ANNUAL WATER QUALITY REPORT

2019 Water Testing Period

PWS ID #2290023
MEETING THE CHALLENGE

We are once again proud to present to you our annual water quality report. This edition covers all testing completed from January 1 through December 31, 2019. Over the years, we have dedicated ourselves to producing drinking water that meets all state and federal drinking water standards. We continually strive to adopt new and better methods for delivering the best quality drinking water to you. As new challenges to drinking water safety emerge, we remain vigilant and meet the challenges of source water protection, water conservation, and community education while continuing to serve the needs of all our water users.

Please share with us your thoughts about the information in this report. After all, well-informed customers are our best allies.

LEAD INFORMATIONAL STATEMENT

HEALTH EFFECTS AND WAYS TO REDUCE EXPOSURE

The City of Moscow is in full compliance with lead testing rules, and has never had a sample set fail for high lead content. In 2016, City of Moscow water staff took several samples from residences constructed during the period when lead was being used and all samples were below the federal level! In addition, we have no reason to believe that we have elevated levels of lead in the City of Moscow water system based on routine monitoring data.

However, 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. The City of Moscow 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 two 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 at 800-426-4791 or at www.epa.gov/safewater/lead.
ADDITIONAL HEALTH INFORMATION

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 microbial contaminants are available from the Safe Drinking Water Hotline at 800-426-4791.

WHERE DOES MY WATER COME FROM?

Moscow has five wells which draw water from two underground aquifers; the shallow aquifer known as the Wanapum, and a deeper aquifer called the Grande Ronde. Wells #2 and #3 draw water from the Wanapum System, and Wells #6, #8, and #9 draw water from the Grande Ronde System.

To protect these water sources, the City has implemented best management practices designed to protect the wells and the areas that surround them.

SOURCE WATER ASSESSMENT

A Source Water Assessment for the City of Moscow was completed in 2001. The assessment determined that Wells #2 and #3 have overall higher susceptibility risk ratings, compared to Wells #6, #8 and #9. The City of Moscow has never had a sample exceed the Maximum Contaminant Level (MCL) for possible contaminants. A copy of the Source Water Assessment can be obtained from the State of Idaho Department of Environmental Quality (DEQ). For more information regarding the assessment, contact Kyle Steele at 208-883-7033.

QUESTIONS?

For more information about this report, or for any questions relating to your drinking water, please call one of the following people:

KYLE STEELE
Environmental Services Manager
208-883-7133

MIKE PARKER
Water Utility Manager
208-892-8624

TYLER PALMER
Deputy City Supervisor—Public Works and Services
208-883-7096
SAMPLING RESULTS

During the past year, we have taken hundreds of water samples in order to identify the presence of any radioactive, biological, inorganic, volatile organic, or synthetic organic contaminants. The table below shows only those contaminants that were detected in the water. Although all of the substances listed here are under the Maximum Contaminant Level (MCL), we feel it is important that you know exactly what was detected and how much of the substance was present in the water. The state allows us to monitor for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

<table>
<thead>
<tr>
<th>Substance</th>
<th>Unit of Measure</th>
<th>Year Sampled</th>
<th>MCL [MRDL]</th>
<th>MCLG [MRDLG]</th>
<th>Amount Detected</th>
<th>Violations</th>
<th>Typical Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combined Radium - 226 and 228</td>
<td>pCi/L</td>
<td>2018</td>
<td>5</td>
<td>0</td>
<td>1.1</td>
<td>No</td>
<td>Erosion of natural deposits</td>
</tr>
<tr>
<td>Gross Alpha</td>
<td>pCi/L</td>
<td>2018</td>
<td>15</td>
<td>0</td>
<td>2.1</td>
<td>No</td>
<td>Erosion of natural deposits</td>
</tr>
<tr>
<td>Chlorine</td>
<td>ppm</td>
<td>Monthly</td>
<td>4</td>
<td>4</td>
<td>1.09</td>
<td>0.43</td>
<td>No</td>
</tr>
<tr>
<td>Barium</td>
<td>ppm</td>
<td>2018</td>
<td>2</td>
<td>2</td>
<td>0.007</td>
<td>0.101</td>
<td>No</td>
</tr>
<tr>
<td>Chromium</td>
<td>ppb</td>
<td>2010</td>
<td>100</td>
<td>100</td>
<td>1.21</td>
<td>1.39</td>
<td>No</td>
</tr>
<tr>
<td>Fluoride</td>
<td>ppm</td>
<td>2018</td>
<td>4</td>
<td>4</td>
<td>0.341</td>
<td>1.37</td>
<td>No</td>
</tr>
<tr>
<td>TTHMs (Total Trihalomethanes)</td>
<td>ppb</td>
<td>2014</td>
<td>80</td>
<td>NA</td>
<td>1.07</td>
<td>1.23</td>
<td>No</td>
</tr>
</tbody>
</table>

COPPER AND LEAD  Tap water samples were collected for lead and copper analyses from sample sites throughout the community.

<table>
<thead>
<tr>
<th>Substance</th>
<th>Unit of Measure</th>
<th>Year Sampled</th>
<th>AL</th>
<th>MCLG</th>
<th>Amount Detected (90th %tile)</th>
<th>Sites Above AL/Total Sites</th>
<th>Violations</th>
<th>Typical Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper</td>
<td>ppm</td>
<td>2018</td>
<td>1.3</td>
<td>1.3</td>
<td>0.295</td>
<td>0/36</td>
<td>No</td>
<td>Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives</td>
</tr>
<tr>
<td>Lead</td>
<td>ppb</td>
<td>2018</td>
<td>15</td>
<td>0</td>
<td>4</td>
<td>0/36</td>
<td>No</td>
<td>Corrosion of household plumbing systems; erosion of natural deposits</td>
</tr>
</tbody>
</table>

The MCL for beta particles is 4 mrem/year. The U.S. EPA considers 50 pCi/L to be the level of concern for beta particles.

DEFINITIONS

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

**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.

**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.

**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.

**MRDLG**  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.

**NA**  Not Applicable

**pCi/L**  Picocuries per Liter – A measure of radioactivity.

**ppb**  Parts per Billion – One part substance per billion parts water (or micrograms per liter).

**ppm**  Parts per Million – One part substance per million parts water (or milligrams per liter).
SUBSTANCES THAT COULD BE IN WATER

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration 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 these contaminants does not necessarily indicate that the water poses a health risk.

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, in some cases radioactive material, and substances resulting from the presence of animals or from human activity. Substances 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 may result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

PESTICIDES AND HERBICIDES, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.

ORGANIC CHEMICAL CONTAMINANTS, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and may also come from gas stations, urban stormwater runoff, and septic systems.

RADIOACTIVE CONTAMINANTS, which can be naturally occurring or may be the result of oil and gas production and mining activities.

For more information about contaminants and potential health effects, call the U.S. EPA’s Safe Drinking Water Hotline at 800-426-4791.
PRODUCTION AND DISTRIBUTION

The first drinking water well and components of Moscow’s distribution system were developed in the late 1800s. Since those early days, Moscow has made a considerable investment in a modern, efficient public water system. As you may suspect, there are a number of regulations and oversight in the operation of a public water system. We work closely with the Idaho Department of Environmental Quality to assure that we are always in compliance with the Idaho Rules for Public Drinking Water Systems.

Our drinking water distribution system is a network of approximately 100 miles of pipes ranging in size from a one-inch service lines all the way up to 24-inch main lines. We operate six (6) booster pump stations that pump drinking water from a lower elevation point to a higher point in each respective zone. We have four (4) finished water storage facilities with a total capacity of 4.7 million gallons that help us meet system demands, including fire flow. We also maintain and operate over 2,600 valves, 950 fire hydrants, and read and service over 6,000 water meters. The maintenance and operation of the production and distribution systems requires state-certified, highly-trained operators, and a lot of specialized equipment.

PUBLIC INFORMATION AND EDUCATION (PIE) PROGRAM

As responsible stewards of our natural resources, it is very important that we strive to keep our citizens informed of environmental issues that may affect them. The City offers a Public Information and Education (PIE) Program designed to improve awareness and understanding of our local water systems as well as any emerging environmental topics. It works to promote water conservation and stormwater best management practices through formal and informal educational programming. The program includes classroom visits, community workshops, participation in community events and providing tours for students and the general public. For more information on the program and to check out our free resources, go to https://www.ci.moscow.id.us/640/Education-Programs.
ALTERNATIVE WATER SUPPLY

The Palouse Groundwater Basin underlies an approximately 500 square mile area of north central Idaho and eastern Washington. Over 60,000 residents of the basin rely on groundwater as the sole source for their municipal supply. Water levels in the lower Grande Ronde aquifer system have been declining since measurements began in the early 1900s.

In 1992, a committee, now known as the Palouse Basin Aquifer Committee (PBAC), in conjunction with the Idaho Department of Water Resources and the Washington Department of Ecology, enacted a Groundwater Management Plan for the basin. The plan included voluntary pumping targets as well as a call for continued pumping and water level monitoring and research involving hydrogeologic characterization and alternative water supply options. In 2015, PBAC hired a consultant team to evaluate previously studied water supply projects to determine the most promising supply alternatives to meet current and future water supply demand. In March 2017, the consultant team completed the Palouse Groundwater Basin Water Supply Alternatives Analysis Report, which identified the four most promising water supply alternatives. The report is available on PBAC’s website at http://palousebasin.org.

PBAC continues to refine the alternatives toward a goal of selecting a viable alternative or a set of alternatives by late 2020 or early 2021 to help position PBAC’s water supply project in the Idaho Department of Water Resources future water project funding cycle. The estimated capital cost of the four alternatives ranges from $60 million to $86 million.

The City of Moscow has issued a request for proposals on behalf of PBAC for project management services to further refine these water supply alternatives and help position PBAC to provide a presentation to the Idaho Water Resource Board regarding these alternatives.

For more information, please contact Tyler Palmer at 208-883-7096.
2020 UTILITY RATE STUDY

This year the City of Moscow is once again completing a Utility Rate Study for the water, sewer, and sanitation services we deliver. The most recent rate study was completed, and adopted by City Council, in 2013. Utilities are not paid with taxes, but with rate-based fees. Idaho Code requires that those rates are equivalent to the value of services provided, which include day-to-day operations, system maintenance and repair, and capital improvement costs. Both residential and commercial water rates in Moscow have two components: a base rate and a consumption rate. The base rate is a fixed monthly charge that is applied to each class to ensure a stable revenue source, so that the basic functions of the water division are able to operate on a regular and sustainable level. The consumption component is calculated based on the volume of water consumed by the individual customer. Balancing these two rates helps ensure a healthy mix of consistent funds for operation of the utility, while also distributing costs to those customers who are creating higher demand on the water system.

The City operates its utilities on a cost-of-service (COS) basis in order to make sure that the price of providing services are covered by the utility rates. These costs are covered by two budgets: the Operations and Maintenance (O&M) Budget and the Capital Budget. O&M contains routine operation of all the pumps, hydrants, valves, pipes, meters, etc. required to deliver clean and safe water to your tap every day. The Capital Budget includes a depreciation plan for the systematic replacement of aging equipment and facilities, as well as plans for expanding our water delivery capabilities as needed so that we can continue to reliably cover all of our future water requirements.

Rate studies serve several important purposes for a local government such as Moscow. Revisiting our rates every five to seven years assures that rates are fair and equitable. It acts as a check on the system to make sure that operations and capital plans are up-to-date and appropriately funded. And it allows citizens to participate in the rate-setting process. The future rate structures that arise from the study will be designed to provide the financial resources to meet our water system needs in a fair and equitable manner.

CALL US FIRST
If you are unsure if a particular issue is your responsibility, call the City first. We will gladly help determine the source of the problem. Some of the services provided by the City of Moscow Public Works Department are:

**WATER:** For water related questions and concerns such as no water, low pressure, water leaks, taste and odor concerns, please call 208-882-3122.

**SEWER:** For concerns pertaining to sewer overflows, backups or odors, please call 208-882-2725.

**STREETS:** For blocked storm drains, debris, pot holes, street lights or traffic signal outages, please call 208-883-7097.

**WATER BILLING:** For questions related to your water bill, including payments, please call 208-883-7043.