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## ***Total Trihalomethane Supplemental Information***

- **Why am I getting this notice?**

The water in the El Cenizo distribution system tested high in March 2015 for total trihalomethanes (TTHMs). Trihalomethanes are chemicals formed as a result of the disinfection process of your water and have potential adverse health effects when exposed to at high levels for many years. The high concentration of total trihalomethanes means that the annual average concentration in the El Cenizo distribution system does not meet standards set by the federal Environmental Protection Agency. The law requires that we notify you of this problem.

Presently, the concentration of trihalomethanes meets the appropriate levels in the distribution system in Rio Bravo.

This notice provides information above the standards required by law. This notice is being published at the request of Comité de Ciudadanos Unidos de El Cenizo and Alianza de Rio Bravo Por Agua Pura so that the communities of El Cenizo and Rio Bravo are better informed about Trihalomethanes. However, the County wants the consumers of the Rio Bravo Water Treatment Plant (RBWTP) to be as well informed as possible about their drinking water and has thus agreed to publish this more informative notice.

- **What is the distribution system?**

The distribution system is the water lines that run underground from the plant to the communities of Rio Bravo and El Cenizo. Your drinking water is delivered to your homes through these water lines that you tap into.

- **What are trihalomethanes?**

Trihalomethanes are four different chemicals: Bromodichloromethane, Bromoform, Dibromochloromethane, and Chloroform.

Total trihalomethanes are also referred to as TTHMs.

TTHMs are formed as a result of disinfecting your drinking water. The chlorine that is used to treat your water and make it safe to drink can react with naturally occurring materials in your water to produce

byproducts. One group of the byproducts is four chemicals called TTHMs. To be a byproduct means TTHMs they did not exist in the water before it was treated with chlorine.

- **What are the drinking water standards for TTHMs?**

In 1974, Congress passed the Safe Drinking Water Act. This law requires the federal Environmental Protection Agency (EPA) to determine the level of contaminants in drinking water at which no adverse health effects are likely to occur. These health goals are based on possible health risks and exposure over a lifetime. The health goals have an adequate margin of safety. The health goals are called maximum contaminant level goals (MCLG).

Contaminants are any physical, chemical, biological or radiological substances or matter in water.

After setting health goals based on the best available science to prevent potential health problems, EPA sets an enforceable regulation called a maximum contaminant level (MCL). MCLs are set as close to the health goals as possible, considering cost, benefits and the ability of public water systems to detect and remove contaminants using suitable treatment technologies. MCLs for TTHMs are set at the following levels:

Levels for Total Trihalomethanes		
Disinfection Byproduct	MCLG	MCL
<i>Bromodichloromethane</i>	Zero	0.080 mg/L or 80 ppb (Sum of the concentrations of all four trihalomethanes) as an annual average
<i>Bromoform</i>	Zero	
<i>Dibromochloromethane</i>	0.06 mg/L or 60ppb	
<i>Chloroform</i>	0.07 mg/L or 70ppb	

*The annual average of TTHM concentration must be 0.08 mg/L or 80 parts per billion or lower as an annual average concentration.*

- **What is the annual average concentration of TTHMs that required the Rio Bravo Water Plant to send this notice? Has anything changed in the treatment of the water?**

Nothing has changed in the treatment of the water to cause a high formation of TTHMs. The new administration of the RBWTP determined that sampling should be done in Rio Bravo and El Cenizo to accurately determine the TTHMs in each distribution system.

Once every three months, the RBWTP sends samples of the drinking water in the distribution system of El Cenizo and Rio Bravo to the Texas Commission on Environmental Quality (TCEQ). EPA has delegated

authority to TCEQ to enforce this standard, and this is why the samples go to TCEQ rather than EPA. TCEQ sends the samples to a laboratory that informs TCEQ and the RBWTP of the results.

The annual average concentration of TTHMs is calculated by averaging four quarters of samples. For instance, the February 2014 annual average includes February 2014 as well as three previous quarters from 2013. The annual average calculated in December 2014 for El Cenizo averages sampling in February, June, August and December 2014:  $0.0482 + 0.0582 + 0.1260 + 0.0443 = 0.2767$ ;  $0.2767/4 = 0.692$ , the annual average. The March 2015 violation includes June 2014 through March 2015:  $0.0582 + 0.1260 + 0.0443 + 0.1060 = 0.3345$ ;  $0.3345/4 = 0.836$ , the annual average in March 2015.

### El Cenizo Distribution System

<b>Date</b>	<b>Concentration of TTHMs – mg/L</b>	<b>Annual Average Maximum contaminant level (MCL) is 0.080 mg/L</b>
Feb 2014	0.0482	0.0527
June 2014	0.0582	0.0521
August 2014	0.1260	0.0727
December 2014	0.0443	0.0692
March 2015	0.1060	0.0836

### Rio Bravo Distribution System

<b>Date</b>	<b>Concentration of TTHMs – mg/L</b>	<b>Annual Average Maximum contaminant level (MCL) is 0.080 mg/L</b>
Feb 2014	0.0461	0.0539
June 2014	0.0428	0.0494
August 2014	0.1090	0.0658
December 2014	0.0459	0.0610
March 2015	0.0479	0.0614

- **How is the Rio Bravo Water Treatment Plant going to fix the problem of TTHMs in the El Cenizo distribution system?**

Although there have been many changes with the process of treating the water within the Treatment Plant, we will be evaluating the conditions that exist within the Plant and the Distribution System that leads to instances where elevated TTHMs are found.

- **Will the new Ultra Violet treatment process fix the problem of TTHMs?**

No.

After the UV system treats the water, TTHMs are formed in the distribution system as a byproduct of the chlorination process reacting with naturally occurring materials in the water.

- **How long will this problem continue?**

Because the TTHM annual average concentrations have usually measured much lower than the 0.080 mg/L, the RBWTP believes that the one high annual concentration was an unusual event and that the next samples will come back normal. The samples are taken every three months.

We will post the TTHM results on line so that you can remain informed of the water quality in your community.

<http://www.webbcountytx.gov/WaterUtilities/MonthlyRegulatoryReporting/TCEQReporting>

- **What are the health effects of TTHMs in the drinking water?**

Health effects may occur from TTHMs after years of exposure to water with TTHMs annual average concentrations that violate the annual average standard of 0.080 mg/L standard set by EPA. This means the annual average concentration has to be more than 0.080 mg/L for years for there to be possible health effects. The health effects are possible liver, kidney, or central nervous system problems and an increased risk of cancer.

Disinfection Byproduct (Chemical Abstract Service Registry Number)	How is it formed?	Health Effects
<b>Total Trihalomethanes</b>		
<i>Bromodichloromethane</i> (75-27-4)	Trihalomethanes occur when naturally-occurring organic and inorganic materials in the water react with the disinfectants, chlorine and chloramine.	Some people who drink water containing total trihalomethanes in excess of the MCL over many years could experience liver, kidney, or central nervous system problems and increased risk of cancer.  of the MCL over many years could experience liver, kidney, or central nervous system problems and increased risk of cancer.
<i>Bromoform</i> (75-25-2)		
<i>Dibromochloromethane</i> (124-48-1)		
<i>Chloroform</i> (67-66-3)		

- **Will boiling my water kill the TTHMs?**

No.

- **Will a water filter get rid of the TTHMs?**

Some filters can be used to help get rid of Trihalomethanes. Only carbon- activated filters will be effective and these filters must be properly maintained; otherwise they will be ineffective or potentially harmful to the drinking supply. You can search the internet to find carbon-activated filters that will help eliminate TTHMs.

- **Will I get sick immediately from drinking water with TTHMs?**

No. The possible health effects from TTHMs are from chronic exposure. The possible health effects may be experienced by some people who drink water with TTHMs in excess of the annual average of 0.080 mg/L for many years.

- **For how many years has the El Cenizo distribution system contained TTHMs in violation of the standard? How do we know that the Rio Bravo distribution system has not violated the TTHM standard in the past?**

EPA initiated this new rule in 2003 and since that time high results for TTHMs has occurred at 11 quarterly sample events prior to 2013. In 2013 your water system began sampling two separate sites for compliance with this rule and has identified two (2) high sampling events in El Cenizo, but those two events have caused just one violation of the annual average rule.

Rio Bravo contains its own sampling location established by TCEQ for monitoring of TTHMs. There have not been violations of the annual average for TTHMs in Rio Bravo.

- **Are there other contaminants in my drinking water that I should know about?**

There is a low possibility that a parasite cryptosporidium is in your drinking water. You should have by now received an additional information sheet on cryptosporidium from the County to better inform you about it. For more information about cryptosporidium, go to <http://www.webbcountytx.gov/WaterUtilities/Resources/>

**Source of Information: EPA,**  
<http://water.epa.gov/drink/contaminants/basicinformation/disinfectionbyproducts.cfm>