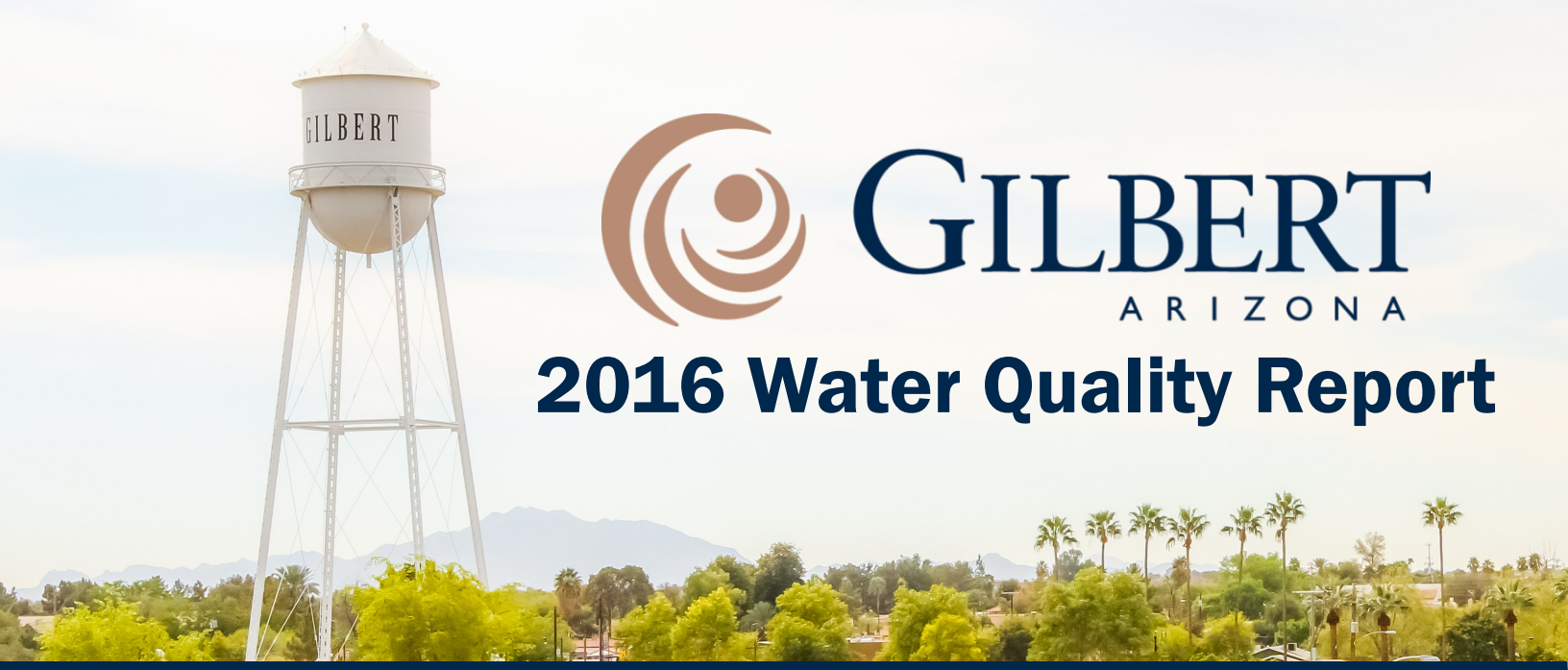


GILBERT
ARIZONA

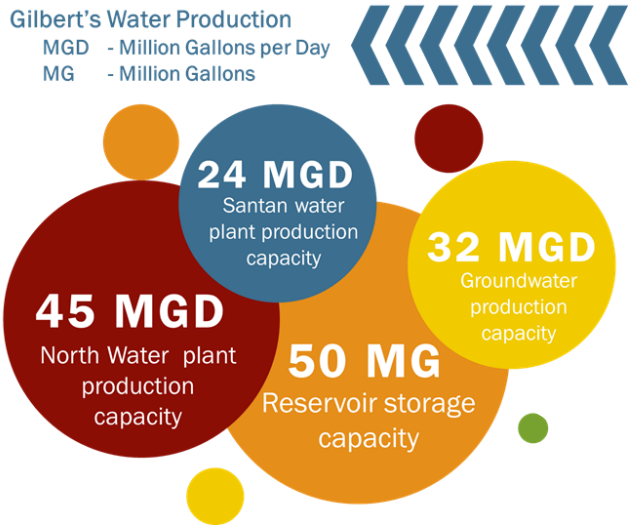
2016 Water Quality Report

What is a Water Quality Report?

Gilbert is pleased to present the 2016 annual drinking water quality report as required by the Environmental Protection Agency's (EPA) Safe Drinking Water Act (SDWA). This report is designed to provide details about where your water comes from, what it contains, and how it compares to the standards set by regulatory agencies. This report is a snapshot of your water quality in Gilbert in 2016, and discloses information on any contaminants detected in your water. This report is also Gilbert's opportunity to tell the story of Gilbert water's activities, programs and process improvements in 2016.

Where does my water come from?

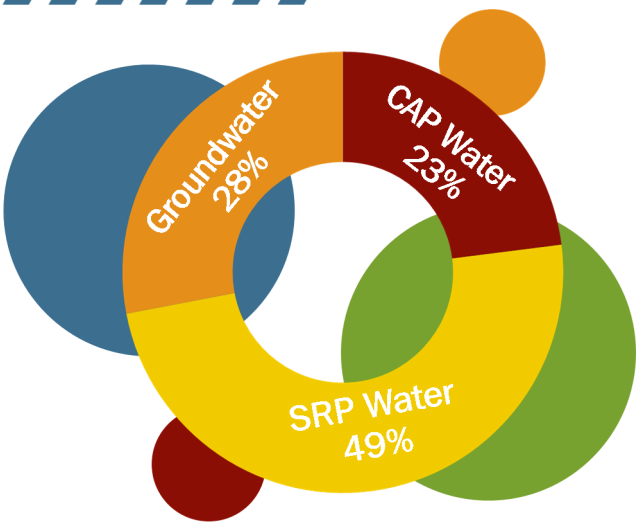
Gilbert's water comes from a combination of several surface water and groundwater sources. Surface water is supplied to Gilbert's two water treatment plants by an extensive canal network from the Salt River Project (SRP) and the Central Arizona Project (CAP). SRP manages a series of dams and reservoirs along the Salt River and Verde River watersheds, storing water for times of low rainfall and drought. Water collected in these reservoirs is released into SRP canals. CAP operates and maintains a 336 mile long canal system which carries Colorado River water from Lake Havasu, through Phoenix, to south of Tucson.



Groundwater

Groundwater is used in Gilbert to supplement the surface water supplies to meet water demand during times of high water use and during canal and water treatment plant scheduled maintenance. Groundwater is pumped from any number of the 17 wells located throughout Gilbert where it can be put directly into the distribution system or can be used to fill a water storage reservoir. At some well sites, ion exchange or adsorptive media are used to reduce the concentration of inorganic contaminants native to the groundwater to below EPA maximum contaminant levels (MCLs) prior to delivery.

Gilbert's Water Sources at a glance



- **North Water Treatment Plant**

Called the North Water Treatment Plant (NWTP) due to its location in northern Gilbert, the plant is situated on the eastern canal and receives water from SRP. The SRP canal delivers a mixture of water from the Salt River, the Verde River and groundwater wells to the plant where it is then treated using conventional treatment methods of coagulation, flocculation, sedimentation, and filtration with ozonation and chlorine disinfection. The NWTP can produce as much as 45 million gallons of water per day (MGD) and has a 16 million gallon (MG) reservoir for onsite water storage.

- **Santan Vista Water Treatment Plant**

Called Santan Vista because of the stunning view of the San Tan Mountains from the control room, this plant receives water from the Central Arizona Project (CAP) canal system, which diverts water from the Colorado River watershed. From the CAP canal turnout, water is brought to the plant through 14 miles of 48" diameter ductile iron pipeline. This plant was built and operates in partnership with the City of Chandler which uses 12 MGD of Santan Vista's 24 MGD production capacity. The Santan Vista water treatment plant operates using ballasted flocculation and filtration with ozone and on-site generation of sodium hypochlorite for disinfection.

- **Source water assessment and its availability**

In 2004, the Arizona Department of Environmental Quality (ADEQ) completed a Source Water Assessment (SWA) for the 12 groundwater wells (at the time of the assessment) and one water treatment plant used by Gilbert. The assessment reviewed and evaluated adjacent land uses to the aforementioned locations that may pose a potential risk to water, and the quality thereof, served to the community from those sources. These risks may include, but are not limited to, gas stations, landfills, dry cleaners, and agriculture fields.

The result of the SWA led to the identification of 10 sources with a low risk susceptibility and three sources identified as high risk. Those sites receiving a high risk designation are located in proximity to a gas station, agriculture field, and an industrial park.

Santan Vista is expanding!

In order to meet the needs of Gilbert's growing population, the Santan Vista Water Treatment Plant, built in partnership with the City of Chandler, is currently undergoing a capacity expansion project. This expansion will double the current water production abilities, increasing the water treatment plant from 24MGD to 48MGD. Utilizing state of the art technology, this expansion will provide the necessary volume of water to support future industrial and residential growth in Gilbert. The project completion is scheduled for early 2018.

None of the locations, including those with a low risk assessment, have detected contamination; however, Gilbert remains vigilant in their monitoring to ensure the best water quality is served to our community. Residents can help protect source water by taking hazardous household chemicals to hazardous material collection sites and by limiting the amount of pesticide and fertilizer use in the home. The SWA is available to the public by request from the Clerk's Office, or visit the ADEQ's SWA Unit website at azdeq.gov/environ/water/dw/swap.html for more information.

- **Are there contaminants in my 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 (EPA) Safe Drinking Water Hotline (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: microbial contaminants, such as viruses and bacteria, that 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 by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems; and 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, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

- **Do I need to take special precautions?**

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

- **How can I get involved?**

The Gilbert Town Council consists of the mayor and six council members who serve four year terms. Unless otherwise noted, the council meets every other Thursday at 7 p.m. in the Gilbert Municipal Center, 50 E. Civic Center Drive. Council agendas are posted on this website at least 24 hours prior to meeting time at gilbertaz.gov/council.

Want to hear more from your water division?

Sign up for our water conservation emails at gilbertaz.gov/water for project updates and water news!

Painful water bill?

Schedule a free water checkup and we'll diagnose the problem.

Water checkups are performed by a trained Water Conservation Specialist who evaluates the irrigation system, checks for water leaks, and offers customized recommendations for increased water savings at your residence or business.

GILBERT ARIZONA | gilbertaz.gov/watercheckup

Water is precious here in the desert. You can do your part to save water.

Residential customers

- *Eliminate leaks.*

  Use the Smart Home Water Guide to find and fix leaks in your home.

  smarthomewaterguide.org

- *Water your landscape efficiently*

  Up to 70% of water use is outdoors. Find out how much water your plants need.

  landscapewateringguide.com

- *Take a FREE landscape class*

  Learn how to optimize your irrigation system.

  gilbertaz.gov/waterworkshops

- Hire a Smartscape trained landscape professional.

  Find a Smartscape landscaper.

  smartscape.org/directory

- *Is your water bill too high and you're not sure why?*

  Request a FREE water efficiency checkup.

  gilbertaz.gov/watercheckup

- Learn how to use water efficiently around your home.

  Visit gilbertaz.gov/water

Businesses, schools, churches, and HOAs

- *Join the HOA Water Budget Program*

  Visit gilbertaz.gov/HOA-Irrigation to reduce water use and maintain an attractive landscape.

- *Become a Water Wise Gilbert organization*

  Visit gilbertaz.gov/waterwise to save your business water and money.

- ## How does Gilbert deliver water?

Gilbert's water distribution system is comprised of over 1200 miles of underground piping ranging in size from 4-inches in diameter to 48-inches in diameter. Gilbert's underground piping network is essential to ensure the safe delivery of water to all water customers. Gilbert serves various types of customers including; private homes, industrial facilities, commercial properties and institutional establishments. Gilbert's water distribution piping network is designed to maintain a positive pressure and typically operates between 50 and 80 psi (pounds per square inch). Positive pressure is needed to ensure treated drinking water reaches all parts of Gilbert's underground piping network. Gilbert's water distribution division works hard to ensure that every Gilbert customer and resident has access to this water, and to do so they operate, inspect, repair and replace these critical components of our drinking water infrastructure:

12,578 Fire Hydrants

- Provide accessible water for fire fighting, fire flow testing and inspections, construction needs, street sweeping, and water quality flushing programs.
- In 2016, Gilbert performed preventative maintenance on nearly 2,000 fire hydrants and was able to repair 216 fire hydrants to full operability, saving $865,000 over the cost of replacement hydrants.

1,334 Miles of Pipe

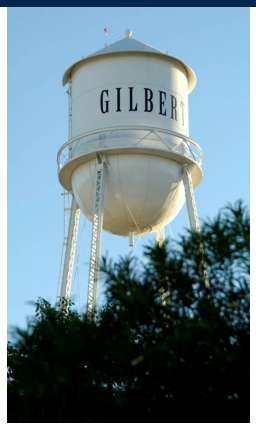
- In 2016, Gilbert repaired 33 water main breaks. Water main breaks can be caused by construction activities, or by natural environmental changes including extreme temperature fluctuations.
- Over 80% of the water mains in Gilbert are made of PVC (Polyvinyl Chloride)

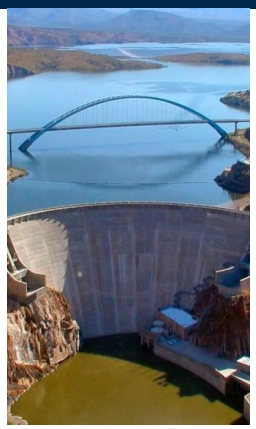
83,055 Water Meters

- Water meters are used to accurately record water consumption for each Gilbert customer. Gilbert's water meter department reads all meters monthly, and replaces over 5,000 meters every year.
- Gilbert's water meter testing program ensures that water meters accurately record consumption. Each water meter must be accurate within +/- 1.5% to pass.

37,218 Isolation Valves

- Gilbert's water department maintains valves by exercising them on a regular basis. Each year, over 7,000 valves are exercised by opening and closing them with a valve key.
- Valves range in size from 4 to 48 inches in diameter. A 48 inch valve takes a full 450 revolutions of a valve key in order to open or close the valve.





- ## Your Water Quality

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of contaminants in water provided by public water systems. The following tables list all of the drinking water contaminants that were detected during the calendar year of this report. Although many more contaminants were tested, only those substances listed below were found in your water. All sources of drinking water contain some naturally occurring contaminants. At low levels, these substances are generally not harmful in our drinking water. Removing all contaminants would be extremely expensive, and in most cases, would not provide increased protection of public health. A few naturally occurring minerals may actually improve the taste of drinking water and have nutritional value at low levels. Unless otherwise noted, the data presented in these tables are from testing done in 2016. The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not vary significantly from year to year, or the system is not considered vulnerable to this type of contamination. As such, some of our data, though representative, may be more than one year old. In these tables you will find terms and abbreviations that might not be familiar to you. To help you better understand these terms, we have provided the definitions.

- ## Definitions

AL:	**Action Level** - The concentration of a contaminant which, if exceeded, triggers treatment or other requirements
MCL:	**Maximum Contaminant Level** - The highest level of a contaminant that is allowed in drinking water
MCLG:	**Maximum Contaminant Level Goal** - The level of a contaminant in drinking water below which there is no known or expected risk to health
MFL:	**Million Fibers per Liter**
MRDL:	**Maximum Residual Disinfectant Level -** The level of disinfectant added for water treatment at that may not be exceeded at the customer's tap.
MRDLG:	**Maximum Residual Disinfectant Level Goal** - The level of disinfectant added for water treatment at which no known or anticipated adverse effect on health of persons would occur.
MREM:	**Millirems per year** - a measure of radiation absorbed by the body
NA:	**Not Applicable**
ND:	**Not Detected** - Concentration too low to be detected
NTU:	**Nephelometric Turbidity Units -** a measure of the clarity of water
pCi/L:	**Picocuries per liter** – a measure of the radioactivity in water
PPM:	**Parts Per Million** – or milligrams per liter (mg/L)
PPB:	**Parts Per Billion** – or micrograms per liter (µg/L), 1000 ppb = 1 ppm
PPT:	**Parts Per Trillion** – or nanograms per liter (ng/L), 1000 ppt = 1 ppb
RAA:	**Running Annual Average -** Average value of a contaminant at a location in a year
TT:	**Treatment Technique** – A required process intended to reduce the level of a contaminant in drinking water.

• 2016 Results - Treated Source Water

Contaminant	Violation	Range (Low – High)	Average	MCL	MCLG	Likely source
Arsenic (ppb)	No	3.2 - 9.1	6.43	10	0	Erosion of natural deposits
Barium (ppm)	No	ND - 0.055	0.032	2	2	Erosion of natural deposits
Bromate (ppb)	No	0 - 1.5	0.32	10	0	By-Product of drinking water disinfection
Chromium (total, ppb)	No	4.1 - 12	8.6	100	100	Discharge from drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Nitrate (ppm)	No	0.24 - 6.8	3.91	10	10	Runoff from fertilizer use; Leaching from septic tanks; Erosion of natural deposits
Fluoride (ppm)	No	0.28 - 0.94	0.58	4	4	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Alpha emitters (pCi/L)	No	ND - 7.9	2.8	15	0	Erosion of natural deposits
Uranium (ppb)	No	ND - 7.6	2.4	30	0	Erosion of natural deposits
Combined Radium (pCi/L)	No	ND - 0.8	0.06	5	0	Erosion of natural deposits

Contaminant	Violation	TT % < 0.3	Highest result	TT requirement	MCL	Likely source
Turbidity (NTU)	No	100%	0.23	> 95%	1.0	Soil Runoff

• 2016 Results - Distribution System

Contaminant	Violation	Range (Low – High)	Average	MCL or MRDL	MCLG or MRDLG	Likely source
Total Coliform (% positive samples/ month)	No	0 - 1.16	0.24	5	0	Naturally present in the environment
Chlorine (ppm)	No	0.21 - 1.65	0.89	4	4	Water additive used to control microbes
Haloacetic Acids (ppb)	No	2 - 40	8.9	60	NA	By-Product of drinking water disinfection
Total Trihalomethanes (ppb)	No	2.4 - 110 *	48	80	NA	By-Product of drinking water disinfection
Total Organic Carbon (% removal)	No	18.4 - 32.4	22.5	TT	NA	Naturally present in the environment

*Compliance based on local running annual average, not highest individual result.

Contaminant	Violation	90th percentile	Number over AL	Range (Low – High)	AL	ALG	Sampled	Likely source
Copper (ppm)	No	0.098	0	0.0049 – 0.33	1.3	NA	2016	Corrosion of house-hold plumbing systems; Erosion of natural deposits
Lead (ppb)	No	1.33	0	ND - 2.9	15	0	2016	Corrosion of house-hold plumbing systems; Erosion of natural deposits

Additional information on contaminants

- **Arsenic**

While your drinking water meets EPA's standard for arsenic, it does contain low levels of arsenic. EPA's standard balances the current understanding of arsenic's 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

- **Fluoride**

In April of 2015, the United States Department of Health and Human Services issued a revised recommendation for the optimal level of fluoride in drinking water. This revision lowered the recommendation from between 0.7 to 1.2 parts per million (ppm) as recommended by the department in 1962, to an optimal level of 0.7ppm. In Gilbert, voters have mandated that fluoride be added to the water supply at our two water treatment plants. These water treatment plants have maintained a target level of 0.7ppm in response to the 1962 recommendation, and will continue to do so as it is consistent with the revised recommendation. A copy of the full United States Department of Health and Human Services report can be found at ada.org/~/media/EBD/FI/PHS_2015_Fluoride_Guidelines.pdf.

- **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. Gilbert 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 or at epa.gov/safewater/lead.

- **Nitrate**

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

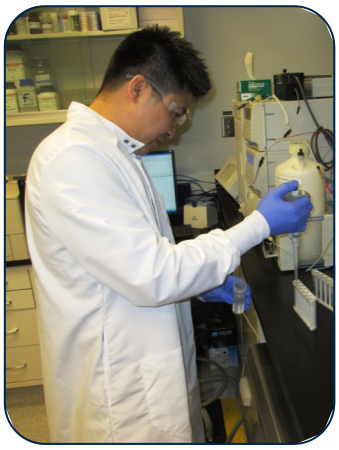
- **Additional Monitoring**

In addition to sampling and testing your water as required by state, county and federal regulations, Gilbert's water division performs additional monitoring daily to ensure that the water treatment plants are operating efficiently, and to ensure the highest level of quality for your water. The following table shows the results of some of this additional monitoring. The compounds listed in this table do not have maximum contaminant levels enforceable by the EPA, and are used to characterize the aesthetic quality of the water.

Analyte	Average	Range (Low – High)
pH	7.79	7.52 - 8.04
Alkalinity (mg/L)	148	106 - 226
Conductivity (µs/cm)	1275	622 - 2305
TDS (mg/L)	816	398 - 1470
Calcium Hardness (mg/L)	192.8	116–265
Calcium Hardness (grains/gallon)	11	6.7 - 15.2
Iron (ppb)	ND	ND

Gilbert's commitment to quality

Gilbert'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 government. Gilbert has a state certified laboratory which analyzes daily process, distribution and regulatory compliance samples. Each month, the Water Quality staff collects bacteriological samples from 150 designated water quality sampling stations across Gilbert to monitor the chlorine disinfectant level in the distribution system and to test for the presence of the microbial activity in the water. Our staff works diligently to ensure compliance with all drinking water regulations and to supply safe, high quality drinking water at a reasonable cost. Here are some of the ways that Gilbert's Water Quality department ensures that your water meets the highest standards:



Continuous Monitoring

- In addition to the instruments in our laboratories, Gilbert uses 95 online online instruments to monitor water quality parameters every second to continuously analyze your water.
- These online instruments are located at Gilbert's two surface water treatment plants, as well as across the 17 well sites and 14 water storage reservoirs in Gilbert.
- Gilbert's two surface water treatment plants are staffed 24 hours a day, 365 days per year to ensure that your water is clean, safe and reliable.

Compliance Testing

- Gilbert's Water Quality Department operates a state-certified compliance laboratory which is used to ensure your water meets rigorous state and federal water quality regulations.
- Samples are collected from the water treatment plants, well sites and dedicated Water Quality sample stations across Gilbert and tested to ensure quality, safety and compliance.
- For specialized testing, samples are also sent to a certified drinking water testing laboratory for in-depth analysis.

Process Control

- In addition to all of the testing required by the state and federal government, your water undergoes rigorous additional monitoring to ensure the highest quality water.
- This additional monitoring includes frequent testing for bacteriological contaminants, inorganic contaminants , trace metals and organic materials.
- This testing is used to optimize surface water treatment plant operations to adjust to changes in incoming water quality and guarantee safe drinking water is produced.

Gilbert: A leader in the water industry

Our Gilbert water division staff takes pride in their work and strives to be leaders in the industry by demonstrating commitment and continuous active involvement in professional organizations. Gilbert staff leads committees, councils and boards on state and national levels. Here are just a few of the ways that your water department has been involved and recognized this year.

Water Operations Supervisor of the Year

Kurtis McDavid
Water Production Supervisor, SVWTP

At the 90th annual conference this year, Kurtis McDavid was named Water Operations Supervisor of the Year for the state of Arizona by the AZ Water Association. The Operations Leadership Award recognizes exceptional operation leaders for their significant contributions to the water or wastewater industry and to AZ Water.

Top Ten Public Works Leaders of the Year

David Fabiano, P.E.
Town Engineer

This year, David Fabiano was named one of the top ten public works leaders of 2017 by the American Public Works Association (APWA). This award is presented to ten individual leaders in recognition of their professionalism, expertise and personal dedication to improving the quality of life in their communities through the advancement of public works services and technology.

The Arizona Water Association (AZ Water) is a state-wide organization of water and wastewater professionals founded in 1928 with over 2,700 members dedicated to preserving and enhancing Arizona's water environment. AZWater serves as Arizona's local chapter of the American Water Works Association (AWWA). This year, at the 90th annual conference, Gilbert water division staff was proud to present 9 papers, lead several committees and serve on the governing board of AZ Water.

The American Water Works Association (AWWA) is an international, nonprofit, scientific and educational society founded in 1881 dedicated to providing total water solutions assuring the effective management of water. Its more than 50,000 members include over 3,900 utilities that supply roughly 80% of the nation's drinking water. Gilbert staff is highly represented in AWWA through involvement in utility and standards councils and multiple committees which develop educational materials and industry standards for the entire water industry. Gilbert staff are also proud members and supporters of the following organizations.

GILBERT ARIZONA
WATER QUALITY DIVISION
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