

Consumer Confidence Report for Calendar Year 2019

Este informe contiene información muy importante sobre el agua usted bebe.
Tradúscalo ó hable con alguien que lo entienda bien.

Public Water System ID Number	Public Water System Name		
AZ04-12-006	Town of Patagonia		
Contact Name and Title	Phone Number	E-mail Address	
Operator:Ralph Smith	520-394-2229	Patagoniagov4@qwestoffice.net	
We want our valued customers to be informed about their water quality. If you would like to learn more about public participation or to attend any of our regularly scheduled meetings, please contact Townhall at 520-394-2229 for additional opportunity and meeting dates and times.			

Drinking Water Sources

The sources of drinking water (both tap 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 pickup substances resulting from the presence of animals or from human activity.

In order to ensure that tap water is safe to drink, EPA prescribes regulations which 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.

Our water source(s): Sonoita creek Watershed

Drinking Water Contaminants

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 that can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming

Pesticides and Herbicides: Such as agriculture, urban storm water runoff, and residential uses that may come from a variety of sources

Organic Chemical Contaminants: Such as synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and also may come from gas stations, urban storm water runoff, and septic systems.

Radioactive Contaminants: That can be naturally occurring or be the result of oil and gas production and mining activities.

Vulnerable Population

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. 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.

For more information about contaminants and potential health effects, or to receive a copy of the U.S. Environmental Protection Agency (EPA) and the U.S. Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and microbiological contaminants call the EPA Safe Drinking Water Hotline at 1-800-426-4791.

Source Water Assessment

- Based on the information currently available on the hydrogeologic settings of and the adjacent land uses that are in the specified proximity of the drinking water source(s) of this public water system, the department has given a low risk designation for the degree to which this public water system drinking water source(s) are protected. A low risk designation indicates that most source water protection measures are either already implemented, or the hydrogeology is such that the source water protection measures will have little impact on protection.

Definitions

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

Level 1 Assessment: A study of the water system to identify potential problems and determine (if possible) why total coliform bacteria was present

Level 2 Assessment: A very detailed study of the water system to identify potential problems and determine (if possible) why an *E. coli* MCL violation has occurred and/or why total coliform bacteria was present

Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment, or other requirements

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed 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

Maximum Residual Disinfectant Level (MRDL): The level of disinfectant added for water treatment that may not be exceeded at the consumer's tap

Maximum Residual Disinfectant Level Goal (MRDLG): The level of disinfectant added for treatment at which no known or anticipated adverse effect on health of persons would occur

Minimum Reporting Limit (MRL): The smallest measured concentration of a substance that can be reliably measured by a given analytical method

Millirems per year (MREM): A measure of radiation absorbed by the body

Not Applicable (NA): Sampling was not completed by regulation or was not required

Not Detected (ND or <): Not detectable at reporting limit

Nephelometric Turbidity Units (NTU): A measure of water clarity

Million fibers per liter (MFL)

Picocuries per liter (pCi/L): 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)

ppt: Parts per trillion or Nanograms per liter (ng/L)

ppq: Parts per quadrillion or Picograms per liter (pg/L)

ppm x 1000 = ppb

ppb x 1000 = ppt

ppt x 1000 = ppq

Lead Informational Statement:

Lead, in drinking water, is primarily from materials and components associated with service lines and home plumbing. If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Town of Patagonia 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. 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.

Water Quality Data – Regulated Contaminants

Microbiological (RTCR)	TT Violation Y or N	Number of Positive Samples	Positive Sample(s) Month & Year	MCL	MCLG	Likely Source of Contamination	
E. Coli	N			0	0	Human and animal fecal waste	
Fecal Indicator (From GWR source) (coliphage, enterococci and/or E. coli)	N			0	0	Human and animal fecal waste	
Surface Water Treatment Rule	TT Violation Y or N	Highest Level Detected	% Range (Low-High)	TT	Sample Month & Year	Likely Source of Contamination	
Total Organic Carbon ¹ (mg/L)	N			TT		Naturally Present in the Environment	
Turbidity ² (NTU)	N			TT		Soil runoff	
¹ Total organic carbon (TOC) has no health effects. However, total organic carbon provides a medium for the formation of disinfection byproducts. These byproducts include trihalomethanes (THM) and haloacetic acids (HAA). Drinking water containing these byproducts in excess of the MCL may lead to adverse health effects, liver, or kidney problems, or nervous system effects, and may lead to an increased risk of getting cancer.							
² Turbidity is a measure of the cloudiness of water and is an indication of the effectiveness of our filtration system. We monitor it because it is a good indicator of the quality of water. High turbidity can hinder the effectiveness of disinfectants. Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.							
Disinfectants	MCL Violation Y or N	Running Annual Average (RAA)	Range of All Samples (Low-High)	MRDL	MRDLG	Sample Month & Year	Likely Source of Contamination
Chlorine/Chloramine (ppm)	N	.19	.14-.6	4	0	2019	Water additive used to control microbes
Chlorine dioxide (ppb) if treated with CLO2	N	0		800	0	2019	Water additive used to control microbes
Disinfection By-Products	MCL Violation Y or N	Running Annual Average (RAA) OR Highest Level Detected	Range of All Samples (Low-High)	MCL	MCLG	Sample Month & Year	Likely Source of Contamination
Haloacetic Acids (HAA5) (ppb)	N	<4		60	N/A	7/22/19	Byproduct of drinking water disinfection
Total Trihalomethanes (TTHM) (ppb)	N	2.9	2.9	80	N/A	7/22/19	Byproduct of drinking water disinfection
Bromate (ppb) if treated with Ozone				10	0		Byproduct of drinking water disinfection
Chlorite (ppm) if treated with CLO2				1	0.8		Byproduct of drinking water disinfection
Lead & Copper	N	90 th Percentile	Number of Samples Exceeds AL	AL	ALG	8/12/19	Likely Source of Contamination
Copper (ppm)	N	.535	0	1.3	1.3	8/12/19	Corrosion of household plumbing systems; erosion of natural deposits
Lead (ppb)	N	3	0	15	0	8/12/19	Corrosion of household plumbing systems; erosion of natural deposits
Radionuclides	MCL Violation Y or N	Running Annual Average (RAA) OR Highest Level Detected	Range of All Samples (Low-High)	MCL	MCLG	Sample Month & Year	Likely Source of Contamination
Beta/Photon Emitters (mrem/yr.)				4	0	Not reqd. this year	Decay of natural and man-made deposits
Alpha Emitters (pCi/L) (This is Gross Alpha 4000)	N			15	0		Erosion of natural deposits
Combined Radium-226 & -228 (pCi/L)	N			5	0		Erosion of natural deposits
Uranium (ug/L)				30	0		Erosion of natural deposits
Inorganic Chemicals (IOC)	MCL Violation Y or N	Running Annual Average (RAA) OR Highest Level Detected	Range of All Samples (Low-High)	MCL	MCLG	Sample Month & Year	Likely Source of Contamination
Antimony (ppb)	N	<1		6	6	11/19	Discharge from petroleum refineries; fire retardants; ceramics, electronics and solder
Arsenic ¹ (ppb)	N	1.2	1.2	10	0	11/19	Erosion of natural deposits, runoff from orchards, runoff from glass and electronics production wastes
Asbestos (MFL)	N	<.2		7	7	11/19	Decay of asbestos cement water mains; Erosion of

							natural deposits
Barium (ppm)	N	.026	.026	2	2	11/19	Discharge of drilling wastes; discharge from metal refineries; Erosion of natural deposits
Beryllium (ppb)	N	<1		4	4	11/19	Discharge from metal refineries and coal-burning factories; discharge from electrical, aerospace, and defense industries
Cadmium (ppb)	N	<.5		5	5	11/19	Corrosion of galvanized pipes; natural deposits; metal refineries; runoff from waste batteries and paints
Chromium (ppb)	N	<1		100	100	11/19	Discharge from steel and pulp mills; Erosion of natural deposits
Cyanide (ppb)	N	<25		200	200	11/19	Discharge from steel/metal factories; Discharge from plastic and fertilizer factories
Fluoride (ppm)	N	.42	.42	4	4	11/19	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Mercury (ppb)	N	<.2		2	2	11/19	Erosion of natural deposits; Discharge from refineries and factories; Runoff from landfills and cropland.
Nitrate ² (ppm)	N	.47	.46-.47	10	10	11/19	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Nitrite (ppm)	N	<.05		1	1	11/19	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Selenium (ppb)	N	<5		50	50	11/19	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines
Sodium (ppm)	N	21	21	N/A	N/A	11/19	Erosion of natural deposits
Thallium (ppb)	N	<1		2	0.5	11/19	Leaching from ore-processing sites; discharge from electronics, glass, and drug factories

¹ Arsenic is a mineral known to cause cancer in humans at high concentration and is linked to other health effects, such as skin damage and circulatory problems. If arsenic is less than or equal to the MCL, your drinking water meets EPA's standards. EPA's standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water, and continues to research the health effects of low levels of arsenic.

² Nitrate in drinking water at levels above 10 ppm 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 short periods of time because of rainfall or agricultural activity. If you are caring for an infant, and detected nitrate levels are above 5 ppm, you should ask advice from your health care provider.

Synthetic Organic Chemicals (SOC)	MCL Violation Y or N	Running Annual Average (RAA) OR Highest Level Detected	Range of All Samples (Low-High)	MCL	MCLG	Sample Month & Year	Likely Source of Contamination
2,4-D (ppb)	N	<.1		70	70	11/19	Runoff from herbicide used on row crops
2,4,5-TP (a.k.a. Silvex) (ppb)	N	<.2		50	50	11/19	Residue of banned herbicide
Acrylamide	N			TT	0	Not reqd. this yr.	Added to water during sewage / wastewater treatment
Alachlor (ppb)	N	<.1		2	0	11/19	Runoff from herbicide used on row crops
Atrazine (ppb)	N	<.05		3	3	11/19	Runoff from herbicide used on row crops
Benzo (a) pyrene (PAH) (ppt)	N	<20		200	0	11/19	Leaching from linings of water storage tanks and distribution lines
Carbofuran (ppb)	N	<.5		40	40	11/19	Leaching of soil fumigant used on rice and alfalfa
Chlordane (ppb)	N	<1		2	0	11/19	Residue of banned termiticide
Dalapon (ppb)	N	<1		200	200	11/19	Runoff from herbicide used on rights of way
Di (2-ethylhexyl) adipate (ppb)	N	<.6		400	400	11/19	Discharge from chemical factories
Di (2-ethylhexyl) phthalate (ppb)	N	<.6		6	0	11/19	Discharge from rubber and chemical factories

Dibromochloropropane (ppt)	N	<10		200	0	11/19	Runoff/leaching from soil fumigant used on soybeans, cotton, pineapples, and orchards
Dinoseb (ppb)	N	<.2		7	7	11/19	Runoff from herbicide used on soybeans and vegetables
Diquat (ppb)	N	<.4		20	20	11/19	Runoff from herbicide use
Dioxin [a.k.a. 2,3,7,8-TCDD] (ppq)	N	<5		30	0	11/19	Emissions from waste incineration and other combustion; discharge from chemical factories
Endothall (ppb)	N	<5		100	100	11/19	Runoff from herbicide use
Endrin (ppb)	N	<.01		2	2	11/19	Residue of banned insecticide
Epichlorohydrin	N			TT	0	Not reqd. this yr.	Discharge from industrial chemical factories; an impurity of some water treatment chemicals
Ethylene dibromide (ppt)	N	<10		50	0	11/19	Discharge from petroleum refineries
Glyphosate (ppb)	N	<6		700	700	11/19	Runoff from herbicide use
Heptachlor (ppt)	N	<10		400	0	11/19	Residue of banned termiticide
Heptachlor epoxide (ppt)	N	<10		200	0	11/19	Breakdown of heptachlor
Hexachlorobenzene (ppb)	N	<.05		1	0	11/19	Discharge from metal refineries and agricultural chemical factories
Hexachlorocyclo pentadiene (ppb)	N	<.05		50	50	11/19	Discharge from chemical factories
Lindane (ppt)	N	<10		200	200	11/19	Runoff/leaching from insecticide used on cattle, lumber, gardens
Methoxychlor (ppb)	N	<.05		40	40	11/19	Runoff/leaching from insecticide used on fruits, vegetables, alfalfa
Oxamyl (a.k.a. Vydate) (ppb)	N	<.5		200	200	11/19	Runoff/leaching from insecticide used on apples, potatoes and tomatoes
PCBs [Polychlorinated biphenyls] (ppt)	N			500	0	Not reqd. this yr.	Runoff from landfills; discharge of waste chemicals
Pentachlorophenol (ppb)	N	<.04		1	0	11/19	Discharge from wood preserving factories
Picloram (ppb)	N	<.1		500	500	11/19	Herbicide runoff
Simazine (ppb)	N	<.05		4	4	11/19	Herbicide runoff
Toxaphene (ppb)	<.5			3	0	11/19	Runoff/leaching from insecticide used on cotton and cattle
Volatile Organic Chemicals (VOC)	MCL Violation Y or N	Running Annual Average (RAA) OR Highest Level Detected	Range of All Samples (Low-High)	MCL	MCLG	Sample Month & Year	Likely Source of Contamination
Benzene (ppb)	N	<.5		5	0	11/19	Discharge from factories; leaching from gas storage tanks and landfills
Carbon tetrachloride (ppb)	N	<.5		5	0	11/19	Discharge from chemical plants and other industrial activities
Chlorobenzene (ppb)	N	<.5		100	100	11/19	Discharge from chemical and agricultural chemical factories
o-Dichlorobenzene (ppb)	N	<.5		600	600	11/19	Discharge from industrial chemical factories
p-Dichlorobenzene (ppb)	N	<.5		75	75	11/19	Discharge from industrial chemical factories
1,2-Dichloroethane (ppb)	N	<.5		5	0	11/19	Discharge from industrial chemical factories
1,1-Dichloroethylene (ppb)	N	<.5		7	7	11/19	Discharge from industrial chemical factories
cis-1,2-Dichloroethylene (ppb)	N	<.5		70	70	11/19	Discharge from industrial chemical factories
trans-1,2-Dichloroethylene (ppb)	N	<.5		100	100	11/19	Discharge from industrial chemical factories
Dichloromethane (ppb)	N	<.5		5	0	11/19	Discharge from pharmaceutical and chemical factories
1,2-Dichloropropane (ppb)	N	<.5		5	0	11/19	Discharge from industrial chemical factories
Ethylbenzene (ppb)	N	<.5		700	700	11/19	Discharge from petroleum refineries
Styrene (ppb)	N	<.5		100	100	11/19	Discharge from rubber and plastic factories; leaching from landfills
Tetrachloroethylene (ppb)	N	<.5		5	0	11/19	Discharge from factories and

							dry cleaners
1,2,4-Trichlorobenzene (ppb)	N	<.5		70	70	11/19	Discharge from textile-finishing factories
1,1,1-Trichloroethane (ppb)	N	<.5		200	200	11/19	Discharge from metal degreasing sites and other factories
1,1,2-Trichloroethane (ppb)	N	<.5		5	3	11/19	Discharge from industrial chemical factories
Trichloroethylene (ppb)	N	<.5		5	0	11/19	Discharge from metal degreasing sites and other factories
Toluene (ppm)	N	<.0005		1	1	11/19	Discharge from petroleum factories
Vinyl Chloride (ppb)	N	<.3		2	0	11/19	Leaching from PVC piping; discharge from chemical factories
Xylenes (ppm)	N	<.0005		10	10	11/19	Discharge from petroleum or chemical factories

Water Quality Table - Unregulated Contaminant Monitoring Rule

Metals	Detected (Y/N)	Average	Range of All Samples (Low-High)	MRL	Likely Source of Contamination
Germanium (ppt)	N			300	Naturally-occurring element; commercially available in combination with other elements and minerals; a byproduct of zinc ore processing; used in infrared optics, fiber-optic systems, electronics and solar applications
Manganese (ppt)	N			400	Naturally-occurring element; commercially available in combination with other elements and minerals; used in steel production, fertilizer, batteries and fireworks; drinking water and wastewater treatment chemical; essential nutrient
Pesticides	Detected (Y/N)	Average	Range of All Samples (Low-High)	MRL	Likely Source of Contamination
Alpha-hexachlorocyclohexane (ppt)	N			10	Component of benzene hexachloride (BHC); formerly used as an insecticide
Chlorpyrifos (ppt)	N			30	Organophosphate; used as an insecticide, acaricide and miticide
Dimethipin (ppt)	N			200	Used as an herbicide and plant growth regulator
Ethoprop (ppt)	N			30	Used as an insecticide
Oxyfluorfen (ppt)	N			50	Used as an herbicide
Profenofos (ppt)				300	Used as an insecticide and acaricide
Tebuconazole (ppt)				200	Used as a fungicide
Total permethrin (cis- & trans-) (ppt)				40	Used as an insecticide
Pesticides Manufacturing By-Product	Detected (Y/N)	Average	Range of All Samples (Low-High)	MRL	Likely Source of Contamination
Tribufos (ppt)				700	Used as an insecticide and cotton defoliant Water additive used to control microbes
Alcohols	Detected (Y/N)	Average	Range of All Samples (Low-High)	MRL	Likely Source of Contamination
1-butanol (ppb)				2.0	Used as a solvent, food additive and in production of other chemicals
2-methoxyethanol (ppt)				400	Used in a number of consumer products, such as synthetic cosmetics, perfumes, fragrances, hair preparations and skin lotions
2-propen-1-ol (ppt)				500	Used in the production flavorings, perfumes and other chemicals
Semivolatile Chemicals	Detected (Y/N)	Average	Range of All Samples (Low-High)	MRL	Likely Source of Contamination
Butylated hydroxyanisole (ppt)				30	Used as a food additive (antioxidant)
O-toluidine (ppt)				7	Used in the production of dyes, rubber, pharmaceuticals and pesticides
Quinolone (ppt)				20	Used as a pharmaceutical (anti-malarial) and flavoring agent; produced as a chemical intermediate; component of coal

Surface Water Monitoring & Violations (

Cryptosporidium was detected in the finished water or source water. We detected *Cryptosporidium* in <Detected Number of Samples this year> of our <Number of Samples Taken this year> samples tested. If *Cryptosporidium* is found at greater than 0.075 oocyst per liter, we have to provide additional treatment. We believe it is important for you to know that *Cryptosporidium* may cause serious illness in 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. These people should seek advice from their health care providers.

Health Effects Language:

Cryptosporidium is a microbial pathogen found in surface water throughout the United States. Although filtration removes cryptosporidium, the most commonly used filtration methods cannot guarantee 100 percent removal. Our monitoring indicates the presence of these organisms in our source water and/or finished water. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Ingestion of cryptosporidium may cause cryptosporidiosis, an abdominal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immuno-compromised people are at greater risk of developing life-threatening illness. We encourage immuno-compromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. Cryptosporidium must be ingested to cause disease, and it may be spread through means other than drinking water.

Violation Summary (for MCL, MRDL, AL, TT, or Monitoring & Reporting Requirement)

Violation Type	Explanation, Health Effects	Time Period	Corrective Actions
(none)		(

Assessments for the Revised Total Coliform Rule (RTCR) (

Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. If coliform is found, then the system is responsible to look for potential problems in water treatment or distribution. When this occurs, the water system is required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments.

- During the past year, we were required to conduct [#] Level 1 assessment(s). [#] Level 1 assessment(s) were completed. In addition, we were required to take [#] corrective actions and we completed [#] of these actions.
- During the past year, we were required to conduct [#] Level 2 assessment(s). [#] Level 2 assessment(s) were completed. In addition, we were required to take [#] corrective actions and we completed [#] of these actions.

E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, the elderly, and people with severely compromised immune systems. If *E. coli* bacteria is found, the water system is required to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments.

- During the past year, we were required to complete [#] Level 2 assessment(s) because we found *E. coli* in our water system. In addition, we were required to take [#] corrective actions and we completed [#] of these actions.

Failure to Conduct Assessments for the Revised Total Coliform Rule (

Contaminant Name	TT Violation Y or N	TT Requirement
Total Coliform	N	<p>We were required to conduct an assessment of our system due to one of the following:</p> <ul style="list-style-type: none"> More than 5.0% positive samples per period (if the number of samples are greater than or equal to 40) OR More than 1 positive sample per period (if the number of samples are less than 40) OR Repeat samples not collected after positive sample.