



# DRINKING WATER QUALITY REPORT FOR 2007



## WATER PURVEYOR

The Water Purveyor is the City of Moses Lake. If you have any questions, or would like more information on our system, call the Water Division Supervisor at 766-9227 between 7:30 a.m. and 4:00 p.m., Monday through Friday. For broken pipes after normal working hours, call the Multi-Agency Communication Center at 762-1160. They will contact a Water Division employee.

## PUBLIC CITY COUNCIL MEETINGS

The public potable water system is owned and operated by the City of Moses Lake. Its direction is provided by the City Council through the City Manager. The City Council meets on the second and fourth Tuesday each month, at 7:00 p.m. in the Council Chambers in the Police and Parks Building, located at 401 South Balsam. The public is encouraged to attend.

## KEY TERMS

**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.

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

**Premises** – Land and buildings together considered as a property.

**Secondary Contaminant Level** – an aesthetic quality of drinking water rather than a health effect.

**MRDLG** – Maximum Residual Disinfection Level Goal: The level of a drinking water disinfectant below which there is no known or expected health risk. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

**MRDL** – Maximum Residual Disinfectant Level: The highest level of a disinfectant allowed in drinking water. There is continuing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

**ppb** – parts per billion - 1 ppb = 1 microgram/L, (The equivalent of one second in 32 years).

**ppm** – parts per million - 1 ppm = 1 mg/L (The equivalent of one second in 12 days).

**microgram/L** – microgram per liter, 1 microgram/L = 1 ppb

**mg/L** – milligrams per liter, 1 mg/L = 1 ppm

**gpg** – grains per gallon - a measure of water hardness

**N/A** – not applicable                      **ND** - not detected

## YOUR DRINKING WATER

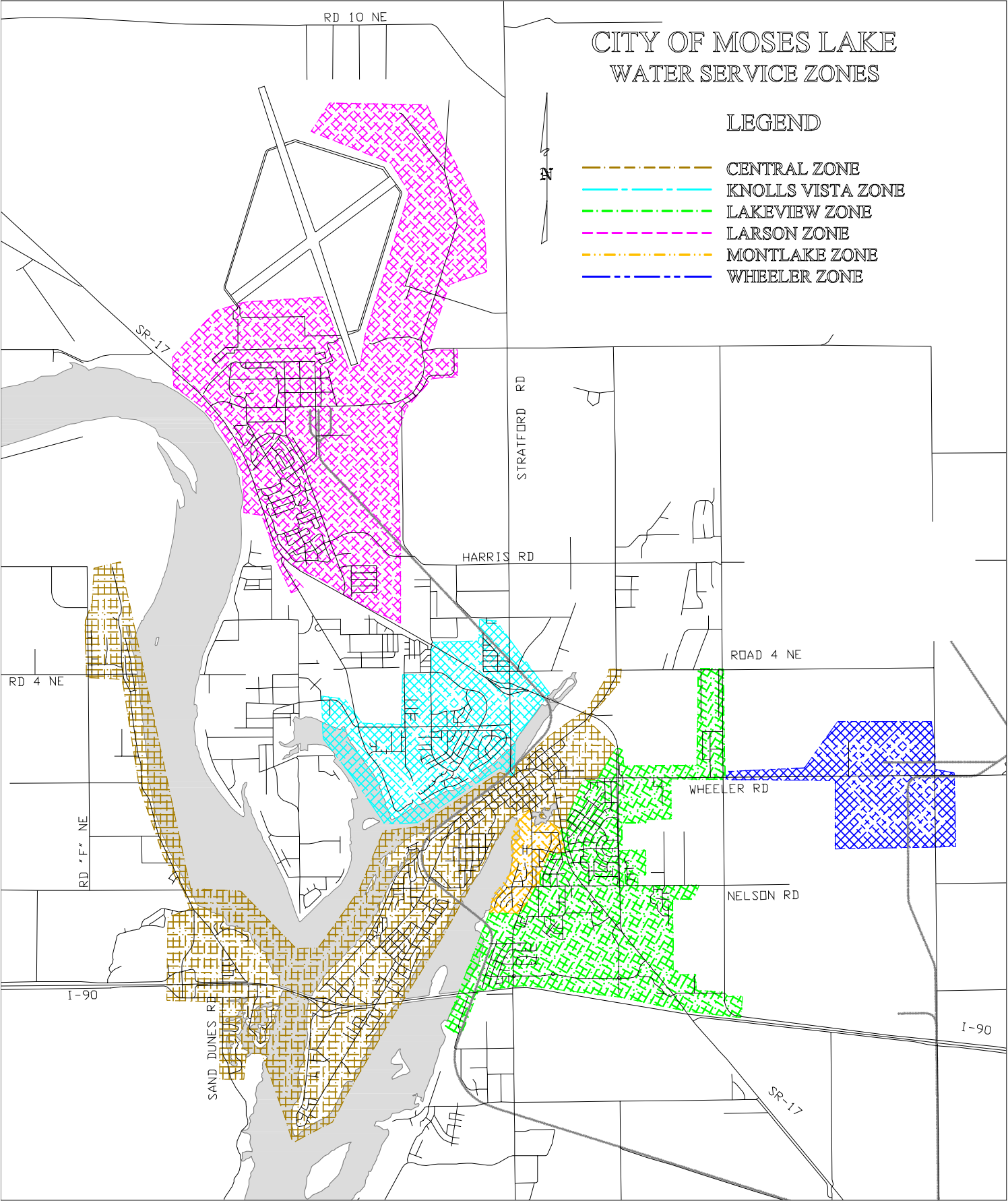
This report is provided to you to help you make informed decisions about the water you drink and to encourage you to get involved in protecting and improving your drinking water resource. The report tells you the source of the water we provide, the quality of the water, and who makes the management decisions. The report is required by the Federal Clean Water Act, which refers to it as the Consumer Confidence Report. As the water system's certified operator, I encourage you to call us with any concerns you have.

William L. Maddox, P.E.  
Water Division Supervisor

## CONTACT NUMBERS

<b>City of Moses Lake Water Division:</b>	<b>509-766-9227</b>
<b>City of Moses Lake Building Dept.:</b>	<b>509-766-9235</b>
<b>Grant County Building Department:</b>	<b>509-754-2011</b>
<b>Moses Lake City Manager:</b>	<b>509-766-9201</b>
<b>After-hours emergencies (MACC):</b>	<b>509-762-1160</b>
<b>City of Moses Lake Billing Office:</b>	<b>509-766-9214</b>
<b>WA State Dept of Health:</b>	<b>509-456-3115</b>
<b>US EPA Safe Drinking Water Hotline:</b>	<b>800-426-4791</b>
<b>EPA's Web site:</b>	<b><a href="http://www.epa.gov/safewater">www.epa.gov/safewater</a></b>

CITY OF MOSES LAKE  
DRINKING WATER QUALITY REPORT FOR 2007



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### WATER SERVICE ZONES

The City of Moses Lake Water System is divided into 6 service zones. The following chart shows the wells that serve each zone. The water in each zone is comprised of a combination of the wells in the zone. Hardness ratings (below) and fluoride levels (pg. 6) are listed in this report by well.

SERVICE ZONES	WATER HARDNESS RATING (as CaCO <sub>3</sub> ) by Pressure Zone			
	Well	ppm	gpg	Rating
Central Zone Peninsula & Westlake Areas	4	90	5	M.H.
	7	11	1	Soft
	10	13	1	Soft
	19	193	11	V.H.
Knolls Vista Zone Knolls Vista Area	3	12	3	Soft
	9	2	<1	Soft
	14	48	3	Soft
Lakeview Zone Terrace Area	11	15	1	Soft
	12	225	13	V.H.
Larson Zone Grant County Airport And Larson Housing	21	63	4	M.H.
	23	69	4	M.H.
	24	45	3	Soft
	28	60	4	Soft
	29	188	11	V.H.
Montlake Zone Below Division Street	8	49	3	Soft
Wheeler Zone East of D & L Foundry	17	18	1	Soft
	18	158	9	Hard

### WATER HARDNESS RATING

Hardness, ppm  
as CaCO<sub>3</sub>

Rating

0 – 60	Soft
61 – 120	Moderately Hard (M.H.)
121 – 180	Hard
181 – Up	Very Hard (V.H.)

### WATER SOURCE

The City of Moses Lake has 17 wells which draw from confined aquifers in basalt rock over 300 feet below the ground surface. The aquifers have been free of the contaminants found in shallow wells. Pumping capacity is approximately 30 million gallons of water per day. Peak day production was on July 12, 2007 at 16.4 million gallons. The wells' production rates range from 520 to 2,090 gpm. Our total production for 2007 was 3.1 billion gallons.

### pH LEVELS

pH levels range from 8.0 to 8.5

The US Geological Survey and the World Health Organization classify water hardness in parts per million (ppm) as Calcium Carbonate (CaCO<sub>3</sub>). In general, water softer than 50 ppm, as CaCO<sub>3</sub>, is corrosive. Water harder than 80 ppm requires the use of more soap. Water harder than 200 ppm may cause incrustations in pipes. Desirable hardness values are 50 to 80 ppm. More than 150 ppm is undesirable. More than 500 ppm as CaCO<sub>3</sub> is unacceptable. Moses Lake wells range from a minimum of 2 ppm to a maximum of 225 ppm. Another measure of hardness is grains per gallon (gpg) as CaCO<sub>3</sub>. (1 gpg = 17.1 ppm).

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### WATER TESTING AND WATER QUALITY DATA TABLE

The Federal Safe Drinking Water Act of 1974 regulated 22 contaminants in drinking water. In 2007, approximately 100 contaminants were regulated. Population, industrialization and scientific and technologic advances have led to greater scrutiny of our drinking water.

The table below lists all the drinking water contaminants that we detected in the most recent samples. The presence of these contaminants does not necessarily indicate that the water poses a health risk. The Environmental Protection Agency (EPA) allows Washington State Department of Health (DOH) to waive testing for certain contaminants if it will not result in unreasonable risk to health. Washington State DOH has waived testing for some synthetic and volatile organic contaminants at some city wells.

#### EPA WATER QUALITY DATA TABLE (health effected based)

Contaminants	MCLG or MRDLG	MCL or MRDL	Highest Level	Range Detection	In-Compliance	Sample Date
<b>INORGANIC CONTAMINANTS</b>						
1. Arsenic (ppb)	0	10	4.8	ND – 4.8	Yes	2006
2. Barium (ppm)	2	2	0.28	ND – 0.28	Yes	2006
3. Fluoride (ppm)	4	4	2.39	0.36 – 2.39	Yes	2006/2007
4. Nitrate (ppm)	10	10	3.68	ND – 3.68	Yes	2007
<b>SYNTHETIC ORGANIC CONTAMINANTS (Including Pesticides)</b>						
<i>No detects</i>						
<b>VOLATILE ORGANIC CONTAMINANTS</b>						
5. Trichloroethylene (ppb)	0	5	1.2	ND – 1.2	Yes	2007
6. Total Trihalomethane (ppb)	N/A	80	4.8 avg.	ND – 9.1	Yes	2006
7. Haloacetic Acids (ppb)	N/A	60	1.6 avg.	0.7 – 1.6	Yes	2006
<b>UNREGULATED CONTAMINANTS</b>						
<i>As part of an on-going evaluation program the EPA has required us to monitor some additional contaminants/chemicals. Information collected through the monitoring of these contaminants/chemicals will help to ensure that future decisions on drinking water standards are based on sound science.</i>						
8. DCPA Acid Metabolites (ppb)	N/A	N/A	2.3	ND – 2.3	N/A	2007
<b>RADIOACTIVE CONTAMINANTS</b>						
9. Radionuclide (gross alpha) pCi/L	---	15	4.03	ND – 4.03	N/A	2007
10. Radium 228	---	---	0.26	ND – 0.26	N/A	2007

### CONTAMINANT DETECTIONS

- Arsenic was detected within allowable levels in Wells 8, 12, 14, 18, 19, 21, 23, 24, 28, and 29.
- Barium was detected within allowable levels at Wells 8, 19, 28, and 29.
- Fluoride was detected above the secondary MCL of 2 ppm. See chart on page 6.
- Nitrate was detected within allowable levels in Wells 4, 8, 9, 11, 12, 14, 17, 18, 19, 23, 24, 28, and 29.
- Trichloroethylene was detected within allowable levels at Wells 19 and 23.
- Trihalomethanes were detected within allowable levels in the distribution system.
- Halocetic Acids were detected within allowable levels in the distribution system.
- DCPA Acid Metabolites were detected at Wells 8, 11, 12, and 18.
- Radionuclide (gross alpha) was detected at Well 18.
- Radium 228 was detected within allowable levels at Wells 3, 4, 9, 21, and 29.

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## DRINKING WATER QUALITY REPORT FOR 2007

### CONTAMINANT INFORMATION -

#### PROVIDED BY THE ENVIRONMENTAL PROTECTION AGENCY (EPA) 40 CFR PART 141

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 material; and can pick up substances resulting from the presence of animals or from human activity. Contaminants 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, and wildlife.

**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.

**Pesticides and herbicides** - which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.

**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.

**Radioactive contaminants** - which can be naturally occurring or be the result of oil and gas production and mining activities.

### TYPICAL SOURCES OF CONTAMINANTS:

1. Arsenic - Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes.
2. Barium - Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
3. Fluoride - Erosion of natural deposits, Discharge from fertilizer and aluminum factories. Fluoride present in city water is naturally occurring. Fluoride is not added to city water.  
See page 6 for additional fluoride information.
4. Nitrate - Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
5. Trichloroethylene - Discharge from metal degreasing sites and other factories.
6. Total Trihalomethane - By-products of drinking water chlorination.
7. Haloacetic Acids - By-products of drinking water chlorination.
8. DCPA Acid Metabolites - An herbicide used on grasses and weeds with fruits and vegetable crops.
9. Radionuclide - Erosion of natural deposits.
10. Radium 228 - Erosion of natural deposits.



### HEALTH INFORMATION PROVIDED BY EPA

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 at 1-800-426-4791.

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 1-800-426-4791.



# CITY OF MOSES LAKE

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### FLUORIDE NOTICE TO WATER SYSTEM USERS

Secondary Maximum Contaminant Level Exceeded. This notice applies to the customers serviced by the City of Moses Lake's Water System with the exception of the Larson Housing area and Grant County Airport area, which are not affected by the following information:

This is an alert about your drinking water and a cosmetic dental problem that might affect children under nine years of age. At low levels, fluoride can help prevent cavities, but children drinking water containing more than 2 milligrams per liter (mg/L) of fluoride may develop cosmetic discoloration of their permanent teeth (dental fluorosis). The City of Moses Lake Water System, I.D. number 56300X in Grant County submitted water samples for inorganic chemical testing. Water samples from wells 3, 7, 9, and 11 had fluoride concentrations over 2.0 mg/L. (See chart below)

Dental fluorosis, in its moderate or severe forms, may result in a brown staining and/or pitting of the permanent teeth. This problem occurs only in developing teeth, before they erupt from the gums. Children under nine should be provided with alternative sources of drinking water or water that has been treated to remove the fluoride to avoid the possibility of staining and pitting of their permanent teeth. You may also want to contact your dentist about proper use by young children of fluoride-containing products. Older children and adults may safely drink the water.

Drinking water containing more than 4 mg/L of fluoride (the U.S. Environmental Protection Agency's drinking water standard) can increase your risk of developing bone disease. Your drinking water does not contain more than 4 mg/L of fluoride, but we're required to notify you when we discover that the fluoride levels in your drinking water exceed 2.0 mg/L because of this cosmetic dental problem.

For more information, please call Bill Maddox of the City of Moses Lake of Moses Lake Water Division at 509-766-9227. Some home treatment units are also available to remove fluoride from drinking water. To learn more about available home water treatment units, you may call NSF International at 1-877-867-3435.

Well	Fluoride Level in mg/L	Sample Year
7	2.39	2007
11	1.98	2007
8	1.93	2006
3	1.84	2007
17	1.84	2006
10	1.35	2006
9	1.18	2007
28	1.12	2006
4	0.92	2006
24	0.90	2006
14	0.89	2006
23	0.83	2006
21	0.60	2006
18	0.56	2006
12	0.54	2006
19	0.46	2006
29	0.36	2006

### BACKFLOW AND CROSS CONNECTIONS

A Cross Connection is an unprotected connection between the drinking water system and any potential source of contamination. When there is a cross connection, the potential for backflow exists. Examples of cross connections include, a hose inside a bucket of water or connections between potable water and sprinkler irrigation systems. **Backflow** occurs when pressure differentials cause water to flow "backwards" from a contaminated source into the drinking water. To help avoid these situations, install a backflow device on your home sprinkler system and always maintain an air gap of at least one inch when filling a container with a hose. The City of Moses Lake has an active cross connection control program that shows individuals and businesses how to identify and prevent cross connections.

**In accordance with WAC 51-56-0603.3.3, the premise owner or responsible person shall have the backflow prevention assembly tested by a Washington State Department of Health certified backflow assembly tester at least once a year.**

For further information on cross connections or backflow devices, please call 509-766-9227.

# CITY OF MOSES LAKE

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### WATER USE EFFICIENCY

All group A water systems are mandated to implement the Water Use Efficiency (WUE) Program. Prior to the implementation of the WUE Rule, the following measures were in place:

1. **Service meters installed on all wells – monthly readings by telemetry.**
2. **Service meters required on all services – monthly readings by meter readers.**
3. **Water conservation billing rates are in place.**
4. **Public education notices have been placed on billings and in the annual Drinking Water Quality Report.**
5. **Leak detection has been performed on a periodic basis.**

Upon implementation of the Water Use Efficiency Program, the city is required to establish goals to work toward conservation and accountability of water use by the customer as well as by operation functions. A public meeting was held on January 29, 2008 to receive comments for goal setting for our WUE program. On February 12, 2008, City Council adopted the following goals to support our goal of ensuring safe and reliable drinking water in the following ways:

1. **Within the next six years, complete a feasibility study for irrigating Larson Ballfields, Cascade Park, or Montlake Park out of the lake.**
2. **By July 2009, install meters on Parks not currently being metered.**
3. **Educate consumers to understand why and how to use water more efficiently.**
4. **Contract a service to perform leak detection in a portion of the City of Moses Lake water system annually.**
5. **Maintain per capita use or reduce water consumption by 1%.**

Progress on the goals will be evaluated annually and reported in the Drinking Water Quality Report.

### LEAK FACTS

- \* A 1/8 inch hole in a metal pipe, at 40 psi, leaks 2,500 gallons of water in 24 hours.
- \* A leak the size of a pinhead can waste 360,000 gallons per year, enough to fill 12,000 bathtubs to the overflow mark.
- \* A leaking toilet can use 90,000 gallons of water in 30 days.
- \* A dripping faucet can lose up to 180 gallons a month or 2,160 gallons per year.
- \* Approximately 1 in every 20 pools has a leak.
- \* Approximately 1 in every 318 homes or buildings has a leak.
- \* A typical toilet leak at today's rate can add \$500 to a single water bill
- \* One trip through a car wash uses 150 gallons of drinking water.
- \* Collecting water for gardening from the faucet while waiting for hot water saves about 250 gallons of water a month.
- \* Using a broom to clean the sidewalk instead of a hose saves 150 gallons of drinking water.
- \* Using a pool cover prevents about 1,000 gallons per month from evaporating.



### THERMAL EXPANSION

The City installs check valves at the meter on most services. Consumers must be aware that the installation of a check valve results in a closed plumbing system within the premises. Provisions may have to be made by the owner to provide for thermal expansion within the closed system, such as the installation of an approved thermal expansion device.

# CITY OF MOSES LAKE

## Drinking Water Quality Report for 2007

### EPA Consumer Confidence Report

#### English

This is very important information regarding the City of Moses Lake public potable (drinking) water system. You may wish to have this information translated.

#### Spanish

Este informe contiene informacion muy importante sobre su agua potable. Traduzcalo o hable con alguien que lo entienda bien.

#### Russian

**В этом сообщении содержится важная информация о воде, которую вы пьёте. Попросите кого-нибудь перевести для вас это сообщение или поговорите с человеком, который понимает его содержание.**

#### Japanese

このレポートには飲料水に関する重要な情報が記載されています。この英文を訳してもらるか、またはどなたか英語が分かる方にたずねてください。



DRINKING WATER QUALITY REPORT - 2007  
This Water Quality Report contains information for customers connected to the City of Moses Lake potable water system. If you are served by another public system or on a private well, this report does not pertain to the quality of your water.

ECRWSS  
POSTAL CUSTOMER

PRSTD STD  
US POSTAGE  
PAID  
WENATCHEE, WA  
PERMIT #1

City of Moses Lake  
P. O. Box 1579  
Moses Lake, WA 98837