

WATER FLUORIDATION SAMPLING Q&A

Jamie Herman | Energy Efficiency Circuit Rider



As many of you are aware, the NYRWA has been working with the NYSDOH, Bureau of Child Health over the past several years. This partnership is an effort to assist Water Systems and Operations Specialists who add fluoride to their drinking water. The role of your NYRWA is to provide training and technical assistance to those who add fluoride on equipment and operational issues, helping to make this treatment as effective and efficient as possible. We typically provide (4) training sessions per year, geographically covering the state, and also work in conjunction with the operations specialists in conducting fluoridation system on-site assessments. This article is NOT intended to be a referendum on whether or not to add fluoride, but rather to discuss some commonly asked questions we receive while providing this assistance.

WHAT IS THE TARGET RANGE FOR FLUORIDE?

In the past, Operations Specialists were instructed to strive to achieve a target level of 0.8 mg/L, with a target range of between 0.8 mg/L – 1.2 mg/L. However, the Centers for Disease Control and Prevention (CDC) and the New York State Department of Health (NYSDOH) recently revised the target level to 0.7 mg/L. This change in the target level was a culmination of years of scientific data collection and research, and was initiated to provide a new target which addressed providing a level that is scientifically proven to benefit public health at the least cost possible to the water systems providing water fluoridation. Unfortunately, the recommended target level change did not include a new “target range”, which has left many operations specialists wondering what levels are acceptable. While regulatory agencies will not express a range, we at the NYRWA would like to share that science has concluded at levels of 0.5 mg/L or less, there is virtually no health benefit to your consumers. Given this information, we feel it is responsible to maintain a level of at least 0.6 mg/L at all times if you fluoridate, and every effort should be made to achieve and maintain a level of 0.7 mg/L, the target level. In my personal and humble opinion, I would try to stay between 0.7 mg/L – 0.9 mg/L, but again, that approach is not endorsed by these agencies.

WHY DO MY RESULTS VARY SLIGHTLY FROM WADSWORTH LAB?

Many Operations Specialists question why their sample results deviate slightly from the results reported by the NYSDOH Wadsworth Laboratory. First, and for the purposes of this article, we typically see slight variations of 0.2 mg/L or less. If your results have a greater variation then you should conduct further investigation into possible issues. For those of you with slight variations, it can usually be attributed to differences in the analytical devices employed. For instance, most small rural water

systems use a colorimetric device for testing (**Pictured, but let's hope the reading is wrong!**). These devices are very affordable, and have an ease of use, as well as a comfort level for us as operations specialists as they closely resemble and follow a protocol similar to that of a free chlorine residual device.



The Wadsworth Laboratory uses a Specific Ion Electrode device for their analysis (**Pictured Below**). These devices resemble a pH meter with electrode, and are more accurate for fluoride analysis.

Colorimetric devices, such as hand held units, are more susceptible to interferences such as iron, phosphate, etc...and can provide slightly less accurate results than a specific ion electrode. In my mind it's all about cost, ease of use, and reliability when selecting a laboratory instrument. The specific ion electrode will likely cost 3 times more, and it will require a minor amount of training to use. In either case, when you select an analytical device, ensure that it is EPA Compliant for fluoride analysis.

NOTE: If you are using a colorimetric device, we suggest the purchase of Secondary Standards, which will allow you to verify the accuracy of your meter. Further, we recommend using the standards and verifying the accuracy of the device on a monthly basis. The more frequent the better, but monthly is a reasonable time frame. Our 3 staff members who work with the fluoridated systems also carry the secondary standards. While we will not arrive monthly to test your device, we would be willing to provide a test or demo to answer any questions.



We hope this article answers a few of the questions many of our Operations Specialists have when dealing with water fluoridation. As always, if our staff can be of any assistance, or if you have any questions regarding water fluoridation, then please don't hesitate to contact either Morris Coolidge at Coolidge@nyruralwater.org, John Farewell at Farewell@nyruralwater.org, or Jamie Herman at Herman@nyruralwater.org, and we will do our very best to continue to work with you to provide...**Quality on Tap!!!** 💧💧💧