

# Brewery growth calls for smart decisions



## Castle Danger Brewery

Two Harbors, Minnesota

### Project scope

There's something different about Castle Danger Brewery. Located on the shore of Lake Superior in Two Harbors, Minnesota, Castle Danger seems to embody the North Shore itself. Maybe it's the fact they use Lake Superior water to make their beer. With a very low mineral content, the water provides the brewmasters a blank canvas to start from.

*Whatever the difference is, it has caught on.*

In 2011, the brewery started on a small commercial scale in a 700 square foot space in Castle Danger, Minnesota outputting just three barrels (approx. 93 gallons) at a time. From that humble beginning, Castle Danger has expanded several times and their annual output reached nearly 25,000 barrels (775,000 gallons) in 2018.

#### Challenge

Increased beer production tested the brewery's capabilities.

#### Solution

Switching to micro-bulk and bulk gas supplies.

#### Benefits

MO<sub>2</sub>'s expertise, service and reliable supply supported Castle Danger's continued growth and their ability to supply their home state with dangerously good ales.

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## Situation

You need carbon dioxide (CO<sub>2</sub>) and oxygen (O<sub>2</sub>) to make beer. Castle Danger Brewery's growth meant more and more cylinders were needed. "I was making more trips to Duluth for CO<sub>2</sub> and O<sub>2</sub>," founder and owner Clint MacFarlane said. "I needed more and more cylinders to get me through the week." These trips meant less time for brewing beer and running the growing business.

## Reducing inefficiencies and costs

At first, Minneapolis Oxygen Company (MO<sub>2</sub>) put Castle Danger on a delivery schedule which freed up more time for making beer. As the brewery's production continued to increase, MO<sub>2</sub> suggested a better alternative to cylinder delivery. In 2015, MO<sub>2</sub> set up micro-bulk storage tanks and installed gas lines to get the gas to where it was needed. This approach is MO<sub>2</sub> SmartSupply, a cost-effective program tailored to each customer's gas needs.



*Minneapolis Oxygen filling the nitrogen bulk tank*

Now, instead of frequent cylinder changes, Castle Danger had a steady supply that kept up with their growing production. "Not having the interruption of running out of gases allowed us to focus more time on making great beer," MacFarlane said.

**// Production has grown in a significant way and Minneapolis Oxygen Company has been there for every step of it. //**

*Clint MacFarlane, Founder and Owner, Castle Danger Brewery*

Production continued to increase and in 2014, Castle Danger opened a new location in downtown Two Harbors with a 30-barrel brewing system, canning line and a year-round taproom with 22 lines overlooking Lake Superior. A packaging hall was built next door, moving canning and kegging operations from the original Castle Danger location.

Castle Danger's increased production necessitated the switch from micro-bulk to full-size bulk tanks. The cylinders saved the taproom staff time and made the beer more consistent out of the tap line. With telemetry, the tank levels are monitored remotely and refilled as needed. "They really don't have to worry about anything," said Josh Scheall, account manager with Minneapolis Oxygen.



*Clint and Jamie MacFarlane at the original brewery location*



## Adding nitrogen

Minneapolis Oxygen was also there to help with the brewery's carbon-friendly decision to add bulk nitrogen (N2). When people talk of nitrogen or nitro, it's a reference to the type of gas used in the carbonation process. It means the difference between the creamier nitrogen beers and their lively, prickly CO2 counterparts. In general, beers that are served with nitro tend to be smoother than their CO2 counterpart.

MacFarlane explained the choice as easy, "Using N2 helped lower our CO2 emissions and also reduced some operating costs. We also use N2 during the packaging process, which helps us achieve consistent carbonation levels in our beer. N2 has increased our quality and has the added bonus of having less of an impact on our environment. It is a win-win."

## Result

Today, Castle Danger distributes throughout Minnesota and into the border towns of Fargo in North Dakota and Superior in Wisconsin. "Production has grown in a significant way and MO2 has been there for every step of it," MacFarlane said. "They have handled our needs for service, delivery and new equipment solutions. They have been reliable and helpful." He expects continued growth and for production to go over 30,000 barrels in 2019.

## M02 SmartSupply™

As the need for gas volume increases, it's time to consider an integrated, streamlined alternative to changing out cylinders or dealing with dewars. M02 SmartSupply offers uninterrupted supply, more savings and fewer administrative obligations for nitrogen, oxygen, argon, and carbon dioxide process gases.



### A tailored approach

Our skilled team can provide the technology and know-how for growing business needs. Our process begins with a site survey, taking in specific application requirements. Our technical experts will not only recommend the best tank for each unique situation, but will design and install a supply system to efficiently get the gas where it's needed.

Delivered by truck, gases are transferred into a liquid storage supply system. These micro-bulk systems provide product safely and cost-effectively.

Beyond maximized gas efficiency, M02 SmartSupply also offers cylinder tracking for accurate billing, on-site vending for hardgood supplies, easy online ordering with next day delivery, and telemetry monitoring to ensure uninterrupted gas supply.

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