

TOWN OF PLAINS
Montana Public Water Supply ID number 00305
2018 Water Quality Report

In a continuing effort to keep you informed about the quality of water and services we provide to you each day, we're pleased to provide you with our Annual Water Quality Report. This report is a snapshot of the quality of water we provided you last year. It includes details regarding the source of your water, what your water contains and how it compares to EPA and the State of Montana standards.

Our water comes from two wells: the City and the Balch wells, which are 38 and 41 feet deep. To ensure its purity, we disinfect our water with a small amount of chlorine. We have 589 service connections and added nine new connections last year. In a continuing effort to maintain and improve our water system, we repaired and replaced service lines between mains and water meters as needed last year.

We want you, our valued customers, to be informed about your water utility. If you want to learn more, please attend any of our meetings held in the city council room at City Hall, 101 West Lynch St. We are pleased to report that our drinking water is safe and meets all federal and state requirements. If you have any questions about this report or concerning your water utility, please contact the Town of Plains water department at 826-3411. Greg Dicken and Greg Welty are our certified operators with 16 years of experience. They attend periodic training sessions to meet continuing education requirements. The most recent training course they attended was at the Montana Rural Water Systems Annual Conference in February of 2018.

DID YOU KNOW? The sources of drinking water (both tap and bottled water) include rivers, lakes, streams, ponds, reservoirs, and wells. As water travels over the surface of land or through the ground, it dissolves naturally occurring minerals and in some cases radioactive elements. Water can also pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in water include:

- 1) Microbial contaminants such as viruses and bacteria which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife
- 2) Inorganic contaminants, such as salts and metals which can be naturally occurring or result from urban storm water runoff, industrial or domestic waste water discharges, oil and gas production, mining and farming.
- 3) Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.
- 4) Volatile organic chemicals, which are byproducts of industrial processes, petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.
- 5) 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, the EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water which must provide the same protection for public health. We routinely monitor for contaminants in your drinking water according to Federal and State laws. We take all of our water samples to Montana Environmental Laboratory in Kalispell (406-755-2131). They are a private laboratory that is certified by the State of Montana and the EPA to analyze drinking water.

Our sampling frequency complies with EPA and state drinking water regulations. The following tests were performed to identify possible contaminants in our system during the period of January 1 to December 31, 2018:

- 24 Coliform bacteria tests - all were coliform free.
- 1 Nitrate plus Nitrite test on each of our wells - results were within EPA guidelines.
- 5 tests on the water from our customers' homes to determine the possible presence of lead and copper leaching out of the faucets and fixtures - results were within EPA guidelines.
- Tests on the water from our distribution system to determine the possible presence of 10 disinfection byproducts - results were within EPA standards.

Due to the purity of our water, we have applied for and been issued a monitoring waiver for ten inorganic contaminants. This waiver allows our system to sample only once every nine years for these contaminants. Past sampling has shown that these contaminants are either not present in our water or occur in such small amounts that they do not warrant a health hazard. This waiver covers the period from 2011 to 2019.

The following table lists the contaminants detected during recent testing. Some of our data in the table may be more than one year old, since certain chemical contaminants are monitored less than once per year.

Regulated Contaminants

CONTAMINANT	VIOLATION Y/N	SAMPLE DATE	HIGHEST LEVEL DETECTED	UNIT MEASUREMENT	MCLG	MCL	LIKELY SOURCE OF CONTAMINATION
Barium City Well Balch Well	N	6-13-12	0.07 0.24	ppm	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Copper	N	7-11-18	90th % is 0.20	ppm	1.3	AL= 1.3	Corrosion of Household plumbing/ naturally occurring
Fluoride City Well Balch Well	N	6-13-12	0.08 0.12	ppm	4	4	Erosion of natural deposits; water additive which promotes strong teeth
Lead	N	7-11-18	90th % is 3	ppb	0	AL= 15	Corrosion of Household plumbing / naturally occurring
Nitrate + Nitrite City Well Balch Well	N	6-11-18 6-13-18	0.39 3.26	ppm	10	10	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Radium 226 City Well Balch Well	N	6-22-17	0.2 +/- 0.1 0.2 +/- 0.1	pCi/L	0	5	Natural deposits
Radium 228 City Well	N	6-22-17	2.0 +/- 1.2	pCi/L	0	5	Natural deposits
Total Haloacetic Acids (HAA's)	N	9-11-18	1.9	ppb	0	60	By product of drinking water chlorination
Total Trihalomethanes (TTHM)	N	9-11-18	4.2	ppb	0	80	By product of drinking water chlorination
Uranium Balch Well	N	6-22-17	2	ppb	0	30	Erosion of natural deposits

DEFINITIONS:

MCL - Maximum Contaminant Level - The "Maximum Allowed" is the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

MCLG - Maximum Contaminant Level Goal - The "Goal" is 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.

PPM - Parts per million or Milligrams per liter (mg/l) - one part per million corresponds to one minute in two years or a single penny in \$10,000.

PPB - Parts per billion or Micrograms per liter - one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

AL - Action Level - the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

pCi/L - Pico Curies per Liter - a very small unit of measurement of radioactivity.

What does this table tell us?

As you can see our system had no MCL violations. MCL's are set at very stringent levels. To understand the possible health effects of exceeding the MCL, a person would have to drink two liters of water every day at the MCL for a lifetime to have a one in a million chance of having any adverse health effects. Although we have learned through our monitoring and testing that some constituents have been detected, the EPA has determined that your water IS SAFE at these levels.

During 2000, we tested for radon in our water. The results ranged from 72 to 213 picocuries per liter. Presently radon is an unregulated contaminant. However, the EPA has proposed establishing an MCL of 300 picocuries per liter. Our levels are below the proposed standard. Radon is a radioactive gas that you can't see, taste, or smell. It is found throughout the U.S. Radon can move through the ground and into a home through cracks and holes in the foundation. Radon can also get into indoor air when released from tap water from showering, washing dishes, and other household activities. Compared to radon entering the home through soil, radon entering the home through tap water will in most cases be a small source of radon in indoor air. Radon is a known human carcinogen. Breathing air containing radon can lead to lung cancer. Drinking water containing radon may also cause increased risk of stomach cancer. If you are concerned about radon in your home, test the air in your home. Testing is inexpensive, and easy. Fix your home if the level of radon in your air is four picocuries per liter of air or higher. There are simple ways to fix a radon problem that aren't too costly. For additional information, call EPA's Radon Hotline (800)-SOS-RADON).

All sources of drinking water are subject to potential contamination by constituents that are naturally occurring or man made. Those constituents can be microbes, organic or inorganic chemicals, or radioactive materials. All 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 the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791 or online at www.epa.gov/safewater.

Lead in drinking water comes primarily from materials and components of the service lines and home plumbing systems. It is possible that lead levels at your home may be higher than other homes in the community as a result of materials used in your home's plumbing. Our water system is responsible for providing high quality drinking water, but we cannot control the variety of materials used in private home plumbing systems. If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested by a certified laboratory like the one we send our samples to (Montana Environmental Laboratory, 406-755-2131). When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap until the water temperature has stabilized (usually for 30 seconds to 2 minutes) before you use the water for drinking or cooking. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure to lead is available from the Safe Drinking Water Hotline 1-800-426-4791, or online at www.epa.gov/safewater/lead.

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/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline or online at www.epa.gov/safewater.

In August of 2002, the Montana Department of Environmental Quality conducted a source water assessment of our system. This report provides additional information on the potential vulnerability of our wells to contamination. This report is available for review at Town Hall. It is also available online at <http://svc.mt.gov/deq/dst/#/app/swp>. The report can be summarized in the table on the following page.

Our water system is committed to providing our customers with safe, pure water and we are pleased that our water meets or exceeds all established state and federal standards. Thank you for reviewing this report.

Prepared by Montana Environmental Lab, LLC 1/19

Significant Potential Contaminant Sources

Source	Containment	Hazard / Origin of Contaminant	Hazard Rating	Barriers	Susceptibility	Management needed to reduce potential impacts
Highway and Railroad	VOC's, SOC's other organic contaminants, Nitrates, Nitrites, Metals, Petroleum Contaminants	Releases of large volumes of chemicals due to vehicular accidents that may reach groundwater. Roadside chemical pesticide spraying that concentrate and reach groundwater. Winter application of road deicer compounds that concentrate and reach groundwater. Concentration of storm water runoff.	High hazard - these transportation routes are within the 1 year time of travel (TOT) for groundwater	None	Very high	Prevention planning, Transportation restrictions, Spill response planning and training, DOT regulatory compliance, Storm water diversion and catchment, Reduced chemical use
Septic Systems	Sewage, Nitrate, Nitrite, Pathogens	Nitrates and pathogens that are insufficiently treated in private septic systems	97% Low hazard, 3% Moderate hazard	None	Moderate to high	Growth management, maintenance and replacement of old sewer systems, possible connection to centralized sewer system, advanced treatment systems
Pipeline	VOC's petroleum hydrocarbons	Pipeline rupture and the subsequent release of large amounts of contaminants near surface water or near the supply wells.	High hazard - because the pipeline is located within the 1 year TOT	Pipeline integrity testing, Ongoing release monitoring, Upgrading of pipeline segments.	Moderate	Pipeline integrity testing, Ongoing release monitoring, Upgrading of pipeline segments, Spill response planning, spill catchments and diversions
UST's, LUST's	VOC's, SOC's, lead, petroleum hydrocarbons	Leaks and spills that have reached or may reach groundwater.	High hazard - because the tanks are within the 1 year TOT	Spill prevention, planning, and handling precautions Leak detection, monitoring wells. Inventorying, Spill catchment	Moderate	Spill prevention, spill response planning, spill catchment, best management practices, regulatory compliance, groundwater monitoring, town ordinance?
Municipal Sewer System	Sewage, Nitrate, Nitrite, Pathogens	Nitrates and pathogens that are insufficiently treated in private septic systems	Low hazard, less than 20% of inventory region is sewerred	None known	Moderate	Incremental upgrading and replacement of all facilities, monitoring of groundwater
Auto and Engine Shops	VOC's, SOC's, petroleum hydrocarbons	Leaks, spills, improper handling and disposal of chemicals used	High hazard - because the shops are within the 1 year TOT	Spill prevention, planning, monitoring, best management practices, recycling	Moderate	Prevention planning, spill response planning and training, best management practices, regulatory compliance, waste chemical recycling, dry shops, good housekeeping
Machinery Shop	VOC's, metals, petroleum hydrocarbons	Leaks, spills, improper handling and disposal of chemicals used	High hazard - because the shops are within the 1 year TOT	Spill prevention, planning, monitoring, best management practices, recycling, active remediation of previous releases	Moderate	Prevention planning, spill response planning and training, best management practices, regulatory compliance, waste chemical recycling, dry shops, good housekeeping
Agricultural Land	Fertilizers, pesticides, & erosion	Over application or improper application of chemicals, poor cropping practices, and spills allow contaminants to reach groundwater	Moderate hazard - 20-50% of the IR is in crop land	Non point pollution, chemical application, best management practices	Low	Best management practices, training and education, technical assistance, spill prevention, erosion control, soil conservation