Operational Engineering Aspects

What are the monitoring and testing requirements for fluoridated water systems in New York State?

Daily Analysis: For systems that fluoridate, the Department regulations require daily sampling of the fluoride level in the finished drinking water. These daily samples should be used as a safety measure and to monitor operational parameters. These daily samples can be analyzed inexpensively on site by the operator, and the results must be recorded and forwarded on a monthly basis to the local health department. These results should be submitted to the local health department on form DOH-360 CFL, which can be found online at http://www.nyhealth.gov/environmental/water/drinking/forms/forms.htm.

Monthly Analysis: Also, once per month a split sample must be collected for simultaneous analysis by the operator and an Environmental Laboratory Approval Program (ELAP) certified lab. This split sample is analyzed by a precise analytical method that typically is not susceptible to interference or imprecision common to field measuring methods and is meant to provide an accurate benchmark for the system and field tests. Properly certified commercial labs may be used, but water systems are encouraged to send the monthly split sample to the New York State Wadsworth Lab in Albany for analysis at no cost, excluding sample return postage. Testing kits will be sent from Wadsworth to participating water systems. Inclusion in the Wadsworth program can be arranged through a request to the local health department with: the system’s name, the system’s federal identification number, mailing address, contact name, contact phone number and gazetteer code.

What is the CDC’s Proficiency Testing Program?

Fluoridating water systems should be adjusting fluoride dosages and assessing the accuracy of their daily testing values based on results from the monthly lab samples in an effort to achieve the optimal level. Wadsworth Lab is the only New York State lab that participates in the Centers for Disease Control and Prevention’s (CDC’s) Proficiency Testing Program, further enhancing the validity of the results. Wadsworth will send the results directly back to the operators. This should provide the results in a more consistent and timely manner.
How does a fluoridating water system receive a CDC Fluoridation Quality Award?

Quality Awards: Water systems that consistently report daily and monthly sample results to the Department and maintain an optimal level of fluoride for twelve consecutive months will be nominated for the CDC’s Fluoridation Quality Award.

How can I get technical assistance?

Technical assistance for fluoridation is available from your local health department, Bureau of Water Supply Protection, and may also be available through the New York Rural Water Association. The following recommendations are made to help address common sources of variability in fluoride levels:

- Fluorosilicic acid strength should be verified upon delivery from the chemical supplier. This can be done either with testing of the delivered product or certification by the vendor. Test procedures are specified in the American Water Works Association (AWWA) standards for the specific fluoride chemicals (B701, B702, & B703). Most water treatment plant laboratories should be able to conduct these tests.
- Fluoride saturators need to be properly filled (i.e. at least 12 inches of coarse crystalline grade sodium fluoride) and have an influent water flow of 2 gallons per minute (gpm) or less in order to provide a fully saturated solution with a consistent concentration. Powdered sodium fluoride should not be used in a fluoride saturator in place of the coarse crystalline form as the powder tends to not fully dissolve, resulting in significantly different solution concentrations.
- A properly operated fluoride saturator should consistently produce a saturated solution with a fluoride concentration of 18,000 ppm. However, fluoride solution strength from saturators should be verified by periodic batch testing.
- Dosage calculations should be based on the actual strength of the solutions, as determined by testing or vendor certification.
What is Optimal Fluoride Level for New York State?
The optimal fluoride level in New York State is 1.0 mg/L. This level provides the most benefit to oral health. This is achieved when the fluoride level in finished water is maintained in the control range of 0.8 to 1.2 mg/L. Targeting the lower end of the control range, instead of 1.0 mg/l, can substantially reduce the benefit provided to the community, as the benefits of fluoridation are lost when fluoride levels drop below the optimal level.

Water Fluoridation Posters for New York State
Water Fluoridation Posters are handy tools to review the benefits of water fluoridation, discuss why maintaining an optimal level of fluoride is important for the community, and provide technical information and safety for operators.

Water Fluoridation Reporting System for New York State
The CDC Water Fluoridation Reporting System (WFRS) is another resource where daily and monthly fluoride levels are entered and monitored for New York State.

Water Fluoridation Additives used in New York State
Three additives—sodium fluoride, sodium fluorosilicate, and fluorosilicic acid—may be used to adjust the natural fluoride levels in water to concentrations that prevent or reduce tooth decay. Learn more about these additives and how they work in water by reading the CDC Fact Sheet “Water Fluoridation Additives.”

For more information, contact:

Division of Oral Health
Centers for Disease Control and Prevention
4770 Bufford Highway, NE, MSF-10
Atlanta, GA 30333
Phone: 770-488-6054
http://www.cdc.gov/fluoridation/index.htm

New York State Department of Health
Bureau of Dental Health
ESP, Tower Bldg, Room 542
Albany NY, 12237
Phone: 518-474-1961
http://www.nyhealth.gov/prevention/dental/

Bureau of Water Supply Protection
New York State Department of Health
547 River Street
Troy, New York, 12180-2216
Phone: (518) 402 7652
http://www.nyhealth.gov/environmental/water/drinking/