

REGISTRATION

Pursuant to s. 37(1)(e) of the Environmental Protection Act, SNL 2002, cE-14.2

UNDERTAKING:

Micro Brewery: (A Micro brewery produces less than 15,000 hectoliters/year)

LOCATION:

349 Veterans Drive, Cormack, Newfoundland

SUBMITTED BY:

Robert Sutton for Crooked Feeder Brewing Co.

SUBMISSION DATE:

July 6, 2017

Name of the undertaking

Crooked Feeder Brewing Co.

PROPONENT:

- (i) **Name of Corporate Body:**
Crooked Feeder Brewing Co.
Address: 349 Veterans Drive, Newfoundland A8A 2R8

- (ii) **Chief Executive Officer:**
Robert Sutton
Official Title: President
Address: 44 Middle Road, Deer Lake, Newfoundland A8A 1T7
Telephone No: (709) 636-3383

- (iii) **Principal Contact Person**
Name: Robert Sutton
Official Title: President
Address: 44 Middle Road, Deer Lake, Newfoundland A8A 1T7
Telephone No.: (709) 636-3383

- (iv) **Directors**
Name: Ray Brake
Official Title: Director of Marketing and Distribution

Name: Corey Wight
Official Title: Director of Product Development and Quality Control

The Undertaking:

Nature of the Undertaking:

Crooked Feeder Brewing Co. is seeking approval to open a microbrewery in a leased building in Cormack, NL. A microbrewery brews less than 15,000 hectoliters of beer per year, and Crooked Feeder's target is to produce 600 hectoliters per year at peak production. The intent is to commence with a pilot brewing project in the former Cormack Woodworks planer building in Cormack, NL. Here fine-tuning of the production systems and delivery logistics will occur. Initial production will be to supply local taprooms, and small distribution via growler sales and deliveries. Within 2 years of commencing operation, the Crooked Feeder Brewing Co. intends to expand to full production capacity with the potential for an onsite taproom/store. The company is a partnership and is made up of three equal partners, Robert Sutton, Ray Brake and Corey Wight.

Purpose of the Undertaking:

Newfoundland, along with the rest of Atlantic Canada, is a diverse cultural province with a growing appetite for finer food and beverages. With the rise of craft beer appreciation in Newfoundland, the success of new beer opportunities (specifically Port Rexton Brewing and the Western Newfoundland Brewing Company) proves that Newfoundland is eager to try new and better beer. The craft beer culture is improving in Newfoundland, but compared to many other provinces, Newfoundland is still lagging behind in the number of locally crafted beers.

Crooked Feeder Brewing will help to fill this void by providing locally crafted ales to bars, clubs, taverns, pubs and restaurants within Western Newfoundland and branch out systematically through self-distribution.

The opportunity we have is to capitalize on an emerging market where there is currently only one other local brewery (and several more in progress). We have high quality craft beers that will quench the thirst of craft beer enthusiasts and pique the interest of the people who don't yet realize they are craft beer enthusiasts.

To develop a competitive edge in the Western Newfoundland microbrewery market, Crooked Feeder Brewing will brew quality beers with as many high quality local ingredients available.

The brewery location of Cormack is a small farming community that has several great attributes to contribute to Crooked Feeder's success. The community in recent years has seen a decline in local business and they are excited about a new venture in the community. Local farmers are currently testing grains for brewing purposes and there are great potentials for secondary processing. Utilizing an existing property in the community just makes sense from a business perspective, as the cost to build would sink an initial startup. It also makes sense in terms of revitalizing an existing property in terms of community beautification and ultimately a tourist destination for tours and brewery sales.

Description of the Undertaking:

Ownership

Robert Sutton

Company President

Duties: Brewmaster, Distribution

Background: 20 Years Brewing Experience: Four years all grain craft brewing, professional forest analyst with Government of Newfoundland

Corey Wight

Duties: Product Development, Brewmaster

Background: Four years all grain craft brewing, Senior Forest Planner with Government of Newfoundland

Ray Brake

Duties: Marketing, Creative Development

Background: 10 year owner of GIS Analysis Company, 3 Years owner of Digital Advertising Company

Location/Description of Facility

The corporate office and main brewing facility will be located at the former Cormack Woodworks mill site at 349 Veterans Dr, Cormack, NL. (Figure 1). This location is nestled in the middle of a farming community and is adjacent to a small cattle farm (Figure 2).

The mill property is comprised of 3 large buildings, with the original main manufacturing building slated to house the brewery/cellaring facility. The main building is 1680 ft² with no interior walls (allows for easy customization), and has a segregated 160 ft² chamber with a refrigeration unit for cold conditioning and storage. If necessary this refrigeration area can be enlarged.

Figure 1. Cormack proposed Brewery Location

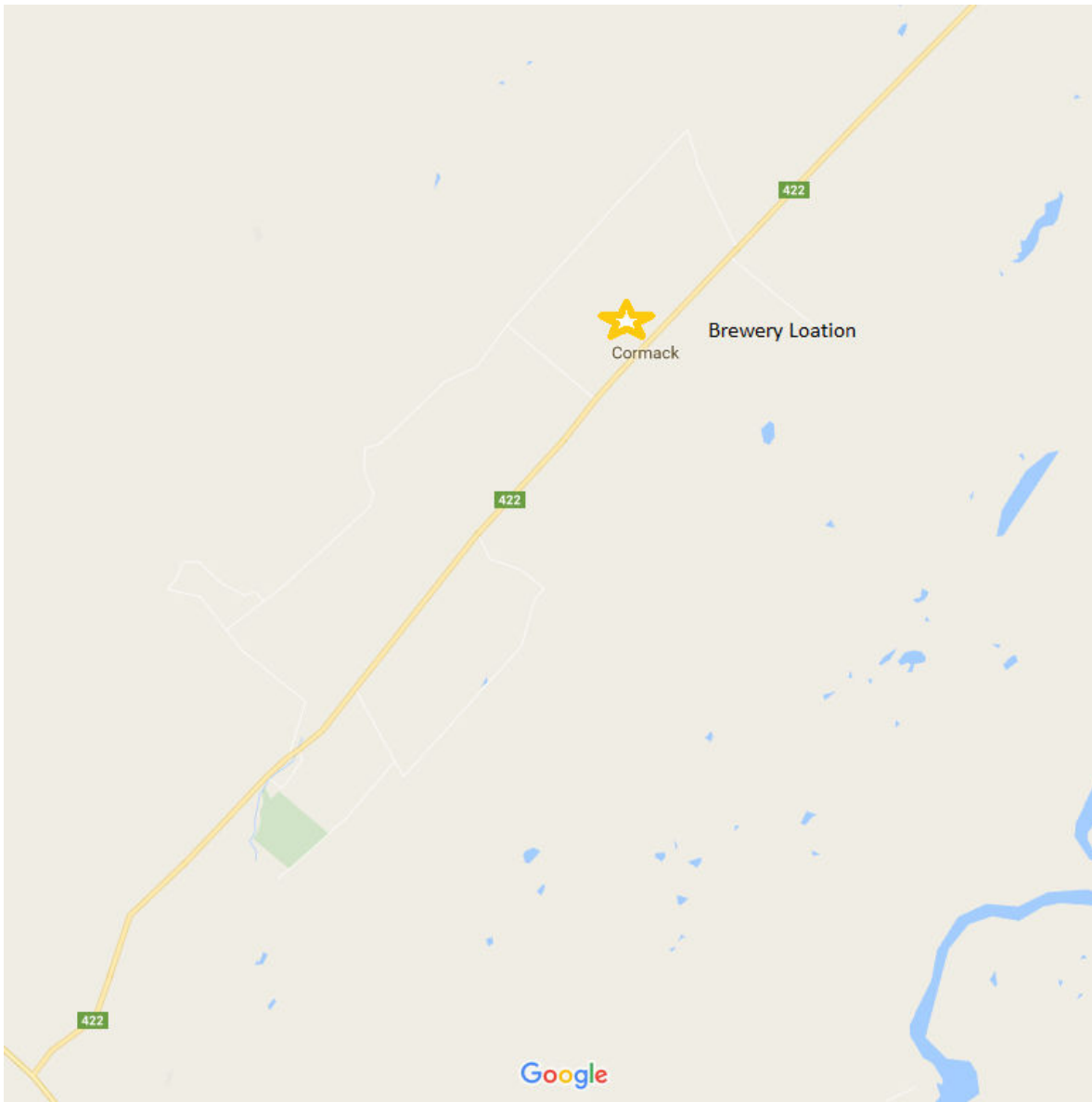
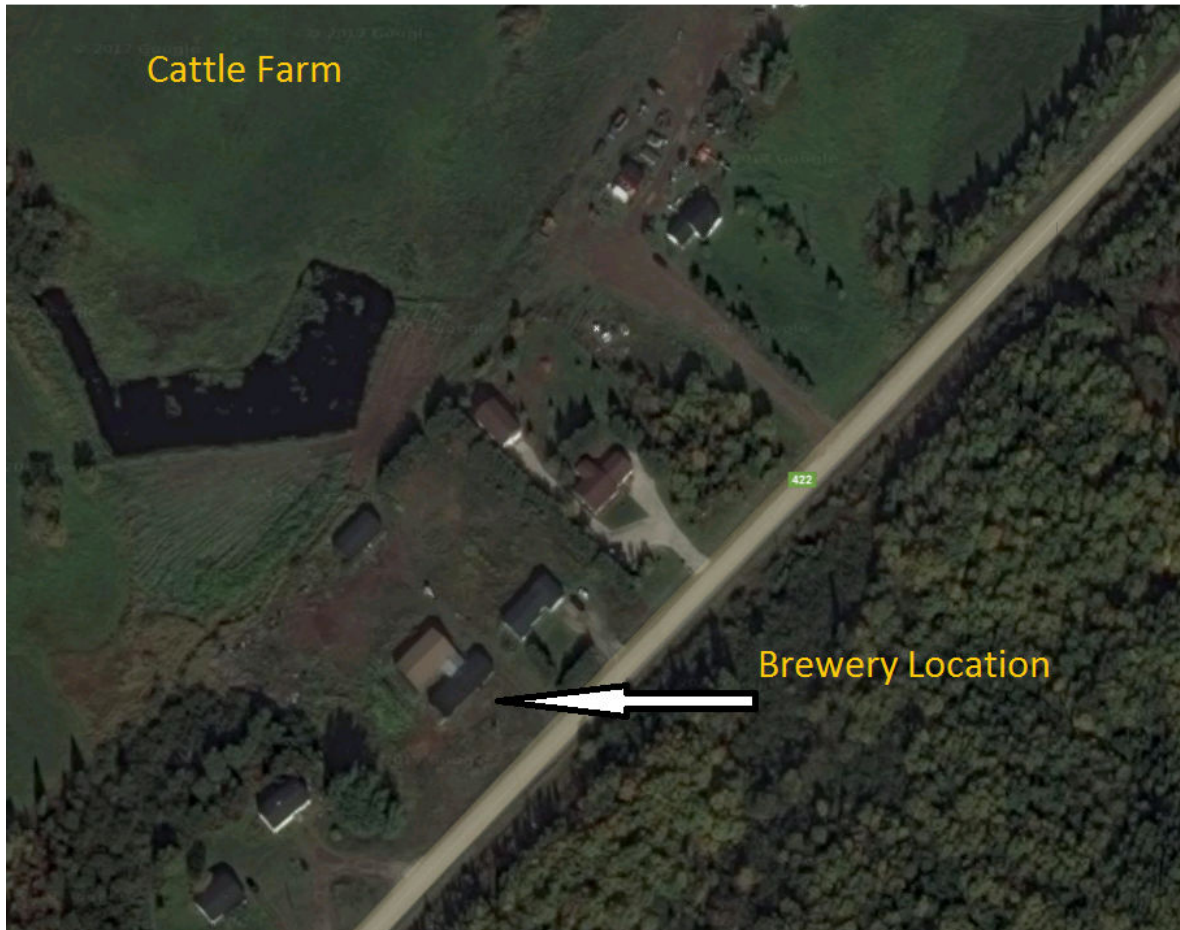


Figure 2. Proposed Brewery location and adjacent cattle farm



Building Upgrades

The building currently has a 400 amp service that is more than adequate for the electric brewing setup necessary for a 600 hectoliter production target. The building is connected to a well on the property that will be tested prior to production. It currently services the house of the lease holder and has been tested in the past. The building is also connected to an existing septic system that is more than adequate for less than 100 liters of rinse water per brew day with no solid waste. There will need to be a stainless steel wash station added for cleaning equipment and fermenters. A new hot water heater will be installed to provide hot water to the facility. The only other modification needed will be a freestanding insulated temperature controlled fermentation chamber that doesn't require structural modifications to the facility.

Services

The Crooked Feeder Brewing Co. will be producing well-crafted and traditionally brewed beer. We are starting with four to six signature ales with plans on introducing seasonal and special event ales, as well as ciders, sodas and lemonades.

Initially our beer will be sold on tap in locations within Humber Valley, Corner Brook region with a particular focus on “Growler” (1 to 2 litre refillable glass containers), available for purchase on-site at the Cormack brewing location or through web delivery orders.

As demand and production increases the intent will be to expand into a canning line. Canning is the preferred method to distribute beer both in terms of beer quality and portability.

Micro Brewery Operations

Process Description

The start of the brewing process begins with grain; multiple grain types are used depending on beer being produced in the brewery – a porter, cream ale, pale ale, wheat beer...

Milling Grain

A typical brew day will require the milling of approximately 200 lbs of grain to brew the beer. The grain is processed through a two roller grain mill that cracks the husk to allow for sugar and starch extraction. The grain will be cracked into a closed barrel to minimize airborne dust particles and thus will not be a fire hazard.

Extracting the Wort

The milled grain is placed into a large insulated holding tank (Mashtun) where hot water (temperature specific to grain type and batch size) is added and allowed to separate the starches and sugars from the grain. Through enzyme activity this liquid sugar mixture is converted to fermentable liquid sugar water called “Wort”. The wort is then drained and filtered through its own natural grain bed and transferred to the boil kettle.

Once the brewing process is complete the spent grain will be not be a part of the process. However, the spent grains are an ideal source of feed for livestock. As part of the company plan to give back to the farming community, the intent is to donate spent grains to local farms. In fact, as previously mentioned, Anthony Alexander’s beef cattle farm is adjacent to the Brewery site and could benefit from up to 30,000 lbs of grain per year.

Boiling

Once transferred, the wort now has to be brought to a boil for two important reasons.

- 1) To boil sanitize the wort so that it is free of any bacterial or wild yeasts that may infect the beer during fermentation
- 2) So that hops or other adjuncts may be added to the beer to provide bitterness and flavors

Boiling each batch of wort will take approximately 60 to 120 minutes depending on the style of beer being produced. Once the boil is complete the wort is rapidly cooled through a counter flow heat exchanger and transferred to a fermenter. This rapid cooling precipitates out any impurities and hop particles that may be in suspension.

Fermentation

A fermenter is where the wort is turned into beer by yeast. A strain of yeast, specific to a style of beer, is added to the wort in the fermenter and sealed off for a specific amount of time and at a specific temperature. This will be initially controlled in a fermentation chamber. As the capacity of the brewery increases the fermenters will be individually temperature regulated by use of a glycol system.

Cold crashing/conditioning and Carbonation

Once fermentation is complete the temperature of the beer is brought down to 4 degrees..this will allow any remaining yeast particles to drop from suspension. The beer can then be transferred to a brite tank for carbonation and depending on beer style longer term cold conditioning prior to keg or growler filling.

Waste Products

Crooked Feeder Brewing Co. will operate within environmental regulations and attempt to exceed all standards where possible. There are three basic waste products from the brewing process, spent grains, trub and water.

As mentioned all spent grains will be donated to the local farming community. Since the brewery abuts a cattle farm there will be no carbon foot print associated with transporting the spent grains.

There are two types of trub created in the process:

- 1) Kettle trub (hops and grain particles) from the boil process which will be composted on site in preparation for some experimental hops

- 2) Fermenter trub (dormant yeast, hops and grain particles) which will be collected and reused to brew subsequent batches with any excess used for compost

Environmentally friendly carbonate cleaners will be used to clean and disinfect the equipment and will be drained with the waste water which is anticipated to be less than 100 liters per batch. All water will drain through the existing septic system.

Human Resources

The brewery is primarily operated by the three business owners. Since the three owners all have jobs outside the brewery, it will be necessary to hire at least two additional part time operating personnel to cover the normal day operations and at least two part time hires to provide administrative/delivery functions. As production capacity increases additional employees may be required for operations and sales.

Approval of the Undertaking

Permits Required

Municipal

- Municipal Approval – Town of Cormack
 - o Have verbal approval – waiting on documentation from Service NL

Provincial

- Environmental Assessment and Approval & Registration - Municipal Affairs and Environment
- Brewery Licence – NLC
- Food Establishment Licence – Service NL
- Buildings Accessibility and Fire & Life Safety – Service NL

Federal

- Excise License – Canada Revenue Service
- Labeling Approval – Canadian Food Inspection Agency

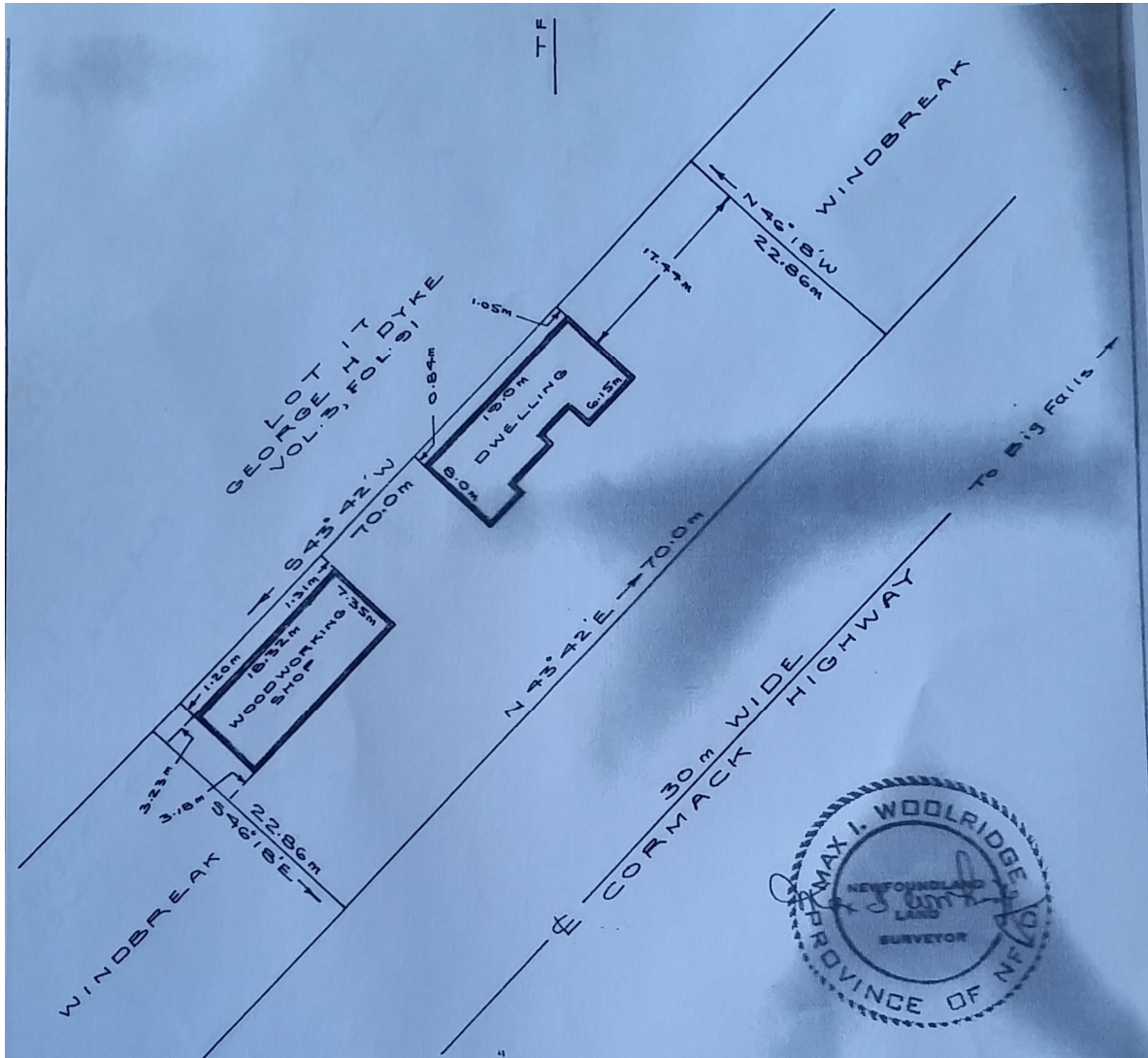
Funding

Pilot portion of the project will be funded from personal finances

Expansion will be funded through reinvestment of profits

SCHEDULE: The start up for Operations of the Crooked Feeder Brewing Co. is scheduled for the end of October 2017.

Site Survey



I. Max Woolridge, Newfoundland Land Surveyor, do certify that the field survey represented on this plan certifies the information shown as of July 11, 1985.

Certificate of Location
 Property of Grace Sutton
 Cormack, Nfld.

M. Woolridge

Scale: 1 : 500
 Date : July 11, 1985
 Drg. No. 2686 - 85