



## Dallas Water Utilities is Continuing to Implement Process Changes at its Water Purification Plants

Dallas Water Utilities (DWU) supplies potable water to 1.3 million retail customers and 1.2 million wholesale customers (through 23 wholesale treated water customers). DWU operates three large water purification plants that process the Trinity River and East Texas lake waters. The three water plants have a combined treatment capacity of 900 million gallons per day. DWU's treated water meets and exceeds current and anticipated potable water standards on the regulatory horizon.

Although the current treated water complies with existing standards, higher levels of naturally-occurring organics were found in a source-to-tap Water Quality study that linked them to the potential for biological and chemical instability in the distribution system. That Water Quality Study identified process modifications (conversion to Enhanced Coagulation (EC) – Biologically Active Filtration (BAF)) and operational changes that have and will continue to result in improvements to distribution system water quality.

### What Changes Are Already in Place?

Most significant are the process conversions to EC-BAF that are complete at both the Bachman and East Side WTPs. In addition, DWU has continued to see the benefits of more rigorous control of chlorine-to-ammonia ratios leaving the water purification plants and in the distribution system. To help maintain higher chloramine disinfectant levels, additional online water quality monitoring is being used in conjunction with booster chlorination facilities at several key locations in the distribution system. DWU also began adding orthophosphate corrosion inhibitor at its three water purification plants. These improvements, along with tighter pH control and higher alkalinity leaving the converted plants, have helped to improve stability.

### What Happens Next?

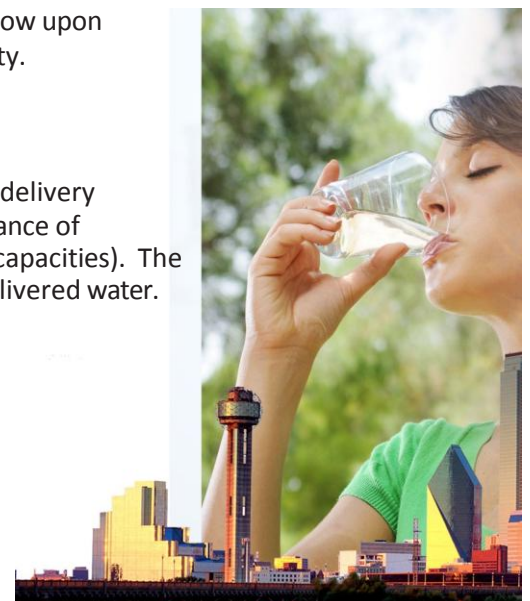
To realize DWU's vision — to be “an efficient provider of superior water service and a leader in the water industry” — the City of Dallas will continue to make substantial investments at its water purification plants. Next, DWU will convert its treatment process at the third plant - Elm Fork WTP in Carrollton-in the fall of 2019 to an EC strategy for increased organics removal — the first step toward increased biological and chemical stability. Implementation of BAF at Elm Fork will follow upon construction of a new filtration complex to further increase biological stability.

### What Should You Expect?

Integrating the new processes into the DWU water system will result in the delivery of chemically and biologically stable waters. This means improved maintenance of disinfectant levels, more stable pH levels, and higher alkalinities (buffering capacities). The new processes are also expected to enhance the aesthetic quality of the delivered water.

### What are the Timelines for the Changes?

The process changes at Elm Fork will be implemented in phases over the next several years. Process modifications have recently been completed at the Elm Fork WTP to facilitate conversion to EC, targeted for fall 2019. Implementation of BAF will follow in 2024.



## What Will Water Quality Be Like in the Future? What Changes Should You Anticipate?

The anticipated water quality changes for the key parameters following process conversion at Elm Fork are shown in the graphics at right. The ranges of values reflect the variability in water quality from the different sources used by DWU (lakes and river) and during the changing seasons.

The current values represent actual figures based on historical water quality monitoring, while the future values are estimates that reflect probable future changes or the addition of new treatment processes.

Since the upcoming changes at Elm Fork will continue to be implemented in phases over the next several years, there will be a transition period during which the water quality can vary between the current and future values. As the processes have been integrated into the DWU water system at the other plants, chemical and biological stability of delivered water has improved with a tighter pH range, higher alkalinity (more buffering capacity), greater removal of organics, lower assimilable organic carbon (AOC) and positive Langelier Saturation Index (LSI, scale preserving water). Process conversion at Elm Fork is expected to continue the positive distribution system water quality trends.

Also, the new processes will retain the minerals (hardness and total dissolved solids (TDS)) in the source waters. These changes to water quality improve DWU's ability to maintain disinfectant levels (total chlorine, monochloramine) and will also enhance the water's aesthetic quality.

The water quality parameters shown here represent only a small portion of the parameters that DWU monitors. However, they do represent most of the parameters that will change in the future.

### Questions?

For more information or questions about the process changes, contact Karen Menard at [karen.menard@dallascityhall.com](mailto:karen.menard@dallascityhall.com).

