WATER QUALITY REPORT

2022

Carthage Water & Electric Plant

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 (CWEP) supplies more than 5,500 customers with water in the Carthage community.

OUR WATER COMES FROM THE FOLLOWING SOURCE(S):

SOURCE NAME	TYPE
WELL # 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18	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 information sheets are available on the internet at **http://drinkingwater.missouri.edu/**. 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 MAY BE FOUND IN DRINKING WATER

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 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.

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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.

RADIOACTIVE CONTAMINANTS | which can be naturally-occurring or be the result of oil and gas production and mining activities.

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 ALL REGULATIONS?

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

CWEP Water Treatment Plant

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.

ENSURING OUR WATER QUALITY

CWEP employees perform many roles 24/7 to ensure the water quality for the City of Carthage. In 2022 we installed a new lining in approximately 6000ft of water supply mains. Crews also installed approximately 450ft of new water main connecting two dead end mains. This will help reduce future main breaks on the dead end lines.

In addition to these system improvements, CWEP completed our annual water main flushing program. During this process CWEP will isolate sections of water main by closing valves to force water down the selected section of main. This allows us to increase the velocity of water flowing through the pipe, thus cleaning the inner lining of our water mains and discharging out of a fire hydrant.

As of 2022, CWEP implemented a new AMI meter reading system. This system will allow CWEP to view

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water and electric usage in real time from the office. It assists CWEP in analyzing meter usage and communication with our customers regarding their services.

This past year, crews also began identifying lead service inventory in preparation for the new lead and copper rules that will require all utilities to identify and replace existing lead services. To conclude our 2022 system improvements, CWEP was able to replace 5 fire hydrants and 16 lead service lines.

IMPORTANT DRINKING WATER DEFINITIONS

POPULATION: 14570. 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 results 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.

QUESTIONS? Give us a call at 417-237-7300 or visit our website at www.cwep.com

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REGULATED CONTAMINANTS

Regulated Contaminants	Collection Date	Highest Test Result	Range of Sampled Results (low-high)	Unit	MCL	MCLG	Typical Source
BARIUM	1/18/2022	0.0693	0.0646 - 0.0693	ppm	2	2	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
FLUORIDE	1/18/2022	0.71	0.12 - 0.71	ppm	4	4	Natural deposits; Water additive which promotes strong teeth

Disinfection Byproducts	Sample Point	Monitoring Period	Highest LRAA	Range of Sampled Results (low-high)	Unit	MCL	MCLG	Typical Source
TTHM	DBPDUAL-04	2022	1	0.62 - 0.62	ppb	80	0	Byproduct of drinking water disinfection

Lead and Copper	Date	90th Percentile: 90% of your water utility levels were less than	Range of Sampled Results (low-high)	Unit	AL	Sites Over AL	Typical Source
COPPER	2019 - 2021	0.0549	0.00212 - 0.175	ppm	1.3	0	Corrosion of household plumbing systems
LEAD	2019 - 2021	1.53	0 - 16.3	ppb	15	0	Corrosion of household plumbing systems

VIOLATIONS & HEALTH EFFECTS INFORMATION

During the 2022 calendar year, we had the below noted violation(s) of drinking water regulations.

Compliance Period	Analyte	Type
7/1/2022 - 11/29/2022	CONSUMER CONFIDENCE RULE	CCR ADEQUACY/AVAILABILITY/CONTENT
3/1/2022 - 3/31/2022	CHLORAMINE	DISINFECTANT RESIDUAL < .5 BUT > .2 MG/L

CWEP COMMENTS

Regarding the Consumer Confidence Rule violation, MDNR permits CWEP to notify the public of the consumer confidence report (CCR) by providing the URL link for the internet on our customer bills. This link must be the exact URL to direct customers directly to the link. When our billing was printed the ".pdf" at the end of the URL was left off due to the message box on the bill running out of characters. This was not noticed until after the bills had been sent.

The chloramine violation occurred on March 7th and 8th, 2022. Our disinfection concentration dropped below 1.0 mg/l entering the distribution system. This was due to a faulty regulator that controls the feed rate of our disinfection. Although the minimum level entering the distribution system fell below the 1.0 mg/l minimum, the actual disinfection levels throughout our distribution system never fell below 1.0 mg/l. The problem was identified and corrected, as well as training water operators to identify trends to predict process changes before they reach unacceptable levels.

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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 PWS 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.**

All contaminant sample results from past and present compliance monitoring are available online at the Missouri DNR Drinking Water Watch website at **www.dnr.mo.gov/DWW/**. To see the Lead and Copper results, enter your water system's name in the box titled Water System Name, then select Find Water Systems at the bottom of the page. On the next screen, click on the Water System Number. At the top of the next page, under the Help column, click on Other Chemical Results by Analyte. Scroll down to Lead and click the blue Analyte Code (1030). A Sample Collection Date range may need to be entered. 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 results. If you assisted the water system in taking a Lead and Copper sample but cannot find your location on the list, please contact CARTHAGE PWS for your results.

OPTIONAL MONITORING (not required by EPA)

Monitoring is not required for optional contaminants.

Secondary Contaminants	Collection Date	Your Water System Highest Sampled Results	Range of Sampled Result(s) (low-high)	Unit	SMCL
ALKALINITY, CACO3, STABILITY	1/18/2022	171	124 - 171	MG/L	
BROMIDE	12/18/2019	0.123	0.0279 - 0.123	MG/L	0.05
CALCIUM	12/18/2019	40.4	20 - 40.4	MG/L	
CHLORIDE	1/18/2022	14.6	8.71 - 14.6	MG/L	250
HARDNESS, CARBONATE	1/18/2022	177	130 - 177	MG/L	
IRON	1/18/2022	0.0117	0 - 0.0117	MG/L	0.3
MAGNESIUM	1/18/2022	18.8	17.7 - 18.8	MG/L	
MANGANESE	1/18/2022	0.00196	0 - 0.00196	MG/L	0.05
NICKEL	1/18/2022	177	0 - 0.00119	MG/L	0.1
PH	1/18/2022	8.66	7.69 - 8.66	PH	8.5
POTASSIUM	1/18/2022	2.07	1.42 - 2.07	MG/L	
SODIUM	1/18/2022	14.9	6.63 - 14.9	MG/L	
SULFATE	1/18/2022	20.7	11.8 - 20.7	MG/L	250
TDS	1/18/2022	193	156 - 193	MG/L	500
ZINC	1/18/2022	0.00894	0.00111 - 0.00894	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.