

Mountain Water & Linda Vista Water Company Annual Water Quality Report

The Environmental Protection Agency's 1988 designation of the Missoula Valley as a Sole Source Aquifer has helped define public policy and what Missoulians hold as critical to their health and welfare. Mountain Water Company has been an active partner in the fight to protect this priceless resource—the Missoula aquifer. Several studies which were partially or fully funded by Mountain Water Company helped create a database so we could more fully understand the Missoula aquifer and what affects it. Prior to Missoula being designated a Sole Source Aquifer, Mountain Water Company commissioned Meredith-Boli, an Environmental Consulting



Agency, to help identify sources of contamination to the aquifer. Ensuing studies by Hydrometrics, a Helena based engineering firm and others have helped us put together a fairly substantial body of knowledge. Based on these studies, our primary public education effort since 1990 has been the protection of this drinking water supply which serves approximately 55,000 people. The more people know about their drinking water and where it comes from, the greater the chances it can be protected.

We can accept no less than the provision of clean, safe drinking water for the people of Missoula.

Amendments to the 1996 Safe Drinking Water Act correspond ideally with this ongoing education effort. These amendments require each community water system to provide its customers with a report on the quality of the drinking water that it supplies.

We encourage you to read this report carefully. Hopefully, it will educate you not only on water quality, but other important topics as well. This report includes information such as “Where Does Your Water Come From?”, “What Kinds of Contaminants Might be Found in Drinking Water?”, “Water Results - What’s in your Water?”, and other information ranging from emergency preparedness to encouraging conservation. If you should have questions on any portion of the information in this report, please feel free to call Brad Hafar or Arvid Hiller at Mountain Water Company (406) 721- 5570.

The preamble of the Montana Constitution includes the idea that Montanans have the right to “a clean and healthful environment.” Our commitment to help protect this priceless resource remains as strong as ever. We need everyone’s support and we appreciate the efforts of those who are working to that end.

Thank you!



MISSOULA AND SURROUNDING COMMUNITIES ARE PROVIDED CLEAN AND SAFE DRINKING WATER.

WHERE DOES YOUR WATER COME FROM?

The Missoula Aquifer is currently the only source of drinking water for Missoula Valley residents. This aquifer supplies 80% of the residents in Missoula County with drinking water. The remainder of the County residents live outside the Missoula Valley and receive their drinking water from a variety of surface and groundwater sources. The Missoula aquifer is truly a wonder. Hydrologists judge this aquifer to be one of the finest sources of groundwater in America. This aquifer is the result of more than twenty million years of geological forces that laid down over a hundred feet of porous sand, gravel and boulders, and then capped it with a layer of surface soil.

This natural storage tank contains billions of gallons of fresh water which is constantly being replenished from the Clark Fork River. In many cases this remarkable resource is surprisingly close, ranging anywhere from 40 to 120 feet below ground level. This water serves all of Mountain Water and Linda Vista Water Companies. The customers of these companies receive water from 35 wells in the Missoula Valley.

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. The tables in this report indicate which minerals and substances have been detected in the water provided by Mountain Water and Linda Vista Water Companies. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800) 426-4791.

As an alternative source available for use in emergency situations, Rattlesnake Creek lies just north of Missoula. Rattlesnake Creek was used for many years as one of the primary sources of supply to the Missoula community. Rattlesnake Creek is a surface supply originating in the Rattlesnake Wilderness Area and emptying into the Clark Fork River. This source is now used for our backup emergency supply and we maintain strict environmental conditions to preserve this natural wonder.

WHAT KINDS OF CONTAMINANTS MIGHT BE FOUND IN DRINKING WATER?

In order to ensure that tap water is safe to drink, the EPA prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

Contaminants that may be present in source (untreated) 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 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 the result of oil and gas productions and mining activities.

Mountain Water and Linda Vista Water have monitored all of our wells for 78 constituents regulated by primary and secondary drinking water standards and 122 that are unregulated. The tables that follow on pages 4 and 5 represent the values of all constituents that have been detected in our source water.

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

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.

RADON

Drinking water regulations for radon are currently being developed by the United States Environmental Protection Agency (USEPA). Radon is a naturally occurring gas formed from the normal radioactive decay of uranium. It is colorless, odorless, tasteless, chemically inert, and radioactive. Radon can be found virtually everywhere on Earth.

In anticipation of this new regulation, MWC has performed extensive monitoring of our wells for radon. In fact, MWC has developed one of the best databases for the

occurrence of radon in ground water in the nation. The level of radon found in MWC wells range from 55 to 803 pCi/L (picocuries per liter of water). The average radon level is 315 pCi/L. The National Academy of Sciences (NAS) has determined that 315 pCi/L of radon in water can transfer to approximately 0.03 picocuries in indoor air.

The primary threat from radon is in air, indoor air in particular. The USEPA recommends that homeowners take remedial action if the indoor air radon level in their home exceeds 4.0 picocuries. By comparison, the average outdoor radon level is 0.4 picocuries. The average radon level in MWC wells equates to 1/10th of the average outdoor air level and 1/100th of the recommended indoor air standard.

USEPA recommends that all homeowners test their homes for radon. To obtain information on radon and how it may affect your home, call the State of Montana Radon Hotline at (1-800-546-0483).



WHAT IS BACKFLOW AND WHY IS IT A DANGER?

Mountain Water customers expect the water supplied to them to be safe and healthful. In pursuit of this goal, Mountain Water Company has expended considerable resources to protect the water from contamination or pollution as it flows through the distribution system. This can change once water enters private property. It is possible for contamination to occur when a water supply line is connected to equipment containing a non-potable (unfit to drink) substance. A water line may be connected to a tank filled with acid, or a hose may drop into a bucket of cleaning solution. These connections, called cross-connections, whether permanent or temporary, would be dangerous if no protective measures were taken.

IF YOU WOULD LIKE MORE INFORMATION ON BACKFLOW PROTECTION, PLEASE CALL GARY MITCHELL AT 721-5570.

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1999 WATER QUALITY - MOUNTAIN WATER COMPANY

PRIMARY STANDARDS - Mandatory health-related

INORGANIC MATERIALS	Federal MCL	MCLG	Units of Measurement	Range (including highest value) for MWC	(a) Average For MWC	Range (including highest value) for EAST MISSOULA	(a) Average for EAST MISSOULA	LINDA VISTA	POTENTIAL SOURCES OF CONTAMINATION
Antimony	6	0	ppb	<1 - 1	<1	ND	ND	ND	Erosion of natural deposits: mining
Arsenic	50	NS	ppb	<1 - 3	<1	1	1	1	Erosion of natural deposits: mining and smelting
Barium	2	2	ppm	0.1 - 0.5	0.24	0.2	0.2	0.4	Erosion of natural deposits: discharge from metal refineries
Chromium	100	100	ppb	<2 - 9	2.3	<10	ND	6.3	Erosion of natural deposits: discharge from steel mills
Fluoride	4.0 (2.0#)	NS	ppm	<0.1 - 0.2	0.15	0.12 - 0.17	0.17	0.2	Erosion of natural deposits: discharge from fertilizer and aluminum factories.
Lead	15##	0	ppb	ND - 5.6	4.1	ND - 5.6	4.1	ND	Corrosion of household plumbing systems: erosion of natural deposits
Nitrate	10	10	ppm	0.36 - 2.3	0.82	0.42 - 0.44	0.42	3.5	Erosion of natural deposits: leaching from septic tanks, sewage; runoff from fertilizer

RADIONUCLIDES

Gross Alpha	15	NS	pCi/L	<1 - 3.3	1.71	1.3 - 1.7	1.3	2.7	Erosion of natural deposits
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ORGANIC CHEMICALS

Tetrachloroethylene (PCE)	5	0	ppb	ND - .2	<0.5	ND	ND	ND	Discharge from factories and dry cleaners
TTHM Monitoring (dist system) (b)	100	NS	ppb	ND - 4.9	1.6	NA	NA	NA	By-product of drinking water disinfection

KEY TO ABBREVIATIONS AND FOOTNOTES

- NS = No Standard
- ND = Not Detected
- NA = Not Applicable at this time or not required to analyze for.
- NTU = Nephelometric Turbidity Units (measure of suspended material in water).
- ppb = parts per billion, or micrograms per liter (ug/L)
- ppm = parts per million, or milligrams per liter (mg/L)
- pCi/L = Picocuries per liter.
- Umho/cm = micromhos per centimeter.
- # = A secondary (aesthetic) drinking water standard.
- ## = Action level measured at the consumer's tap, a primary standard. Average for these chemicals represent the 90th percentile sample result.
- < = Less than, essentially equivalent to ND.
- (a) = The average is weighted according to the individual contribution in pumping by each well to the total. (Active wells only)
- (b) = Total Trihalomethanes (TTHM's) monitoring is conducted on a quarterly basis in the distribution system.
- (c) = An Aggressiveness Index greater than 11 indicates that the water is not aggressive (non-corrosive).
- (d) = A positive number Langlier Index indicates that the water is noncorrosive.

MAXIMUM CONTAMINANT LEVEL (MCL) - 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.

MAXIMUM CONTAMINANT LEVEL GOAL (MCLG) - 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.

ACTION LEVEL - The concentration of a contaminant which, if exceeded, triggers a treatment or other requirement which a water system must follow.

PRIMARY DRINKING WATER STANDARD - Primary MCLs, specific treatment techniques adopted in lieu of primary MCLs, and monitoring and reporting requirements for MCLs that are specified in regulations.

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1999 WATER QUALITY - MOUNTAIN WATER COMPANY

SECONDARY STANDARDS - Aesthetic, non-health standards

CHEMICAL PARAMETERS	Federal MCL	MCLG	Units of Measurement	Range for MWC	Average For MWC	Range for EAST MISSOULA	Average for EAST MISSOULA	LINDA VISTA
Chloride	500	NS	ppm	3-14	5.3	3 - 4	3.9	23
Copper	1300**	1300	ppb	ND- 930	640	ND - 930	640	460
Specific Conductance	NS	NS	umho/cm	284 - 475	360	304 - 353	349	400
Sulfate	500	NS	ppm	10 - 27	17	12 - 20	19	17
Total Dissolved Solids (TDS)	1,000	NS	ppm	146 - 290	206	164 - 206	202	250

PHYSICAL PARAMETERS

Color	15	NS	units	<3 - 5	<3	0.0	0.0	<3
Odor Threshold	3	NS	units	0 - 1	<1	0.0	0.0	1
pH	6.5 - 8.5	NS	units	7.2 - 8.0	7.7	7.3 - 7.6	7	7.2
Turbidity/clarity	5.0	NS	NTU	<0.05 - 0.25	0.1	0.13 - 0.29	0.14	.2

ADDITIONAL PARAMETERS - Unregulated

Aggressiveness (c)	NS	NS	units	11.4 - 12.4	10.8	11.6 - 11.8	11.6	11.4
Alkalinity (as Ca O3)	NS	NS	ppm	125 - 200	158	142 - 160	158	130
Bicarbonate	NS	NS	ppm	152 - 244	193	173 - 195	193	159
Calcium	NS	NS	ppm	33 - 61	47	42 - 49	48	38
Corrosivity (Langlier Index) (d)	NS	NS	units	(-0.52) - (+0.05)	+0.05	(-0.15) - (-0.34)	-0.31	-0.5
Hardness (Ca CO3)	NS	NS	ppm	132 - 226	172	155 - 160	160	174
Hardness	NS	NS	grains	8.2 - 13.2	10	9.1 - 9.4	9.3	10.2
Magnesium	NS	NS	ppm	12 - 21	14.2	12 - 14	14	17
Potassium	NS	NS	ppm	1 - 2	1.7	1 - 2	1.9	2.4
Sodium	NS	NS	ppm	6 - 15	7.1	6	6	16

Water distribution systems are designed with the intention of the water flowing in a certain direction — from the distribution system to the consumer. However, hydraulic conditions within the system may deviate from the “normal” conditions, causing the water to flow in the opposite direction in unprotected systems. This is called *backflow*.

Federal, state and local laws require water suppliers to protect their water systems from pollution or contamination due to backflow. It is very important that a strong cross-connection control program be maintained in order to protect the safety of the drinking water. To accomplish this goal, the water supplier, health department, plumbing authority, and

the consumer must work together. The water supplier and health department may carry out cross-connection control surveys, not only to determine what may be needed to protect the distribution system

from contamination or pollution, but also to determine what may be needed to protect the consumer’s internal water system.

The consumer, on the other hand, must be aware of the dangers cross-connections pose to them and their neighbors and can prevent them by protecting such connections with the proper backflow prevention assembly.

With cooperation, a comprehensive cross-connection control program will keep Missoula’s water distribution system free from objectionable impurities and health hazards.

MOUNTAIN WATER COMPANY SYSTEM IMPROVEMENTS

One of the most important aspects of operating a public water system is reinvestment in infrastructure. Infrastructure replacement is an often overlooked necessity to assuring continued superior service to a

community. Maintaining a strong infrastructure benefits everyone in the community. Mountain Water Company has a strong history of reinvesting profits back into the company. Over the last 20 years, MWC has invested over \$26 million in the Missoula water system. Had those improvements been overlooked until today, those costs would be well over \$32 million, not to mention the price to the community of not having superior service. The following table summarizes these improvements.

CAPITAL IMPROVEMENTS

	1979-1993	1994-1998
Actual	\$12,095,559	\$14,021,816
Based on 1998 Dollars	\$18,052,471	\$14,588,964
	20 Year Total	20 Year Average
Actual	\$26,117,375	\$1,305,869
Based on 1998 Dollars	\$32,641,435	—

In 1999, MWC has budgeted over \$2.5 million in water system improvements for Missoula.

MISSOULA’S OWN WATER-WISE GARDEN

Walking along the beautiful Missoula Riverfront Parkway you may notice several people touring the scenic garden behind the *Missoulian*. What started out to be a demonstration garden emphasizing conservation, the Water-Wise Garden has become a focal point for the community. Because of its beauty, the garden has generated interest of not only conservationists, but the general public as well. Tours from local garden clubs, schools and people walking by are commonplace throughout the spring, summer and fall.

One of the most exciting developments concerning this community resource deals with its educational function. The Montana Natural History Center is in the process of



WATER-WISE
GARDEN TEACHING
MORE THAN
CONSERVATION.

writing a curriculum for grade school and middle school students with the garden as its primary resource. The Water-Wise Garden is an excellent example of how a community can work together for the education and enjoyment of everyone.

MOUNTAIN WATER COMPANY INTERACTIVE VOICE RESPONSE

Misplaced your bill? Need to know your balance or due date? Want to check if your payment has been received? Don't have time to wait on hold?

Access your account 24-hours-a-day, 7-days-a-week using the new automated information service now available at Mountain Water Company. Simply have your 10-digit account number in hand and dial (406) 523-5065.

Choose from the available options to find the answers to these and other questions. And don't worry, if you get lost, you can press zero during regular business hours to talk to one of our friendly Customer Service Representatives.

Try it today!

Mountain Water Company's web page is currently under construction. Please review this report at www.mtnwater.com.

Y2K / EMERGENCY PREPAREDNESS

Like all companies, Y2K issues affect MWC and LVWC hardware, databases, software, information systems, technical infrastructure, vendors, suppliers and contractors. Likewise, the Y2K preparedness of vendors and third parties may directly impact MWC and LVWC.

In an effort to address the Year 2000 issues head-on, MWC and LVWC are engaged in an ongoing process of analyzing their products and suppliers, acting to ensure effective operation through the change of the century and well into the

future. The primary goal of our Year 2000 project is to ensure that MWC and LVWC vital business processes will operate in the next millennium by being Y2K compliant. This project has been in active operation for over two years.

In order to provide additional assurances, MWC and LVWC engaged an independent consulting firm to provide a general evaluation of its Year 2000 conversion plan. MWC and LVWC are proud to report that they received a Figure of Merit of 100%, which is the best score possible. This evaluation reflects the completeness, reasonableness and prioritization components of the plan, and measures how well MWC and LVWC's risk has been addressed by the plan.

In addition to our Y2K efforts, MWC and LVWC are contributing time, effort and resources to general emergency preparedness. As with Y2K, events beyond MWC and LVWC's control can affect water service to our customers. In the event that water service is interrupted or is adversely affected for any reason, you can be assured MWC and LVWC will do its best to minimize the impact on its customers.



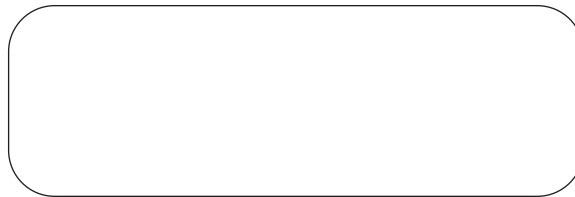
Mountain Water and Linda Vista Water Company

*Providing affordable quality water
and dependable services to the
Missoula community.*

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