



# Do You Know Where Your Water Comes From and How It's Treated?

By: Matt Corley, GRP Division

If you ask most citizens about where their water comes from, you might get a blank stare and a response like, "the faucet." While technically this is true, there is substantially more effort that goes into ensuring safe, high-quality potable water is delivered to every household. This is especially true when it comes to treating surface water, as opposed to groundwater which requires very little treatment.

SJRA began treating surface water from Lake Conroe in September of 2015 with a goal of supplementing groundwater usage in Montgomery County in order to comply with the Lone Star Groundwater Conservation District's rules for groundwater reduction. The SJRA's treatment process for surface water is a three-step process: sedimentation, microfiltration, and disinfection. Each step is vital to ensuring that the finished product meets all state and federal safe drinking water standards.

The beginning of the overall water treatment process starts at the raw water intake and pump station. This is where untreated, raw water is pumped out of Lake Conroe and then conveyed to the Pretreatment Facility.



## GRP Division Surface Water Facility



At the Pretreatment Facility, chemicals are mixed with the raw water to help small particles stick together and create larger particles that will settle by gravity. The larger particles that are developed settle to the bottom of the clarifier tanks for removal. The clarified, or "settled" water, is directed to the Membrane Building for further treatment. Settled particles, or sludge, are further treated prior to disposal in a landfill.

At the Membrane Building, special filters remove microscopic particles, including bacteria and viruses, which are not removed by pretreatment. The particles removed by the filters are further treated for disposal. The clean water that leaves this facility is crystal clear. Although membranes are highly effective at removing particles and impurities, the water can still contain dissolved constituents that can present aesthetic issues. To address these issues, the water is then directed to the Granular Activated Carbon (GAC) Building.

Through a process that is very similar to the activated carbon filters that can be purchased at retail outlets and installed on your faucet, the GAC process removes dissolved constituents that can present aesthetic issues such as tastes and odors.

After the water is processed through GAC, it is transferred to two circular storage tanks that hold five million gallons each. Each tank is nearly half a football field in diameter. The water is stored here for several hours prior to delivery to customers.

The high service pump station is the final facility the potable water passes through before being pumped through the transmission system to the receiving customers located throughout Montgomery County. The water is delivered via six pumps capable of pumping over 30 million gallons of water per day. This allows for flexibility in the rate at which water is delivered through the system.

The SJRA's GRP treatment process has proven reliable and effective. So much so that recently, the SJRA GRP Division was recognized by the American Water Works Association (AWWA) for producing the Best Tasting Drinking Water in the State of Texas. SJRA's GRP Division will now go on to compete for Best Tasting Drinking Water in the Nation at the AWWA Annual Conference and EXPO in Philadelphia on June 13, 2017.

The GRP's sophisticated and robust system has attracted many who want to tour the facilities and learn more about the GRP Division's process for treating surface water. These tours range from other water utilities and civic organizations to schools. On May 10, 2017, the staff of Mid-South Synergy Electric Cooperative toured the Surface Water Treatment Facility. Covenant Christian School's Junior Physics class toured the GRP's facilities on May 4, 2017. The students learned about the GRP's water treatment process and potential career opportunities in the water utility field.

If your organization would like to receive a tour of SJRA's Surface Water Treatment Facilities, please contact Matt Corley by telephone at 936-588-1662 or email at mcorley@sjra.net. ♦

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