2017 Annual Water Quality Report

City of Worland PWS# 5600197

Is my water safe?

We are pleased to present this year's Annual Water Quality Report (Consumer Confidence Repor t) as required by the 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 standards set by r egulatory agencies. This report is a snapshot of last year's water quality. We are committed to pr oviding you with information because informed customers are our best allies.

Do I need to take special precautions?

Some people may be more vulnerable to contaminants in drinking water than the general popula tion. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, pers ons who have undergone organ transplants, people with HIV/AIDS or other immune system diso rders, some elderly, and infants can be particularly at risk from infections. These people should s eek advice about drinking water from their health care providers.
EPA/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of in fection by Cryptosporidium and other microbial contaminants are available from the Safe Water Drinking Hotline (800-426-4791).

Where does my water come from?

Our water is provided by two groundwater wells.

Source water assessment and its availability

You can obtain a copy of our source water assessment and a copy of this Water Quality report fr om City Hall located at 829 Big Horn Ave. in Worland, WY.

Why are there contaminants in my drinking water?

Drinking water, including bottled water, may reasonably be expected to contain at least small am ounts of some contaminants. The presence of contaminants does not necessarily indicate that wa ter 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 th e 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. Microbia l contaminants, such as viruses and bacteria, that may come from sewage treatment plants, septi c systems, agricultural livestock operations, and wildlife; inorganic contaminants, such as salts a nd 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 h erbicides, which may come from a variety of sources such as

agriculture, urban storm water runoff, and residential uses; organic Chemical Contaminants, incl uding synthetic and volatile organic chemicals, which are by-products of industrial processes an d petroleum production, and can also come from gas stations, urban storm water runoff, and sept ic 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 p ublic water systems. Food and Drug Administration (FDA) regulations establish limits for conta minants in bottled water which must provide the same protection for public health.

How can I get involved?

If you want to learn more, please attend any of our regularly scheduled meetings. They are held on the first and third Tuesday of every month for the City of Worland or the third Wednesday of every month for the Big Horn Regional office.

Description of Water Treatment Process

Your water is treated by disinfection. Disinfection involves the addition of chlorine or other disi nfectant to kill dangerous bacteria and microorganisms that may be in the water.
Disinfection is considered to be one of the major public health advances of the 20th century. Wor land's water is disinfected by use of chlorine gas. A residual of 0.30 to 0.50 mg/L is maintained in the drinking water. Chlorine residual is the amount of chlorine that remains in the water after a certain period of "contact time".

Water Conservation Tips

Did you know that the average U.S. household uses approximately 400 gallons of water per day or 100 gallons per person per day? Luckily, there are many low-cost and no-cost ways to conser ve water. Small changes can make a big difference – try one today and soon it will become seco nd nature.

- Take short showers - a 5 minute shower uses 4 to 5 gallons of water compared to up to 50 g allons for a bath.
- Shut off water while brushing your teeth, washing your hair and shaving and save up to 500 gallons a month.
- Use a water-efficient shower head. They're inexpensive, easy to install, and can save you up to 750 gallons a month.
- Run your clothes washer and dishwasher only when they are full. You can save up to 1 ,000 gallons a month.
- Water plants only when necessary.
- Fix leaky toilets and faucets. Faucet washers are inexpensive and take only a few minutes to replace. To check your toilet for a leak, place a few drops of food coloring in the tank and wait . If it seeps into the toilet bowl without flushing, you have a leak. Fixing it or replacing it with a new, more efficient model can save up to 1,000 gallons a month.
- Adjust sprinklers so only your lawn is watered. Apply water only as fast as the soil can a bsorb it and during the cooler parts of the day to reduce evaporation.
- Teach your kids about water conservation to ensure a future generation that uses water wisely. Make it a family effort to reduce next month's water bill!
- Visit www.epa.gov/watersense for more information.

Cross Connection Control Survey

The purpose of this survey is to determine whether a cross-connection may exist at your home or business. A cross connection is an unprotected or improper connection to a public water distribu tion system that may cause contamination or pollution to enter the system. We are responsible fo r enforcing cross-connection control regulations and insuring that no contaminants can, under an y flow conditions, enter the distribution system. If you have any of the devices listed below plea se contact us so that we can discuss the issue, and if needed, survey your connection and assist y ou in isolating it if that is necessary.

- Boiler/ Radiant heater (water heaters not included)
- Underground lawn sprinkler system
- Pool or hot tub (whirlpool tubs not included)
- Additional source(s) of water on the property
- Decorative pond
- Watering trough

Source Water Protection Tips

Protection of drinking water is everyone's responsibility. You can help protect your community' s drinking water source in several ways:

- Eliminate excess use of lawn and garden fertilizers and pesticides – they contain hazardous chemicals that can reach your drinking water source.
- Pick up after your pets.
- If you have your own septic system, properly maintain your system to reduce leaching to water sources or consider connecting to a public water system.
- Dispose of chemicals properly; take used motor oil to a recycling center.
- Volunteer in your community. Find a watershed or wellhead protection organization in yo ur community and volunteer to help. If there are no active groups, consider starting one. Use EP A's Adopt Your Watershed to locate groups in your community, or visit the Watershed Informatio n Network's How to Start a Watershed Team.
- Organize a storm drain stenciling project with your local government or water supplier. St encil a message next to the street drain reminding people "Dump No Waste - Drains to River" or "Protect Your Water." Produce and distribute a flyer for households to remind residents that stor m drains dump directly into your local water body.

Additional Information for Lead

If present, elevated levels of lead can cause serious health problems, especially for pregnant wo men and young children. Lead in drinking water is primarily from materials and components ass ociated with service lines and home plumbing. The City of Worland is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing compon ents. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 3 to 5 minutes before utilizing water for drinking or cooking. I f you are concerned about lead in your drinking water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exp osure is available from the City of Worland Water department @ 307-347-8978 ext 120, Lead In formation Center Hotline @ 1-800-424-LEAD, or at http://www.epa.gov/safewater/lead.

Water Quality Data Table

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 table below lists all of the drinking water contaminants that we detected d uring the calendar year of this report. Although many more contaminants were tested, only those substances listed belo w were found in your water. All sources of drinking water contain some naturally occurring contaminants. At low level s, these substances are generally not harmful in our drinking water. Removing all contaminants would be extremely exp ensive, 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 d ata presented in this table is from testing done in the calendar year of the report. The EPA or the State requires us to mo nitor for certain contaminants less than once per year because the concentrations of these contaminants do not vary sign ificantly from year to year, or the system is not considered vulnerable to this type of contamination. As such, some of o ur data, though representative, may be more than one year old. In this table 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 below the ta ble.

Contaminants	MCLG or MRDLG	MCL, TT, or MRDL	Your Water	Range Low	Range High	Sample Date	Violation	Typical Source
Disinfectants & Disinfectant By-Products								
(There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants)								
Haloacetic Acids (H AA5) (ppb)	NA	60	0.3	NA	0.45	2017	No	By-product of drinking water chlorination
TTHMs [Total Trihal omethanes] (ppb)	NA	80	0.92	NA	3.14	2017	No	By-product of drinking water disinfection
Inorganic Contaminants								
Arsenic (ppm)	0	10	2	NA	2	2016	No	Erosion of natural deposits; R unoff from orchards: Runoff f rom glass and electronics pro duction wastes
Contaminants								
Fluoride (ppm)	4	4	0.3	0.2	0.3	2016	No	Erosion of natural deposits; Water additive which promot es strong teeth; Discharge fro m fertilizer and aluminum fa ctories
Nitrate [measured as Nitrogen] (ppm)	10	10	0.42	0.2	0.5	2017	No	Runoff from fertilizer use; Le aching from septic tanks, sew age; Erosion of natural deposi ts
Selenium (ppb)	50	50	5	NA	5	2016	No	Discharge from petroleum an d metal refineries; Erosion of natural deposits; Discharge fr om mines
Sodium (optional) (p pm)	NA		3.3	2.2	3.3	2016	No	Erosion of natural deposits; L eaching

Contaminants	MCLG or MRDLG	MCL, TT, or MRDL	Your Water	Range Low	Range High	Sample Date	Violation	Typical Source
Microbiological Contaminants								
Total Coliform (posit ive samples/month)	0	1	0	NA	NA	2017	No	Naturally present in the environment

Radioactive Contaminants								
Alpha emitters (pCi/L)	0	15	5.97	1.79	5.97	2015	No	Erosion of natural deposits
Radium (combined 226/228) (pCi/L)	0	5	2.93	0.8	2.93	2015	No	Erosion of natural deposits

Contaminants	EPA Action Level	MCLG	90% of Utility levels were less than	Samples taken with high levels	Date	Violation	Typical Source
Lead - (ppb)	90% of samples less than 15 ppb	0 ppb	5.4 ppb	2 out of 35	2017	No	Corrosion of household plumbing systems; Erosion of natural deposits
Copper - (ppm)	90% of samples less than 1.3 ppm	1.3 ppm	0.1684 ppm	2 out of 35	2017	No	Corrosion of household plumbing systems; Erosion of natural deposits

Although the City of Worland was not out of compliance for lead and copper sampling, we did have some unusually high sites that have caused us to have to test for lead and copper annually as per EPA Region 8 monitoring and reporting requirements. 90Th% lead=0.0054 mg/L (AL=0.015 mg/L) 90th % copper=0.1684 mg/L (AL=1.3 mg/L)

Undetected Contaminants

The following contaminants were monitored for, but not detected, in your water.

Contaminants	MCLG or MRDLG	MCL or MRDL	Your Water	Violation	Typical Source
1,1,1-Trichloroethane (ppb)	200	200	ND	No	Discharge from metal degreasing sites and other factories
1,1,2-Trichloroethane (ppb)	3	5	ND	No	Discharge from industrial chemical factories
1,1-Dichloroethylene (ppb)	7	7	ND	No	Discharge from industrial chemical factories
1,2,4-Trichlorobenzene (ppb)	70	70	ND	No	Discharge from textile-finishing factories
1,2-Dichloroethane (ppb)	0	5	ND	No	Discharge from industrial chemical factories
1,2-Dichloropropane (ppb)	0	5	ND	No	Discharge from industrial chemical factories
2,4,5-TP (Silvex) (ppb)	50	50	ND	No	Residue of banned herbicide
2,4-D (ppb)	70	70	ND	No	Runoff from herbicide used on row crops
Antimony (ppb)	6	6	ND	No	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder; test addition.
Atrazine (ppb)	3	3	ND	No	Runoff from herbicide used on row crops
Benzene (ppb)	0	5	ND	No	Discharge from factories; Leaching from gas storage tanks and landfills
Benzo(a)pyrene (ppt)	0	200	ND	No	Leaching from linings of water storage tanks and distribution lines

Beryllium (ppb)	4	4	ND	No	Discharge from metal refineries and coal-burning factories; Discharge from electrical, aerospace, and defense industries
Cadmium (ppb)	5	5	ND	No	Corrosion of galvanized pipes; Erosion of natural deposits; Discharge from metal refineries; runoff from waste batteries and paints
Carbofuran (ppb)	40	40	ND	No	Leaching of soil fumigant used on rice and alfalfa
Carbon Tetrachloride (ppb)	0	5	ND	No	Discharge from chemical plants and other industrial activities
Chlordane (ppb)	0	2	ND	No	Residue of banned termiticide
Chlorobenzene (monochlorobenzene) (ppb)	100	100	ND	No	Discharge from chemical and agricultural chemical factories
Chromium (ppb)	100	100	ND	No	Discharge from steel and pulp mills; Erosion of natural deposits
Cyanide (ppb)	200	200	ND	No	Discharge from plastic and fertilizer factories; Discharge from steel/metal factories
Dalapon (ppb)	200	200	ND	No	Runoff from herbicide used on rights of way
Di (2-ethylhexyl) adipate (ppb)	400	400	ND	No	Discharge from chemical factories
Di (2-ethylhexyl) phthalate (ppb)	0	6	ND	No	Discharge from rubber and chemical factories
Dibromochloropropane (DBCP) (ppt)	0	200	ND	No	Runoff/leaching from soil fumigant used on soybeans, cotton, pineapples, and orchards
Dichloromethane (ppb)	0	5	ND	No	Discharge from pharmaceutical and chemical factories
Dinoseb (ppb)	7	7	ND	No	Runoff from herbicide used on soybeans and vegetables
Endrin (ppb)	2	2	ND	No	Residue of banned insecticide
Ethylbenzene (ppb)	700	700	ND	No	Discharge from petroleum refineries
Ethylene dibromide (ppt)	0	50	ND	No	Discharge from petroleum refineries
Heptachlor (ppt)	0	400	ND	No	Residue of banned pesticide
Heptachlor epoxide (ppt)	0	200	ND	No	Breakdown of heptachlor
Hexachlorobenzene (ppb)	0	1	ND	No	Discharge from metal refineries and agricultural chemical factories
Hexachlorocyclopentadiene (ppb)	50	50	ND	No	Discharge from chemical factories
Lindane (ppt)	200	200	ND	No	Runoff/leaching from insecticide used on cattle, lumber, gardens
Mercury [Inorganic] (ppb)	2	2	ND	No	Erosion of natural deposits; Discharge from refineries and factories; Runoff from landfills; Runoff from cropland
Methoxychlor (ppb)	40	40	ND	No	Runoff/leaching from insecticide used on fruits, vegetables, alfalfa, livestock
Nitrite [measured as Nitrogen] (ppm)	1	1	ND	No	Runoff from fertilizer use; Leaching from septic tanks, sewage, Erosion of natural deposits
Oxamyl [Vydate] (ppb)	200	200	ND	No	Runoff/leaching from insecticide used on apples, potatoes and tomatoes
PCBs [Polychlorinated biphenyls] (ppt)	0	500	ND	No	Runoff from landfills; Discharge of waste chemicals

Pentachlorophenol (ppb)	0	1	ND	No	Discharge from wood preserving factor ies
Picloram (ppb)	500	500	ND	No	Herbicide runoff
Simazine (ppb)	4	4	ND	No	Herbicide runoff
Styrene (ppb)	100	100	ND	No	Discharge from rubber and plastic fact ories; Leaching from landfills
Tetrachloroethylene (ppb)	0	5	ND	No	Discharge from factories and dry clean ers
Thallium (ppb)	0.5	2	ND	No	Discharge from electronics, glass, and Leaching from ore-processing sites; dr ug factories
Toluene (ppm)	1	1	ND	No	Discharge from petroleum factories
Toxaphene (ppb)	0	3	ND	No	Runoff/leaching from insecticide used on cotton and cattle
Trichloroethylene (ppb)	0	5	ND	No	Discharge from metal degreasing sites and other factories
Vinyl Chloride (ppb)	0	2	ND	No	Leaching from PVC piping; Discharge from plastics factories
Xylenes (ppm)	10	10	ND	No	Discharge from petroleum factories; D ischarge from chemical factories
cis-1,2-Dichloroethylene (ppb)	70	70	ND	No	Discharge from industrial chemical fac tories
o-Dichlorobenzene (ppb)	600	600	ND	No	Discharge from industrial chemical fac tories
p-Dichlorobenzene (ppb)	75	75	ND	No	Discharge from industrial chemical fac tories
trans-1,2- Dichloroethyle ne (ppb)	100	100	ND	No	Discharge from industrial chemical fac tories

Additional Monitoring

As part of an ongoing evaluation program the EPA has required us to monitor some additional contaminates/chemicals. Information collected through the monitoring of these contaminates/chemicals will help to ensure that future decisions on drinking water standards are based on science.

Name	Reported Level	Range	
		Low	High
Alachlor (ppb)	-2		

Unit Descriptions	
Term	**Definition**
ppm	ppm: parts per million, or milligrams per liter (mg/L)
ppb	ppb: parts per billion, or micrograms per liter (µg/L)
ppt	ppt: parts per trillion, or nanograms per liter
pCi/L	pCi/L: picocuries per liter (a measure of radioactivity)
positive samples/month	positive samples/month: Number of samples taken monthly that were f ound to be positive
NA	NA: not applicable
ND	ND: Not detected
NR	NR: Monitoring not required, but recommended.

Important Drinking Water Definitions	
Term	**Definition**
MCLG	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.
MCL	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.
TT	TT: Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.
AL	AL: Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
Variances and Exemptions	Variances and Exemptions: State or EPA permission not to meet an MCL or a treatment technique under certain conditions.
MRDLG	MRDLG: Maximum residual disinfection 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.
MRDL	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.
MNR	MNR: Monitored Not Regulated
MPL	MPL: State Assigned Maximum Permissible Level
90th %	Calculation of all samples taken (DEQ/EPA region 8 guidelines) 90th percentile must be lower than AL to be in compliance

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