

Why Change?

Having access to clean and safe drinking water is an important component to preserving the quality of life for Castle Pines North Metropolitan District's customers. In the future, it is highly likely that the residents of Castle Pines North will receive their water from two or three major regional water suppliers in the Denver Metropolitan Region. Those water suppliers include Denver Water, Centennial Water and Sanitation, possibly Aurora Water. All three entities have been using chloramines for many years as a disinfectant within their distribution systems. If Castle Pines North is ever to enjoy the benefits of receiving water from these entities, CPNMD's disinfection process must be compatible with those water resource entities mentioned above.

Chloramination is a common disinfection process used safely for decades throughout the United States, including Colorado's largest city, Denver, since 1917. An added benefit is that the chloramine disinfection process also meets higher quality and safety standards set by the EPA.

Chloraminated water is safe for bathing, drinking, cooking and all everyday uses. The change-over in the disinfection process will largely be unnoticed. There are two groups of people, however, that should take special precautions when using chloraminated water. They are **kidney dialysis patients and fish owners**.

This brochure is designed to help the residents of Castle Pines North understand more about the use of chloramines in public drinking water systems and address many of the questions they may have.

Special Message

KIDNEY DIALYSIS PATIENTS & FISH OWNERS

Both chlorine and chloramines must be removed from water used in the kidney dialysis process and from water that is used in fish tanks or ponds, because they are toxic if they *directly* enter the bloodstream.

- In the dialysis process, water comes in contact with blood across a permeable membrane.
- Fish take water directly into their blood-streams through their gills.

Kidney dialysis patients can safely drink, cook and bathe in chloraminated water. Chloramines are only harmful if they directly enter the bloodstream. Customers with home dialysis equipment should contact their physician or dialysis center regarding chloramination and how it will affect them.

Because chlorine dissipates relatively quickly, many aquarium owners simply leave water in an open container for several hours in order to remove it. This is not an effective method for removing chloramines. A chemical neutralizer or filter, available from most pet shops, must be used to eliminate any danger to fish and aquatic life. Pond owners may need to purchase a conditioner or ammonia binder in bulk quantities if more than one percent of the total water volume in the pond is replaced at one time.

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Questions You May Have

What is chloramine?

Chloramine is a disinfectant used in drinking water to remove bacteria and viruses. It consists of chlorine and ammonia.

How many people use drinking water that has been treated with chloramine?

Approximately one-third of all public water systems in the United States use chloramine for residual disinfection. In a 1998 national survey, the U.S. Environmental Protection Agency (EPA) estimated that water systems serve drinking water containing chloramine residuals to more than 68 million people across the country.

Why add disinfectants to drinking water?

Disinfection of drinking water has improved public health by lowering the rates of infectious diseases (for example, typhoid, hepatitis and cholera) spread through untreated water. Common disinfectants, including chlorine and chloramines, eradicate disease-causing microorganisms.

Are chloramines safe?

Chloraminated water is safe for people and animals to: drink, cook with, bathe in, water the garden, and for all other general uses. Chloraminated water is safe for those on low-sodium diets, with diabetes, with suppressed immune systems or other diseases. Pregnant women, and children may drink chloraminated water, and baby formulas may be prepared with chloraminated water.

Will the water taste different?

Most consumers should not notice the change. In fact, many consumers from other utilities report chloramine improves the taste and decreases odor of drinking water.

Meeting Long-Term Goals

Background and Preparation

As identified by the Integrated Water Resource Plan (IWRP) in 2006, the groundwater supply for the Castle Pines North community is being depleted. In order for CPNMD to be able to meet future demand and provide water to residents, it is necessary for CPNMD to obtain renewable water sources.

Over the last two years, CPNMD has built working relationships and entered into agreements with various water entities. Preparations have also been made to assimilate our community's water treatment method with that of our future partners. For this reason it is necessary for CPNMD to convert to a disinfection process utilizing chloramines.

Phase I of the chloramine conversion took place during the Fall of 2008. The CPNMD water treatment plant began with the conversion from gas chlorine to liquid chlorine. The water treatment plant was also retrofitted to accommodate the upcoming change to chloramines by upgrading system components as well as adding a chemical feed station and associated monitoring systems.

What are the advantages in making the change to chloramines?

- ♦ Chloramine is a better choice as a final disinfectant than chlorine alone because chloramine produces lower levels of disinfectant by-products like trihalomethanes, suspected carcinogens that form when chlorine mixes with natural organic substances in water.
- ♦ Chloramine is more stable than chlorine and lasts longer in the distribution system. This provides increased protection from bacterial and viral contamination.
- ♦ Because chloramine does not tend to react with organic compounds, many systems will experience fewer taste and odor complaints when using chloramine. Chloramine technology is relatively easy to install and operate. It also is among the less expensive disinfectant alternatives to chlorine.

COMING JULY 2009

The change over to the new treatment process is scheduled to take place in July 2009. It is at this time of year that water demand in the community is at one of its highest levels due to the addition of outdoor watering. The process of running water through the entire distribution system will take much less time than, for example, the winter months when water usage is at its lowest.

Where can I learn more?

To read an extended version of frequently asked questions about chloramination, please visit www.cpnmd.org. Information is also provided by the Environmental Protection Agency - Information about Chloramine in Drinking Water, and the Colorado Department of Public Health and Environment. You may also call CPNMD for direct help.

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CHLORAMINES AND Your Drinking Water

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