

*Esta es informacion importante. Si no la pueden leer, necesitan que alguien se la traduzca.*

The Sage Water Users Association and Mid-Colorado Investment Co., Inc. are pleased to present this year's annual Water Quality Report. This report is designed to inform you about the quality of the water you consume every day. We are committed to providing you, our customers, with water that meets or exceeds all federal and state requirements. If you have any questions, please contact any member of the Sage Board of Directors (660-3076), Philip Cromwell, operator of the Sage system (499-8408), or Al Hagedorn of Mid-Colorado (719-687-5312), or attend the meetings of the Sage Board. The Board meets at 7:00 PM on the third Tuesday of "odd-numbered" months (Jan., Mar., etc.) at the Sage Creek Community Church, 6160 Murr Rd. For updated locations, dates and times, check [www.sagewater.org](http://www.sagewater.org) or call (719) 222-2955.

## Vulnerable Populations Warning

Some people may be more vulnerable to contaminants in drinking water than the public in general. All 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 the water poses a health risk. 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 of infections. These people should seek advice from their health care providers about drinking water. For more information about contaminants and potential health effects, or to receive a copy of the U.S. Environmental Protection Agency (EPA) and the U.S. Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by cryptosporidium and microbiological contaminants, call the EPA Safe Drinking Water Hotline at 1-800-426-4791.

## Where Does Our Water Come From?

Our water comes from deep (over 1000 feet) wells drilled into the Laramie-Fox Hills and Arapahoe aquifers (groundwater); the amounts drawn from the two aquifers vary, but we usually deliver a blend of about 67% Laramie-Fox Hills, and 33% Arapahoe. The wells, pumps and treatment facilities are owned and maintained by Mid-Colorado. The water is chlorinated at the wells, then pumped to an underground reservoir. From there, the pressure is raised with booster pumps and the water is delivered into the distribution system, which is owned and maintained by the Sage Association. In 2012, the amount used by the entire Sage service area was a bit over twenty five and one-half million gallons, about 69,935 gallons per day average over the year.

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 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, which 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 that 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 byproducts of industrial processes and petroleum production, and may also come from gas stations, urban stormwater runoff, septic systems, and as byproducts of water disinfection.
- \* Radioactive contaminants, that can be naturally occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the Colorado Department of Public Health and Environment prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

## The Source Water Assessment Report

The Colorado Department of Public Health and Environment has provided us with a Source Water Assessment Report for our water supply. You may obtain a copy of the report by visiting [www.cdphe.state.co.us/wq/sw/swaphom.html](http://www.cdphe.state.co.us/wq/sw/swaphom.html) or by contacting Al Hagedorn at 719-687-5312.

Potential sources of contamination in our source water area come

from: "Road Miles."

The Source Water Assessment Report provides a screening-level evaluation of potential contamination that **could** occur. **It does not mean that contamination has occurred or will occur.** We can use this information to evaluate the need to improve our current water treatment capabilities and prepare for future contamination threats. This can help us ensure that quality finished water is delivered to your homes. In addition, the source water assessment results provide a starting point for developing a source water protection plan.

Please contact Al Hagedorn, (719)-687-5312, to learn more about what you can do to help protect your drinking water sources, any questions about the Drinking Water Consumer Confidence Report, to learn more about our system, or to attend scheduled public meetings. We want you, our valued customers, to be informed about the services we provide and the quality water we deliver to you every day.

## Understanding the Table of Contaminants

In the table on the other side of this sheet, you will find some terms and abbreviations that might not be familiar to you. To help you better understand these terms, we've provided some definitions:

*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.

*Maximum Residual Disinfectant Level (MRDL)* - 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.

*Maximum Residual Disinfectant Level Goal (MRDLG)* - 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.

*Action Level (AL)* - The concentration of a contaminant which, if exceeded, triggers treatment or other requirements a water system must follow.

*Waiver* - State permission not to test for a specific contaminant. **During 2012, we had waivers of monitoring requirements for dioxin, glyphosate, cyanide, and asbestos.** These contaminants are not expected to occur in our water.

*Milligram* - a unit of weight in the metric system, abbreviated "mg." There are about 454,000 milligrams in a pound. Approximately six grains of table salt weigh one milligram.

*Liter* - a unit of volume in the metric system, abbreviated "L." A liter is slightly more than one quart.

*Milligrams per liter (mg/L)* - 1 mg/L corresponds to about 4 drops of water in a full bathtub, or 10 tablespoons of salt in one day's average water use throughout the Sage subdivisions; same as "parts per million (ppm)."

*Micrograms per liter (µg/L)* - 1 µg/L corresponds to one or two grains of salt in a full bathtub, or about half a teaspoon of water in an average week's water use by all of Sage; same as "parts per billion (ppb)."

*Picocuries per liter (pCi/L)* - a measure of the radioactivity in water.

*N/A* - Not Applicable. This test was not required, or the requirement is not applicable to our system.

*N/T* - No Test. This test was not required for our system.

## What's In Our Water?

The State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year, or the system is not considered vulnerable to this type of contamination. Some of our data, though representative, may be more than one year old. The table below lists the regulated and unregulated contaminants that were found, as well as a few that were NOT detected. For a complete list of the **large** number of contaminants tested for but not detected, their MCLs, sampling dates, etc., please contact Al Hagedorn at (719)-687-5312. He can also supply results for earlier years and for the individual wells, possible health effects from contaminants, and other information about the water.

Contaminant	Sample Date	Violation (Yes/No)	Level Detected	Unit	MCL	MCLG	Likely source of contaminant
<b>Microbiological Contaminants</b> (samples taken at booster pump station and at various locations throughout the distribution system)							
Total Coliform Bacteria	monthly	No	Absence	Presence/ Absence	Presence	0	Naturally present in the environment
<i>E. coli</i> Bacteria	monthly	No	Absence	Presence/ Absence	Presence	0	Human and animal fecal waste
<b>Inorganic Contaminants</b>							
Barium	11/17/11	No	0.0065	mg/L	2.0	0.1	Erosion of natural deposits
Copper (see Note below)	9/18/10	No	0.009 (90th %ile)	mg/L	AL = 1.3	1.3	Corrosion of household plumbing systems; erosion of natural deposits
Fluoride (see Note below)	12/4/12	No	1.0	mg/L	4	4 (AL = 2)	Erosion of natural deposits
Lead (see Note below)	9/18/10	No	0.37 (90th %ile)	µg/L	AL = 15	0	Corrosion of household plumbing systems; erosion of natural deposits
Nitrate (as Nitrogen)	12/4/12	No	0.027	mg/L	10	10	Runoff from fertilizer use; sewage, leaching from septic tanks; erosion of natural deposits
Nitrite (as Nitrogen)	12/4/12	No	<0.004	mg/L	1.0	1	Runoff from fertilizer use; sewage, leaching from septic tanks; erosion of natural deposits
Sodium (unregulated)	11/17/11	N/A	135	mg/L	N/A	N/A	Naturally present in the environment
<b>Radionuclides</b> (see Note below)							
Radium-226	12/4/12	No	0.2	pCi/L	5 (for com- bined Ra-226	0	Erosion of natural deposits
Radium-228	12/4/12 in 2007	No	1.5	pCi/L	+ Ra-228)	0	Erosion of natural deposits
Gross Alpha	12/4/12	No	0.0	pCi/L	15	0	Erosion of natural deposits
Uranium	12/4/12	No	<0.7	pCi/L	30	0	Erosion of natural deposits
<b>Disinfection Byproducts</b> (See Note below.)							
Bromodichloromethane	11/17/11	N/A	<0.5	µg/L	N/A	0	Disinfection byproduct
Bromoform	11/17/11	N/A	0.68	µg/L	N/A	0	Disinfection byproduct
Dibromochloromethane	11/17/11	N/A	0.82	µg/L	N/A	60	Disinfection byproduct
Chloroform	11/17/11	N/A	<0.5	µg/L	N/A	N/A	Disinfection byproduct
TTHM in Sage distrib system	see Note	No	see Note below		80 µg/L	N/A	Disinfection byproducts
HAA5 in Sage distrib system	see Note	No	see Note below		60 µg/L	N/A	Disinfection byproducts
<b>Disinfectant Residual</b>							
Total Chlorine Residual (see Note below)	1/1/12- 12/31/12	N/A	1.06 (0.66-1.64)	mg/L	N/A	N/A	Water additive added to control microbes; MRDL and MRDLG both 4.0 mg/L

### Notes to Table of Values

**Fluoride:** If children under 7 years of age regularly consume water with fluoride levels near 1 mg/L, their permanent teeth tend to become decay-resistant. However, with *prolonged* consumption of water with fluoride levels over 2 mg/L, the children begin to be at risk of developing dental fluorosis, a mottling of the enamel of the permanent teeth. The blend of Laramie-Fox Hills and Arapahoe water sampled on 11/17/11 showed a fluoride content of 1.2 mg/L, in line with historic results. Arapahoe well water by itself exceeds the action level of 2 mg/L, but it is rarely the sole source of water; only when the Laramie-Fox Hills well is out of service (e.g., when the pump needs replacing) is unblended Arapahoe water delivered. Exposure to the higher fluoride level would be for a few days only, and should not pose a risk of dental fluorosis.

**Copper and Lead:** There is very little copper or lead in the water that is delivered to the Sage distribution system; for example, a sample of the usual blend of Laramie-Fox Hills and Arapahoe water taken 10/13/02 showed these contaminants to be present, if at all, at levels below the State Health Department lab's limits of detection. However, these contaminants might leach into the water from piping or plumbing fixtures in the homes. Accordingly, analyses were conducted on "first draw" samples (the first water taken from a tap after standing overnight) from ten homes. None of these samples showed lead or copper at or above the Action Levels. The values in the Table are the 90th percentile figures, and are far below the action levels for both contaminants. Similar results were obtained in samples taken in previous years.

Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested and flush your tap for 30 seconds to 2 minutes before using tap water. Additional information is available from the Safe Drinking Water Hotline at 1-800-426-4791.

**Disinfection Byproducts:** The first four compounds listed make up the "Total Trihalomethanes" (TTHM), which arise as by-products from the chlorination process used to disinfect the water; the values shown for these are from Mid-Colorado's sampling at the booster station on 11/17/11. Sage Water Users Association took samples for TTHM, and for "HAA5" (five "Haloacetic Acids") on 6/10/09, 9/8/09, 12/9/09, and 3/9/10, at two points in the distribution system each time. The TTHM values ranged from < 5 µg/L to 7.12 µg/L, and the HAA5 values ranged from "not detected" to 7.10 µg/L. All these values, and the total of the Mid-Colorado 11/17/11 values, are far below the MCLs of 80 and 60 µg/L for TTHM and HAA5, respectively.

**Disinfectant Residual (Total Chlorine Residual):** The average (1.06 mg/L) and range (0.66-1.64 mg/L) given in the Table are from Mid-Colorado's measurements when monthly samples for bacterial analysis were taken at the booster pump building; additional readings are taken at least weekly but are not included in the Table values. The chlorine residual slowly drops as the water stands in the reservoir and travels through the distribution system. Accordingly, we aim for a residual of about 1.1 mg/L for water directly from the wells, and about 0.6 mg/L for water several hours after the wells have run. Some people who use water containing chlorine well in excess of the MRDL could experience irritating effects to their eyes and nose; some people who drink water that contains chlorine well in excess of the MRDL could experience stomach discomfort.

**Radionuclides:** Radioactive decay of these radium isotopes is the primary source of radon, another radioactive contaminant in water and in air. Radium itself arises from naturally occurring uranium in the rocks and soil.

Comments on this report and other aspects of water quality are very welcome! Please contact any member of the Sage Association Board of Directors. Attending the Board meetings is a great way to keep up to date about **your** water system.