WEST CENTRAL CONSERVANCY DISTRICT

POLICY 2009-02

A POLICY SETTING FORTH THE REQUIREMENTS OF THE WEST CENTRAL CONSERVANCY DISTRICT IN REGULATING SEWAGE DISCHARGE BY INTERCEPTION

WHEREAS, West Central Conservancy District ("WCCD") is a duly formed conservancy district providing for the collection and treatment of wastewater pursuant to Indiana Code 14-33 and

WHEREAS, the Board of Directors, pursuant to IC 14-33-5-20 is empowered by statute to accomplish each purpose for which the District is established, including but not limited to, making such regulations as necessary for the administration of the affairs to accomplish each purpose, and

WHEREAS, wastewater regulation requires a greater compliance in order to meet federal and state regulations relative to wastewater discharge, and

WHEREAS, the Board of Directors of WCCD recognizes that certain private, governmental, commercial and industrial establishments discharge as an expected or unexpected byproduct of their service substances, elements and/or chemicals, and

WHEREAS, these byproducts contain, among other things, the presence in the discharge of fats, oils, grease ("FOG's"), grit, sand, lint, hair, acids, solvents, chemical, plaster and solids larger than one-quarter (1/4) inch in any dimension, and

WHEREAS, these byproducts are harmful to the collection and treatment of wastewater and significantly impact operational costs of WCCD, therefore impacting the rates and charges of all customers and presents a potential environmental health issue to both the public and the natural habitat.

NOW THEREFORE, the Board of Directors, in recognizing the need to develop and implement a formal policy of discharge of water and waste into the public sewer system of the West Central Conservancy District that is consistent with the District's "Use" Resolution 09-01. As such, the following information, as a management tool, will provide a prescriptive design document that enables the interception of and eliminate the prohibited discharge and such pretreatment interceptor devices must be installed any time there are 1) new private governmental,, commercial or industrial facilities constructed within the WCCD, 2) remodeled private, governmental, commercial or industrial that a) may not have a pretreatment interceptor device or b) may have an undersized device

installed in accordance with this resolution, 3) a new use is identified for an existing facility that places the facility under this resolution and/or 4) repair or replacement of an existing pretreatment device:

Part I: Requirements for Interceptors. Sizing Guidelines and Design Criteria

A. Introduction

While all prohibited discharge substances are significant issues to the proper management and operation of the collection and treatment systems of the West Central Conservancy District ("WCCD"), the increasing grease problem must be addressed as a potential cause and effect of not adequately pre-treating it. Under-sized pre-treatment interceptors that are improperly connected to the collection system adversely causes collection impairment and improper treatment of wastewater. There is no simple solution to the challenge, as virtually every discharger's waste stream is unique in many ways. These variations can be caused by building layout, property location, wastewater volume, staff training, management, cleaning practices, maintenance chemicals, pretreatment systems, monitoring and maintenance of the pretreatment system and preparation/serving volume of different menu items. What might be effective for reducing grease discharges in one location may be inadequate in another, even among restaurants in the same restaurant chain, this variation in waste streams creates a situation in which many different treatment options should be considered. FOG's must be significantly reduced or eliminated through pretreatment processing from entering the wastewater collection system. The most economical, effective and prudent way to accomplish preventing FOG's from causing problems in the collection and treatment systems is to keep it from entering the collection system in the first place.

Some ways to do this are as follows:

1. The person who removes plates from dining tables should be responsible for scraping all left-over food into a container for disposal as a solid waste.

2. All cookware should likewise be scraped before being washed.

3. Garbage grinders should not be used.

4. Restaurant managers and personnel should be trained to dispose of cooking oil properly in recycling containers and not pour it down the drain as a short-cut. If necessary, some restaurants may need to consider installing a video camera to show drains and any potential misuse.

5. Signs should be posted at or near drains indicating not to pour oils down the drains.

Ideally, FOG would never go down the drain. However, at this time, most restaurants and food establishments cannot keep 100% of FOG out of the collection system. While

restaurants are typically targeted in any FOG control plan, other commercial sources include food manufacturers, bakeries and food processors as well as other food providers in schools, hospitals, hotels, bars/taverns, correctional facilities, churches, nursing homes, child care centers and other such facilities. This is why FOG pretreatment (removal) devices and proper operation and maintenance of these devices are so important.

This policy, in the form of an information packet, sets forth the guidelines and procedures of the WCCD to aid in preventing the introduction and accumulation of prohibited discharge substances into the wastewater collection system. These substances tend to cause or contribute to blockage and obstructions as well as negatively impacting the operation of the wastewater treatment facility. Private, governmental, commercial or industrial establishments generating wastewater containing prohibited discharge substances subject to this regulation are required to install interceptors, installed and maintained in accordance with provision herein. Information contained in this document is based on standard industry practices and size, type and location of such interceptors shall be in accordance with manufacturing recommendations and instructions and approved by WCCD.

WCCD will require, in accordance with Section 3.2 C. of "Use" Resolution 09-01, exterior installation of interceptors for FOG management. Such installations are more conducive to interception of the focused material and provide minimal invasion/distraction to the operation of the enterprise. Other prohibited discharge substance interceptors will be installed based on size, availability to service and inspection and as approved by WCCD.

The District Manager may make determinations of interceptor(s) adequacy, need, design, application, location, modification(s), and conditional usage based on review of all relevant information regarding interceptor performance, facility site and building plan review and may require repair/modification to or replacement of existing interceptors.

B. Definitions:

Interceptor means a device for separating waterborne prohibited discharge from wastewater and retaining such complexes prior to the wastewater exiting the interception and entering the sanitary sewer collection and treatment system. Interceptors also serve to collect solids that settle, generated by and from all activities that subject Users to this section, prior to the water exiting the interceptors and entering the sanitary sewer collection and treatment systems. The terms "traps" and "interceptors" are sometimes used interchangeably, but generally denote the size of the interceptor.

Common interceptors mean one or more interceptors receiving FOG laden wastewater from more than one establishment. Common interceptors may be located at shopping centers, malls, entertainment complexes, sporting arenas, hotels, multi-tenant "flex" spaces, mixed use spaces, and other sites where multiple establishments are connected to a single FOG receptor. The owner of the property on which the common FOG interceptor

is located shall be responsible for the maintenance, upkeep, and repair of the common interceptor.

Fats, oils, and greases means 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 amended from time to time. All are sometimes referred to herein as "grease" or "greases" or "FOG". Discharge of FOG in excess of 100 mg/l, or substances which may solidify or become viscous at temperatures between thirty-two degrees (32ºF) (0ºC) and one hundred fifty degrees (150º F) (65º C), are prohibited in accordance with Section 2.3 Q of "Use" Resolution 09-01.

Food Service Establishments or "FSE" means those commercial or industrial establishments primarily engaged in activities of preparing, serving, or otherwise making available for consumption foodstuffs and that use one or more of the following preparations activities: Cooking by frying (all methods), baking (all methods), grilling sautéing, rotisserie cooking, broiling (all methods), boiling, blanching, roasting, toasting, or poaching and infrared heating, searing, barbecuing, and other food preparation or serving activating that produces a consumable food product in or on a receptacle requiring washing to be reused. Such facilities include but are not limited to a restaurant, café, cafeteria, snack bar, grill, deli, catering service, bakery, grocery store, butcher shop or similar establishment that discharges wastewater to the WCCD system.

Other establishments means those establishments primarily engaged in other food services that do not include any form of cooking; but that may produce a consumable food product in or on a receptacle requiring washing to reuse or discharge a prohibited substance as a byproduct of their enterprise. Enterprises with a kitchen designed falls into this category or uncompleted design of the facility (unknown treatment).

Service provider means any third party not in the employment of the User that performs maintenance, repair, and other services on a User's interceptor at the User's directive and expense.

Users include property owners who provide common interceptors for one or more independent establishments, *including tenants.*

Minimum design capability means the design features of a FOG interceptor and its ability or volume required to effectively intercept and retain FOGs and settle solids from wastewaters discharged to the public sanitary sewer.

C. Applicability:

Businesses and other enterprises subject to this regulation which were in operation prior to the effective date of this regulation ("Existing Businesses") and do not have a FOG interceptor are required to install such a system within one (1) year of WCCD formal

notice to the Existing Business that this regulation is in effect and the Existing Business falls within the definition of those establishments requiring interceptor installation.

These requirements are applicable to all private, governmental, commercial and industrial establishments, including those that are undergoing:

1. New construction.
2. Interior remodeling to accommodate expansion or operational modification.
3. Changes of ownership/occupancy.
4. Any facility which may be experiencing difficulty achieving compliance with maintenance and/or wastewater discharge limitations.

D. Sizing Requirements:

Sizing methods described herein are intended as guidance in determining interceptor sizes that will afford WCCD's sanitary sewer systems a minimum degree of protection against prohibited and obstructing materials. It is the responsibility of the WCCD engineer to determine the appropriate level of the treatment necessary for compliance with wastewater regulations and recommend his find to the WCCD.

Minimum acceptable interceptor sizing shall be accomplished as follows:

a. Sizing according to formulas found in Section E below.

b. Where sizing formulas result in a determination of an interceptor less than 500 gallons in capacity, this minimum size is required with limited or no food preparation. The minimum size FOG interceptor is 750 gallons in capacity.

E. Interceptor Sizing Formulas:

It is the responsibility of the generator and his/her contractor to ensure that the wastewater discharge from their facility is in compliance with the discharge limitations. For the purpose of plan review, a general assessment of interceptor design and size will be performed using the following formulas.

(These formulas have been demonstrated as industry standards capable of achieving WCCD's discharge criteria when systems are maintained in proper condition).

Method 1: Uniform Plumbing Code, FOG Interception Sizing Formula

Number of meals Per peak hour (1)	x	waster flow rate (2)	x	retention time (3)	x	storage factor	=	Size Requirement (liquid capacity)

Factors:

1) Number of meals served at peak operating hours (Seating Capacity) x Peak Factor:

    a. Where Peak Factor for Fast Food Restaurant is ……..33
    b. And, Peak Factor for all other food service types is ….1.00

2) Waste Flow rates:
    a. With Dishwashers……6 gallon flow
    b. Without Dishwasher…….5 gallon flow
    c. Single Service kitchen……..2 gallon flow
    d. Food Waste Disposal……1 gallon flow

3) Retention Times:
    a. Commercial Kitchen waste/dishwasher……2.5 hours
    b. Single Service kitchen/Single Service……..1.5 hours

4) Storage Factor:
    a. Fully equipped commercial kitchen……..8 hour operation…1
    b. ……16 hour operation…2
    c. ……24 hour operation…3
    d. Single Service Kitchen……1.5

The Uniform Plumbing Code includes a built-in safety factor that can yield very large FOG interceptors size specification.

Method 2: Environmental Biotech Based On EPA-2 Model

A. Determine maximum drainage flow from fixtures:

Type of Fixture	Flow Rate Per Unit
China Hand Sink	15 gpm
Single Compartment Sink	20 gpm
Double Compartment Sink	25 gpm
2, Single Compartment Sinks	25 gpm
2, Double Compartment Sinks	35 gpm
Triple Sink 1 ½ in. drain	35 gpm
Triple Sink 2 in. drain	35 gpm
30 gal. dishwasher	15 gpm
50 – 100 gal. dishwasher	40 gpm

B. Total A Divided by number of fixtures equals gpm per kitchen

C. Loading Factors

Restaurant Type	Fast Food – Paper Delivery = 0.50
	Low Volume = 0.50

Medium Volume = 0.75
High Volume = 1.0

D. B x C = Sub total

E. Sub total x 60 Min. + max. flow for 1 hour

F. x 2 hours retention time = volume of trap in drains _____

Model assumes inclusion of floor drains and lesser fixtures such as soup kettles with intermittent flows.

Method 3: EPA Sizing From The Design Manual: Onsite Wastewater Treatment and Disposal Systems

1. Restaurants

(d) x (GL) x (ST) x (HR/2) x (LF) = Size of FOG Interceptor, gallons, where

D = Number of seats in dining area
GL = Gallons of wastewater per meal, normally 5 gallons
ST = Storage capacity factor – minimum of 1.7
Onsite disposal – 2.5

HR = Number of hours open
LF = Loading factor 1.25 interstate freeways
1.0 other freeways
1.0 recreational areas
0.8 main highways
0.5 other highways

2. Hospitals, nursing homes, other types of commercial kitchens with varied seating capacity:

(M) x (GL) x (ST) x (LF) = Size of FOG Interceptor, gallons, where:

M = Meals per day
GL = Gallons of wastewater per meal normally 4.5 gallons
ST = Storage capacity factor – minimum of 1.7
Onsite disposal – 2.5
LF = Loading factor 1.25 garbage disposal and dishwasher
1.0 without garbage disposal
0.75 without dishwashing
0.5 without dishwashing and garbage disposal

Minimum size FOG Interceptor shall be 750 gallons

F. Construction/Installation

The following specifications must be incorporated into a FOG interceptor design:

a. The interceptor shall be constructed with a minimum of one baffle

b. Interceptors are to be installed at a minimum distance of 10 ft. from sink and dishwashers to allow for adequate cooling of the wastewater. Water temperature must be less than 120 degrees prior to entering interceptor.

c. All FOG bearing waste streams should be routed through an appropriate FOG interceptor, including: three-compartment sinks, pot/pan sinks, soup kettles, hand-washing sinks, dishwashers, mop sinks and floor drains.

Notable Exceptions: Drains that receive "clear waste" only, such as from ice Machines, condensation from coils and drink stations, may be plumbed to the sanitary system without passing through the FOG interceptor.

d. Access manholes shall have an installed diameter of 24 inches, a maximum weight of 50 pounds, and shall be provided over each chamber, interior baffle wall, and each sanitary tee. The access penetrations, commonly referred to as "risers" into the interceptor shall also be, at a minimum 24 inches in diameter. 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 inspection, grease removal, and wastewater sampling activities.

e. A user may request a variance/modification to the previous requirements of this ordinance. Such request for a modification shall be in writing to the District Manager and must demonstrate that the size and location will not cause the facility any problems in meeting the discharge requirements of WCCD and the modification shall not impede the operation, inspection and cleaning of the interceptor device.

G. User Responsibilities

Hazardous waste, such as acids, chemicals, strong cleaners, pesticides, herbicides, paint, solvents, petroleum oil, non-biodegradable cutting oil, products of mineral oil origin or gasoline shall not be disposed of where they would go through interceptors or the collection and treatment system. Care must be taken in system design when commercial dishwashers are discharged through a FOG interceptor. Dishwashers use detergents and elevate water temperatures that will melt grease. If the interceptor is either too small or too close to the commercial dishwasher, grease, oils and fats may pass through the interceptor into the collection system.

Users are responsible for maintaining interceptors in continuous proper working condition, by removing the buildup in the interceptor at sufficient intervals as directed by WCCD. Further, users are responsible for repairing, replacing, or installing apparatus and equipment necessary to ensure proper operation and function of FOG interceptors and compliance with discharge limitation at all times.

All FOG interceptors shall be serviced and emptied of accumulated waste content as required to maintain minimum design capability or effective volume of the FOG interceptor, but not less often than every **ninety (90) days** or as permitted in a valid program modification by the District Manager.

The User shall maintain a written record on forms prescribed by the WCCD of each FOG interceptor's maintenance for three (3) years. All such records will be available for inspection. These records shall include:

a. Established name and physical location.
b. Date of interceptor service.
c. Time of interceptor service.
d. Name of interceptor service company.
e. Name and signature of interceptor service company agent performing said service.
f. Established service frequency and type of service: Full pumpout or partial pumpout.
g. Number and size of each interceptor location.
h. Approximate amount, per best professional judgment of contact service provider, of grease and solids removed from each interceptor.
i. Total volume of waste removed from each interceptor.
j. Destination of removed waste, food solids, and wastewater disposal.
k. Signature and date of establishment representative confirming service completion.
l. Such other information as required by the District Manager.

No Non-FOG-laden sources are allowed to be connected to sewer lines intended for FOG interceptor service.

The use of biological or other additives as a grease degradation or conditioning agent is permissible only upon prior written approval of the District Manager. Any User using biological or other additives shall maintain the interceptor in such a manner that attainment of any grease wastewater, action level, solids, blankets or grease cap criteria, goal or directive, as measured from the grease interceptor outlet or interior is constantly achieved. Interceptors are required for oil, grease, sand and other substances harmful or hazardous to the building drainage system, the collection system and the public sewer treatment plant. Design, size, and location of pretreatment devices must be submitted by a professional engineer for review and approval by WCCD.

Part II: Other Interceptors

A. Laundries

Commercial laundries, laundromats, and dry-cleaners shall be equipped with an interceptor in order to reduce the quantity of lint and silt that enter the collection system. The system must be of adequate size and design to allow for cool-down of wastewater so that separation can be readily achieved. The interceptor must be installed with a wire basket capable of collecting solids larger than ¼ inch in any dimension, string rags, buttons or other material detrimental to the public sewage system.

Sizing must be in accordance with guidance found in the Uniform Plumbing Code (UPC), Appendix H, which uses the following formula:

(TGC) x (CPH) x (RT) x (ST) = Size of Lint Interceptor (gallons)

Where:
TGC = Total Gallons per Cycle
CPH = Cycles per hour
RT = Retention time
2.5 for Institutional Laundry
2.0 for Standard Commercial Laundry
1.5 for Light Commercial Laundry

B. Car Washes

Self service car washes shall have an oil/water/sand separator interceptor with a minimum capacity of 1,000 gallons for the first bay, with additional 500 gallons of capacity for every other bay.

Additionally, wash racks must be constructed to eliminate or minimize the impact of runoff from rain/storm events. Minimum requirement are roofed structures with at least two walls and appropriate grading to prevent storm water infiltration into the sanitary sewer.

An effluent sampling well is required, per specifications listed in Part 1, Section G, Subsection E.

C. Automotive Repair Facilities (Garage and Service Station)

Where automobiles are services, greased, or repaired or where gasoline is dispensed, an oil/water/sand separator interceptor shall have a minimum capacity of 500 gallons for the first 1,000 square feet of area to be drained into the separator.

An effluent sampling well is required, per specifications listed in Part 1, Section G, and Subsection E.

Note: Parking garages shall not require a grit separator unless vehicle servicing, repairing, washing gasoline dispensing occurs. Areas in commercial garages utilized only for storage of automobiles are not required to be drained through a grit separator.

D. Barber/Beauty Salon

Barber shops and beauty salons shall be engineered with a solids/hair interceptor. The interceptor must be installed with wire basket or similar device, removable for cleaning, that prevents hair from passing into the drainage system.

Sizing must be based on the number of sinks, but no less than the minimum 500 gallon requirement.

E. Veterinary Offices

Veterinary facilities shall be equipped with a solids/hair interceptor that is installed with a wire basket or similar device, removable for cleaning, that prevents the accumulation of hair from passing into the drainage system. Sizing must be based on cage-wash down drains and grooming wash tubs, but no less than the minimum 500 gallon interceptor requirement.

F. Schools

Schools shall also, in addition to FOG interception, have a plastic/solids interceptor based in size on the number of art room sinks and an acid neutralization basin based in size on the number of Science/Chemistry laboratory sinks. **Acids and chemicals are prohibited from entering West Central Conservancy District collection and treatment systems.**

In no event, shall either interceptor be smaller in size than the minimum 500 gallon requirement.

G. Hospitals, Doctors/Dentist Labs

Hospitals, in addition to FOG interceptor for food services, will be required to have a plastics/solids interceptor for cast and mold rooms to be sized upon the number of sinks.

Dental offices shall be equipped with a solids interceptor and silver recovery system for dental lab sinks to be sized by the number of sinks in the facility.

Hospitals and Doctors offices equipped with laboratories shall have an acid neutralization basin sized accordingly to the number of discharge sinks. **Acids and chemicals are prohibited from entering West Central Conservancy District collection and treatment systems.**

H. Optical Manufacturers

Optical manufacturers shall be equipped with a solids interceptor, when having a lens machine and laboratory sinks sized by the number of sinks.

I. Photo Developing

All commercial enterprises involved in the development of photos on site shall have a silver recovery unit installed after the sinks.

J. Dry Cleaners

All commercial dry cleaning operations shall have a solvent recovery system installed. **Cleaning solvents are prohibited from entering West Central Conservancy District collection and treatment system.**

Maintenance, record keeping and inspection requirements remain the same as for FOG Interceptors as outlined in Part I, G, a-I.

Part III: Permitting, Limits, Inspection Procedure, Enforcement/Fines/ Assessments

A. Permitting/Reporting Requirements:

Beginning July 1, 2010, West Central Conservancy District will require an annual permitting process that identifies those participants in the prohibited discharge substances program. The administrative fee for facilities with grease discharges shall be set by the Board of Directors of WCCD. The fee shall be established to insure full cost recovery and shall include but not be limited to the cost of field, administrative, engineering and clerical expenses involved. The fee shall not be less than $75.00 per year for each affected facility. Sections 4.0 and 5.0 of WCCD's "Use" Resolution 09-01 are hereby incorporated.

B. Limits:

All federal and state categorical pretreatment standards and "Use" Resolution 09-01, Sections 2.3 to, and including 2.6 are hereby incorporated as WCD pretreatment standards and specific pollutant limitations.

C. Compliance Monitoring/Inspection:

Section 6.0 of WCCD's "Use" Resolution 09-01 is hereby incorporated.

D. Administrative Enforcement/Fines/Assessments:

Sections A 8.0 and 9.0 of WCCD's "Use" Resolution 09-01 are hereby incorporated.