VIOLATION NOTICE

TIER II VIOLATION

High Turbidity in the Filter Confluent (Over 1.0)

EXPLANATION

A Float switch failed during a backwash cycle, causing fluctuations in flow with the remaining filters. The result was a high turbidity for a duration of about two hours.

LENGTH

Two hours. From about midnight to 2:00 a.m. on Nov. 3, 2019

STEPS TAKEN TO CORRECT THE VIOLATION

The float switch in question has been repaired. Also, there has been additional operator training with regard to high levels of turbidity.

HEALTH EFFECTS

Turbidity has no health effects. However, turbidity can interfere with disinfection and provide amedium for microbial growth. Turbidity may indicate the presence of disease causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as cramps, diarrhea and associated headaches.

WHAT SHOULD I DO?

There is nothing you need to do at this time. This is not an emergency. You do not need to boil water or use an alternative source of water at this time. Even though this is not an emergency, as our customer, you have a right to know what happened and what we did to correct the situation.

WHERE CAN I GET MORE INFORMATION?

For more information, please contact the City of Jackson Department of Public Works –Water Division at (517) 788-4170, or Michigan Department of Environment, Great Lakes, and Energy (EGLE) at (616) 356-0500.

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City of Jackson
Department of Public Works
161 W. Michigan Ave.
Jackson, MI 49201

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2019 Annual Water Quality Report

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Continued from inside

- **AL (Action Level):** The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements, which a water system must follow.
- **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.
- **MCLG (Maximum Contaminant Level Goal):** The level of a contaminant in drinking water below which there is no known or exposed risk to health. MCLGs allow for the margin of safety.
- **MRDL (Maximum Residual Disinfection Level):** 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.
- **MRDLG (Maximum Residual Disinfectant Level Goal):** 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
- **ND: (Not Detected):** (Not Detected): Indicates that the substance was not found by laboratory analysis.
- **NTU (Nephelometric Turbidity Units):** Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.
- **pCi/L (picocuries per liter):** a measure of radioactivity.
- **ppb (parts per billion):** One part substance per billion parts water.
- **ppm (parts per million):** One part substance per million parts water.
- **TT (Treatment Technique):** A required process intended to reduce the level of a contaminant in drinking water.

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CITY OF JACKSON-BLACKMAN TOWNSHIP–STATE PRISON OF SOUTHERN MICHIGAN

2019 Annual Water Quality Report

City of Jackson WSSN: 3470
Blackman Township WSSN: 0740
SPSM WSSN: 6370

The City of Jackson is proud to present the 2019 Annual Water Quality Report for all City of Jackson customers, including Blackman Township and the State Prison of Southern Michigan. In complying with the Federal legislative requirements, this report has been developed to provide you with valuable information about your drinking water. State and Federal regulations require us to test our water on a regular basis to ensure its safety. We met all the monitoring and reporting requirements for 2019. You will see as you review this report that your drinking water meets or exceeds all government standards set for water quality and safety.

This report will explain where your water comes from. It lists the results of testing conducted at the water treatment plant and in the water distribution system and contains important information about water and health. This report also provides information on how you can minimize contaminants in our source water.

Please help us to preserve the quality of our drinking water supply. If at any time you notice a change in the look, smell or taste of your drinking water, please contact the City of Jackson Department of Public Works-Water Division at (517) 788-4170.

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 (EPA) Safe Drinking Water Hotline at (800) 426-4791.

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, 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 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 storm water 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 storm water runoff, and residential uses.
- **Organic chemical contaminants,** including synthetic and volatile organics, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm runoff and septic systems.
- **Radioactive contaminants,** which can be naturally occurring or be the result of oil and gas production and mining activities.

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

Where does my water come from?

The City of Jackson water system is supplied by ground water pumped from 16 wells. The wells are located in two separate well fields to ensure a safe water supply is available in the unlikely event contaminants were to enter one of the well fields. Water is pumped from the wells to the water treatment plant, where it is softened with a lime/soda ash process. The hardness is reduced from about 475 parts per million (ppm) to about 140 ppm. It is then filtered, disinfected, and transferred to a 7.5 million gallon storage reservoir and is pumped to our customers through the distribution system.

Source Water Assessment

The State of Michigan performed an assessment of our source water in 2003 to determine the susceptibility to, or the relative potential of contamination. The susceptibility rating is on a seven-tiered scale from "very low" to "very high" based on geologic sensitivity, water chemistry, and contamination sources. The susceptibility of our source is "moderately high". The susceptibility determination may be altered in the future as the City demonstrates that and an active Wellhead Protection Program is supporting the management and control of existing and potential sources of contamination in the Wellhead Protection area. In an effort to do so, the City of Jackson participated in a countywide endeavor to protect our drinking water and has developed a Wellhead Protection Program. The effort has identified the ground water recharge areas for municipal wells, the potential sources of contamination, and has provided recommended actions to prevent contamination from entering the ground water.

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. The City of Jackson, Blackman Township and the State Prison of Southern Michigan 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 about 30 seconds to 2 minutes before using the 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.

Important Health Information

Some people may be more vulnerable to contaminants in drinking water than is 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 microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791.

Sampling Results

Over the past year, hundreds of water samples were taken in order to determine the presence of any biological, inorganic, volatile organic, or synthetic organic contaminants. The table below shows only those contaminants that were detected in the water. The State allows us to monitor for certain substances less than once per year because the concentrations of these substance do not change frequently. In these cases, the most recent sample data are included along with the year in which the sample was taken. Total Trihalomethanes, Total Haloacetic Acids, and Lead and Copper samples were collected from sites throughout the community. All other regulated substances were collected at the water treatment plant tap.

For more information

For more information, to obtain extra copies of this report, or for any questions relating to your drinking water, please call the City of Jackson Department of Public Works – Water Division at (517) 788-4170, visit the City of Jackson website at www.cityofjackson.org or call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791 or visit the EPA website at www.epa.gov/safewater. The Jackson City Council meets on the second and fourth Tuesday of every month at 6:30 p.m. The Blackman Township Board meets on the first Monday of every month at 6:00 p.m.

2019 Regulated Detected Contaminants Tables

					City of Jackson		Blackman Twp		State Prison of Southern Mich			
Contaminant	**Test Date**	**Units**	**Health Goal MCLG**	**Allowed Level MCL**	**Level Detected**	**Range of Detection**	**Level Detected**	**Range of Detection**	**Level Detected**	**Range of Detection**	**Violation yes/no**	**Major Sources in Drinking Water**
Inorganic Chemicals – Annual Monitoring at Plant Finished Water Tap												
Fluoride	8/2019	ppm	4	4	0.77	N/A	N/A	N/A	N/A	N/A	no	Erosion of natural deposits; Water additive, which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Selenium	8/2019	ppm	10	10	0.002	N/A	N/A	N/A	N/A	N/A	no	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Barium	8/2019	ppm	2	2	0.020	0.015	N/A	N/A	N/A	N/A	no	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
cis-1,2,Dichloro ethylene	8/2019	ppb	70	70	0.0009	0.15-0.19	N/A	N/A	N/A	N/A	no	Discharge from industrial chemical factories.
Fluoride	8/2019	ppm	4	4	0 .77	N/A	N/A	N/A	N/A	N/A	no	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Combined Radium	2014	PCi/L	5	0	1.8	1.4-1.9	N/A	N/A	N/A	N/A	no	Erosion of natural deposits
Chloride	8/2019	ppm	N/A	N/A	101	N/A	N/A	N/A	N/A	N/A	no	Running/leaching from natural deposits
Sulfate	8/2019	ppm	N/A	N/A	101	N/A	N/A	N/A	N/A	N/A	no	Running/leaching from natural deposits; industrial wastes
Disinfectant Residuals and Disinfection By-Products – Monitoring in Distribution System												
Total Trihalomethanes (TTHM)	Feb-Dec 2019	ppb	n/a	80	42	22-54	52	23-55	43	30-56	no	By-product of drinking water chlorination.
Haloacetic Acids (HAA5)	Feb-Dec 2019	ppb	n/a	60	6	3.0-9.0	8.5	4.0-12.0	8	6-8	no	By-product of drinking water disinfection.
Disinfectant (Total Chlorine) Residual)	Jan-Dec 2019	ppm	MRDL 4	MRDL 4	1.20	0.12-2.19	1.55	0.85-2.23	1.52	0.76-2.17	no	Water additive used to control microbes.

Contaminant	MCLG	MCL	Level Detected	Source of Contamination
Sodium (ppm)	n/a	n/a	50	Erosion of natural deposits

2019 Turbidity – monitored every 4 hours at Plant Finished Water Tap

Highest Single Measurement Cannot exceed 1 NTU	Lowest Monthly % of Samples Meeting Turbidity Limit of 0.3 NTU (minimum 95%)	Violation yes/no	Major Sources in Drinking Water
1.9 NTU	99.44%	no	Soil Runoff

Turbidity is a measure of the cloudiness of water. We monitor it because it is a good indicator of the effectiveness of our filtration system.

2019 Lead and Copper Monitoring — City of Jackson — Blackman Twp — State Prison of South Michigan

Contaminant	Test Date	Health Goal MCLG	Action Level AL	90th Percentile Value*	Number of Samples Over AL	90th Percentile Value*	Number of Samples Over AL	90th Percentile Value*	Number of Samples Over AL	Violation yes/no	Major Sources in Drinking Water
Lead (ppb)	2019	0	15	9	1/30	1	0/20	6	0/20	no	Corrosion of household plumbing system; Erosion of natural deposits.
Copper (mg/l)	2019	1.3	1.3	0	0/30	0	0/20	0.1	0/20	no	Corrosion of household plumbing system; Erosion of natural deposits; Leaching from wood preservatives.

Number of Lead Service Lines	Number of Service Lines of Unknown Materials	Total Number of Service Lines
11,339	0	12,042

*The 90th percentile value means 90 percent of the homes tested have lead and copper levels below the given 90th percentile value. If the 90th percentile value is above the AL additional requirements must be met. *Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.

Continued on back