

DEER CREEK RURAL WATER CORPORATION

2016 Annual Water Quality Report

We are pleased to present to you this year's Annual Water Quality Report. This report is designed to inform you about the quality of water and services we deliver to you 24 hours each day. Our constant goal is to provide you with a safe and dependable supply of drinking water. The water produced is used for residential/domestic use, commercial use (including Schools), livestock watering and firefighting in our area. Deer Creek Water Corporation supplies potable water to the Deer Creek rural area located north of Oklahoma City, and includes parts of Oklahoma County, Canadian County, Kingfisher County and Logan County.

This report shows our water quality and what it means. We want our valued customers to be informed about their water utility. You are welcome to attend any of our regularly scheduled board meetings held on the third Monday of each month, 7:30 p.m. at the Deer Creek Water Corp. office, 4621 NW 206th Street, Edmond, OK 73012. Our five-member board is elected by members of the water system and serve on a strictly volunteer basis. Our regular office hours are Monday thru Friday from 8 am to 3 pm, phone 405/348-0285.

Our primary water source is groundwater from wells in the Garber-Wellington Aquifer. Our well field is located East of Portland, between NW 206th and NW 234th. In our continuing efforts to maintain a safe and dependable water supply to all customers we continually make improvements to the water system. We *completed four wells* last year for current total of **15** production wells and are currently in the process of completing two additional water wells. We will continue to drill test wells to keep up with the supply needs of our water system customers. At this time we are discontinuing the purchase of bulk water from the City of OKC and as of May 2017 all of our customers are being served from our groundwater wells!

***We are proud to announce that **Oklahoma Rural Water Association** selected Deer Creek Water Corporation as the **Water System of the Year for 2017** and Debbie Wells-Bethel as the **Manager of the Year for 2017** !

\$\$\$\$\$ COMING SOON....Online bill pay options! Please watch your water bills for notification of our future **website** and online bill pay options. Hopefully these will be up and running in the next few months!

****PLEASE NOTE....We require all customers to comply with MANDATORY YEAR-ROUND ODD-EVEN LAWN WATERING.** Please help protect our precious groundwater supply through conservation.

Deer Creek Water Corporation routinely monitors for constituents in your drinking water according to Federal and state laws. The following table shows the results of our monitoring for the period of January 1st to December 31st, 2016. (Some of our data may be more than one year old because the state allows us to monitor for some contaminants less often than once per year.) Since we purchased bulk water for a small portion of our system, water quality information is also provided in this report for water supplied by the City of OKC.

DEFINITIONS:

- *Maximum Contaminant Level (MCL)* - The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
- *Maximum Contaminant Level Goal (MCLG)* - The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
- *Maximum Residual Disinfectant Level (MRDL)*- The highest level of disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants. Compliance calculated as a Running Annual Average (RAA).
- *Maximum Residual Disinfectant Level Goal (MRDLG)*- Level of drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contamination.
- *Treatment Technique (TT)* - A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.
- *Action Level (AL)* - the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- *Parts per million (ppm) or Milligrams per liter (mg/l)* - one part of contaminant per million parts of water (1oz. per 7,350 gallons/water).
- *Parts per billion (ppb) or Micrograms per liter (ug/l)* - one part of contaminant per billion parts of water (1oz. per 7,350,000 gallons/water).
- *Nephelometric Turbidity Unit (NTU)* - nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.
- *Picocuries per liter (pCi/L)* - picocuries per liter is a measure of the radioactivity in water.
- *Millirems per year (mrem)*
- *Non-Detects (ND)* – Laboratory analysis indicates that the constituent is not present.

MCLs are set at very stringent levels. To understand the possible health effects described for many regulated constituents, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect. All sources of drinking water are subject to potential contamination by constituents that are naturally occurring or are man-made. Those constituents can be microbes, organic or inorganic chemicals, or radioactive materials. All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

DEER CREEK WATER CORPORATION 2016 WATER QUALITY DATA

MICROBIOLOGICAL CONTAMINANTS

Substance	MCL	Max. Level Detected	EPA MCLG (EPA Goal)	2016 Violations	Sources of Contaminant
Total Coliform Bacteria	0 sample (0%) testing positive for coliform	0% (0/72) of monthly samples.	0% of monthly samples testing positive for coliform	None	Naturally present in the environment
Fecal Coliform Bacteria & E. Coli	0 sample (0%) testing positive for fecal coliform and E. Coli	0% (0/72) of monthly samples.	0 samples testing positive for fecal coliform and E. Coli	None	Human and animal fecal waste

RADIONUCLIDES

Substance	MCL	Highest Level Detected	Range Detected	2016 Violations	Source of Contaminant
Gross Alpha Emitters	15 pCi/L	14.0 pCi/L	3.07-20.3 pCi/L	* <i>Monitoring Violation</i>	Erosion of natural deposits
Radium, Comb. (226,228)	5 UG/L	.0 pCi/L	0 PCI/L	* <i>Monitoring Violation</i>	Erosion of natural deposits
Uranium (pCi/L or ug/l)	30 ug/L	11 UG/L	1.58-14.7 UG/L	* <i>Monitoring Violation</i>	Erosion of natural deposits
Beta/Photon emitters	4 mrem/yr	5.56 mrem	0-5.56 mrem	* <i>Monitoring Violation</i>	Decay of natural & man-made deposits

LEAD AND COPPER (Regulated at Customer Tap)

Substance	Action Level – 90% of samples must be below this level	90% Sample Detected	2016 Violations	Sources of Contaminant
Lead	15 ug/l	0 ug/l Sept 2016	None	Corrosion of home water pipes
Copper	1.3 mg/l	0.0774 mg/l Sept 2016	None	Corrosion of home water pipes

INORGANIC CONTAMINANTS and VOLATILE ORGANIC CONTAMINANTS

Substance	MCL	Highest Level Detected	Range Detected	2016 Violations	Sources of Contaminant
Barium	2 ppm	.156 ppm	.156-.156 ppm	None	Drilling waste, natural erosion
Fluoride	4 MG/L	.2 MG/L	0-.2 MG/L	None	Erosion of natural deposits; water additive which promotes strong teeth
Arsenic	10 UG/L	3 UG/L	0-3.2 UG/L	None	Geological
Chromium	100 UG/L	28 UG/L	8.7-28 UG/L	None	Geological
Selenium	50 UG/L	13.4 UG/L	0-13.4 UG/L	None	Geological
Nitrite-Nitrate as N	10 MG/L	1 MG/L	.23-.96 MG/L	None	Runoff from fertilizer use, septic tanks or sewage

STAGE 1 AND STAGE 2 DISINFECTION BYPRODUCTS RULE MONITORING

Substance	Action Level *	Max. Level Detected	2016 Violations	Sources of Contaminant
Chlorine	MRDL = 4 ppm	1 ppm	None	Additive used to control microbes.
Total Trihalomethanes	80 RAA (Running Annual Avg.)	3 UG/L	None	Byproduct of Chlorination of water.
Haloacetic Acids	60 RAA (Running Annual Avg.)	<6.0 UG/L	None	Byproduct of disinfection of water.

Gross Alpha Emitters: Certain minerals are radioactive and may emit a form of radiation known as Alpha radiation. Some people who drink water containing Alpha emitters in excess of the MCL over many years may have an increased risk of getting cancer. Some people who drink water containing Uranium in excess of the MCL over many years may have an increased risk of getting cancer and kidney toxicity. Our system did not exceed the maximum levels during 2016 and we continue to test for Gross Alpha and Uranium on a regular basis.

Arsenic. While your drinking water meets EPA's standard for arsenic, it does contain low levels of arsenic. EPA's standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. EPA continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

Total Coliform. Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, bacteria may be present.

Fecal Coliform/E.Coli. Fecal coliforms and E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Fecal Coliform/E. Coli were **not** present in any of our monthly samples.

Lead. Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure. Our system showed 0 ug/l of lead, so this is not a concern to our users. **Copper.** Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Our system was well below the action level for all copper samples, so this should not be a concern to our users.

Some people may be more vulnerable to contaminants in drinking water than the general population. **Immuno-compromised persons** such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

***Monitoring Violation for Radionuclides:** We are required to monitor your drinking water for specific contaminants on a regular basis and the results are an indicator of whether or not our drinking water meets health standards. During the following monitoring periods, we did not complete all monitoring or testing for Radionuclides and therefore cannot be sure of the quality of our drinking water during that time: **Rads for Well 7 (1/14-12/16); Rads for Well 12 (1/14-12/16); Rads for Well 13 (10/16-12/16); Rads for Well 14 (1/14-12/16).** Deer Creek Water Corp has completing all retesting on 4/26/17 to correct this monitoring violation. All sampling schedules have been updated and are being monitored accordingly to prevent this error in the future.

CITY OF OKLAHOMA CITY 2016 WATER QUALITY DATA (HEFNER WTP)

MICROBIOLOGICAL CONTAMINANTS

Substance	MCL	Max Level Detected	EPA MCLG (EPA Goal)	2016 Violations	Sources of Contaminant
Total Coliform Bacteria	<5% of monthly samples testing positive for coliform	0.061% or 2 Positive out of 3286 samples	0% of monthly samples testing positive for coliform 2016 samples	None	Naturally present in the environment 2 Fecal Coliforms or E.Coli in 2016 out of 3286 total samples

RADIONUCLIDES

Substance	MCL	Maximum Level Detected 2012	2016 Violations	Sources of Contaminant
Alpha Emitters	15 pCi/L	<2.229 pCi/L	None	Decay of natural & man-made deposits
Beta/Photon Emitters	50 pCi/L	6.784 pCi/L	None	Decay of natural & man-made deposits
Radium 226	5 pCi/L	<0.545 pCi/L	None	Decay of natural & man-made deposits
Uranium	0 ppb	<1	None	Decay of natural & man-made deposits

LEAD AND COPPER (Regulated at Customer Tap)

Substance	Action Level *	90% Sample Detected	2016 Violations	Sources of Contaminant
Lead	15 ug/l	2.53 ug/l Sept-Oct 2015	None	Corrosion of home water pipes
Copper	1.3 mg/l	.07837 mg/l Sept-Oct. 2015	None	Corrosion of home water pipes

* Action Level – 90% of samples must be below this level

INORGANIC CONTAMINANTS

Substance	MCL	Max Level Detected	EPA MCLG (EPA Goal)	2016 Violations	Sources of Contaminant
Turbidity	TT= >.3NTU in <5% of samples	100% - .25 NTU	NA	None	Lime/calcium carbonate in soil runoff
Fluoride	4 ppm	.61 ppm	4 ppm	None	Erosion of natural deposits; water additive which promotes strong teeth
Nitrite-Nitrate	10 ppm	.366 ppm	10 ppm	None	Runoff from fertilizer use, septic tanks or sewage
Arsenic	10 ppb	<2.0 ppb	10 ppb	None	Geological
Barium	2 ppm	.0052 ppm	2 ppm	None	Drilling waste, natural erosion

DISINFECTION BY-PRODUCTS

Substance	MCL	Max Level Detected	EPA MCLG (EPA Goal)	2016 Violations	Sources of Contaminant
Haloacetic Acids (HAA)	60 ppb	1.67 – 5.89 ppb (8.49 ppb highest avg)	60 ppb	None	Disinfection by-product
Chloramines*	4.0 ppm	2.10 – 5.0 ppm (3.66 ppm average)	4.0 ppm	None	Water additive controls microbes
Trihalomethanes (THM)	80 ppb	4.17-19.43 ppb (17.96 ppb highest avg)	0 ppb	None	Disinfection by-product
Bromate	10 ppb	2.89 ppb highest avg	10 ppb	None	Ozone disinfection by-product
Chlorine	MRDL= 4	2.10 ppm	< 4 ppm	None	Water additive controls microbes
LT2 Source Water Monitoring		Cryptosporidium: all source waters tested at less than 0.075 cysts/L (lowest risk category)		None	EPA required Source Water Monitoring (Lakes/rivers) to test for cryptosporidium
Stage 2 Disinfection Byproducts Rule Monitoring (2Q2013-1Q2014)		Trihalomethanes: 4.17-19.43 ppb (Avg 17.96) Haloacetic Acids: 1.67-5.89 ppb (Avg 8.49)	80 ppb 60 ppb	None	By-products of drinking water disinfection

Nitrite-Nitrate Note: Measured as the sum of Nitrate-N and Nitrite-N

Bromate Health Note: Some people who drink water containing bromate in excess of the MCL over many years may have an increased risk of getting cancer.

Total Organic Carbon Note: Total organic carbon (TOC) has no health effects. However, total organic carbon provides a medium for the formation of disinfection byproducts. These byproducts include trihalomethanes (THMs) and haloacetic acids (HAAs). Drinking water containing these byproducts in excess of the MCL may lead to adverse health effects. TOC compliance is based on the percent TOC removed, not the total amount present.

Stage 2 Disinfection Byproducts Rule Monitoring: U.S. water utilities are required to continuously improve the quality of water delivered to customers. The federal Environmental Protection Agency and the OK Dept of Environmental Quality enforce drinking water laws and develop long-range improvement activities. In 2009, Oklahoma City collected information on how THMs and HAAs change the water system and will work with the EPA and ODEQ to decrease numbers.

Fecal Coliform or E.coli: Zero positive coliform results in samples in 2016. Zero fecal Coliforms or E.coli in samples in 2016.

Turbidity: All filtered water samples remained less than 0.3 during 2016 at the Hefner Plant.

***Chloramines Note:** CUSTOMERS WHO ARE ON A DIALYSIS MACHINE OR WHO RAISE AQUATIC LIFE SUCH AS AQUARIUM FISH SHOULD TAKE NECESSARY STEPS TO REMOVE THE CHLORAMINES THAT ARE PRESENT IN THE WATER SUPPLY. Persons who use tap water containing chloramines for hemodialysis (artificial kidney machines) must ensure that the water is properly treated to avoid a serious health problem (methemoglobinemia). The types of controls available to users include carbon filtration and reverse osmosis or chemical reduction. Operators of licensed dialysis centers know that water must be treated before use in dialysis. Dialysis operators must be prepared for an anticipated chloramine concentration of 2 to 4 milligrams per liter. In addition, users of home dialysis systems, which utilize tap water for dialysis purposes, must ensure that the tap water is properly treated to remove chloramines prior to the use of such water for dialysis. Please contact your doctor and dialysis equipment provider for more information. Chloramines can be deadly to fish. Since chloramine is more persistent than free chlorine (which is also toxic to fish), treatment and aging of water to be used in aquaria is more critical when chloramine is present. Suggested action for fish fanciers, breeders, or pet shop owners includes the use of activated carbon filters. Care needs to be taken to replace filter cartridges regularly. Pet stores should have a product that will quickly neutralize both the chlorine and ammonia molecules.

If you have any questions about this report, please call our office at 405/348-0285.

**Thank you,
Debbie Wells-Bethel, Manager**