

2017 CONSUMER CONFIDENCE REPORT

Prepared for the

Phantom Hills Public Water System

Supplied at the request of Montana Department of Environmental Quality

A Water Quality Report for the Water Users of Phantom Hills Water System, PWSID #004379; In compliance with the 1996 Safe Drinking Water Act Phantom Hills Water System is providing water users with this report on the quality of the drinking water.

This report makes available water quality data representing the period from 1 January 2017 through 31 December 2017.

Definition of Terms, Abbreviations and Units

AL	Action Level; the concentration of a contaminant or chemical, which triggers treatment or other requirements, which a water system must follow.
MCL	Maximum Contaminant Level; the maximum allowable concentration of a regulated chemical in a public water supply. The maximum contaminant level for most regulated chemicals represents a one in a million chance of developing health risks after consuming two liters of water a day at the MCL level for seventy years. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
MCLG	Maximum Contaminant Level Goal; the level of a contaminant or chemical in drinking water below which there are no known or expected risk to health. MCLGs allow for a margin of safety.
pCi/L	Picocuries per liter; a measure of radioactivity.
ppm	Parts per million; equivalent to milligrams per liter of water (mg/L). One part per million corresponds to one minute in two years or a single dollar in \$1,000,000.
ppb	Parts per billion; equivalent to micrograms per liter of water (ug/L). One part per billion corresponds to one minute in 2000 years or single dollar in \$1,000,000,000.
umhos/cm	Micromhos per centimeter; a measure of the electrical conductivity of water.

You should know.... (Mandatory Federal Language): Some people may be more vulnerable to contaminants in drinking water than the general population. Immune-compromised persons such as persons with cancer, undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune 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 risk of infection by Cryptosporidium are available from the Safe Drinking Water Hotline (1-800-426-4791).

Did you know? (Mandatory Federal Language): 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 materials, and can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source 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 wastewater discharges, oil and gas production, mining or farming.
3. Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.
4. Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can, also come from gas stations, urban storm water runoff, and septic systems.
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, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public systems. FDA regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (1-800-426-4791).

WATER SOURCE

Two wells within the Phantom Hills Subdivision supply water for Phantom Hills Water System. The wells have been developed in the Missoula Valley Aquifer. The two wells vary in depth from 200 feet to 220 feet. The wells have varying yields of between 600 to 800 gallons per minute.

TREATMENT

The Phantom Hills Water System currently chlorinates the water in the system. Sodium hypochlorite is injected at a concentration of 1 ppm in order to maintain a minimum chlorine residual of 0.2 ppm. Certified operators, on a daily basis, monitor the chlorine residual. Some homeowners have installed water softeners to reduce the natural hardness of the water. Softening works by ion exchange to replace the calcium and magnesium carbonate components of hardness with sodium and chloride. For those who use or are considering the use of softeners, it is recommended only hot water be softened to reduce hardness to a level between 60 and 100 mg/L (3.5 to 5.8 grains per gallon). This level of hardness in hot water would increase soap production while maintaining the health benefits of calcium and magnesium in the water used for drinking and cooking. Discharge brines from softeners can lock up some clayey drainfield soils and reduce the useful life of on-site sewage treatment systems; therefore, over-softening or softening of both hot and cold water is not recommended.

ANNUAL WATER USAGE

In 2017 Phantom Hills Water System used a total of 16.3 million gallons of water.

BACTERIOLOGICAL MONITORING

Bacteriological monitoring is conducted monthly to test for the presence of Total Coliform bacteria and fecal (E. Coli) Coliform bacteria. All samples were found to be satisfactory.

LEAD AND COPPER MONITORING

Baseline monitoring within the distribution system was started in 2004, and Lead and Copper monitoring frequency was reduced to once every three years. Lead and Copper testing was last conducted in September 2015. The table below shows the results along with the MCL set by the State. The next test for lead and copper will be conducted in 2016-2018. The cause of lead and copper in the drinking water is from the corrosion of the household plumbing by the source water.

Metal	Result (mg/L)	MCL (mg/L)	Violation
Lead	0.002	0.015	No
Copper	0.08	1.3	No

Mandatory Federal Language: 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. Phantom Hills is responsible for providing high quality of drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>

RADIOLOGICALS (Unregulated distribution system sample)

The last test for radiological presence was taken in March 2013. There was a small presence of Gross Alpha and combined Radium (226 & 228). The Gross Alpha concentration of 5.0 pCi/L is well below the MCL of 15 pCi/L. While the detected combined limit was 0.6 pCi/L is well below the MCL of 5 pCi/L. The required monitoring frequency for Gross Alpha and Combined Radium (226 + 228) is once per nine year compliance period. As a result the next radiological test will be performed in 2017-2025.

Radionuclide	Result (pCi/L)	MCL (pCi/L)	Violation
Gross Alpha	5	15	No
Radium, Combined (226, 228)	0.6	5	No

CHEMICAL MONITORING – Chemical monitoring is conducted at each entry point to the distribution system. Chemical monitoring frequency varies by constituent. Below is a summary for the various constituents in which we sample for as required by the EPA & the Montana Department of Environmental Quality.

ASBESTOS

Our water system has been granted a 9-year waiver for asbestos sampling. As our customers, you have a right to know that we are not sampling for asbestos.

We have not and will not conduct monitoring or testing for asbestos because we have been granted a 9-year waiver by the Montana Department of Environmental Quality Public Drinking Water Section. This waiver is based on our certification that there are no asbestos containing materials in the distribution system and is good until 2019.

VOLATILE ORGANIC CHEMICALS (VOCs - 21 regulated, 34 unregulated)

The required monitoring frequency of VOC's is once during each three-year compliance period. The last sample was taken in March 2016. There were several detected VOCs in the public water supply. They were Bromodichloromethane, Bromoform, and Chlorodibromomethane. These three VOCs are all part of a group called Trihalomethanes. The Total Trihalomethane level detected was 5.9 ug/L. The table below shows the

results. For these chemicals there is no MCL set by the State. All of the detected chemicals have a MCLG of zero. The next sample will be taken by the end of 2019.

Parameter	Detected Level	MCL	MCLG	Violation
Bromodichloromethanes	0.38 ug/L	None	0	No
Bromoform	3.9 ug/L	None	0	No
Chlorodibromomethane	1.6 ug/L	None	0	No
Total Trihalomethanes	5.9 ug/L	None	80 ug/L	No
* Health Effects for the Trihalomethanes includes possible liver, kidney or central nervous system problems and an increased risk of cancer. There are no known health effects of regulated Volatile Organic Chemicals in drinking water at levels less than the maximum contaminant level.				

SYNTHETIC ORGANIC CHEMICALS (SOCs – 23 regulated, 10 unregulated, 3 deferred)

The required monitoring frequency is once during each three-year compliance period. The SOC's were sampled last in March 2016. There was not a detectable presence of SOC's in the public water supply. The next sample will be taken in 2019.

INORGANIC CHEMICALS (IOC's – 11 regulated, plus nitrates)

The required monitoring frequency is once during each three-year compliance period. The IOC's were sampled last in March 2016. There was no detectable presence of IOC's in the public water supply except for barium. The barium level was 0.61 mg/L which is below the MCL of 2 mg/L. The next sample will be taken in 2019.

Parameter	Date of Sample	Detected Level	MCL	Violation/Period
Source of Occurrence or Contamination and Health Effects				
Barium	03/2016	0.61 mg/L	2 mg/L	No
Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure.				
* There are no known health effects of regulated inorganic chemicals in drinking water at levels less than the maximum contaminant level.				

Nitrate plus Nitrite as Total Nitrogen (Total N) is sampled annually. A sample was taken in December 2017 which resulted in 1.77 mg/l which is below the 10 mg/L MCL set by the State.

Parameter	Date of Sample	Detected Level	MCL	Violation/Period
Source of Occurrence or Contamination and Health Effects				
Total N	12/2017	1.77 mg/L	10 mg/L	No
The cause of nitrate in groundwater is primarily due to agricultural practices and the concentration of septic tanks and drainfields in the valley.				
* There are no known health effects of regulated inorganic chemicals in drinking water at levels less than the maximum contaminant level.				

DISINFECTION BYPRODUCT MONITORING

Disinfection byproduct constituents are required to be sampled every three years and were last sampled in August 2016. The total Trihalomethanes concentration was 15 ug/L, a level that is well below the State’s MCL of 80 ug/l. The total Haloacetic Acids concentration was 1.4 ug/L, which is a level well below the State’s maximum contaminant level of 60 ug/l. It should be mentioned that when the VOCs were sampled in March 2016 Total Trihalomethanes were detected at a level of 5.9 ug/L (as seen above under the VOC section). Reduced monitoring for Disinfection byproduct constituents was granted in September 2005. The next sampling will occur in 2019.

DBP	Result (ug/L)	MCL (ug/L)	Violation
Total Trihalomethanes	15	80	No
Total Haloacetic Acids	1.4	60	No

ADDITIONAL INFORMATION

If you would like additional information regarding Phantom Hills Water System public water supply system or monitoring results, please contact Certified Water Operator Andy Mefford at 406-728-1880.