DAVIS COUNTY BOARD OF HEALTH

DRINKING WATER FLUORIDATION REGULATION

Davis
COUNTY
HEALTH
DEPARTMENT

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1.0 PURPOSE

The purpose of this regulation is to preserve, promote, and protect the public health, safety, and welfare of residents, visitors, and water operators in Davis County by regulating the application of fluoride to Public Water Systems, ensuring that optimal fluoride levels in drinking water supplies are targeted, and requiring the safe application and storage of Fluoride Compounds.

2.0 SCOPE

This regulation applies to Public Water Systems in Davis County as required by UCA Section 19-4-111.

3.0 AUTHORITY AND APPLICABLE LAWS

This regulation is adopted under the authority of the Davis County Board of Health in accordance with Utah Code Annotated (UCA) Sections *26A-1-121* and *19-4-111*.

The provisions of UCA Section 19-4-111 are hereby adopted and incorporated by reference subject to the additions, clarifications, exceptions, and modifications specifically set forth in this regulation.

4.0 DEFINITIONS

4.1 ANNUAL CONTROL RANGE: A range of the adjusted fluoride ion concentration.

4.2 CALCULATED DOSAGE: The calculated amount of fluoride (mg/L) that has been added to a Public Water System. The calculation is based on the total amount of fluoride (weight) that was added to the Public Water System and the total amount of water (volume) that was produced.

4.3 DEPARTMENT: The Davis County Health Department.

4.4 DISTRIBUTION SYSTEM: A collection of pipes, valves, fire hydrants, storage tanks, and reservoirs that carries water from the water source(s) or treatment plant(s) that delivers water to its customers.

4.5 FLUORIDE COMPOUNDS: A chemical compound that contains the fluoride ion and is used to fluoridate drinking water, including: fluorosilicic acid, sodium fluorosilicate, or sodium fluoride.

4.6 PUBLIC WATER SYSTEM (PWS): A system, either publicly or privately owned, providing water through constructed conveyances for human consumption and other domestic uses, which has at least 15 service connections or serves an average of at least 25 individuals daily at least 60 days out of the year as defined in UAC Section R309-110-4: Definitions.

4.7 SPLIT SAMPLE: A distribution water sample collected by a Public Water System representative in duplicate or as a single sample divided into two samples.

5.0 REGULATION

5.1 Fluoride Levels

5.1.1 Monitoring.
Fluoride levels shall be monitored throughout the Distribution System.

5.1.1.1 Calculated Dosage.
The Calculated Dosage shall be recorded daily.

Commented [JSC1]: Dave had requested more information on the monitoring aspect of this section. Discuss these two additions.

5.1.1.2 Sampling.
Fluoride levels in the Distribution System shall be determined weekly by the PWS at each of the representative points in the Distribution System as defined in the sampling plan.

5.1.1.2.1 The sampling plan shall be submitted to the Department.

5.1.1.3 Split Sample.
A Split Sample shall be taken monthly. One portion shall be analyzed by the PWS, and the second shall be submitted for comparison to a laboratory that is certified for fluoride analysis.

5.1.1.3.1 The Split Sample analyzed by the PWS shall have a fluoride ion concentration that is within 20% of the fluoride ion concentration measured by the certified laboratory.

5.1.1.4 Analytical Methods.
Analysis of fluoridated water shall be consistent with the requirements found in 40 CFR 141.23 – Inorganic Chemical Sampling and Analytical Requirements.

5.1.1.4.1 Continuous monitors may be used, provided they are installed at representative points in the Distribution System.

5.1.1.4.2 Analytical methods which do not perform with equivalency to Split Samples shall not be used.

5.1.1.4.3 Instructions provided by the manufacturer for analytical equipment shall be followed.

5.1.1.5 Reporting.
The PWS shall submit a report each month to the Department. The report shall contain the following information:

5.1.1.5.1 results of fluoride monitoring for the previous month, including the address and description of the sampling point;

5.1.1.5.2 results of the Split Sample; and,

5.1.1.5.3 the daily Calculated Dosage.

5.1.2 Fluoride Concentrations.

5.1.2.1 Optimal Fluoride Level.
The optimal fluoride level of 0.7 mg/L shall be targeted throughout the Distribution System.

5.1.2.2 Annual Control Range.
The Annual Control Range of 0.6 mg/L to 0.8 mg/L shall be achieved at each Distribution System sampling site.

5.1.2.2.1 Compliance shall be determined using the monthly reports submitted to the Department.

5.1.2.2.2 The Department may exclude time periods of reported underfeeds when calculating the Annual Control Range.

5.1.2.3 Fluoride Overfeeds.
Fluoride levels above 1.0 mg/L are considered fluoride overfeeds. A PWS shall follow the actions listed in Table 1 whenever an overfeed has been detected.

Table 1: Corrective Actions Required for Fluoride Overfeeds

Fluoride Level	PWS Actions
>1.0 mg/L to 2.0 mg/L (over 30-minute continual average or single sample analysis)	1. Leave the fluoridation system on. 2. Determine if there is a malfunction and make any necessary repairs. 3. Make dosage adjustments to the system as necessary.
2.1 mg/L to 4.0 mg/L (over 30-minute continual average or single sample analysis)	1. Leave the fluoridation system on. 2. Determine malfunction and make repair. 3. Notify the Department within seven days. 4. Comply with any EPA and DDW reporting requirements.
4.1 mg/L to 10.0 mg/L	1. Turn off the fluoridation system immediately. 2. Determine malfunction and make repair. 3. Notify the Department within 24 hours. 4. Take water samples for fluoride analysis at several locations within the Distribution System until the results are below 1.0 mg/L. 5. Measure the pH of the water to determine corrosivity. 6. Notify the Department when fluoridation has resumed. 7. Comply with any EPA and DDW reporting requirements.

Fluoride Level	PWS Actions
>10.0 mg/L	1. Turn off the fluoridation system immediately. 2. Notify the Department and the DDW immediately. 3. Flush out the water lines containing the high fluoride concentration (> 10 mg/L). 4. Notify the public to prevent the consumption of water with the high fluoride concentration. 5. Determine malfunction and make repair. 6. Take water samples for fluoride analysis at several locations within the Distribution System until the results are below 1.0 mg/L. 6. Measure the pH of the water to determine corrosivity. 7. Obtain approval from the Department and the DDW prior to resuming fluoridation. 8. Comply with any EPA and DDW reporting requirements.

5.1.2.4 Fluoride Underfeeds.

Fluoride levels below 0.5 mg/L are considered fluoride underfeeds. A PWS shall follow the actions listed in Table 2 whenever an underfeed has been detected.

Table 2: Corrective Actions Required for Fluoride Underfeeds

Duration	PWS Actions
Less than two (2) consecutive weeks	1. Determine if there is a malfunction and make any necessary repairs. 2. Make dosage adjustments to the system as necessary.
Over two (2) weeks to six (6) months	1. Notify the Department within three (3) weeks, starting from the first day of the underfeed. 2. Submit an action plan to the Department containing an expected date of correction.
Over six (6) months	1. Review underfeed related activities with the Department and comply with the required action plan as approved by the Department.

5.2 Safety

5.2.1 Storage of Fluoride Compounds.

5.2.1.1 Fluoride Compounds shall be isolated from other chemicals to prevent contamination.

5.2.1.2 Fluoride Compounds shall be stored in covered or unopened shipping containers.

5.2.1.3 Space shall be provided for an adequate supply of chemicals and for dry storage conditions.

5.2.1.4 Unsealed storage units for fluorosilicic acid shall be vented to the atmosphere at a point outside any building.

5.2.1.5 Bags, fiber drums and steel drums shall be stored on pallets.

5.2.1.6 All chemical containers shall be labeled with the product name.

5.2.1.7 Safety Data Sheets (SDS) shall be posted at all chemical injection sites.

5.2.2 Accidental Release.
In the event of an uncontained or accidental release to the environment, operators are to follow the "Accidental Release Measures" instructions found on the SDS and notify the Department immediately.

5.3 Training

5.3.1 Training Frequency.
A minimum of three hours of fluoridation trainings shall be completed by each operator involved with fluoride operations. The training shall be completed within six (6) months of assignment and every two (2) years thereafter.

5.3.1.1 All fluoridation trainings shall be approved by the Department.

5.3.2 Training Content.
Training shall include, but is not limited to the following:

5.3.2.1 operations and maintenance;

5.3.2.2 Fluoride Compounds;

5.3.2.3 operator safety; and,

5.3.2.4 regulatory requirements.

5.3.2.4.1 review;

5.3.2.4.2 updates; and,

5.3.2.4.3 reporting.

5.3.3 Documentation.
The PWS shall keep a record of operator training and provide training records to the Department upon request.

5.4 Enforcement
It is unlawful for any person to interfere with the Department in the performance of its duties.

5.4.1 Notice.
If the Department finds that a PWS is in violation of this regulation, the Department shall notify the PWS, in writing, of its findings and order PWS to take specific steps to correct such violations.

5.4.1.1 A notice may be issued for any violation of this regulation.

5.4.2 Failure to Comply.
Failure to comply with a notice or order may result in further actions taken by the Department in accordance with relevant provisions of Utah Code, including, but not limited to Sections 26-23-6, 19-5-115, and 26A-1-123.

6.0 PENALTY

6.1 Criminal Penalties Pursuant to UCA Section 26A-1-123

6.1.1 Any person determined guilty by a court of: violating any of the provisions of this regulation; or violating, disobeying, or disregarding any Notice or Order issued under this regulation is guilty of a class B misdemeanor.

6.1.2 Any person found guilty of a subsequent similar violation within two years of the initial violation is guilty of a class A misdemeanor.

6.1.3 Each day such violation is committed or permitted to continue shall constitute a separate violation.

6.1.4 Conviction under this section does not relieve the person convicted from civil liability.

6.2 Civil and Administrative Penalties

6.2.1 Any person who violates any of the provisions of this regulation or violates, disobeys, or disregards any Notice or Order issued under this regulation shall be subject to the payment of costs incurred in the enforcement of any violation or notice issued, including costs attributable to any involved local agencies.

6.2.2 A penalty pursuant to the provisions of UCA Subsection 26-23-6(2).

6.2.3 A penalty pursuant to the provisions of UCA Section 19-5-115.

6.2.4 The exercise of civil and administrative penalties shall be subject to the Department's Adjudicative Hearing Procedures Regulation.

7.0 SEVERABILITY

If any provision, clause, sentence, or paragraph of this regulation or the application or circumstances shall be held invalid, such invalidity shall not affect the other provisions or applications of this regulation. The valid part of any clause, sentence, or paragraph of this regulation shall be given independence from the invalid provisions or application, and to this end, the provisions of this regulation are hereby declared to be severable.

8.0 FEES

N/A

IN WITNESS WHEREOF, the Davis County Board of Health has passed, approved, and adopted this regulation this 4th day of September, 2001.

Effective date: September 4, 2001

Revised and Amended: February 8, 2005.

Revised and Amended: March, 13, 2007.

Revised and Amended: October 7, 2010.

Revised and Amended: August 9, 2011.

Revised and Amended: August 13, 2013

Revised and Amended: February 11, 2020

Signed: _____
Troy Wood
Board Chair

Attest: _____
Brian Hatch, MPH
Director of Health