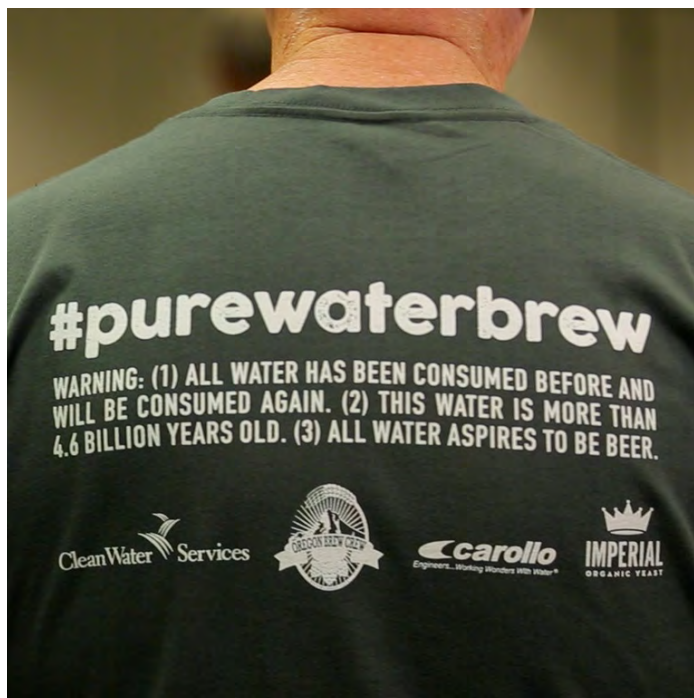


Clean Water Services: Brewing Innovation

Talking about wastewater can leave a bad taste in your mouth. Drinking beer made from wastewater won't.



What better way to start a conversation than over a beer? That's the premise behind Pure Water Brew: a project of Clean Water Services, the water resources management utility for more than 560,000 residents of the Tualatin River Watershed, just west of Portland. About two years ago, Clean Water Services' leadership spotted an opportunity to fast-track the One Water discussion by linking it to Oregon's legendary craft brewing movement.

One of the greatest barriers to discussion and awareness surrounding wastewater is perception. The "ick" factor is powerful and deeply rooted. It's known for stopping important conversations before they start—not only among the general public, the media and public officials, but even within our own industry. Pure Water Brew neutralizes the "ick" factor not through a dry reiteration of the basic facts of the water cycle, but by giving people the experience of drinking delicious craft beer made from water that was recently sewage.

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If you want to gain the confidence of the public; if you want them to understand the value of water; if you want them to support the activities that we do, you have to be creative, you have to be innovative. I firmly believe that there isn't a utility in this country who couldn't do the same thing if they had the courage and the will to do it.

—Roy Rogers, *Washington County Commissioner/Clean Water Services Board Member*

Left: CWS created a package of educational and outreach materials for Pure Water Brew, including videos, a press kit, beer labels, fact sheets, social media posts—and these popular t-shirts.

Clean Water Services operates Oregon's largest water reuse program and cleaned water from the advanced facilities nearly meets drinking water standards. This put Clean Water Services in a strong position to launch a pilot project called Pure Water Brew in 2014. The concept was simple: Clean Water Services produced a batch of high purity water and provided it to local brewers to make beer.

With authorization from the Oregon Department of Environmental Quality, Clean Water Services drew water from the Tualatin River, just below the outfall from one of their Advanced Wastewater Treatment Facilities. At that location, at that time of year, the river is 30 percent effluent. Working with consultants from Carollo Engineers, Clean Water Services subjected the water to ultrafiltration, reverse osmosis, and advanced oxidation.

After producing the water, Clean Water Services turned to the members of the Oregon Brew Crew to produce the beer. As one of the nation's oldest associations of homebrewers, the Oregon Brew Crew was perfectly positioned to organize a competition, complete with score sheets, trained judges and medals. They dubbed it the "sustainable beer challenge," and instructed participants to focus on lower-gravity varieties of beer that connoisseurs know can be made only from great water.

The competition attracted 13 homebrewers the first year and 25 the second. From an array of great beers that could hold their own in any bottle shop, the judges chose a Best in Show along with second, third and fourth place winners. Clean Water Services arranged to ship these extremely limited edition beers to the WaterReuse Symposium, in New Orleans in 2014. Those who had the opportunity to taste Pure Water Brew found it a mind-opening experience—and delicious.

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Most of the time their first response is kind of a big 'ew' factor. But they're curious. They're engaged. Being able to use something as fun as beer and brewing provides an educational opportunity, to say, 'Hey, clean water is closer than you think.'

—Ted Assur, *first place winner, Sustainable Beer Challenge 2014*

After a successful 2014 pilot, Clean Water Services expanded the effort in 2015, this time starting with water directly from the outflow, rather than from the river. (The labels on the 2015 cans promised beer that was "100% EBV effluent by volume," EBV is a pun on the important beer metric ABV, or alcohol by volume.) In addition to another appearance at the WaterReuse Symposium, Pure Water Beer also traveled to WEFTEC. There, the project reached even more industry leaders from around the world through a partnership—a mock wrestling match dubbed the "Sustainable Beer Smackdown"—with Milwaukee Municipal Sewerage District (MMSD).



Above: By partnering with the Oregon Brew Crew, CWS connects with enthusiastic and credible advocates for the One Water message from all walks of life—not just water resource professionals.

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Judged tasting events are a big deal in the home brewing world... the involvement of BJCP-ranked judges is one of the steps we've taken to give this competition as much credibility and structure as possible. We feel really proud that our members' beers have traveled to New Orleans and Seattle and Chicago to bolster Oregon's reputation as a brewing nirvana where innovators are solving environmental issues with sustainable business practices!

—Jason Barker, *Education Committee Chair, Oregon Brew Crew*

By serving this unique beer at major industry events, Clean Water Services creates an embodied and unforgettable experience for industry leaders of literally tasting what the future might hold. At the same time, this project reaches general publics around the world through a vigorous and effective communication strategy. For example, in 2015 the Pure Water Brew story logged 500+ media hits, from the Wall St Journal and NPR, to Liquor.com and Treatment Plant Operator magazine.

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There is no reason in the world to judge water by its history. We very much are focused on: What's the quality of the water for the use to which it's going to be put?

—Ken Kopocis, *Deputy Assistant Director, US EPA Office of Water*

By laughing along with “sewage brewage” humor, Clean Water Services has leveraged the inevitable jokes into real conversations about the nature of water. The solid science behind the effort and Clean Water Services' parallel involvement in serious conversations within the industry is critical. Through innovation and partnership, Pure Water Brew is accelerating critical conversations about water reuse, not only close to Clean Water Services' Oregon home, but around the country and the globe.



Above: CWS General Manager Bill Gaffi donned a lab coat for a humorous video promoting the Sustainable Beer Smackdown at WEFTEC 2015.

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