WATER QUALITY REPORT 2024

CITY OF Yuma

PWSID#:AZ414024

This report contains important information about your drinking water. Have someone translate it for you, or speak with someone who understands it.

Este informe contiene información importante acerca de su agua potable. Haga que alguien lo traduzca para usted, o hable con alguien que lo entienda.

To our valued water customers,

It is my pleasure to present to you, on behalf of the staff of the City of Yuma Utilities Department, our 2024 Annual Water Quality Report. This report has been prepared to familiarize you with the characteristics of the City of Yuma's water system, including your source of supply, the quality of treated water, substances present in the water, and the maximum levels of those compounds permitted by state or federal regulations. Throughout the entire process our Water Treatment, Distribution and Compliance teams monitor water quality and conduct thousands of water quality tests. We encourage you to read this report to learn more about the results of testing conducted and water samples collected during 2024.

If you want to learn more, please consider attending any of our regularly scheduled Water & Sewer Commission Meetings. We hope the following information helps you become more knowledgeable about what is in your drinking water.

Sincerely,
Jeremy McCall
Director of Utilities

COMMUNITY PARTICIPATION

Your input on water quality is always welcome. The City of Yuma's Water and Sewer Commission is a group of citizens developing ideas and providing advice to the Director of Utilities on a range of water and wastewater issues. Our Water and Sewer Commission meets on-call at 5:00 p.m. in the Thomas F. Allt Utilities Complex Conference Room. The public is invited. You can contact the Utilities Department at (928) 373-4602 for more information regarding meeting dates.

Source Water Assessment

In 2004, the Arizona Department of Environmental Quality completed a source water assessment for the Yuma Main Canal, "A" Main Canal, and groundwater wells used by the City of Yuma. The assessment reviewed the adjacent land uses that may pose a potential risk to the sources. The assessment determined that adjacent land use presented a low risk of contamination to the source water. For more information contact sourcewaterprotection@azdeq.gov or visit the ADEQ's Source Water Assessment and Protection Unit website at: https://azdeq.gov/source-water-protection

Cryptosporidium

The EPA's Long Term 2 Enhanced Surface Water Treatment Rule required Yuma and other large water systems to conduct monthly monitoring for Cryptosporidium in their source water. Cryptosporidium is a microbial pathogen found in surface water throughout the U.S. Although filtration removes Cryptosporidium, the most commonly-used filtration methods cannot guarantee 100 percent removal. Our monitoring indicates, although infrequently, these organisms are present in our source water. Current test methods cannot determine if the organisms are dead or if they are capable of causing disease. Ingestion of Cryptosporidium may cause cryptosporidiosis, an abdominal infection. Cryptosporidium must be ingested to cause disease, and it may be spread through means other than drinking water. In 2015, the City of Yuma began the twenty-four month LT2ESWTR source water monitoring for Cryptosporidium. The results range from not detected (ND) to 0.348 oocysts per liter in the source water. The results from the testing show that the City of Yuma's source water meets the lowest classification for Cryptosporidium and requires no additional treatment.

A Note from the EPA

To ensure that tap water is safe to drink, the Environmental Protection Agency sets regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration regulations establish limits for contaminants in bottled water. Drinking water, including bottled water, or water that passes through home treatment systems, may reasonably be expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that the water poses a health risk.

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, in some cases, radioactive material, and substances resulting from the presence of animals or from human activity.

Important Health Information

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, persons with HIV/AIDS or other immune system disorders, some elderly, and infants may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) 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 or http://water.epa.gov/drink/hotline.

Yuma's Water Quality staff collects and analyzes the drinking water you receive at your home or business. These tests ensure that your water meets health and safety standards set by the state and federal governments. Yuma has a state certified laboratory. Our staff works diligently to ensure compliance with all drinking water regulations and to supply safe, high quality drinking water at a reasonable cost. The data tables present 2024 test results and corresponding water quality standards. The tables below show only those **regulated** contaminants that were detected in the drinking water and the Maximum Contaminant Level (MCL). **Please note, the presence of a substance or contaminant in drinking water does NOT necessarily indicate the drinking water poses a health risk.**

MONITORING RESULTS FOR REGULATED CONTAMINANTS

WATER TREATMENT PROCESS DESIGNED TO REMOVE TURBIDITY

The filters in the water treatment process produce water of superior clarity. Turbidity readings are a measure of the water clarity and a good indicator that the treatment process is removing tiny particles, including microorganisms.

Using conventional filtration, the Main Street Treatment Facility's standard for turbidity or clarity is 0.3 Nephelometric Turbidity Units (NTU - a measure of clarity) in at least 95 percent of the measurements taken each month, and must not exceed 1 NTU.

Using membrane filtration, the Agua Viva Treatment Facility's standard for turbidity or clarity is 1 Nephelometric Turbidity Units (NTU- a measure of clarity) in at least 95 percent of the measurements taken each month, and must not exceed 5 NTU.

2024 TURBIDITY MONITORING AFTER TREATMENT AT THE WATER TREATMENT PLANTS

Plant	Units	MCL	Highest Measurement	TT Requirements for Monthly Readings	Lowest Monthly Percentage	Violation	Likely Source in Drinking Water
Main Street	NTU	1	0.084 NTU	95% less than 0.3 NTU	100%	No	Soil runoff
Agua Viva	NTU	5	0.189 NTU	95% less than 1 NTU	100%	No	Soil runoff

MEETING THE LEAD AND COPPER STANDARDS

Lead and copper usually enter our drinking water from corrosion of household plumbing, pipes and fixtures that contain these metals, such as copper piping, lead solder or brass fixtures. The EPA requires water systems to perform periodic testing for lead and copper in the tap water from inside customers' homes. The City of Yuma is required to collect these samples every three years. The City of Yuma's drinking water test results are well below the action level for both lead and copper: the water meets the requirements of this program.

While the City of Yuma's water meets the EPA's limits, lead and copper levels at some customers' homes may be elevated due to leaching of materials into the water from materials used in the household plumbing fixtures. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of Yuma is responsible for providing high quality drinking water, but cannot control the variety of materials used in household 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 present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. 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 www.epa.gov/safewater/lead.

2024 RESULTS OF LEAD AND COPPER SAMPLING FROM RESIDENTIAL WATER TAPS

Substances	Units	Action Level (AL) applies instead of MCL	MCLG	Amount detected 90%	Sites above AL/Total Sites	Range of Sampling Results	Violation	Major Source in Drinking Water
Copper	ppm	1.3	1.3	0.073 ppm	0/100	ND to 0.25	No	Corrosion of household plumbing systems.
Lead	ppb	15	0	1.1 ppb	0/100	ND to 12	No	Corrosion of household plumbing systems.

YUMA MONITORS FOR UNREGULATED CONTAMINANTS

We participated in EPA's 5th Unregulated Contaminant Monitoring Rule (UCMR5) programs by performing additional testing on the drinking water. This rule benefits the environment and public health by providing the EPA with data on the occurrence of contaminants suspected to be in drinking water, in order to determine if EPA needs to introduce new regulatory standards to improve drinking water quality. Any UCMR5 detections are shown in the data tables in this report.

2023-2024 UCMR5 SAMPLED AT ENTRY POINT TO THE DISTRIBUTION SYSTEM (EPDS)

Location	Main Street		Agua Viva	
UCMR5 at EPDS	Range	Average	Range	Average
Lithium (ppb)	62.8 - 75.5	70.6	68 - 150	110
UCMR5 at EPDS	Range		Range	
PFAS (ppt)	ND		ND	

In 2023 - 2024, your drinking water was sampled for the presence and concentration of Lithium and of 29 different per- and polyfluoroalkyl substances (PFAS). Lithium is a naturally occurring metal found in our environment and is commonly used in electrochemical cells, batteries and pharmaceuticals. PFAS are man-made chemicals that are resistant to heat, water, and oil. Since the 1940s, they have been used in the manufacture of products, including fire-fighting foam, stain resistant, water-resistant, and nonstick items. The results showed no detectable PFAS contamination in your drinking water. Scientific studies indicate that exposure to certain PFAS can be harmful to humans and animals, depending on the level and duration of exposure. For more information on PFAS and their potential effects, visit the ADEQ website at www.azdeq.gov/pfas-resources.

CONTROLLING DISINFECTANTS AND DISINFECTION BYPRODUCTS

Yuma's entire water supply (well water and treated surface water) is safely disinfected with chlorine before being delivered to customers. Federal law requires a minimum chlorine residual level of 0.2 parts per million in the water leaving a water treatment plant. There also is a Maximum Residual Disinfectant Level (MRDL) allowed in the water in the distribution system as it travels to your tap.

While it is essential to disinfect the water to prevent widespread outbreaks of serious diseases and comply with EPA standards, the use of disinfectants can create disinfection byproducts (DBPs), which are formed when natural organic matter such as total organic carbon in water, reacts with chemicals used for disinfection.

2024 DISINFECTANT AND DISINFECTION BYPRODUCT MONITORING IN OUR DISTRIBUTION SYSTEM

Substance	Units	MCL	MCLG	Highest Running Annual Average	Sample Results Range	Violation	Major Source in Drinking Water
Chlorine	ppm	MRDL = 4 Running Annual Average	MRDLG = 4	0.59	0.03 - 1.26	No	Water additive used to control microbes.
Chlorite	ppm	1	0.8	0.30 (highest sample set average)	ND - 0.33	No	Byproduct of drinking water treatment.
Haloacetic Acids (HAAs)	ppb	60 ppb LRAA	NA	15	6.4 - 20	No	Byproduct of drinking water disinfection.
Total Trihalomethanes (TTHMs)	ppb	80 ppb LRAA	NA	66	23 - 79	No	Byproduct of drinking water disinfection.

TOC REDUCTION

The City routinely monitors for Total Organic Carbon (TOC) and alkalinity in the City water supply and finished water. This information tells the City whether disinfection byproduct precursors (DBP) are being effectively removed from the water supply according to the required "treatment technique." The treatment technique requires City Utilities to meet a TOC removal rate greater than or equal to 1.00 or meet "alternative compliance criteria".

2024 TOC REDUCTION

Treatment Technique	Units	Removal Rate Required	Quarterly Running Annual Average Range	Units	Violation	Major Source in Drinking Water
TOC Removal Rate	Removal Ratio	≥1.00	1.19 - 1.43	Ratio for Running Annual Average	No	Naturally present in the environment

We achieved the required reduction of TOC between the source water and the EPDS using a combination of TOC reduction and an "alternative compliance criteria". Data collected during the 12-month monitoring period from 1/1/2024 to 12/31/2024 gave us a calculated TOC removal level of 1.19 - 1.43 Running Annual Average for each Quarter of 2024, which is above the ≥1.00 requirement.

2024 REGULATED SUBSTANCES DETECTIONS

			MAIN STREET	AGUA VIVA		
Substance	Units	MCL	Amount Detected	Amount Detected	Violation	Major Sources in Drinking Water
Arsenic	ppb	10	1.1	1.9	No	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes.
Barium	ppm	2	0.13	0.10	No	Erosion of natural deposits; discharge of drilling wastes; discharge from metal refineries.
Chlorine Dioxide	ppm	0.8 MRDLG	ND - 1.4*	ND - 0.4	Yes*	Water additive used to control taste and odor.
Chlorite	ppm	1	ND - 0.5	ND - 1.5**	No	Byproduct of drinking water treatment.
Fluoride	ppm	4	0.42	0.47	No	Erosion of natural deposits; water additive, which promotes strong teeth; discharge from fertilizer and aluminum factories.
Nitrate	ppm	10	0.42	0.37	No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
Sodium	ppm	No MCL	140	190	No	Naturally present in the environment.

** In compliance with State and Federal requirements, all instances of Chlorite >1.0 mg/L at the EPDS were followed up with a 3-sample set collected in the distribution system. All distribution system samples were below the detection limit for Chlorite.

2024 MICROBIOLOGICAL MONITORING IN THE DISTRIBUTION SYSTEM

Substance	MCL	Amount detected	Violation	Major Sources in Drinking Water
Total Coliform Bacteria	5% of monthly samples are positive	0	No	Naturally present in the environment
E. coli	0	0	No	Human or animal fecal waste

Microbiological testing is performed monthly at over 100 sites within the distribution system for Total Coliform bacteria in order to verify the integrity of the distribution system.

2023 RADIONUCLIDES

				MAIN STREET	AGUA VIVA		
Substance	Units	Year Sampled	MCL	Amount Detected	Amount Detected	Violation	Major Sources in Drinking Water
Alpha Emitters	pCi/L	2023 ***	15	7.2 ± 0.9	12.5 ± 1.5	No	Erosion of natural deposits
Combined Radium	pCi/L	2023 ***	5	ND	0.554 ± 0.372	No	Erosion of natural deposits

***2023 Monitoring. Some of our data although representative, may be more than a year old. The Arizona Department of Environmental Quality allows us to monitor for certain substances less than once per year because the concentrations are below MCLs and reduced monitoring has been granted.

INFORMATION ABOUT THE CHLORINE DIOXIDE MRDL VIOLATION

***Tier 1 Public Notice:** On December 4th, Main Street Water Treatment Plant had a chlorine dioxide result of 1.0 milligrams per liter (mg/L). This is above the maximum residual disinfectant level (MRDL) of 0.8 (mg/L). As required, sampling was conducted at three locations downstream of our treatment plant. At one location, the reading was 1.26 mg/L. Due to this exceedance, the city received a violation, requiring us to issue a Tier 1 public notice. The other 2 sampling point results were non-detect (less than 0.02 mg/L) and 0.05 mg/L. In addition to the 3 required sampling points, our laboratory personnel analyzed over 20 additional samples at various locations in the distribution system. All samples were non-detect for chlorine dioxide, resolving the violation.

Chlorine dioxide is used in small amounts every day to kill bacteria and other organisms that may be in your drinking water. Chlorine dioxide breaks down very quickly in the water system, dissipates within 48 hours, and can be removed through home reverse osmosis systems. It is used for disinfection, but too much of it over a short period of time may harm the development of children, infants, and fetuses. Some infants and young children who drink water containing chlorine dioxide in excess of the MRDL could experience nervous system effects. Similar effects may occur in fetuses of pregnant mothers who drink water containing chlorine dioxide in excess of the MRDL. Some people may experience anemia.

UNDERSTANDING THE LANGUAGE OF WATER
The following are definitions of terms used to describe types of limits or substances that may be found in drinking water.

Maximum Contaminant Level Goal (MCLG): 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 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 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.

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.

Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.

Action level (AL): The concentration of a contaminant that, if exceeded, triggers treatment or other requirements that a community water system shall follow.

Not Detected (ND): Indicates that the substance was not found by laboratory analysis.

Part per million: One part per million (1 ppm) or one milligram per liter (1 mg/L) is approximately equal to a single penny in $10,000 or one minute of time in two years. To convert ppm to ppb, multiply ppm by 1000.

Part per billion: One part per billion (1 ppb) or one microgram per liter (1 µg/L) is approximately equal to a single penny in $10,000,000 or one minute of time in 1,920 years. To convert ppb to ppm, divide ppb by 1000.

Part per trillion (ppt) denotes one part per 1,000,000,000,000 parts, which is equivalent to one part in 10^{12}. To put this into persepective: Or consider it as one second of time in approximatley 31,700 years.

Locational Running Annual Average (LRAA): the average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters.

Picocuries per liter (pCi/L): A measure of radioactivity.

Nephelometric Turbidity Units (NTU): Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

NA: Not Applicable

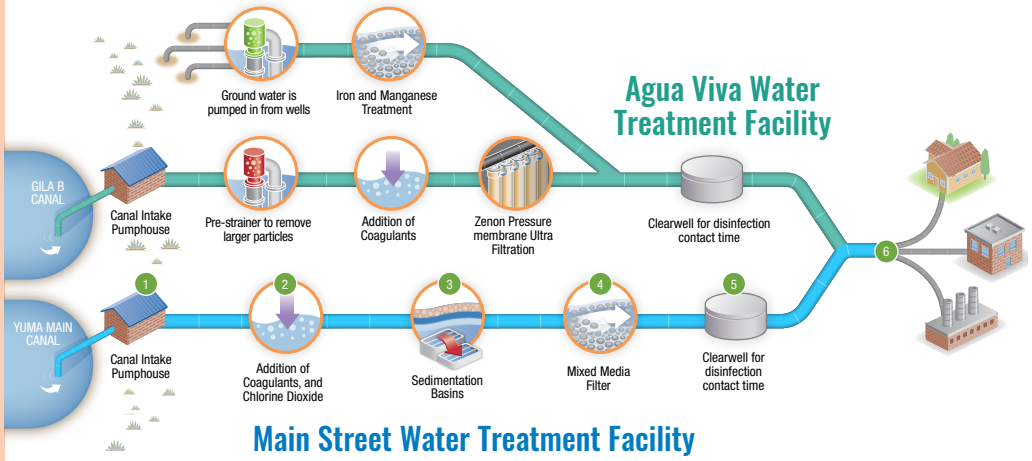
Microbial Contaminants, such as viruses and bacteria, may come from sewage treatment plants, septic systems, agricultural livestock operations, or wildlife;

Inorganic Contaminants, such as salts and metals, can be naturally occurring or may result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming;

Pesticides and Herbicides, 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, may be by-products of industrial processes and petroleum production, and may also come from gas stations, urban stormwater runoff, and septic systems;

Radioactive Contaminants, may be naturally occurring or may be the result of oil and gas production and mining activities.



The City of Yuma Main Street Water Treatment Facility uses conventional water treatment methods.

1. Raw water is pumped from the Yuma Main Canal.
2. Raw water is dosed with chlorine dioxide for algae control and alum and polymer are added for coagulation.
3. The coagulants continue to mix in the water and create floc as the water makes its way into the sedimentation basins. This causes small particles in the water to adhere to one another (called floc), making them large enough to settle to the bottom of the sedimentation basin.
4. The water then flows through dual media filters (sand and anthracite), which filter out the remaining unsettled particulate matter. As smaller, suspended particles are removed, turbidity disappears and clear water emerges.
5. Filtered water enters the clear well, which provides contact time for the post-chlorinated water. This allows for disinfection of any bacterial contamination in the water and provides a chlorine residual for the distribution system. Fluoride (Hydrofluorosilicic Acid) is added to prevent tooth decay. In Yuma, voters mandated that fluoride be added to the water supply at our two water treatment plants.

   The entire process is continually monitored and tested in order to ensure that the process and water meets state and federal regulations. After the clear well, the water is of excellent quality and is ready for distribution and use.
6. The water is then pumped into the City's distribution and storage system. The water is distributed throughout the City of Yuma for residential, commercial and industrial use via more than 500 miles of pipeline.

WHERE DOES OUR WATER COME FROM? AND HOW IS IT TREATED?

The main source of Yuma's drinking water is surface water from the Colorado River, which is delivered to the Treatment Facilities via the canal systems. Our water is treated by two distinctive water treatment plants with differing technologies. The treatment processes for both plants are depicted in the graphic above.

The Main Street Water Treatment Plant is a conventional surface water treatment plant. The Agua Viva Water Treatment Facility may use surface water, ground water, or a blend of both prior to entering the water distribution system.

Agua Viva's ground water treatment process pumps water from the wells. Chlorine is added, followed by treatment for iron and manganese removal. The treated ground water enters storage tanks prior to additional disinfection and being distributed into the water system.

Agua Viva's surface water treatment process uses an advanced membrane treatment technology. Raw water is sent through a 500-micron screen, adding alum to coagulate particles, and then is sent to the membrane ultra-filtration system. After the water passes through the membranes, treated water will receive a dose of fluoride to prevent tooth decay. Finally, the water will enter storage tanks prior to disinfection and being distributed into the water system.

24/7 water treatment

QUESTIONS?
If you have any questions about this report or the quality of our drinking water, please contact Christopher Grant, Water Quality & Compliance Manager 928-373-4628.

E-mail address:
Christopher.Grant@yumaaz.gov

City of Yuma Home Page:
www.yumaaz.gov

Laboratory Direct Web Page:
https://www.yumaaz.gov/government/utilities/utilities-treatment-division/laboratory

Environmental Protection Agency: (800) 426-4791

Arizona Department of Environmental Quality: (800) 234-5677

More information about contaminants, potential health effects, including guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants, is available from the US Environmental Protection Agency's Safe Drinking Water Hotline at (800) 426-4791 or online at www.epa.gov/safewater.