2018

Annual Drinking Water Quality Report

White Flag at Deerchase
0-92-014
1 Well
05/1/2019

Clarke Utilities, Inc. is pleased to present to you this year's Annual Quality Water Report. This report is designed to inform you about the quality water and services we deliver to you every day. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water. Our water source is ground water wells from underground aquifers. Each of our wells has a 100 foot protected area from potential sources of contamination. Our treatment process includes disinfection at each source, corrosion control and mineral control as needed.

If you have any questions about this report or concerning your water utility, please contact Clarke Utilities at 919-662-0457 during the hours 8:30am – 5pm, Monday – Friday. We want our valued customers to be informed about their water utility.

Clarke Utilities routinely monitors for contaminants in your drinking water according to Federal and State laws. This table shows the results of our monitoring for the period of January 1st to December 31st, 2018. and the last test results of contaminants that were not due to be tested in 2018. As water travels over the land or underground it can pick up substances or contaminants such as microbes, inorganic and organic chemicals, and radioactive substances. All drinking water, including bottled drinking water, may be reasonably expected to contain at least small amounts of some contaminants. It's important to remember that the presence of these contaminants does not necessarily pose a health risk.

In this table you will find many terms and abbreviations you might not be familiar with. To help

you better understand these terms we've provided the following definitions:

Action Level - the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Treatment Technique (TT) - A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

Maximum Contaminant Level - The "Maximum Allowed" (MCL) is 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 - The "Goal"(MCLG) is 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.

The following tables list the contaminants that were detected in your drinking water.

2018 Well #1
Microbiological Contaminants in the Distribution System - For systems that collect ***less than 40*** samples per month.

Contaminant (units)	MCL Violation Y/N	Your Water	MCLG	MCL	Likely Source of Contamination
Total Coliform Bacteria (presence or absence)	N	NONE	0	1 positive sample / month* Note: If either an original routine sample and/or its repeat samples(s) are fecal coliform or *E. coli* positive, a Tier 1 violation exists.	Naturally present in the environment
Fecal Coliform or *E. coli* (presence or absence)	N	NONE	0		Human and animal fecal waste

2018 Well #1
Nitrate/Nitrite Contaminants

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water	Range Low High	MCLG	MCL	Likely Source of Contamination
Nitrate (as Nitrogen) (ppm)	03/06/18	N	1.34 mgl	N/A	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Nitrite (as Nitrogen) (ppm)	N/A	N	N/A	N/A	1	1	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits

2018 Well#1
Lead and Copper Contaminants

Contaminant (units)	Sample Date	Your Water	Number of sites found above the AL	MCLG	AL	Likely Source of Contamination
Copper (ppm) (90th percentile)	07/20/18	.267mg/l	0	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits
Lead (ppb) (90th percentile)	07/20/18	ND	0	0	AL=15	Corrosion of household plumbing systems; erosion of natural deposits

2016 Well #1
Inorganic Contaminants

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water	Range Low High	MCLG	MCL	Likely Source of Contamination
Antimony (ppb)	1/14/16	N	ND	N/A	6	6	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
Arsenic (ppb)	1/14/16	N	ND	N/A	0	10	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Barium (ppm)	1/14/16	N	ND	N/A	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Beryllium (ppb)	1/14/16	N	ND	N/A	4	4	Discharge from metal refineries and coal-burning factories; discharge from electrical, aerospace, and defense industries
Cadmium (ppb)	1/14/16	N	ND	N/A	5	5	Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints
Chromium (ppb)	1/14/16	N	ND	N/A	100	100	Discharge from steel and pulp mills; erosion of natural deposits
Cyanide (ppb)	1/14/16	N	ND	N/A	200	200	Discharge from steel/metal factories; discharge from plastic and fertilizer factories
Fluoride (ppm)	1/14/16	N	.10 mg/l	N/A	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Mercury (inorganic) (ppb)	1/14/16	N	ND	N/A	2	2	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills; runoff from cropland
Selenium (ppb)	1/14/16	N	ND	N/A	50	50	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines
Thallium (ppb)	1/14/16	N	ND	N/A	0.5	2	Leaching from ore-processing sites; discharge from electronics, glass, and drug factories

2016 Well#1

Synthetic Organic Chemical (SOC) Contaminants Including Pesticides and Herbicides

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water	Range Low High	MCLG	MCL	Likely Source of Contamination
2,4-D (ppb)	08/18/16	N	ND	N/A	70	70	Runoff from herbicide used on row crops
2,4,5-TP (Silvex) (ppb)	08/18/16	N	ND	N/A	50	50	Residue of banned herbicide
Alachlor (ppb)	08/18/16	N	ND	N/A	0	2	Runoff from herbicide used on row crops
Atrazine (ppb)	08/18/16	N	ND	N/A	3	3	Runoff from herbicide used on row crops
Benzo(a)pyrene (PAH) (ppt)	08/18/16	N	ND	N/A	0	200	Leaching from linings of water storage tanks and distribution lines
Carbofuran (ppb)	08/18/16	N	ND	N/A	40	40	Leaching of soil fumigant used on rice and alfalfa
Chlordane (ppb)	08/18/16	N	ND	N/A	0	2	Residue of banned termiticide
Dalapon (ppb)	08/18/16	N	ND	N/A	200	200	Runoff from herbicide used on rights of way
Di(2-ethylhexyl) adipate (ppb)	08/18/16	N	ND	N/A	400	400	Discharge from chemical factories
Di(2-ethylhexyl) phthalate (ppb)	08/18/16	N	ND	N/A	0	6	Discharge from rubber and chemical factories
DBCP [Dibromochloropropane] (ppt)	08/18/16	N	ND	N/A	0	200	Runoff/leaching from soil fumigant used on soybeans, cotton, pineapples, and orchards
Dinoseb (ppb)	08/18/16	N	ND	N/A	7	7	Runoff from herbicide used on soybeans and vegetables
Endrin (ppb)	08/18/16	N	ND	N/A	2	2	Residue of banned insecticide
EDB [Ethylene dibromide] (ppt)	08/18/16	N	ND	N/A	0	50	Discharge from petroleum refineries
Heptachlor (ppt)	08/18/16	N	ND	N/A	0	400	Residue of banned pesticide
Heptachlor epoxide (ppt)	08/18/16	N	ND	N/A	0	200	Breakdown of heptachlor
Hexachlorobenzene (ppb)	08/18/16	N	ND	N/A	0	1	Discharge from metal refineries and agricultural chemical factories
Hexachlorocyclo-pentadiene (ppb)	08/18/16	N	ND	N/A	50	50	Discharge from chemical factories
Lindane (ppt)	08/18/16	N	ND	N/A	200	200	Runoff/leaching from insecticide used on cattle, lumber, gardens
Methoxychlor (ppb)	08/18/16	N	ND	N/A	40	40	Runoff/leaching from insecticide used on fruits, vegetables, alfalfa, livestock
Oxamyl [Vydate] (ppb)	08/18/16	N	ND	N/A	200	200	Runoff/leaching from insecticide used on apples, potatoes and tomatoes
PCBs [Polychlorinated biphenyls] (ppt)	08/18/16	N	ND	N/A	0	500	Runoff from landfills; discharge of waste chemicals
Pentachlorophenol (ppb)	08/18/16	N	ND	N/A	0	1	Discharge from wood preserving factories
Picloram (ppb)	08/18/16	N	ND	N/A	500	500	Herbicide runoff
Simazine (ppb)	08/18/16	N	ND	N/A	4	4	Herbicide runoff
Toxaphene (ppb)	08/18/16	N	ND	N/A	0	3	Runoff/leaching from insecticide used on cotton and cattle

2018 Well#1
Volatile Organic Chemical (VOC) Contaminants

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water	Range Low High	MCLG	MCL	Likely Source of Contamination
Benzene (ppb)	03/06/18	N	ND	N/A	0	5	Discharge from factories; leaching from gas storage tanks and landfills
Carbon tetrachloride (ppb)	03/06/18	N	ND	N/A	0	5	Discharge from chemical plants and other industrial activities
Chlorobenzene (ppb)	03/06/18	N	ND	N/A	100	100	Discharge from chemical and agricultural chemical factories
o-Dichlorobenzene (ppb)	03/06/18	N	ND	N/A	600	600	Discharge from industrial chemical factories
p-Dichlorobenzene (ppb)	03/06/18	N	ND	N/A	75	75	Discharge from industrial chemical factories
1,2 – Dichloroethane (ppb)	03/06/18	N	ND	N/A	0	5	Discharge from industrial chemical factories
1,1 – Dichloroethylene (ppb)	03/06/18	N	ND	N/A	7	7	Discharge from industrial chemical factories
cis-1,2-Dichloroethylene (ppb)	03/06/18	N	ND	N/A	70	70	Discharge from industrial chemical factories
trans-1,2-Dichloroethylene (ppb)	03/06/18	N	ND	N/A	100	100	Discharge from industrial chemical factories
Dichloromethane (ppb)	03/06/18	N	ND	N/A	0	5	Discharge from pharmaceutical and chemical factories
1,2-Dichloropropane (ppb)	03/06/18	N	ND	N/A	0	5	Discharge from industrial chemical factories
Ethylbenzene (ppb)	03/06/18	N	ND	N/A	700	700	Discharge from petroleum refineries
Styrene (ppb)	03/06/18	N	ND	N/A	100	100	Discharge from rubber and plastic factories; leaching from landfills
Tetrachloroethylene (ppb)	03/06/18	N	ND	N/A	0	5	Discharge from factories and dry cleaners
1,2,4 –Trichlorobenzene (ppb)	03/06/18	N	ND	N/A	70	70	Discharge from textile-finishing factories
1,1,1 – Trichloroethane (ppb)	03/06/18	N	ND	N/A	200	200	Discharge from metal degreasing sites and other factories
1,1,2 –Trichloroethane (ppb)	03/06/18	N	ND	N/A	3	5	Discharge from industrial chemical factories
Trichloroethylene (ppb)	03/06/18	N	ND	N/A	0	5	Discharge from metal degreasing sites and other factories
Toluene (ppm)	03/06/18	N	ND	N/A	1	1	Discharge from petroleum factories
Vinyl Chloride (ppb)	03/06/18	N	ND	N/A	0	2	Leaching from PVC piping; discharge from plastics factories
Xylenes (Total) (ppm)	03/06/18	N	ND	N/A	10	10	Discharge from petroleum factories; discharge from chemical factories

2013 Well#1
Radiological Contaminants

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water	Range Low High	MCLG	MCL	Likely Source of Contamination
Alpha emitters (pCi/L)	08/14/13	N	ND	N/A	0	15	Erosion of natural deposits
Beta/photon emitters (pCi/L)	08/14/13	N	N/A	N/A	0	50 *	Decay of natural and man-made deposits
Combined radium (pCi/L)	08/14/13	N	.7 pCi/L	N/A	0	5	Erosion of natural deposits
Uranium (pCi/L)	08/14/13	N	ND	N/A	0	20.1	Erosion of natural deposits

* Note: The MCL for beta/photon emitters is 4 mrem/year. EPA considers 50 pCi/L to be the level of concern for beta particles.

As you can see by the table, our system had no violations. We're proud that your drinking water meets or exceeds all Federal and State requirements. We have learned through our monitoring and testing that some constituents have been detected. The EPA has determined that your water IS SAFE at these levels.

All sources of drinking water are subject to potential contamination by substances that are naturally occurring or man made. These substances can be microbes, inorganic or organic chemicals and radioactive substances. 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.

MCL's 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.
Total Coliform: The Total Coliform Rule requires water systems to meet a stricter limit for coliform bacteria. Coliform bacteria are usually harmless, but their presence in water can be an indication of disease-causing bacteria. When coliform bacteria are found, special follow-up tests are done to determine if harmful bacteria are present in the water supply. If this limit is exceeded, the water supplier must notify the public by newspaper, television or radio. To comply with the stricter regulation, we have increased the average amount of chlorine in the distribution system.
Nitrates: As a precaution we always notify physicians and health care providers in this area if there is ever a higher than normal level of nitrates in the water supply.

In our continuing efforts to maintain a safe and dependable water supply it may be necessary to make improvements in your water system. The costs of these improvements may be reflected in the rate structure. Rate adjustments may be necessary in order to address these improvements.

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).
Clarke Utilities works around the clock to provide top quality water to every tap. We ask that all our customers help us protect our water sources, which are the heart of our community, our way of life and our children's future.

"Providing Quality Water Service, while protecting our Most Valuable Natural Resource"