

The District's grease interceptor program began in February of 1976 with the passing of grease interceptor requirements in the Lake County Sanitation District Sewer Use Ordinance. The Ordinance requires installation of grease interceptors in all food service and restaurant establishments. Additionally, the Ordinance established maintenance requirements, as well as discharge limitations for fats, oil and grease of 100 mg/L (milligrams per liter).

Ordinance

§602 – Types of Wastes Prohibited (A-CC inclusive)

(B) Any water or waste which may contain more than 100 ppm, by weight, of fat, oil or grease. (Ord. No. 871, 2-2-76)

§605 – Interceptors Required

Grease, oil and sand interceptors shall be provided when in the opinion of the Administrator, they are necessary for the proper handling of liquid wastes containing grease in excessive amounts, or any flammable wastes, sand, and other harmful ingredients; except that such interceptors shall not be required for buildings used for residential purposes. All interceptors shall be of a type and capacity approved by the Administrator, and shall be so located as to be readily and easily accessible for cleaning and inspection. (Ord. No. 871, 2-2-76)

§606 – Maintenance of Interceptors

All grease, oil and sand interceptors shall be maintained by the Owner, at his expense, in continuously efficient operation at all times. (Ord. No. 871, 2-2-76)

Fats, oil and grease, also referred to as "FOG", from local food service and restaurants is a major problem for our local sewer systems. The Lake County Sanitation District devotes many equipment and man hours to unstopping and cleaning manholes, pump stations and sewers lines clogged with grease.

FAQs

Q: "What is a gravity grease interceptor and how does it work?"

A: A grease interceptor is a device connected to your plumbing system, designed to remove Fats, Oil and Grease (FOG) from the wastewater before it enters the sewer system. It works by slowing the flow of water to allow the FOG time to float to the top where it is contained within the baffle system. There are different types of gravity grease interceptors including, large 1000 to 1500 gallon in-ground units, smaller under-counter units and self-cleaning hydromechanical grease interceptors.

Q: "How often should I pump out my gravity grease interceptor?"

A: The proper pumping and cleaning frequently is dependent upon many variables, such as type of food prepared, cooking and cleaning methods, volume of food or meals prepared and the size of your gravity grease interceptor. Lake County Special Districts recommends that all gravity grease interceptors be inspected frequently and owners use the "25% Rule" where interceptors are pumped out when the combined thickness of the floating FOG and settleable solids layers exceed 25% of the total liquid depth of the interceptor. All gravity grease interceptors should be pumped out at least once every three (3) months.

Q: "What size gravity grease interceptor should I have?"

A: To effectively remove FOG, a gravity grease interceptor must retain the water long enough for the FOG and settleable solids to separate within the baffle chamber. Lake County Special Districts suggests that gravity grease interceptors are sized to match the number of Drainage Fixture Units (DFUs) of the kitchen or source (see UPC Chapter 7) as follows:

Gravity Grease Interceptor Sizing	
DFUs	GGI Volume (gallons)
8	500
21	750
35	1000
90	1250
172	1500
216	2000
307	2500
342	3000
428	4000
Example #1: Typical fast food kitchen = 17 DFUs = 750 gallon GGI	
Example #2: Typical larger kitchen = 45 DFUs = 1250 gallon GGI	

Q: "What kinds of problems do Fats, Oil and Grease cause?"

A: FOG in the sewer system builds up on the walls of the sewer lines, accumulates in pump station wet wells, creates odors and clogs pumping and sensing equipment. When FOG builds up on the walls of the sewer line it reduces the system's capacity and can result in complete blockage. This results in sewer backups and overflows, greatly increased man hours and maintenance costs, equipment downtime, and fines.

Q: "Isn't my business grandfathered in under the old rules?"

A: No, any food or restaurant establishment that does not have a properly sized and properly maintained gravity grease interceptor is in violation of the sewer use ordinance.

Q: "My business doesn't produce grease. Do I still have to install a large grease interceptor?"

A: Provisions were made in the ordinance to allow facilities with no or low levels of grease to be exempt from the requirements. The facility must provide information and sampling data which substantiates the request. Other facilities could request a variance from the sizing requirements and be allowed to install approved types of smaller interior hydromechanical grease interceptors and grease removal devices.

Q: "Will a garbage disposal affect a grease interceptor?"

A: Absolutely. The ground up solids that go through the disposal will settle to the bottom of the grease interceptor and take up valuable space. The reduced volume will lower the detention time of the device and will reduce its efficiency. The increase loading will also lead to an increase in needed maintenance frequency.

Q: "My restaurant doesn't have space to install a exterior in-ground grease interceptor. Are there other options?"

A: Special Districts Administration can permit the installation of certain types of interior hydromechanical grease interceptors and grease removal devices instead of exterior in instances of space limitations. However, smaller interior units require substantial increased maintenance and implementation of best management practices to maintain compliance and effective grease removal. Please contact Lake County Special Districts at (707) 263-0119 to be considered for interior hydromechanical grease interceptor approval.

Q: "How do I have a Gravity Grease Interceptor installed?"

A: Most plumbers and plumbing contractors install gravity grease interceptors and hydromechanical grease interceptors. All installations must comply with California Plumbing Code Requirements.

Installation

All grease interceptors and traps must meet sizing requirements, construction standards and conform to Environmental Health Department requirements, plumbing and building codes. The District suggests that the following information be discussed with the Environmental Health Department and your County (or City) Building Department PRIOR to installation:

- Proposed interceptor location
- Proposed size of grease interceptor
- Detailed drawing of interceptor and piping
- Number and type of fixtures proposed to be attached

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 lids and pump out the accumulated water, grease, oil and sediment in the interceptor.
4. Scrape clean and remove baffles if possible.
5. Scrape the sides, the lid, and the baffles with appropriate tools to remove as much of the grease as possible. Dispose the grease into the pumper truck.
6. Inspect the Inlet, Baffle, and Outlet Tees. Inspect the interceptor lids. Clean, repair (tees) and replace gaskets (lids), as necessary.
7. Replace the baffles
8. Re-open the isolation valve, verify flow.
9. Seal lids on the interceptor.
10. Record the date and volume of grease removed and maintenance performed in the maintenance log.

Hydromechanical Grease Interceptors

Hydromechanical grease interceptors are usually cleaned by facility staff. A proper maintenance procedure for a hydromechanical grease interceptor is outlined below:

1. Remove the access cover(s) to the unit. Remove the solids strainer and dispose of the accumulated debris as solid waste. Empty the grease/oil container into a "brown grease" container.
2. Bail out any remaining grease/oil remaining in the interceptor. Dispose the grease/oil into a "brown grease" container.
3. Remove the remaining water and discharge it into the sanitary sewer system.
4. Remove all removable parts (baffles, skimmer blades, troughs, etc.).
5. Scrape the sides, the lid, and the baffles and removable parts with appropriate tools to remove as much of the grease as possible. Dispose the "scrapings" into a "brown grease" container.
6. Inspect all parts (skimmer blades, gaskets, etc.), for damage and wear, and replace as necessary.
7. Re assemble the removed parts, and baffle. Re-install the strainer and grease container. Verify proper mechanical operation. Secure lids.
8. Record the date and volume of grease removed and maintenance performed in the maintenance log.

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

Maintenance and cleaning events must be recorded in written form and kept on file on site. A bound logbook is suggested. Receipts or manifests from private pumping septic and grease haulers should indicate destination of hauled waste. The records shall be made

The District suggests consulting with or hiring a licensed plumbing contractor to insure proper installation "the first time" and avoid the risk of improper installation.

Grease interceptors should be inspected regularly and cleaned on a regular basis to ensure efficient operation. The District suggests that they be cleaned no less than twice per year. The necessary frequency of cleaning will vary greatly depending on the nature of the establishment. Factors such as types of food, cooking methods, cleaning techniques, carry-out verses dine-in, all will determine volume of grease discharged. Facilities with high grease loadings may have to clean their interceptors as often as monthly. Facilities with under-sized interceptors, especially under-the-counter units, may have to clean weekly or even daily. To properly clean a grease interceptor, the entire contents (liquids and solids) must be pumped out. Leaving accumulated solids in the bottom of grease interceptors can lead to short circuiting and reduced retention times, as well as, very unpleasant odors.

As noted above, 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.

Maintenance of external large capacity grease interceptors should be performed by qualified grease or septic haulers. These services typically will empty the entire contents with a pumper truck and haul the grease and sludge to an approved disposal site. A list of local grease haulers is available on our website. Smaller under counter grease interceptors (grease traps) can be cleaned by in-house staff. Please refer to the manufacturers cleaning procedures, as cleaning methods may vary with type of unit. The District requires that cleaning events be recorded in a maintenance log and kept on file. 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.

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

Gravity Grease Interceptors

Gravity grease interceptors, due to their size, are usually cleaned by service technicians or licensed grease haulers. A proper maintenance procedure for a gravity grease interceptor is outlined below:

1. Contact a service technician or licensed grease hauler for cleaning. See list of Fats, Oil and Grease Haulers and Recyclers.

available to District or Health Department inspectors upon request. Maintenance records shall contain the following information:

- Date of Maintenance
- Person performing maintenance
- Estimated volume of grease removed
- Disposal location, Example: Grease recycle bin, etc.
- Manager's signature or initials for verification

Entries noting grease pick-up (disposal) MUST also be noted on the maintenance log.

Interceptors

Two types of collection devices for fats, oil and grease are as follows:

A gravity grease interceptor is a large (500-4,000 gallon capacity) in-ground collector, and is generally located outside and usually has all kitchen waste streams connected.

A hydromechanical grease interceptor is a much smaller (30-50 gallon capacity) collector, and is generally located inside the kitchen/food preparation area, and is usually connected to all kitchen waste streams except automated dishwashers.

Both systems require diligent effort by restaurant facility managers and staff to insure that they are regularly maintained and properly serviced. For a grease collection device to work correctly, it must be properly designed, installed, maintained, and serviced regularly.

For additional information or answers to your questions, please feel free to contact the Lake County Special Districts Administration at 263-0119.

Lake County Sewer Use Ordinance

Properly sized interceptors or grease traps are required for all commercial food and restaurant facilities operating in Lake County.

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Installation costs (new construction) for a gravity grease interceptor or hydromechanical grease interceptor averages \$3,000 - \$7,500, depending on the type, size, and location required for installation. Generally, hydromechanical units (installed under sinks) cost significantly less than in-ground gravity grease interceptors, but require more maintenance and frequent (daily or weekly) cleaning. Some hydromechanical unit maintenance and cleaning activities can be performed by trained kitchen staff. Collected grease and debris can be lawfully disposed in "brown-grease" receptacles available through licensed grease haulers. For large interceptors, most food preparation managers find it necessary and cost effective to contract with professional service provider to clean and dispose of collected grease and debris on a regular/scheduled basis.

Service providers for recycling fats, oils and grease...

The Lake County Sanitation District does not accept waste products with oils or grease into the sanitary sewer system or any of the wastewater treatment facilities. Grease haulers and rendering companies process animal by-products into saleable commodities. Cooking (yellow) grease and interceptor (brown) grease are collected from restaurants for reprocessing. Costs and types of materials accepted by haulers vary from company to company.

The list of registered grease haulers based in Lake County are as follows:

Action Sanitary, Inc.
P.O. Box 492
Lower Lake, CA 95457
(707) 994-5068

Roto-Rooter of Lake County
6585 Jacobsen Road
Kelseyville, CA 95451
(707) 279-9461

The following companies also service Lake County:

Yokayo Biofuels
150 Perry Street
Ukiah, CA 95482
(707) 472-0900, or (877) 804-1900

North State Rendering Company Inc.
P.O. Box 1478
Chico, CA 95927
(530) 343-6076

Sacramento Rendering Co.
11350 Kiefer Blvd.
Sacramento, CA 95830
(800) 339-6493

The above listed service providers are in the grease/oil recycling business and may provide service in Lake County. Others may be listed in the Yellow Pages of your phone book. Please contact these companies directly if you have any questions or wish to arrange for service.

Non-Compliance Costs

Without the use of gravity grease interceptors, grease is washed directly into the plumbing system from the kitchen sink or dishwasher. Over time, grease sticks to the inside of the plumbing system, builds up and eventually blocks the entire pipe. The result can be:

- Raw sewage overflowing in your restaurant or neighboring businesses
- Raw sewage overflowing in your parking lot, sidewalk and street
- Costs of an expensive and unpleasant cleanup
- Potential contact with disease-causing organisms
- Environmental Health Department Violations
- Retrofit costs
- Sewer Use Ordinance Violations
- Loss of customers

Best Management Practices (BMPs) to Prevent Blockages in the Sewer System

1. Train kitchen staff about how they can help ensure BMPs are implemented.
Reason: People are more willing to support an effort if they understand the basis for it.
Benefit: All of the subsequent benefits of BMPs will have a better chance of being implemented.
2. Post "No Grease" signs above sinks and on the front of dishwashers.
Reason: Signs serve as a constant reminder for staff working in kitchens.
Benefit: These reminders help minimize grease discharge to the traps/interceptors and reduce the cost of cleaning and disposal.
3. Use water temperatures less than 140°F in all sinks, especially the pre-rinse sink before the mechanical dishwasher.
Reason: Temperatures in excess of 140°F will dissolve grease, but the grease can re-congeal/solidify in the sewer collection system as the water cools.
Benefit: The facility will reduce energy costs for heating the water, reduce plugging of the sewer lateral, and the need to hire someone to unplug it.
4. Use a three-sink dishwashing system (washing/rinsing/sanitizing in a 50-100 ppm bleach solution) – water is less than 140°F (see #3).
Reason: The three-sink system uses water less than 140°F, where a mechanical dishwasher requires a minimum temperature of 160°F. The UPC prohibits the discharge of dishwasher water to grease traps.
Benefit: The facility will reduce energy costs for heating the water and operating the dishwasher.
5. Recycle waste cooking oil.
Reason: There are waste oil recyclers in northern California.
Benefit: Recycling is a low-cost option, which will reduce the amount of garbage a facility must pay to have hauled away.

6. "Dry-wipe" pots, pans, and dishware prior to dishwashing.
Reason: By dry-wiping and disposing in the garbage, the material will not be sent to the grease traps.
Benefit: This will reduce the amount of material collected in the grease trap and interceptors, and will lessen cleaning and maintenance costs of FOG in collection systems.
7. Dispose of food waste by recycling or by depositing in with other solid wastes.
Reason: To divert food wastes away from grease traps and interceptors.
Benefit: Recycling or solid waste disposal will reduce the frequency and cost of grease trap and interceptor cleaning.

Recommended Maintenance Activities

1. Managers should always try to observe all interceptor cleaning/maintenance activities to ensure the device is properly cleaned and operational.
Reason: Grease interceptor service companies may take shortcuts, and not completely clean the interceptor.
Benefit: Witnessing this activity will ensure you are getting the full value for your money.
2. Clean under-sink hydromechanical grease interceptors weekly. If interceptors are more than 25% full, increase the cleaning frequency.
Reason: Weekly (or more frequent) cleaning of the hydromechanical grease interceptors by the facilities own staff will reduce the costs. If the facility does not have a gravity grease interceptor, the hydromechanical grease interceptor is the only means of preventing grease from entering the sewer system.
Benefit: Cleaning under-sink hydromechanical grease interceptors frequently will reduce the frequency and cost of gravity grease interceptor cleaning.
3. Clean gravity grease interceptors routinely.
Reason: Gravity grease interceptors must be cleaned routinely to insure that grease accumulation does not cause the interceptor to operate poorly.
Benefit: Routine cleaning will prevent plugging of the sewer lateral, and need to hire someone to unplug it.
4. Keep a Maintenance Log.
Reason: The maintenance log serves as a record of the frequency and volume of cleaning and maintenance, and helps insure the interceptor is cleaned on a regular basis.
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Chemical Additives and Treatments

Be cautious of chemicals and additives (including soaps and detergents) that claim to dissolve grease. Some of these additives simply pass grease down pipes where it can clog the sewer lines in another area. Besides being expensive for the facility, they increase

operation and maintenance costs for the District which causes higher sewer bills for customers.

Website Links for Grease and Gravity Grease Interceptor Information

www.calfog.org

www.big-dipper.com

www.greasestopper.com