



GREASE CONTROL PROGRAM

Second Revision



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I. **PURPOSE OF THE GREASE CONTROL PROGRAM**

Grease is one of the primary causes of stoppages, backups, and overflows in a wastewater collection system. Grease buildup in the sewers also causes restrictions and blockage problems.

KUB's goal is to prevent grease from entering into the KUB sanitary sewer collection system. This goal is achieved through the Grease Control Program and routine sanitary sewer collection system maintenance.

KUB's Grease Control Program consists of two important components:

1) Commercial Food Service Facilities

As part of the Grease Control Program, food service facilities (FSFs) are required to capture and dispose of the grease generated by their operation. KUB requires FSFs to install approved, adequately sized, properly installed and maintained grease control equipment. Through this effort, the goal of improved sewer service through proper grease control can be achieved.

2) Residential or Public Awareness Program

Residential customers in a sanitary sewer overflow area are identified through a Geographical Information System (GIS) query and receive information about KUB's Can the Grease Program. The program is designed to raise awareness about disposing of grease in a way that is good for household plumbing, KUB's wastewater system, and our environment. The Can the Grease Program recommends scraping cooled grease into a metal can for disposal in the trash.

The commercial FSF component of KUB's Grease Control Program is the focus of this document, including the proper sizing, installation, and maintenance of grease control equipment. The administrative and inspection requirements are established as well.



II. **DEFINITIONS**

Unless otherwise expressly stated in the Rules and Regulations for KUB's Wastewater Division with respect to which this program is incorporated by reference and a part, or the context in this Appendix clearly indicates a different intention, the following terms shall, for the purpose of this Appendix, have the meanings indicated in this section:

A. Black Water

Wastewater from sanitary fixtures such as toilets and urinals.

B. Food Service Facility

Any establishment, business, or facility engaged in preparing, serving, or making food available for consumption.

C. Garbage Grinder

A device which shreds or grinds up solid or semisolid waste materials into smaller portions for discharge into the sanitary sewer collection system.

D. Gray Water

Refers to all wastewater other than "Black Water" as defined in this section.

E. Grease

A material composed primarily of fats, oil, and grease from animal or vegetable sources. The term fats, oil, and grease may be referred to as grease or types of grease in this document and does not include petroleum-based products.

- Brown grease – Fats, oils, and grease that is discharged to the grease control equipment.
- Yellow grease – Fats, oils, and grease, usually spent oil from deep frying, that has not been in contact with or contaminated from other sources (water, wastewater, solid waste, etc.) and can be recycled. Yellow grease is typically stored in a rendering container outside the FSF.

F. Grease Control Equipment (GCE)

A device for separating and retaining grease and solids prior to wastewater exiting the FSF and entering KUB's sanitary sewer collection system. The GCE is so constructed as to separate and trap or hold grease from entering KUB's sanitary sewer collection system. Devices include grease interceptors and grease traps.

G. Grease Interceptor

Grease control equipment identified as a large tank or device so constructed as to separate and trap or hold fats, oil, and grease substances from the sewage discharged from a facility in order to keep fats, oil, and grease substances from entering the sanitary sewer collection system. Grease Interceptors are typically located outside of FSFs due to their size. The minimum size of grease interceptor allowed by KUB is 1000 gallons.



H. Grease Trap

Grease Control Equipment identified as an internal grease trap, usually installed inside and under or in close proximity to sinks or other fixtures likely to discharge grease in an attempt to separate, trap or hold fats, oils and grease substances to prevent their entry into the sanitary sewer collection system. Grease traps are sized by retention capacity (i.e. 20 lbs., 30 lbs., 40 lbs., etc.). All grease traps must be installed with a flow restrictor and vent. Grease traps are only allowed under specific conditions including, but not limited to, if no cooking is occurring at the facility.

I. User

In this document, the term User shall mean a KUB customer operating a FSF inside the KUB wastewater service area who is obligated to follow the requirements of this Grease Control Program.

J. Waste Hauler

One who transfers waste from the site of a customer to an approved site for disposal or treatment. The waste hauler is responsible for assuring that all federal, state and local regulations are followed regarding waste transport.



III. GENERAL CRITERIA

- A. Food Service Facility (FSF) Employee Training.** FSFs shall train their employees on proper grease disposal practices and the requirements of this program.
- B. Installation Requirements for New or Remodeled FSFs.** All proposed or newly remodeled FSFs inside the KUB wastewater service area are required to install or upgrade to approved, adequately sized, properly installed and maintained grease control equipment in accordance with this document. Remodeling of an FSF may include, but is not limited to, the addition of new plumbing fixtures or kitchen equipment. See Section IV for installation requirements.
- C. Inspections and Compliance for Existing FSFs.** All existing FSFs inside the KUB wastewater service area shall conduct their operations in such a manner that grease is captured on the user's premises and then properly disposed of. This is ensured through routine inspections by KUB.

KUB inspects each FSF on an as-needed basis to ensure each facility is complying with the Grease Control Program requirements.

In addition, through preventive maintenance records or emergency calls related to grease, KUB identifies and targets "grease problem areas" in the wastewater collection system. FSFs located upstream of these problem areas and that discharge their wastewater into the "problem" lines are identified as potential contributors to the grease build-up. Each FSF in the vicinity of the problem area is inspected. The facilities' maintenance records, grease control practices, and the adequacy of their grease control equipment is assessed. Maintenance records are reviewed and posting of "No Grease" signs are required at each fixture that drains to the grease control equipment.

It is prohibited for facilities to have grease control equipment that malfunctions due to structural failure. For example, a collapsed or deteriorated baffle wall, leaks, improperly located or missing tees, and other deficiencies will prevent the grease control equipment from working properly. These deficiencies must be addressed through repair of existing equipment or installation of a larger device. The Grease Control Equipment Certification aspect of the program requires FSFs to have their equipment inspected every other year to verify that all components of the interceptor or trap is installed and the device is working properly.

Following the inspection, KUB provides the FSF with a copy of the inspection report and other program materials if necessary. The inspections typically result in one of the following actions:



1. Facilities equipped with adequately-sized and properly maintained grease control equipment who are in compliance with the Grease Control Program by implementing grease control practices are provided a copy of the inspection form indicating compliance.
2. Facilities may be required to develop and submit to KUB a proposed plan designed to achieve compliance through improved housekeeping and/or increased maintenance and pumping on the existing grease control equipment.
3. Facilities that are not successful in achieving compliance with the Grease Control Program and other applicable rules and regulations of KUB through improved housekeeping and increased maintenance and cleaning of the existing grease control equipment will be required to install and maintain adequate grease control equipment to bring the facility into compliance. KUB recognizes that it may not be possible for the facility to immediately come into compliance with the requirements and in such cases, if appropriate, KUB, at its sole discretion, may be willing to work with the customer to arrive at an acceptable compliance schedule for the customer.
4. FSFs that fail to comply with the required maintenance schedule for a grease trap will be required to install a grease interceptor to prevent continued discharge of grease to KUB's sanitary sewer collection system.

D. Risk Rating and Enforcement. Risk assessment ratings (Low, Medium, High, or Unacceptable) will be assigned to FSFs after each inspection based on compliance with KUB program guidelines, adequacy of the grease control equipment, or other factors as necessary. The standard Grease Control Program permitting fee is a minimum of \$100 unless otherwise stated. Rating assessments will be reviewed periodically for changes in compliance, and any changes will be reflected in the next permit renewal fee.

KUB evaluates compliance with the Grease Control Program during site inspections. Failure to comply with program requirements increases the risk of producing grease related SSOs in KUB's collection system, which must be prevented. Enforcement action will be taken as necessary in accordance with the Enforcement Response Guide for the Grease Control Program. More information pertaining to reasons for enforcement can be found in Section VII.

E. Upgrades or Changes to Existing FSFs. Any changes or upgrades to an existing FSF (including the addition of new plumbing fixtures or kitchen equipment) which, directly or indirectly, affects grease discharge to the KUB



sanitary sewer collection system must be reported to KUB to determine if the existing grease control equipment is adequate.

- F. Prohibited Discharges to Grease Control Equipment.** Black water shall not be discharged to the grease control equipment. Additives or chemicals designed to absorb, purge, consume, treat, or otherwise eliminate fats, oils, and grease are prohibited – see Section V.D. for more information. Yellow grease is prohibited from being discharged to a grease trap and should not be discharged to a grease interceptor.
- G. Floor Drains.** Only floor drains which discharge or have the potential to discharge grease shall be connected to a grease interceptor.
- H. Garbage Grinders and Dishwashers.** Solid food waste products should be disposed of through normal solid waste/garbage disposal procedures. The use of garbage grinders, which discharge to the sanitary sewer, is discouraged within the KUB wastewater service area. However, in the event that the device is used in a commercial or industrial facility, it must have a large particle trap and be connected to the grease interceptor. The use of a garbage grinder decreases the operational capacity of the grease interceptor and will require an increased pumping frequency to ensure continuous and effective operation. Garbage grinders are prohibited from being connected to a grease trap.

Commercial dishwashers must be connected to a grease interceptor and are prohibited from being connected to a grease trap. Dishwashers discharge hot water and soap, which can melt grease stored in grease control equipment. Melted grease may then pass through the grease control equipment into the customer's private service lateral and ultimately to KUB's sanitary sewer collection system, where the grease can harden and causes buildup and overflows.



IV. **INSTALLATION REQUIREMENTS FOR GREASE CONTROL EQUIPMENT**

Grease traps can be used at FSFs with no cooking or frying. The appropriate type of grease control equipment for all other FSFs will be determined by KUB based on FSF type, plumbing fixtures, and amount of food preparation. See Exhibit B.

Grease control equipment shall be installed and connected so that it is easily accessible for inspection, cleaning, and removal of the intercepted grease at any time and be located in an area that is a sufficient distance from any air intake. A grease interceptor may not be installed inside any part of a building unless approved by KUB.

Location of grease control equipment shall meet the approval of KUB. The best location for grease interceptors is in an area outside of an outside wall, but upstream from the black water drain line(s). The best location for grease traps is inside the FSF in an area that can be easily accessed for maintenance.

A. CRITERIA FOR GREASE INTERCEPTORS

1. **Construction of Grease Interceptors.** Grease interceptors shall be constructed of sound durable materials, not subject to excessive corrosion or decay and in accordance with KUB's standards described in this document and shall have a minimum of two compartments with fittings designed for grease retention. Other grease removal devices or technologies shall be subject to the written approval of KUB. Such approval shall be based on demonstrated removal efficiencies of the proposed technology. KUB's standard drawing for grease interceptors is in Exhibit A.
2. **Access.** Access to grease interceptors shall be available at all times to allow for their maintenance and inspection. Access to grease interceptors shall be provided by at least two manholes terminating 1-inch above finished grade with a cast iron frame and cover. One manhole shall be located above the inlet tee and the other manhole shall be located above the outlet tee.
3. **Load-Bearing Capacity.** In areas where additional weight loads may exist (example: vehicular traffic in parking or driving areas), the grease interceptor and manhole lids shall be designed to have adequate load-bearing capacity.
4. **Inlet and Outlet Piping.** Wastewater discharging to a grease interceptor shall enter only through the inlet tee of the grease interceptor. Each grease interceptor shall have only one inlet and one outlet tee. Tees must be constructed of non-collapsible material. Refer to Exhibit A for tee installation specifications.



5. **Grease Interceptor Sizing.** The required size of a grease interceptor is determined by using the KUB Grease Interceptor Sizing Formula shown in Exhibit B of this program. Grease interceptors will have a capacity of not less than 1,000 gallons nor exceed a capacity of 3,000 gallons. If the calculated capacity using the KUB Grease Interceptor sizing formula exceeds 3,000 gallons, multiple units in series or additional equipment may be necessary.

Grease interceptor designs represent minimum standards for normal usage for grease control. Installations with heavier usage require more stringent measures for which the user is responsible and the user shall pay the costs to provide additional measures if required by KUB. KUB reserves the right to evaluate interceptor sizing on an individual basis for FSFs with special conditions, such as highly variable flows, high levels of grease discharge, or other unusual situations that are not adequately addressed by the formula.

B. CRITERIA FOR GREASE TRAPS

1. **Required Components for Grease Traps.** Grease traps are required to be installed as per manufacturer specifications, which include a flow restrictor and venting prior to the discharge entering the grease trap. See Exhibit C for KUB's standard drawing for grease traps.
2. **Access.** Access to grease traps shall be available at all times, to allow for their maintenance and inspection.
3. **Inlet and Outlet Piping.** Wastewater discharging to a grease trap shall enter only through the inlet tee of the grease trap. Each grease trap shall have only one inlet and one outlet tee.
4. **Grease Trap Sizing.** The appropriate size of grease trap will be determined by KUB upon consultation with the FSF based on the type of FSF, but in no case may it be less than a 20 gpm / 40 lb rated trap. Exceptions to this requirement may be approved by KUB in rare situations. FSFs using a dishwasher and/or garbage grinder are prohibited from installing a grease trap unless approved by KUB under specific conditions in rare cases.

C. NEW GREASE CONTROL EQUIPMENT TECHNOLOGIES

All grease removal devices or technologies different from KUB's current specifications included in this document shall be subject to review and approval by KUB prior to use. Such approval shall be based on demonstrated removal efficiencies of the proposed technology.



V. GREASE CONTROL EQUIPMENT MAINTENANCE

- A. Cleaning/Pumping.** The user, at the user's expense, shall maintain all grease control equipment.

Maintenance of grease traps includes the removal of all fats, oil, and grease from the detention compartment of the trap. Removal is usually accomplished by hand-dipping or scooping the collected grease, solids, and wastewater from the trap. Maintenance may also be performed by a waste hauler.

Maintenance of grease interceptors must be performed by a waste hauler and includes the complete removal of all contents, including floating materials, wastewater, bottom sludges and solids, as well as grease that has accumulated on the side walls. Dewatering or discharging removed waste back into the grease interceptor from which the waste was removed or into any other grease interceptor, for the purpose of reducing the volume to be disposed of, is prohibited.

- B. Cleaning/Pumping Frequency.** Grease traps must be cleaned no less than monthly or as often as necessary to prevent grease from entering KUB's sanitary sewer collection system. Failure to perform cleaning and maintenance of a grease trap as required may result in a mandatory contract with a waste hauler to perform the cleaning per the required schedule or result in a requirement for the FSF to install a larger capacity grease control device that could include an external grease interceptor.

Grease interceptors must be pumped out completely a minimum of once every three months, or more frequently as needed to prevent grease from entering the sanitary sewer collection system. Measurement of solids greater than or equal to 25% shall be considered non-compliance with KUB's Grease Control Program. This compliance monitoring and evaluation may be conducted by a sludge judge or electronic measuring device.

- C. Disposal of Grease Waste.** Waste removed from grease traps must be disposed of with other solid waste or garbage in a sealed container to prevent leakage unless cleaned and disposed of by a waste hauler. All waste removed from grease interceptors must be disposed of at a facility approved by KUB to receive such waste in accordance with the provisions of this program. In no way shall the pumpage be returned to any private or public portion of the sanitary sewer collection system.

- D. Additives.** Any additive(s) placed into the grease interceptor, grease trap, or building discharge line system on a constant, regular, or scheduled basis is prohibited. Such additives include, but are not be limited to, chemicals, drain cleaners, acids, caustics, enzymes, commercially available bacteria, emulsifiers, surfactants, or other product designed to absorb, purge,



consume, treat, or otherwise eliminate fats, oils, and grease. Written approval may be given by KUB under specific circumstances; however, approved use may be discontinued at any time if grease is found downstream of the FSF. In addition, approved use will in no way be considered as a substitution to the required maintenance procedures and schedule.

- E. Manifests.** All pumpage from grease interceptors must be tracked by a manifest, which confirms pumping, hauling, and disposal of waste. The customer should obtain a manifest from the waste hauler with signatures for their records.

- F. Maintenance Log.** A Grease Control Equipment Cleaning Record Maintenance Log and pumping manifest indicating each cleaning or pumping for the previous 24 months shall be maintained by each facility required to install grease control equipment. This log shall include the date and time of the cleaning, and the company or person conducting the cleaning. For grease interceptors, the log should also include the volume pumped and disposal site. Maintenance logs shall be kept in a conspicuous location for inspection and be made immediately available to the KUB representative upon request.

- G. Grease Control Equipment Certification Program.** All FSFs with grease control equipment must have their grease interceptor or trap inspected every other year to verify that all components of the interceptors and traps are installed and working properly. Documentation of the equipment inspection shall be submitted to certify that there are no missing inlet or outlet tees, holes or cracks, deterioration of the equipment, overflowing grease at the outlet tee, or any other obvious problems with the interceptor or trap and there is access to all interceptor chambers. A detailed corrective action response is required from the FSF owner or authorized representative if deficiencies are discovered and the grease control equipment fails the certification.

Corrective actions are reviewed by KUB and an appropriate course of action will be agreed to between KUB and the FSF. Failure to appropriately address the deficiencies noted in the failed certification will result in enforcement action as outlined in KUB's Enforcement Response Plan for the Grease Control Program. Immediate corrective action may be necessary if grease is found to be entering the KUB sanitary sewer collection system.



VI. ADMINISTRATIVE REQUIREMENTS

- A. Initial Data Acquisition.** Upon inspection of each FSF, KUB's inspector shall complete an inspection sheet to facilitate the population of KUB's Grease Control Program FSF database. The database is updated with additional or modified information after each inspection.
- B. Permits and Fees.** All FSFs that discharge wastewater to KUB's system must agree to comply with all aspects of this program and will be issued a Grease Control Program permit. A permit fee for facilities with grease discharges has been set by KUB. The fee was established to allow cost recovery and includes, but is not limited to, the cost of field, administrative, engineering, and clerical expenses involved. The fees shall be not less than \$100.00 per year for each facility, and include an additional charge for FSFs that pose a high or unacceptable risk to the KUB system. The annual permit fee is applied to the customer's KUB bill.
- C. Inspection and Entry.** Authorized personnel of KUB, bearing proper credentials and identification, shall have the right to enter upon all properties subject to this program, at any time and without prior notification, for the purpose of inspection, observation, measurement, sampling, testing or record review, in accordance with this program.



VII. **ENFORCEMENT, ABATEMENT AND APPEALS**

See Sections XV and XVI of KUB's Wastewater Rules and Regulations for the applicable provisions pertaining to enforcement, abatement and appeals. In addition to the authorities established under these provisions, KUB may take the following actions as outlined in the Enforcement Response Guide for the Grease Control Program:

Enforcement Responses for Violations of Rules. Any person who is in noncompliance and/or violates any provision of KUB's Rules and Regulations, program requirements, or a compliance order shall be subject to an enforcement response, including but not limited to a civil penalty in an amount not to exceed ten thousand (\$10,000) dollars per offense, and the possibility of water and/or wastewater service termination. Civil penalties or termination of water and/or wastewater service may be appealed in accordance with Section XV of the Rules and Regulations. The following situations are subject to an enforcement response by KUB as outlined in the Enforcement Response Guide for the Grease Control Program:

- FSF operating without an appropriate permit
- Failure to pay annual permit fees
- Failure to install grease control equipment or to meet KUB guidelines for grease control equipment design and installation
- Structural failure of grease control equipment
- Inadequate maintenance of grease control equipment
- Pumping records not maintained
- Failure to report upgrades/changes to existing facilities to KUB
- Failure to report improper operation or failure of grease control equipment
- Denial of entry
- Inadequate FSF employee training and/or recordkeeping
- Failure to respond to KUB enforcement action

A. Emergency Suspension of Services. KUB may suspend water or wastewater service when such suspension is necessary, in the opinion of KUB, in order to stop an actual or threatened discharge which:

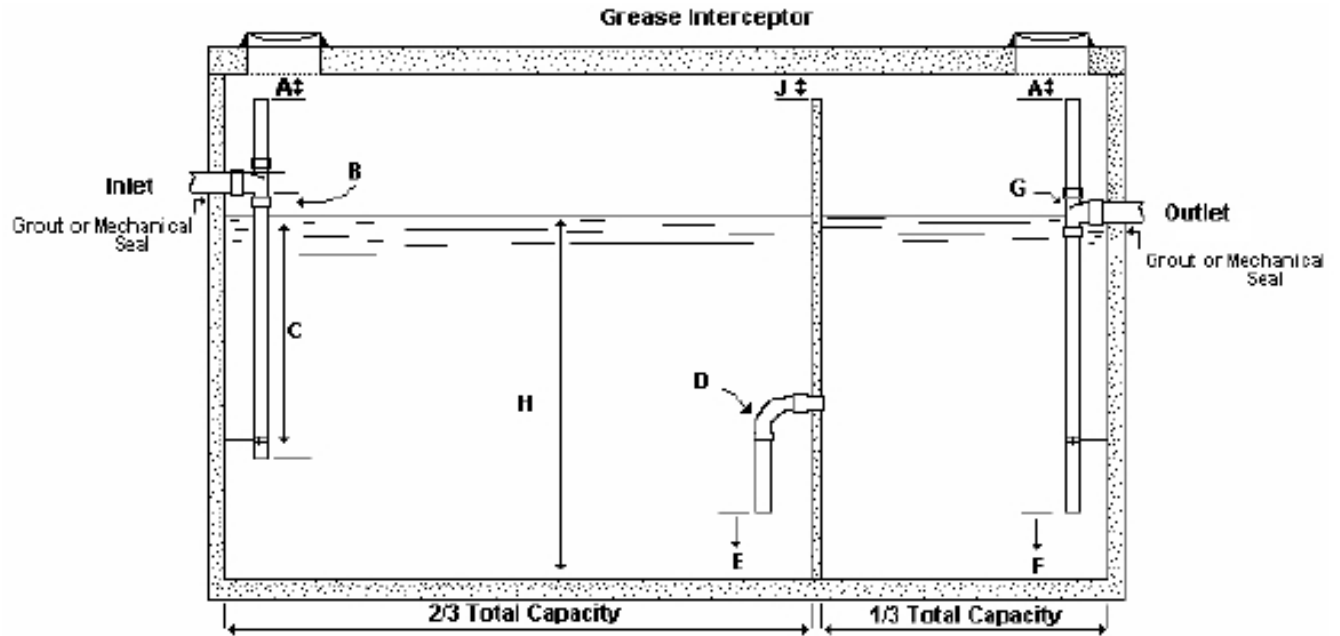
- 1) presents or may present an imminent or substantial endangerment to the health or welfare of persons or the environment;
- 2) causes stoppages, sanitary sewer overflows, or excessive maintenance to be performed to prevent stoppages in the sanitary sewer collection system;
- 3) causes interference to the POTW; or
- 4) causes KUB to violate any condition of its NPDES permits, orders or consent decrees.

See KUB's Rules and Regulations for the Wastewater Division for more information.

EXHIBITS

EXHIBIT A

External Grease Interceptor Typical Installation



- A.) Minimum 6", but not less than pipe diameter.
- B.) Inlet pipe invert to be 2 1/2" above liquid surface.
- C.) Inlet pipe to terminate 2/3 depth of water level.
- D.) 90 degree Sweep, minimum size - 6".
- E.) 12" from floor to end of sweep.
- F.) 12" from floor to end of outlet pipe.
- G.) Outlet pipe no smaller than inlet pipe, minimum - 4".
- H.) Minimum depth of liquid capacity - 42".
- J.) Maximum distance from ceiling - 6".

EXHIBIT B

Grease Interceptor Sizing Formula Based on EPA-2 Model

Note: No cooking/frying; food prep only; use adequately sized grease trap; based on flow per plumbing code.

Type of Restaurant Fixture	Flow Rate	No. of Fixtures	Amount
Single compartment sink	20 gpm		
Double compartment sink	25 gpm		
2, single compartment sinks	25 gpm		
2, double compartment sinks	35 gpm		
Triple sink	35 gpm		
Floor drains, 1 ½ or 2 in. drain	35 gpm		
Janitor sink	35 gpm		
30 gal. Dishwasher	15 gpm		
50 gal. Dishwasher	25 gpm		
50-100 gal. Dishwasher	40 gpm		
Garbage grinder or disposal	40 gpm		
Totals:			

A. Average Flow Rate = Flow Total _____ gpm / Number of fixtures _____ = _____ gpm

Restaurant Type and Sizing Factors:

Fast food (no dishes)	=	.50
Dine-in (0-100 seats)	=	.50
Dine-in (>100 seats)	=	.60
Cafeteria-Buffer	=	.75
Food Production	=	.85

B. Sub Total = A X Sizing Factor, _____ gpm X _____ Factor = _____ gpm

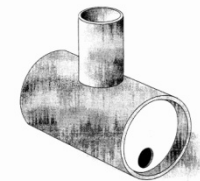
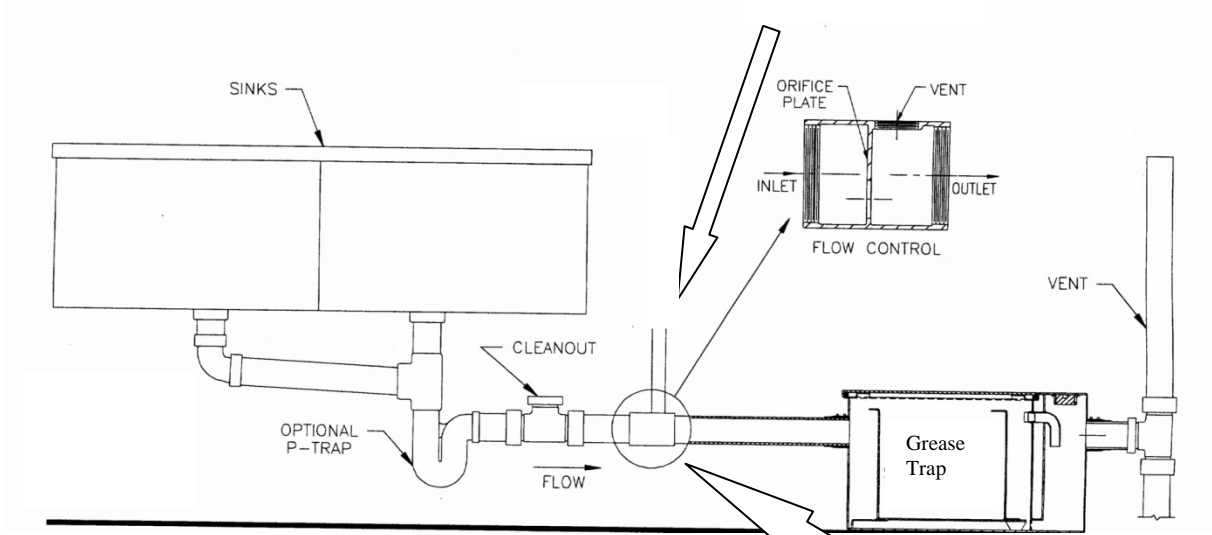
C. Sub Total = B X 60 min.= avg. flow for 1 hour = _____ X 60 = _____ gph

D. Total = C x 2 hrs retention time = trap volume = _____ X 2 = _____ gal

Note: If larger than 1500 gallons, may use two or more tanks in series.

Internal (Under the Sink) Grease Trap Diagram

Vent Pipe
Must be lower than
sink drain



Flow Restrictor

FLC SERIES