

# **City of Greenwood**

## **2013 Annual Drinking Water Quality Report**

We're pleased to present to you this year's Annual Drinking Water Quality Report. This report is designed to inform you about the quality water and services we deliver to you every day. Our goal is to provide you with a safe and dependable supply of drinking water, and we want you to understand, and be involved in, the efforts we make to continually improve the water treatment process and protect our water resources.

### ***Where Does Our Drinking Water Come From?***

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. Our source is surface water from Greenwood City Lake. We also purchase treated surface water from James Fork Regional Water District whose source is James Fork Lake.

### ***How Safe Is The Source Of Our Drinking Water?***

The Arkansas Department of Health has completed Source Water Vulnerability Assessments for Greenwood Water Department and James Fork Regional Water District. The assessments summarize the potential for contamination of our sources of drinking water and can be used as a basis for developing source water protection plans. Based on the various criteria of the assessments, our water sources have been determined to have a medium susceptibility to contamination. You may request summaries of the assessments from our office.

### ***What Contaminants Can Be In Our Drinking Water?***

As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include: Microbial contaminants such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife; Inorganic contaminants such as salts and metals, which can be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming; Pesticides and herbicides which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses; Organic chemical contaminants including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems; Radioactive contaminants which can be naturally occurring or be the result of oil and gas production and mining activities.

In order to assure tap water is safe to drink, EPA has regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

### ***Am I at Risk?***

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. However, 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 small amounts of contamination. These people should seek advice about drinking water from their health care providers. 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. In addition, EPA/CDC guidelines on appropriate means to lessen the risk of infection by microbiological contaminants are also available from the Safe Drinking Water Hotline.

### ***Lead and Drinking Water***

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 service lines and home plumbing. We are responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

### ***How Can I Learn More About Our Drinking Water?***

If you have any questions about this report or concerning your water utility, please contact Director Greg Cross at 479-322-0381. We want our valued customers to be informed about their water utility. If you want to learn more, please attend any of our regularly scheduled meetings. They are held on the first Monday of each month at 7:00 PM at Greenwood City Hall, 30 Bell Road.

## TEST RESULTS

We and James Fork Regional Water District routinely monitor for constituents in your drinking water according to Federal and State laws. The test results table shows the results of our monitoring for the period of January 1<sup>st</sup> to December 31<sup>st</sup>, 2013. In the table you might find terms and abbreviations you are not 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.

**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)** - unenforceable public health goal; 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 a 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.

**NA** - not applicable

**Nephelometric Turbidity Unit (NTU)** - a unit of measurement for the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

**Parts per billion (ppb)** - a unit of measurement for detected levels of contaminants in drinking water. One part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

**Parts per million (ppm)** - a unit of measurement for detected levels of contaminants in drinking water. One part per million corresponds to one minute in two years or a single penny in \$10,000.

MICROBIOLOGICAL CONTAMINANTS						
Contaminant	Violation Y/N	Level Detected	Unit	MCLG (Public Health Goal)	MCL (Allowable Level)	Major Sources in Drinking Water
Total Coliform Bacteria (City of Greenwood)	N	None	Present	0	1 positive sample per month	Naturally present in the environment
TURBIDITY						
Contaminant	Violation Y/N	Level Detected	Unit	MCLG (Public Health Goal)	MCL (Allowable Level)	Major Sources in Drinking Water
Turbidity (City of Greenwood)	N	Highest yearly sample result: 0.23 Lowest monthly % of samples meeting the turbidity limit: 100%	NTU	NA	Any measurement in excess of 1 NTU constitutes a violation	Soil runoff
Turbidity (James Fork Regional)	N	Highest yearly sample result: 0.35 Lowest monthly % of samples meeting the turbidity limit: 100%			A value less than 95% of samples meeting the limit of 0.3 NTU, constitutes a violation	
♦ Turbidity is a measurement of the cloudiness of water. James Fork Regional and Greenwood monitor it because it is a good indicator of the effectiveness of their filtration systems.						
INORGANIC CONTAMINANTS						
Contaminant	Violation Y/N	Level Detected	Unit	MCLG (Public Health Goal)	MCL (Allowable Level)	Major Sources in Drinking Water
Nitrate [as Nitrogen] (City of Greenwood)	N	0.33	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Nitrate [as Nitrogen] (James Fork Regional)	N	0.16	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Fluoride (James Fork Regional)	N	Average: 0.86 Range: 0.82 - 0.91	ppm	4	4	Erosion of natural deposits; water additive which promotes strong teeth
LEAD AND COPPER TAP MONITORING						
Contaminant	Number of Sites over Action Level	90 <sup>th</sup> Percentile Result	Unit	Action Level	Major Sources in Drinking Water	
Lead (City of Greenwood)	0	<0.003	ppm	0.015	Corrosion from household plumbing systems; erosion of natural deposits	
Copper (City of Greenwood)	0	<0.20	ppm	1.3		
♦ We are on a reduced monitoring schedule and required to sample once every three years for lead and copper at the customers' taps. The results above are from our last monitoring period in 2013. Our next required monitoring period is in 2016.						
TOTAL ORGANIC CARBON						
♦ The percentage of Total Organic Carbon (TOC) removal was routinely monitored by James Fork Regional and Greenwood Waterworks in 2013 and all TOC removal requirements set by USEPA were met. TOC has no health effects. However, Total Organic Carbon provides a medium for the formation of disinfection by-products. These by-products include trihalomethanes (THMs) and haloacetic acids (HAAs).						

REGULATED DISINFECTANTS						
Disinfectant	Violation Y/N	Level Detected	Unit	MRDLG (Public Health Goal)	MRDL (Allowable Level)	Major Sources in Drinking Water
Chlorine (City of Greenwood)	N	Average: 0.56 Range: 0.14 – 1.01	ppm	4	4	Water additive used to control microbes

**BY-PRODUCTS OF DRINKING WATER DISINFECTION**

Contaminant	Violation Y/N	Level Detected	Unit	MCLG (Public Health Goal)	MCL (Allowable Level)
HAA5 [Haloacetic Acids] (City of Greenwood)	N	Stage 1 Compliance Highest Running 12 Month Average: 24 Range: 2.4 – 38.7	ppb	0	60
	NA	Stage 2 Investigative Highest Running 12 Month Average: 23.5 Range: 8.3 – 37.8			
TTHM [Total Trihalomethanes] (City of Greenwood)	Y	Stage 1 Compliance Highest Running 12 Month Average: <b>82</b> (site YD015) Range: 53 – <b>109</b>	ppb	NA	<b>80</b>
	NA	Stage 2 Investigative Highest Running 12 Month Average: <b>84.8</b> (site YC011) Range: 64.3 – <b>111</b>			
Chlorite (City of Greenwood)	N	Highest Monthly Average: 501 Range: 20 – 796	ppb	800	1000

- ◆ *The levels detected for HAA5 & TTHM are from investigative (or preliminary) monitoring performed under the upcoming Stage 2 Disinfectants and Disinfection Byproducts Rule (Stage 2 DBPR). The purpose of the Stage 2 DBPR is to increase public health protection by having us meet the HHA5 and TTHM allowable levels (MCLs) as an annual average at specific locations and not just averaging the entire system. This is a tougher standard and when the Rule goes into effect some localities will have trouble meeting it. To assist us in meeting these stricter requirements we are taking investigative samples to work on reducing HAA5s and TTHMs throughout the distribution system before new Rule goes into effect. **MCL violations are not applicable to investigative monitoring.***
- ◆ **Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.**

**UNREGULATED CONTAMINANTS**

Contaminant	Level Detected	Unit	MCLG (Public Health Goal)	Major Sources in Drinking Water
Chloroform (City of Greenwood)	Average: 22.72 Range: 5.48 - 39	ppb	70	By-products of drinking water disinfection
Chloroform (James Fork Regional)	15			
Bromodichloromethane (City of Greenwood)	Average: 5.37 Range: 1.65 – 7.57	ppb	0	
Bromodichloromethane (James Fork Regional)	4.01			
Dibromochloromethane (City of Greenwood)	Average: 0.92 Range: 0 – 1.71	ppb	60	
Dibromochloromethane (James Fork Regional)	0.92			
Strontium (UCMR3) (James Fork Regional)	Average: 27.15 Range: 21.9 – 32.2	ppb	Undetermined	Naturally-occurring element; historically, commercial use of strontium has been in the faceplate glass of cathode-ray tube televisions to block x-ray emissions
Chlorate (UCMR3) (James Fork Regional)	Average: 54.35 Range: 50 – 58.7	ppb	Undetermined	Agricultural defoliant or desiccant; disinfection byproduct; and used in production of chlorine dioxide
Vanadium (UCMR3) (James Fork Regional)	Average: 0.692 Range: 0.57 – 0.90	ppb	Undetermined	Naturally-occurring elemental metal; used as vanadium pentoxide which is a chemical intermediate and a catalyst
Chromium (UCMR3) (James Fork Regional)	Average: 0.925 Range: 0.67 – 1.3	ppb	Undetermined	Naturally-occurring element; used in making steel and other alloys; chromium-3 or -6 forms are used for chrome plating, dyes and pigments, leather tanning, and wood preservation
Chromium-6 (UCMR3) (James Fork Regional)	Average: 0.884 Range: 0.640 – 1.26	ppb	Undetermined	

- ◆ Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted. MCLs (Maximum Contaminant Levels) and MCLGs (Maximum Contaminant Level Goals) have not been established for all unregulated contaminants.

**VIOLATIONS – City of Greenwood**

TYPE: Disinfection by-Products	FROM:	TO:	CORRECTIVE ACTION:
The running annual average of Total Trihalomethanes exceeded 80 ppb 12 Month Average: <b>82</b> winter quarter 2013	10/1/2013	12/31/2013)	Reviewing disinfection procedures and working on a solution to lower the levels of disinfection by-products in the distribution system