



2021 Water Quality Report

Water Supply Serial Number: 05120

Municipal tap water is the life source of every community.

Our dependable water supply contributes to public health, keeps citizens safe from waterborne illness, drives economic prosperity, and is vital for everyday life. The Owosso Water Filtration Plant treated over 622 million gallons of water to over 14,539 residents in the City of Owosso during 2021. This report covers the drinking water quality for City of Owosso Water Supply for the 2021 calendar year. This information is a snapshot of the quality of the water that we provided to you in 2021. Included are details about where your water comes from, what it contains, and how it compares to United States Environmental Protection Agency (USEPA) and state standards.

At Owosso's water filtration plant - water is tested continuously. Operators also conduct quality assurance and quality control processes to ensure accuracy. Chemists in the water quality laboratory conduct hourly tests from the treatment process and weekly and monthly tests from water sample sites throughout the city. Staff work closely with Michigan Department of Environment, Great Lakes, and Energy (EGLE) to ensure water regulatory and safety guidelines are met. Owosso's team of water quality experts go to great lengths to deliver great-tasting tap water. It's a 24/7, 365-day-a-year responsibility that they take very seriously.

Your water comes from five active groundwater wells, each over 80 feet deep. In 2018 EGLE performed an assessment of our source water to determine the susceptibility 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, well construction, water chemistry and contamination sources. The susceptibility of our well source is high to very high.

Water Treatment Plant and System Maintenance in 2021.

Maintenance at the water plant is a continuous exercise. There are many parts and pieces of equipment that make up the different processes. All of the equipment has an expected useful life which we try to prolong with preventive maintenance. Our Asset Management Plan and Capital Improvement Plan guides us on when to repair/replace more expensive items and how to budget for them. During 2021, as part of a State Drinking Water Revolving Fund (DWRf) loan project, the City completed replacement of an 80 ft. section of 16" pipe inside the Water Filtration Plant that had been a serious main break threat. Also, the City replaced the original filter backwash pump with new redundant pumps and backwash system capability.



New 16" piping being installed in the subbasement of the Plant replacing a 80+ year old pipe that was ready to burst.



A portion of the old pipe was replaced.



This original backwash pump was in service for 80+ years. There was no backup pump or usable backwash method if this failed.

Distribution System

The city of Owosso has over 108 miles of distribution piping ranging in size from 1.5" to 24". The majority of water distribution system mains are 50 to 65 years old with some mains 80 to 100 years old. There are over 1,950 valves throughout the system and over 591 fire hydrants. Owosso serves over 6,467 residential households and commercial customers with meter sizes ranging from 3/4" to 8". Also, the distribution system includes 2 water storage facilities.

Projects & Maintenance

The City of Owosso started the process of replacing one of our wells near Hopkins Lake and continued the investigation into developing a new well site. The goal of this project is to ensure water supply capacity and water quality for future generations in Owosso. Another component of the critical water system infrastructure completed in 2021 was the cleaning and rehabilitation of our primary well at the Water Filtration Plant. The city was also able to obtain 400 LED bulbs for the Water Filtration Plant without any cost to the taxpayer, these have been installed by staff. Regular inspection and cleaning of our two clarifiers resulted in determining that another main bearing had to be replaced in the south clarifier, this was completed in 2021. One of our pumps that maintains water pressure in the distribution system required a complete rebuild, this project is ongoing. During 2021 the City was required to complete two Lead and Copper Rule six month sampling periods as result of our Action Level Exceedance (ALE) for Lead in 2020. We thank everyone involved at over 120 qualified sampling sites to help us obtain water samples to test for Lead and Copper, and monitor water quality parameters. The Lead and Copper results for both sampling periods were below the ALE and are provided in this report. The City is also glad to report that at locations where elevated lead and copper test results are obtained, that service line became a priority to ensure all piping going into the residence had compliant piping materials.



This is one of two new backwash pumps in service as of June 2021.



One of two new backwash pumps that were being unloaded for installation.

Contaminants in the 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 USEPA's Safe Drinking Water Hotline (800-426-4791).



This pressure reducing valve (PRV) now safely controls the water pressure used during a filter backwash. This system backs up the two new backwash pumps.

Water Supply

In 2021 we had certified labs test our water for general chemistry, Lead and Copper, Cyanide, Nitrate, PFAS, Synthetic Organic Compounds (SOC's) and Total Trihalomethanes - Haloacetic Acids. Our ground water sources were also tested for general chemistry, Arsenic, Complete Minerals and Metals, and VOC's. We continue to protect our sources by developing an updated Wellhead Protection Program (WHPP) to ensure safe drinking water to the public and protect the drinking water from potential sources of contamination by following the WHPP program guidelines set forth by EGLE. If you would like to know more about this report, please contact the Water Plant Superintendent David Haut at 301 W Main Street, Owosso, MI 48867, Phone: 989-725-0560. Email: david.haut@ci.owosso.mi.us or at our website:

<http://www.ci.owosso.mi.us/utilities>.



One of the two backwash pumps installed ready for paint.



High Service Pumps 1, 2 and 3 shown above, pump 1 (furthest away) is being rebuilt.

Vulnerability of Sub-Populations

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 systems 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. USEPA/Center for Disease Control guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

Sources of Drinking Water

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. Our water comes from 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 in source water:

- 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 and residential uses.
- Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.
- 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.
- To ensure that tap water is safe to drink, the USEPA prescribes regulations that limit the levels of certain contaminants in water provided by public water systems. Federal Food and Drug Administration regulations establish limits for contaminants in bottled water which provide the same protection for public health.



One of two Clarifiers at the Water Filtration Plant, the main bearing which required replacement, is located at the top of the cone which is 30 ft. deep.

Information about Lead

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 Owosso Water Supply 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 have a lead service line, it is recommended that you run your water for at least 5 minutes to flush water from both your home plumbing and the lead service line. 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>.

Infants and children who drink water containing lead 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.

Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's disease should consult their personal doctor.

Our water supply has 149 confirmed lead service lines and 4,684 service lines of unknown material out of a total of 6,467 service lines.

Monitoring and Reporting per EGLE Requirements: The State of Michigan and the USEPA require us to test our water on a regular basis to ensure its safety. We met all the monitoring and reporting requirements for 2021.

We will update this report annually and will keep customers informed of any problems that may occur throughout the year, as required. Copies are available at City Hall. This report will not be sent to you. We invite public participation in decisions that affect drinking water quality. Public comment may be provided at City Hall during regularly scheduled city council meetings, held at 7:30 p.m. on the first and third Mondays of each month. For more information about your water, or the contents of this report, contact the Water Plant Superintendent, David Haut at 989-725-0560, or email: david.haut@ci.owosso.mi.us. Further, the city web site at <http://www.ci.owosso.mi.us/Utilities> is available for inquiries and comment. Finally the Director of Public Services and Utilities is available for information and inquiries at 989-725-0555 or email at ryan.suchanek@ci.owosso.mi.us. For more information about safe drinking water, visit the U.S. EPA at <http://www.epa.gov/safewater/>.

Water Quality Data

The table below lists all the drinking water contaminants that we detected during the 2021 calendar year. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented in this table is from testing done January 1 through December 31, 2021. The State allows us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. All the data is representative of the water quality, but some are more than one year old.

Regulated Contaminant	MCL	MCLG	Level Detected	Range	Year Sampled	Violation Yes/No	Typical Source of Contaminant
Barium (ppm)	2	2	0.01	0.01	08/2018	No	Discharge from oil drilling wastes and from metal refineries; erosion of natural deposits
Fluoride (ppm)	4	4	0.72	0.28 - 0.72	2021	No	Erosion of natural deposits. Discharge from fertilizer and aluminum factories.
HAA5 Haloacetic Acids (ppb)	60	N/A	3	2 - 3	08/24/2021	No	Byproduct of drinking water disinfection.
TTHM - Total Trihalomethanes (ppb)	80	N/A	51	45 - 51	08/24/2021	No	Byproduct of drinking water disinfection.
Chlorine* (ppm)	MRDL 4	MRDLG 4	0.48	0.33 - 0.48	2021	No	Water additive used to control microbes.
Bromodichloromethane	0.080	N/A	0.015	0.013 - 0.015	08/24/2021	No	Byproduct of drinking water disinfection.
Bromoform	0.080	N/A	0.0073	0.007 - 0.0073	08/24/2021	No	Byproduct of drinking water disinfection.
Chlorodibromomethane	0.080	N/A	0.018	0.017 - 0.018	08/24/2021	No	Byproduct of drinking water disinfection.
Chloroform	0.080	N/A	0.011	0.0081 - 0.011	08/24/2021	No	Byproduct of drinking water disinfection.
Radioactive Contaminant	MCL	MCLG	Level Detected	Range	Year Sampled	Violation Yes/No	Typical Source of Contaminant
Combined Radium pCi/L (T)	5	0	0.4	N/A	08/2016	No	Erosion of natural deposits.

*Chlorine was calculated using the running annual average.

Inorganic Contaminant Subject to ALs	AL	MCLG	Your Water*	Range of Results	Year Sampled	Number of Samples Above AL	Typical Source of Contaminant
Lead (ppb)	15	0	10 ppb	0 ppb - 162 ppb	1/1/21 - 6/30/21	3	Lead service lines, corrosion of household plumbing including fitting and fixtures; Erosion of natural despositis.
			11 ppb	0 ppb - 170 ppb	7/1/21 - 12/31/21	4	
Copper (ppm)	1.3	1.3	0.0 ppm	0 ppm - 0.4 ppm	1/1/21 - 6/30/21	0	Corrosion of household plumbing systems; Erosion of natural despositis.
			0.0 ppm	0 ppm - 0.3 ppm	7/1/21 - 12/31/21	0	

*Ninety (90) percent of the samples collected were at or below the level reported for our water.

Terms & Abbreviations

AL: Action Level – The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that 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 expected risk to health. MCLGs allow for a margin of safety.

MRDL: Maximum Residual Disinfectant 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.

N/A: Not Applicable

ND: Not Detectable at testing limit.

ppm: parts per million or milligrams per liter

ppb: parts per billion or micrograms per liter

pCi/L: picocuries per liter (a measure of radioactivity)

Additional Monitoring

Unregulated contaminants are those for which the USEPA has not established drinking water standards. Monitoring helps the USEPA determine where certain contaminants occur and whether regulation of those contaminants is needed.

	Level Detected	Year Sampled	Comments
Sodium (ppm)	46	8/2021	Typical source is erosion of natural deposits.
Chloride (ppm)	91	8/2021	Naturally occurring or indicative of road salt contamination.
Sulfate (ppm)	123	8/2021	Naturally occurring.
Magnesium (ppm)	29	8/2021	Naturally occurring.
Hardness of CaCO3 (ppm)	194	8/2021	Naturally occurring.
Calcium (ppm)	30	8/2021	Naturally occurring.
	Average Level Detected	Year Sampled	Comments - See EPA Website: https://www.epa.gov/dwucmr/fourth-unregulated-contaminant-monitoring-rule
Germanium (ug/L)	<0.300	1/21/2020	Metal.
Manganese (ug/L)	<0.400	1/21/2020	Metal.
BHA (ug/L)	<0.0300	1/21/2020	Semi-Volatile Organic Compounds
o- Toluidine (ug/L)	<0.0070	1/21/2020	Semi-Volatile Organic Compounds
Quinoline (ug/L)	<0.0200	1/21/2020	Typical Source of Contaminant
HAA5 (five regulated haloacetic acids) (ug/L)	13.200	1/07/2020	Disinfection Byproducts
HAA6Br (six brominated haloacetic acids) (ug/L)	11.000	1/07/2020	Disinfection Byproducts
HAA9 (nine haloacetic acids) (ug/L)	18.300	1/07/2020	Disinfection Byproducts
alpha-BHC (alpha -Hexachlorocyclohexane) (ug/L)	<0.010	1/07/2020	Pesticide
Chlorpyrif (ug/L)	<0.030	1/07/2020	Pesticide
Dimethipin (ug/L)	<0.200	1/07/2020	Pesticide
Ethoprop (ug/L)	<0.030	1/07/2020	Pesticide
Oxyfluorfen (ug/L)	<0.050	1/07/2020	Pesticide
Profenofos (ug/L)	<0.300	1/07/2020	Pesticide
Tebuconazole (ug/L)	<0.200	1/07/2020	Pesticide
Permethrin (ug/L)	<0.040	1/07/2020	Pesticide
Tribufos (ug/L)	<0.070	1/07/2020	Pesticide
1-Butanol (ug/L)	<2.000	1/07/2020	Alcohol
2-Methoxyethanol (ug/L)	<0.400	1/07/2020	Alcohol
2-Propen-1-ol (ug/L)	<0.500	1/07/2020	Alcohol

