

Customers of Kleinwood MUD have obtained their drinking water from wells owned and operated by the district. The fresh groundwater we have always relied upon has been readily available and free of quality concerns. In the past decade, however, new environmental regulations, declining aquifers, and a mandate from the Harris-Galveston Subsidence District to reduce the amount of groundwater pumped out of the ground have combined to change the way we'll get our water in the future.

Our area will be converting to surface water within the next few months. That means that while some of our water will still come from groundwater wells, surface water will gradually become the primary source of water we use in our homes. When drinking water is to be 'blended' -- some groundwater and some surface water -- there are a number of quality issues that must be addressed before the 'marriage' occurs.



Water Quality...

While no one likes to consider that there might be contaminants in our drinking water, the fact is that there are quite a few of them: some that occur naturally (e.g., arsenic and uranium) and some that are manmade (e.g., solvents or pesticides). When chlorine reacts with naturally occurring organic compounds found in the water during the treatment process, disinfection byproducts -- or DBPs -- can occur, which introduces another quality issue that must

be addressed.

Groundwater can also be contaminated by fertilizers, septic tanks, naturally occurring minerals, industrial chemicals and metals. Storm drains can carry polluted runoff from neighborhoods and farms into rivers and streams, which in turn can carry harmful microorganisms and bacteria from animals or humans into the source waters of our drinking supplies. Stormwater pollution is an increasingly serious issue that deserves our attention and assistance.

The Chemistry of Blending...

The conversion to surface water in our district will begin within the next few months. We have modified the equipment at our water plants, and will begin incorporating surface water from the North Harris County Regional Water Authority into our distribution system. This water will already be disinfected with chloramines at the City of Houston's Northeast Water Purification Plant.

A water chemistry problem occurs when it is necessary to mix surface water disinfected with chloramines with groundwater that has been disinfected with chlorine. This is why *the district is switching to chloramine disinfection to avoid this chemical conflict.*

Safe Drinking Water...

The use of both chlorine and chloramines is regulated by the EPA and the Texas Commission on Environmental Quality (TCEQ). **Chloraminated water is safe for bathing, drinking, cooking and all normal tasks we have for water every day.**

There are two situations, however, where special care must be taken: kidney dialysis treatments and tropical fish aquariums. In both cases, the water comes into direct contact



with the blood -- in dialysis through a permeable membrane, and in fish through their gills.

The chloramines in the water would be toxic in these conditions, so they must be removed from the water. This can be accomplished by introducing an additive or by use of a granular activated carbon filter/treatment.

If more specific information is desired, kidney patients can consult their physician about any special recommendations, and fish owners can talk with experts at their pet store about which products/filters will best accomplish the desired elimination of chloraminated water.

There are no other restrictions for kidney patients -- drinking, bathing, cooking -- when using chloraminated water are fine. It is just a problem during dialysis when the water has the potential to come into direct contact with the blood supply.

As in the past, our District continues to be committed to ensuring a sustainable, safe, top quality supply of water for future generations and will continue to meet or exceed state and federal water quality rules and regulations.

Please visit our website to sign up to receive periodic messages on important water issues. 💧

Water Quality Facts:

■ Drinking water supplies in this country are highly regulated at all levels of government. Each year, the Environmental Protection Agency (EPA) requires water utilities to provide their customers with the **Consumer Confidence Report** -- detailed information about the quality of their drinking water, as well as identifying the amounts of any contaminants found in the district's source water.

■ Chloramines are a combination of chlorine and a small amount of ammonia. The primary type of Chloramines used in our systems will be monochloramine (NH₂Cl), in a ratio of 5 parts chlorine to one part ammonia-nitrogen.

■ Chloramines are preferred for their ability to last in the distribution system; their lack of taste and odor; and for their safety. This method of water disinfection has been used in this country since 1917. The EPA estimates that more than half of the nation's large water systems currently use chloramines.

■ The amount of chloramines in our drinking water will be extremely small: no more than 4 parts per million parts of water.

■ About the only thing you might notice about chloraminated water is that it may have less of a chlorine taste or smell.

■ Chloramines will not change the pH of the water; it will remain as it was before the conversion.

■ Swimming pools will still need to use chlorine to control algae and growth of bacteria.

■ Chlorine dissipates quickly when water sits for a few days, but chloramines do not. They may take weeks to disappear. For aquarium or pond concerns, check with a pet store for agents or filters that will remedy the problem.

*The water we conserve today
can serve us tomorrow!*

**Here are five things you can do
to use water more efficiently at
home and in the yard and garden...**

- 1.** Find and fix leaks -- fixing leaky faucets and plumbing joints can save 20 gallons of water a day for each one repaired.
- 2.** Toilets use about 27 percent of the household's water. If toilets are older than 1992, replace them with the low flow models for a significant savings.
- 3.** Take shorter showers -- even a one or two minute reduction in time can save up to 700 gallons a month. And install low-flow shower heads. This can save 500 to 800 gallons a month!
- 4.** Use dishwashers and washing machines **ONLY** with full loads and consider replacing older models with the new, water- and energy-efficient ones.
- 5.** Use lawn and garden irrigation systems **ONLY WHEN NEEDED** and install a rain sensor or control device to prevent watering in the rain.



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**To Our Customers...
We're Changing Our
Water Disinfection
Method**