

Metro Vancouver Fermentation Operations Bylaw Guide

WINTER 2020





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Metro Vancouver wishes to thank Main Street Brewing Company, Granville Island Brewing, Big Rock Urban Brewery, and R&B Brewing Co. for allowing us to use images of their fermentation operations for demonstration purposes.

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DISCLAIMER: This guide is not intended to provide legal advice or direction. This guide provides summary information for convenience only and should not be used as a substitute for the Greater Vancouver Sewerage and Drainage District Fermentation Operations Bylaw No. 294, 2015, as amended, any related regulations, or policy.

Fermentation Operations Bylaw

In November 2015, Metro Vancouver implemented a bylaw to reduce and prevent spent grains, fruit and yeast from smaller fermentation operations from going down the drain.

The Fermentation Operations Bylaw applies to any business using yeast to produce alcoholic beverages and discharging up to 300 m³ (300,000 L) of wastewater into the sewer within 30 days, including brew pubs, cottage breweries, micro-breweries, vint-on-premises, wineries, distilleries, cideries and u-brews.

Ensuring waste from fermentation operations is managed responsibly

A rapid rise in the number of fermentation operations in the Metro Vancouver region increased the volume of spent grains, fruit and yeast entering and stressing the sewer system. The bylaw requires fermentation operations to remove solids from wastewater and monitor and control the pH of cleaning and sterilization water.

The Fermentation Operations Bylaw was developed in consultation with operators from across the region and reflects the distinct conditions of their operations. The bylaw is a set of standards operators need to meet; it was designed so there are multiple ways of achieving the standards, depending on a business' unique situation.

Supporting fermentation operations to comply with the bylaw

This guide describes each bylaw requirement and offers support to fermentation operators to comply with the regulation.

The guide is a companion piece to the Fermentation Operations Bylaw which can be found at www.metrovancouver.org by searching "Fermentation Operations Bylaw."

Operators are also encouraged to contact Metro Vancouver at 604-432-6200 and speak to an Officer with any questions or comments about the bylaw. In Vancouver, the bylaw is managed and enforced by the City of Vancouver local government. Fermentation operations within the City of Vancouver should call 3-1-1 for any inquiries related to the bylaw.



Contact information

Metro Vancouver:

Call: 604-432-6200

Email: regulationenforcement@metrovancouver.org

City of Vancouver:

(for operations in the City of Vancouver only)

Call: 3-1-1

Email: environmentalprotection@vancouver.ca

Requirement 1: Remove solids

When coarse solids like spent grains and fruit, and fine solids suspended in water, like yeast, enter the sewer it stresses the system and costs money to maintain and repair.

This requirement ensures both coarse and suspended solids are removed from wastewater.

Bylaw requirement

- The discharge of coarse spent grains or fruit pulp to the sewer is prohibited
- The maximum concentration of Total Suspended Solids (TSS) shall not exceed 1,200 mg/L

All operations must comply with the TSS limit.

Supporting compliance

Operations employing Best Management Practices for this sector usually have TSS concentrations under 800 mg/L.

In practice

Since it is unlawful to put organic solids in the garbage, some breweries have made arrangements to have their spent grains delivered to farmers to use as feed.

Operators are encouraged to call their waste hauler to learn about customized waste management services or contact processing facilities around the region to see what materials can be accepted.

Operators can contact the Recycling Council of BC (www.rcbc.ca) to learn how to manage organic waste. RCBC can connect operators to the right resources to help them develop or improve an organics management program.

Hatch to empty spent grains



Spent grain feed to outside for farmer pick-up



Requirement 2: Provide a sampling point

To ensure operators and regulatory staff have accurate knowledge of wastewater quality, they must be able to access wastewater for sampling purposes.

Bylaw requirement

Fermentation operations must provide a suitable sampling point that can be accessed during operating hours. A suitable sampling point must be:

- Downstream from fermentation equipment;
- Downstream from any equipment or device for treating wastewater;
- Upstream from washrooms; and
- Easily accessible.

Supporting compliance

The intent of this requirement is that both operators and Metro Vancouver staff will be able to gather a representative sample of the wastewater produced from a fermentation operation. Examples of sampling points for operations with or without treatment equipment are shown in Figures 1 and 2.

In practice

The sampling point will be different based on the scale and type of operation. Fermentation operators are strongly encouraged to contact regulation staff to confirm their plans before installing a sampling point. Regulation staff would be pleased to provide guidance and suggestions on the appropriate sampling point type and location.

Figure 1: Example of sampling point for fermentation operations with treatment equipment

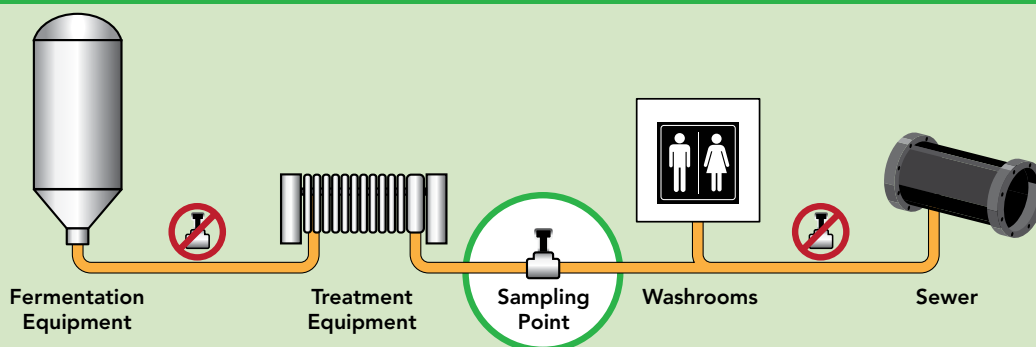


Figure 2: Examples of sampling points for fermentation operations without treatment equipment



Fermentation Vessel

In some cases, samples can be drawn directly from a carboy or other small fermentation vessel.



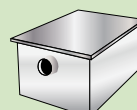
Sink

In operations that rinse the fermentation vessel into a sink, it may be possible to simply plug the sink and take samples from there.



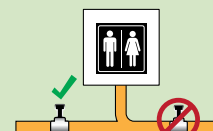
Spigot or Check Valve

Installing a spigot or check valve, either underneath a sink or further downstream, may be considered an acceptable sampling point.



Trade Waste Interceptor

It may be possible to use an existing trade waste interceptor, as long as it is accessible and upstream of washrooms.



Sampling point must be located upstream of washrooms and other sources of wastewater unrelated to fermentation

Please contact regulatory staff to discuss your options prior to installing a new sampling point.

Requirement 3: Monitor and treat wastewater pH

Cleaning and sterilizing activities for fermentation operations can impact the pH levels of wastewater which can damage pipes and cause chemical imbalances that may be dangerous for workers in the sewer. This requirement ensures wastewater is tested regularly and adjusted to meet appropriate pH levels.

Bylaw requirement

Each operation is required to monitor and record wastewater pH. On days operators clean and sterilize fermentation equipment, they must measure and record pH at least once. The pH level must be measured immediately after sampling using an onsite pH meter.

Bottles are not considered fermentation equipment and therefore are excluded from the sampling requirement.

pH monitoring should begin once the sampling point is installed, to determine whether the wastewater complies with the Sewer Use Bylaw range of 5.5 to 10.5.

Supporting compliance

In order to obtain a representative and accurate pH reading, fermentation operators should use a digital handheld pH meter. Meters can be obtained from a scientific supply retailer.

Operators should not use pH paper strips (paper) since they do not provide an accurate measure of wastewater pH.

Using a pH meter to monitor and record wastewater pH



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Fermentation Operations Bylaw Record Form
Instructions: On days that you clean and sterilize fermentation equipment, measure and record wastewater pH at least once.

Date: _____

Date	Time	pH	Sampling point <small>(indicate location if more than one)</small>	Sampled by
July 3 2016	4:00 PM	7	Sink	Tam
July 5 2016	1:00 PM	5.5	Sink	Sarah
JULY 21 2016	2:30 PM	6.2	Sink	JANIL
JULY 22,				

Off-spec discharge report

Date	Time	Volume
JUL 22 16	4:30 PM	105 L

Requirement 4: Keep records

Records are required so regulatory staff can confirm operators are complying with the bylaw when they inspect the facility. Record keeping can also help operators understand the nature of their wastewater over time.

Bylaw requirement

Operators are required to keep the following records:

- Hectolitres (hL) of packaged product being produced per calendar month
- Dates, times and results of pH testing

Operators must maintain records of monthly hL of product. Copies of data recorded by operators for tax purposes (Canada Revenue Agency) would be acceptable.

These records must be kept at the facility and available for inspection for a minimum of two years.

Supporting compliance

Metro Vancouver has created a simple template for recording pH testing that can be copied from this guide (see page 10) or downloaded from the Metro Vancouver website and used to track this data.

Other types of forms, such as a calendar, may be used by operators as long as the required information (date, time, pH) is clearly provided.

You can download a copy of the **Fermentation Operations Bylaw Record Form** at www.metrovancouver.org, search: **"Fermentation Operations Bylaw"**





Requirement 5: Pay treatment fees

Treatment fees are designed to recover the costs of conveying and treating the wastewater from fermentation operations.

Bylaw requirement

All fermentation operations are required to pay an annual amount for treatment fees based on their annual production from the previous year. The annual fees are calculated as per the fee table, at right.

Metro Vancouver will determine the appropriate fee based on information collected for Provincial or Federal government agencies for tax purposes, or an operator's records.

TREATMENT FEE TABLE

Operation Type	Rate/hL of Annual Production
Breweries	\$0.394
Distilleries	\$0.282
Wineries & Cideries	\$0.376
U-Vin/U-Brew/Sake Makers	\$0.142

Note: smaller operations producing less than 250 hL per year are exempt from paying annual treatment fees.



Requirement 6: Pay administrative fees

Administrative fees recover the costs to administer and enforce the bylaw. These costs include inspections, sampling and analysis.

Bylaw requirement

Operators are required to pay an annual administration fee of \$200 to Metro Vancouver or the City of Vancouver to cover the costs of regulating fermentation operations under this bylaw.

Regulatory fees will be invoiced annually and are payable by the date specified.

Requirement 7: Manage discharge of off-spec product

Off-spec product (bad batches) is very high in Biochemical Oxygen Demand (BOD) which can negatively impact the region's wastewater treatment plants.



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Off-spec management depends on the volume produced:

- **Off-spec over 100 litres and under 2000 litres per day:** notify Metro Vancouver or the City of Vancouver by phone or email and then discharge. No response is required from Metro Vancouver or the City of Vancouver. Record the date, time and volume of off-spec in the appropriate section of the Fermentation Operations Bylaw Record Form.
- **Off-spec over 2000 litres per day:** contact Metro Vancouver or the City of Vancouver by phone, email or online and obtain authorization before discharging to the sewer. Record the date, time and volume of off-spec in the appropriate section of the Fermentation Operations Bylaw Record Form. Metro Vancouver/City of Vancouver will typically respond to your notification within one to two business days.





Fermentation Operations Bylaw Record Form

Instructions: On days that you clean and sterilize fermentation equipment, measure and record wastewater pH at least once.

Date: _____ MONTH _____ YEAR

Date	Time	pH	Sampling point <i>(indicate location if more than one)</i>	Sampled by

Off-spec discharge report

Date	Time	Volume



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