

SECTION VII—FOG CONTROL PLAN

Requirement¹

Each Enrollee shall evaluate its service area to determine whether a FOG control program is needed. If an Enrollee determines that a FOG program is not needed, the Enrollee must provide justification for why it is not needed. If FOG is found to be a problem, the Enrollee must prepare and implement a FOG source control program to reduce the amount of these substances discharged to the sanitary sewer system. This plan shall include the following as appropriate:

- (a) An implementation plan and schedule for a public education outreach program that promotes proper disposal of FOG;
- (b) A plan and schedule for the disposal of FOG generated within the sanitary sewer system service area. This may include a list of acceptable disposal facilities and/or additional facilities needed to adequately dispose of FOG generated within a sanitary sewer system service area;
- (c) The legal authority to prohibit discharges to the system and identify measures to prevent SSOs and blockages caused by FOG;
- (d) Requirements to install grease removal devices (such as traps or interceptors), design standards for the removal devices, maintenance requirements, BMP requirements, record keeping and reporting requirements;
- (e) Authority to inspect grease producing facilities, enforcement authorities, and whether the Enrollee has sufficient staff to inspect and enforce the FOG ordinance;
- (f) An identification of sanitary sewer system sections subject to FOG blockages and establishment of a cleaning maintenance schedule for each section; and
- (g) Development and implementation of source control measures for all sources of FOG discharged to the sanitary sewer system for each section identified in (f) above.

¹ SWRCB Order No. 2006-0003-DWQ § B.13 (vii)

Supporting Documents

1. FOG Control Program. Created August 2006 by Water Quality Technician. Revised August 2008, December 2009, and November 2011.
2. Watch Areas (previously known as FOG Hot Spots). Created November 2011 by Management Analyst.
3. Food Handling Facility – Wastewater Discharge Permit (Tier 3). Updated November 2011.
4. Best Management Practices (BMPs) for Restaurant FOG. August 2008.
5. 2010California Plumbing Code Excerpt for Sections 1009, 1014, and 1015.

Sewer System Management Plan - FOG Control Program

The Fats Oil and Grease (FOG) Program was developed as a component of the Sanitary Sewer System Management Plan (SSMP). Many of the elements required for a FOG program were already in place as part of the City's routine sewer system maintenance.

The FOG Control Program consists of 6 elements as follows:

- ▶ Public education and outreach
- ▶ Legal authority to prohibit illegal discharges, FOG blockages, and prevent sanitary sewer overflows (SSOs),
- ▶ Require installation of grease removal devices and a means to standardize their installation,
- ▶ Authority to inspect grease-producing facilities and enforce noncompliant facilities,
- ▶ Identify system locations subject to FOG blockages and establish maintenance schedules, and,
- ▶ Develop and implement source control measures for all FOG discharged to the sanitary sewer system.

How each of these elements is addressed in the City's FOG Control Program is described below.

Public Education and Outreach

The City's primary avenue for distributing public outreach material will continue to be at local community events. The City's Water Quality Technician (WQT) attends Farmer's Markets from May through October to distribute various FOG outreach promotional items, including FOG collection receptacles, scrappers and brochures. The City also participates in regional FOG public outreach activities through the Bay Area Pollution Prevention Group (BAPPG) and the Bay Area Clean Water Association (BACWA). Previously used public outreach methods, such as utility bill inserts, are used as needed. The City generally distributes "Sustainability Starts at your Sink" brochures with utility bills annually.

Legal Authority

The City is required to maintain adequate legal authority to prohibit discharges to the system and identify measures to prevent Sanitary Sewer Overflows (SSO) and blockages caused by FOG. The City uses Fish and Game Code 5650(a) *Polluting Water*, which states, amongst other things, that it is unlawful to deposit harmful substances in waterways. The City uses Health and Safety Code 5411, *Discharge of Sewage or Other Waste*, which states that no person shall discharge sewage or other waste in any manner that results in contamination or nuisance. The City uses the 2010 *California Plumbing Code* Section 1009, 1014 and 1015 for newly constructed or permitted facilities. Lastly, the City uses its Industrial Waste (Pretreatment) Program and *Benicia Municipal Code Section 13.50* to enforce illegal discharges of FOG to the collection system and as a mechanism to develop and issue permits if needed.

Identification of FOG Blockages and Establishment of Maintenance Schedules

The City is required to identify locations of FOG blockages and establish a routine maintenance schedule to help avoid SSOs. In 2009, City staff identified "hot spots" (an identifiable location of (a) sanitary sewer overflow(s) that requires repeat maintenance due to controllable upstream influences)

during the initial development of the FOG Control Program. These “hot spots” were subsequently reviewed interdepartmentally to determine potential causes and solutions for prevention. It was determined that each location was the result of a combination of piping deficiencies (e.g. inadequate slope, a “belly”), roots, or FOG. Although FOG was witnessed at various locations, it was not solely responsible for SSOs at any of the originally identified locations. It was determined that none of the original locations met the criteria for a FOG “hot spot”, and that the best mechanism for preventing SSOs at these locations was periodic maintenance (cleaning) by the City’s Public Works Maintenance Division rather than reliance upon FOG removal devices at a limited number of commercial establishments. The “hot spot” list was subsequently revised and is shown in the attached spreadsheet referred to as “watch areas”. It can be found in the SSMP, Section 7, immediately following this FOG Control Program.

The WQT tracks all SSOs in the City through monthly reports from the Public Works Maintenance Division. The WQT uses a color-coded map to monitor where SSOs are occurring, the cause of the SSOs and if localized FOG prevention measures are necessary. The City’s ”watch area” spreadsheet will be periodically updated as needed based on analysis of the WQT’s tracking system map.

FOG Source Control Program

The City is required to develop and implement source control measures for FOG control. The City’s current FOG source control program consists of public outreach and education and the requirement to install grease removal devices for new businesses and tenants who make major improvements to their site that produce FOG. The public outreach and education program was discussed in a previous section.

Previously the City’s source control program also included food service establishments (FSEs). In November 2009, the City held two FOG trainings for restaurants that were in the previously identified “hot spots” service area. Fourteen of the twenty restaurants invited to the training attended. The previously identified hot spots were subsequently removed from the hot spot list for reasons described above. With no current “hot spots” identified in the City’s service area, the WQT identified food service establishments (FSEs) with large in-ground grease interceptors to target for source control. FSEs with in-ground interceptors were/are issued a no fee permit to clearly state what is required of each facility. Each FSE with a permit is inspected once per year. During inspections the WQT distributes FOG outreach material, including posters and asks to review grease interceptor inspection and maintenance logs. Additional restaurants may be targeted in the future for source control activities such as inspections and distribution of FOG BMPs if “hot spots” are identified.

Watch Areas
(previously known as FOG Hot Spots)

	Location	Customer Class (residential or commercial)	Type of infrastructure (pipeline or lift station)	Cause (FOG, roots, engineering deficiency, infrastructure problem)	Corrective Action
1	Burger King - 828 Southampton Rd	Commercial (Restaurant)	Grease Interceptor	Grease	Water Quality Technician requires businesses to clean grease interceptor twice per year and maintain the records for 3 years. The WQ Technician inspects each business once per year after the cleanings have been completed.
2	Burger King - 1980 Columbus Pkwy	Commercial (Restaurant)	Grease Interceptor	Grease	
3	Carl's Jr. - 5990 East 2nd St	Commercial (Restaurant)	Grease Interceptor	Grease	
4	Panda Express 802 Southampton Rd	Commercial (Restaurant)	Grease Interceptor	Grease	
5	Jack in the Box - 6001 Goodyear Rd	Commercial (Restaurant)	Grease Interceptor	Grease	
6	Mc Donalds - 2110 Columbus Pkwy	Commercial (Restaurant)	Grease Interceptor	Grease	
7	Mc Donalds - 1602 2nd Street	Commercial (Restaurant)	Grease Interceptor	Grease	
8	Huckleberry's - 800 Southampton Rd	Commercial (Restaurant)	Grease Interceptor	Grease	
9	Raley's - 890 Southampton Rd	Commercial (Restaurant)	Grease Interceptor	Grease	
10	Safeway - 50 Solano Square	Commercial (Restaurant)	Grease Interceptor	Grease	
11	Valley Fine Foods - 3909 Park Rd	Commercial (Restaurant)	Grease Interceptor	Grease	
12	First and B St./East 2nd and B St. 123 First St. to East 2nd and B St. L/S	Commercial and Residential	8" main and lift station	Flat - FOG	Bi-annual cleaning Discussions underway for proper method to approach First St to B St. (e.g. TV)
13	510 East Channel Rd. Manhole #716	Commercial	12" main	Belly - FOG	Bi-annual cleaning CIP WWO63 "East Channel Road Sewerline Replacement" is on the future CIP list for FY 2016-2031.
14	350 Raymond Dr. Manhole #157	Residential	8" main	Eng - FOG	Quarterly cleaning
15	Lower Bolton Circle and Rose Dr. Manhole #844	Residential	8" main	Infras - FOG	Bi-annual cleaning
16	141 East F St. (@ 2nd St.)	Residential (with predominately commercial flow)	6" main	Belly - FOG	Bi-annual cleaning
17	1032 West 5th St. (Continental) Manhole #242	Residential	6" main	Flat - FOG	Quarterly cleaning
18	1421 East 5th St. (Alley 400 block East N) Manhole #096	Residential	6" main	Old infrastructure plus nearby businesses have changed over the years - FOG	Quarterly cleaning



**CITY OF BENICIA
FOOD HANDLING FACILITY
WASTEWATER DISCHARGE PERMIT (TIER 3)**

Business Name: _____

Effective date: _____

Business Location: _____

Expiration date: _____

Business Address: _____

- I. Grease removal devices (interceptors or grease traps) are required for food handling facilities that meet any of the following criteria:
- New Construction
 - Remodels, additions, alterations or repairs valued at or greater than \$20,000
 - Have caused or contributed to a grease related collection system blockage resulting in increased maintenance requirements and/or a sanitary sewer overflow.
- II. A food handling facility may be granted a waiver or conditional variance from grease interceptor installation and pumping requirements at the discretion of the City's Wastewater Treatment Plant Superintendent or Building Official.
- III. All **new** grease removal devices shall be designed, constructed and installed in accordance with the California Plumbing Code, Title 24, Part 5, Chapter 10 (Attachment 1) and shall have a sampling access point located downstream of the device.
- IV. Each grease removal device shall be maintained, to ensure proper operation and performance, as follows:
- For interceptors, removing the entire contents of the device each time the device is pumped. A minimum pumping frequency of once per six-month period, or more frequently to ensure that the facility discharge does not cause or contribute to a grease-related collection system blockage resulting in maintenance requirements and/or a sanitary sewer overflow. Pumping by a food handling facility waste grease hauler (Attachment 2) is required.
 - For grease traps, remove all solid waste inside the trap each time the trap is cleaned. Daily cleaning is recommended.
- V. The Permit Holder shall record maintenance activities on a "Cleaning Log" provided by the City (Attachment 3) with the following information for each grease removal device located on the premises. The records shall be kept a minimum of three years and provided to the City upon request.
- Date of service
 - Volume pumped (gallons)
 - Name of food handling facility waste grease hauler
 - Approved waste grease disposal location
 - If the device is an interceptor, a copy of the waste manifest for documentation
- VI. The Permit Holder shall notify the City of Benicia-Water Quality Division at (707) 746-4337 of any:
- Sale, lease, closure, or transfer of the operations for which the permit was issued
 - Change of facility name
 - Alteration or change to a grease removal device (s)
 - Remodels, additions, or repairs valued at greater than or equal to \$20,000
- VII. Access to the facility shall be granted to city staff to conduct wastewater compliance inspections and to collect wastewater discharge samples as needed.
- VIII. The City of Benicia will conduct random, unannounced inspections to verify compliance with the terms and conditions of this Food Handling Facilities Wastewater Discharge Permit.
- IX. The City of Benicia will pursue enforcement and penalties as authorized by Benicia Municipal Code Chapter 13.50.

AUTHORIZATION

The above named Permit Holder is hereby authorized to discharge wastewater to the community sewer, subject to Permit Holder's compliance with these Permit Terms and Conditions, Benicia Municipal Code Chapter 13.50.040, and the Food Handling Facility Wastewater Discharge Permit Standard, and Terms and Conditions. The City may amend this Permit to include revisions during the term of the Permit. This permit shall remain in effect until a new permit is issued.

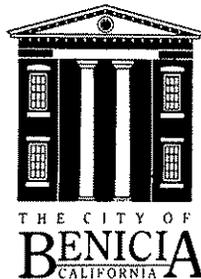
Jeff Gregory, Wastewater Treatment Plant Superintendent
614 East 5th Street, Benicia, CA 94510

Date

Restaurant Handouts

Best Management Practices (BMPs) for Restaurant Fats, Oils and Grease (FOG)

- Post “No Grease” signs above sinks and on the front of dishwashers.
- Check grease interceptor solids depth routinely. The combined thickness of the floating grease and the bottom solids should not be more than 25% of the total interceptor depth.
- Collect and recycle waste cooking oil.
- “Dry wipe” pots, pans, and kitchen equipment, before cleaning.
- Maintain a routine grease trap cleaning schedule.
- Use absorbent paper under fryer baskets.
- Use absorbents such as cat litter or paper towels to pick up oil and grease spills before mopping.
- Do not use emulsifiers or solvents other than typical dishwashing detergents.
- TRAIN ALL STAFF ON BMPS.



City of Benicia
Water Quality Division
FOG Control Program: 707-746-4337

tubing trap shall be installed without a listed tubing trap adapter. Listed plastic trap adapters shall be permitted to be used to connect listed metal tubing traps.

1003.3 The size (nominal diameter) of a trap for a given fixture shall be sufficient to drain the fixture rapidly, but in no case less than nor more than one (1) pipe size larger than given in Table 7-3. The trap shall be the same size as the trap arm to which it is connected.

1004.0 Traps — Prohibited.

No form of trap that depends for its seal upon the action of movable parts shall be used. No trap that has concealed interior partitions, except those of plastic, glass, or similar corrosion-resisting material, shall be used. "S" traps, bell traps, and crown-vented traps shall be prohibited. No fixture shall be double trapped. Drum and bottle traps shall be installed only for special conditions. No trap shall be installed without a vent, except as otherwise provided in this code.

1004.1 Bladders, check valves or any other type of devices with moveable parts shall be prohibited to serve as a trap.

1005.0 Trap Seals.

Each fixture trap shall have a liquid seal of not less than two (2) inches (51 mm) and not more than four (4) inches (102 mm), except where a deeper seal is found necessary by the Authority Having Jurisdiction. Traps shall be set true with respect to their liquid seals and, where necessary, they shall be protected from freezing.

1006.0 Floor Drain Traps.

Floor drains shall connect into a trap so constructed that it can be readily cleaned and of a size to serve efficiently the purpose for which it is intended. The drain inlet shall be so located that it is at all times in full view. When subject to reverse flow of sewage or liquid waste, such drains shall be equipped with an approved backwater valve.

1007.0 Trap Seal Protection.

Floor drain or similar traps directly connected to the drainage system and subject to infrequent use shall be protected with a trap seal primer, except where not deemed necessary for safety or sanitation by the Authority Having Jurisdiction. Trap seal primers shall be accessible for maintenance.

1008.0 Building Traps.

Building traps shall not be installed except where required by the Authority Having Jurisdiction. Each building trap when installed shall be provided with a cleanout and with a relieving vent or fresh-air intake on the inlet side of the trap, which need not be larger than one-half the diameter of the drain to which it connects. Such relieving vent or fresh-air intake shall be carried above grade and terminate in a screened outlet located outside the building.

1009.0 Industrial Interceptors (Clarifiers) and Separators.

1009.1 When Required. Interceptors (clarifiers) (including grease, oil, sand interceptors [clarifiers], etc.) shall be required by the Authority Having Jurisdiction when they are necessary for the proper handling of liquid wastes containing grease, flammable wastes, sand, solids, acid or alkaline substances, or other ingredients harmful to the building drainage system, the public or private sewer, or to public or private sewage disposal.

1009.2 Approval. The size, type, and location of each interceptor (clarifier) or separator shall be approved by the Authority Having Jurisdiction. Except where otherwise specifically permitted, no wastes other than those requiring treatment or separation shall be discharged into any interceptor (clarifier).

1009.3 Design. Interceptors (clarifiers) for sand and similar heavy solids shall be so designed and located as to be readily accessible for cleaning and shall have a water seal of not less than six (6) inches (152 mm).

1009.4 Relief Vent. Interceptors (clarifiers) shall be so designed that they will not become air-bound if closed covers are used. Each interceptor (clarifier) shall be properly vented.

1009.5 Location. Each interceptor (clarifier) cover shall be readily accessible for servicing and maintaining the interceptor (clarifier) in working and operating condition. The use of ladders or the removal of bulky equipment in order to service interceptors (clarifiers) shall constitute a violation of accessibility. Location of all interceptors (clarifiers) shall be shown on the approved building plan.

1009.6 Maintenance of Interceptors. Interceptors shall be maintained in efficient operating condition by periodic removal of accumulated grease, scum, oil, or other floating substances and solids deposited in the interceptor.

1009.7 Discharge. The waste pipe from oil and sand interceptors shall discharge as approved by the Authority Having Jurisdiction.

1010.0 Slaughterhouses, Packing Establishments, etc.

Every fish, fowl, and animal slaughterhouse or establishment; every fish, fowl, and meat packing or curing establishment; every soap factory, tallow-rendering, fat-rendering, and hide-curing establishment shall be connected to and shall drain or discharge into an approved grease interceptor (clarifier).

1010.1 [AGR] Meat and Poultry Processing Plants.

1010.1.1 Drainage and Plumbing Systems. Drainage and plumbing systems shall meet the requirements of Section 724.0.

1010.1.1.1 Each floor drain shall be equipped with a deep-seal trap.

1010.1.2 The plumbing shall be installed so as to prevent sewage from backing up and flooding the floor.

Exception: Floor drains in areas not regularly washed down will be acceptable with deep-seal traps, provided

that such drains are connected to secondary drainage systems discharging into a safe sink or basin (air gap) that is properly trapped and vented, and that such drains accomplish the objectives and intent of this section.

1010.1.3 Interceptor traps which are connected with the sewer system shall not be near any edible products department or in any area where products are unloaded from or loaded into vehicles. To facilitate cleaning, such traps shall have inclined bottoms and be provided with suitable covers.

1010.2 [AGR] Collection Centers and Facilities. All drains shall be properly installed with adequate deep-sealed traps of the conventional "P," "U" or "S" type and vents.

1010.3 [AGR] Horse Meat and Pet Food Establishments. There shall be an efficient drainage and plumbing system for the establishment and premises. All drains and gutters shall be installed with traps and vents approved by the Department.

1010.4 [AGR] Draining and Plumbing. There shall be an efficient drainage and plumbing system for the plant and premises.

1010.4.1 Drainage and Gutters. All drains and gutters shall be properly installed with approved traps and vents. The drainage and plumbing system must permit the quick runoff of all water from plant buildings, and of surface water around the plant on the premises, and all such water shall be disposed of in such a manner as to prevent a nuisance or health hazard.

1010.4.2 Sewage and Plant Waste. The sewer system have adequate slope and capacity to remove readily all waste from the various processing operations and to minimize, or if possible, prevent stoppage and surcharging of the system. When the sewage disposal system is a private system which is required to be approved by a state or local health authority, the applicant shall furnish the administrator a letter from the proper health authority indicating that the sewage disposal system is acceptable to such authority.

1011.0 Minimum Requirements for Auto Wash Racks.

Every private or public wash rack and/or floor or slab used for cleaning machinery or machine parts shall be adequately protected against storm or surface water and shall drain or discharge into an approved interceptor (clarifier).

1012.0 Commercial and Industrial Laundries.

Laundry equipment in commercial and industrial buildings that does not have integral strainers shall discharge into an interceptor having a wire basket or similar device that is removable for cleaning and that will prevent passage into the drainage system of solids one-half (½) inch (12.7 mm) or larger in maximum dimension, such as string, rags, buttons, or other solid materials detrimental to the public sewerage system.

1013.0 Bottling Establishments.

Bottling plants shall discharge their process wastes into an interceptor that will provide for the separation of broken glass

or other solids, before discharging liquid wastes into the drainage system.

1014.0 Grease Interceptors.

1014.1 Where it is determined by the Authority Having Jurisdiction that waste pretreatment is required, an approved type of grease interceptor(s) complying with the provisions of this section shall be correctly sized and properly installed in grease waste line(s) leading from sinks and drains, such as floor drains, floor sinks and other fixtures or equipment in serving establishments such as restaurants, cafes, lunch counters, cafeterias, bars and clubs, hotels, hospitals, sanitariums, factory or school kitchens, or other establishments where grease is introduced into the drainage or sewage system in quantities that can effect line stoppage or hinder sewage treatment or private sewage disposal. Any combination of hydro-mechanical, gravity grease interceptors and engineered systems shall be allowed in order to meet this code and other applicable requirements of the Authority Having Jurisdiction when space or existing physical constraints of existing buildings necessitate such installations. A grease interceptor shall not be required for individual dwelling units or for any private living quarters. Water closets, urinals, and other plumbing fixtures conveying human waste shall not drain into or through the grease interceptor.

1014.1A [OSHPD 1, 2, 3 & 4] The Authority Having Jurisdiction the individual official, board, department or agency authorized to administer and enforce the sewage treatment system in the area of the location of the health facility.

1014.1B [OSHPD 1, 2, 3 & 4] Grease traps shall not be installed in food preparation area of the kitchens.

1014.1C [OSHPD 1, 2, 3 & 4] Grease interceptors shall be installed outside of the kitchen area in location affording ease of maintenance and servicing.

1014.1.1 Each fixture discharging into a grease interceptor shall be individually trapped and vented in an approved manner.

1014.1.2 All grease interceptors shall be maintained in efficient operating condition by periodic removal of the accumulated grease and latent material. No such collected grease shall be introduced into any drainage piping or public or private sewer. If the Authority Having Jurisdiction determines that a grease interceptor is not being properly cleaned or maintained, the Authority Having Jurisdiction shall have the authority to mandate the installation of additional equipment or devices and to mandate a maintenance program.

1014.1.3 Food Waste Disposal Units and Dishwashers. Unless specifically required or permitted by the Authority Having Jurisdiction, no food waste disposal unit or dishwasher shall be connected to or discharge into any grease interceptor. Commercial food waste disposers shall be permitted to discharge directly into the building's drainage system.

1014.2 Hydromechanical Grease Interceptors.

1014.2.1 Plumbing fixtures or equipment connected to a Type A and B hydromechanical grease interceptor shall discharge through an approved type of vented flow control installed in a readily accessible and visible location. Flow control devices shall be designed and installed so that the total flow through such device or devices shall at no time be greater than the rated flow of the connected grease interceptor. No flow control device having adjustable or removable parts shall be approved. The vented flow control device shall be located such that no system vent shall be between the flow control and the grease interceptor inlet. The vent or air inlet of the flow control device shall connect with the sanitary drainage vent system, as elsewhere required by this code, or shall terminate through the roof of the building, and shall not terminate to the free atmosphere inside the building.

Exception: Listed grease interceptors with integral flow controls or restricting devices shall be installed in an accessible location in accordance with the manufacturers' instructions.

1014.2.2 The total capacity in gallons (L) of fixtures discharging into any hydromechanical grease interceptor shall not exceed two and one-half (2½) times the certified GPM (L/m) flow rate of the interceptor as per Table 10-2.

For the purpose of this section, the term "fixture" shall mean and include each plumbing fixture, appliance, apparatus, or other equipment required to be connected to

or discharged into a grease interceptor by any provision of this section.

1014.2.3 A vent shall be installed downstream of hydro-mechanical grease interceptors in accordance with the requirements of this code.

1014.3 Gravity Grease Interceptors. Required gravity grease interceptors shall comply with the provisions of Sections 1014.3.1 through 1014.3.7.

1014.3.1 General. The provisions of this section shall apply to the design, construction, installation, and testing of commercial kitchen gravity grease interceptors.

1014.3.2 Waste Discharge Requirements.

1014.3.2.1 Waste discharge in establishments from fixtures and equipment which contain grease, including but not limited to, scullery sinks, pot and pan sinks, dishwashers, soup kettles, and floor drains located in areas where grease-containing materials exist, shall be permitted to be drained into the sanitary waste through the interceptor when approved by the Authority Having Jurisdiction.

1014.3.2.2 Toilets, urinals, and other similar fixtures shall not drain through the interceptor.

1014.3.2.3 All waste shall enter the interceptor through the inlet pipe only.

1014.3.3 Design.

1014.3.3.1 Gravity Interceptors shall be constructed in accordance with the applicable standard in Table 14-1 or the design approved by the Authority Having Jurisdiction.

**TABLE 10-2
HYDROMECHANICAL INTERCEPTOR SIZING USING GRAVITY FLOW RATES¹**

DIAMETER OF GREASE WASTE PIPE	MAXIMUM FULL PIPE FLOW (GPM) ²	SIZE OF GREASE INTERCEPTOR	
		ONE-MINUTE DRAINAGE PERIOD (GPM)	TWO-MINUTE DRAINAGE PERIOD (GPM)
2"	20	20	10
3"	60	75	35
4"	125	150	75
5"	230	250	125
6"	375	500	250

¹ For interceptor sizing by fixture capacity see the example below.

² ¼" (.240) slope per foot based on Manning's formula with friction factor N = 0.012

**EXAMPLE FOR SIZING
HYDROMECHANICAL INTERCEPTOR(S) USING FIXTURE CAPACITY**

Step 1: Determine the flow rate from each fixture.

[Length] X [Width] X [Depth] / [231] = Gallons X [.75 fill factor] / [Drain Period (1 min or 2 min)]

Step 2: Calculate the total load from all fixtures that discharge into the interceptor.

FIXTURES	COMPARTMENTS	LOAD (gallons)	SIZE OF GREASE INTERCEPTOR ONE-MINUTE DRAINAGE PERIOD (gpm)	TWO-MINUTE DRAINAGE PERIOD (gpm)
Compartment size				
24"x 24"x 12"	2	44.9		
Hydrant		3		
Rated Appliance		2		
		49.9	50	25

1014.3.4 Location.

1014.3.4.1 Each grease interceptor shall be so installed and connected that it shall be at all times easily accessible for inspection, cleaning, and removal of the intercepted grease. A gravity grease interceptor complying with IAPMO Z1001, *Standard for Prefabricated Gravity Grease Interceptors*, shall not be installed in any part of a building where food is handled. Location of the grease interceptor shall meet the approval of the Authority Having Jurisdiction.

1014.3.4.2 Interceptors shall be placed as close as practical to the fixtures they serve.

1014.3.4.3 Each business establishment for which a gravity grease interceptor is required shall have an interceptor which shall serve only that establishment unless otherwise approved by the Authority Having Jurisdiction.

1014.3.4.4 Each gravity grease interceptor shall be located so as to be readily accessible to the equipment required for maintenance.

1014.3.5 Construction Requirements.

1014.3.5.1 Purpose. Gravity grease interceptors shall be designed to remove grease from effluent and shall be sized in accordance with this section. Gravity grease interceptors shall also be designed to retain grease until accumulations can be removed by pumping the interceptor. It is recommended that a sample box be located at the outlet end of all gravity grease interceptors so that the Authority Having Jurisdiction can periodically sample effluent quality.

1014.3.6 Sizing Criteria.

1014.3.6.1 Sizing. The volume of the interceptor shall be determined by using Table 10-3. If drainage fixture units (DFUs) are not known, the interceptor shall be sized based on the maximum DFUs allowed for the pipe size connected to the inlet of the interceptor. Refer to Table 7-5, Drainage Piping, Horizontal.

1014.3.7 Abandoned Gravity Grease Interceptors. Abandoned grease interceptors shall be pumped and filled as required for abandoned sewers and sewage disposal facilities in Section 722.0.

1015.0 FOG (Fats, Oils, and Greases) Disposal System.

1015.1 Purpose. The purpose of this section is to provide the necessary criteria for the sizing, application, and installation of FOG disposal systems designated as a pretreatment or discharge water quality compliance strategy.

1015.2 Scope. FOG disposal systems shall be considered engineered systems and shall comply with the requirements of Section 301.4 of this code.

1015.3 Components, Materials, and Equipment. FOG disposal systems, including all components, materials, and equipment necessary for the proper function of the system, shall comply with Sections 301.1.3 or 301.2 of this code.

1015.4 Sizing Application and Installation. FOG disposal systems shall be engineered, sized, and installed in accordance with the manufacturers' specifications and as specified in ASME A112.14.6, *Standard for FOG (Fats, Oils, and Greases) Disposal Systems*, as listed in Chapter 14, Table 14-1 of this code.

**TABLE 10-3
GRAVITY GREASE INTERCEPTOR SIZING**

DFUS ^{1,3}	INTERCEPTOR VOLUME ²
8	500 gallons
21	750 gallons
35	1,000 gallons
90	1,250 gallons
172	1,500 gallons
216	2,000 gallons
307	2,500 gallons
342	3,000 gallons
428	4,000 gallons
576	5,000 gallons
720	7,500 gallons
2112	10,000 gallons
2640	15,000 gallons

¹ The maximum allowable DFUs plumbed to the kitchen drain lines that will be connected to the grease interceptor.

² This size is based on: DFUs, the pipe size from this code; Table 7-5; Useful Tables for flow in half-full pipes (ref: *Mohinder Nayyar Piping Handbook*, 3rd Edition, 1992). Based on 30-minute retention time (ref.: George Tchobanoglous and Metcalf & Eddy, *Wastewater Engineering Treatment, Disposal and Reuse*, 3rd Ed. 1991 & Ronald Crites and George Tchobanoglous, *Small and Decentralized Wastewater Management Systems*, 1998). Rounded up to nominal interceptor volume.

³ When the flow rate of directly connected fixture(s) or appliance(s) have no assigned DFU values, the additional grease interceptor volume shall be based on the known flow rate (gpm) multiplied by 30 minutes.

1015.5 Performance. FOG disposal systems shall be tested and certified as listed in Chapter 14, Table 14-1 of this code, and other national consensus standards applicable to FOG disposal systems as discharging a maximum of 100 mg/L FOG.

1015.6 [OSHPD 1, 2, 3 & 4] Grease traps shall not be installed in food preparation area of the kitchens.

1015.7 [OSHPD 1, 2, 3 & 4] Grease Interceptors shall be installed outside of the kitchen area in location affording ease of maintenance and servicing.

Gravity Grease Interceptor Sizing Example:

Given: A restaurant with the following fixtures and equipment.

One food preparation sink; three floor drains - one in the food prep area, one in the grill area, and one receiving the indirect waste from the ice machine and a mop sink.

Kitchen Drain Line DFU Count (from Table 7-3):

3 floor drains @ 2 DFUs each =	6 DFUs
Mop sink @ 3 DFUs each =	3 DFUs
Food prep sink @ 3 DFUs each =	3 DFUs
Total	12 DFUs

Using Table 10-3, the grease interceptor will be sized at 750 gallons.