



# Colorado Water Fluoridation Guidelines

## Operational & Administrative Guidelines

Updated: January 2019

### INTRODUCTION

More than 70 years of scientific research has consistently shown that an optimal level of fluoride in community water is safe and effective in preventing tooth decay by at least 25% in both children and adults. Simply by drinking water, Americans can benefit from fluorides cavity protection whether they are at home, work or school. The Centers for Disease Control and Prevention (CDC) named community water fluoridation one of 10 great public health achievements of the 20th century.

Fluoride is present in varying amounts in almost all soil, water supplies, plants, and animals and, thus, is a normal constituent of all diets. Water fluoridation is the adjustment of the natural fluoride concentration in drinking water to the level recommended for optimal health. Adjustments of drinking water are in accordance with scientific and dental guidelines.

Data consistently indicates that fluoridation is safe, cost-effective and the most efficient means for reducing the incidence of tooth decay for all community members. Additional studies have demonstrated that oral health benefits are reduced if the optimal level of fluoride is not maintained.

The following overview of guidelines and recommendations for water fluoridation is further detailed at [Engineering and Administrative Recommendations for Water Fluoridation, 1995](#).

### GUIDELINES & RECOMMENDATIONS FOR FLUORIDATED COMMUNITY PUBLIC WATER SUPPLY SYSTEM

#### I. Personnel

- A. A trained water plant operator (one who has received greater than or equal to 6 hours of fluoridation training) should be responsible for each fluoridated water system.
- B. The CDC offers courses to assist with managing state fluoridation programs and water treatment facility operations.<sup>1</sup>

#### II. System Reporting Requirements

When the fluoride content of drinking water is adjusted, a staff (administrative assistant, water quality operator, etc) member should be designated to report daily fluoride results to the Colorado Department of Public Health and Environment (CDPHE). These reports should be submitted each month to the state fluoridation program.

#### III. Monitoring and Surveillance

- A. Monthly reporting should be done on CDPHE fluoride monitoring forms and submitted to the fluoridation program at [cdphe.psfluoridationsmf@state.co.us](mailto:cdphe.psfluoridationsmf@state.co.us).
- B. Daily Monitoring: Water system personnel are expected to monitor daily fluoride levels in the water distribution system. Samples that will reflect the actual level of fluoride in the water distribution system should be taken at points throughout the water system. The sites where samples are taken should be rotated daily.

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<sup>1</sup> <http://www.cdc.gov/fluoridation/engineering/training.htm>

1. In April 2015, the U.S. Department of Health and Human Services (HHS) released updated recommendations for fluoride levels in public drinking water supplies. The updated policy statement recommends that public water systems maintain fluoride levels at 0.7 mg/L.<sup>2</sup> CDPHE supports and has adopted the HHS recommendation, and supports an optimal range of 0.6 mg/L to 0.9 mg/L. This range supports oral health for optimal health and decreases the risk for dental fluorosis.
- C. Monthly Split Sample: At least once each month, water system personnel should divide one sample, a split sample, and have one portion analyzed for fluoride by water system personnel and the other portion analyzed by the state laboratory or a state-certified laboratory.<sup>3</sup>
1. Split samples should be taken in the distribution system. You will want to collect the sample in the distribution system at a location which is representative of the flow to be sampled.
  2. We encourage you to conduct the split sample at the same time every month.
  3. The Laboratory Request for Analytical Services form, found on the [CDPHE OHU website](#), needs to be filled out clearly. A few specific notes follow:
    - a. SAMPLE SITE:
      - I. Collected in Distribution System: If the sample was collected in the distribution system (i.e. after the first customer) **Mark as "DS001 - RTOR"**.
      - II. Collected at the Entry Point: If the sample was collected at the entry point then use the sample point ID and facility ID listed on your [schedule](#) (e.g. "001 - 001").

**\*\*Please note fluoride samples collected at the entry point and analyzed using an approved method by a certified lab are considered compliance samples and must be reported as such.**

- b. SPECIMEN INFORMATION:
  - I. Collected in Distribution System: If the sample was collected in the distribution system mark as "Special Purpose".
  - II. Collected at the Entry Point: If the sample was collected at the entry point mark as "Routine" **\*\*Read note above.**
  - III. Comments - Indicate Oral Health Unit.
- c. You will receive bottles and mailing information once every four months from the Oral Health Unit.

Fluoride variances greater than one-tenth of a point between the water system and the state laboratory split sample result should be addressed by the water system. Variances can be addressed by testing and recalibrating the equipment to ensure the water system is maintaining the targeted fluoride level. Failure to adjust testing equipment and align with state laboratory sample results will make all data reported to the state invalid.

<sup>2</sup> [http://www.publichealthreports.org/documents/PHS\\_2015\\_Fluoride\\_Guidelines.pdf](http://www.publichealthreports.org/documents/PHS_2015_Fluoride_Guidelines.pdf)

<sup>3</sup> It is the PWS responsibility to research another state certified lab, if not using the state lab.

- D. Each water system is expected to send monthly operational reports to the state. The report must include:
  - 1. The amount and type of fluoride fed and the total number of gallons of water treated per day.
  - 2. The results of daily monitoring for fluoride in the water distribution system.
  - 3. The water system's results of monthly split samples.
- E. The calculated dosage should be cross-checked against the reported fluoride levels to spot chronic non-optimal operation.
- F. The system's raw water source (i.e. water that has not been treated) should be analyzed at least annually for fluoride by either the state laboratory or a state-certified laboratory.
- G. Water systems must maintain 75% of the month at targeted fluoride levels for 9 of 12 months at optimal levels to be considered optimally fluoridated and meeting operational standards. Meeting this criteria, and split sample criteria, will qualify a system as eligible for a Colorado Excellence Award.
  - 1. To qualify for a Centers for Disease Control and Prevention Quality Award - Water systems must maintain 75% of the month at targeted fluoride levels for 11 of 12 months, and meet split sample criteria.

#### IV. Inspection

- A. All new or updated fluoridation systems must submit plans and specifications for the construction, improvements, or modifications to the Department for prior approval to ensure construction and installation plans are in accordance with state-approved specifications.
- B. State Water Quality Inspectors will inspect public water systems. At a minimum, the following will be inspected:
  - 1. the fluoride equipment;
  - 2. the fluoride testing equipment;
  - 3. the fluoride additive storage area;
  - 4. An inspection of the fluoride additive certification, additives must meet ANSI/NSF Standard 60 . Commonly cited accredited organizations for product certification include Underwriters Laboratories- <http://www.ul.com>, National Sanitation Foundation- <http://www.nsf.org> and Water Quality Association- <http://wqa.org>;
  - 5. the operation and maintenance manuals;
  - 6. that only state-accepted backflow preventers and anti-siphon devices (as well as testing procedures for such equipment) are being used;
  - 7. the on-site emergency plans (stipulated actions in case of overfeed and public-notification procedures to be followed)<sup>4</sup>;

<sup>4</sup> Engineering and Administrative Recommendations for Water Fluoridation (1995), pg 6, <http://www.cdc.gov/mmwr/preview/mmwrhtml/00039178.htm>

8. the plant's security (e.g., placement of appropriate signs and fences to prevent entrance by unauthorized persons); and
9. the on-site safety equipment available to the operator.

Please contact the following with any questions:

Email: [cdphe.psfluoridationsmf@state.co.us](mailto:cdphe.psfluoridationsmf@state.co.us)

Phone: 303-692-2470