

PINE BROOK HILLS WD 2018 Drinking Water Quality Report For Calendar Year 2017

Public Water System ID: CO0107610

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 ROBERT DE HAAS at 303-443-5394 with any questions or for public participation opportunities that may affect 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 storm water 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 storm water 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 www.colorado.gov/cdphe/ccr. The report is located under "Guidance: Source Water Assessment Reports". Search the table using 107610, PINE BROOK HILLS WD, or by contacting ROBERT DE HAAS at 303-443-5394. 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 Quality 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> ^[SP1] |
|--------------------------------|---|--|---|
| FOUR MILE CREEK | Intake – Supply to the Pine Brook Raw Water Reservoir | Surface Water | THE DISTRICT'S SOURCE WATER PROTECTION PLAN/STUDY IS AVAILABLE AT pinebrookwater.com , ON THE FRONT PAGE YOU WILL SEE A LINK FOR THE "SOURCE WATER PROTECTION PLAN" |
| TWO MILE | Intake – Supply to the Pine Brook Raw Water Reservoir | Surface Water | THE DISTRICT'S SOURCE WATER PROTECTION PLAN/STUDY IS AVAILABLE AT pinebrookwater.com , ON THE FRONT PAGE YOU WILL SEE A LINK FOR THE "SOURCE WATER PROTECTION PLAN" |
| PINE BROOK RAW WATER RESERVOIR | Reservoir – Supply to the Pine Brook Water Filter Plant | Surface Water – this water is a combination of both Four Mile Creek Water and Two Mile Creek Water | THE DISTRICT'S SOURCE WATER PROTECTION PLAN/STUDY IS AVAILABLE AT pinebrookwater.com , ON THE FRONT PAGE YOU WILL SEE A LINK FOR THE "SOURCE WATER PROTECTION PLAN" |

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.
- **Health-Based** – A violation of either a MCL or TT.
- **Non-Health-Based** – A violation that is not a MCL or TT.
- **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.
- **Not Applicable (N/A)** – Does not apply or not available.
- **Level 1 Assessment** – A study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.
- **Level 2 Assessment** – A very detailed study of the water system to identify potential problems and determine (if possible) why an E. coli MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.

Detected Contaminants

PINE BROOK HILLS WD 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, 2017 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.

| Disinfectants Sampled in the Distribution System | | | | | | | | |
|--|--------------------------|--|-------------|-----------------|--------------------------------|-----------------------|---|--|
| TT Requirement: At least 95% of samples per period (month or quarter) must be at least 0.2 ppm <i>OR</i> If sample size is less than 40 no more than 1 sample is below 0.2 ppm Typical Sources: Water additive used to control microbes | | | | | | | | |
| Disinfectant Name | Time Period | Results | | | Number of Samples Below Level | Sample Size | TT Violation | MRDL |
| Chlorine | December, 2017 | Lowest period percentage of samples meeting TT requirement: 100% | | | 0 | 2 | No | 4.0 ppm |
| 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 | 09/06/2017 to 09/13/2017 | 0.21 | 10 | ppm | 1.3 | 0 | No | Corrosion of household plumbing systems; Erosion of natural deposits |
| Lead | 09/06/2017 to 09/13/2017 | 3 | 10 | ppb | 15 | 0 | No | 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) | 2017 | 18 | 13.3 to 23 | 4 | ppb | 60 | N/A | | No | Byproduct of drinking water disinfection |
| Total Trihalomethanes (TTHM) | 2017 | 45.08 | 36.3 to 50.5 | 4 | ppb | 80 | N/A | | No | Byproduct of drinking water disinfection |
| Disinfectants Sampled at the Entry Point to the Distribution System | | | | | | | | | | |
| Contaminant Name | Year | Number of Samples Above or Below Level | | Sample Size | TT/MRDL Requirement | TT/MRDL Violation | Typical Sources | | | |
| Chlorine/Chloramine | 2017 | 0 | | 1084 | TT = No more than 4 hours with a sample below 0.2 MG/L | No | Water additive used to control microbes | | | |
| 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: Feb | <u>Highest single</u> measurement: 0.18 NTU | | | Maximum 1 NTU for any single measurement | | No | Soil Runoff | | |
| Turbidity | Month: Feb | <u>Lowest monthly</u> percentage of samples meeting TT requirement for our technology: 98 % | | | In any month, at least 95% of samples must be less than 0.3 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 | 2017 | 0.5 | 0.5 to 0.5 | 1 | pCi/L | 15 | 0 | No | Erosion of natural deposits | |
| Uranium | 2017 | Below | Detection | Limit | Ug/l | 30 | 0 | No | Erosion of natural deposits | |
| Radium 226 & 228 combined | 2017 | 0.0 | N/A | 1 | Mg/l | 5 | 0 | No | Erosion of natural deposits | |

Note: only Gross Alpha is required to be reported as it was detected. However the District is reporting Uranium and Radium 226 & 228 (combined) as a courtesy to our consumers

Inorganic Contaminants 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 |
|------------------|------|---------|------------------|-------------|-----------------|-----|------|---------------|--|
| Barium | 2017 | 0.05 | 0.05 to 0.05 | 1 | ppm | 2 | 2 | No | erosion of natural deposits |
| Chromium | 2017 | 1 | 1 to 1 | 1 | ppb | 100 | 100 | No | erosion of natural deposits |
| Fluoride | 2017 | 0.29 | 0.29 to 0.29 | 1 | ppm | 4 | 4 | No | Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer |
| Nitrate | 2017 | 0.2 | 0.2 to 0.2 | 1 | ppm | 10 | 10 | No | Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits |

Secondary Contaminants**

**Secondary standards are non-enforceable guidelines for contaminants that may cause cosmetic effects (such as skin, or tooth discoloration) or aesthetic effects (such as taste, odor, or color) in drinking water.

| Contaminant Name | Year | Average | Range Low – High | Sample Size | Unit of Measure | Secondary Standard |
|------------------|------|---------|------------------|-------------|-----------------|--------------------|
| Sodium | 2017 | 23 | 23 to 23 | 1 | ppm | N/A |
| CALCIUM | 2017 | 46.7 | 50.5 to 50.5 | 1 | N/A | |
| MAGNESIUM | 2017 | 21.96 | 24.94 to 24.94 | 1 | N/A | |

Inorganic Contaminants Sampled at the Entry Point to the Distribution System

WITH NO MCL OR MCLG SET BY EITHER THE EPA OR THE STATE

| Contaminant Name | Year | Test Result | Sample Size | | | Unit of Measure |
|-------------------------|------|-------------|-------------|--|--|-----------------|
| Total Hardness as CaCO3 | 2017 | 207.0 | 1 | | | Mg/L |

During 2017 there were additional Inorganic Contaminants sampled but not detected.

The District also tested for a very large number of Synthetic Organic Chemicals (SOC's) and Volatile Organic Chemicals (VOC's) but again none were detected.

Violations, Significant Deficiencies, Backflow/Cross-Connection, and Formal Enforcement Actions

No Violations or Formal Enforcement Actions