

MEADOW MTN WATER SUPPLY 2014 Drinking Water Quality Report

For Calendar Year 2013

Public Water System ID: CO0207504

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

We are pleased to present to you this year's water quality report. Our constant goal is to provide you with a safe and dependable supply of drinking water. Please contact RACHEL BARKWORTH at 303-823-2318 with any questions about the Drinking Consumer Confidence Rule (CCR) or for public participation opportunities that may affect the water quality.

General Information

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. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (1-800-426-4791) or by visiting <http://water.epa.gov/drink/contaminants>.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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 about drinking water from their health care providers. 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).

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:** viruses and bacteria that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic contaminants:** 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:** may come from a variety of sources, such as agriculture, urban stormwater runoff, and residential uses.
- Radioactive contaminants:** can be naturally occurring or be the result of oil and gas production and mining activities.
- Organic chemical contaminants:** including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and also may come from gas stations, urban storm water runoff, and septic systems.

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.

Lead in Drinking Water

If present, elevated levels of lead can cause serious health problems (especially for pregnant women and young children). It is possible that lead levels at your home may be higher than other homes in the community as a result of materials used in your home's plumbing. If you are concerned about lead in your water, you may wish to have your water tested. 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 2 minutes before using water for drinking or cooking. Additional information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline (1-800-426-4791) or at <http://www.epa.gov/safewater/lead>.

Source Water Assessment and Protection (SWAP)

The Colorado Department of Public Health and Environment has provided us with a Source Water Assessment Report for our water supply. For general information or to obtain a copy of the report please visit <http://wqcdcompliance.com/ccr>. The report is located under "Source Water Assessment Reports", and then "Assessment Report by County". Select BOULDER County and find 207504; MEADOW MTN WATER SUPPLY or by contacting RACHEL BARKWORTH at 303-823-2318. The Source Water Assessment Report provides a screening-level evaluation of potential contamination that could occur. It does not mean that the contamination has 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. Potential sources of contamination in our source water area are listed on the next page.

Please contact us 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.

Our Water Sources

<u>Source</u>	<u>Source Type</u>	<u>Water Type</u>	<u>Potential Source(s) of Contamination</u>
WILLOW CREEK	IN	SW	Animals in the stream, vegetation debris.
FOX CREEK	IN	SW	Animals in the stream, vegetation debris.

Terms and Abbreviations

- **Maximum Contaminant Level (MCL)** – The highest level of a contaminant allowed in drinking water.
- **Treatment Technique (TT)** – A required process intended to reduce the level of a contaminant in drinking water.
- **Action Level (AL)** – The concentration of a contaminant which, if exceeded, triggers treatment and other regulatory requirements.
- **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 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 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.
- **Violation (No Abbreviation)** – Failure to meet a Colorado Primary Drinking Water Regulation.
- **Formal Enforcement Action (No Abbreviation)** – Escalated action taken by the State (due to the risk to public health, or number or severity of violations) to bring a non-compliant water system back into compliance.
- **Variance and Exemptions (V/E)** – Department permission not to meet a MCL or treatment technique under certain conditions.
- **Gross Alpha (No Abbreviation)** – Gross alpha particle activity compliance value. It includes radium-226, but excludes radon 222, and uranium.
- **Picocuries per liter (pCi/L)** – Measure of the radioactivity in water.
- **Nephelometric Turbidity Unit (NTU)** – Measure of the clarity or cloudiness of water. Turbidity in excess of 5 NTU is just noticeable to the typical person.
- **Compliance Value (No Abbreviation)** – Single or calculated value used to determine if regulatory contaminant level (e.g. MCL) is met. Examples of calculated values are the 90th Percentile, Running Annual Average (RAA) and Locational Running Annual Average (LRAA).
- **Average (x-bar)** – Typical value.
- **Range (R)** – Lowest value to the highest value.
- **Sample Size (n)** – Number or count of values (i.e. number of water samples collected).
- **Parts per million = Milligrams per liter (ppm = mg/L)** – One part per million corresponds to one minute in two years or a single penny in \$10,000.
- **Parts per billion = Micrograms per liter (ppb = ug/L)** – One part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.
- **Parts per trillion = Nanograms per liter (ppt = ng/L)** – One part per trillion corresponds to one minute in 2,000,000 years, or a single penny in \$10,000,000,000.
- **Parts per quadrillion = Picograms per liter (ppq = pg/L)** – One part per quadrillion corresponds to one minute in 2,000,000,000 years or one penny in \$10,000,000,000,000.
- **Not Applicable (N/A)** – Does not apply or not available.

Detected Contaminants

MEADOW MTN WATER SUPPLY routinely monitors for contaminants in your drinking water according to Federal and State laws. The following table(s) show all detections found in the period of January 1 to December 31, 2013 unless otherwise noted. The State of Colorado 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. Therefore, some of our data, though representative, may be more than one year old. Violations and Formal Enforcement Actions, if any, are reported in the next section of this report.

Note: Only detected contaminants sampled within the last 5 years appear in this report. If no tables appear in this section then no contaminants were detected in the last round of monitoring.

Lead and Copper Sampled in the Distribution System								
Contaminant Name	Time Period	90 th Percentile	Sample Size	Unit of Measure	90 th Percentile AL	Sample Sites Above AL	90 th Percentile AL Exceedance	Typical Sources
Copper	06/23/2013 to 06/23/2013	0.3	5	Ppm	1.3		No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead	06/23/2013 to 06/23/2013	23	5	Ppb	15	1	Yes	Corrosion of household plumbing systems; Erosion of natural deposits

Disinfection Byproducts Sampled in the Distribution System										
Name	Year	Average	Range Low – High	Sample Size	Unit of Measure	MCL	MCLG	Highest Compliance Value	MCL Violation	Typical Sources
Total Haloacetic Acids (HAA5)	2013	5.1	5.1 to 5.1	1	Ppb	60	N/A		No	Byproduct of drinking water disinfection
Total Trihalomethanes (TTHM)	2013	34	34 to 34	1	Ppb	80	N/A		No	Byproduct of drinking water disinfection

Summary of Turbidity Sampled at the Entry Point to the Distribution System					
Contaminant Name	Sample Date	Level Found	TT Requirement	TT Violation	Typical Sources
Turbidity	Date/Month: May 2013	<u>Highest single</u> measurement: 3.72 NTU	Maximum 5 NTU for any single measurement	Yes	Soil Runoff
Turbidity	Date/Month: 14 th Sep 2013	<u>Highest single</u> measurement: 5.32 NTU	Maximum 5 NTU for any single measurement	Yes	Soil Runoff
Turbidity	Month: Dec 2013	<u>Lowest monthly</u> percentage of samples meeting TT requirement for our technology: 100 %	In any month, at least 95% of samples must be less than 1 NTU	No	Soil Runoff

Radionuclides Sampled at the Entry Point to the Distribution System									
Contaminant Name	Year	Average	Range Low – High	Sample Size	Unit of Measure	MCL	MCLG	MCL Violation	Typical Sources
Gross Alpha	2011	0.03	0.03 to 0.03	1	pCi/L	15	0	No	Erosion of natural deposits
Combined Radium	2011	0.34	0.34 to 0.34	1	pCi/L	5	0	No	Erosion of natural deposits
Combined Uranium	2011	0.1	0.1 to 0.1	1	ppb	30	0	No	Erosion of natural deposits

Violations, Significant Deficiencies, and Formal Enforcement Actions

Violations					
Name	Category	Time Period	Health Effects	Compliance Value	TT Level or MCL
TURBIDITY	MONTHLY COMB FLTR EFFLUENT (IESWTR/LT1) - TT	09/01/2013 - 09/30/2013	Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea and associated headaches.	0 N/A	N/A
TURBIDITY	MONTHLY COMB FLTR EFFLUENT (IESWTR/LT1) - TT	05/01/2013 - 05/31/2013	Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea and associated headaches.	0 N/A	N/A
Additional Violation Information					
<p>Note: If any violation relates to failing to install adequate filtration or disinfection equipment or processes, or have had a failure of such equipment or processes then the water may be inadequately treated. Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites, which can cause symptoms such as nausea, cramps, diarrhea, and associated headaches. Explanation of the violation(s) and the steps taken to resolve them:</p>					
<p>Step 1: On September 19th, 2013 MMWSC had a temporary solution installed by Innovative Water Technologies. This included two SunSpring membrane systems, which cleaned the extremely turbid water affected by the major flood incident that occurred in this region on September 12th 2013 through September 16th 2013.</p>					

Step 2: During September 2013 labs conducted additional water tests for our engineers. These tests showed that over 75% of the particles in the water in Willow Creek were below 0.3um, and about 25% of the particles in Fox Creek were also below 0.3um. The existing bag filtration system that had been used for years was totally unable to handle particles that were less than 5um.

These tests in September were the first that identified the cause of our turbidity to be extremely small particles. Previous particle size analysis testing performed in May 2014 had not been conclusive. The engineers completed the Preliminary Engineering Report for the CDPHE and it was submitted on December 31st, 2013. Approval of this report was obtained in January 2014.

Step 3: The water board selected a solution to our issue based on engineering suggestions and the final Basis of Design Report was submitted to CDPHE on February 20th, 2014

Step 4: . Approval of the design was obtained from CDPHE on April 11th, 2014 and the new technology was installed at the plant between April 16th and April 19th. This solution has so far proved itself to our board and our water plant operators, but we are still working through the remainder of the steps that have to be completed for the entire design. All these final steps must be completed before we can get CDPHE to lift the enforcement order on our water plant.

Final Notes: There are still outstanding items that need to be completed: the clear well needs to be cleaned and baffles have to be installed. This step is scheduled for early June 2014. Testing will occur on the backwash water to help classify the type of backwash pond we need. This testing may cause further work to be performed on our backwash pond. We are also installing alarm controls on the Hach Turbidity meter and the Chlorine Residual meter to ensure that actions can be taken within a short period of time if certain situations arise.

Thank you all for your patience during this process, and we will keep you all informed of future steps and our progress.