ANNUAL WATER QUALITY REPORT

WATER TESTING PERFORMED IN 2012

PWS ID# 2290023

CITY OF MOSCOW 1887 IDAHO

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, 2012. 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 to meeting 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

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's drinking water comes from five groundwater sources. Although all the wells are located within the Palouse Basin, Wells #2 and #3 draw water from the basin's shallow aquifer known as the Wanapum, and Wells #6, #8, and #9 draw water from the deep aquifer known as the Grande Ronde.

To protect our source water, the City of Moscow Water Department 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 high susceptibility risk ratings, while Wells #6, #8 and #9 have lower susceptibility scores than Wells #2 and #3. A copy of the Source Water Assessment can be obtained from the State of Idaho Department of Environmental Quality (DEQ). The City of Moscow has never had a sample exceed the Maximum Contaminant Level (MCL) for possible contamination. For more information regarding the assessment, contact Kyle Steele at **(208) 883-7133**.

WELL
MAINTENANCE AND REPAIR

Reinstallation of Well #9 was completed on April 10, 2013. Bacteria sampling was completed, and on April 11 at 6:00 p.m., the well was put back on-line.

Well maintenance is generally done on a yearly rotation. There are five (5) production wells that supply water to the City of Moscow Public Drinking Water System. One well per year is pulled,then inspected and refurbished back to new condition. This includes replacing the bearings with new ones and rewinding the motor if needed. The well pumps are also torn down and rebuilt back to specifications.

In the case of Well #9, there was a motor fail before routine maintenance was scheduled. This resulted in a loss of production during the high demand time of year—irrigation season. It is more common for wells to be taken off-line for maintenance during the low demand time of year.

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**.

Your Annual Water Quality Report is Available ONLINE!

Go to **http://www.ci.moscow.id.us/water/Pages/water-quality** to view current and past Water Quality Reports at any time on your computer, tablet, or mobile device. We are working on developing a process for our customers to opt out of receiving a physical paper report of the 2013 WQR in favor of using the digital copy. To be put on the opt out list, or if you have any questions, please email Ty Thompson at **tthompson@ci.moscow.id.us**.

HOME FACTS
Q & A

Q: How long can I store drinking water?

A: Drinking water that is thoroughly disinfected, such as water from your public water supplier, can be stored for six months in capped, plastic containers that will not rust. Glass containers should be avoided as they can easily be broken. Water that has been boiled for one minute, or three minutes at high altitudes, can be stored for up to one year. Be sure to cool the water before storing it. Be careful to use plastic that will not make the water taste bad—trial and error is best here. Because the disinfectant that was in the water when you stored it will slowly go away, replacing the water every six months is recommended. The taste will become "flat" after extended storage, so periodic replacement will help here also. If possible, you should store water in a refrigerator to help control bacterial (not germ) growth.

Q: How much water should I store for emergencies?

A: A good rule of thumb is to store one gallon of water per person per day, plan for at least three days. Fox example, a family of four should store about 12 gallons of water. You'll need more water in hot temperatures and for strenuous activities. People with special needs, such a nursing mothers, young children and family members with illnesses may require more water.

Q: Should I be concerned about the chlorine in the water I use for bathing or showering?

A: No, for two reasons: (1) it will not be absorbed into the skin and get into your body; and (2) the amount of chlorine in the water is too low to harm the skin itself. There have not been any reports of danger from breathing the chlorine that gets into the air during a shower.

However, there are some people who seem to be allergic to chlorine and related compounds. This has been a problem in swimming pools. Whether this problem is caused by chlorine or chlorine reaction products is not known. If you have any trouble in swimming pools, remember that the amount of chlorine in swimming pool water is much greater than in tap water.

Q: Why are there aerators on home water faucets?

A: When mixed with water, tiny air bubbles from the aerator prevent the water from splashing too much. Because the water flow is less, often half the regular flow, it helps conserve water.

Q: How can I locate my home's master valve?

A: It is important to know where the master valve is in case you have a major leak. The most common locations in your house or apartment are:

- Where the water supply enters your home
- Near the clothes washer hook up
- Near your water heater

To determine if the valve you have found is the correct one, try turning it off and see if it shuts off all water faucets in your home. If not, repeat this process with each valve you find until you identify the correct one. If you are unable to locate it, contact your plumber for assistance. Once you've found the valve, it's a good idea to mark it with something distinctive like bright paint, a tag, or ribbon. This will help you locate it quickly in case of an emergency.

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

Substance	Unit of Measure	Year Sampled	MCL [MRDL]	MCLG [MRDLG]	Amount Detected		Violations	Typical Source
Combined Radium-226 and 228	pCi/L	2010	5	0	0.939		No	Erosion of natural deposits
MRDL Contaminant	**Unit of Measure**	**Sample Date**	**MCL [MRDL]**	**MCLG [MRDLG]**	**Highest Level Detected**	**Running Annual Average**	**Violations**	**Typical Source**
Chlorine	ppm	Monthly	4	4	1.3	0.4	No	Water additive used to control microbes
Substance	**Unit of Measure**	**Year Sampled**	**MCL [MRDL]**	**MCLG [MRDLG]**	**Lowest Level Detected**	**Highest Level Detected**	**Violations**	**Typical Source**
Chromium	ppb	2010	100	100	1.11	1.39	No	Discharge from steel and pulp mills; erosion of natural deposits
Barium	ppm	2010	2	2	0.007	0.17	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Fluoride	ppm	2010	4	4	0.5	1.6	No	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
TTHMs (Total Trihalomethanes)	ppb	2012	80	NA	0.25	5	No	By-product of drinking water chlorination

COPPER AND LEAD

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

Substance	Unit of Measure	Year Sampled	AL	MCLG	Amount Detected (90th %tile)	Sites Above AL/ Total Sites	Violations	Typical Source
Copper	ppm	2012	1.3	1.3	0.635	0/30	No	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead	ppb	2012	15	0	8	0/30	No	Corrosion of household plumbing systems; erosion of natural deposits

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 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 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).

QUESTIONS?

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

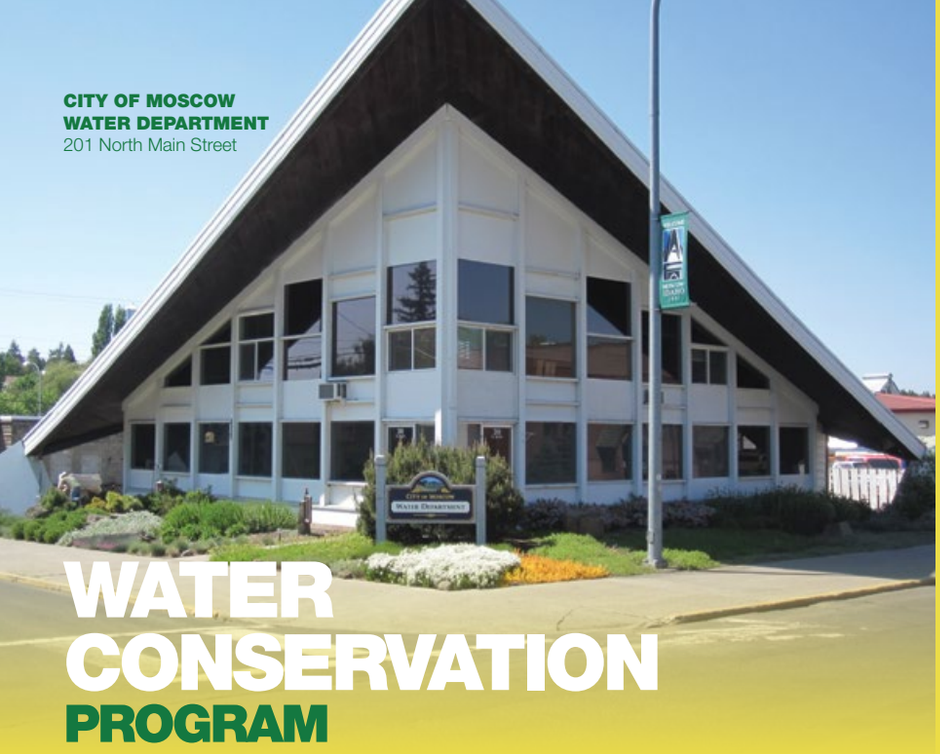
GARY SMITH Water Production Lead **(208) 883-7109**

DAVID RICHARDSON Utility Operations Supervisor **(208) 883-7108**

TOM SCALLORN Water Manager **(208) 883-7106**

LES MacDONALD Public Works Director **(208) 883-7028**

KYLE STEELE Environmental Compliance Coordinator **(208) 883-7133**



CITY OF MOSCOW
WATER DEPARTMENT
201 North Main Street

WATER CONSERVATION PROGRAM

The Moscow Water Department has supplied safe drinking water to the residents and businesses of Moscow, Idaho since the 1890s. An elaborate system of wells, filters, reservoirs, miles of underground infrastructure, and the individuals who manage it, all play a vital role toward delivering the precious underground aquifer to the tap. Conserving this resource has been and will continue to be an important goal for the city.

The City of Moscow has had a long standing conservation program, dating back to the 1970s by supplying effluent reuse water for University of Idaho landscapes. Since that time the program has evolved to include reductions in water use from both commercial and residential customers through the City's regional management approach. As one of the pumping entities for the Palouse Ground Water Basin, Moscow agreed to the voluntary goals set by the Palouse Basin Aquifer Committee (PBAC) in 1992. As an active member of the Palouse Basin Water Summit Committee that hosts an annual conference in October, the city continues to work with other communities that share our water source. The year 2004 brought about more additions to conservation efforts, which included the Water Waste Resolution, Irrigation Ordinance, and Water Conservation Plan that suggested a tiered rate billing structure, adopted in 2007. To assist and motivate the residents of Moscow to attain their water conservation goals, the all-encompassing Water Conservation Program is there for the customer at home, at work, and at school. Indoor devices, outdoor devices, the outdoor Wisescape Awards and demonstration garden, booth events and education outreach are some of the available resources.

Thanks to the efforts of our community, the City of Moscow's PBAC goals have been met since 2006. With the past goals successful, and the future goals defined, the City of Moscow Water Utility has been a leader in water conservation. With goal objectives to provide safe water to meet the needs of people, the water conservation program is sure to remain a solid support for the stakeholders to be good stewards of our precious resource, water.

IRRIGATION SYSTEMS REQUIRE BACKFLOW PROTECTION

The protection of Moscow's water supply is of critical importance to both the City of Moscow and its citizens. Backflow regulations are necessary to help prevent contaminates from entering your public water supply through what is known as backflow. Backflow is defined as "the flow, other than the intended direction of flow of any foreign liquids, gases, or substances into the distribution system of a public water supply." This can happen when there is a change in pressure in one part of the system causing the water to flow upstream in another part. An approved backflow prevention assembly, certified by the State of Idaho, which is designed to properly prevent backflow is required.

New irrigation systems have been required to install approved backflow prevention assemblies since the early 1990s. In 2010, the water department began implementing a comprehensive program to bring all irrigation systems that are not already or are improperly protected with a backflow prevention assembly into compliance with the Idaho Rules for Public Drinking Water Systems (IDAPA 58.01.08) and Moscow City Code Title 7, Chapter 9. All irrigation systems, existing or new, must be equipped with an approved backflow prevention assembly and must be inspected and tested annually. This annual test is important because the internal components of the assembly can, and sometimes do, fail. When this happens, it puts the health of our community at risk.

A successful test of the assemblies must be completed by a Licensed Backflow Prevention Assembly Tester possessing a valid Idaho State License. Assemblies that fail test requirements must be serviced, repaired or replaced as is necessary in order to pass subsequent testing. Generally, cleaning or replacing the internal parts of the assembly will fix the problem. Rarely does the entire assembly need to be replaced.

Backflow events can and sometimes do happen. In May of 2012, a backflow event occurred in the City of Boise which introduced bacterial contaminants into their water system due to a faulty backflow assembly. Dozens of people became ill as a result, some seriously enough to require hospitalization. Of the nearly 1,100 assemblies tested in the City of Moscow in 2012, approximately 7% failed the initial test.

A street side survey has been initiated to locate systems that have inadequate or non-existent backflow protection. A notice requiring corrections to bring these systems into compliance will be sent to the owner(s) of record. A plumbing permit is required before work can begin and must be purchased at the Building Department.

If you have any questions about your irrigation system, or for a list of licensed professionals who can test and/or install the appropriate assembly, please contact Ty Thompson at **tthompson@ci.moscow.id.us** or by calling **(208) 883-7111**.