



# SIP THE FUTURE

**QC WATER IS CRAFTED WITH CARE.** Derived from recycled water, QC Water is safe and reliable clean water, transformed to redefine the norms of water usage. QC Water employs a state-of-the-art process using carbon filtering, reverse osmosis and advanced oxidation (Ozone + Ultraviolet treatment) to bring the best in sustainable clean water to the Queen City. This unique approach involves running the water through a detailed cleansing process, ensuring an unparalleled level of purity and quality, so that every drop is not just clean and delicious, but also positively supports our environment. We proudly serve the Queen City with the clear way to sustainable beer.

## PARTNERS WITH PURPOSE

**Renew Brew is the first product created with QC Water. Several partners committed to water sustainability came together for this innovative project:**

### QC Water

Revolutionizing the water cycle by complementing Charlotte Water's commitment to clean water, QC Water leverages a state-of-the-art water treatment process to transform recycled water into small batch, high-quality, safe, sustainable and delicious beer.

### Town Brewing

Town Brewing is an innovative brewery rooted in a passion for delicious beer. Town opened its doors in 2018 as the first brewery in the Wesley Heights neighborhood and loves being a part of the greater community. Town is always looking for ways to contribute to big ideas around the City, and that included stepping up when Charlotte Water and the City were seeking a brewing partner to create the state's first recycled water brew, Renew Brew.

### Xylem

Xylem (XYL) is a leading global water technology company committed to developing innovative technology solutions to the world's water challenges.

**This project in sustainability was also made possible by these additional partners:**

Charlotte Water	Charlotte Beer Collective
Yellow Duck Marketing	City of Charlotte

## WHAT IS WATER REUSE?

Water reuse generally refers to the use of reclaimed water. Reusing wastewater as part of sustainable water management provides an alternative water source for human and environmental uses. By using innovative technologies to treat the existing wastewater more thoroughly, wastewater can be turned into a reliable and safe water supply for many uses, including drinking.

## THE EMOTIONAL FACTOR

Emotional responses to water reuse are associated with uncertainty, even though our rational scientific understanding—and ample water quality testing—tells us it is no different than any other treated water. Can we overcome the “yuck factor” and make using reclaimed water into potable water acceptable? Arizona and Oregon do. Singapore does. The international space station does. Tell us—what do you think?

## WHY IS REUSING WATER IMPORTANT?

Changing climate and growing global populations mean water authorities around the world are looking at treatment options to produce reclaimed water to meet declining fresh water supplies and achieve water security and sustainability. Charlotte Water and its partners in QC Water's mission want to make this incredibly sustainable and ultra purified water available to those breweries looking to brew a beer option that promotes water reuse and teaches the importance of sustainability.



# FROM SOURCE TO SIP: THE TREATMENT PROCESS

## IS TREATED WASTEWATER SAFE?

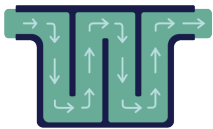
Yes. An advanced physical-chemical-biological treatment system is used to create QC Water, and monitored for optimal performance and to meet and exceed all safe drinking water standards. QC Water exceeds all pathogen reduction requirements and the Environmental Protection Agency (EPA) guidelines through the Safe Drinking Water Act (SDWA). An accredited laboratory tests the water after treatment to ensure independent verification of its quality. Wastewater treatment plants disinfect water to remove pathogens, including viruses, for all water. The state-of-the-art QC Water cleansing process takes the water you would have already been consuming through the natural water cycle and makes it that much more purified and ready to enjoy.

## HOW IS THE WATER TREATED?

Municipal wastewater is treated in a full-scale biological nutrient removal treatment facility, and then additional advanced treatment is done using carbon filtration, followed by reverse osmosis, then advanced oxidation (Ozone + Ultraviolet treatment).

This multi-barrier process is monitored for the full duration of water production to ensure it meets criteria specified by Charlotte Water and the SDWA. Under the SDWA, the EPA sets the standards for drinking water quality and monitors states, local authorities, and water suppliers who enforce those standards. Other areas of the United States have developed multi-barrier treatment approaches to similar water reuse projects, including utility and brew partners in Oregon and Arizona. This is the first project of this kind in the Carolinas.

## WATER THAT SPEAKS VOLUMES



### 1 STANDARD WASTEWATER TREATMENT PROCESS AT MCDOWELL CREEK WATER RESOURCE RECOVERY FACILITY

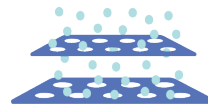
Water leaving Charlotte's McDowell Creek facility meets high national standards before returning to the Catawba River. Charlotte Water processes 85 million gallons daily.

*For QC Water's smaller batches, the following additional purification steps are implemented:*



### 5 ULTRAVIOLET DISINFECTION

UV light is used to disinfect and remove 99.9999% of viruses and pathogens from the water and irradiate other contaminants.



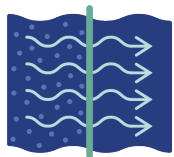
### 6 ANOTHER CARBON FILTERING ROUND

Water is filtered a second time through activated carbon media.



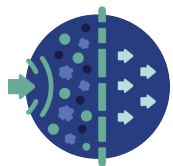
### 7 WATER TESTING & APPROVAL

Water moves through rigorous testing to ensure it exceeds highest water quality standards for human consumption as set by the Environmental Protection Agency (EPA).



### 2 CARBON FILTRATION

Water is filtered through activated carbon media to reduce both solids and organic contaminants. This treatment is commonly used for beverage ingredient water.



### 3 REVERSE OSMOSIS

Membranes remove salt, organics, trace pollutants and remaining pathogens. This treatment, too, is used by premium water bottling companies.



### 8 BREW TIME

Approved QC Water is delivered to brewers for the brewing process, including mashing, lautering, boiling, chilling, fermentation, testing and packaging for consumption.



### 4 OZONE OXIDATION

Oxidants are produced on-site and on-demand, then transferred to the water being treated to kill pathogens and destroy trace pollutants.

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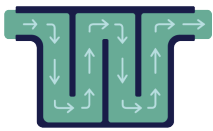
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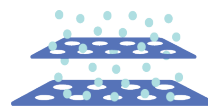
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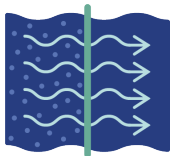
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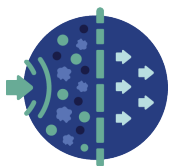
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