



U.S. Army Garrison  
Yuma Proving Ground  
Attn: IMYM-PWE  
301 C Street  
Yuma, AZ 85365-9498

Water Consumer  
USAYPG  
Yuma, AZ 85365-9498

## **2018 Water Quality Report Consumer Confidence Report**

**Walker Cantonment Area & Kofa Firing Range Water Systems**

## **2018 Water Quality Report Consumer Confidence Report**

**Walker Cantonment Area & Kofa Firing Range  
Public Water Systems (14-363 & 14-367)**



**Please Note:** This Consumer Confidence Report (CCR) covers only the potable water systems servicing the Walker Cantonment Area (regulated as MTA System), which also serves the Laguna Army Airfield Cantonment Area, and Kofa Firing Range, which also serves Castle Dome Heliport and Castle Dome Annex Cantonment Areas, at U.S. Army Yuma Proving Ground (YPG). No other water systems are covered or otherwise referenced in this information.

### **For More Information...**

This Consumer Confidence Report was prepared by the Environmental Sciences Division, USAG Yuma Proving Ground. For questions, information about drinking water or additional copies of this report please contact Sergio Obregon, Safe Drinking Water Program Manager, at (928) 328-2015, or Mark Schauer of the Yuma Proving Ground Public Affairs Office at (928) 328-6189.

# Your 2018 Water Quality Page 2

## CONSUMER CONFIDENCE REPORT

*This report covers the two public water systems which serve:  
Walker Cantonment Area (WCA) & Laguna Army Airfield (LAAF) (AZ04-14363), and  
Kofa Firing Range (KFR), Castle Dome Heliport (CDH), & Castle Dome Annex (CDA) (AZ04-14367).*

*U.S. Army Garrison Yuma Proving Ground*

*Issued May 2019*

### Dear Valued Water Consumer,

Thank you for taking the time to read this annual water report. We are here to answer any questions or concerns you may have. Certified laboratory results show our water is well below the federal guidelines for allowable constituents in drinking water. *The proof is in the data!* If you have any individual questions, please feel free to contact us. We'd be happy to answer any questions you may have.

The United States Army Garrison (USAG) Yuma Proving Ground (YPG) Water Treatment Plant staff are happy to provide guided tours of the water facilities on YPG. If you are interested in a private tour of a water treatment plant, please contact Sergio Obregon for scheduling.

YPG is proactive in providing safe, quality water to its water consumers throughout all three cantonment areas. Although this report's data covers the Walker Cantonment Area (WCA) and the Kofa Firing Range (KFR) water systems only, the general information is relevant to drinking water across the United States.

**Our water systems provided drinking water that met all regulatory requirements during 2018.**

If you have any questions about the quality of your water, please contact Sergio Obregon, Safe Drinking Water Program Manager, at 928-328-2015 or [Sergio.obregon.civ@mail.mil](mailto:Sergio.obregon.civ@mail.mil)

Thank you for taking interest in your drinking water.

*Sincerely,*

*Your Public Works Directorate*



### Our Continuing Commitment to You

YPG and its trained, certified water quality professionals are committed to:

- Providing high quality, safe drinking water to its water consumers,
- Monitoring and testing the water we provide to ensure it is always safe to drink,
- Providing opportunities for water consumers to ask questions and learn during YPG's Safety Week, held each year in February, periodic YPG town hall meetings, and via articles in the YPG Outpost.

### Inside this report:

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### Introduction

This is the 2nd edition of the annual report for WCA and KFR water systems on the quality of water delivered by YPG.

Under the "Consumer Confidence Reporting Rule" of the Safe Drinking Water Act (SDWA), only community water systems (Howard Cantonment Area) are *required* to report this water quality information to the consuming public. However, as part of the ongoing water quality outreach program, YPG has chosen to provide a CCR for

the additional public water systems on YPG. Presented in this report is information on the source of our water, its constituents, and the health risks associated with any contaminants.

WCA and KFR are regulated as Non-Transient, Non-Community water systems because these water systems regularly supply water to at least 25 of the same people at least six months per year.

This type of system requires less frequent monitoring of certain contaminants which other systems may have more often due to the consumers not residing within the water system full-time, therefore lessening the risk.

For more information on water system classifications, please visit <https://www.epa.gov/dwreginfo/information-about-public-water-systems>.

### Information About Federal Regulations

In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (EPA) and Arizona Department of Environmental Quality (ADEQ) prescribe regulations that limit the amount of certain

contaminants in water provided by public water systems. The U.S. Food and Drug Administration regulations also establish limits for contaminants in bottled water that provide the same protection for public health.



Most constituents of drinking water are naturally occurring throughout the environment.

## Substances in Drinking 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.

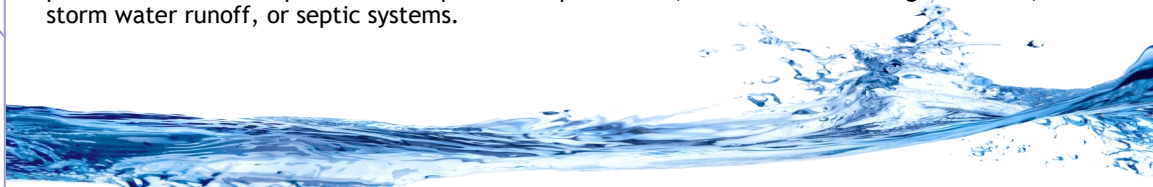
Contaminants that may be present in source water include:

Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, or 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 agricultural activities.

Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, or residential uses.

Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can come from gas stations, urban storm water runoff, or septic systems.



### Primary vs. Secondary Drinking Water Regulations

The EPA sets Current Drinking Water Standards for drinking water. These standards are made up of the National **Primary Drinking Water Regulations** and the National **Secondary Drinking Water Regulations**.

The **Primary Standards** set levels of contaminants that may pose a health risk when present in drinking water supplies and are known or anticipated to occur in public water systems. The Primary Standards contaminants are divided into Inorganic Chemicals, Organic Chemicals, and Microorganisms.

The **Secondary Standards** are non-enforceable guidelines that establish recommendations for contaminants that may cause cosmetic effects such as skin or tooth discoloration and aesthetic effects such as taste, odor and color. The EPA recommends Secondary Standards for water treatment systems but does not require systems to comply.

### Questions or Concerns?

YPG Town Hall meetings are held intermittently during the year. When meetings are scheduled, they are announced via email.

For any questions relating to YPG drinking water, please contact Sergio Obregon, Safe Drinking Water Program Manager.

(928) 328-2015  
Sergio.Obregon.civ@mail.mil

## About Lead and Copper

Lead and copper are rarely found in source waters; however, both of these metals can enter drinking water by leaching from the building's plumbing and fixtures. Water that sits in your pipes for long periods of time may dissolve tiny amounts of lead and/or copper (parts per billion levels) into building water. The EPA has developed a rule to minimize the levels of these metals in drinking water.

The Lead and Copper Rule was developed to protect public health by establishing an action level of 15 parts per

billion (ppb) for lead and 1.3 parts per million (ppm) for copper at the tap.

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.

*YPG is responsible for providing high quality drinking water but cannot control the variety of materials used in plumbing components. While WCA and KFR water system monitoring has historically shown lead levels below the Action Level (AL), due to the age of some buildings it is reasonable to assume there are outdated plumbing materials throughout the distribution system that could contribute to the levels of lead and/or copper.*



A single elevated result does not necessarily mean an AL exceedance. If a water system exceeds the AL for lead, its consumers will be notified.

If your water has been sitting in your building's plumbing for over a day, 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 do so, you may wish to collect the flushed water and reuse it for another beneficial purpose, such as watering plants.* 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 at 1(800) 426-4791 or at [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead).



## Facts About Total Coliform Bacteria

Coliform bacteria are naturally present in the environment and are generally not harmful. Coliform bacteria may occur in soil, vegetation, animal waste, sewage, and surface waters.

*This Consumer Confidence Report (CCR) reflects changes in drinking water regulatory requirements during 2016. All water systems*

*are required to comply with the 'Total Coliform Rule' through March 31, 2016. Beginning April 1, 2016, all water systems are now required to comply with the federal 'Revised Total Coliform Rule.' The new federal rule maintains the purpose to protect public health by ensuring the integrity of the drinking water distribution system and monitoring for the presence of*  
(Continued on page 4)



## Facts About Total Coliform Bacteria (continued from page 3)

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*microbials (i.e. total coliform and E. coli bacteria). The EPA anticipates greater public health protection as the new rule requires water systems that are vulnerable to microbial contamination to identify and fix problems. Water systems that exceed a specified frequency of total coliform occurrences are required to conduct an assessment to determine if any sanitary defects exist. If found, these must be corrected by the water system.*

**YPG WCA and KFR water systems routinely test for the presence of coliform bacteria as an indicator of the sanitary quality of drinking water.**

WCA and KFR water systems each analyzed 36 coliform samples in 2018, zero of which were positive for total coliform bacteria. The maximum allowed by EPA for coliforms is one positive in any month.

A positive coliform test result does not necessarily mean a maximum contaminant level (MCL) has been exceeded, or that there is a problem in the water system.

More information and general guidelines on ways to lessen the risk of infection by microbes are available from the EPA's Safe Drinking Water Hotline at 1(800) 426-4791 or at <https://www.epa.gov/ground-water-and-drinking-water>.

REVISED TOTAL COLIFORM RULE



The 'Revised Total Coliform Rule' went into effect during 2016 to help protect public health.

## Individual Health Concerns

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 and the Center 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 Drinking Water Hotline 1 (800) 426-4791.



## What We Do

At YPG we monitor our non-transient, non-community water systems for every federally regulated contaminant. The contaminants listed on pages 6-7 are ones which were detected in your water; there are many additional contaminants that were monitored for but were not detected in your water and therefore are not listed in this report. Drinking water samples are collected from the treatment plant at the entry point to the distribution system (EPDS) and from water taps in

the service area as required by federal regulations. Samples are sent to an Arizona Department of Health Services (ADHS) and EPA accredited laboratory for analysis. Results for the most recent monitoring through the end of 2018 for each contaminant are provided in this CCR.

*The state allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though representative, is more than one year old.*

ADEQ has the authority to enforce federal regulations regarding drinking water. The results are reported to ADEQ and also kept on file by the YPG Environmental Sciences Division.



## Arizona Source Water Assessment Program

The Source Water Assessment Program (SWAP) is an evaluation of water sources that provide recreational and drinking water to public water systems. This evaluation is used to determine the degree to which a public water system is protected, or at risk from contamination. The assessment examines the possible migration of contaminants from use of land bordering the watershed. According to the 2002 Arizona

SWAP, the area our water system draws from is considered an "attaining" watershed. It is unlikely, at this time, that the source our aquifer draws from is susceptible to contamination from adjacent land uses. More information on Arizona's Source Water Protection Program is available at <https://azdeq.gov/source-water-protection>.



YPG follows all federal regulations under the Safe Drinking Water Act.

## Information on Detected Contaminants

*Many people are concerned about drinking water issues identified by the news media. Elements such as arsenic and mercury, pesticides such as Aldrin and DDT, and bacteria such as E. coli, have increased public concerns about the safety of the water they drink.*

***Our water systems provided drinking water that met all regulatory requirements during 2018.***





For more information on protecting your source water, please visit <https://www.epa.gov/sourcewaterprotection>

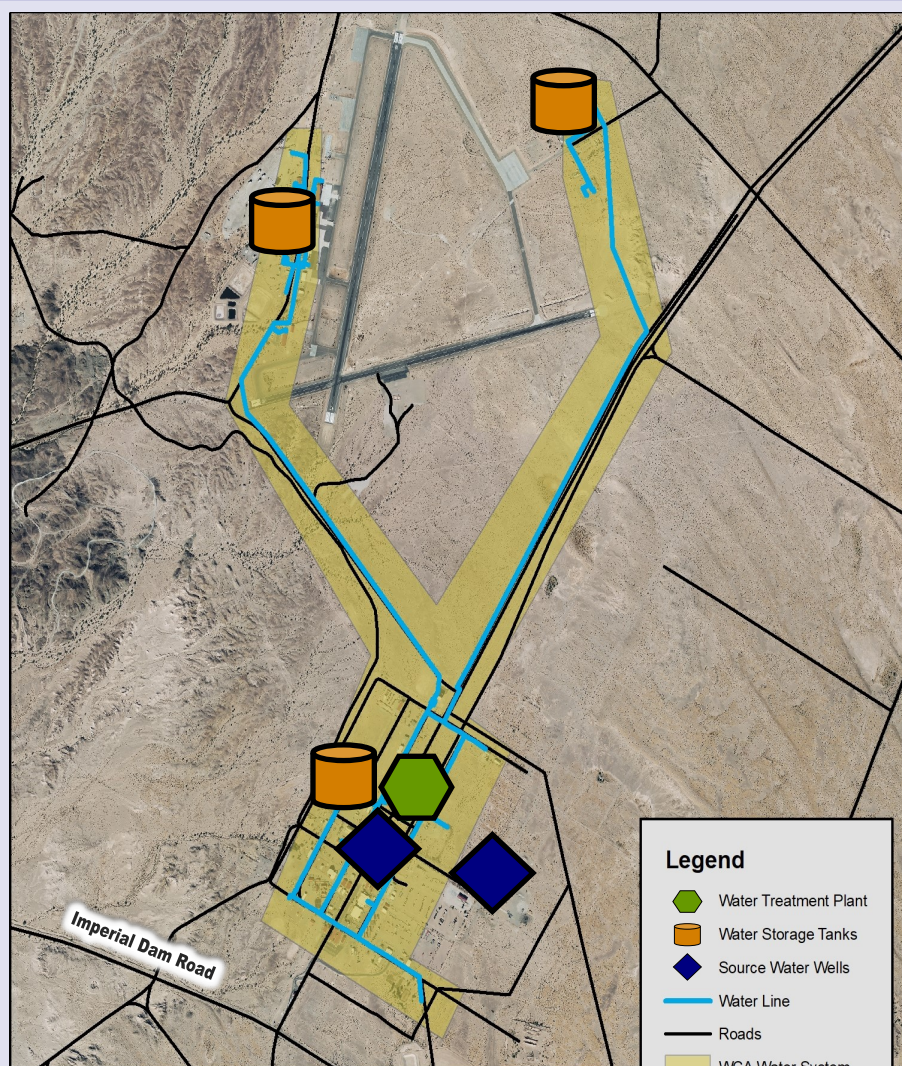
## The Source of Your Drinking Water

Our water supply for WCA and KFR water systems is derived from groundwater pumped from the Coarse Gravel Aquifer, which lies in the ancient streambed of the Colorado River. The water is pumped from two wells located near each water treatment plant. These wells range in depth from approximately 300 feet to 500 feet. Although the minimum depth to groundwater is about 160 feet at WCA and 250 feet at KFR, our tap water is drawn from approximately 250 to 450 feet below the ground surface, respectively. The pumped water is then treated through an electrodialysis reversal (EDR) unit at both WCA and KFR treatment plants to provide quality drinking water. Additionally, our water is chlorinated (treatment technique) to help prevent the growth of disease causing organisms, such as viruses and bacteria.

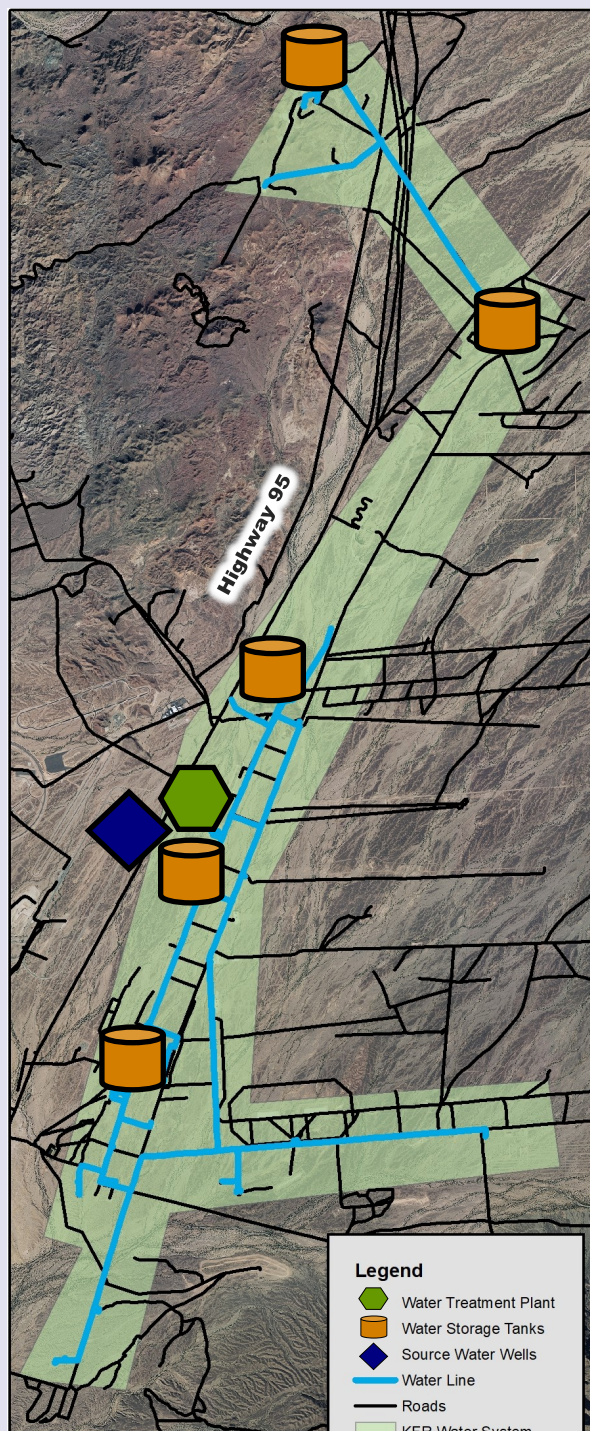
## Protecting Your Water

Protecting the sources of drinking water helps protect our health. It's everyone's responsibility, and here are a few ways you can help:

- ◆ Dispose of chemicals properly,
- ◆ Take used petroleum wastes and other chemicals to the YPG Hazardous Waste Management Facility (ext. 2828),
- ◆ Do not dump anything that may contain hazardous chemicals down a stormwater drain, as it can reach your drinking water source.



Walker Cantonment Area  
Drinking Water Distribution System



Kofa Firing Range  
Drinking Water Distribution System





# 2018 Walker Cantonment Area Water System Drinking Water Results

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Parameter	Units	Highest Level Allowed (EPA's MCL)	Ideal Goal (EPA's MCLG)	WCA Highest Result	Range/ Average	Exceeded Standard	Sample Date	Monitoring Frequency	Major Sources in Drinking Water	Health Effects
PRIMARY STANDARDS - Mandatory Health-Related Standards The National Primary Drinking Water Regulations (NPDWR) are legally enforceable primary standards and treatment techniques that apply to public water systems. Primary standards and treatment techniques protect public health by limiting the levels of contaminants in drinking water.										
Microbiological										
Total Coliform Bacteria	# positive coliforms	One positive coliform sample per month	0	0	0	No	Monthly	Monthly	Naturally occurring in the environment or can result from human and animal fecal waste entering the water system	Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially-harmful, bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems.
Fecal Coliform Bacteria (E. coli)	# positive E. coli	0	0	N/A, All monitoring results during 2018 were ABSENT for Total Coliform; analysis for Fecal Coliform was not required.				Monthly, if required	Human and animal fecal waste	Fecal coliforms and E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.
Disinfection Residuals and Disinfection By-Products										
Total Chlorine Residuals	ppm (mg/L)	MRDL = 4.0	MRDLG = 4.0	1.76	0.02 - 1.76 Average: 0.86	No	Monthly	Monthly	Water additive used to control microbes	Some people who use water containing chlorine well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chlorine well in excess of the MRDL could experience stomach discomfort.
Total Trihalomethanes (TTHM)	ppb	80	N/A	40	19 - 40	No	September 2018	Annually	By-product of drinking water disinfection	Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.
Haloacetic Acids (HAA5)	ppb	60	N/A	3.9	2 - 3.9	No	September 2018	Annually	By-product of drinking water disinfection	Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.
Metals - As a By-Product of Corrosion of Consumer's Plumbing										
Lead	ppb	AL = 15	0	Highest Level Detected: 18	0.29 - 18	No <sup>1</sup>	July 2017	Once every 3 years	Corrosion of household plumbing systems; Erosion of natural deposits	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.
				90 <sup>th</sup> Percentile: 2.6						
Copper	ppm	AL = 1.3	1.3	Highest Level Detected: 0.11	0.0015 - 0.11	No	July 2017	Once every 3 years	Corrosion of household plumbing systems; Erosion of natural deposits	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.
				90 <sup>th</sup> Percentile: 0.037						
Inorganic Chemicals										
Antimony	ppb	6	6	0.28	Single Sample	No	March 2017	Once every 3 years	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder	Some people who drink water containing antimony well in excess of the MCL over many years could experience increases in blood cholesterol and decreases in blood sugar.
Arsenic	ppb	10	0	3.7	2.1 - 3.7	No	January, April, July, October 2018	Once every quarter	Erosion of natural deposits, runoff from orchards, runoff from glass and electronics production wastes	Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.
Barium	ppm	2	2	0.0015	Single Sample	No	March 2017	Once every 3 years	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits	Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure.
Chromium	ppb	100	100	0.91	Single Sample	No	March 2017	Once every 3 years	Discharge from steel and pulp mills; Erosion of natural deposits	Some people who use water containing chromium well in excess of the MCL over many years could experience allergic dermatitis.
Fluoride	ppm	4	4	3.2	Single Sample	No	March 2017	Once every 3 years	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories	Some people who drink water containing fluoride in excess of the MCL over many years could get bone disease, including pain and tenderness of the bones. Fluoride in drinking water at half the MCL or more may cause mottling of children's teeth, usually in children less than nine years old. Mottling, also known as dental fluorosis, may include brown staining and/or pitting of the teeth, and occurs only in developing teeth before they erupt from the gums.
Nitrate	ppm	10	10	0.24	Single Sample	No	April 2018	Annually	Runoff from fertilizer use; Leaching from septic tanks, sewer age; Erosion of natural deposits	Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.
Selenium	ppb	50	50	0.14	Single Sample	No	March 2017	Once every 3 years	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines	Selenium is an essential nutrient. However, some people who drink water containing selenium in excess of the MCL over many years could experience hair or fingernail losses, numbness in fingers or toes, or problems with their circulation.
<sup>1</sup> The level for lead at which a water system must take additional regulatory action is 15 ppb. This means the primary standard is only exceeded if more than 10% of the samples (i.e. 90 <sup>th</sup> Percentile level) show lead levels higher than 15 ppb. In WCA's case, only one building showed elevated levels of lead and YPG chose to perform additional monitoring to ensure the water was safe to consume.										
Parameter	Units	Secondary Standard (EPA's Recommended Highest Level)	WCA Highest Level	Range/ Average	Exceeded Secondary Standard	Sample Date	Monitoring Frequency	Major Sources in Drinking Water		Noticeable Effects Above the Secondary MCL
SECONDARY STANDARDS - Aesthetic Standards National Secondary Drinking Water Regulations are non-enforceable guidelines regarding contaminants that may cause cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste, odor, or color) in drinking water. EPA recommends secondary standards to water systems but does not require systems to comply. However, some states may choose to adopt them as enforceable standards.										
pH	NA	6.5-8.5	9.21	8.71 - 9.21 Average: 8.71	Yes <sup>2</sup>	Monthly	Monthly in conjunction with Total Coliform	The pH level of your drinking water reflects how acidic it is. pH stands for "potential of hydrogen," referring to the amount of hydrogen found in a substance (in this case, water). pH is measured on a scale that runs from 0 to 14. Seven is neutral, meaning there is a balance between acid and alkalinity.		Low pH: bitter metallic taste; corrosion. High pH: slippery feel; soda taste; deposits.
Total Dissolved Solids (TDS)	mg/L	500	295	166 - 295 Average: 236	No	Intermittent throughout each month	Averaged monthly	TDS represents the total concentration of dissolved substances in water. TDS is made up of inorganic salts, as well as a small amount of organic matter. Common inorganic salts that can be found in water include calcium, magnesium, potassium and sodium, which are all cations, and carbonates, nitrates, bicarbonates, chlorides and sulfates, which are all anions. Cations are positively charged ions and anions are negatively charged ions.		Hardness; deposits; colored water; staining; salty taste.

<sup>2</sup>YPG continuously monitors the pH levels within the distribution system. Although it is not harmful to your health, higher pH levels may affect the aesthetics of the water.

# 2018 Kofa Firing Range Water System Drinking Water Results

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Parameter	Units	Highest Level Allowed (EPA's MCL)	Ideal Goal (EPA's MCLG)	KFR Highest Result	Range/ Average	Exceeded Standard	Sample Date	Monitoring Frequency	Major Sources in Drinking Water	Health Effects	
PRIMARY STANDARDS - Mandatory Health-Related Standards The National Primary Drinking Water Regulations (NPDWR) are legally enforceable primary standards and treatment techniques that apply to public water systems. Primary standards and treatment techniques protect public health by limiting the levels of contaminants in drinking water.											
Microbiological											
Total Coliform Bacteria	# positive coliforms	One positive coliform sample per month	0	0	0	No	Monthly	Monthly	Naturally occurring in the environment or can result from human and animal fecal waste entering the water system	Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially-harmful, bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems.	
Fecal Coliform Bacteria (E. coli)	# positive E. coli	0	0	N/A, All monitoring results during 2018 were ABSENT for Total Coliform; analysis for Fecal Coliform was not required.				Monthly, if required	Human and animal fecal waste	Fecal coliforms and E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.	
Disinfection Residuals and Disinfection By-Products											
Total Chlorine Residuals	ppm (mg/L)	MRDL = 4.0	MRDLG = 4.0	1.27	0.02 - 1.27 Average: 0.74	No	Monthly	Monthly	Water additive used to control microbes	Some people who use water containing chlorine well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chlorine well in excess of the MRDL could experience stomach discomfort.	
Total Trihalomethanes (TTHM)	ppb	80	N/A	41	26 - 41	No	August 2018	Annually	By-product of drinking water disinfection	Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.	
Haloacetic Acids (HAA5)	ppb	60	N/A	4.4	2.8 - 4.4	No	August 2018	Annually	By-product of drinking water disinfection	Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.	
Metals - As a By-Product of Corrosion of Consumer's Plumbing											
Lead	ppb	AL = 15	0	Highest Level Detected: 14	ND - 14	No	August 2018	Annually	Corrosion of household plumbing systems; Erosion of natural deposits	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.	
				90 <sup>th</sup> Percentile: 7.3							
Copper	ppm	AL = 1.3	1.3	Highest Level Detected: 0.039	0.0054 - 0.039	No	August 2018	Annually	Corrosion of household plumbing systems; Erosion of natural deposits	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.	
				90 <sup>th</sup> Percentile: 0.020							
Inorganic Chemicals											
Antimony	ppb	6	6	0.86	Single Sample	No	March 2017	Once every 3 years	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder	Some people who drink water containing antimony well in excess of the MCL over many years could experience increases in blood cholesterol and decreases in blood sugar.	
Arsenic	ppb	10	0	8.2	5.5 - 8.2	No	January, April, July, October 2018	Once every quarter	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes	Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.	
Barium	ppm	2	2	0.002	Single Sample	No	March 2017	Once every 3 years	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits	Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure.	
Fluoride	ppm	4	4	3.7	Single Sample	No	March 2017	Once every 3 years	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories	Some people who drink water containing fluoride in excess of the MCL over many years could get bone disease, including pain and tenderness of the bones. Fluoride in drinking water at half the MCL or more may cause mottling of children's teeth, usually in children less than nine years old. Mottling, also known as dental fluorosis, may include brown staining and/or pitting of the teeth, and occurs only in developing teeth before they erupt from the gums.	
Mercury	ppb	2	2	0.15	Single Sample	No	March 2017	Once every 3 years	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills; runoff from cropland	Some people who drink water containing inorganic mercury well in excess of the MCL over many years could experience kidney damage.	
Nitrate	ppm	10	10	0.18	Single Sample	No	April 2018	Annually	Runoff from fertilizer use; Leaching from septic tanks, sewerage; Erosion of natural deposits	Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.	
Selenium	ppb	50	50	0.13	Single Sample	No	March 2017	Once every 3 years	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines	Selenium is an essential nutrient. However, some people who drink water containing selenium in excess of the MCL over many years could experience hair or fingernail losses, numbness in fingers or toes, or problems with their circulation.	
Parameter	Units	Secondary Standard (EPA's Recommended Highest Level)		KFR Highest Level	Range/ Average	Exceeded Secondary Standard	Sample Date	Monitoring Frequency	Major Sources in Drinking Water		Noticeable Effects Above the Secondary MCL
SECONDARY STANDARDS - Aesthetic Standards National Secondary Drinking Water Regulations are non-enforceable guidelines regarding contaminants that may cause cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste, odor, or color) in drinking water. EPA recommends secondary standards to water systems but does not require systems to comply. However, some states may choose to adopt them as enforceable standards.											
pH	NA	6.5-8.5		9.76	8.24 - 9.76 Average: 9.06	Yes <sup>1</sup>	Monthly	Monthly in conjunction with Total Coliform	The pH level of your drinking water reflects how acidic it is. pH stands for "potential of hydrogen," referring to the amount of hydrogen found in a substance (in this case, water). pH is measured on a scale that runs from 0 to 14. Seven is neutral, meaning there is a balance between acid and alkalinity.		Low pH: bitter metallic taste; corrosion. High pH: slippery feel; soda taste; deposits.
Total Dissolved Solids (TDS)	mg/L	500		499	305 - 499 Average: 376	No	Intermittent throughout each month	Averaged monthly	TDS represents the total concentration of dissolved substances in water. TDS is made up of inorganic salts, as well as a small amount of organic matter. Common inorganic salts that can be found in water include calcium, magnesium, potassium and sodium, which are all cations, and carbonates, nitrates, bicarbonates, chlorides and sulfates, which are all anions. Cations are positively charged ions and anions are negatively charged ions.		Hardness; deposits; colored water; staining; salty taste.

<sup>1</sup>YPG continuously monitors the pH levels within the distribution system. Although it is not harmful to your health, higher pH levels may affect the aesthetics of the water.

# Definitions

**90th Percentile** The value in a data set in which 90 percent of the set is less than or equal to this value.

**Action Level (AL)** The level of lead or copper which, if exceeded in over 10% of the homes tested, triggers treatment or other requirements that a water system must follow.

**Electrodialysis Reversal (EDR)** is an electrodialysis reversal water desalination membrane process that has been commercially used since the early 1960s. An electric current migrates dissolved salt ions, including fluorides, nitrates and sulfates, through an electrodialysis stack consisting of alternating layers of cationic and anionic ion exchange membranes. Periodically, the direction of ion flow is reversed by reversing the polarity of the applied electric current.

**Maximum Contaminant Level (MCL)** The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the Maximum Contaminant Level Goals (MCLGs) as is economically and technologically feasible. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water.

**Maximum Contaminant Level Goal (MCLG)** The level of contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the US EPA.

**Maximum Residual Disinfectant Level (MRDL)** The highest level of a disinfectant allowed in drinking water. There is convincing evidence that the addition of a disinfectant is necessary for control of microbial contaminants.

**Maximum Residual Disinfectant Level Goal (MRDLG)** The level of a disinfectant added for water treatment 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.

## Abbreviations

<	Indicates the contaminant was not detected or was less than the laboratory reporting limit	MRDL	Maximum Residual Disinfectant Level
ADEQ	Arizona Department of Environmental Quality	MRDLG	Maximum Residual Disinfectant Level Goal
ADHS	Arizona Department of Health Services	N/A	Not Applicable: no State or Federal standards are established
AL	Action Level	ND	None Detected: sample was taken and chemical was not detected
ALG	Action Level Goal	pCi/L	picocuries per Liter; a measure of radioactivity in water
CCR	Consumer Confidence Report; annual water quality report	ppb	Parts per billion
CDA	Castle Dome Annex	ppm	Parts per million
CDC	Center for Disease Control	ppt	Parts per trillion
CDH	Castle Dome Heliport	PWS	Public water system
EDR	Electrodialysis reversal	RTCR	Revised Total Coliform Rule; regulation in effect starting April 2016
EPA	United States Environmental Protection Agency	SDWA	Safe Drinking Water Act; federal law that sets forth drinking water regulations
EPDS	Entry point to the distribution system	SWAP	Source Water Assessment Program
HCA	Howard Cantonment Area	TCR	Total Coliform Rule; regulation in effect through March 2016
KFR	Kofa Firing Range	USAG	United States Army Garrison
LAAG	Laguna Army Airfield	WCA	Walker Cantonment Area
MCL	Maximum Contaminant Level	YPG	Yuma Proving Ground
MFL	Million fibers per Liter		



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For more information on anything relating to YPG drinking water, please contact Sergio Obregon, Safe Drinking Water Program Manager.

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### ONE PART PER MILLION (PPM) IS LIKE...

- 1 second in 11.6 days
- 1 teaspoon in 1,302 gallons
- 1 drop in 13.6 gallons
- 1 milligram per liter (mg/L)

### ONE PART PER BILLION (PPB) IS LIKE...

- 1 second in 31.7 years
- 1 teaspoon in 1.3 million gallons
- 1 drop in 13,563 gallons
- 1 microgram per liter (µg/L)

### ONE PART PER TRILLION (PPT) IS LIKE...

- 1 second in 31,710 years
- 1 teaspoon in 1.3 billion gallons
- 1 drop in 13,563,368 gallons
- 1 nanogram per liter (ng/L)