

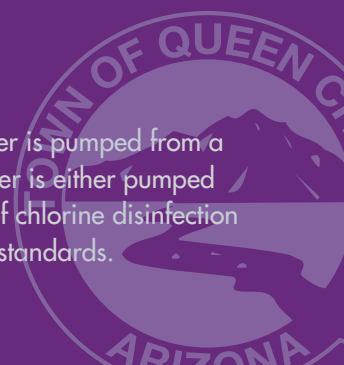
ANNUAL
Water Quality Report
WATER TESTING PERFORMED IN 2021



Where Our Water Comes From

The Town of Queen Creek's drinking water originates exclusively from groundwater sources. Groundwater is pumped from a combination of the 26 active drinking water wells located throughout the water distribution system. Water is either pumped directly into the distribution system or pumped to fill a water storage tank for future use. A small amount of chlorine disinfection is applied at entry points to the distribution system in order to maintain federal drinking water standards.

PRODUCED BY THE TOWN OF QUEEN CREEK





Our Commitment to Service

The Town of Queen Creek Water Division is proud to present the 2021 Annual Water Quality Report showcasing our commitment to delivering exceptional water quality. Through the challenges brought by the COVID-19 pandemic, we remain dedicated to meeting the challenges of new regulations, source water protection, water conservation, and community outreach and education while continuing to serve the needs of our community. Thank you for allowing us the opportunity to serve you and your family.

The Town of Queen Creek water service extends outside the physical boundaries of the Town. In 2021, we saw over 33,000 active connections, attributed to the remarkable new single-family home and commercial growth. Expected growth is anticipated with a projection to serve an estimated population of approximately 100,000 by end of 2023.

This past year the Water Division implemented improvements to increase water system functionality and improve infrastructure lifespan. Improvements to over seven wells were completed. Over 40 miles of new waterlines are currently in design and approximately 10 miles installed, allowing the water system to operate more efficiently.

Construction is almost complete on the Barney Farms three-million-gallon reservoir. Five wells are currently in development, expected to be online before the end of 2023. The merger with the former Diversified water system was administratively finalized and now incorporated in the physical distribution system.

Water meters continue to be tested for accuracy and replaced to keep our water loss low. Our geographic information systems and technology staff continue to develop efficiency improvements through technological changes, allowing staffing to access information remotely and enabling faster responses, work order completions and emergency mitigation. Improvements are continually evaluated to allow customers more access to billing and scheduling.

Water conservation continues to be a priority for our Town. We continued to grow our HOA relationships and monitoring programs with Waterfluence. We continued with water conservation workshops with a partnership with the City of Chandler and delivered 24 virtual water conservation workshops. We were able to go virtual again in 2021 with our water conservation program, which teaches our 4th graders about the water cycle. The Town was able to have its interactive water conservation floor graphic design installed at the Queen Creek Library. This design encouraged our young residents to jump, skip and hop their way to learning about water conservation.

The Town of Queen Creek continues to be an exceptional place to live and grow. The Water Division is committed to providing reliable high-quality water. We excitedly embrace the growth the Town of Queen Creek is experiencing. We greatly appreciate the partnership we have cultivated with the community and are honored to serve you in the future.



— Paul Gardner
Utilities Director
Town of Queen Creek

Substances That Could be in Water

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 organic chemicals, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.

Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

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 online at **EPA.gov/Safewater** or by calling the EPA's Safe Drinking Water Hotline at (800) 426-4791.

Count on Us

Delivering high-quality drinking water to our customers involves far more than just pushing water through pipes. Because tap water is highly regulated by state and federal laws, water system operators must be licensed and are required to commit to long-term, on-the-job training before becoming fully qualified.

Our licensed water professionals are knowledgeable on a wide range of subjects, including mathematics, biology, chemistry, and physics.

Some of the tasks they complete on a regular basis include:

- Operating and maintaining equipment to produce and store water.
- Monitoring and inspecting machinery, meters, gauges, and operating conditions.
- Conducting tests and inspections on water and evaluating the results.
- Maintaining optimal water chemistry.
- Applying data to formulas that determine treatment requirements, flow levels, and concentration levels.
- Documenting and reporting test results and system operations to regulatory agencies.
- Serving our community through customer support, education, and outreach.

So, the next time you turn on your faucet, think of the skilled professionals who stand behind every drop.



Water Quality

To ensure that tap water is safe to drink, the EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water which must provide the same protection for public health. Some people may be more vulnerable to contaminants in drinking water than the general population.

The Water Division continues to take thousands of water samples to determine the presence of microbiological and various contaminants in the system. Additionally, the Water Division participates in the Arizona Department of Environmental Quality Monitoring Assistance Program (MAP) to perform regular sampling and testing of all system wells for radioactive, inorganic, volatile organic, and synthetic organic contaminants. Efforts to sample and test our water has documented that the Town of Queen Creek water has exceeded all health standards. The table below shows only those contaminants that were detected in the water, many more were tested with no measurable amounts detected. Although all the substances listed here are under the Maximum Contaminant Level (MCL), we feel it is important that you know exactly what was detected and how much of the substance was present in the water.

2021 RESULTS

CONTAMINANT	SAMPLE YEAR	VIOLATION	RANGE	AVERAGE	MCL	MCLG	TYPICAL SOURCE
Arsenic (ppb)	2021	No	2.1 – 2.4	2.25	10	0	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Barium (ppm)	2021	No	0.042 – 0.045	0.0435	2	2	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chlorine (ppm)	2021	No	0.1 – 1.185	0.67	4	4	Water additive used to control microbes
Chromium (ppb)	2021	No	3.2 – 4.4	3.9	100	100	Discharge from steel and pulp mills; Erosion of natural deposits
Combined Radium 226 and 228 (pCi/L)	2021	No	ND	ND	5	0	Erosion of natural deposits
Dibromochloropropane (ppb)	2021	No	ND - 0.014	0.0007	200	0	Runoff/leaching from soil fumigant used on soybeans, cotton, pineapples, and orchards
Fluoride (ppm)	2021	No	0.13 – 0.81	0.31	4	4	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Gross Alpha excluding radon and uranium (pCi/L)	2021	No	ND - 4.7	0.58	15	0	Erosion of natural deposits
Haloacetic Acids (ppb)	2021	No	<2.0	ND	60	NA	By-product of drinking water disinfection
Iron (ppm)	2021	No	ND	<0.50	NA	NA	Erosion of natural deposits
Magnesium Hardness as CaCO3 (ppm)	2021	No	15-71	48.1	NA	NA	Erosion of natural deposits
Nitrate (ppm)	2021	No	0.61 – 7.3	4.2	10	10	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Sodium (ppm)	2021	No	58 – 94	78	NA	NA	Erosion of natural deposits
Total Coliform (% positive samples/month)	2021	No	0 – 2.1	0.34	4.5	0	Naturally present in the environment
Total Dissolved Solids (ppm)	2021	No	351-652	500	ND	ND	Naturally present in the environment
Total Hardness as CaCO3 (ppm)	2021	No	110-260	206	NA	NA	Naturally present in the environment
Total Trihalomethanes (ppb)	2021	No	0.6 – 14.5	3.7	80	NA	By-product of drinking water disinfection
Uranium (ppb)	2020	No	1.9	1.9	30	0	Erosion of natural deposits
Zinc (ppm)	2021	No	ND - 0.10	0.009	NA	NA	Erosion of natural deposits

Tap water samples collected for lead and copper analyses from specific community sample sites

CONTAMINANT	YEAR	VIOLATION	NUMBER OVER AL	90 TH PERCENTILE	AL	MCLG	TYPICAL SOURCE
Copper (ppm)	2019	No	0	0.101	1.3	1.3	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2019	No	0	2.25	15	0	Corrosion of household plumbing systems; Erosion of natural deposits

Definitions

AL: Action Level – The concentration of a contaminant that, if exceeded, triggers treatment or other requirements that a community water system shall follow

LRAA: Locational Running Annual Average – The average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters. Amount Detected values for THMs and HAAs are reported as the highest LRAAs

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

NA: Not applicable

ND: Not detected – Concentration too low to be detected by laboratory equipment

pCi/L: picocuries per liter – A measure of radioactivity

ppb: parts per billion – One part substance per billion parts
(or micrograms per liter)

ppm: parts per million – One part substance per million parts (or milligrams per liter)





Source Water Assessment

In 2002, the Arizona Department of Environmental Quality (ADEQ) completed a source water assessment for six groundwater wells used by the Queen Creek Water Company, now known as the Town of Queen Creek Water Division. The assessment reviewed adjacent land uses that could pose risks to water sources. These risks include, but are not limited to, gas stations, landfills, dry cleaners, agricultural fields, wastewater treatment plants, and mining activities. Once ADEQ identified the adjacent land uses, the source waters were ranked according to their potential to become contaminated. The result of the assessment for the six wells was low risk from adjacent land use and low risk to source water. For more information or to request a copy of the source water assessment, please contact Nicole Petker at (480) 358-3459 or email Nicole.Petker@QueenCreekAZ.gov.



IMPORTANT Health Information

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 for infections. These people should seek advice from their health care provider about drinking water. 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.

While your drinking water meets EPA standards for arsenic, it does contain low levels of arsenic. EPA's standard balances the current understanding of possible health effects against the costs of removing arsenic from drinking water. EPA continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six (6) months of age. High nitrate levels in drinking water can cause "blue baby syndrome." Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, you should ask advice from your health care provider. Visit Epa.gov for additional information.

Lead in Home Plumbing

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 Town of Queen Creek is responsible for providing high-quality drinking water, but we 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 before using water for drinking or cooking. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline at (800) 426-4791 or EPA.gov/Safewater.



Water Conservation

Water is a precious natural resource. Please join the Town of Queen Creek and reduce your water use.
QueenCreekAZ.gov/ReduceTheUse



SIX TIPS TO REDUCE YOUR USE

1. Water your landscape efficiently

Learning how to water your landscape is crucial to saving our most valuable resource, water. Up to 70% of water use is outdoors. Find out how much water your landscape actually needs to thrive in our unique desert environment.

QueenCreekAZ.gov/WaterGuides

2. Is your water use increasing and you don't know why?

Learn how to read your water meter and take charge!

QueenCreekAZ.gov/WaterAudit

3. Attend a FREE landscape workshop

Learn about drip system design and install, how to water your landscape properly, maintain and repair your irrigation system, utilize proper pruning techniques, use low water use plants for an inviting backyard and much more.

QueenCreekAZ.gov/WaterSmart

4. Hire a Smartscape trained landscape professional

A Smartscape landscaper is trained in planning, planting and caring for landscapes in our desert environment.

Smartscape.org/Directory

5. Do you have a swimming pool?

A standard (16 ft. X 36 ft.) uncovered pool loses four to six feet per year to evaporation, most of which occurs during the summer. Added to the water lost during refilling due to evaporation and backwashing, that's roughly the equivalent of filling the entire pool every year. Draining a pool for cleaning doubles this amount! Find a number of ways to reduce water loss from pools and spas.

WaterUseItWisely.com/Swimming-Pools

6. Plant like you live in the desert

Xeriscaping your yard does not mean using only rocks and cactus. Create your own oasis using low water use plants that are full of color and texture. Certain plants encourage visits from hummingbirds & butterflies as well. Our archived WaterSmart workshops can help you with design, plants, color and much more.

QueenCreekAZ.gov/WaterSmart

WATER CONSERVATION EDUCATION IN THE SCHOOLS

The Town of Queen Creek is committed to creating a sustainable future for residents. We proudly partner with the Environmental Education Exchange and Abracadabra Productions to offer innovative, educational outreach to Queen Creek and San Tan Valley area schools.

Abracadabra Water Conservation

Magic Shows are visually-engaging presentations, designed for 2nd–4th grade.

Our Water, Our Future is a water education program designed for 4th–5th grade students, addressing the water cycle, Queen Creek's water supply and water conservation.



The Town of Queen Creek Water Conservation is a proud partner of Water Use It Wisely, an organization devoted to promoting water conservation for a sustainable future. Sign up for their free monthly e-newsletter and get water-saving tips, conservation news and more delivered right to your inbox and become water wise.
WaterUseItWisely.com

Benefits of Chlorination

Disinfection, a chemical process used to control disease-causing microorganisms by killing or inactivating them, is unquestionably the most important step in drinking water treatment. By far the most common method of disinfection in North America is chlorination. Before communities began routinely treating drinking water with chlorine (starting with Chicago and Jersey City in 1908), cholera, typhoid fever, dysentery, and hepatitis A killed thousands of U.S. residents annually. Drinking water chlorination and filtration have helped to virtually eliminate these diseases in the U.S. Significant strides in public health are directly linked to the adoption of drinking water chlorination. In fact, the filtration of drinking water plus the use of chlorine is probably the most significant public health advancement in human history.

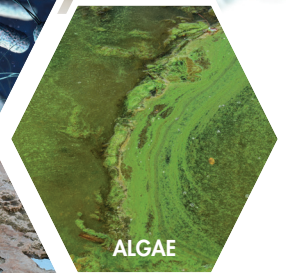
HOW CHLORINATION HELPS:

Potent Germicide Reduction in the level of many disease-causing microorganisms in drinking water to almost immeasurable levels.

Taste and Odor Reduction of many disagreeable tastes and odors like foul-smelling algae secretions, sulfides, and odors from decaying vegetation.

Biological Growth Elimination of slime bacteria, molds, and algae that commonly grow in water supply reservoirs, on the walls of water mains, and in storage tanks.

Chemical Removal of hydrogen sulfide (which has a rotten egg odor), ammonia, and other nitrogenous compounds that have unpleasant tastes and hinder disinfection. It also helps to remove iron and manganese from raw water.



QUESTIONS?

For more information about this report, or to ask drinking water related questions, please contact Nicole Petker, Water Resource Analyst, at (480) 358-3459 or Nicole.Petker@QueenCreekAZ.gov.

Residents may provide public comment to the Queen Creek Town Council regarding water quality at the regularly scheduled Town Council Meetings, usually held on the first and third Wednesdays of each month. The Town Council meeting calendar can be viewed online at QueenCreekAZ.gov/Calendar.

