

Calgary



Automotive industry

Wastewater compliance information



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Glossary of terms

Spill Containment – Any impervious structure that surrounds a container that is sufficient to hold the larger of 110 per cent of the volume of free liquid or 25 per cent of the total volume of free liquid in storage.

Wetted Height – The depth from the static water line to the bottom of the grease interceptor.

Hazardous Substance – means a substance that is either a hazardous substance or a hazardous waste or has the properties of hazardous waste as described in the *Environmental Protection and Enhancement Act*.

Pre-treatment system – means a treatment system or device that is designed to remove substances or contaminants from wastewater produced on site before that wastewater passes into the wastewater system, and includes interceptors, separators and sumps.

Standard Methods – means the analytical and examination procedures set out in the current edition of “*Standard methods for the Examination of Water and Wastewater*” published jointly by the American Public Health Association, the American Water Works Association and the Water Environment Federation

Wastewater– means the composite of water and water-carried substances released from premises or from any other source

Wastewater treatment facility – means a facility that stores, treats and disposes of wastewater, but which is not part of the wastewater system

1.0 Introduction

This information document is relevant to all types of automotive service facilities which may include, but is not limited to lubrication, repair, maintenance, and vehicle wash.

It is important to note that the purpose of this information document is to provide general information to automotive service customers. This information may aid them in identifying ways to achieve compliance with The City of Calgary Wastewater Bylaw 14M2012 and reduce their environmental impact. This document also contains some general federal, provincial and municipal regulations that may be applicable to this type of industry. It is the responsibility of each business to know and comply with all applicable federal, provincial and municipal regulations.

This information document aligns with the pollution prevention principles outlined in the *Canadian Environmental Protection Act*. These principles place priority on reducing, eliminating or preventing pollution at its source. In general, the options for minimizing waste production and potential pollution should take priority as follows:

1. **Elimination** – Where feasible, eliminate generation of waste in the first place (i.e. substitution for environmentally friendly products, adjust process design)
2. **Reduction** - Reduce waste at the source by making changes to materials and procedures
3. **Re-use/recycle** - Recycle or treat waste generated and recover material that has value from the waste
4. **Proper disposal** - Dispose of generated waste through the appropriate waste streams

2.0 Regulations

The objective of applicable federal, provincial and municipal pieces of legislation is to protect people and the environment from substances of concern used in the automotive service industry. Common substances of concern may include but are not limited to antifreeze, windshield washer fluid, brake fluid, oil, grease, paints, solids, benzene, toluene, ethylbenzene, xylene, polycyclic aromatic hydrocarbons (PAHs) and phenols.

The regulations listed below are a summary of some, but not all, guidelines and requirements that may apply. This regulation list is for information purposes only and reference to the actual legislation document is recommended.

2.1 The City of Calgary regulations

The City of Calgary Wastewater Bylaw (14M2012) regulates the waste discharged from automotive service facilities into the municipal wastewater system.

Wastewater Bylaw Number 14M2012 (from now on referred to as Wastewater Bylaw) is a City of Calgary bylaw that allows the municipality to regulate wastewater. There are multiple sections addressing contamination limits within this bylaw. These sections include but are not limited to:

- **Schedule A**
 - This section lists substances that should not be released into the wastewater system in any concentration. An example of prohibited substances relevant to automotive operations includes:
 - (a) a substance that will cause an adverse effect
 - (k) wastewater having a pH of less than 5.5 or greater than 10
 - (n) corrosive or toxic wastewater that will cause an adverse effect
 - (r) hazardous substances
- **Schedule B**
 - This section states concentration limits for inorganic and organic contaminants. Examples of some concentration limits that may apply to the automotive industry are included in the table below:

Parameter	Bylaw Limit (mg/L)
BTEX	1.0
Benzene	0.5
Toluene	0.5
Ethylbenzene	0.5
Xylene	0.5
Hydrocarbons	50
Total Suspended Solids	300

For a full listing of concentration limits refer to Schedule B of the Wastewater Bylaw.

- **Schedule C**
 - This section outlines concentration limits for substances for which a surcharge fee may be applied if limits are exceeded.
- **Section 35: Release Reporting**
 - This section outlines the notification requirements that must be followed following a release of a substance into the wastewater system in contravention of the wastewater bylaw.

Stormwater Bylaw Number 37M2005 (from now on referred to as Stormwater Bylaw) is a City of Calgary bylaw that allows the municipality to regulate storm drainage, including discharges to the storm water collection system. Sections include but are not limited to:

- **Section 2 (t)**
 - “Prohibited Material” means any substance that may, directly or indirectly, obstruct the flow of water within the storm drainage system or may have an adverse effect and includes, but is not limited to:
 - Hazardous substances
 - Industrial waste

- **Section 4**
 - No Person shall Release, or allow to be Released, any Prohibited Material into the Storm Drainage System unless permitted in Subsection (3)
- **Section 5**
 - This section outlines the notification requirements that must be followed following a release of a substance into the storm drainage system in contravention of the Stormwater Bylaw.

2.2 Provincial regulations

Environmental Protection and Enhancement Act supports and promotes the protection, enhancement and wise use of the environment while recognizing the need for economic growth and sustainable development as well as other factors.

Wastewater and Storm Drainage Regulation is an Alberta regulation under the *Environmental Protection and Enhancement Act* that addresses wastewater discharge and storm drainage.

- **Section 7**
 - Owners of wastewater or storm drainage systems are not permitted to use or dispose of substances into the wastewater or storm drainage system in an amount, concentration, level or rate of release that may hinder the integrity, operation or quality of the treated materials within these systems.

2.3 Federal regulations

Fisheries Act is a Canadian regulation that focuses on protecting the productivity of commercial, recreational and Aboriginal fisheries through regulating construction, impact and wastewater discharge.

Canadian Environmental Protection Act is one of the most important environmental laws in Canada as it protects the environment as well as the health and well being of Canadians. A major part of this Act is to sustainably prevent pollution by addressing wastewater discharge and dangerous chemical substance exposure.

3.0 Wastewater Pre-Treatment

3.1 Pre-treatment

All automotive service facilities in the city that discharge non-domestic wastewater into the wastewater system are required to have an interceptor installed. The interceptor should be designed and sized in accordance with the requirements of the National Plumbing Code of Canada to prevent hydrocarbons, flammable liquids and total suspended solids (TSS) from passing into the wastewater system. The interceptor should allow for a minimum retention time of two hours based on the maximum expected flow. The interceptor should be easily accessible and only receive non-domestic wastewater (i.e. not wastewater from washrooms or kitchens).

The owner of the facility must ensure that each interceptor installed on the premises is monitored, maintained, and cleaned regularly. Additionally, the owner is responsible for ensuring that all wastewater does not exceed parameters set out in Schedule “A” and concentration limits set out in Schedule “B” of Wastewater Bylaw 14M2012.

Regular cleaning is required since the increasing solids levels over time acts to decrease the efficiency of the interceptor. Ideally, solids levels in the interceptor should not exceed the lesser of 15 cm or 25 per cent of the wetted height of the interceptor. Floating oil and grease should not exceed the lesser of 5 cm or 5 per cent of the wetted height of the interceptor. These oils, solvents and fuels may be volatile to the point that even if the interceptor is designed to hold more, accumulation of these materials can present health and safety concerns.

The interceptor should be inspected with solids levels being measured and recorded regularly. A full cleaning with a vacuum power unit should be completed annually at a minimum, regardless of solids levels to ensure integrity of the interceptor and a minimum level of maintenance is received.

The only type of liquid entering into the interceptor should be water. All other products/waste should be disposed of appropriately. Hot water, detergents, solvents or any other chemical agents should not be used to flush oil or other materials through the interceptor.

Examples of some common interceptors found in the automotive industry are shown below.



1. Oil water separator



2. Two-chamber sump



3. Oil water separator

3.2 Waste handling

Antifreeze, oil and oil filters, gasoline, solvents, brake cleaners and any other wastes or automotive products should never be discharged into the wastewater or stormwater system. Should any materials or chemicals be spilled onto the floor it should be cleaned up using floor dry and disposed accordingly. It should never be allowed to enter floor drains.

3.3 Record keeping

As required in section 26 (4) of the wastewater bylaw, a written record of all maintenance, cleaning and inspections of your pre-treatment system must be kept on file for a minimum of two years. An [example of a pre-treatment record form](#), shown in Appendix A, can be downloaded from calgary.ca/IMG.

4.0 Education

4.1 Employee education

Investing in staff can provide many benefits such as improved motivation and productivity, improved health and safety and reduced material losses. It can also provide an important awareness of relevant and/or changing regulatory requirements.

Some of the many benefits of investing in employee education can include:

- Increased familiarity with hazards and sources of contamination
- Use and purpose of Safety Data Sheets (SDS)
- Purpose and importance of a spill response plan
- Correct housekeeping and reporting procedures
- Awareness of pollution prevention practices
- Improved waste handling and disposal practices

4.2 Materials storage and disposal

Chemical storage containers should be impermeable, resistant to stored materials and be subject to regular visual inspection. Secondary containment for storage of hazardous chemicals provides added protection for both workers safety and the environment. Documented procedures should be in place to control processes that have the potential to impact the environment. A preventative maintenance program should encompass all facility related processes.

All used product, solvents, paints, greases, detergents and chemicals should be contained appropriately and disposed of at an [Alberta Environment and Parks](#) approved facility. These products should never be discharged to the wastewater or stormwater system.

Store materials indoors if possible. If this is not possible and storage outside is needed for petroleum products, then ensure all products are stored in a tank designed exclusively for that purpose. Storage outside also requires the material be covered in order to protect it from the elements.

If the following materials are stored outside, use secondary spill containment;

- Used batteries
- Used materials such as antifreeze, oil, oil filters, brake fluid, transmission fluid and other hazardous waste
- Fuel storage tanks

4.3 Spill response

It is important to train all staff in the correct steps and procedures to follow when dealing with a spill. Instructions should be posted in the workplace and appropriate spill response equipment should be made available. The contents of a spill kit will depend on the requirements of each individual operation. Some examples of items that may be found in spill kits includes:

- Protective clothing and equipment
- Absorbent materials such as sand, sawdust, absorbent pads, kitty litter, mops, and rags
- Brooms, shovels and dustpans to clean up the absorbent materials
- Portable barriers or storm drain covers to prevent spills from entering the storm drainage system

During a spill it is important to act quickly to prevent wastewater from entering any nearby storm drain. Spills entering the storm drainage system could have adverse effects on the local environment. The City of Calgary Wastewater Bylaw section 35 requires the person who released or allowed the release of wastewater to notify:

- The 9-1-1 emergency telephone number
- The City by calling 311 and emailing the Industrial Monitoring Group at calgary.ca/IMG.
- The owner of the premise where the release occurred
- Any other person that may be affected by the release

5.0 Industry specific information

5.1 Antifreeze

It is important to handle antifreeze containing ethylene glycol carefully. This type of antifreeze is a water-soluble organic compound with a high biological oxygen demand (BOD) and potentially toxic even at relatively low concentrations. If possible, replace with propylene glycol, which is a less toxic substitute.

5.2 Oil and oil filters

Ensure that oil and oil filters are properly disposed of at an approved and licensed receiving facility. Automotive waste oils include motor and engine oil, crankcase oils, gear and metal-working oils, transmission oil and hydraulic fluid.

Oil filters should be punctured and allowed to drain prior to recycling. To prevent injury a properly designed puncture tool should be used. Store used filters in a separate and properly labeled container.

Keep used oil in a separate, marked, watertight container in a secure place prior to recycling. Make sure tanks or drums have proper containment in case of spill or leak. If the storage area is exposed to traffic, ensure it is protected from vehicle contact.

5.3 Spent lead-acid batteries

All used lead-acid batteries should be recycled. Batteries should be stored in acid resistant containment and checked on a regular basis for leaks and cracks. Keep an acid spill response kit nearby and avoid long-term storage if possible.

5.4 Brake fluid

Do not place brake fluid into your used oil container as brake fluid is not an oil-based product. Used brake fluid should be kept in separate sealed container until it can be disposed of at an approved facility.

5.5 Parts cleaning and degreasing

Consider replacing hazardous solvents and/or degreaser with a non-hazardous substitute. Spent solvents are hazardous to workers because they are toxic and emit harmful fumes. When not in use, cover solvent cleaning tanks and close drain plugs. Solvent losses due to inappropriate usage, equipment leaks, spills and evaporation can account for up to 40 per cent of total solvent usage.

Pre-clean parts in a container with a squeegee, rag or wire brush before soaking them in a parts washer. Do not change the solvent until it is necessary to do so. Consider having two tanks, one with old solvent to pre-soak and remove most of the dirt and grease and one with new solvent. This will extend the life of the solvent bath. Avoid chlorinated solvents and other solvents with a specific gravity greater than 1.0 (check the Safety Data Sheet). Aqueous or alkaline cleaners may be substituted for solvent-based cleaners in some applications, particularly for non-aluminum parts. Use spray cleaners only when parts cannot be removed from a vehicle and place a pan under the part to catch potential drips.

5.6 Engine cleaning/shampooing

Collect engine cleaning wastewater for reuse, recycling or for treatment and disposal as engine cleaning products can contain toxic solvents. Do not allow the wash area to drain to the wastewater or storm system. Consider steam cleaning using small amounts of detergent as an alternative method for engine cleaning.

5.7 Used tires and other solid waste

Store as few used tires on site as possible as they pose a fire hazard. Store materials such as scrap metal and old machine parts under a roof, if possible, to protect them from the elements and to prevent the potential for contaminated runoff.

5.8 Service bays

Do not drain shop wastes into a stormwater drain, septic tank, onto the ground or into surface water. Place drip pans underneath vehicles and equipment when performing maintenance

such as parts removal, unscrewing filters and unclipping hoses. Do not leave drip pans or other open containers lying around. Place dirty parts in drip pans instead of on the floor. Never hose down spills with water. Instead use floor dry to clean up any spills.

6.0 Inspections and enforcement

City of Calgary Industrial Compliance Inspectors carry out inspections of automotive service facilities and may request records with regards to maintenance and cleaning of wastewater pre-treatment systems. Samples may also be taken to verify compliance with Wastewater Bylaw 14M2012. Should any non-compliances be noted The City will work with the business to determine root causes and identify the best way to achieve compliance.

As per the disclaimer, the intent of this document is to act as a guidance document only. All applicable federal, provincial and municipal legislation and regulations shall take precedence.

For more information

An educational handout sheet, included in Appendix A, can be downloaded from calgary.ca/IMG.

For more information regarding compliance information for automotive service businesses, please contact The City of Calgary at 311.

Appendix A: Information handout



Automotive Service Facilities Wastewater Information Handout

Automotive service facilities must adhere to The City of Calgary Wastewater Bylaw 14M2012 and The City of Calgary Stormwater Bylaw 37M2005. Use these tips to comply with regulatory requirements, lower fees and protect your business, the community and the environment.

Substances of concern

Automotive service operations use many substances that can present risks to the wastewater and stormwater system. Individual facilities may contribute smaller quantities of these substances, but the collective impact from the automotive sector can be significant.

Pre-treatment systems such as oil-water separators, industrial sumps and interceptors must be properly maintained to avoid blockages, costly wastewater charges, fines and to ensure protection of the wastewater system and environment.

Substances of concern	Sources
Hydrocarbons	Fuels, oils, grease, solvents, flammable liquids and automotive fluids
Glycol	Anti-freeze
Phosphorus	Detergents, cleaners and exterior finishes
Metals and solids	Rust, sand, sediment and paint chips

Wastewater Bylaw 14M2012 Fines for Non-Compliance

Schedule "A" Prohibited Substances

The following must not be released into the wastewater system:

(k) wastewater having a pH of less than 5.5 or greater than 10;

(n) corrosive or toxic wastewater that causes or will cause an adverse effect.

Release of Substances

22 (1) (a) A person must not release or allow the release of any wastewater that contains a prohibited substance into the wastewater system
Specified Penalty \$3000

35 (1) Failing to immediately notify the proper authorities in accordance with subsection 35 (1) where a substance is released into the wastewater system in contravention of the Bylaw

Sector Specific Pre-Treatment

27 (2) (a) Failing to install an interceptor as required
Specified Penalty \$2000

27(2)(b) Failing to monitor, operate, properly maintain and clean each interceptor as required
Specified Penalty \$1500

Records Maintenance

26(4)(b) Failing to obtain and retain manuals, instructions and specifications related to the installation, operation, maintenance and cleaning of the pre-treatment system installed as a premises
Specified Penalty \$500

Pre-treatment options

Pre-treatment systems are a cost-effective way of preventing unwanted wastes from entering the wastewater system. If your business does not already have one, you will need to install a pre-treatment system that is designed and sized in accordance with the requirement of the National Plumbing Code of Canada to prevent hydrocarbons, flammable liquids and suspended solids from passing into the wastewater system.

Pre-treatment selection and installation must be completed by a qualified consultant or tradesperson. If you have any questions about the pre-treatment system selection or installation, contact PlumbingGasTAC@Calgary.ca or call 311.

For your pre-treatment system to be effective, it must be cleaned regularly and checked to ensure it is in proper working order. Most devices require cleaning when the last outflowing chamber is at 25 per cent settled solids capacity. You are required to complete and retain maintenance records on-site for a two-year period. See sample below. Your service provider can assist with the cleaning, maintenance record keeping, as well as the integrity of the pre-treatment system.

What to do if you have an accidental release

In the event of an unintentional release it is important to act quickly to prevent the material from entering the wastewater or stormwater system.

The Wastewater Bylaw section 35 under “Release Reporting” requires the person who released or allowed the release to notify:

- The 9-1-1 emergency telephone number.
- The City of Calgary by contacting 311 as well as the Industrial Monitoring Group at img@calgary.ca
- The owner of the premise where the release occurred.
- Any other person that may be affected by the release.

For any spills that could harm the environment you will also need to report the spill to Alberta Environment.

For more information please contact 311 or the Industrial Monitoring Group at img@calgary.ca



Pre-treatment Maintenance Record

A written record of all maintenance, cleaning and inspections of your pre-treatment must be kept on file for two years. The form below is available at calgary.ca/IMG

Business name: _____ Business address: _____

Date of inspection	Cleaned Yes/No	Contractor used Yes/No	Contractor name (if applicable)	Disposal location	Condition of interceptor (good, fair, poor)	Sludge or Sediment layer (%)*

** Solids should not be more than 25% of the final chamber

Appendix B: Example of record keeping form



Pre-treatment Maintenance Record

A written record of all maintenance, cleaning and inspections of your pre-treatment must be kept on file for two years. The form below is available at calgary.ca/IMG

Business name: _____ Business Address: _____

Date of Inspection	Cleaned Yes/No	Contractor used Yes/No	Contractor name (if applicable)	Disposal location	Condition of interceptor (good, fair, poor)	Sludge or Sediment layer (%)*

**Solids should not be more than 25% in the final chamber.