

REGISTRATION

Pursuant to s. 49 of the Environmental Protection Act, SNL 2002, c. E-14.2

UNDERTAKING:

Microbrewery

LOCATION:

316 Church Street, Burin, NL

SUBMITTED BY:

Christopher Johnson, on behalf of
Rough Waters Brewing Company Ltd.

SUBMISSION DATE:

August 9, 2017

NAME OF UNDERTAKING:

Burin Microbrewery

PROPONENT:

(i) Name of Corporate Body:

Rough Waters Brewing Company Ltd

(ii) Address:

316 Church Street
Burin, NL
A0E 1E0

(iii) Chief Executive Officer:

Name: Christopher Johnson
Official Title: Director of Product Development and Quality Control
Address: 316 Church Street
Burin, NL
A0E 1E0
Telephone No.: (709) 325-1492

Name: Jennifer O'Keefe
Official Title: Director of Marketing and Distribution
Address: 316 Church Street
Burin, NL
A0E 1E0
Telephone No.: (709) 325-1492

(iv) Principal Contact Person for purposes of environmental assessment:

Name: Christopher Johnson
Official Title: Director of Product Development and Quality Control
Address: 316 Church Street
Burin, NL
A0E 1E0

THE UNDERTAKING:

(i) Nature of the Undertaking:

Christopher Johnson, the owner of Rough Waters Brewing Company Ltd., is seeking approval to establish a small 12 hectoliter capacity microbrewery in Burin, NL. The microbrewery will be attached to a restaurant and bar in Smugglers Cove located at 316 Church Street with a portion of the building (approximately 2,000 square feet) containing the microbrewery. The beer will be made with all natural ingredients (water, malted barley, hops, and yeast) with no added preservatives or pasteurization.

A microbrewery is often defined as a brewery producing less than 15,000 hectoliters per year. In this case, less than 1,000 hectoliters will be produced per year. In comparison, major breweries such as Molson produce roughly 10 million hectoliters per year.

(ii) Purpose/Rationale/Need for the Undertaking:

The craft beer industry in Canada has gained a large following and has seen significant growth due to the increased desire for local, all-natural products that differ from major breweries. Newfoundland and Labrador has only 7 microbreweries across the province which pales in comparison to Nova Scotia which has more than 50 microbreweries and New Brunswick with more than 40. Many of those microbreweries operate in rural communities, successfully stimulating the local economy and bringing jobs to labourers and craftsmen.

The Burin Peninsula is currently seeing increased commercial development and revitalization to some communities. The Town of Burin is currently completing plans to increase tourism to the area which will provide attractions for families, outdoor adventurers, and festival-goers alike. A microbrewery will only add to the tourism market as many people are now traveling for the purpose of seeking out small breweries in rural locations which all offer a unique experience.

A microbrewery will be a great addition to the experience that will be available at Smugglers Cove, as well as the surrounding area. While visiting Smugglers Cove, people will have the opportunity to sample different types of artisan beer, have a brewery tour and purchase merchandise.

DESCRIPTION OF THE UNDERTAKING:

(i) Geographic Location:

The site (building) is located within the Town of Burin, at 316 Church Street. The property (land and building) that the microbrewery will be located in is commercially zoned. Smugglers Cove will have several businesses operating in conjunction with each other. The Town of Burin has written a letter of support for the microbrewery and has advised that there will be no municipal issues preventing the microbrewery from opening (Appendix A).

Currently, the site's water is supplied by a well. This water will be tested by AGAT Laboratories prior to being used in the production and manufacturing of beer. The bathrooms and waste disposal are connected to a commercial septic system.

Attached are geographical maps showing the location of the undertaking as well as plans for the portion of the site that will contain the microbrewery (Appendix B).

(ii) Physical Features:

The site is a portion of one of the buildings located on the property. The site contains two fresh water ponds as well as other plant life and vegetation which will not be affected by the undertaking. Also, as previously mentioned, the building is connected to a well and septic system that will be shared with other businesses operating on the property.

There will be no new pipelines, transmission lines, roads, etc. constructed for the undertaking as the microbrewery will be located in approximately 2,000 square feet of a renovated structure.

(iii) Construction:

The building in which the brewery will be operating is a commercial building which will be renovated to house a brewery operation. The operators of Smugglers Cove will have all of the contractors following provincial Occupation Health and Safety requirements and provincial environmental standards throughout the construction work.

The construction for the undertaking will be for the installation of equipment. The brewery construction will consist of plumbing and electrical upgrades as required for the equipment. The electrical will operate a 400amp service and there will be proper drainage installed in the microbrewery.

The only potential pollutants could be from machinery used for installing the brewing equipment, which would be minimal for the undertaking.

(iv) Operations:

The operation of the microbrewery will consist of the following: (a) the brewing process, carried out two or three times a week; (b) crushing grains; and (c) cleaning.



(a) The Brewing Process

The brewing process typically runs over an eight-hour period and described as follows:

- Heating, via electrical elements, approximately 600 liters of water to a temperature of 75C in a large (1,200 liter capacity) stainless steel tank called a Hot Liquor Tank (HLT).
- The heated water is transferred via pump and hose to a second stainless steel insulated tank called the Mash Lauter Tun. Malted barley/grain is added and steeped in the hot water (65C) for approximately one hour. Additional water (approximately 150-200 liters) added, over the grains to draw off more starches where possible.
- The liquid ("wort") is then drawn from the mash lauter tun and pumped to a stainless steel tank, called the kettle, which is fitted with electrical elements. The wort is heated to 100C and boils for approximately one hour. During the boil, hops (the female flower of the hop plant, *Humulus Lupulus*) are added, giving beer bitterness as well as additional flavor and aroma.
- The wort is then drawn off the tank via pump and hose and passes through a plate chiller (heat exchanger) that runs cold water to cool it to room temperature. This water is then used to fill the hot liquor tank.
- The wort leaves the plate chiller and enters the fermentation tank. Brewer's ale yeast is added to the tank and held at a temperature between 18-22C for five to seven days. The tank is equipped with a glycol jacket which is used to control the temperature. Glycol is cycled through the jacket and a small chiller to maintain the wort at a consistent temperature.
- After fermentation is completed, the wort is cooled to 4C over a 12 to 24 hour period. Once cooled, the beer is then transferred to a carbonating/conditioning tank, called the Bright Tank, which is also glycol jacketed.
- The beer is then held at 4C and carbonated via the addition of carbon dioxide. The carbonated beer is then transferred into kegs.
- During the brewing process, two 1 HP variable frequency drive pumps (one stationary, one mobile) will perform all of the above transfers of liquid via hose.

(b) Crushing Grain:

The microbrewery will be crushing a small amount of grains prior to brewing. The amount of dust from this process is not large enough to create a fire or explosion hazard. This process will occur a maximum of three times a week. The mill will operate for only 15 minutes during brew days and crush between 150-200lbs of grain during this time. The grain will be stored and mulled as recommended by fire regulations.

(c) Cleaning:

The tanks and equipment will be cleaned and sanitized after every use, utilizing a clean-in-place (CIP) system with non-caustic (alkaline) cleaner and sanitizer. On an as-needed basis, a caustic cleaner will be required to remove scale and beerstone from the tanks. This cleaner will be highly diluted and used on a minimal bases.

Other Operations:

Rough Waters Brewing Company Ltd will also operate a walk-in cooler for keg and hop storage. There will be a small draft system to provide tastings during tours of the brewery. The beer will be provided to the connected bar where the public will be able to purchase it.

Water Demand/Usage:

The water usage will fluctuate based on the operation being carried out that day. Water will be required: (1) on a brew day and (2) during cleaning. The water demand for a brew day will be approximately 750 liters for the brewing process. During the cleaning process following a brew day, approximately 150 liters will be used.

As demand increases, the operation will brew twice in one day to produce 1200 liter batches. Once this happens, the required water will be approximately 1650 liters.

This may occur once every four or five days, depending on the brewing schedule. Water will be saved in the HLT, and will result in 750 liters of water being available. Therefore, all water does not have to be drawn on the same day.

Period of Operations:

Rough Waters Brewing Company Ltd. will operate year round with the greatest production happening seasonally between May and October. Smugglers Cove will be open to the public from May to October, and open for certain festivals and weekends during the rest of the year. During the winter, some brewing will be required to supply restaurants and bars as well as festival activity and events at Smugglers Cove.

Potential Sources of Pollutants:

Airborne emissions:

During operations there are only two small opportunities for airborne emissions: (1) vented steam during the brewing and (2) vented grain dust during the milling process. These processes result in minuscule to non-existent air emissions and all are 100% natural and will contain no chemicals or toxic substances.

The vented steam occurs during boiling in the brewing process. The wort drawn from the Mash Lauter Tun is put into the Kettle and boiled for approximately one hour. During the boil, hops (a natural plant) are added at various stages of the boil. At this point, the wort only contains water, starches from the grains, and flavours drawn from the hops, which are all natural and contain no chemicals or toxic substances. The steam produces a slight odour which will be vented outside. The odour will only be detectable while standing close to the vent as the brewery capacity is 1/20th that of Quidi Vidi Brewery when it first opened. There are no chemicals or toxic substances that will be emitted.

There will also be a small amount of airborne grain dust produced while milling the grains. There will be a ventilation system in the brewery to assist in the emission of grain dust, which will be small in nature, all natural, and will dissipate quickly.

Solid Waste & Liquid Effluents:

Rough Waters Brewing Company Ltd. will be environmentally friendly and work towards exceeding all environmental standards when possible. Fortunately, the brewing processes uses organic materials that are reusable in nature.

When manufacturing anything, there will be some waste of product. The waste produced in the brewing process for 600 litres of beer are water, spent grains, hops, and cleaning products:

- Water: There will be approximately 150 litres of water wasted for cleaning purposes. The excess water will be disposed in the floor drain during the cleaning process.
- Spent Grains and Hops: The spent grains and hops will be collected from the Mash Lauter Tun when the brew day is complete. The spent grains can range from 200-300 lbs. These grains will be given to farmers the same day to feed their livestock.
- Cleaning Products: The microbrewery will do its best to use environmentally friendly cleaning products. As previously mentioned, there will be a need to use a more toxic cleaner to dissolve "Beerstone," which is a buildup of minerals and proteins that accumulates over time. This type of cleaner will not be used often and will be highly diluted (a 2,000:1 ratio) before disposing it in the commercial septic system. The other cleaner used frequently after every brew day will be powdered brewery wash (PBW). This is an environmentally and user-friendly cleaner and will be disposed of through the floor drains and into the commercial septic system.

(iv) Occupations:

Chris Johnson will work full time as the brew master for Rough Waters Brewing Company Ltd. Jennifer O’Keefe will be in charge of marketing and business analysis. Smugglers Cove will have its own employees operating the tap room and selling merchandise. This will eliminate the need for hiring additional workers in the early stages of the company. As demands increase, the company will grow and hire on additional workers for driving kegs to tap accounts around the province, and an assistant brewer. In the future, when hiring workers, there will be discrimination in the process.

APPROVAL OF UNDERTAKING:

The following is a list of permits, licences, and approvals required for Rough Waters Brewing Company Ltd.:

Municipal

- Municipal Approval – Town of Burin

Provincial

- Environmental Assessment Approval and Registration – Department of Environment and Conservation
- Building Accessibility and Fire and Life Safety Approval – Service NL
- Manufacturer’s Licence (Brewery) – Newfoundland and Labrador Liquor Corporation

Federal

- Excise Duty Licence – Canada Revenue Agency
- Labelling Requirements – Canadian Food Inspection Agency

SCHEDULE:

Rough Water Brewing Company Ltd, is tentatively scheduled for opening in May, 2018.

FUNDING:

Loans have been requested from:

Federal:

Atlantic Canada Opportunities Agency (ACOA)
130-140 Ville Marie Drive
Jerrett Building
P.O. Box 489

Registration

Microbrewery
Rough Waters Brewing Company Ltd

Marystown, NL
A0E 2M0

Provincial:

Department of Tourism, Culture, Industry and Innovation
215 Ville Marie Drive
P.O. Box 100
Marystown, NL
A0E 2M0

Date

Signature of Chief Executive Officer

Appendix A:



Town of Burin

July 25, 2017

Rough Waters Brewing Company
34 Church Street
Burin, NL A0E1E0

Dear Ms. O'Keefe (Jenny):

The Town of Burin is very excited that you have chosen Burin to begin your brewery located at Smuggler's Cove.

The Town of Burin fully supports this business venture and welcomes the economic and community benefits it will bring to our region.

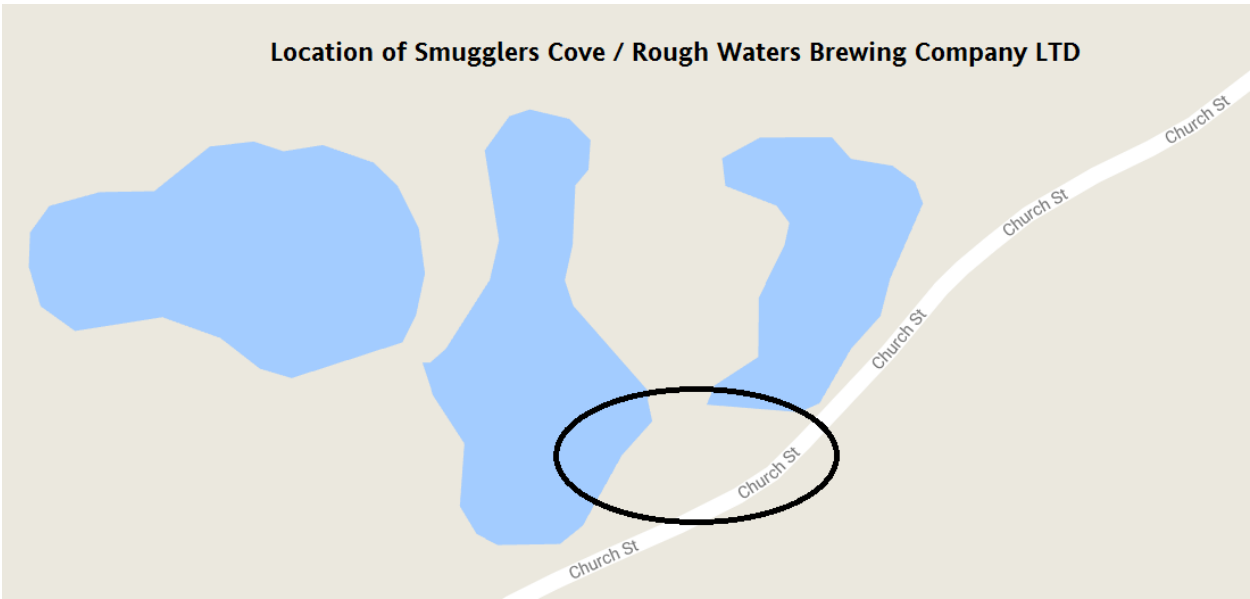
Good luck and we look forward to working with you in the near future.

Kindest regards,



Kevin Lundrigan
Mayor

Appendix B:



Registration
Microbrewery
Rough Waters Brewing Company Ltd





Registration

Microbrewery

Rough Waters Brewing Company Ltd



