

THIS POLICY DOES NOT HAVE THE FORCE OF LAW

Policy for Determining Fluoride Compliance	Division:	DDAGW
	Number:	WQ-11-001
	Category:	Water Quality - Policy
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I. PURPOSE:

The purpose of this document is to describe the procedure that will be used by staff in Ohio EPA's Division of Drinking and Ground Waters to determine public water system compliance with the fluoride requirements in the Ohio Administrative Code and the Ohio Revised Code. This procedure will be followed until the fluoride rules can be revised to better describe compliance determination.

II. BACKGROUND:

The regulation of fluoride in Ohio's public water systems is found in both the Ohio Revised Code (ORC) and the Ohio Administrative Code (OAC). ORC 6109.20 requires systems serving a population $\geq 5,000$ (unless exempted from the law) with natural fluoride < 0.8 mg/L to add fluoride to maintain concentrations in the range of 0.8 mg/L to 1.3 mg/L. Systems that add fluoride are required to take a daily fluoride sample at the plant tap (entry point) and in the distribution system, and report the results on the monthly operating report form 5011 per OAC Rule 3745-83-01 (E).

Monitoring and compliance for fluoride in OAC 3745-81-23 is intended to regulate naturally occurring fluoride. OAC 3745-81-23 requires all community and nontransient systems, including those that add fluoride, to monitor for fluoride at the entry point either once every three years (ground water systems) or annually (surface water systems), and submit those results on Ohio EPA form 5020 (paper or Drinkware).

According to OAC 3745-81-23, compliance with the fluoride MCL of 4 mg/L is based on a running annual average for systems monitoring more frequently than annually, and on a single sample (or the average of the sample and resample) for systems monitoring annually or less frequently. Systems that exceed the fluoride primary MCL are required to issue public notice in accordance with OAC 3745-81-32. Furthermore, OAC 3745-82-03 states that compliance with the fluoride SMCL of 2.0 mg/L is determined on the basis of the most recent sample taken in accordance with 3745-81-23. Systems that exceed the secondary MCL are also required by OAC 3745-81-32 to issue public notice once a year as long as the exceedances exist. Currently, no short term health advisories exist from USEPA for fluoride exposures.

For systems that are not adding fluoride, the OAC is clear as to how compliance is determined. However, inconsistencies and questions have been raised over the years in

the Division when determining compliance for systems that add fluoride. The primary questions that have been raised, and that need to be answered to ensure a consistent response across the Division, include the following:

- a. For systems that are required to maintain a fluoride concentration of 0.8 mg/L to 1.3 mg/L, which sample(s) are used to determine compliance with the range? Is it a single daily sample, the monthly average of all daily samples, or the running annual average? The ORC does not specifically state how compliance with this range is determined. When it is determined that a system is not in compliance with the range, should the violation letter require the system to issue a public notice? The OAC only requires a public notice for MCL and SMCL exceedances. The ORC gives us the authority to issue, or require the system to issue, a water use advisory when a health threat exists. Does a health threat exist if the system is above this range but below 2.0 mg/L?
- b. Should public water systems that add fluoride, but aren't required to do so by ORC 6109.20, be required to maintain a fluoride concentration of 0.8 mg/L to 1.3 mg/L? If so, what section of the ORC or OAC are they in violation of should the fluoride concentration not be maintained within this range? Or, should these systems be encouraged to maintain the 0.8 mg/L to 1.3 mg/L range, but only be required to be in compliance with the primary and secondary MCLs?
- c. For all systems that add fluoride, how should compliance be determined with the SMCL and MCL? Is the determination based on a single daily sample, the monthly average, or the running annual average?
- d. For public water systems that want to use fluoride in tracer studies, what concentration range is required to be maintained?

Until such time as the OAC and ORC are revised to address compliance issues for systems that add fluoride, this document will outline the procedures that should be followed, based on the current limitations of the fluoride laws and rules, by DDAGW staff to ensure consistency in the determination of fluoride compliance, as well as consistency in the consequences for public water systems as a result of being out of compliance.

III. POLICY:

The Chemical Monitoring and Compliance Unit (CMCU) will determine compliance with the fluoride SMCL and MCL for systems that do not add fluoride, and they will issue NOV's and track public notices as required.

The district staff will use the following procedure for determining fluoride compliance for public water systems that add fluoride as part of their water treatment process.

1. For public water systems that are required by ORC 6109.20 to maintain a fluoride concentration in the range of 0.8 mg/L to 1.3 mg/L, compliance with this range will be

determined based on the number of days in a month that a public water system does not maintain the required range. If a public water system has four or more days during a month that are outside the required range of 0.8 mg/L to 1.3 mg/L, as reported in the Plant Tap column on Ohio EPA form 5011, the public water system is in violation of 6109.20. Public water systems required by ORC 6109.20 to maintain a fluoride concentration in the range of 0.8 mg/L to 1.3 mg/L that fail to take one or more fluoride samples in a month are in violation of OAC Rule 3745-83-01 (E).

2. District staff will send notices of violation to systems that are out of compliance with ORC 6109.20, as determined above. Public notification will not be required for violations of 6109.20 since a health threat does not exist at levels below 2 mg/L (See #4 below to determine if public notification is required for fluoride results greater than 2 mg/L). Notices of violation will be sent to systems that fail to monitor in accordance with OAC Rule 3745-83-01 (E). Violation of OAC Rule 3745-83-01 (E) is not included in OAC Rule 3745-81-32 and therefore, does not require public notification. In addition, community systems are not required to report these violations as part of their consumer confidence reports (CCRs).

3. Public water systems that add fluoride but are not required by ORC 6109.20 to maintain a fluoride concentration in the range of 0.8 mg/L to 1.3 mg/L should be reminded by district staff of the importance of maintaining the proper fluoride range when they fail to do so. These public water systems will not be sent a notice of violation for failure to maintain the proper range since they are not required by law or rule to do so. However, OAC Rule 3745-83-01 (E) applies to all community public water systems. District staff will send systems a notice for failure to monitor as required on their 5011 form. As noted above, this is not a violation which requires public notification. In addition, community systems are not required to include this information in their CCRs.

4. For all public water systems that add fluoride, compliance with the primary MCL and secondary MCL will be determined based on a running annual average of the daily plant tap results as reported on Ohio EPA form 5011, as specified in OAC 3745-81-23 (H)(2). If the monthly plant tap average exceeds either the primary or secondary fluoride MCLs, then the annual average will be calculated by adding together the current monthly plant tap average with the 11 previous monthly plant tap averages and dividing by 12. A public water system is out of compliance if this annual average exceeds either the primary or secondary MCLs. Notices of violation will be sent to these systems by the district staff, requiring the issuance of a public notice in accordance with OAC 3745-81-32.

5. In the event of a fluoride overfeed at a public water system, district staff should use the following recommendations from the Centers for Disease Control and Prevention (CDC) when consulting with the public water system:

CDC Recommended Actions For Fluoride Overfeed

Fluoride Content (mg/L), as measured at the entry point (plant tap)	Recommended Actions
1.4 to 2.0	<ol style="list-style-type: none"> 1. Leave the fluoridation system on. 2. Determine malfunction and repair. 3. Notify supervisor and report the incident to the Ohio EPA and to the appropriate county health department
2.1 to 4.0	<ol style="list-style-type: none"> 1. Leave the fluoridation system on. 2. Determine malfunction and repair. 3. Notify supervisor and report the incident to the Ohio EPA and to the appropriate county health department.
4.1 to 10.0	<ol style="list-style-type: none"> 1. Determine malfunction and immediately try to repair. 2. If the problem is not found and corrected quickly, turn off the fluoridation system. 3. Notify supervisor and report the incident to the Ohio EPA and to the appropriate county health department. 4. Take water samples at several points in the distribution system and test the fluoride content. Retest if results are still high. 5. Determine malfunction and repair. Then, with supervisors permission and Ohio EPA's permission, restart the fluoridation system.
10.1 or higher	<ol style="list-style-type: none"> 1. Turn off the fluoridation system immediately. 2. Notify supervisor and report the incident to the Ohio EPA and to the appropriate county health department. 3. Issue a no use advisory to the public.* 4. Take water samples at several points in the distribution system and test the fluoride content. Retest if results are still high. 5. Determine malfunction and repair. Then, with supervisors permission and Ohio EPA's permission, restart the fluoridation system. 6. Notify the public once the problem has been fixed.

*As noted in number 4 of the Guidance section, compliance with the fluoride MCL and SMCL is determined based on a running annual average of the daily plant tap results. Under most circumstances, one or two days of fluoride over the SMCL or MCL will not cause the annual average to exceed either standard, and does not pose an immediate or long term threat to public health. The no use advisory at 10.1 mg/L or higher is a precautionary measure recommended by the CDC for those rare overfeed events that result in fluoride concentrations greater than 10 mg/L.

6. Results reported on Ohio EPA form 5011 require district staff to round the results in order to determine compliance. Therefore, staff will round the first decimal place down if the second decimal place is ≤ 4 , and they will round the first decimal place up if the second decimal place is ≥ 5 . For example, 0.74 mg/L rounds to 0.7, and 1.35 mg/L rounds to 1.4 mg/L.

7. District staff should enter the fluoride violations into the violation program using the following codes: 02 for MCL/SMCL violations; 03 for failure to monitor violations. There is not a federal violation code for failure to maintain the fluoride concentration in the range of 0.8 mg/L to 1.3 mg/L, so districts should not enter these violations into the violation program. Copies of the notices of violation letters, and public notices returned by the public water systems, should be forwarded to the Information Management Section (IMS).

8. Public water systems that perform tracer studies using fluoride will not be in violation of ORC 6109.20 as long as DDAGW has received prior notification of the tracer study and the fluoride levels in the distribution system do not exceed the SMCL of 2.0 mg/L.

IV. HISTORY:

The Division of Drinking and Ground Waters issued this policy on May 17, 2004.