CASE STUDY

Buffalo Brewing Seeks to Improve Environmental Footprint of the Brewery

New York State Pollution Prevention Institute

Buffalo Brewing Company

Buffalo Brewing Company is a local community brewpub with a tasting room and beer garden in addition to the brewing operations. They have been a staple in the Buffalo community serving craft brews since July 2016. Based on their success, Buffalo Brewing wanted to further improve sustainability practices and decrease their overall environmental footprint.

Challenge

Buffalo Brewing was selected and a project developed to evaluate the high level environmental impacts of the brewery given the lack of clarity on how water was used in the process and the opportunity to decrease beer dwell times. New York State Pollution Prevention Institute (NYSP2I) conducted a site visit to collect baseline metrics and identify pathways for improving Buffalo Brewing's existing sustainability practices. The focus of the project was to find practical tools for sustainable brewing and sharing the knowledge and practices with Buffalo Brewing.

Solutions

NYSP2I worked with Western New York Sustainable Business Roundtable (WNYSBR) to conduct a sustainable technical assistance project for Buffalo Brewing as part of an EPA source reduction grant. WNYSBR was founded in 2014 in Buffalo, New York, and has since been actively guiding the sustainability efforts of businesses in the area with over 60+ member organizations from across the region.

Water meters were installed by the brewery, and data was collected and combined with facility water bills. Using both, Buffalo Brewing should be able to separate what water enters the brewing process and contributes to the water-used-to-beer-produced ratio that is critical to brewers and what water is used for hospitality purposes. As Buffalo Brewing expands this data can be updated using the same methodology.

Challenge

- Buffalo Brewing wanted to further improve its sustainable practices and to decrease its overall environmental footprint.

Solution

- NYSP2I collaborated with WNYSBR and industry experts and conducted a site visit and a collection of baseline metrics to help evaluate and identify any opportunities to reduce Buffalo Brewery's environmental footprint.

Results

- Utilize low-flow fixtures for hospitality purposes to reduce water use outside of brewing operations.
- Reuse the final rinse of one cleaning cycle as the first rinse of the next to decrease the amount of cleaning water and chemistry needed to brew.
- Develop a pilot program to assess whether modifying recipes with minerals will decrease post-fermentation dwell times, affect flavors, or both.
- Investigate implementing cartridge filtration to remove particles greater than 10 microns size to potentially decrease the dwell time of post-fermentation beer.

With respect to dwell times, industry experts were consulted regarding the water quality, brewing recipes, and potential changes in the brewing process that could be made to increase yeast flocculation. Changes may or may not affect the flavor of the beer and should be made carefully before full implementation.

Due to the COVID-19 pandemic, pilot studies were not possible, but benchtop testing of separation techniques and sustainability opportunities were performed where feasible.

Results

The work performed by NYSP2I and WNYSBR led to key findings to support Buffalo Brewing with their pursuit for decreasing environmental footprint through the reduction of water consumption and improving dwell time.

- Utilizing low-flow fixtures for hospitality purposes could potentially reduce water use by up to 10-50% per fixture.
- Reusing the final rinse of one cleaning cycle as the initial rinse of the next will reduce both the water necessary for cleaning operations and decrease cleaning chemistry use and is scalable to all operation sizes.
- Develop a pilot program to see if adding minerals will significantly change the flavor of the beer, decrease post-fermentation dwell times, or both.
- Investigate coarse filtration, particularly cartridge filters, as a method to reduce dwell times by removing solids before reach the settling tanks with a focus on removing particles greater than 10 microns size.

Buffalo Brewing Company

314 Myrtle Avenue
Buffalo, NY 14204
Phone: (716) 868-2218
www.buffalo-brewing-company.com
john@buffalo-brewing-company.com

Partners

For more information please contact us:

585-475-2512
nysp2i.rit.edu
nysp2i@rit.edu

111 Lomb Memorial Drive, Bldg 78
Rochester, NY 14623

Funding provided by a grant to RIT from the Erie County's Source Reduction Assistance Environmental Protection Agency (EPA) Grant #96269916.