Carthage Water & Electric Plant

2015 WATER Quality Report

#MO5010142

Customer Confidence Report

This report is intended to provide you with important information about your drinking water and the efforts made to provide safe drinking water.

Safe & Reliable
source of water

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and groundwater 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.

100% of our water is pumped from a system of 13 deep wells in the Carthage area. Carthage Water & Electric Plant (CW&EP) supplies more than 5,500 customers with water in the Carthage community.

Our water comes from the following source(s):

Source Name	Type
WELL # 1, 5, 6, 7, 8, 10,11,12,13,14,15,16,17,18	GROUND WATER
WELL # 9 - USED AS MONITORING WELL ONLY	GROUND WATER

Source Water Assessment

The Department of Natural Resources conducted a source water assessment to determine the susceptibility of our water source to potential contaminants. This process involved the establishment of source water area delineations for each well or surface water intake and then a contaminant inventory was performed within those delineated areas to assess potential threats to each source. Assessment maps and summary infor-mation sheets are available on the internet at http://maproom.missouri.edu/swipmaps/pwssid.htm. To access the maps for your water system you will need the State-assigned identification code, which is printed at the top of this report. The Source Water Inventory Project maps and information sheets provide a foundation upon which a more comprehensive source water protection plan can be developed.

Substances That Maybe Found in Drinking Water

Drinking water, including bottled water, may reasonably be expected to con-tain at least small amounts of some contaminants. The presence of contami-nants does not necessarily indicate that 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 (800-426-4791).

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 byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.

In order to ensure that tap water is safe to drink, the Department of Natural Resources prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Department of Health regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Are We Meeting Other Rules That Govern Our Operations?

The Missouri Department of Natural Resources regulates our water system and requires us to test our water on a regular basis to ensure its safety. Our system has been assigned the identification number MO5010142 for the purposes of tracking our test results. Last year, we tested for a variety of contaminants. The detectable results of these tests are on the following pages of this report. Any violations of state requirements or standards will be further explained later in this report.

MISSOURI DEPARTMENT OF NATURAL RESOURCES

How Can I Be Actively Involved?

If you would like to observe the decision-making process that affect drinking water quality or if you have any further questions about your drinking water report, please **call us at 417-237-7300** to inquire about scheduled meetings or contact persons.

Special Precautions

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such

as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, peo-ple 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 appropri-ate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

Ensuring Our Water Quality

Carthage Water and Electric Plant (CW&EP) employees perform many roles to ensure the water quality for the City of Carthage. In 2015, Water Treatment and Distribution employees attended over 400 hours of training in water and wastewater related topics.

In 2015 we completed implementation of our Geographical Information System (GIS) mapping our entire water and wastewater infrastructure along with utilizing mobile technology in our trucks. Some of the benefits from this system are:

- **Improved efficiency in locating our assets.**
- **Asset management capabilities.**
- **Better organization of callout reports.**
- **Enhanced communication with Engineers and Contractors.**

Starting in October 2015 we performed our annual hydrant flushing which helps clean our system by flushing every distribution main in our system while allowing us to record flow and pressure data for every fire hydrant in our system. This is valuable information to ensure adequate fire protection.

CW&EP replaced 2,180′ of 2″ water main on Fulton, Morningside and James St. with 6″ main. This will improve flow and pressure for the residents in this area.

CARTHAGE will provide a printed hard copy of the CCR upon request. To request a copy of this report to be mailed, please call us at **417-237-7300.** The CCR can also be found on the internet at **www.dnr.mo.gov/ccr/MO5010142.pdf**.

The state has reduced monitoring requirements for certain contaminants to less often than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Records with a sample year more than one year old are still considered representative.

Regulated Contaminants

Regulated Contaminants	Collection Date	Highest Test Result	Range of Sampled Results (low-hight)	Unit	MCL	MCLG	Typical Source
ARSENIC	1/15/2013	1.49	0 - 1.49	ppb	10	0	Erosion of natural deposits
BARIUM	1/15/2013	0.0895	0.0712 - 0.0895	ppm	2	2	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
CHROMIUM	1/15/2013	1.61	0 - 1.61	ppb	100	100	Discharge from steel & pulp mills
FLUORIDE	1/15/2013	0.84	0.74 - 0.84	ppm	4	4	Natural deposits; Water additive which promotes strong health
NITRATE-NITRITE	1/20/2015	0.36	0 - 0.36	ppm	10	10	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits

Disinfection Byproducts	Sample Point	Monitoring Period	Highest LRAA	Range of Sampled Results (low-hight)	Unit	MCL	MCLG	Typical Source
(HAA5)	DBPDUAL-01	2015	0	0 - 0	ppb	60	0	Byproduct of drinking water disinfection
(HAA5)	DBPDUAL-04	2015	0	0 - 0	ppb	60	0	Byproduct of drinking water disinfection
TTHM	DBPDUAL-01	2015	0	0 - 0	ppb	80	0	Byproduct of drinking water disinfection
TTHM	DBPDUAL-04	2015	3	3.33 - 3.33	ppb	80	0	Byproduct of drinking water disinfection

Lead & Copper	Date	90th Percentile: 90% of your water levels	Range of Sampled Results (low-hight)	Unit	AL	Sites Over AL	Typical Source
COPPER	2013-2015	0.0663	0.00202 - 0.0961	ppm	1.3	0	Corrosion of household plumbing systems
LEAD	2013-2015	6.18	1.23 - 11	ppm	15	0	Corrosion of household plumbing systems

Radionuclides	Collection Date	Highest Value	Range of Sampled Results (low-hight)	Unit	MCL	MCLG	Typical Source
GROSS ALPHA PARTICLE ACTIVITY	8/22/2011	5	4.5 - 5	pCi/l			Erosion of natural deposits

Microbiological	Result	MCL	MCLG	Typical Source
COLIFORM (TCR)	In the month of August, 1 sample returned as positive	MCL: Systems that Collect Less Than 40 Samples per Month - No more than 1 positive monthly sample	0	Erosion of natural deposits

Ungregulated Contaminant Monitoring Rule (UCMR)	Collection Date of HV	Highest Value (HV)	Range of Sampled Result(s)	Unit
Chromium, HEX	3/18/2013	0.071	0 - 0.071	UG/L
MOLYBDENUM, TOTAL	9/23/2013	2.16	1.8 - 2.16	UG/L
STRONTIUM	9/23/2013	124	63.8 - 124	UG/L
VANADIUM, TOTAL	3/18/2013	0.53	0 - 0.53	UG/L

DEFINITIONS

POPULATION: 14502. This is the equivalent residential population served including non-bill paying customers.

MCLG: Maximum Contaminant Level 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.

MCL: Maximum Contaminant Level - 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.

SMCL: Secondary Maximum Contaminant Level, or the secondary standards that are non-enforceable guidelines for contaminants and may cause cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste, odor or color) in drinking water. EPA recommends these standards but does not require water systems to comply

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

TT: Treatment Technique, or a required process intended to reduce the level of a contaminant in drinking water.

90TH PERCENTILE: For lead & copper testing. Ten percent of test resultes are above this level and 90 percent are below this level.

RANGE OF RESULTS: Shows the lowest and highest levels found during a testing period, if only one sample was taken, then this number equals the Highest Value.

ppb: parts per billion or micrograms per liter.

ppm: parts per million or micrograms per liter.

RAA: Running Annual Average, or the average of sample analytical results for samples taken during the previous four calendar quarters.

LRAA: Locational Running Annual Average, or the locational average of sample analytical results for samples taken during the previous four calendar quarters.

TTHM: Total Trihalomethanes (chloroform, bromodichloromethane, dibromochloromethane, and bromoform) as a group.

HAA5: Haloacetic Acids (mono-, di- and tri-chloracetic acid, and mono- and di-bormoacetic acid) as a group.

NTU: Nephelometric Turbidity Unit, used to measure cloudiness in drinking water.

nd: not detectable at testing limits.

Violations & Health Effects Information

During the 2015 calendar year, we had the below noted violation(s) of drinking water regulations.

Compliance Period	Analyte	Type
No Violations Occured in the Calendar Year of 2015		

Additional Required Health Effects Language:
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.

Special Lead and Copper Notice:
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. CARTHAGE is 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 (800-426-4791)** or at **http://water.epa.gov/drink/info/lead/index.cfm.**

You can also find sample results for all contaminants from both past and present compliance monitoring online at the Missouri DNR Drinking Water Watch website **http://dnr.mo.gov/DWW/indexSearchDNR.jsp.** To find Lead and Copper results for your system, type your water system name in the box titled Water System Name and select Find Water Systems at the bottom of the page. The new screen will show you the Water System Name and Number, select and click the Water System Number. At the top of the next page, under the Help column find, Other Chemical Results by Analyte, select and click on it. Scroll down alphabetically to Lead and click the blue Analyte Code (1030). The Lead and Copper locations will be displayed under the heading Sample Comments. Scroll to find your location and click on the Sample No. for the results. If your house was selected by the water system and you assisted in taking a Lead and Copper sample from your home but cannot find your location in the list, please contact CARTHAGE for your results.

Optional Monitoring *(not required by EPA)*

Optional Contaminants

Monitoring is not required for optional contaminants.

Secondary Contaminants	Collection Date	Your Water System Highest Sampled Results	Range of Sampled Result(s)	Unit	SMCL
ALKALINITY, CACO3, STABILITY	1/15/2013	167	120 - 167	MG/L	
CALCIUM	1/15/2013	39.3	37.1 - 39.3	MG/L	
CHLORIDE	1/15/2013	26.8	7.22 - 26.8	MG/L	250
CHROMIUM, HEX	3/18/2013	0.071	0 - 0.071	UG/L	
HARDNESS, CARBONATE	1/15/2013	169	149 - 169	MG/L	
IRON	1/15/2013	0.619	0 - 0.619	MG/L	0.3
MAGNESIUM	1/15/2013	17.1	13.6 - 17.1	MG/L	
MANGANESE	1/15/2013	0.00436	0 - 0.00436	MG/L	0.05
MOLYBDENUM, TOTAL	9/23/2013	2.16	1.8 - 2.16	UG/L	
NICKEL	1/15/2013	0.00177	0.00131 - 0.00177	MG/L	0.1
PH	1/15/2013	7.87	7.54 - 7.87	PH	8.5
POTASSIUM	1/15/2013	1.97	1.17 - 1.97	MG/L	
SODIUM	1/15/2013	124	5.67 - 15.2	MG/L	
STRONTIUM	9/23/2013	29.3	63.8 - 124	MG/L	
STRONTIUM	9/23/2013	29.3	11.1 - 29.3	MG/L	250
TDS	1/15/2013	235	190 - 235	MG/L	500
VANADIUM, TOTAL	3/18/2013	0.53	0 - 0.53	UG/L	
ZINC	1/15/2013	0.00898	0.00668 - 0.00898	MG/L	5

Secondary standards are non-enforceable guidelines for contaminants that may cause cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste, odor or color) in drinking water. EPA recommends these standards but does not require water systems to comply.