

# Cedar Key Water & Sewer District

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Phone: 352-543-5285*

February 15, 2018

Dear Customers:

Over the course of last year (2017), the drinking water produced by the Cedar Key Water and Sewer District failed to meet the state standard for disinfectant byproducts, commonly referred to as DBPs. The District tests for DBPs every three months, and our results over 2017 exceeded the maximum levels when averaged over the year. The official state-mandated notice of this failure to meet drinking water standards is included in this mailing.

It is difficult to find a clear statement of what the risk is from DBPs. The US Environmental Protection Agency states the following:

While disinfectants are effective in controlling many microorganisms, they react with natural organic and inorganic matter in source water and distribution systems to form DBPs. Results from toxicology studies have shown several DBPs to be carcinogenic in laboratory animals. Other DBPs have also been shown to cause adverse reproductive or developmental effects in laboratory animals. Several epidemiology studies have suggested a weak association between certain cancers (e.g., bladder) or reproductive and developmental effects, and exposure to chlorinated surface water. More than 200 million people consume water that has been disinfected. Because of the large population exposed, health risks associated with DBPs, even if small, need to be taken seriously.

Thus, the risk to any given individual is small, but that small risk when spread over a population of hundreds of millions creates a sufficient risk overall to warrant regulation. And that small risk arises only after many years of drinking large amounts of water each day with elevated levels of DBPs. In light of how small the risk is, the signers of this letter each drink the water produced by the District and are comfortable doing so.

As stated above, DBPs are created when chlorine combines with organics in raw water that is influenced by surface water. The District's raw water comes from relatively shallow wells located several miles out of town on State Road 24. Because these wells are shallow, they are influenced by surface waters and rainfall. A lot of rain washes organic material—from leaves, wood, soil, etc.—into the groundwater that supplies our wells. The level of organics in our well water can vary widely depending on the amount of rainfall over the prior several months. Digging deeper wells would not solve the problem because the groundwater quality in our area does not get better as you go deeper.

Because of the high levels of organics in our well water, meeting DBP standards has always been a challenge for the District. Back in 2004 and 2005 when the DBP rules first went into effect, several different ways of reducing the organics in our raw water were tested with none of them working very well. The decision was finally made in 2006 to install a “Miex” system at a cost of about \$500,000. We estimate that a total of another \$500,000 has been spent maintaining the system since 2006, for a total effort of almost \$1 million to reduce DBPs.

After 11 years of constant use the Miex system has begun to show it’s age and lose some of its effectiveness. Toward the end of 2016 the District was faced with the question whether to spend additional hundreds of thousands of dollars to restore or replace the Miex equipment, or try something new. It was recommended that, instead of trying to remove organics from the water which has proved so difficult for the District over the years, we try the approach of changing to a disinfectant that does not react with organics and therefore does not create DBPs. The suggested disinfectant is chlorine dioxide which, although very expensive, is allowed under Department of Environmental Protection (DEP) rules and is widely used in Europe as a primary drinking water disinfectant.

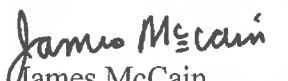
Two other small Florida utilities with DBP issues had successfully made the change to chlorine dioxide and brought their DBP levels down to virtually nil. The District therefore decided to try the change to chlorine dioxide, and all customers were notified of this pending change at the beginning of 2017. Unfortunately, due to a variety of technical and regulatory issues, the change to chlorine dioxide did not take place. And now, for reasons that are unclear to us, DEP has put a hold on further conversions to chlorine dioxide and we do not know when this hold will be lifted.

Upon hearing about the DEP hold on chlorine dioxide, the District decided to start using the reverse osmosis treatment system that had been installed during the saltwater intrusion episode back in 2012. We had hesitated to do that before because using the reverse osmosis system for this purpose has some serious drawbacks. First, it is very expensive because it uses a great deal of electricity, and because the costly membrane filters are quickly fouled by the organics in our water which leads to great expense to clean or replace them. It also uses a lot of water because 20% of the water that goes into a reverse osmosis system is discharged as waste.

But reverse osmosis is effective in reducing DBPs, and our use of the reverse osmosis system has brought our DBP numbers down, and we expect them to stay down over the coming year. It is our plan to use the reverse osmosis system for this purpose until a better and more economical solution can be found. We hope that we are able to bear this added expense without raising rates.

We will continue to search for a more economical long-term solution for keeping DBP levels low, and will keep you informed as these efforts progress.

  
John McPherson  
General Manager


  
James McCain  
Plant Superintendent

  
Dottie Haldeman  
Chair

  
Joe Hand  
Board Member

  
Chris Reynolds  
Board Member

  
Stephen Rosenthal  
Board Member

  
Leslie Sturmer  
Board Member