



## WHY IS THERE CHLORINE IN MY DRINKING WATER?!

The Centers for Disease Control and Prevention has called providing safe drinking water one of the greatest public health achievements of the 20<sup>th</sup> century. Colorado has long recognized the use of mandatory disinfection and the maintenance of a chlorine residual throughout distribution systems as necessary for the protection of public health from waterborne diseases. The Commission and the Department agree that the intent of the regulations has always been to actually have a chlorine residual present throughout all distribution systems.

Recently, two disease outbreaks occurred in Colorado – the 2008 salmonella outbreak in Alamosa and the Skyline Ranch norovirus outbreak in 2007. The Alamosa outbreak was particularly serious due to the large number of people who were sickened and one death associated with this particular disease outbreak. Alamosa had a disinfection waiver at the time of the outbreak (which has since been withdrawn) and, as a result, the city's drinking water was not being disinfected and the distribution system maintained no disinfectant residual. An extensive report was developed in the wake of the Alamosa outbreak. This report outlined a combined failure of physical, regulatory and human infrastructure all of which contributed to the outbreak. A key recommendation of this report was that all distribution systems should maintain appropriate disinfectant residual to maintain the final barrier to protect public health.

The Department presented evidence of the occurrence of *E. coli* within drinking water samples and found that there exists over a 300 percent rise in probability of a bacteria sample having *E. coli* when the chlorine residual is less than 0.2 mg/L. Furthermore, between eight and ten percent of the samples taken in Colorado are at or below the proposed disinfectant residual limit.

Given the history and statewide practices of distribution system residual maintenance, the threat of waterborne illness, and to protect public health the Commission adopted a minimum allowable residual disinfectant concentration in the distribution system of 0.2 mg/L. The value of 0.2 mg/L includes only one significant digit and therefore any measurement of 0.15 mg/L or greater is compliant with this requirement.