ANNUAL WATER QUALITY REPORT

2018 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, 2018. 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 INFORMATION 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 (800-426-4791) or at www.epa.gov/safewater/lead.

ON THE COVER:
Our Hands On Water wall is signed by over 700 children and adults who have toured the Water Filter Plant as part of the Public Information and Education program since 2017.
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 Grand 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 our source water, the City of Moscow implements best management practices aimed at protecting the wellheads and surface seals within the zone immediate to the wells.

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 208-883-7133.

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 Supervisor
208-883-7133

MIKE PARKER
Water Utility Manager
208-892-8624

TYLER PALMER
Deputy Director - Operations
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.

### REGULATED SUBSTANCES

<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>
</tbody>
</table>

#### MRDL Contaminant

<table>
<thead>
<tr>
<th>Substance</th>
<th>Unit of Measure</th>
<th>Year Sampled</th>
<th>MCL (MRDL)</th>
<th>MCLG (MRDLG)</th>
<th>Highest Level Detected</th>
<th>Annual Average</th>
<th>Violations</th>
<th>Typical Source</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Chlorine</td>
<td>ppm</td>
<td>Monthly</td>
<td>4</td>
<td>4</td>
<td>1.06</td>
<td>0.45</td>
<td>No</td>
<td>Water additive used to control microbes</td>
<td></td>
</tr>
</tbody>
</table>

#### Substance

<table>
<thead>
<tr>
<th>Substance</th>
<th>Unit of Measure</th>
<th>Year Sampled</th>
<th>MCL (MRDL)</th>
<th>MCLG (MRDLG)</th>
<th>Lowest Level Detected</th>
<th>Highest Level Detected</th>
<th>Violations</th>
<th>Typical Source</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Barium</td>
<td>ppm</td>
<td>2018</td>
<td>2</td>
<td>2</td>
<td>0.007</td>
<td>0.181</td>
<td>No</td>
<td>Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits</td>
<td></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>
<td>Discharge from steel and pulp mills; erosion of natural deposits</td>
<td></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>
<td>Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories</td>
<td></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>
<td>By-product of drinking chlorination</td>
<td></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>
<th></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>
<td></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>
<td></td>
</tr>
</tbody>
</table>

### 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 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.

**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.
**CONSERVATION FOR 2018 WATER TESTING PERIOD**

Conservation in Moscow is very important! Residents of Moscow rely entirely on two aquifers for our water supply: the Wanapum (upper aquifer) and the Grande Ronde (lower aquifer). This aquifer system is also the sole source of water for the University of Idaho, the City of Pullman, Washington State University, and other surrounding smaller users. The aquifers have steadily declined since they were first tapped in the late 1800s. This makes conservation absolutely imperative. As responsible stewards of our natural resources, it is very important that we all strive to conserve as much water as possible. To this end, the City of Moscow has a progressive conservation program offering rebates, free devices, resources, and information. We also actively educate in our schools about the importance of water conservation through our Public Information and Education (PIE) Program.

The PIE program is designed to improve awareness and promote water conservation practices. The program includes facilitated kindergarten through 12th grade education programming, community workshops, participation in community events, and providing tours for students and community members. The program’s Environmental Education Specialist has a strong background in education and outreach. For more information about the PIE program, please contact Kelli Cooper at 208-883-7122.

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**REBATES ARE AVAILABLE**

Start planning for that beautiful new landscape you deserve while saving resources that the planet deserves. Take advantage of the irrigated lawn replacement to Wisescape rebate offered to City of Moscow water customers. Call for a pre-site inspection of your existing lawn and start planning for planting season. Get paid $150 to transform that thirsty turf into a Wisescape!

Also, get rid of that water guzzling old toilet and take advantage of the rebate available to City of Moscow water customers. Switch out your old toilet for a high efficiency toilet and earn up to $125. For more information about the rebates, please contact Nichole Baker at 208-883-7114.
As you can see in the water quality testing included in this report, the Moscow Water Staff diligently monitors the water that is produced and distributed to the community to ensure that it is safe for all Moscow residents. However, this is not the end of the story for the safety of your water. The fixtures, faucets, equipment, and systems in the homes and businesses connected to the distribution pipes are a direct route for potentially harmful substances which can contaminate your water supply. The City’s Cross Connection Control Program (CCCP) is in place to ensure that undesirable and hazardous materials are not introduced into your water system, through a process called backflow, and distributed to the rest of the community. This program is required by the “Idaho Rules for Public Drinking Water Systems” (IDAPA 58.01.08) and Moscow City Code Title 7, Chapter 9.

A **cross connection** is any actual or potential connection to the public water system through which it is possible to introduce anything other than the intended potable water. This includes used water (water that has left the City’s distribution system), biological or chemical contaminants, and water from auxiliary (private) wells. **Backflow** is the flow of any liquids (including used water), gases, or substances in the wrong direction back into the public water supply. This can happen in two ways: by a drop in pressure in the distribution system that creates backsiphonage, which pulls water backwards; or by an increase in pressure on an external system that creates backpressure, which pushes water backwards.

When it is determined that a cross connection which may endanger your public water supply is present, an approved backflow assembly must be installed. A **backflow assembly** is a device which is designed to be tested and repaired without having to be removed. All backflow assemblies must be inspected and tested annually by a State of Idaho licensed Backflow Assembly Tester (BAT). Note that an assembly that fails testing must be repaired, replaced, or isolated within ten (10) business days, or water service must be shut off. Over the past five years an average of 6.3% of backflow assemblies in Moscow failed the initial test.

The protection of Moscow’s water supply is of critical importance to both the City of Moscow and its citizens. If you have any questions about the CCCP or would like to schedule a cross connection assessment, please contact Ty Thompson at tthompson@ci.moscow.id.us or by calling 208-883-7111.
THINGS THE WATER DIVISION IS DOING

Our Metering Staff has recently undertaken a water meter upgrade project. This labor-intensive improvement plan is expected to take place over the course of approximately five years. It requires the removal and replacement of all water meters with an in-service life exceeding 18 years. The old meters will be exchanged for new, ultrasonic water meters. The newer meters utilize sound waves to detect water flow. They have no moving internal parts and are not subject to the same degradation over time. This means that they will maintain greater accuracy throughout the course of their service life. The new meters are also equipped with an electronic radio transmitter. These transmitters provide the added benefit of year-round meter readings, putting an eventual end to winter estimation periods.

In 2018, we installed a new Supervisory Control and Data Acquisition (SCADA) system. This new system replaces the first SCADA system that was installed in 1994. The SCADA system controls when the wells cycle, monitors the boosters/water reservoirs, and calls out alarms so we can fix the issues in a timely manner without interruptions to the customer.

In addition, we upgraded the electrical equipment at the Well #6 site with a variable frequency drive (VFD). A VFD allows the pump motor to start and stop at a slower rate of speed which in turn reduces the amount of power needed to run the pump.

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.