

Calgary



Carpet Cleaning Operations

Wastewater Compliance Information



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1.0 Introduction

Carpet cleaning operations are typically a commercial or industrial process that engages in cleaning hard and soft surfaces using various methods. One common method used is hot water extraction or steam cleaning where hot pressurized water is employed to clean a surface or carpet of debris, solids and/or stains. Many processes such as hot water extraction generate high-strength wastewater that contains a variety of contaminants depending on the surface being cleaned. This wastewater needs to be properly treated and disposed of to not only protect the company from damages and fines but as well the local community, City infrastructure, as well as the environment.

Wastewater from cleaning activities may have adverse effects on City of Calgary water infrastructure and the environment. **Discharge of this water to the stormwater system is prohibited under the City of Calgary Wastewater Bylaw (14M2012) due to the contaminated nature of the water.** Generated wastewater may contain a variety of pollutants including dirt, debris, cleaning additives such as soap, anti-spot agents, degreasing agents, engine cleaning agents as well as oil, grease, acid solution, solvents, paint chips, metals and food waste that can harm aquatic life and contaminate recreational sites and the environment.

Cleaning agents and soaps labelled “*bio-degradable*” and “*non-toxic*” may be a safer alternative to other brands but despite the labelling, they still have harmful effects on aquatic life and the environment. **As a result, wash water from carpet cleaning activities using environmentally safe additives are still prohibited from discharging wash water into the stormwater system.** Such activities performed by individual businesses may at quick glance seem negligible, but when applied across an industry, produce effects that are magnitudes stronger resulting in lethal consequences to aquatic life and our waterways.

The purpose of this Wastewater Information Summary document is to offer guidance in addressing the high-strength discharge from various carpet cleaning washing activities. By following the recommendations outlined in this document, businesses will be able to lower the risk of fines for non-compliance with The City’s Wastewater Bylaw 14M2012 and reduce monthly surcharge fees (if applicable). **Non-compliance fines for discharging a prohibited substance begin at \$1,000 and can exceed \$3,000.** This document contains some federal, provincial, and municipal regulations relevant to carpet cleaning practices as well as strategies to lower the risk to wastewater infrastructure and the environment.

2.0 Regulations

The regulations listed below are a summary of some, but not all, applicable guidelines and requirements that apply carpet cleaning operations in the City of Calgary. This regulation list is for informational purposes only. Reference of the actual legislation document is recommended.

2.1 The City of Calgary regulations

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. This bylaw sets concentration limits for contaminants found within commercial 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 the carpet cleaning operations may include:
 - Wastewater with a pH of less than 5.5 or greater than 10, or with a temperature exceeding 75 degree Celsius.
- **Schedule B**
 - This section states concentration limits for inorganic and organic contaminants.
- **Schedule C**
 - This section outlines concentration limits for substances for which a surcharge fee will be applied if limits are exceeded.

Stormwater Bylaw Number 37M2005 (from now on referred to as Stormwater Bylaw) is a City of Calgary bylaw that allows the municipality to regulate stormwater, 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 stormwater system or may have an adverse effect and includes, but is not limited to:
 - Soaps or detergents
 - Soil, sediment, waste, or other solid matter
 - Industrial waste (including empty chemical containers and drums, acids, caustics, sludge, and industrial sump water)
- **Section 4**
 - No Person shall Release, or allow to be Released, any Prohibited Material into the Stormwater System unless permitted in Subsection (3)

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 Stormwater Regulation is an Alberta regulation under the *Environmental Protection and Enhancement Act* that addresses wastewater discharge and stormwater.

- **Section 7**
 - Owners of wastewater or stormwater systems are not permitted to use, or dispose of, substances into the wastewater or stormwater 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.

The Alberta Water Act is an Alberta regulation that supports and promotes the conservation and management of water, including the wise allocation and use of water. This act addresses the use of water during processes such as power washing by introducing proper disposal and management actions.

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 Industry best practices

This section describes some industry best practices that can be implemented to reduce the impact carpet cleaning operations have on the environment, local community, and wastewater treatment facilities. Following the suggested practices can assist in meeting regulatory requirements, lowering wastewater surcharge fees as well as better protecting your business, community, and environment.

The practices and procedures outlined in this document emphasize eliminating pollutants at the source. Once pollutants are mixed into a single waste stream, reduction and separation of these pollutants becomes increasingly difficult and cost intensive.

3.1 Contamination limits

The primary contaminant of concern during carpet cleaning operations is the amount of Total Suspended Solids (TSS) within the wastewater. Other wastewater parameters such as Biochemical Oxygen Demand (BOD) should also be monitored before wastewater is discharged to the wastewater system. Below are some concentration limits outlined in the City of Calgary Wastewater Bylaw:

Surcharge Parameter	Bylaw Limit
Biological Oxygen Demand (BOD)	300 mg/L
Total Suspended Solids (TSS)	300 mg/L

It also common for wastewater in the carpet cleaning industry to experience fluctuating pH values and high temperatures. Either of the conditions below would qualify as a prohibited substance and should not be released to the wastewater system in any quantity:

- Wastewater with a pH of less than 5.5 or greater than 10 and temperature more than 75°C.

It is important to note that the contaminants mentioned above are the most common substances found in the generated wastewater during carpet cleaning operations. Individual operations may have additional contaminants based on their chemicals and type of processes etc. It is the responsibility of each individual operation to ensure their wastewater meets all requirements of the Wastewater Bylaw.

3.2 Managing contaminants

Proper management of generated wastewater is an important aspect of carpet cleaning operations that requires diligence. Wastewater may contain a variety of contaminants though the most common substances include non-biodegradable grit and fibrous materials. Furthermore, cleaning agents and other chemicals that may have been used to pre-treat the carpeted surface prior to cleaning will inevitably end up in the wastewater. Attention must be paid to the type of cleaning agents and other additives used as these chemicals can change the classification of wastewater from non-hazardous to hazardous, affecting the disposal options. An example of such classification would include spotting agents that contain hazardous chlorinated and non-chlorinated compounds. The following are various wastewater management strategies that will assist in the safe disposal of generated wastewater.

Preparation for operation:

Before beginning carpet cleaning operations, it is important to verify that the task is thoroughly understood, and all the necessary equipment and tools are in proper working order. The following is a list of actions that should be completed before beginning work:

- **Non-toxic detergents and cleaners:** The use of low-toxin, low-surfactant, and non-toxic materials such as cleaning agents and detergents is an excellent practice to eliminate or reduce the presence of harmful contaminants within the generated wastewater. By using less harmful materials, carpet cleaning companies can easily comply with City of Calgary bylaws.

- **Equipment condition** – Ensuring that equipment is in proper working order before use is critical to avoid spills or leaks. This can save a carpet cleaning company time and money by avoiding damages to their customer’s property that may have resulted from an accidental spill or break in the company’s equipment. It is recommended that filter screens are inspected daily for defects and hoses, connections, valves, and other components are inspected at least once a week.
- **Outdoor stormwater system** – Wastewater generated from carpet cleaning operations cannot be discharged into the stormwater system. By locating storm drains near the cleaning operation, proper actions can be taken to prevent the flow of wastewater into these drains during accidental leaks or breaks in hosing and equipment located outdoors (mounted trucks etc.). Actions include setting up barrier devices around the storm drains if a wastewater spill is likely to occur.

3.3 Wastewater pre-treatment

The main contaminant within generated wastewater from carpet cleaning operations is grit and carpet fibres. Discharging a large amount of these materials could result in abrasion and damage to the carpet cleaner’s pipes, pumps and hoses as well as significant harm to the local environment. Furthermore, wastewater containing large amounts of grit, carpet fibre and total suspended solids creates debris deposits within the City of Calgary wastewater system resulting in high cleaning costs for The City. Pre-treatment methods allow for wastewater to undergo initial treatment, lowering contaminant concentration and reducing damages to infrastructure and the environment.

Dry vacuuming: This should be performed prior to applying water and other cleaning agents. By vacuuming up debris and other solid materials such as soil, dirt, and fibres before the addition of water, the number of suspended particles in the wastewater can be drastically reduced. This action will as well prolong the life of filter screens and the overall lifespan of the carpet cleaning systems.

Filter screens: These are used as a pre-treatment method to removed solids such as grit and carpet fibre from the generated wastewater. The holes in a filter screen should be no longer or wider than 0.25 millimetres as larger holes will not filter out enough material to avoid the above-mentioned impacts. Solids collected from these filters should be disposed of in the garbage unless these materials are considered hazardous. Hazardous solids should be disposed of at an appropriate waste disposal facility. By installing filter screens within the carpet cleaning system, the life of the equipment will be extended as less abrasion and damages will result from normal use.

Note: To discharge these collected solids into a storm or wastewater drain puts the wastewater infrastructure and environment at risk and can lead to fines.

3.4 Wastewater disposal

There are a few ways to dispose of the collected wastewater from carpet cleaning activities. Before disposal, the wastewater should be processed through a filter screen no larger than 0.25 millimetres to remove suspended solids preventing damages to the carpet cleaning equipment, receiving infrastructure and the environment. The following are recommended disposal methods:

- **Drains:** Drains such as sinks, tubs, toilets and floor drains that are connected to the wastewater system can be used to dispose of collected wastewater from carpet cleaning activities as long as the wastewater meets or does not exceed the City of Calgary Wastewater Bylaw limits. Only drains located within the facilities owned by the carpet cleaning company or at the work site can be used to dispose of the generated wastewater. If using drains at the work site, permission from the property owner must be granted and retained.
- **Wastewater treatment facility:** Another method to dispose of wastewater into the wastewater system is to haul the generated wastewater to a wastewater treatment facility for disposal. Hauled wastewater is defined as wastewater, seepage, FOG (fats, oils, and grease) or waste residue that is transported by vehicle to a designated site for disposal to the wastewater system. It is important to note that a hauled wastewater permit is required to transport the wastewater off the cleaning site and to the wastewater treatment plant.
- **Off-site disposal:** Other than the wastewater system, collected wastewater from carpet cleaning activities can also be disposed of at a waste treatment site that is permitted to accept this type of waste. It is important to note that RV dump sites or car washes are not appropriate disposal locations and it is illegal to disposal of wastewater at these sites.

3.5 Employee training and education

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. A spill kit should consist of:

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

Secondary containment for stored chemicals is recommend as a last line of defense to prevent spills and leaks from reaching the wastewater or storm system.

During a spill it is important to act quickly to prevent wastewater from entering any nearby storm drain. Spills entering the stormwater 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 City by calling 311 as well as the Industrial Monitoring Group at img@calgary.ca
- The owner of the premises 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.

4.0 Further information

For more information regarding best management practices for carpet cleaning operations, please contact The City at 311 or the Industrial Monitoring Group at img@calgary.ca.

5.0 Summary of mandatory and recommend actions

Required actions	
Regulation	Action
Wastewater Bylaw 14M2012	<p>22 (1) A person must not allow the release of any wastewater into the wastewater system that:</p> <ul style="list-style-type: none"> (a) contains a substance described in Schedule “A”: Prohibited Substances. (b) contains a substance that is above the approved concentration limits as described in Column 2 of Schedule “B” or Column 2 of Schedule “C”; or, <p>Does not comply with the requirements of this bylaw.</p>
Wastewater Bylaw 14M2012	<p>26 (1) The Director, Water Resources may require an owner to do any one or more of the following: (a) Install, operate, monitor and properly maintain at all times a wastewater pre-treatment system that is located at a directly accessible location on the upstream side of a monitoring access point at the owner’s premises</p> <p>(2) An owner who fails to install, operate, monitor, provide access to and properly maintain at all times a wastewater pre-treatment system as required by the Director pursuant to subsection (1) (a), (b) or (b.1) is guilty of an offence under this bylaw.</p> <p>(4) An owner of premises with a pre-treatment system installed in or on a premise must:</p> <ul style="list-style-type: none"> (b) maintain a maintenance schedule and record of each maintenance for every pre-treatment system installed at the premises for a period of two years, including records for disposal of waste residue
Wastewater Bylaw 14M2012 – Section 35	<p>A person who released or allowed the release of a substance must notify:</p> <ol style="list-style-type: none"> 1. The City by calling 311 2. The owner of the premise where the release occurred 3. Any other person that may be affected by the release

Recommended actions	
Type	Action
Employee education	<ol style="list-style-type: none"> 1. Clean up spills immediately. 2. Use a broom and mop to clean the floor. 3. Do not overfill tanks.
Establishment operations	<ol style="list-style-type: none"> 1. No discharging of prohibited substances (pH less than 5.5 or greater than 10 or a temperature exceeding 75°C). 2. Maintain records of pre-treatment maintenance and cleaning.
Accidental spills and releases	<p>Have a spill plan ready for:</p> <ul style="list-style-type: none"> • Indoor wet spills • Outdoor wet spills • Indoor or outdoor dry spills

Appendix A: Information Handout



Carpet Cleaning Wastewater Information Handout

Carpet cleaning businesses 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.

Manage contaminants in your wastewater

- Ensure the purchase of non-toxic detergents and cleaners
- Prior to cleaning, confirm equipment is in proper working order, free of leaks and damage

Use a pre-treatment method

- Filter screens shall be installed at any water release point to capture all solid materials.
- Dry vacuuming should occur prior to cleaning agent application and water cleaning
- Solids must be diverted to a solids waste stream unless the materials are considered hazardous, in which case they shall be sent to an appropriate treatment facility.
- Visit calgary.ca/hhw or contact 311 for the hazardous materials disposal requirements.

How to dispose of your wastewater

- Drains connected to the Wastewater System (i.e. floor drains and sinks) may be used to dispose of wastewater if the following conditions of the Wastewater Bylaw (14M2012) are met:
 - Does not contain any substances listed in Schedule A Prohibited Substances;
 - Does not exceed any concentrations listed in Schedule B Restricted Substances and Schedule C Surcharge Substances
- If the wastewater exceeds City of Calgary Wastewater Bylaw limits, the wastewater can be disposed of at other waste treatment facilities where industrial wastewater is permitted.

Wastewater Bylaw 14M2012 Fines for Non-Compliance

18(1) Failing to dispose of wastewater from a premises into either the wastewater system or a private wastewater system

Specified Penalty \$1000

22(1)(a) Releasing, or allowing the release of wastewater that contains a prohibited substance into the wastewater system

Specified Penalty \$3000

22(1)(b) Releasing, or allowing the release of wastewater into the wastewater system that contains a substance that is over the concentration limit as described in Column 2 of Schedule "B" or Column 2 of Schedule "C"

Specified Penalty \$3000

43(6) Failing to comply with a Remedial Order

Specified Penalty \$1000

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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 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