

# Mountain Water Company

## Consumer Confidence Report

### 2002/2003 Annual Water Quality Report

## WHAT KIND OF CONTAMINANTS MIGHT BE FOUND IN DRINKING WATER?

In 1996, the Safe Drinking Water Act was amended to require all community water systems to deliver a brief annual water quality report to their customers. This year's report includes information on your source water, the levels of any detected contaminants, compliance with drinking water rules, and some informational articles relating to chlorine and the hardness of your water.

In order to ensure that tap water is safe to drink, the United States Environmental Protection Agency (EPA) and the Montana Department of Environmental Quality (DEQ) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The federal Food and Drug Administration and DEQ regulations also establish limits for contaminants in bottled water, which must provide the same protection for public health. 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 that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic contaminants, such as salts and metals, that can be naturally occurring or 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 that are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.
- Radioactive contaminants, that can be naturally occurring or be the result of oil and gas productions and mining activities.

This report describes those contaminants that have been detected in our analysis of 145 different potential contaminants, almost 100 of which are regulated by EPA and the DEQ.

**Mountain Water Company (MWC) is proud to tell you that there have been no contaminants detected in our water that exceed any federal or state drinking water standards.** All primary (health related) and secondary (aesthetic) drinking water standards are being met.

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 EPA's Safe Drinking Water Hotline (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/Centers for Disease Control guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

Because there have been no confirmed findings of synthetic organic chemicals in MWC wells, DEQ has allowed us to reduce the level of monitoring for these chemicals. This waiver has resulted in a significant reduction in monitoring costs. This monitoring waiver is reviewed every three years by DEQ.

This report is intended to provide information for all water users. If received by an absentee landlord, a business, or a school, please share the information with tenants, employees or students. We will be happy to make additional copies of this report available. Complete records of water quality analyses are open for inspection by the public upon request.

You may also access this report on the Mountain Water Company web page at **[www.mtnwater.com](http://www.mtnwater.com)**

**If you would like more information about water quality, please call: Brad Hafar or Arvid Hiller at (406) 721-5570.**

# Mountain Water Company

## 2002/2003 Annual Water Quality Results

### Water Quality Parameters Detected in Mountain Water Company Sources

<b>PRIMARY STANDARDS</b> -- Health-related	<b>Federal MCL</b>	<b>MCLG</b>	<b>Units of Measurement</b>	<b>MWC Range (including highest value)</b>	<b>Average for MWC Wells (a)</b>	<b>(b) MWC Date of Last Measurement</b>	<b>Potential Sources of Contamination</b>
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#### INORGANIC CHEMICALS

Arsenic	50	NS	ppb	ND - 2	1	2000/01/02	Erosion of natural deposits; historical mining and smelting.
Barium	2	2	ppm	0.2 - 0.5	0.24	2000/01/02	Erosion of natural deposits; discharge from metal refineries; discharge from oil drilling wastes.
Copper	AL = 1.3 #	1.3	ppm	0.06 - 0.74	0.45	2001	Internal corrosion of household plumbing systems; erosion of natural deposits; leach from wood preservatives.
Fluoride	4	4	ppm	ND - 0.23	0.15	2000/01/02	Erosion of natural deposits; discharge from fertilizer factories.
Nitrite/Nitrate total	10	10	ppm	0.37 - 3.15	0.83	2002	Erosion of natural deposits; runoff and leaching from fertilizer use; leaching from septic tanks and sewers.

#### RADIONUCLIDES

Gross Alpha	15	NS	pCi/L	ND - 2.0	0.38	2002	Erosion of natural deposits.
Radium 226	5	NS	pCi/L	ND - 0.6	ND	2002	Erosion of natural deposits.
Radium 228	5	NS	pCi/L	ND - 3.6	ND	2002	Erosion of natural deposits.

#### ORGANIC CHEMICALS

Chlorine Residual	MRDL=4	MRDLG=4	ppm	0.05-1.95	0.35	2002	Drinking water disinfectant added for treatment.
Chloroform	NS	NS	ppb	ND - 0.53	ND	2002	By-product of drinking water disinfection. Water-lube process at wells with distribution system water.
Tetrachloroethylene (PCE)	5	0	ppb	ND - 0.53	ND	2002	Discharge from factories and dry cleaners.
Total Trihalomethanes (TTHM's)	NS	NS	ppb	ND - 0.53	ND	2002	By-product of drinking water disinfection. Water-lube process at wells with distribution system water.

#### DISTRIBUTION SYSTEM

##### PRIMARY STANDARDS

Asbestos	7 MFL	7 MFL	fibers	ND - 0.96	NA	2002	Internal corrosion of asbestos-cement water mains; erosion of natural deposits.
Total Trihalomethanes (TTHM's)	100	NS	ppb	1.1 - 3.8	2.95	2002	By-product of drinking water disinfection.

<b>SECONDARY STANDARDS</b> -- Aesthetic, non-health standards	<b>Federal MCL</b>	<b>MCLG</b>	<b>Units of Measurement</b>	<b>MWC Range (including highest value)</b>	<b>Average for MWC Wells (a)</b>	<b>(b) MWC Date of Last Measurement</b>	<b>Potential Sources of Contamination</b>
<b>CHEMICAL PARAMETERS</b>							
Aluminum	0.05-0.2	NS	ppm	ND - 0.2	ND	2000/01/02	Erosion of natural deposits.
Chloride	250	NS	ppm	3 - 19	6	2000/01/02	Runoff/leaching from natural deposits.
Sulfate	250	NS	ppm	10 - 19	17	2000/01/02	Runoff/leaching from natural deposits; industrial wastes.
Total Dissolved Solids (TDS)	500	NS	ppm	167 - 251	197	2000/01/02	Runoff/leaching from natural deposits.
Zinc	5,000	NS	ppb	ND - 40	ND	2000/01/02	Runoff/leaching from natural deposits; industrial wastes.

#### PHYSICAL PARAMETERS

pH	6.5-8.5	NS	units	7.3 - 8.0	7.7	2000/01/02	Hydrogen ion concentration. Value greater than 7 is basic (non-acidic).
Turbidity / clarity	5.0	NS	NTU	0.05 - 0.46	0.08	2000/01/02	Soil runoff.

# Mountain Water Company

## 2002/2003 Annual Water Quality Results

Detected Unregulated Chemicals That May Be of Interest to Consumers\*

ADDITIONAL PARAMETERS Unregulated	Federal MCL	MCLG	Units of Measurement	MWC Range (including highest value)	Average for MWC Wells (a)	(b) MWC Date of Last Measurement
Aggressiveness Index ( c )	NS	NS	units	11.5 - 12.4	12	2000/01/02
Alkalinity (as Ca CO <sub>3</sub> )	NS	NS	ppm	137 - 218	171	2000/01/02
Calcium	NS	NS	ppm	38 - 55	47	2000/01/02
Corrosivity (Langlier Index) ( d )	NS	NS	positive/negative	( - 0.3) - (+ 0.60)	+ 0.2	2000/01/02
Hardness (Ca CO <sub>3</sub> )	NS	NS	ppm	136- 210	172	2000/01/02
Hardness	NS	NS	grains	8 - 12.3	10.1	2000/01/02
Magnesium	NS	NS	ppm	10 - 21	13	2000/01/02
Potassium	NS	NS	ppm	1 - 2	1.8	2000/01/02
Sodium	NS	NS	ppm	5 - 16	6.9	2000/01/02
Specific Conductance	900	NS	micromho/cm	295 - 466	360	2000/01/02

### KEY TO ABBREVIATIONS AND FOOTNOTES

AL = Action Level

MCL = Maximum Contaminant Level

MRDL = Maximum Residual Disinfectant Level

MRDLG = Maximum Residual Disinfectant Level Goal

MFL = Million Fibers per Liter

NA = Not applicable at this time or not required to analyze

ND = Not detected

NS = No standard

NTU = Nephelometric Turbidity Units. This is a measure of the suspended material in water.

# = Action Level measured at the consumers tap, a primary standard. Compliance determined at 90th percentile value. The value shown as the "average" for copper is the 90th percentile value for 30 samples taken in 2001. No samples exceeded the AL.

\* = Unregulated contaminant monitoring helps USEPA determine where certain contaminants occur and whether the contaminants need to be regulated.

ppm = parts per million

ppb = parts per billion

pCi/L = picoCuries per liter

( a ) = The average is weighted according to the individual contribution in pumping by each well to the total (active wells only).

( b ) = The state allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants in groundwater sources do not change frequently. Some of our data, though representative, are more than one year old.

( c ) = An Aggressiveness Index of 11 or greater indicates that the water is not aggressive (noncorrosive).

( d ) = A positive number Langlier Index indicates that the water is noncorrosive.

### DEFINITIONS

#### Maximum Contaminant Level (MCL):

The highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology.

#### Maximum Contaminant Level Goal (MCLG):

The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety.

#### Action Level (AL):

The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

#### Primary Drinking Water Standard:

Primary MCL's, specific treatment techniques adopted in lieu of primary MCL's, and monitoring and reporting requirements for MCL's that are specified in regulations.



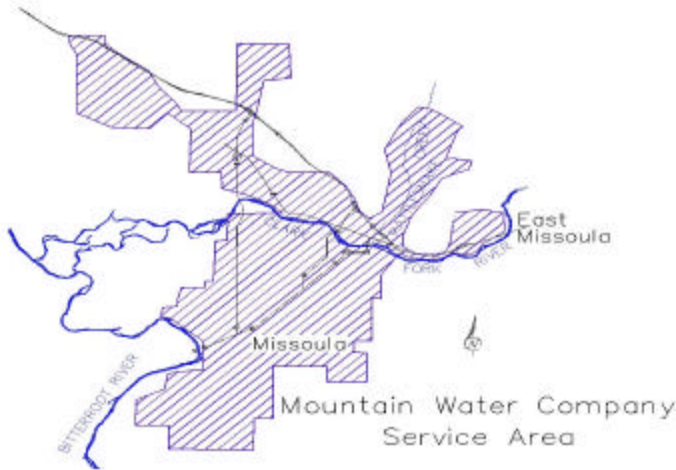
Providing affordable quality water and dependable service to the Missoula community

#### Mountain Water Company

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# WHERE DOES YOUR WATER COME FROM?



Mountain Water Company serves the greater Missoula area. The Missoula aquifer is currently the only active source of drinking water for Missoula Valley residents. MWC utilizes 37 deep wells to pump water from this aquifer. The only treatment performed by MWC is low-level disinfection with chlorine.

Rattlesnake Creek lies just north of Missoula and, under the guidance of the DEQ, serves as an alternative source available for use in special situations. Rattlesnake Creek is a surface water supply originating in the Rattlesnake Wilderness area and emptying in the Clark Fork River. Strict environmental conditions are maintained in the watershed to preserve the quality of this source.

## ***Water Hardness***

Water hardness occurs naturally in the Missoula Aquifer. Calcium and magnesium, both of which are widely distributed in the environment, are the two main contributors to the total hardness of the water. Hardness is usually expressed as equivalent calcium carbonate (Ca CO<sub>3</sub>) in milligrams per liter (mg/L). Hardness may also be measured in grains per gallon. One grain per gallon is equal to 17.1 mg/L. The hardness of the water in the MWC system ranges from 136 mg/L Ca CO<sub>3</sub> (moderately hard) to 210 mg/L (hard). Hardness is an aesthetic issue and not related to the healthfulness of water.

Minerals, like calcium and magnesium, dissolved in water tend to precipitate out when heated or can be left behind when it evaporates. The white spots on glass shower doors, coffee pots, dishes, etc. are best prevented by wiping them dry before the water evaporates. A whitish layer on plants can be avoided by watering with distilled water, rainwater or water from a dehumidifier, but this may also reduce the mineral content of the soil. Ca CO<sub>3</sub> can be beneficial to some water lines by forming a protective coating inside the pipe which reduces corrosion and can help prevent the leaching of lead and copper into the water.

## ***Chlorine***

Disinfection is critical to drinking water safety. Chlorine has been the most common water disinfectant used in the United States (US) for nearly 100 years. A dramatic decline in waterborne diseases such as cholera and typhoid fever occurred in the US as the number of water systems that disinfected increased. The World Health Organization considers drinking water chlorination to be one of the most significant advances in public health protection. About 75% of the larger systems and 95% of the smaller systems in the US now use chlorine as their primary disinfectant.

In 2002, the average free chlorine residual in the MWC system was 0.35 milligrams per liter. For information on reducing the chlorine concentration and/or the hardness of your drinking water contact the National Sanitation Foundation at [www.nsf.org/certified/DWTU](http://www.nsf.org/certified/DWTU) or the Water Quality Association at [www.wqa.org/goldseal](http://www.wqa.org/goldseal).