**Section 611.1357 Monitoring for Water Quality Parameters**

A large system supplier or any small or medium-sized system supplier exceeding the lead or copper action level must monitor water quality parameters in addition to lead and copper under this Section.

a) General Requirements

1) Sample Collection Methods

A) Using Tap Samples. In totality, all tap samples a supplier collects must represent water quality throughout the supplier’s distribution system, considering the number of persons served, the different sources of water, the different treatment methods the supplier employs, and seasonal variability. Although a supplier may conveniently conduct tap sampling for water quality parameters at sites it uses for coliform sampling under Subpart L, the supplier needs not do so, and the supplier needs not perform tap sampling under this Section at taps it targeted for lead and copper sampling under Section 611.1356(a).

B) Using Entry Point Samples. A supplier must collect samples at entry points to the distribution system from locations representing each source after treatment. If a supplier draws water from more than one source and combines the sources before distribution, the supplier must sample at an entry point to the distribution system during normal operating conditions (i.e., when the supplier uses water representing all sources).

2) Number of Samples

A) Tap Samples. A supplier must collect two tap samples for applicable water quality parameters during each six-month monitoring period under subsections (b) through (e) from the number of sites the first column of Table F (labelled “standard monitoring”) indicates.

B) Entry Point Samples

i) Initial Monitoring. Except as subsection (c)(3) provides otherwise, a supplier must collect two samples for each applicable water quality parameter at each entry point to its distribution system during each six-month monitoring period subsection (b) specifies.

ii) Subsequent Monitoring. A supplier must collect one sample for each applicable water quality parameter at each entry point to its distribution system during each six-month monitoring period subsections (c) through (e) specify.

b) Initial Sampling

1) Large Systems. A large system supplier must measure the applicable water quality parameters subsection (b)(3) specifies at taps and at each entry point to its distribution system during each six-month monitoring period Section 611.1356(d)(1) specifies.

2) Small and Medium-Sized Systems. A small or medium-sized water system supplier must measure the applicable water quality parameters subsection (b)(3) specifies at the locations this subsection (b) specifies during each six-month monitoring period Section 611.1356(d)(1) specifies during which the supplier exceeds the lead or copper action level.

3) Water Quality Parameters

A) pH;

B) Alkalinity;

C) Orthophosphate, when the supplier uses an inhibitor containing a phosphate compound;

D) Silica, when the supplier uses an inhibitor containing a silicate compound;

E) Calcium;

F) Conductivity; and

G) Water temperature.

c) Monitoring after Installing Corrosion Control

1) Large Systems. A large system supplier installing optimal corrosion control treatment under Section 611.1351(d)(4) must measure the water quality parameters at the locations and frequencies subsections (c)(4) and (c)(5) specify during each six-month monitoring period Section 611.1356(d)(2)(A) specifies.

2) Small and Medium-Sized Systems. A small or medium-sized system installing optimal corrosion control treatment under Section 611.1351(e)(5) must measure the water quality parameters at the locations and frequencies subsections (c)(4) and (c)(5) specify during each six-month monitoring period Section 611.1356(d)(2)(B) specifies during which the supplier exceeds the lead or copper action level.

3) Groundwater Systems. A groundwater system supplier can limit entry point sampling under subsection (c)(5) to those entry points representing water quality and treatment conditions throughout the system. If water from untreated groundwater sources mixes with water from treated groundwater sources, the system must monitor for water quality parameters at both representative entry points receiving treatment and representative entry points not receiving treatment. Prior to starting monitoring under this subsection (c)(3), the supplier must provide written information to the Agency identifying the selected entry points and documentation sufficient to demonstrate that the sites represent water quality and treatment conditions throughout the system, including information on seasonal variability.

4) Tap Water Samples. The supplier must collect two water samples at each tap for each of five water quality parameters:

A) pH;

B) Alkalinity;

C) Orthophosphate if the supplier uses an inhibitor containing a phosphate compound;

D) Silica if the supplier uses an inhibitor containing a silicate compound; and

E) Calcium if the supplier uses calcium carbonate stabilization as part of corrosion control.

5) Entry Point Samples. Except as subsection (c)(3) provides otherwise, a supplier must collect one sample at each entry point to its distribution system every two weeks (bi-weekly) for three water quality parameters:

A) pH;

B) If the supplier adjusts alkalinity as part of optimal corrosion control, a reading of the chemical dosage rate the supplier uses to adjust alkalinity and the alkalinity concentration; and

C) If the supplier uses a corrosion inhibitor as part of optimal corrosion control, a reading of the inhibitor dosage rate the supplier uses and the orthophosphate or silica concentration.

BOARD NOTE: Subsections (c)(1) and (c)(2) derive from 40 CFR 141.87(c) (2020), subsection (c)(3) derives from 40 CFR 141.87(c)(3) (2020), subsection (c)(4) derives from 40 CFR 141.87(c)(1) (2020), and subsection (c)(5) derives from 40 CFR 141.87(c)(2) (2020).

d) Monitoring after the Agency Specifies Water Quality Parameter Values for Optimal Corrosion Control

1) Large-Sized Water Systems. After the Agency specifies the values for water quality control parameters reflecting optimal corrosion control treatment under Section 611.1352(f), a large-sized water system supplier must monitor the applicable water quality parameters under subsection (c) and determine whether the supplier complies with Section 611.1352(g) every six months, with the first six-month period to begin on the sooner of January 1 or July 1 after the Agency specifies the optimal values under Section 611.1352(f).

2) Small and Medium-Sized System Suppliers. A small or medium-sized system supplier must monitor during each six-month monitoring period this subsection (d) specifies during which the supplier exceeds the lead or copper action level. For a small or medium-sized system supplier subject to a reduced monitoring frequency under Section 611.1356(d)(4) at the time it exceeds the action level, the start of the applicable six-month monitoring period under this subsection (d) coincides with the start of the applicable monitoring period under Section 611.1356(d)(4).

3) A supplier must determine whether it complies with Agency-designated optimal water quality parameter as Section 611.1352(g) specifies.

e) Reduced Monitoring

1) Reduced Tap Monitoring. A supplier maintaining the range of values for the water quality parameters reflecting optimal corrosion control treatment during each of two consecutive six-month monitoring periods under subsection (d) must continue monitoring at the entry points to the distribution system as subsection (c)(5) specifies. The supplier may collect two samples from each tap for applicable water quality parameters from the reduced number of sites the second column of Table F (Standard Monitoring) indicates during each subsequent six-month monitoring period.

2) Reduced Monitoring Frequency

A) Staged Reductions in Monitoring Frequency

i) Annual Monitoring. A supplier maintaining the range of values for the water quality parameters reflecting optimal corrosion control treatment under Section 611.1352(f) during three consecutive years of monitoring may reduce its tap sampling frequency for applicable water quality parameters subsection (e)(1) specifies from every six months to annually. The supplier may only begin this reduced sampling during the calendar year immediately following the end of the monitoring period in which the third consecutive year of six-month monitoring occurs.

ii) Triennial Monitoring. A supplier maintaining the range of values for the water quality parameters reflecting optimal corrosion control treatment under Section 611.1352(f) during three consecutive years of annual monitoring under subsection (e)(2)(A)(i) may reduce its tap sampling frequency for applicable water quality parameters subsection (e)(1) specifies from annually to once every three years. The supplier must conduct this triennial monitoring no later than every third calendar year.

B) A supplier may reduce its tap sampling frequency for applicable water quality parameters in subsection (e)(1) to once every three years if the supplier demonstrates that it complies with subsections (e)(2)(B)(i) through (e)(2)(B)(iii) during two consecutive monitoring periods, subject to subsection (e)(2)(B)(iv).

i) The supplier must demonstrate that its tap water 90th percentile level for lead is less than or equal to the PQL for lead in Section 611.1359(a)(1)(B).

ii) The supplier must demonstrate that its tap water 90th percentile level for copper is less than or equal to 0.65 mg/L for copper in Section 611.1350(c)(2).

iii) The supplier must demonstrate that it maintains the range of values for the water quality parameters reflecting optimal corrosion control treatment the Agency specified under Section 611.1352(f).

iv) The supplier must complete triennial monitoring no later than every third calendar year.

3) A supplier sampling annually or triennially must collect these samples evenly throughout the calendar year to reflect seasonal variability.

4) A supplier on a reduced monitoring frequency under this subsection (e) failing to operate at or above the minimum value or within the range of values for the water quality parameters the Agency specifies under Section 611.1352(f) for more than nine days in any six-month period Section 611.1352(g) specifies must resume tap water sampling complying with the number and frequency of samples subsection (d) requires. A supplier thus ceasing reduced monitoring may resume annual monitoring for water quality parameters at the tap at the reduced number of sites subsection (e)(1) specifies after completing two subsequent consecutive six-month rounds of monitoring complying with subsection (e)(1). The supplier may resume triennial tap water monitoring for water quality parameters at the reduced number of sites after demonstrating through subsequent rounds of monitoring that the supplier complies with subsection (e)(2)(A) or (e)(2)(B).

f) Additional Monitoring by Suppliers. The supplier and the Agency must consider any monitoring results and what this Section requires in making any determinations (i.e., determining concentrations of water quality parameters) under this Section or Section 611.1352.

BOARD NOTE: This Section corresponds with Section 611.357 and derives from 40 CFR 141.87 (2020).

(Source: Added at 47 Ill. Reg. 16486, effective November 2, 2023)