BREWERY CASE STORY

FOR A CRAFT BREWER FOCUSED ON QUALITY WATER, GRUNDFOS SOLVED FOR ACCURACY AND RELIABILITY

INTRODUCTION

Consistency is paramount in brewing operations. Careful attention to water quality control ensures every beer tastes the same everywhere it's distributed. This is especially true for MadTree Brewing, Ohio's first canned craft brewer. Since the company's inception in 2013, reverse osmosis (RO) has been used for all its process water.

Reverse osmosis can customize the water source, a critical process in producing MadTree's critically acclaimed portfolio of beers. From a German Kölsch to a French Saison, each beer maintains a consistent mineral profile and an accurate brewing water profile.

THE SITUATION

One of the biggest challenges the brewer faced during its first several years was keeping up with demand. After hitting a maximum capacity of 25,000 barrels of beer, the decision was made to relocate to a new, expanded location. By adding the potential capacity to support future growth, output could be boosted to 180,000 barrels.

"Not only did we need to up our RO production rates with a bigger system, but we were also switching from a well water source at the old facility to a city water source at MadTree 2.0," said director of brewing operations Matt Rowe.

The transition to using the City of Cincinnati's water introduced a new set of requirements for pretreatment, which involves a chemical injection in the pre-filter section of the RO unit to eliminate chloramines used in the city water.

"We had experience with all sorts of brands of peristaltic pumps in our previous RO installation and knew the headaches we experienced with those, so we were keen to avoid those difficulties with our new installation," said Rowe.

THE SOLUTION

To achieve its vision for a more efficient and growth-ready facility, MadTree tapped Veolia Water Technologies to provide an RO skid system that met the brewer's needs.

Two Grundfos SMART Digital Dosing pumps and a Grundfos CRN vertical multistage centrifugal pump were specified for the 100 gpm (gallons per minute) RO packaged system. Rowe added that the dosing pumps were selected for their accuracy across a broad range for chemical injection at two key points in the process.

In addition to the RO system, MadTree utilizes two Grundfos CRN pumps for its water supply and recirculation skid and two Grundfos CR pumps for its steam generator feedwater skid.

Above: *Director of Brewing Operations, Matt Rowe, sprays out the mash / lauter tun on MadTree's 126 BBL production brewhouse during a brew day.*

Far Left: *Lead Brewer Ryan Johnston works on a beer collaboration with local restaurant Mikey's Late Night Slice.*

Center: *Mikey's Late Night Slice employee adds hops to the whirlpool vessel.*

Far Right: *MadTree staff members cheers to another day in the books.*

THE OUTCOME

The Grundfos pumps have been issue free since they went into service in 2017. Rowe recommends Grundfos based on ease of use, including ample ability to adjust flow rate through a simple interface, minimal maintenance and high reliability.

Early on in the RO system's life, adjustments were needed to dial in the precise amount of chemical injection needed to eliminate the chloramines in the brewer's incoming water supply. Rather than requiring a Veolia tech to come out and make the adjustments, Rowe's team was able to precisely dial in adjustments over the 3,000:1 turndown range of the pump to meet system demands themselves.

"The Grundfos pumps we use for both injection points in our system have worked flawlessly and are very easy to navigate and adjust for the end user," said Rowe.

Rowe said MadTree purchased two backup units as part of its critical spare parts purchase list. He adds, *"At this rate I don't know if we will ever need them!"*

GRUNDFOS **SUPPLIED**

To manage efficiency needs and varying growth demands, Grundfos supplied two SMART Digital Dosing pumps and a CRN vertical multistage centrifugal pump for a 100 gpm reverse osmosis packaged system.

INCREASED **EFFICIENCY & FLEXIBILITY**

"The Grundfos pumps we use for both injection points in our system have worked flawlessly and are very easy to navigate and adjust for the end user," - Matt Rowe, Brewing Operations Director

PROJECT **DETAILS**

Topic: Water Treatment
Continent: North America
Location: Cincinnati, Ohio / United States
Market areas: Industry
Applications: Food and Beverage
Products: CR / CRN / SMART Digital Dosing

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