



Alcohol and Fermentation Industry Wastewater Information Handout

Fermentation operators — businesses that produce beer, wine, cider, spirits, kombucha or other fermented products, 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.

Why are these operations a concern?

This industry has the potential to release large volumes of high-strength wastewater into the City’s wastewater system. The amount and strength of this wastewater can stress the treatment capacity of the receiving wastewater treatment plant. Individual operations may contribute smaller quantities of these substances however collectively, impact from the industry can be significant.

Substances of Concern	Sources
Organics (BOD)	Alcohol, sugars, yeast, raw materials
Solids	Spent grains, pulp, fruit, hops, trub
pH	Acidic final product, acidic and caustic cleaning solutions
Nutrients	Organic source materials
Temperature	Boiling and fermenting process

Pre-treatment options

Solids management: Install screens, filters or baskets within the process stream. Keep solids from hitting the ground and prevent material from entering floor drains. Solids may have value as animal feed or compost.

Biological Oxygen Demand (BOD) reduction: Divert concentrated sources of waste rather than mixing and releasing to the wastewater system. Once segregated this high strength waste can either be treated or hauled away for offsite disposal. Ensure spilled product does not enter floor drains. Some of the options to reduce BOD in effluent are Anaerobic (commonly used in breweries) or Aerobic Digestion, Membrane Filtration, Advanced Oxidation, Electrochemical Methods or Activated Carbon treatment.



Brewery tanks

pH treatment: The wastewater bylaw 14M2012 states wastewater pH must fall between 5.5 and 10.0. This can be achieved, for example, by adjusting effluent pH through a pH Equalization/Neutralization Tank prior to releasing to the wastewater system.

Maintenance record: When maintaining a pre-treatment system, it is important to keep records of any activities completed. Records are required to be kept onsite for minimum of two years.

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.

Surcharge Program (Wastewater Bylaw 14M2012)

Untreated, high strength Alcohol and Fermentation Wastewater effluent likely contains one or more substances at a concentration that would fall under the City of Calgary’s Surcharge program (Schedule “C”).

Wastewater Bylaw 14M2012 Schedule “C” Surcharge Substances To recover costs incurred for the treatment of high strength effluent a surcharge may be applied to your monthly water bill. The table below shows the average effluent quality of Alcohol and Fermentation Wastewater and how it would translate to a surcharge bill. The surcharge has been broken down by parameter and range of cost by \$/m3 of wastewater generated.

Parameter	Bylaw Limit	*Typical Industry Average	**Approximate Surcharge \$/m3
BOD (mg/L)	300	8,500	11.83
TSS (mg/L)	300	1,600	1.49
pH	5.5-10		

* Ranges and average determined from numerous North American literature reviews

** Approximate surcharge rate based on typical industry average

More information on the surcharge program and rate formula can be found at calgary.ca in Schedule “C” and “F” of wastewater bylaw 14M2012.

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

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;
(l) wastewater having a temperature in excess of 75 degree Celsius.

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

Specified Penalty \$3000

Release Reporting

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

Specified Penalty \$1000

Monitoring Access Points

28 (a) Failing to provide one or more monitoring access points for the monitoring of wastewater in compliance with subsection 26 (1) (a)

Specified Penalty \$2000

Records Maintenance

26 (4) (b) Failing to maintain a maintenance schedule and record of each maintenance for the pre-treatment system installed at a premises for a period of two years, including records for disposal of waste residue

Specified Penalty \$500