



Water District No. 1 of Johnson County



WATER QUALITY REPORT

2016

WHAT IS THIS REPORT?

This report is to let you - our customers - know that water produced by WaterOne meets or exceeds all standards for safe, high-quality water.

WaterOne is required by drinking water regulations to make this water quality report available to customers. It's like a nutritional label for the substance you probably consume the most - water!

This data and information can be complex, so we've tried to make it readable while also including the required language. Congress, the EPA, and WaterOne want to be sure that consumers know what's in their drinking water.

WHAT DO WE TEST FOR?

WaterOne tests for over 100 regulated and unregulated contaminants in drinking water. Our state-of-the art water quality lab utilizes multiple monitoring systems, and our water is continuously checked every single day of the year to ensure the finest water reaches our customers' taps.

All data in this report is from 2015. **If a known health-related contaminant is not listed in this report, WaterOne did not detect it in the water.**

HOW MUCH WATER DOES WATERONE PRODUCE?

In 2015, WaterOne treated approximately 9.6 billion gallons of Kansas River water, 0.86 billion gallons of Missouri River water, 8.4 billion gallons from its Wolcott Collector Well (adjacent to the Missouri River), and 1.1 billion gallons of water from collector wells south of the Kansas River.

WaterOne customers consume between 30-150 million gallons per day (MGD), depending on the time of year. The most water consumed in one day was 157.5 MGD, set on July 23, 2012.

SETTING THE STANDARD FOR UTILITY EXCELLENCE

Winner of the "Best Tasting Water In Kansas," WaterOne is certified as a Platinum Level utility for excellence in utility management by the Association of Metropolitan Water Agencies. We are proud to deliver great-tasting, high-quality water to your tap.



WATER AT A GLANCE

ALL DRINKING WATER, including bottled water, can reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk.

In order to ensure that tap water is safe to drink, the EPA has regulations that limit the amount of certain contaminants in water provided by public water systems and require monitoring for these contaminants.

ENSURING SAFE, RELIABLE WATER

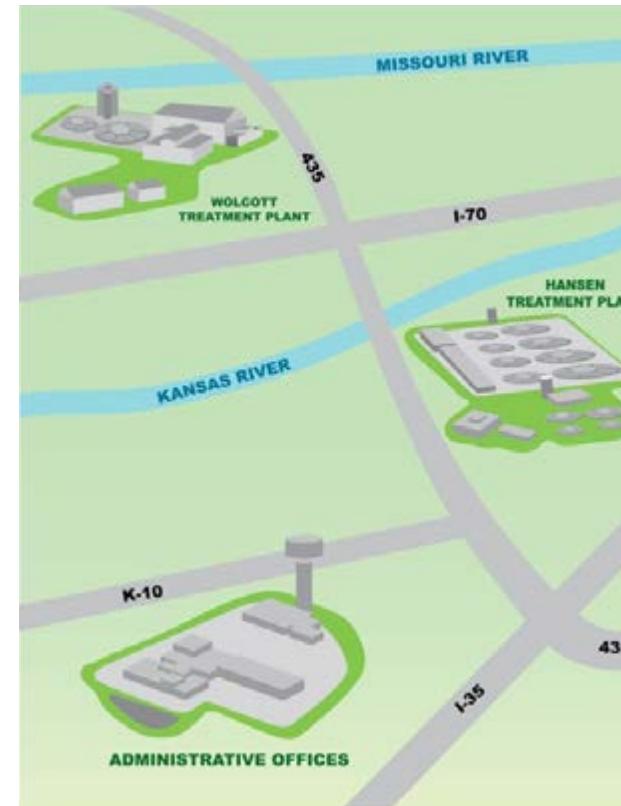
Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, persons with HIV/AIDS or other immune system disorders, some elderly people, and infants can be particularly at risk from infections.

These people should seek advice about drinking water from their health care providers. Guidelines from the Environmental Protection Agency (EPA) and Centers for Disease Control and Prevention (CDC) on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline at **800/426-4791**.

MORE ABOUT WATERONE

WHERE DOES YOUR WATER COME FROM?

WaterOne's drinking water comes from the Kansas and Missouri Rivers. With multiple water sources, we have less vulnerability during drought and an ample supply of fresh water year-round.



CUSTOMER SATISFACTION



We're proud to carry an average overall customer satisfaction score above 90%. Our customers consistently give us high marks for water quality, reliability, customer service, and the responsiveness of our friendly, professional staff.

GREAT VALUE

WaterOne customers enjoy some of the lowest rates for water service in the metro area.

Did you know?

A PENNY buys you 2 gallons of WaterOne.



Based on 2015 rates for average residential customers.

More information about contaminants and potential health effects can be found at the Environmental Protection Agency's Safe Drinking Water Hotline at **800/426-4791** or at www.epa.gov/safewater.

Cryptosporidium

Cryptosporidium is a microbial pathogen found in surface water throughout the U.S. Although filtration removes Cryptosporidium, the most commonly-used filtration methods cannot guarantee 100% removal. Our monitoring indicates the presence of these organisms in our source water, although no instances of cryptosporidium have been detected in finished water. Current test methods do not allow us to determine if the organisms in the source water are dead or if they are capable of causing disease.

Ingestion of Cryptosporidium may cause Cryptosporidiosis, an abdominal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immuno-compromised people, infants and small children, and the elderly are at greater risk of developing life-threatening illness. We encourage immuno-compromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. Cryptosporidium must be ingested to cause the disease, and it may be spread through means other than drinking water.

Lead

We are passionate about producing great water and we are committed to quality control above and beyond the testing required by state and federal regulation. Given recent reports of water quality issues in other communities, we are grateful to be able to affirm for our customers that they receive high-quality, reliable WaterOne water each day.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with private service lines and home plumbing. WaterOne is responsible for providing high quality drinking water, but cannot control the variety of materials used in customers' plumbing components. We have no indication that lead is a concern in this service area; however, if water has been sitting in pipes for several hours, those who are worried about lead can reduce their potential for lead exposure by flushing their taps for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your drinking water, testing methods and steps you can take to minimize exposure are available from the Safe Drinking Water Hotline or at www.epa.gov/safewater/lead.

Additional information is available at www.waterone.org/Lead.

WATER QUALITY DATA

TERMS, ABBREVIATIONS & SYMBOLS

Secondary Maximum Contaminant Level (SMCL): Secondary MCLs for various water quality indicators are established to protect public welfare.

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

µmhos/cm: Or micromhos/cm; a measure of the ability of a solution to carry an electric current.

Sources of Drinking Water

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, and ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants in drinking water sources may include:

- **Microbial contaminants**, such as viruses and bacteria, which may come from wildlife or septic systems.
- **Inorganic contaminants**, such as salts and metals, which can occur naturally or result from urban storm water runoff, industrial or domestic wastewater discharges or farming.
- **Pesticides and herbicides**, which may come from a variety of sources such as farming, urban storm water runoff and home or business use.
- **Organic chemical contaminants**, including synthetic and volatile organic chemicals, which are byproducts of industrial processes, and can also come from gas stations, urban storm water runoff and septic systems.
- **Radioactive contaminants**, which can occur naturally.

Some of the terms used in this report are unique to the water industry and might not be familiar to all customers. Explanations are provided below.

Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Maximum Contaminant Level (MCL): The highest level of a contaminant 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 a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Maximum Residual Disinfectant Level Goal (MRDLG): The 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 contaminants.

Not Detected (ND): Not detected in the water.

Nephelometric Turbidity Units (NTU): A measure of the clarity of water. Picocuries per liter (pCi/L): A measure of radioactivity.

Parts per million (ppm): Or milligrams per liter.

Parts per billion (ppb): Or micrograms per liter.

Parts per trillion (ppt): Or nanograms per liter.

pH Units: A measure of acidity or basicity of the water.

Saturation Index (S.I.): Measure of corrosivity.

WATER QUALITY: WHAT IS IN THE WATER?

REGULATED PARAMETERS

Parameter	MCL	MCLG	WaterOne Result	WaterOne Range	Sample Data	Met Standard	Source
Inorganic Contaminants							
Arsenic	10 ppb	0 ppb	1.6 ppb	ND (1.0) ppb - 1.6 ppb	Quarterly	✓	Erosion of natural deposits; run-off from orchards, glass and electronics production waste.
Barium	2 ppm	2 ppm	0.04 ppm	0.02 ppm - 0.04 ppm	Quarterly	✓	Discharge of drilling wastes; discharge from metal refineries, erosion of natural deposits.
Chromium	100 ppb	100 ppb	2.6 ppb	2.1 ppb - 2.6 ppb	Quarterly	✓	Discharge from steel and pulp mills, erosion of natural deposits.
Copper	AL=1.3 ppm	1.3 ppm	0.019 ppm ¹	0 samples exceeding; 2015	Annually	✓	Corrosion of household plumbing, erosion of natural deposits; leaching from wood preservatives.
Fluoride	4 ppm	4 ppm	0.76 ppm	0.19 ppm - 0.76 ppm	Monthly	✓	Erosion of natural deposits; water additive (oral health); discharge - fertilizer and aluminum factories.
Lead	AL=15 ppb	0 ppb	4.3 ppb ¹	1 sample exceeding; 2015	Annually	✓	Corrosion of household plumbing systems; erosion of natural deposits.
Nitrate	10 ppm	10 ppm	1.8 ppm	0.24 ppm - 1.8 ppm	Annually	✓	Fertilizer run-off; leaching from septic tanks, sewage; erosion of natural deposits.
Selenium	50 ppb	50 ppb	2.1 ppb	1.0 ppb - 2.7 ppb	Quarterly	✓	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines.
Synthetic Organic Contaminants							
Atrazine	3 ppb	3 ppb	ND (0.2) ppb	ND (0.2) ppb - 0.5 ppb	Monthly	✓	Run-off from herbicide used on row crops.
Disinfectants/Disinfection By-Products							
Chloramines	MRDL=4 ppm	MRDLG=4 ppm	2.9 ppm ²	1.3 ppm - 3.9 ppm	Daily	✓	Water additive used to control microbes.
Chlorine Dioxide	MRDL=800 ppb	MRDL=800 ppb	105 ppb	ND (50) ppb - 105 ppb	Monthly	✓	Water additive used to control microbes.
Chlorite	1 ppm	0.8 ppm	0.50 ppm	0.14 ppm - 0.71 ppm	Monthly	✓	By-product of drinking water disinfection.
Haloacetic Acids (HAA)	60 ppb	n/a	22 ppb	7.6 ppb - 37.1 ppb	Monthly	✓	By-product of drinking water disinfection.
Total Trihalomethanes	80 ppb	n/a	24 ppb	8.9 ppb - 41.7 ppb	Monthly	✓	By-product of drinking water disinfection.
Microbiological Contaminants							
Total Coliforms	Presence in ≤ 5% of monthly samples	0(<1/100 mls)	3.1%	0 - 3.1% positive samples/month	Daily	✓	Naturally present in the environment.
Total Organic Carbon	Removal ratio ³ (1.0 required)	TT	1.9	1.54 - 2.52 RAA Removal Ratio	Monthly	✓	Naturally present in the environment.
Turbidity	TT NTU	TT NTU	0.25 NTU	100% lowest monthly % meeting 0.3 NTU	Daily	✓	Soil run-off.
Radiological Contaminants							
Beta Particle & Photon Radioactivity	50 pCi/L	0 pCi/L	4.1 pCi/L	ND (3.0) pCi/L - 4.1 pCi/L ⁴	Annually	✓	Decay of natural and man-made deposits.
Radium - 226	5 pCi/L	0 pCi/L	0.45 pCi/L	ND (0.1) pCi/L - 1.4 pCi/L	Annually	✓	Erosion of natural deposits.

1. Data from 2015 annual monitoring, though not required by a "reduced monitoring schedule" as a result of low levels of lead and copper. This value is the 90th percentile result. The 95th percentile value for lead is 5.2 ppb; the 95th percentile value for copper is 0.022 ppm.
2. WaterOne is required to maintain a minimum residual of 1.0 ppm throughout its distribution system by the Kansas Dept. of Health & Environment as a means to provide some measure of protection against microbiological contamination. Maximum residual compliance is based on monthly averages. WaterOne's highest value, 3.9 ppm, was an instantaneous reading.
3. Monthly TOC removal ratio is calculated as the ratio between the actual TOC removal achieved and the TOC rule removal requirements.
4. This is the highest turbidity measurement for 2014. Compliance is based on 95% of monthly samples being less than 0.3 NTU. The average turbidity was less than 0.10 NTU. Turbidity is measured as an indicator of the effectiveness of the water treatment process. The lower the turbidity, the more effective the treatment process.
5. EPA considers 50 pCi/L to be the level of concern for beta particles.

SOURCE WATER MONITORING

WaterOne detected the presence of the following in source water. This data does not apply to finished water.

Parameter	MCL	MCLG	WaterOne Result	WaterOne Range	Sample Data
Cryptosporidium	TT	0 TT	1 per 100 Liter	ND (1) - 1 per 100 Liter	Monthly

UNREGULATED PARAMETERS

WaterOne conducted testing according to the EPA guidelines for the following Unregulated Parameters.

Parameter	Federal Level Recommended	Goal	WaterOne Results (Ave.)	Range
Alkalinity, Total*	300 ppm	> 40 ppm	64 ppm	47 ppm - 92 ppm
Bromodichloromethane	n/a	0 ppb	2.6 ppb	0.9 ppb - 4.8 ppb
Calcium	n/a	n/a	37 ppm	21 ppm - 48 ppm
Carbon, Total Organic (TOC)	10,000 ppm	n/a	2.9 ppm	1.8 ppm - 6.0 ppm
Chlorate	n/a	n/a	184 ppb	99 ppb - 484 ppb
Chlorodibromomethane	n/a	60 ppb	ND (1.0) ppb	ND (1.0) - 2.5 ppb
Chloroform	n/a	70 ppb	11 ppb	3.2 ppb - 20.2 ppb
Conductivity	1,500 µmhos/cm	n/a	513 µmhos/cm	259 - 716 µmhos/cm
Dibromoacetic acid	n/a ppb	n/a ppb	ND (1.0) ppb	ND (1.0) ppb - 1.2 ppb
Dichloroacetic acid**	n/a	0 ppm	15 ppb	6.5 ppb - 29 ppb
Hardness, Calcium*	200 ppm	> 60 ppm	92 ppm	52 ppm - 121 ppm
Hardness, Magnesium*	150 ppm	50 ppm	38 ppm	2 ppm - 86 ppm
Hardness, Total*	400 ppm	200 ppm	130 ppm	98 ppm - 165 ppm
Magnesium	150 ppm	50 ppm	9 ppm	0.5 ppm - 21 ppm
Manganese	50 ppb	50 ppb	ND (1.0) ppb	ND (1.0) ppb - 1.4 ppb
Monochloroacetic acid	n/a ppb	70 ppb	2 ppb	ND (1.0) ppb - 4.3 ppb
Ortho-Phosphate	n/a ppm	n/a ppm	0.05 ppm	ND (0.05) - 1.19 ppm
pH	8.5 pH units	> 9.0 pH units	9.5 pH units	9.2 - 10.0 pH units
Phosphorus, Total	5 ppm	n/a	0.10 ppm	ND (0.05) - 0.16 ppm
Potassium	100 ppm	20 ppm	7.2 ppm	5.9 ppm - 8.7 ppm
Radon	n/a ppm	n/a ppm	18 ppm	ND (13) - 45 pCi/L
Silica	50 ppm	n/a	9.2 ppm	2.1 ppm - 13 ppm
Sodium	100 ppm	20 ppm	50 ppm	23 ppm - 71 ppm
Trichloroacetic acid	n/a	20 ppb	2.1 ppb	1.1 ppb - 4.0 ppb

* As CaCO₃

** The MCLG for Dichloroacetic acid is listed as zero (in ppm) in the Regulatory Statutes.

Radon: a courtesy message from the EPA

Radon is a radioactive gas that you cannot see, taste, or smell. It is found throughout the U.S. Radon can move up through the ground and into a home through cracks and holes in the foundation. Radon can build up to high levels in all types of homes. Radon can also get into indoor air when released from tap water from showering, washing dishes, and other household activities. Compared to radon entering the home through soil, radon entering the home through tap water will in most cases be a small source of radon in indoor air. Radon is a known human carcinogen. Breathing air containing radon can lead to lung cancer. Drinking water containing radon may also cause increased risk of stomach cancer. If you are concerned about radon in your home, test the air in your home. Testing is inexpensive and easy. (You should pursue radon removal for your home if the level of radon in your air is 4 picocuries per liter of air (pCi/L) or higher. There are simple ways to fix a radon problem that are not too costly. For additional information, call your state radon program or call EPA's Radon Hotline (800-SOS-RADON).

CONSTITUENTS HAVING SECONDARY MCL'S

Monitored in the interest of consumers and to assist regulators in developing future regulations.

Parameter	Federal Level Recommended (SMCL)	WaterOne Results (Ave.)	Range (Low - High)
Aluminum	200 ppb	13 ppb	ND(10) ppb - 18 ppb
Chloride	250 ppm	52 ppm	20 ppm - 100 ppm
Corrosivity*	0 S.I.	1.3 S.I.	0.7 S.I. - 2.0 S.I.
Fluoride	2.0 ppm	0.57 ppm	0.19 ppm - 0.76 ppm
Odor-Threshold (T.O.N.)	3 T.O.N.	1 T.O.N.	1 T.O.N. - 5 T.O.N.
Sulfate	250 ppm	102 ppm	38 ppm - 193 ppm
Total Dissolved Solids (TDS)	500 ppm	257 ppm	130 ppm - 358 ppm
Zinc	5000 ppb	ND(5) ppb	ND (5) ppb - 6 ppb

*Positive values indicate tendency of water to be non-corrosive. Non-corrosive water reduces the likelihood of lead or copper leaching into the water from plumbing.



**UNREGULATED CONTAMINANT MONITORING RULES

Third cycle (UCMR3) [Sampling period: July - December 2013]

Parameter	Federal Level Recommended	Goal	WaterOne Results (Ave.)	Range
1,1 - Dichloroethane	n/a ppt	n/a ppt	36 ppt	ND (30) - 36 ppt
Chlorate	n/a ppb	n/a ppb	178 ppb	140 ppb - 200 ppb
Chromium, Hexavalent	n/a ppb	n/a ppb	1.8 ppb	1.4 ppb - 2.0 ppb
Chromium, Total	n/a ppb	n/a ppb	1.8 ppb	1.3 ppb - 2.4 ppb
Molybdenum	n/a ppb	n/a ppb	4.2 ppb	3.6 ppb - 5.0 ppb
Strontium	n/a ppb	n/a ppb	254 ppb	210 ppb - 340 ppb
Vanadium	n/a ppb	n/a ppb	3.1 ppb	1.5 ppb - 5.6 ppb

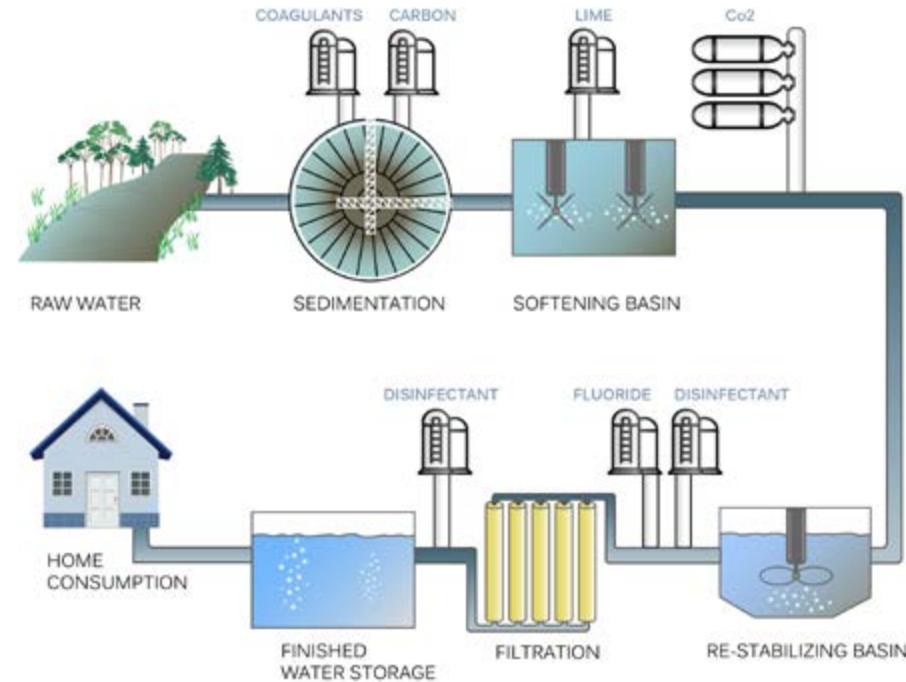
Third cycle (UCMR3) [Sampling period: January - June 2014]

Parameter	Federal Level Recommended	Goal	WaterOne Results (Ave.)	Range
1,1 - Dichloroethane	n/a ppt	n/a ppt	8 ppt	ND (30) - 41 ppt
Chlorate	n/a ppb	n/a ppb	109 ppb	74 ppb - 170 ppb
Chromium, Hexavalent	n/a ppb	n/a ppb	2.0 ppb	1.5 ppb - 2.4 ppb
Chromium, Total	n/a ppb	n/a ppb	1.9 ppb	1.6 ppb - 2.4 ppb
Molybdenum	n/a ppb	n/a ppb	3.5 ppb	2.6 ppb - 4.3 ppb
Strontium	n/a ppb	n/a ppb	261 ppb	200 ppb - 380 ppb
Vanadium	n/a ppb	n/a ppb	2.3 ppb	1.4 ppb - 3.7 ppb

**Unregulated contaminant monitoring helps EPA determine where certain contaminants occur and whether the Agency should consider regulating those contaminants in the future.



OUR TREATMENT PROCESS



Raw water is drawn from our fresh water sources - the Kansas and Missouri Rivers and adjacent collector wells - and collects in our pre-sedimentation holding basins. Water then goes through the following stages as part of the treatment process.

- **Coagulation/Flocculation** - Water is transferred to mixing basins at our treatment plants where we add alum and polymer. This process causes small organic particles to clump together, forming larger particles (flocculation).
- **Sedimentation** - Over time, the now-larger particles become heavy, settle to the bottom, and get strained out. Depending on the profile of the raw water at the time, we may add lime or soda ash to counteract calcium and magnesium, softening the water. Water is then transferred to a second clarifier where we add carbon dioxide to balance pH and treat it again to flocculate and strain sediment clumps.
- **Filtration** - Water filters through layers of fine, granular materials—anthracite coal and sand filters. As smaller, suspended particles are removed, cloudiness diminishes and clear water emerges.
- **Disinfection** - To protect against bacteria and other microbes, disinfectant is added before the water flows into the distribution system - clean, fresh, and delicious. Fluoride occurs naturally in our water but is also supplemented in the treated water.

All data is for January 1 to December 31, 2015, except as noted.

WATER IS LIFE

THE TRADITION CONTINUES

Water touches everything we care about. WaterOne is an independent public utility. We've been proudly serving the Johnson County, Kansas area since 1957. Every day, approximately 425,000 customers rely on WaterOne to provide fresh, clean water on demand. It's a responsibility we deliver on.

HOW CAN I GET WATER ALERTS?

Sign-up for water alerts at www.NotifyJoCo.org. Customize your contact info, alert preferences, and tag your locations - home, work, school, etc. You'll automatically get a phone, text, or email if we need to take water down for maintenance or emergency repair as well as important water quality or water use alerts.

NotifyJoCo is made possible by a partnership of local governments and public utilities in Johnson County. Learn more at www.NotifyJoCo.org.

GOVERNING BOARD

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Water District No. 1 of Johnson County

GOING GREEN FOR A BLUE PLANET

Stewardship is a big deal at WaterOne - whether it's using our rate dollars wisely, taking care of our infrastructure, or being a friend to the environment.

This report is available 24/7 at www.waterone.org/2016Report. To request a paper copy, contact Customer Service at 913/895-1800.

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