspection Checklist Installation Checklist

Inspector: \_\_\_\_\_  
 Establishment: \_\_\_\_\_  
 Signature: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Date: \_\_\_\_\_

Name: \_\_\_\_\_ E-Mail: \_\_\_\_\_  
 Time Inspection Started: \_\_\_\_\_  
 Phone: \_\_\_\_\_ Mobile Phone: \_\_\_\_\_  
 Time Inspection Completed: \_\_\_\_\_

### Inspection Checklist

Number	Item Description	Field Data (where appropriate)	Compliance Status <sup>1</sup>
1.	The establishment has implemented a training program to ensure that the <u>BMPs</u> are followed.		
2.	"No Grease" signs are posted in appropriate locations.		
3.	The establishment recycles waste cooking oil and can provide records of this.		
4.	Water temperatures at all sinks, especially the pre-rinse sink before the mechanical dishwasher or the sinks in the three-sink system are less than 140° F. Measure and record temperature.		
5.	The establishment "dry wipes" pots, pans, and dishware prior to rinsing and washing.		
6.	Food waste is disposed of by recycling or solid waste removal and is not discharged to the grease traps or interceptors.		

7.	Grease trap(s) is cleaned regularly. Note and record the frequency of cleaning.		
8.	Grease trap cleaning frequency is documented on a <u>maintenance log</u> (obtain a copy of the document).		
9.	Grease interceptor does not contain greater than 1/3 the depth in grease accumulation. Estimate and record amount of grease in interceptor.		
10.	Grease interceptor does not contain greater than 1/4 the depth in sediment accumulation. Estimate and record amount of sediment in interceptor if possible.		
11.	Grease interceptor is cleaned and maintained regularly. Note and record frequency of cleaning.		
12.	Grease interceptor cleaning and maintenance frequency is documented on a <u>maintenance log</u> (obtain a copy of the document).		
13.	Outdoor grease and oil storage containers are covered and do not show signs of overflowing.		
14.	Grease and oil storage containers are protected from discharge to storm drains.		
15.	Absorbent pads or other materials (not free flowing material such as cat litter) are used to clean up any spills or leakages that could reach the storm drain.		
16.	Storm drain catch basins show no signs of grease or oil.		
17.	The roof shows no signs of grease and oil from the exhaust system.		
18.	Exhaust system filters are cleaned regularly, which is documented by cleaning records. Note and record frequency of cleaning.		
<b>NOTES</b>			


Inspector: \_\_\_\_\_  
 Establishment: \_\_\_\_\_  
 Signature: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Date: \_\_\_\_\_ Contact Name: \_\_\_\_\_  
 Time Inspection Started: \_\_\_\_\_  
 Phone: \_\_\_\_\_ Mobile Phone: \_\_\_\_\_  
 Time Inspection Completed: \_\_\_\_\_

**Installation Checklist**

Number	Item Description	Compliance Status <sup>1</sup>
1.	Each grease trap serves not more than four single compartment sinks of the same depth. Grease trap is sized based upon the number of fixtures discharging to it. See <i>FAQs</i> .	
2.	Grease trap 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 grease trap.	
4.	Waste from toilets and urinals do not discharge to the grease interceptor.	
5.	Waste in excess of 140° F is not discharged to any grease trap. (Dishwasher with a min. temperature of 160° F is not discharged to any grease trap.)	

6.	The vertical distance between the fixture outlets and grease trap weirs is as short as practical.	
7.	Grease interceptor is as close as practical to the fixtures served.	
8.	Each fixture connected to a grease trap is provided with an approved type flow control or restricting device installed in a readily accessible and visible location. Devices shall be designed so that the flow through the device or devices at no time exceeds the rated capacity of the grease trap or interceptor.	
9.	Each fixture discharging into a grease trap or interceptor is individually trapped and vented in an approved manner.	
10.	Each grease trap and interceptor is properly vented to allow air circulation throughout the entire drain system.	
11.	No water jacketed grease trap or interceptor is installed.	
12.	Grease interceptor is easily accessible for inspection and cleaning and access does not require the use of ladders or the removal of bulky equipment.	
13.	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.	
14.	Location of grease interceptor is shown on approved building plans. Drawings of interceptor are complete and show all dimensions, capacities, reinforcing and structural design calculations.	
15.	Grease interceptor is not installed in any part of a building where food is handled. Location shall meet the approval of the Administrative Authority.	
16.	Grease interceptor serves a single business establishment.	
17.	Grease interceptor 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 2/3 of the total interceptor capacity and shall have a minimum liquid volume of 333 gallons. The length of the inlet compartment shall be longer than the inside width	

	of the interceptor.	
18.	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.	
19.	The liquid depth shall be greater than or equal to 2'-6" and less than 6'-0".	
20.	There shall be a minimum of 9 inches of open vent space above the water level to the top of the interceptor. The airspace has a minimum capacity equal to 12-1/2% of the grease interceptors liquid volume.	
21.	The grease interceptor has at least one square foot of surface area for every 45 gallons of liquid capacity.	
22.	All waste enters the interceptor through the inlet pipe.	
23.	Grease interceptor cover is gastight and has a minimum opening of 20 inches in diameter.	
24.	Grease interceptors 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.	
25.	Redwood baffles are not installed in grease interceptor.	
26.	A sample box is provided on the outlet side of the grease interceptor. This is recommended and may be required by the UPC so that the Administrative Authority can periodically sample the effluent quality.	
27.	Grease interceptor is permanently and legibly marked with the manufacturer's name of trademark, model number, UPC certification mark and registration (if product is listed by the International Association of Plumbing and Mechanical Officials), and any other markings required by law.	
<b>NOTES</b>		

	of the interceptor.	
18.	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.	
19.	The liquid depth shall be greater than or equal to 2'-6" and less than 6'-0".	
20.	There shall be a minimum of 9 inches of open vent space above the water level to the top of the interceptor. The airspace has a minimum capacity equal to 12-1/2% of the grease interceptors liquid volume.	
21.	The grease interceptor has at least one square foot of surface area for every 45 gallons of liquid capacity.	
22.	All waste enters the interceptor through the inlet pipe.	
23.	Grease interceptor cover is gastight and has a minimum opening of 20 inches in diameter.	
24.	Grease interceptors 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.	
25.	Redwood baffles are not installed in grease interceptor.	
26.	A sample box is provided on the outlet side of the grease interceptor. This is recommended and may be required by the UPC so that the Administrative Authority can periodically sample the effluent quality.	
27.	Grease interceptor is permanently and legibly marked with the manufacturer's name of trademark, model number, UPC certification mark and registration (if product is listed by the International Association of Plumbing and Mechanical Officials), and any other markings required by law.	
<b>NOTES</b>		


**Instructions for form:**

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.

<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)

# Complying With Storm and Sanitary Sewer Requirements



## Guidelines for Restaurants

Restaurants play a large role in preventing water pollution and sewer blockages. Mount Vernon City Code requires proper disposal of grease because grease can cause sewage backups to the businesses and homes to the area. While a stream may not be visible near your restaurant, all storm water eventually drains to a local stream, which may be a tributary to our scenic river, the Kokosing. Restaurant managers should practice the following.

- **Never allow kitchen grease to enter any drain not connected to a grease trap or interceptor.**
- **Determine a proper maintenance schedule for your grease trap or interceptor.** Frequency should be based on the amount of oil and grease generated and the size of the grease removal system. If it is not cleaned out as often as needed, the effectiveness of the system decreases, allowing grease to enter the sewer.
- **Scrape food wastes from plates, pots, and pans into the trash before washing.** Do not use the garbage disposal for greasy food wastes.
- **Use paper towels to wipe up grease from the work areas instead of washing it down the drain.**
- **Store grease containers away from floor drains to prevent spilling into the drains and keep them properly covered.** Make sure grease collection containers are emptied regularly by your hauling company. Keep them in a secure area.
- **Don't dump mop water or "gray water" into parking lots or storm drains.** Pour it down sinks and toilets instead, where it will flow to the City's wastewater treatment plant. Storm drains empty to local streams and rivers, untreated, and an excess of pollutants can cause fish kills and other problems.
- **Keep trash dumpster lids closed and make sure your dumpster does not leak liquids onto the ground.**
- **Keep trash and litter around your property cleaned up.** Sweep up litter and leaves; do not flush into storm drains.
- **Do not use soap or degreasers if you need to hose off sidewalks, parking lots, or equipment.** Absorb any oily residue with an absorbent material such as absorbent pads or paper towels before spaying.
- **Use fertilizers, weed killers, and de-icing materials only as needed, follow instructions and do not over apply.**
- **Report hazardous spills or dumping immediately.** If an accident occurs or you notice an illegal discharge, call the Wastewater Treatment Plant immediately at 393-9502.
- **Do not use or add: hot water, acids, caustics, solvents, or emulsifying agents to grease traps or interceptors.**