

Pine Brook Hills WD 2009 Drinking Water Consumer Confidence Report For Calendar Year 2008

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.

General Information About Drinking Water

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. 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 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**, 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 also

may come from gas stations, urban storm water runoff, and septic systems.

- **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.

Our Water Source(s)

Source	Water Type
Well No 6	Ground Water
Well No 8	Ground Water
Well No 9	Ground Water
Well No 10	Ground Water
Well No 11	Ground Water
Pine Brook Raw Water Reservoir	Surface Water
Two Mile	Surface Water

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 or by contacting Bob De Haas at 303-443-5394.

Potential sources of contamination in our source water area come from: Septic Fields – From residential homes, remember what you put into your septic field comes out into the ground which acts as a filter but the less “unnatural” wastes you put into it the less comes out and it is better for your leach field too!

Existing / Abandoned Mine Sites - we are not currently aware of any active mine sites in our drainage areas, we periodically tour the drainage area to check for any changes.

Roads – spills on roadways can be issue and under today's regulations are required to be reported as “hazardous” spills which also require specific types of clean up depending on what was spilled.

Misc. other type sites – Again these are either inactive or “downstream” of our sources so do not have a major impact on our raw water quality.

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.

Please contact Bob De Haas at 303-443-5394 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.

Terms and Abbreviations

The following definitions will help you understand the terms and abbreviations used in this report:

- **Parts per million (ppm) or Milligrams per liter (mg/L)** - one part per million corresponds to one minute in two years or a single penny in \$10,000.
- **Parts per billion (ppb) or Micrograms per liter (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 (ppt) or Nanograms per liter (nanograms/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 (ppq) or Picograms per liter (picograms/L)** - one part per quadrillion corresponds to one minute in 2,000,000,000 years or one penny in \$10,000,000,000,000.
- **Picocuries per liter (pCi/L)** - picocuries per liter is a measure of the radioactivity in water.
- **Nephelometric Turbidity Unit (NTU)** - nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the

average person.

- **Action Level (AL)** - the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- **Treatment Technique (TT)** - A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.
- **Maximum Contaminant Level Goal (MCLG)** - The "Goal" is 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 Contaminant Level (MCL)** - The "Maximum Allowed" is 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 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.
- **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.
- **Running Annual Average (RAA)** - An average of monitoring results for the previous 12 calendar months.
- **Gross Alpha, Including RA, Excluding RN & U** - This is the gross alpha particle activity compliance value. It includes radium-226, but excludes radon 222 and uranium.
- **Microscopic Particulate Analysis (MPA)** - An analysis of surface water organisms and indicators in water. This analysis can be used to determine performance of a surface water treatment plant or to determine the existence of surface water influence on a ground water well.

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, 2008 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. The "Range" column in the table(s) below will show a single value for those contaminants that were sampled only once. Violations, if any, are reported in the next section of this report.

Note: Only detected contaminants appear in this report. If no tables appear in this section, that means that Pine Brook Hills WD did not detect any contaminants in the last round of monitoring.

Organics and Inorganics	Collection Date	Highest Value	Range	Unit	MCL	MCLG	Typical Source
ARSENIC	4/15/2008	1	1	ppb	10	0	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes.
BARIUM	4/15/2008	0.062	0.062	ppm	2	2	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
CHROMIUM	4/15/2008	2	2	ppb	100	100	Discharge from steel and pulp mills; Erosion of natural deposits
FLUORIDE	4/15/2008	0.22	0.22	ppm	4	4	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
NITRATE	4/15/2008	0.24	0.24	ppm	10	10	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits

Disinfection By-Products	Date	Average	Range	Highest RAA	Unit	MCL	MCLG	Typical Source
TOTAL HALOACETIC ACIDS (HAA5)	2008	34.4375	25.75 - 44	44	ppb	60	N/A	By-product of drinking water disinfection
TOTAL TRIHALOMETHANES (TTHM)	2008	69.58	59.08 - 83.46	87	ppb	80	N/A	By-product of drinking water chlorination

Turbidity	Sample Date	Level Found	TT Requirement	Typical Source
TURBIDITY	Date: 08/05/2008	Highest single measurement: 0.15	Maximum 1 NTU for any single measurement	Soil Runoff
	Month: 1	Lowest monthly percentage of samples meeting TT requirement for our technology: 100%	In any month, at least 95% of samples must be less than 0.3 NTU	

Lead and Copper	Collection Date	90 TH Percentile	Unit	AL	Typical Source
COPPER, FREE	2008 - 2010	0.439	ppm	1.3	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
LEAD	2008 - 2010	6	ppb	15	Corrosion of household plumbing systems; Erosion of natural deposits

Radionuclides	Collection Date	Highest Value	Range	Unit	MCL	MCLG	Typical Source
COMBINED RADIUM (-226 & -228)	10/4/2004	0.8	0.1 - 0.8	pCi/L	5	0	Erosion of natural deposits

Secondary Contaminants/ Other Monitoring	Collection Date	Highest Value	Range	Unit	Secondary Standard
SODIUM	4/15/2008	20.2	20.2	MG/L	10000

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. EPA recommends these standards but does not require water systems to comply.

Health Information About Water Quality

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 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 (800)426-4791.

Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

Violations

Type	Category	Analyte	Compliance Period
MCL, AVERAGE	Maximum Contaminant Level Violation	TOTAL TRIHALOMETHANES (TTHM)	01/01/2008 - 03/31/2008
MCL, AVERAGE	Maximum Contaminant Level Violation	TOTAL TRIHALOMETHANES (TTHM)	04/01/2008 - 06/30/2008

Information About the Above Violation(s)

There are no additional required health effects violation notices.

Pine Brook Hills WD is required to include an explanation of the violation(s) in the above table and the steps taken to resolve the violation(s) with this report.

As noted above the District was in violation of the drinking water standard for Total Trihalomethanes. The standard calls for the levels of Total Trihalomethanes to be at 80 parts per billion or less, (no this is not a misprint it is billions not millions) and for part of the year we were in violation of that standard. **By the end of the year the District was again in compliance.** We sent out a lot of information at the end of 2007 and beginning of 2008 on this issue.

The problem is directly influenced by seasonal factors, probably by the algae that proliferate at spring and late summer. The first step that the District took was to install a solar powered “mixer” to put in the reservoir to prevent the formation of the algae, which seems to be working as we are no longer in violation of this standard.

As noted in the last notice (the 2008 CCR) this violation does not mean your health is at immediate or imminent risk. The risk is from exposure over many, many years, which is not the case. SOME people who are exposed to levels of Total Trihalomethanes over MANY, MANY YEARS MAY have an increased risk of health effects.

Again the problem of Total Trihalomethanes are the result of the reaction of chlorine with organic carbons, which occur naturally in all waters, and come mostly from plant debris (leaves, algae’s, etc.). We are required to add chlorine to the treated water (the treatment process does not remove all organic carbons) to disinfect the water for the protection of your health.

We are continuing to research alternate methods of removing the organic carbons (in case the “mixer” in the reservoir does not permanently solve the issue); all of these methods would be a change to our treatment process. The cost to add a treatment process change will probably range from around \$100,000.00 to \$250,000.00. The other potential downside (besides the cost) of adding another treatment process is that it may make the water aggressive which mean that we would have to add chemicals to the finished water so that it would not leach out lead and copper from the plumbing in your home.

Based on all of the above information the Board of Directors and the District staff feels that while they are taking the problem seriously, and starting the implementation of the solutions, your health is not at immediate/imminent risk.