

SUPERSTITION MOUNTAINS COMMUNITY FACILITIES DISTRICT NO. 1



Commercial Pre-Treatment Policy

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1. Introduction

Fats, oils, and grease, known in the wastewater treatment industry as FOG, are typically found in abundance in industrial settings and commercial kitchens or Food Service Establishments. Waste FOG is generated during food preparation, service and cleanup and can also accumulate on kitchen equipment during these processes. Without proper management and pre-treatment before discharge, FOG can be discharged into the sewage treatment system where a multitude of issues can arise.

When FOG enters the local plumbing and service lines that connect to the sewage treatment system, it undergoes a series of chemical processes that allow for the FOG to accumulate in the pipes. Given enough occurrences, the FOG buildup can completely clog pipes and cause backups and sewer overflows into the establishment. Backup of waste can cause significant health concerns or other damage, resulting in closures or extra costs for businesses. As seen below from a local restaurant's replacement of their plumbing, the restaurant had an accumulation of FOG in their plumbing system and over time the quality of the piping was deteriorated by continuous FOG discharge.



A pipe with significant FOG accumulation

With significant FOG discharge, accumulation can continue down the pipe run and service line and begin to impact other businesses and the sewer collection system, affecting the ability to successfully transport wastewater. Costs may be imposed on an establishment to clean or repair damage caused by negligence related to their pre-treatment device.

Though this document is centered around FOG accumulation and Food Service Establishments, there are other pollutants that are of concern. Pre-treatment devices are also required for car washes, automobile facilities, laundromats and any other facilities that are discharging unauthorized pollutants in measurable amounts.

Within this document is the outline of the pre-treatment program, authority, and implementation to ensure thorough understanding of guidelines to follow. The intent of this program is to keep businesses running in a manner to minimize incidents of unauthorized discharge to protect the business, the sewage treatment system, public health, and *our* water sources.

1.1 Legal Authority

Superstition Mountains Community Facilities District No. 1 or “the District” is a political subdivision of the State of Arizona that was formed by the City of Apache Junction to operate and maintain a regional system for the collection, transport and treatment of wastewater from the properties within its boundaries. As such, Legal Authority has been given to the District to implement a pre-treatment program by Federal, State, and local governments. In response to the Clean Water Act amendments of 1972, the following determinations were made:

Federal Response:

Federal General Pretreatment Regulations from the Environmental Protection Agency (40 CFR Part 403) currently prohibit any user of the sanitary sewer system from discharging solid or viscous pollutants, such as FOG, in amounts that will cause obstructions or blockages to the operations of the sanitary sewer system and the Water Reclamation Facility. Businesses that cause or contribute to obstructions or blockages in the Wastewater system because of FOG wastes are in violation of the Clean Water Act. These Federal regulations from the Environmental Protection Agency allow for state governments to oversee discharges into local waters.

State Response

To oversee state environmental laws, Arizona State Legislature created The Arizona Department of Environmental Quality (ADEQ). ADEQ require all cities, towns, and sewer districts (providers) to

minimize all blockages and sanitary sewer overflows. According to the EPA, ADEQ is allowed to delegate the permitting, administrative and enforcement tasks for discharges to municipalities.

Local Response

As a separate governmental entity formed by the City of Apache Junction (pursuant to Title 48, Chapter 4, Article 6 of the Arizona Revised Statutes), the District oversees the permitting, administration, and enforcement of proper discharge into the sanitary sewer system, which includes operation and maintenance of the system and the establishment and enforcement of a pre-treatment program. The purpose of the program is to reduce the pollutant levels discharged by businesses and industries and protect the Sewage Treatment System.

2. Definitions and Acronyms

Listed below are common terms that can be found within this program, along with their definitions and acronym forms:

2.1 Definitions

Best Management Practices: Schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of water. For the purpose of this manual, Best Management Practices include procedures that reduce or eliminate the discharge of Fats, oils, and grease (FOG) into the building sewer or the Collection system.

Collection System: The portion of the Sewage Treatment System which collects the wastewater from Users and conveys the wastewater to the treatment plant.

District- Superstition Mountains Community Facilities District No. 1

Fats, Oil, and Grease (FOG): A semi-solid viscous liquid organic compound derived from animal and/or plant sources that contain multiple carbon chain triglyceride molecules.

Grease Interceptor: A tank that serves one or more fixtures, often installed directly outside of the establishment due to large capacities. Grease interceptors include, but are not limited to, tanks that capture Wastewater from dishwashers, floor drains, pots and pan sinks, and trenches. For the purpose of this manual, a grease interceptor is an outdoor, underground, multi-compartment tank that reduces the amount of FOG before the wastewater enters the Sewage Treatment System.

Hydro-mechanical Grease Interceptor or Grease Trap: A device designed to retain grease from one to four fixtures. A grease trap is not appropriate for use on heated water (e.g., dishwasher) or in-line to a

waste disposal unit (e.g., garbage disposal or grinder). Typically smaller, with smaller capacities, these can be installed above or below ground and use gravity as well as vented flow control.

Interference: A discharge which, alone or in conjunction with other discharges from other sources:

- i) Inhibits or disrupts the Wastewater Treatment System, its treatment processes or operations, or its sludge processes, use or disposal: and
- ii) Therefore is a cause of a violation of any requirements of the Wastewater Treatment Plant APP or AZPDES permits.

Publicly Owned Treatment Works (Wastewater Treatment Plant & Collection System): For the purpose of this manual means, any devices, facilities, structures, equipment or works owned by the District for the transmission, storage, treatment, recycling or reclamation of Industrial or Domestic waste, or necessary to recycle or reuse water. This includes intercepting sewers, outfall sewers, mainline sewer, treatment facility, pumping or other equipment, and their appurtenances.

Sanitary Sewer Overflow: A blockage of the sewer main or manhole that will cause surcharging in the system or the manhole and in turn cause the wastewater to spill into the street or right of way.

Service Line: The wastewater collection line that extends from the wastewater disposal facilities of the premises, up to the connection at the sanitary sewer line (collection system).

Sewage Treatment System: See Publicly Owned Treatment Works

User: Any person, firm, corporation, government, or other entity that discharges, causes or permits the discharge of wastewater to the Sewage Treatment System.

2.2 Acronyms

<i>APP</i>	Aquifer Protection Permit
<i>ADEQ</i>	Arizona Department of Environmental Quality
<i>AZPDES</i>	Arizona Pollution Discharge Elimination System
<i>BMP</i>	Best Management Practices
<i>CMOM</i>	Capacity Management, Operation and Maintenance
<i>FSE</i>	Food Service Establishment
<i>CWA</i>	Clean Water Act
<i>EPA</i>	Environmental Protection Agency
<i>FOG</i>	Fats, Oil and Grease
<i>MCFG</i>	Multi-City FOG Group
<i>mg/L</i>	Milligrams per Liter
<i>NOV</i>	Notice of Violation

<i>POTW</i>	Publicly Owned Treatment Works
<i>SSO</i>	Sanitary Sewer Overflow
<i>WRF</i>	Water Reclamation Facility

3. Rules and Regulations

3.1 From the Environmental Protection Agency

General Prohibition against Pass through

Federal- 40 CFR Part 403.3(p)

“A discharge that exits the POTW into waters of the United States in quantities or concentrations that, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's NPDES [National Pollutant Discharge Elimination System] permit (including an increase in the magnitude or duration of a violation).”

General prohibition against Interference

Federal – 40CFR 403.3 (k)

“A discharge that, alone or in conjunction with a discharge or discharges from other sources, both (1) inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use, or disposal and (2) therefore is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent state or local regulations): Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including state regulations contained in any state sludge management plan prepared pursuant to subtitle D of the SWDA), the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act.”

Specific prohibition against pollutants:

Federal-40CFR 403.5 (b)

The following pollutants shall not be introduced into a POTW:

“(1) Pollutants which create a fire or explosion hazard in the POTW, including, but not limited to, wastestreams with a closed cup flashpoint of less than 140 degrees Fahrenheit or 60 degrees Centigrade using the test methods specified in 40 CFR Part 261.21

(2) Pollutants which will cause corrosive structural damage to the POTW, but in no case discharges with pH lower than 5.0, unless the works is specifically designed to accommodate such discharges.

(3) Solid or viscous pollutants in amounts which will cause obstruction to the flow in the POTW resulting in interference.

(4) Any pollutant, including oxygen demanding pollutants (biochemical oxygen demand, etc.) released in a discharge at a flow rate and/or pollutant concentration which will cause Interference with the POTW.

(5) Heat in amounts which will inhibit biological activity in the POTW resulting in Interference, but in no case heat in such quantities that the temperature at the POTW treatment plant exceeds 40 °C (104 °F) unless the approval authority, upon request of the POTW, approves alternate temperature limits.

(6) Petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through.

(7) Pollutants which result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity that may cause acute worker health and safety problems.

(8) Any trucked or hauled pollutants, except at discharge points designated by the POTW.”

National Pretreatment Standard (Instituted by the EPA)

Fats, Oils, and Grease Discharge limit: 100 mg/L

3.2 District Operating Policies and Procedures

Under Article 7.0 of the Operating Policies and Procedures, the District has outlined all Regulated Discharges and Commercial Pretreatment Requirements. Below is a brief synopsis and explanation of particular and relevant regulations but for the full regulation list please reference the District’s Operating Policies and Procedures, which can be found on the District’s website.

Section 7.1 (B) states that no User shall release any discharge that the District has deemed unacceptable.

Section 7.2 (C) and (D) provide a list of Unacceptable discharges, all of which prohibit the discharge of materials or substances that are deleterious to any part of the Sewage Treatment System. Limits have been set forth to ensure strict adherence. Relating to this pre-treatment program, Section 7.2(D)(4) dictates that “Any water or waste containing fats, wax, grease or oils, whether emulsified or not, in excess of 100 mg/L or containing substances that may solidify or become viscous at

temperatures between 33°F and 150° F (1°C and 65°C)” is to be considered toxic and deleterious and therefore prohibited.

Section 7.2 (F) states “In no event shall any toxic substance, pathogenic bacteria or any other chemical, substance, or material be Discharged if the Discharge would violate federal, State, or other applicable law.”

Under Section 7.3 the following is outlined, in reference to the Operating Policies and Procedures:

“Commercial Waste Pretreatment Requirements

A. When Required

Pretreatment devices, e.g. grease, oil, lint or sand traps or interceptors, must be installed by Customers operating laundries, restaurants, service stations, auto repair shops, carwashes and other facilities, when in the opinion of the District they are necessary for the proper handling of liquid wastes containing grease or oil in excessive amounts, any flammable wastes, sand, lint, hair or other harmful ingredients.

B. Specifications

1. All pretreatment devices must be of a type and capacity approved by the District and must be located where they are readily and easily accessible for cleaning and inspection at all times.
2. All pretreatment devices must:
 - a. Be constructed of impervious materials capable of withstanding abrupt and extreme changes in temperature, and use substantially watertight construction;
 - b. Be equipped with easily removable covers
 - c. Be gastight and watertight when bolted covers are required;
 - d. Be maintained by the Customer, at the Customer’s expense;
 - e. Be in compliance with the cleaning schedule approved by the District to allow for continuously efficient operation.

C. Recordkeeping

Customers required to conduct pretreatment pursuant to these Policies and Procedures must keep written records of all cleaning, repair, calibration, and maintenance at the facility for a minimum of three (3) years and provide same to the District upon request.”

Section 7.4 details Industrial Waste Pretreatment Requirements.

4. Inspection Procedures

To ensure commercial and industrial establishments continue to meet requirements set forth by the EPA, ADEQ and local regulation, the District has appointed a field Inspector that is responsible for inspection, testing and documentation of new installations and existing conditions of all connections, including all pretreatment devices.

4.1 General Procedures

New Installation: For a new installation of a pretreatment device, commercial establishments must provide plumbing plans for the District's Engineering department to review to ensure all proper plumbing is routed to the pretreatment device. After approval and permitting, the Inspector must be notified when installation has been completed to inspect all devices, connections, and fittings. During this time the Inspector will field verify that all necessary plumbing is connected to the pretreatment device. The Inspector may request that a 24-hour leak test be performed to ensure there are no leaks in the device and all the connected fittings.

Existing Devices: For existing pretreatment devices, the Inspector will require pumping records, and access to the pretreatment devices. For all inspections, new and existing, the following items may be discussed:

- a. What portions of the facility will be inspected, as well as the inspection procedure
- b. The standards the District require to be met
- c. Grease trap or interceptor requirements
- d. The facilities documents that need to be reviewed
- e. If a violation is noted, what the facility will need to do to correct the violation and what action can be taken by the District
- f. If video footage is taken, the viewing of video tape of the mainline inspection and the service line will be made available for the facility representative
- g. The 25% Rule and how it is used will be explained in detail
- h. The frequency of required pump-out that is determined and cleaning of the pretreatment device

Dye Tests: During the inspection of the kitchen area, car washes or automotive establishments and their respective pretreatment devices, dye tests may be performed. This includes the floor drains, pre-

wash sinks and any other plumbing that has been verified with the establishment to be connected to the pretreatment device, including the dishwasher and garbage disposal.

Record Review: A copy of the pumping manifest from the most recent pretreatment pump-out must be made available for the inspector. In addition to the most recent, the District requires that records be kept for 3 years on pump-outs of the device. Information that must be provided includes the pumping company, the date of the last pumping and the pumping manifest number.

25% Rule: The District Inspector will take a core sample out of the third compartment of the interceptor to determine how much of the content is fats, oils, and grease. The inspector inserts a measuring device to verify the quantity of settled solids and floating FOG are present. If this amount exceeds 25% of the total volume, the interceptor needs to be serviced. If the total FOG amount is exceeding 25%, this over accumulation can disrupt the function of the interceptor, the establishment and possibly cause unauthorized discharge into the Sewage Treatment System.

Pumping Frequency Determination: The pumping frequency for each establishment is variable. Establishments can have different maintenance needs, depending on a wide variety of factors including customer count, services provided or even foods prepared. The determination is made from typical values seen in the industry and can change with each inspection according to the inspection findings. The goal is to ensure there will not be an over-accumulation of FOG that will then affect the Sewage Treatment System

4.2 Inspection Procedures by Type

The District Inspector inspects a few different types of pre-treatment devices and typically involves the steps below by type of device.

Facility Interceptor and Sand/Oil Separator Inspection Procedures:

- The District Inspector notifies the commercial establishment representative who they are and that they will be conducting an inspection of the installed pretreatment device
- The covers are removed from the interceptor
- The inspector will inspect each chamber of the interceptor
- In the last compartment of the interceptor, a core sample will be taken
- The measuring device will indicate the level of sludge in the bottom of the tank, the level of floating liquid grease (FOG) on the surface of the tank, and the level of the water between the sludge and the floating liquid grease (FOG).

- Levels will be recorded

Grease Trap and Hydro-Mechanical Grease Trap Inspection Procedures:

- The District Inspector notifies the commercial establishment representative who they are and that they will be conducting an inspection of the installed pretreatment device
- The inspector will inspect lid and the chambers of the trap
- The inspector will inspect the baffles
- The inspector will check the overall accumulation of FOG
- The inspector will check the overall cleanliness of the grease trap

4.3 Inspections during Device Cleaning

Business owners are encouraged to oversee pre-treatment device pumping and cleaning. Typically, the District Inspector is not present during the device cleaning, but below are items business owners can check for to help ensure their devices are well maintained and passing future inspections.

Grease Interceptors and Sand/Oil Separators:

- Overall cleanliness of the device, including ensuring that the walls have been scraped of all grease and solids and that the bottom of the tank is free from all debris, solids and grease.

Note: The pumper must fill the tank with fresh water (not water discharged from the kitchen).

- Inspect the inlet and the outlet tees
- Inspect the baffles between the chambers
- Inspect the pass through on the baffles
- Inspect the overall condition of the tank; (i.e., lid conditions, riser conditions, and tank walls).

Grease Traps and Hydro-Mechanical Grease Traps:

- Overall cleanliness of the device, including ensuring the walls have been scraped of all grease and solids and the bottom of the tank is free of all debris, solids and grease
- Inspect the chambers of the trap.

- Inspect the baffles
- Ensure the flow control device is in place and functional
- Inspect the intake and the outfall of the tank.

4.4 Final Procedures of the Inspection:

After completion of the inspection by the District Inspector, the commercial establishment representative is required to sign and date the inspection form. If any violations have been noted, the inspector will thoroughly explain the violation and what steps are needed to correct the violation.

Follow up Inspection: The follow up inspection will occur promptly following the set period allotted for the correction of the violation. If no correction has been made, the establishment will be given 10 days to set forth action to correct the violation or further action will be taken up to and including disconnection until the violation has been corrected. If a third visit is required due to lack of correction, a Re-inspection Fee will be assessed.

5. Enforcement Actions

In the event a commercial or industrial establishment connected to the Sewage Treatment System is not in compliance according to the guidelines set forth by this program or the District’s Operating Policies and Procedures, a Notice of Violation will be issued. Each violation has a different set period of time allotted to correct the violation as shown below:

<u>Cause for Issuance of a Violation</u>	<u>Allotted Correction Time</u>
District representative was denied access	1 day
Pretreatment device or component is required	90 days
Pretreatment device must be modified	60 days
Pretreatment device must be pumped	10 days
Broken or missing inlet tee	10 days
Tallow bin is required	30 days
Improper disposal of FOG waste	Immediate
Evidence of unacceptable discharge	Immediate
No current pumping receipt	1 day
Prior years pumping receipts were not available for review	30 days

Following these allotted times, the Inspector will have a follow up inspection as detailed before to ensure that the violation has been corrected. If no action has been taken further action can be taken, up to and including disconnection from the Sewage Treatment System.

6. Business Maintenance and Best Management Practices

As previously stated, the goal of this program and the District is to help businesses stay in compliance to protect themselves, the Sewage Treatment System and public health. Businesses can do their part to ensure there are never any issues with unauthorized discharges. This includes maintaining their pretreatment devices according to the Inspector's pumping frequency determinations and retaining records for review. Below is a list of Best Management Practices that businesses can use to ensure there is not an over-accumulation of FOG in their devices and possibly help avoid incurred costs for cleaning and repairs.

- Scrape or wipe off plates and utensils into the garbage before washing to remove solids
- Minimize the use of garbage disposals as to not inundate the interceptor with solids
- Ensure any employees never dump oil or grease down any drains in the establishment
- Post No Grease signs near any drains
- Use strainers to catch solids
- Keep water temperatures below 140 degrees Fahrenheit
- Ensure the pretreatment device is thoroughly cleaned
- Train employees to understand Best Management Practices

If there is ever any concern or questions from commercial establishment owners or representatives, SMCFD Engineering Department can be reached by phone at (480) 941-6766 or by email at engineering@smcfd.org. For informative links and helpful resources, please see below:

Environmental Protection Agency National Pre-Treatment Program:

<https://www.epa.gov/npdes/national-pretreatment-program>

Arizona Department of Environmental Quality Website:

<https://www.azdeq.gov/AboutUs>

SMCFD Policies and Procedures:

https://www.smcfd.org/upload/documents/policies_and_procedures/operating_policies_and_procedures_2019_02-26.pdf

Other Links used for this Program:

<https://www.govinfo.gov/content/pkg/CFR-2020-title40-vol31/pdf/CFR-2020-title40-vol31-sec403-8.pdf>

https://www3.epa.gov/npdes/pubs/pretreatment_foodservice_fs.pdf

https://apps.azsos.gov/public_services/title_18/18-09.pdf