



# Food Service Operations

Environmental Best Management Practices



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## Introduction

The Alberta Capital Region Wastewater Commission's (ACRWC) Source Control program has identified Food Services Operations as a significant contributor of contaminants to the region's sanitary sewer system. Hundreds of Food Service Operations within the Alberta Capital Region have the potential to discharge wastewater laden with fats, oils, and grease (FOG) and other contaminants into municipal sanitary sewer systems.

This document serves as a guide to the environmental regulations that apply to Food Services ICIs operating in one or more of ACRWC's thirteen-member municipalities. It also provides information on best management practices and serves to assist operators in meeting these regulations and improving their overall environmental performance.

### Food Services Sector and FOG

Food Services Operations are defined as restaurants or other industrial, commercial, or institutional facilities where food is cooked, processed, or prepared. This includes bakeries, butcher shops, grocery stores, institutional kitchens (including health or residential care facilities), restaurants, caterers, wholesale food processors, delicatessens, fast-food outlets, cafeterias, pubs, or other similar operations.

When FOG is discharged into the sanitary system it congeals and can contribute to plugged sewer lines potentially resulting in sewer overflows, which can be a serious public health and/or environmental concern.

## Regulatory Requirements

The Alberta Capital Region Wastewater Commission Regulation 129/1985 under the Municipal Government Act establishes ACRWC as a regional services commission providing wastewater transmission and treatment services to its thirteen-member municipalities

ACRWC's Bylaw No.8 - Quality of Wastewater regulates discharges into ACRWC's regional wastewater transmission and treatment system, and subsequently the discharges of ACRWC's member municipalities' through their Sewer Use/Utility Bylaws which reflect the requirements and prohibitions of ACRWC's Bylaw.

ACRWC's Bylaw outlines controls for the discharge of pollutants to the sewer system with objectives to protect:

- The sewer system from corrosion, other damage and obstruction;
- The wastewater treatment plant process from upset;
- The public, Commission and municipal workers and property from hazardous conditions;
- Wastewater biosolids quality; and,
- The environment from contaminants that are not removed by the Alberta Capital Region Wastewater Treatment Plant or the Epcor Goldbar Wastewater Treatment Plant.

ACRWC's Source Control program focuses on ICI inspections and monitoring, communication and education activities, and compliance to ACRWC's and its members' bylaws.

### Other Regulations

Other regulations that may apply to the handling and disposal of wastes from Food Services Operations include:

- Municipal storm sewer bylaws which regulate the discharge of wastes into municipal storm drains and watercourses.
- Municipal plumbing bylaws which specify requirements for installation and maintenance of plumbing and drainage equipment.
- Provincial food establishment regulations which include regulatory requirements for fixtures, equipment and procedures for cleaning and sanitizing cooking and serving equipment and utensils.

# Mandatory Requirements

## The Code of Practice (COP)

In many cases, companies require a wastewater discharge permit to discharge industrial, commercial, or institutional wastewater into the municipal sanitary sewer system. However, the ACRWC's Bylaw also provides for the discharge of certain types of wastewater under industry-specific COPs.

A COP is a regulatory document, developed by ACRWC, which contains mandatory requirements for specific ICI sectors. COPs set out minimum effluent treatment, equipment maintenance, hazardous waste containment, spill response, discharge monitoring and record-keeping requirements for various sector operations. A business or organization operating under an approved COP may not require a wastewater discharge permit under the ACRWC Bylaw. However, ICIs that discharge restricted waste, as defined in the Bylaw, must also operate under a wastewater discharge permit. ACRWC reserves the right, if deemed necessary, to require any Food Service Operation to obtain a wastewater discharge permit because of circumstances not covered under the COP. All other terms and conditions of the bylaw apply to the discharge to the municipal sanitary sewer system.

Any discrepancy between the COP and applicable Federal and Provincial Acts and Regulations and/or Municipal Bylaws, the Acts, Regulations and/or Bylaws take precedence.

Food Service Operations that follow the requirements of the COP will benefit through reduced occurrence and severity of drainage problems, increased environmental stewardship, protection of the health and safety of their employees and the public as well as the avoidance of costly fines.

The purpose of these Best Management Practices is to provide educational tools for Food Service Operations to enable them to control the levels of contaminants discharged to the sanitary sewer.

## Oil and Grease Interceptor

An oil and grease interceptor, commonly referred to as a grease trap, is the main pre-treatment device which restaurants are required to install to prevent the release of FOG to the sanitary sewer. They are installed in the plumbing line and are designed to control the flow of wastewater to allow FOG to float and solids to settle (see diagram 1). These contaminants can then be removed from the oil and grease interceptor for proper disposal.

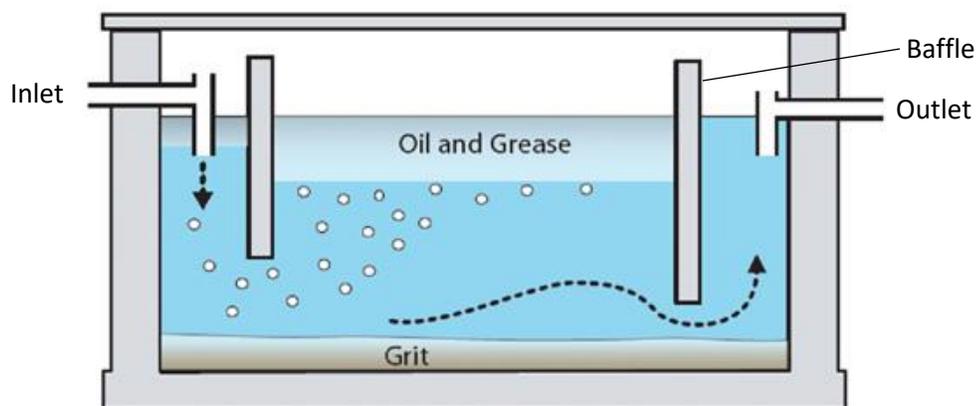


Diagram 1: Typical oil and grease interceptor

Image courtesy of <http://www.mcguinnessmaintenanceservices.ie/HTML/sludge-removal.html>

## COP Requirements

Oil and grease interceptors are required under the ACRWC Bylaw as well as the Food Services Operations COP. They are subsequently required by ACRWC's member municipalities through their Sewer Use/Utility Bylaws.

### Installation Requirements

The owner or operator of all Food Services Operations must install an oil and grease interceptor in any piping system that connects directly or indirectly to a sanitary sewer.

All oil and grease interceptors are to be installed in compliance with the most current requirements of the applicable Building Code and the National Plumbing Code of Canada, as amended.

The following fixtures must be connected to an oil and grease interceptor:

- Sinks used for washing pots, pans, dishes, cutlery and kitchen utensils, including pre-rinse sinks;
- Drains serving self-cleaning exhaust hoods installed over commercial cooking equipment;
- Drains serving commercial cooking equipment that discharge oil and grease;
- Drains serving a garbage compactor used to compact waste that may contain, or be contaminated, with food waste;
- Floor drains; and,
- Other fixtures that discharge wastewater containing oil and grease.

Dishwashers may be connected to an oil and grease interceptor provided it is:

- The only fixture connected; or,
- The grease trap is sized to accept the maximum flow rate.

Oil and grease interceptors must be installed in a location that is easily accessible for inspection and maintenance. Installed oil and grease interceptors need to have a label or stamp with

information containing the flow capacity of the unit affixed directly to it. Where a permanently affixed and visible label is not possible or practical, manufacturer and installation drawings of the oil and grease interceptor must be maintained at the site and must be available for inspection on request by ACRWC and/or the member municipality.

Ensure that the rated flow capacity of each oil and grease interceptor installed must not be less than the maximum discharge flow from all plumbing fixtures connected to the oil and grease interceptor that will discharge simultaneously. The maximum discharge flow can be calculated upon advice of a certified plumber.

All flow control devices used in oil and grease interceptors need to be accessible and must not be removed, altered, or disassembled.

### Maintenance Requirements

All oil and grease interceptors are to be maintained in good working order according to the manufacturer's recommendations. The testing, maintenance and performance of the interceptor shall meet the requirements of CAN/CSA B-481.

While operating an oil and grease interceptor, the thickness of the organic material and solids residuals should not accumulate in excess of 25% of the available volume of the oil and grease interceptor or in adherence to the manufacturer's recommended levels. Oil and grease interceptor cleaning frequency shall not be less than every four weeks. When the interceptor is cleaned, the oil and grease or solids cannot be disposed of directly or indirectly into the municipal sewer system.

Chemical agents, enzymes, bacteria, solvent-containing products, hot water or other agents should not be added to the interceptor or flushed with the intention of facilitating the passage of oil and grease through the oil and grease interceptor.

Ensure that oil and grease interceptor maintenance requirements be made available at

the workplace where the oil and grease interceptor is installed.

#### Record Keeping Requirements

An owner or operator of a Food Service Operation who installs one or more oil and grease interceptors must keep a record of all inspection and maintenance activities for the oil and grease interceptor, including the:

- Date of inspection or maintenance;
- Description of inspection or maintenance conducted;
- Quantity and description of material removed from the oil and grease interceptor; and

- Name, civic and postal address, and telephone number of the disposal or recycling company or facility collecting or transporting the material removed from the oil and grease interceptor.

An owner or operator of a Food Service Operation who installs oil and grease interceptors must keep records of the pretreatment works design calculations and drawings. The design drawings must show the point of connection of the treatment works to the sanitary sewer.

All records must be retained for a period of two years and must be available for inspection on request by the ACRWC and/or the member municipality.



## Best Management Practices (BMPs)

BMPs are activities developed to help operators reduce the amount of contaminants discharged to the environment, to comply with regulations and to improve overall waste management practices. BMPs emphasize reducing or eliminating pollutants and toxic materials at their source rather than removing them from a mixed waste stream.

The following BMPs have been developed to help Food Services Operations decrease the amounts of contaminants entering a sewer system or septic system, comply with regulations, improve their operations, and save money through applications of pollution prevention principles.

### Installation BMPs

Engage an experienced plumbing consultant to assist in sizing, selecting, and installing a proper oil and grease interceptor.

After sizing the oil and grease interceptor to meet flow requirements, consider increasing the size to provide additional oil and grease storage capacity. This will allow longer periods between clean-outs. However, do not design for an excessively long period between clean-outs because of the potential for odour problems.

Oil and grease interceptors may be installed indoors or outdoors. Units that are installed indoors offer the advantage of shorter distances from fixtures, providing less opportunity for FOG to congeal in the inlet piping. Outdoor units offer the advantage of ease of access for maintenance.

### Maintenance BMPs

Open, inspect and clean oil and grease interceptors frequently. Depending on the menu, kitchen practices and the size of the oil and grease interceptor, cleaning may be required daily, weekly or monthly.

The following inspection procedure is recommended:

- Verify that the retention capacity of the oil and grease interceptor has not been exceeded prior to the next scheduled inspection
- Remove excess FOG and solids
- Collect and store any removed oil and grease in a waste grease container for appropriate disposal.

Open, inspect and clean oil and grease interceptors following any unusual discharge that may interfere with the normal operation of the unit.

### Housekeeping BMPs

Do not pour any oily liquid such as gravy, sauce or salad dressing down the drain. Collect this material in a container sealed with a tight-fitting lid for disposal according to your local regulations.

Do not pour used cooking fats, oils or grease down the drain. These products are to be disposed into a used grease bin and a recycling service should be arranged for pick up.

Place signs in the kitchen, especially over the sink, to advise staff what can and cannot be put down the drains.

Scrape off greasy trays and pans into a waste grease container before putting them into a sink or dishwasher.

Scrape and wipe food waste from pots, pans or dishes into a kitchen scraps container before putting them into a sink or dishwasher.

Place basket strainers in sink drains to catch solids.

Do not pour coffee grounds or tea leaves down the drain.

Evaluate your current use of chemicals and cleaners. Reduce quantities used and substitute with more healthy and environmentally conscious alternatives where possible.

Clean all kitchen equipment coated in oil or grease in sink that is connected to an oil and grease interceptor.

Ensure that used grease bins are always tightly covered to minimize problems with odours and pests.

Ensure that adequate and secure storage is provided for new cooking oil, used cooking oil and waste oil and grease. Ensure that proper containers are used and provide storage areas with secondary containment to prevent leaks and spills from draining to the sanitary system.

Train your employees so that they are better equipped to contribute to your goals in responsible waste management. Provide training in:

- Proper function, operation and maintenance of oil and grease interceptors;
- Proper storage, handling and disposal of wastes;
- Proper housekeeping; and,
- The benefits of following the COP and BMPs for Food Service Operations.

# Code of Practice Implementation Plan

The implementation plan for the Food Service Operation COP includes the following components: Education, inspection, monitoring, enforcement, administration, and review. ACRWC's Source Control staff and/or member municipality staff will carry out activities related to each component in partnership with each code sector.

ACRWC's Source Control staff and/or staff from the applicable member municipality may carry out inspections, examine records or other documents, and take samples of effluent for analysis as specified under the ACRWC Bylaw No.8 – Quality of Wastewater and the applicable member municipality's utilities/sewer use bylaw. Compliance sampling may also be conducted at any time on the effluent from operations regulated under a COP. Repeat sampling may be necessary if non-compliance

with the COP is suspected or high contaminant concentrations are detected in previous samples. In addition to ACRWC or member municipality staff sampling, self-monitoring by ICIs is also prescribed within some COPs.

A cooperative, gradually escalating approach to enforcement will be used for all ACRWC Source Control COPs. Both administrative violations and wastewater discharge violations shall be considered. This approach will be established in an enforcement policy to be approved by the ACRWC Board of Directors. ACRWC's Board is comprised of one elected official from each of ACRWC's thirteen-member municipalities.

Where cooperative efforts to achieve compliance using the enforcement policy have failed, fines and/or abatement of wastewater flows may be issued under the applicable member municipality's bylaws.



## Glossary of Terms

**Alberta Capital Region Wastewater Commission (ACRWC)** is a regional services commission that provides wastewater transmission and treatment services to thirteen member municipalities surrounding the City of Edmonton.

**Best Management Practice (BMP)** means activities developed to help operators reduce the amount of contaminants discharged to the environment, to comply with regulations and to improve overall waste management practices. BMP's emphasize reducing or eliminating pollutants and toxic materials at their source rather than removing them from a mixed waste stream.

**Contaminant** means a substance that is not naturally present in the environment or is present in elevated amounts, which, if in sufficient concentration, can adversely affect flora, fauna and/or the environment.

**Code of Practice (COP)** means a regulatory document developed by ACRWC that contains mandatory sanitary sewer discharge standards for specific industrial, commercial or institutional sectors.

**Effluent** means a liquid flowing out of a facility or household into a sewer system or water body.

**Hazardous waste** means any chemical, compound, mixture, substance or article as defined in the Alberta Waste Control Regulation and the Alberta User Guide for Waste Managers.

**ICI** means Industrial, Commercial, or Institutional facility.

**Oil and Grease** means an organic substance recoverable by procedures set out in standard methods or a procedure authorized by ACRWC and includes, but is not limited to, non-polar petroleum hydrocarbons.

**Oil and grease interceptor** means a treatment device installed in the plumbing line to control the flow of wastewater to allow fats, oils and grease to float and solids to settle. These contaminants can then be removed from the interceptor for disposal in a suitable manner.

**Pretreatment works** means any works specified in a code of practice designed for the treatment of wastewater prior to being discharged to the municipal sanitary sewer system.

**Sanitary sewer** means a collection system for domestic, industrial, commercial and institutional wastewater or any combination thereof.

**Spill containment** means any impervious structure that surrounds a container or works that is sufficient to hold the larger of 110 percent of the largest volume of free liquid in the container or works OR 25 percent of the total volume of free liquid in storage.

**Storm Sewer** means a pipe conduit, drain or other equipment or facilities for the collection and transmission of stormwater or uncontaminated water.

**Wastewater** means the spent or used water of a community, industry, commercial or institutional facility.

**Wastewater Discharge Permit** means a permit issued by ACRWC stipulating standard and specific terms and conditions regulating an industrial, commercial, or institutional wastewater discharge into the municipal sanitary sewer system.

**Wetted height** means the depth from the static water line to the bottom of the oil-water separator.

## References

Capital Regional District (CRD) – *Food Services Operations in the Capital Regional District – Environmental Regulations & Best Management Practices* (2015)

City of Red Deer – *Grease Interceptors – A Guide for Food Preparation Facilities* Brochure

City of Toronto – *Food Services Establishment Environmental Code of Practice Draft Guide*

CSA Group (formerly Canadian Standards Association) – *CAN/CSA B-481 – Series 12 – Grease Interceptors*

York Region – *Industrial, Commercial and Institutional – Requirements for Disposing of Fats, Oils and Grease (FOG)* Brochure

York Region – *Proper Disposal of Fats, Oils and Grease* Brochure