

**PART VII**  
**LEAD AND COPPER**

**§ 701 PURPOSE**

- A. These regulations apply to community water systems and non-transient non-community water systems. Effective dates for §§ 704, 707, 708, 712 and 713 became effective on July 7, 1991, and for §§ 701, 705, 706, 709, 710, and 711 became effective on December 7, 1992.
- B. These regulations establish a treatment technique that includes requirements for corrosion control treatment, source water treatment, lead service line replacement, and public education. These requirements are triggered, in some cases, by lead and copper action levels measured in samples collected at consumers' taps.

**§ 702 PROHIBITION ON USE OF LEAD PIPES, SOLDER, AND FLUX**

A. General Requirements

1. Prohibition. Any pipe, solder, or flux, which is used after June 19, 1986, in the installation or repair of:
- a. Any CWS or NTNCWS, or
  - b. Any plumbing in a residential or non-residential facility providing water for human consumption which is connected to a CWS or NTNCWS shall be lead free as defined in §104. This subsection shall not apply to leaded joints necessary for the repair of cast iron pipes.

Notice shall be provided notwithstanding the absence of a violation of any NNPDWR, according to § 602.

B. Navajo Nation Enforcement

1. Enforcement of prohibition. The requirements of subsection (A)(1) of this section shall be enforced in the Navajo Nation effective June 19, 1988. The Director shall enforce such requirements through local plumbing codes, or such other means of enforcement as the Director may determine to be appropriate.

- C. Penalties: If the Administrator determines that the Director is not enforcing the requirements of subsection (A) of this section, as required pursuant to subsection (B), the Administrator may withhold up to 5% of Federal funds available to the PWSSP for program grants under § 1443 (a) of the Act.

**§ 703 COMPLIANCE**

A. Lead and copper action levels.

1. The lead action level is exceeded if the concentration of lead in more than 10 % of tap water samples collected during any sampling period conducted in accordance with § 704 is greater than 0.015 mg/L (i.e., if the "90th percentile" lead level is greater than 0.015 mg/L).
2. The copper action level is exceeded if the concentration of copper in more than 10 % of tap water samples collected during any sampling period conducted in accordance with § 704 is greater than 1.3 mg/L (i.e., if the "90th percentile" copper level is greater than 1.3 mg/L).
3. The 90th percentile lead and copper levels shall be computed as follows:
- a. The results of all lead or copper samples taken during a sampling period shall be placed in ascending order from the sample with the lowest concentration to the sample with the highest concentration. Each sampling result shall be assigned a number, ascending by single integers beginning with the number 1 for the sample with the lowest contaminant level. The number assigned to the sample with the highest contaminant level shall be equal to the total number of samples taken.
  - b. The number of samples taken during the sampling period shall be multiplied by 0.9.

- c. The contaminant concentration in the numbered sample yielded by the calculation in subsection (A)(3)(b) is the 90th percentile contaminant level.
  - d. For CWSs and NTNCWSs serving fewer than 100 people that collect 5 samples per sampling period, the 90th percentile is computed by taking the average of the highest and second highest concentrations.
  - e. For a public water system that has been allowed by the Director to collect fewer than five samples in accordance with § 704 (C), the sample result with the highest concentration is considered the 90th percentile value.
- B. Corrosion control treatment requirements.
- 1. All CWSs and NTNCWSs shall install and operate optimal corrosion control treatment.
  - 2. Any CWSs and NTNCWSs that complies with the applicable corrosion control treatment requirements specified by the Director under §§ 705 and 706 shall be deemed in compliance with the treatment requirement contained in subsection (B)(1) of this section.
- C. Source water treatment requirements.
- 1. Any CWS or NTNCWS exceeding the lead or copper action level shall implement all applicable source water treatment requirements specified by the Director under § 709.
- D. Lead service line replacement requirements.
- 1. Any CWS or NTNCWS exceeding the lead action level after implementation of applicable corrosion control and source water treatment requirements shall complete the lead service line replacement requirements contained in § 710.
- E. Sampling and analytical requirements.
- 1. Tap water sampling for lead and copper, sampling for water quality parameters, source water sampling for lead and copper, and analyses of the sampling results under this part shall be completed in compliance with §§ 704, 707 and 708. The sampling methodology can be found in Appendix C-Lead and Copper.
- F. Public education requirements.
- 1. Pursuant to § 711, all water systems must provide a consumer notice of lead tap water sampling results to persons served at the sites (taps) that are tested. Any CWS or NTNCWS exceeding the lead action level shall implement the public education requirements.
- G. Reporting requirements.
- 1. A CWS or NTNCWS shall report to the Director any information required by the treatment provisions of this part and § 712.
- H. Recordkeeping requirements.
- 1. A CWS or NTNCWS shall maintain records in accordance with § 713.
- I. Violation of NNPDRs.
- 1. Failure to comply with the applicable requirements of this part shall constitute a violation of the NNPDR for lead and/or copper.

**§ 704 SAMPLING REQUIREMENTS FOR LEAD AND COPPER IN TAP WATER**

- A. Sample site location.
- 1. By the applicable date for commencement of sampling under subsection (D)(1) and (D)(2) of this section, each CWS or NTNCWS shall complete a materials evaluation of its distribution system in order to identify a pool of targeted sampling sites that meets the requirements of this section, and which is sufficiently large enough to ensure that the CWS or NTNCWS can collect the number of lead and copper tap samples required in subsection (C) of this section. All sites from which the first draw samples are collected shall be selected from

this pool of targeted sampling sites. Sampling sites may not include faucets that have point-of-use or point-of-entry treatment devices designed to remove inorganic contaminants.

2. A CWS or NTNCWS shall use the information on lead, copper, and galvanized steel that it is required to collect under § Appendix C (702-C) of these regulations (special sampling for corrosivity characteristics) when conducting a materials evaluation. When an evaluation of the information collected pursuant to § Appendix C (702-C) is insufficient to locate the requisite number of lead and copper sampling sites that meet the targeting criteria in subsection (A) of this section, the CWS or NTNCWS shall review the sources of information listed below in order to identify a sufficient number of sampling sites. In addition, the CWS or NTNCWS shall seek to collect such information where possible in the course of its normal operations (e.g., checking service line materials when reading water meters or performing maintenance activities):
  - a. All plumbing codes, permits, and records in the files of the building department(s) which indicate the plumbing materials that are installed within publicly and privately owned structures connected to the distribution system;
  - b. All inspections and records of the distribution system that indicate the material composition of the service connections that connect a structure to the distribution system; and
  - c. All existing water quality information, which includes the results of all prior analyses of the CWS or NTNCWS or individual structures connected to the CWS or NTNCWS, indicating locations that may be particularly susceptible to high lead or copper concentrations.
3. The sampling sites selected for a CWS's sampling pool ("tier 1 sampling sites") shall consist of single family structures that:
  - a. Contain copper pipes with lead solder installed after 1982 or contain lead pipes; and/or
  - b. Are served by a lead service line. When multiple-family residences comprise at least 20 % of the structures served by a CWS or NTNCWS, the system may include these types of structures in its sampling pool.
4. Any CWS with insufficient tier 1 sampling sites shall complete its sampling pool with "tier 2 sampling sites" consisting of buildings, including multiple-family residences that:
  - a. Contain copper pipes with lead solder installed after 1982 or contain lead pipes; and/or
  - b. Are served by a lead service line.
5. Any CWS with insufficient tier 1 and tier 2 sampling sites shall complete its sampling pool with "tier 3 sampling sites" consisting of single family structures that contain copper pipes with lead solder installed before 1983. A CWS with insufficient tier 1, tier 2, and tier 3 sampling sites shall complete its sampling pool with representative sites throughout the distribution system. For the purpose of this subsection, a representative site is a site in which the plumbing materials used at that site would be commonly found at other sites served by the water system.
6. The sampling sites selected for a NTNCWS ("tier 1 sampling sites") shall consist of buildings that:
  - a. Contain copper pipes with lead solder installed after 1982 or contain lead pipes; and/or
  - b. Are served by a lead service line.
7. A NTNCWS with insufficient tier 1 sites that meet the targeting criteria in subsection (A)(6) of this section shall complete its sampling pool with sampling sites that contain copper pipes with lead solder installed before 1983. If additional sites are needed to complete the sampling pool, the NTNCWS shall use representative sites throughout the distribution system. For the purpose of this subsection, a representative site is a site in which the plumbing materials used at that site would be commonly found at other sites served by the water system.

8. Any CWS or NTNCWS whose distribution system contains lead service lines shall draw 50 % of the samples it collects during each sampling period from sites that contain lead pipes, or copper pipes with lead solder, and 50 % of those samples from sites served by a lead service line. A CWS or NTNCWS that cannot identify a sufficient number of sampling sites served by a lead service line shall collect first draw samples from all of the sites identified as being served by such lines.

B. Sample collection methods.

1. All tap samples for lead and copper collected in accordance with this part, with the exception of lead service line samples collected under § 710 (C), and samples collected under subsection (B)(5) of this section, shall be first draw samples.
2. Each first-draw tap sample for lead and copper shall be one liter in volume and shall have stood motionless in the plumbing system of each sampling site for at least six hours. First-draw samples from residential housing shall be collected from the cold-water kitchen tap or bathroom sink tap. First-draw samples from a non-residential building shall be collected at an interior tap from which water is typically drawn for consumption.

Non-first-draw samples collected in lieu of first-draw samples pursuant to subsection (B)(5) of this section shall be one liter in volume and shall be collected at an interior tap from which water is typically drawn for consumption. First-draw samples may be collected by the CWS or NTNCWS owner/operator or the owner/operator may allow residents to collect first draw samples after instructing the residents of the sampling procedures specified in this subsection. To avoid problems of residents handling nitric acid, acidification of first draw samples may be done up to 14 days after the sample is collected. After acidification to resolubilize the metals, the sample must stand in the original container for the time specified in the approved EPA method before the sample can be analyzed. If a CWS or NTNCWS owner/operator allows residents to perform sampling, the owner/operator may not challenge, based on alleged errors in sample collection, the accuracy of sampling results.

3. Each service line sample shall be one liter in volume and have stood motionless in the lead service line for at least six hours. Lead service line samples shall be collected in one of the following three ways:
  - a. At the tap after flushing the volume of water between the tap and the lead service line. The volume of water shall be calculated based on the interior diameter and length of the pipe between the tap and the lead service line;
  - b. Tapping directly into the lead service line; or
  - c. If the sampling site is a building constructed as a single-family residence, allowing the water to run until there is a significant change in temperature which would be indicative of water that has been standing in the lead service line.
4. A CWS or NTNCWS owner/operator shall collect each first draw tap sample from the same sampling site from which it collected a previous sample. If, for any reason, the CWS or NTNCWS owner/operator cannot gain entry to a sampling site in order to collect a follow-up tap sample, the CWS or NTNCWS owner/operator may collect the follow-up tap sample from another sampling site in its sampling pool as long as the new site meets the same targeting criteria, and is within reasonable proximity of the original site.
5. A NTNCWS, or a CWS that meets the criteria of § 711 (B)(7), that does not have enough taps that can supply first-draw samples, as defined in § 104, may apply to the Director in writing to substitute non-first-draw samples. Such water systems must collect as many first-draw samples from appropriate taps as possible and identify sampling times and locations that would likely result in the longest standing time for the remaining sites. The Director has the discretion to waive the requirement for prior Director-approval of non-first-draw sample sites selected by the water system, either through these regulations or written notification to the water system.

- C. Number of samples. CWS or NTNCWS owner/operator shall collect at least one sample during each sampling period specified in subsection (D) of this section from the number of sites listed in the first column below ("Standard Sampling"). A CWS or NTNCWS conducting reduced sampling under subsection (D)(4) of this section shall collect at least one sample from the number of sites specified in the second column ("Reduced Sampling") below during each sampling period specified in subsection (D)(4) of this section. Such reduced sampling sites shall be representative of the

sites required for standard sampling. A public water system that has fewer than five drinking water taps, that can be used for human consumption meeting the sample site criteria of subsection (A) of this section to reach the required number of sample sites listed in subsection (C) of this section, must collect at least one sample from each tap and then must collect additional samples from those taps on different days during the sampling period to meet the required number of sites. Alternatively, the Director may allow those public water systems to collect a number of samples less than the number of sites specified in subsection (C) of this section, provided that 100 percent of all taps that can be used for human consumption are sampled. The Director must approve this reduction of the minimum number of samples in writing based on a request from the system or onsite verification by the Director. The Director may specify sampling locations when a water system is conducting reduced sampling. The table is as follows:

**TABLE 700.1 SAMPLING SIZE**

System Size (# people served)	# of Sites (Standard Sampling)	# of Sites (Reduced Sampling)
>100,000	100	50
10,001 - 100,000	60	30
3,301 - 10,000	40	20
501 - 3,300	20	10
101 - 500	10	5
≤ 100	5	5

D. SAMPLING REQUIREMENTS

1. All large CWSs or NTNCWSs shall sample during two consecutive six-month periods.
2. All small and medium-size CWSs or NTNCWSs shall sample during each six-month sampling period until:
  - a. The CWS or NTNCWS exceeds the lead or copper action level and is therefore required to implement the corrosion control treatment requirements under § 706, in which case the water system shall continue sampling in accordance with subsection (D)(3) of this section, or
  - b. The CWS or NTNCWS meets the lead or copper action levels during two consecutive six-month sampling periods, in which case the water system may reduce sampling in accordance with subsection (D)(5) of this section.
3. Sampling after installation of corrosion control and source water treatment.
  - a. Any large CWS or NTNCWS which installs optimal corrosion control treatment pursuant to § 706 (D)(4) shall sample during two consecutive six-month sampling periods by the date specified in § 706 (D)(5).
  - b. Any small or medium-size CWS or NTNCWS which installs optimal corrosion control treatment pursuant to §706(E)(5) shall sample during two consecutive six-month sampling periods by the date specified in § 706(E)(6).
  - c. Any CWS or NTNCWS which installs source water treatment pursuant to § 709 (A)(3) shall sample during two consecutive six-month sampling periods by the date specified in § 709(A)(4).
4. Sampling after the Director specifies water quality parameter values for optimal corrosion control.

After the Director specifies the value for water quality control parameters under § 705(F), the CWS or NTNCWS shall sample during each subsequent six-month sampling period, with the

first sampling period to begin on the date the Director specifies the optimal values under § 705(F).

5. Reduced sampling:

- a. A small or medium-size CWS or NTNCWS that meets the lead and copper action levels during each of two consecutive six-month sampling periods may reduce the number of samples in accordance with subsection (C) of this section, and reduce the frequency of sampling to once per year. A small or medium water system collecting fewer than five samples as specified in subsection (C) of this section, that meets the lead and copper action levels during each of two consecutive six-month sampling periods may reduce the frequency of sampling to once per year. In no case can the system reduce the number of samples required below the minimum of one sample per available tap. This sampling shall begin during the calendar year immediately following the end of the second consecutive six-month sampling period.
- b. Any water system that meets the lead action level and maintains the range of values for the water quality control parameters reflecting optimal corrosion control treatment specified by the Director under § 705(F) during each of two consecutive six-month sampling periods may reduce the frequency of sampling to once per year and reduce the number of lead and copper samples in accordance with subsection (C) of this section if it receives written approval from the Director. This sampling shall begin during the calendar year immediately following the end of the second consecutive six-month sampling period. The Director shall review sampling, treatment, and other relevant information submitted by the water system in accordance with § 712, and shall notify the system in writing when it determines the system is eligible to commence reduced sampling pursuant to this subsection. The Director shall review, and where appropriate, revise its determination when the system submits new sampling or treatment data, or when other data relevant to the number and frequency of tap sampling becomes available.
- c. A small or medium-size CWS or NTNCWS that meets the lead and copper action levels during three consecutive years of sampling may reduce the frequency of sampling for lead and copper from annually to once every three years. Any water system that meets the lead action level and maintains the range of values for the water quality control parameters reflecting optimal corrosion control treatment specified by the Director under § 705(F) during three consecutive years of sampling may reduce the frequency of sampling from annually to once every three years if it receives written approval from the Director. The Director shall review sampling, treatment, and other relevant information submitted by the CWS or NTNCWS in accordance with § 712, and shall notify the water system in writing when it determines the water system is eligible to reduce the frequency of sampling to once every three years. The Director shall review, and where appropriate, revise the determination when the water system submits new sampling or treatment data, or when other data relevant to the number and frequency of tap sampling becomes available.
- d. A CWS or NTNCWS that reduces the number and frequency of sampling shall collect these samples from representative sites included in the pool of targeted sampling sites identified in subsection (A) of this section. A CWS or NTNCWS sampling annually or less frequently shall conduct the lead and copper tap sampling during the months of June, July, August or September unless the Director has approved a different sampling period in accordance with subsection (D)(5)(d)(i) of this section.
  - i. The Director, at his/her discretion, may approve a different period for conducting the lead and copper tap sampling for water systems collecting a reduced number of samples. Such a period shall be no longer than four consecutive months and must represent a time of normal operation where the highest levels of lead are most likely to occur. For a NTNCWS that does not operate during the months of June through September, and for which the period of normal operation where the highest levels of lead are most likely to occur is not known, the Director shall designate a period that represents a time of normal operation for the water system. This sampling shall begin during the period approved or designated by the Director in the calendar year immediately following the end of the second consecutive six-month sampling period for systems initiating annual sampling and during the three-year period following the end of the third consecutive calendar year of annual sampling for systems initiating triennial sampling.

- ii. CWSs or NTNCWSs sampling annually, that have been collecting samples during the months of June through September and that receive Director approval to alter their sample collection period under subsection (D)(5)(d)(i) of this section, must collect their next round of samples during a time period that ends no later than 21 months after the previous round of sampling. CWSs or NTNCWSs sampling triennially that have been collecting samples during the months of June through September, and receive Director approval to alter the sampling collection period as per subsection (D)(5)(d)(i) of this section, must collect their next round of samples during a time period that ends no later than 45 months after the previous round of sampling. Subsequent rounds of sampling must be collected annually or triennially, as required by this section. Small CWSs or NTNCWSs with waivers, granted pursuant to subsection (G) of this section, that have been collecting samples during the months of June through September and receive Director approval to alter their sample collection period under subsection (D)(5)(d)(i) of this section must collect their next round of samples before the end of the 9-year period.
- e. Any CWS or NTNCWS that demonstrates for two consecutive 6-month sampling periods that the tap water lead level computed under § 703 (A)(3) is less than or equal to 0.005 mg/L and the tap water copper level computed under § 703(A)(3)(a) is less than or equal to 0.65 mg/L may reduce the number of samples in accordance with subsection (C) of this section and reduce the frequency of sampling to once every three calendar years.
- f. A small or medium-size CWS or NTNCWS subject to reduced sampling that exceeds the lead or copper action level shall resume sampling in accordance with subsection (D)(4) of this section and collect the number of samples specified for standard sampling under subsection (C) of this section. Such CWS or NTNCWS shall also conduct water quality parameter sampling in accordance with § 707(B), (C) or (D) (as appropriate) during the sampling period in which it exceeded that action level. Any CWS or NTNCWS may resume annual sampling for lead and copper at the tap at the reduced number of sites specified in subsection (C) of this section after it has completed two subsequent consecutive six-month rounds of sampling that meet the criteria of subsection (D)(5)(a) of this section and/or may resume triennial sampling for lead and copper at the reduced number of sites after it demonstrates through subsequent rounds of sampling that it meets the criteria of either subsection (D)(5)(c) or (D)(5)(e) of this section.
- i. Any CWS or NTNCWS subject to the reduced sampling frequency that fails to meet the lead action level during any four-month sampling period or that fails to operate at or above the minimum value or within the range of values for the water quality parameters specified by the Director under § 705(F) for more than nine days in any six-month period specified in § 707(D) shall conduct tap water sampling for lead and copper at the frequency specified in subsection (D)(4) of this section, collect the number of samples specified for standard sampling under subsection (C) of this section, and shall resume sampling for water quality parameters within the distribution system in accordance with § 707(D). This standard tap water sampling shall begin no later than the six-month period beginning January 1st of the calendar year following the lead action level exceedance or water quality parameter excursion. Such a water system may resume reduced sampling for lead and copper at the tap and for water quality parameters within the distribution system under the following conditions:
  - 1. The CWS or NTNCWS may resume annual sampling for lead and copper at the tap at the reduced number of sites specified in subsection (C) of this section after it has completed two subsequent six-month rounds of sampling that meet the criteria of subsection (D)(5)(b) of this section and the water system has received written approval from the Director that it is appropriate to resume reduced sampling on an annual frequency. This sampling shall begin during the calendar year immediately following the end of the second consecutive six-month sampling period.
  - 2. The CWS or NTNCWS may resume triennial sampling for lead and copper at the tap at the reduced number of sites after it demonstrates through subsequent rounds of sampling that it meets the criteria of either subsection (D)(5)(c) or (D)(5)(e) of this section and the water system

has received written approval from the Director that it is appropriate to resume triennial sampling.

3. The CWS or NTNCWS may reduce the number of water quality parameter tap water samples required in accordance with § 707(E) (1) and the frequency with which it collects such samples in accordance with § 707(E)(2). Such a CWS or NTNCWS may not resume triennial sampling for water quality parameters at the tap until it demonstrates, in accordance with the requirements of § 707(E)(2), that it has re-qualified for triennial sampling.

- g. Any CWS or NTNCWS subject to a reduced sampling frequency under subsection (D)(5) of this section that either adds a new source of water or changes any water treatment shall inform the Director in writing in accordance with § 712(A)(3). The Director may require the CWS or NTNCWS to resume sampling in accordance with subsection (D) (4) of this section and collect the number of samples specified for standard sampling under subsection (C) of this section or take other appropriate steps such as increased water quality parameter sampling or re-evaluation of its corrosion control treatment given the potentially different water quality considerations.

E. Additional sampling by CWSs or NTNCWSs. The results of any sampling conducted in addition to the minimum requirements of this section shall be considered by the CWS or NTNCWS and the Director in making any determinations (i.e., calculating the 90th percentile lead or copper level) under this section.

F. Invalidation of lead or copper tap water samples.

A sample invalidated under this subsection does not count toward determining lead or copper 90th percentile levels under § 703(A)(3) or toward meeting the minimum sampling requirements of subsection (C) of this section.

1. The Director may invalidate a lead or copper tap water sample at least if one of the following conditions is met.
  - a. The laboratory establishes that improper sample analysis caused erroneous results.
  - b. The Director determines that the sample was taken from a site that did not meet the site selection criteria of this section.
  - c. The sample container was damaged in transit.
  - d. There is substantial reason to believe that the sample was subject to tampering.
2. The CWS or NTNCWS must report the results of all samples to the Director and all supporting documentation for samples the water system believes should be invalidated.
3. To invalidate a sample under subsection (F)(1) of this section, the decision and the rationale for the decision must be documented in writing. The Director may not invalidate a sample solely on the grounds that a follow-up sample result is higher or lower than that of the original sample.
4. The CWS or NTNCWS must collect replacement samples for any samples invalidated under this section if, after the invalidation of one or more samples, the water system has too few samples to meet the minimum requirements of subsection (C) of this section. Any such replacement samples must be taken as soon as possible, but no later than 20 days after the date the Director invalidates the sample or by the end of the applicable sampling period, whichever occurs later. Replacement samples taken after the end of the applicable sampling period shall not also be used to meet the sampling requirements of a subsequent sampling period. The replacement samples shall be taken at the same locations as the invalidated samples or, if that is not possible, at locations other than those already used for sampling during the sampling period.

G. Sampling waivers for small CWSs or NTNCWSs.

Any small CWS or NTNCWS that meets the criteria of this subsection may apply to the Director to reduce the frequency of sampling for lead and copper under this section to once every nine years (i.e., a "full waiver") if it meets all of the materials criteria specified in subsection (G)(1) of this section and all of the sampling criteria specified in subsection (G)(2) of this section. If these regulations permit,

any small CWS or NTNCWS that meets the criteria in subsections (G)(1) and (2) of this section only for lead, or only for copper, may apply to the Director for a waiver to reduce the frequency of tap water sampling to once every nine years for that contaminant only (i.e., a "partial waiver").

1. Materials criteria.

The CWS or NTNCWS must demonstrate that its distribution system and service lines and all drinking water supply plumbing, including plumbing conveying drinking water within all residences and buildings connected to the water system, are free of lead-containing materials and/or copper-containing materials, as those terms are defined in this subsection, as follows:

a. Lead.

To qualify for a full waiver, or a waiver of the tap water sampling requirements for lead (i.e., a "lead waiver"), the water system must provide certification and supporting documentation to the Director that the water system is free of all lead-containing materials, as follows:

- i. It contains no plastic pipes which contain lead plasticizers, or plastic service lines which contain lead plasticizers; and
- ii. It is free of lead service lines, lead pipes, lead soldered pipe joints, and leaded brass or bronze alloy fittings and fixtures, unless such fittings and fixtures meet the specifications of any standard established pursuant to §2521 of the NNSDWA.

b. Copper.

To qualify for a full waiver, or a waiver of the tap water sampling requirements for copper (i.e., a "copper waiver"), the water system must provide certification and supporting documentation to the Director that the water system contains no copper pipes or copper service lines.

2. Sampling criteria for waiver issuance.

The CWS or NTNCWS must have completed at least one 6-month round of standard tap water sampling for lead and copper at sites approved by the Director and from the number of sites required by subsection (C) of this section and demonstrate that the 90th percentile levels for any and all rounds of sampling conducted since the water system became free of all lead-containing and/or copper-containing materials, as appropriate, meet the following criteria.

- a. Lead levels. To qualify for a full waiver, or a lead waiver, the CWS or NTNCWS must demonstrate that the 90th percentile lead level does not exceed 0.005 mg/L.
- b. Copper levels. To qualify for a full waiver, or a copper waiver, the CWS or NTNCWS must demonstrate that the 90th percentile copper level does not exceed 0.65 mg/L.

3. Director approval of waiver application.

The Director shall notify the CWS or NTNCWS of its waiver determination, in writing, setting forth the basis of the decision and any condition of the waiver. As a condition of the waiver, the Director may require the water system to perform specific activities (e.g., limited sampling, periodic outreach to customers to remind them to avoid installation of materials that might void the waiver) to avoid the risk of lead or copper concentration of concern in tap water. The small CWS or NTNCWS must continue sampling for lead and copper at the tap as required by subsections (D)(1) through (D)(4) of this section, as appropriate, until it receives written notification from the Director that the waiver has been approved.

4. Sampling frequency for CWSs or NTNCWSs with waivers.

- a. A CWS or NTNCWS with a full waiver must conduct tap water sampling for lead and copper in accordance with subsection (D) (5) (d) of this section at the reduced number of sampling sites identified in subsection (C) of this section at least once every nine years and provide the materials certification specified in subsection (G) (1) of this section for both lead and copper to the Director along with the sampling results.

Samples collected every nine years shall be collected no later than every ninth calendar year.

- b. A CWS or NTNCWS with a partial waiver must conduct tap water sampling for the waived contaminant in accordance with subsection (D) (5) (d) of this section at the reduced number of sampling sites specified in subsection (C) of this section at least once every nine years and provide the materials certification specified in subsection (G) (1) of this section pertaining to the waived contaminant along with the sampling results. Such a water system also must continue to monitor for the non-waived contaminant in accordance with requirements of subsections (D) (1) through (D) (5) of this section, as appropriate.
- c. Any water system with a full or partial waiver shall notify the Director in writing in accordance with § 712(A) (3) of any upcoming long-term change in treatment or addition of a new source, as described in that section. The Director must review and approve the addition of a new source or long-term change in water treatment before it is implemented by the water system. The Director has the authority to require the water system to add or modify waiver conditions (e.g., require re-certification that the water system is free of lead-containing and/or copper-containing materials, require additional round(s) of sampling), if it deems such modifications are necessary to address treatment or source water changes at the water system.
- d. If a CWS or NTNCWS with a full or partial waiver becomes aware that it is no longer free of lead-containing or copper-containing materials, as appropriate, (e.g., as a result of new construction or repairs), the water system shall notify the Director in writing no later than 60 days after becoming aware of such a change.

5. Continued eligibility.

If the CWS or NTNCWS continues to satisfy the requirements of subsection (G) (4) of this section, the waiver will be renewed automatically, unless any of the conditions listed in subsections (G) (5) (a) through (G) (5) (c) of this section occurs. A water system whose waiver has been revoked may re-apply for a waiver at such time as it again meets the appropriate materials and sampling criteria of subsections (G)(1) and (G)(2) of this section.

- a. A CWS or NTNCWS with a full waiver or a lead waiver no longer satisfies the materials criteria of subsection (G) (1) (a) of this section or has a 90th percentile lead level greater than 0.005 mg/L.
- b. A CWS or NTNCWS with a full waiver or a copper waiver no longer satisfies the materials criteria of subsection (G)(1)(b) of this section or has a 90th percentile copper level greater than 0.65 mg/L.
- c. The Director notifies the CWS or NTNCWS, in writing, that the waiver has been revoked, setting forth the basis of the decision.

6. Requirements following waiver revocation.

A CWS or NTNCWS whose full or partial waiver has been revoked by the Director is subject to the corrosion control treatment and lead and copper tap water sampling requirements, as follows:

- a. If the CWS or NTNCWS exceeds the lead and/or copper action level, the water system must implement corrosion control treatment in accordance with the deadlines specified in § 706(E), and any other applicable requirements of this part.
- b. If the CWS or NTNCWS meets both the lead and the copper action level, the water system must monitor for lead and copper at the tap no less frequently than once every three years using the reduced number of sample sites specified in subsection (C) of this section.

7. Pre-existing waivers.

Small CWS or NTNCWS waivers approved by the Director in writing prior to the promulgation of these regulations shall remain in effect under the following conditions:

- a. If the CWS or NTNCWS has demonstrated that it is both free of lead-containing and copper-containing materials, as required by subsection (G) (1) of this section and that its 90th percentile lead levels and 90th percentile copper levels meet the criteria of subsection (G) (2) of this section, the waiver remains in effect so long as the water system continues to meet the waiver eligibility criteria of subsection (G) (5) of this section. The first round of tap water sampling conducted pursuant to subsection (G)(4) of this section shall be completed no later than nine years after the last time the water system has sampled for lead and copper at the tap.
- b. If the CWS or NTNCWS has met the materials criteria of subsection (G) (1) of this section but has not met the sampling criteria of subsection (G) (2) of this section, the water system shall conduct a round of sampling for lead and copper at the tap demonstrating that it meets the criteria of subsection (G) (2) of this section no later than September 30, 2000. Thereafter, the waiver shall remain in effect as long as the water system meets the continued eligibility criteria of subsection (G) (5) of this section. The first round of tap water sampling conducted pursuant to subsection (G)(4) of this section shall be completed no later than nine years after the round of sampling conducted pursuant to subsection (G)(2) of this section.

**§ 705 DESCRIPTION OF CORROSION CONTROL TREATMENT REQUIREMENTS**

Each CWS or NTNCWS shall complete the corrosion control treatment requirements described below which are applicable to such CWS or NTNCWS under § 706.

- A. CWS or NTNCWS recommendation regarding corrosion control treatment.
  1. Based upon the results of lead and copper tap sampling and water quality parameter sampling, small and medium-size CWS or NTNCWS exceeding the lead or copper action level shall recommend installation of one or more of the corrosion control treatments listed in subsection (C) (1) of this section which the CWS or NTNCWS believes constitutes optimal corrosion control for that CWS or NTNCWS.
  2. The Director may require the CWS or NTNCWS to conduct additional water quality parameter sampling in accordance with § 707(B) to assist the Director in reviewing the CWS's or NTNCWS's recommendation.
- B. Director-decision to require studies of corrosion control treatment (applicable to small and medium-size CWSs or NTNCWSs).
  1. The Director may require any small and medium-size CWS or NTNCWS that exceeds the lead or copper action level to perform corrosion control studies under subsection (C) of this section to identify optimal corrosion control treatment for the CWS or NTNCWS.
- C. Performance of corrosion control studies.
  1. Any CWS or NTNCWS performing corrosion control studies shall evaluate the effectiveness of each of the following treatments, and, if appropriate, combinations of the following treatments to identify the optimal corrosion control treatment for that CWS or NTNCWS:
    - a. Alkalinity and pH adjustment;
    - b. Calcium hardness adjustment; and
    - c. The addition of a phosphate or silicate based corrosion inhibitor at a concentration sufficient to maintain an effective residual concentration in all test tap samples.
  2. The CWS or NTNCWS shall evaluate each of the corrosion control treatments using either pipe rig/loop tests, metal coupon tests, partial- system tests, or analyses based on documented analogous treatments with other CWSs or NTNCWSs of similar size, water chemistry and distribution system configuration.
  3. The CWS or NTNCWS shall measure the following water quality parameters in any tests conducted under this subsection before and after evaluating the corrosion control treatments listed above:
    - a. Lead;
    - b. Copper;
    - c. pH;

- d. Alkalinity;
- e. Calcium;
- f. Conductivity;
- g. Orthophosphate (when an inhibitor containing a phosphate compound is used);
- h. Silicate (when an inhibitor containing a silicate compound is used); and
- i. Water temperature.

4. The CWS or NTNCWS shall identify all chemical or physical constraints that limit or prohibit the use of a particular corrosion control treatment and document such constraints with at least one of the following:

- a. Data and documentation showing that a particular corrosion control treatment has adversely affected other water treatment processes when used by another CWS or NTNCWS with comparable water quality characteristics; and/or
- b. Data and documentation demonstrating that the CWS or NTNCWS has previously attempted to evaluate a particular corrosion control treatment and has found that the treatment is ineffective or adversely affects other water quality treatment processes.

5. The CWS or NTNCWS shall evaluate the effect of the chemicals used for corrosion control treatment on other water quality treatment processes.

6. On the basis of an analysis of the data generated during each evaluation, the CWS or NTNCWS shall recommend to the Director in writing the treatment option that the corrosion control studies indicate constitutes optimal corrosion control treatment for that CWS or NTNCWS. The CWS or NTNCWS shall provide a rationale for its recommendation along with all supporting documentation specified in subsections (C) (1) through (5) of this section.

D. Director's designation of optimal corrosion control treatment.

1. Based upon consideration of available information including, where applicable, studies performed under subsection (C) of this section and a CWS's or NTNCWS's recommended treatment alternative, the Director shall either approve the corrosion control treatment option recommended by the CWS or NTNCWS or designate alternative corrosion control treatment(s) from among those listed in subsection (C) (1) of this section. When designating optimal treatment, the Director shall consider the effects that additional corrosion control treatment will have on water quality parameters and on other water quality treatment processes.

2. The Director shall notify the CWS or NTNCWS of the decision on optimal corrosion control treatment in writing and explain the basis for this determination. If the Director requests additional information to aid the review, the CWS or NTNCWS shall provide the information.

E. Installation of optimal corrosion control. Each CWS or NTNCWS shall properly install and operate throughout its distribution system the optimal corrosion control treatment designated by the Director under subsection (D) of this section.

F. Director's review of treatment and specification of optimal water quality control parameters. The Director shall evaluate the results of all lead and copper tap samples and water quality parameter samples submitted by the CWS or NTNCWS and determine whether the CWS or NTNCWS has properly installed and operated the optimal corrosion control treatment designated by the Director in subsection (D) of this section. Upon reviewing the results of tap water and water quality parameter sampling by the CWS or NTNCWS, both before and after the CWS or NTNCWS installs optimal corrosion control treatment, the Director shall designate:

- 1. A minimum value or a range of values for pH measured at each entry point to the distribution system;
- 2. A minimum pH value, measured in all tap samples. Such value shall be equal to or greater than 7.0, unless the Director determines that meeting a pH level of 7.0 is not technologically feasible or is not necessary for the CWS or NTNCWS to optimize corrosion control;
- 3. If a corrosion inhibitor is used, a minimum concentration or a range of concentrations for the inhibitor, measured at each entry point to the distribution system and in all tap samples, that the Director determines is necessary to form a passivating film on the interior walls of the pipes of the distribution system;

4. If alkalinity is adjusted as part of optimal corrosion control treatment, a minimum concentration or a range of concentrations for alkalinity, measured at each entry point to the distribution system and in all tap samples;
5. If calcium carbonate stabilization is used as part of corrosion control, a minimum concentration or a range of concentrations for calcium, measured in all tap samples.

The values for the applicable water quality control parameters listed above shall be those that the Director determines to reflect optimal corrosion control treatment for the CWS or NTNCWS. The Director may designate values for additional water quality control parameters to reflect optimal corrosion control for the CWS or NTNCWS. The Director shall notify the CWS or NTNCWS in writing of the determinations and explain the basis for the decisions.

G. Continued Operation and Sampling. All CWSs or NTNCWSs optimizing corrosion control shall continue to operate and maintain optimal corrosion control treatment, including maintaining water quality parameters at or above minimum values or within ranges designated by the Director under subsection (F) of this section, in accordance with this subsection for all samples collected under § 707(D)-(F). Compliance with the requirements of this subsection shall be determined every six months, as specified under § 707(D). A water system is out of compliance with the requirements of this subsection for a six-month period if it has excursions for any NNEPA-specified parameter on more than nine days during the period. An excursion occurs whenever the daily value for one or more of the water quality parameters measured at a sampling location is below the minimum value or outside the range designated by the Director. Daily values are calculated as follows. The Director will have discretion to delete results of obvious sampling errors from this calculation.

1. On days when more than one measurement for the water quality parameter is collected at the sampling location, the daily value shall be the average of all results collected during the day regardless of whether they are collected through continuous sampling, grab sampling, or a combination of both. If EPA has approved an alternative formula under 40 CFR §142.16 in the state/tribe's application for a program revision submitted pursuant to 40 CFR §142.12, the state/tribe's formula shall be used to aggregate multiple measurements taken at a sampling point for the water quality parameter in lieu of the formula in this subsection.
2. On days when only one measurement for the water quality parameter is collected at the sampling location, the daily value shall be the result of that measurement.
3. On days when no measurement is collected for the water quality parameter at the sampling location, the daily value shall be the daily value calculated on the most recent day on which the water quality parameter was measured at the sample site.

H. Modification of the Director's treatment decision.

Upon the Director's initiative or in response to a request by a CWS or NTNCWS or other interested party, the Director may modify a determination of the optimal corrosion control treatment under subsection (D) of this section or optimal water quality control parameters under subsection (F) of this section.

A request for modification by a CWS or NTNCWS or other interested party shall be in writing, explain why the modification is appropriate, and provide supporting documentation.

The Director may modify a determination where the Director concludes that such change is necessary to ensure that the CWS or NTNCWS continues to optimize corrosion control treatment.

A revised determination shall be made in writing, set forth the new treatment requirements, explain the basis for the Director's decision, and provide an implementation schedule for completing the treatment modifications.

I. Treatment decisions by EPA in lieu of the Director.

Pursuant to the procedures in 40 CFR § 142.19, the EPA Regional Administrator may review treatment determinations made by the Director under subsections (D), (F), or (H) of this section and issue federal treatment determinations consistent with the requirements of those subsections where the Regional Administrator finds that:

1. The Director has failed to issue a treatment determination by the applicable deadlines contained in § 706;

2. The Director has abused his/her discretion in a substantial number of cases or in cases affecting a substantial population; or
3. The technical aspects of the Director's determination would be indefensible in an expected Federal enforcement action taken against a CWS or NTNCWS.

**§ 706 APPLICABILITY OF CORROSION CONTROL TREATMENT STEPS TO SMALL, MEDIUM-SIZE AND LARGE PUBLIC WATER SYSTEM**

A. Public water system, CWSs and NTNCWSs, shall complete the applicable corrosion control treatment requirements described in § 705 by the deadlines established in this section.

1. A large CWS or NTNCWS (serving >50,000 persons) shall complete the corrosion control treatment steps specified in subsection (D) of this section, unless it is deemed to have optimized corrosion control under subsection (B) (2) or (B) (3) of this section.
2. A small CWS or NTNCWS (serving ≤3,300 persons) and medium-size CWS or NTNCWS (serving >3,300 and ≤50,000 persons) shall complete the corrosion control treatment steps specified in subsection (E) of this section, unless it is deemed to have optimized corrosion control under subsection (B)(1), (B)(2), or (B)(3) of this section.

B. Any CWS or NTNCWS deemed to have optimized corrosion control under this section, and which has treatment in place, shall continue to operate and maintain optimal corrosion control treatment and meet any requirements that the Director determines appropriate to ensure optimal corrosion control treatment is maintained.

A CWS or NTNCWS is deemed to have optimized corrosion control and is not required to complete the applicable corrosion control treatment steps identified in this section if the CWS or NTNCWS satisfies one of the following criteria:

1. A small or medium-size CWS or NTNCWS is deemed to have optimized corrosion control if the CWS or NTNCWS meets the lead and copper action levels during each of two consecutive six-month sampling periods conducted in accordance with § 704.
2. Any CWS or NTNCWS may be deemed, by the Director, to have optimized corrosion control treatment if the CWS or NTNCWS demonstrates to the satisfaction of the Director that it has conducted activities equivalent to the corrosion control steps applicable to such CWS or NTNCWS under this section.

If the Director makes this determination, a written notice explaining the basis for the decision will be provided and shall specify the water quality control parameters representing optimal corrosion control in accordance with § 705(F).

CWS or NTNCWS deemed to have optimized corrosion control under this subsection shall operate in compliance with the NNEPA-designated optimal water quality control parameters in accordance with § 705(G) and continue to conduct lead and copper tap and water quality parameter sampling in accordance with §§704(D)(4) and 707(D), respectively.

A CWS or NTNCWS shall provide the Director with the following information in order to support a determination under this subsection:

- a. The results of all test samples collected for each of the water quality parameters in § 705(C) (3);
  - b. A report explaining the test methods used by the CWS or NTNCWS to evaluate the corrosion control treatments listed in § 705(C)(1), the results of all tests conducted, and the basis for the CWS or NTNCWS's selection of optimal corrosion control treatment;
  - c. A report explaining how corrosion control has been installed and how it is being maintained to insure minimal lead and copper concentrations at consumers' taps; and
  - d. The results of tap water samples collected in accordance with § 704 at least once every six months for one year after corrosion control has been installed.
3. Any CWS or NTNCWS is deemed to have optimized corrosion control if it submits results of tap water sampling conducted in accordance with § 704 and source water sampling conducted in accordance with § 708 that demonstrates for two consecutive six-month sampling periods

that the difference between the 90th percentile tap water lead level computed under § 703(A)(3), and the highest source water lead concentration, is less than the Practical Quantitation Level (PQL) for lead specified in Appendix C 701-C (A)(1)(b).

- a. Those CWS or NTNCWS whose highest source water lead level is below the Method Detection Limit may also be deemed to have optimized corrosion control under this subsection if the 90th percentile tap water lead level is less than or equal to the PQL for lead for two consecutive 6-month sampling periods.
- b. Any CWS or NTNCWS deemed to have optimized corrosion control in accordance with this subsection shall continue sampling for lead and copper at the tap no less frequently than once every three calendar years using the reduced number of sites specified in § 704(C) and collecting the samples at times and locations specified in § 704 (D)(5)(d).

Any such CWS or NTNCWS that has not conducted a round of sampling pursuant to § 704(D) since September 30, 1997, shall complete a round of sampling pursuant to this section no later than September 30, 2000.

- c. Any CWS or NTNCWS deemed to have optimized corrosion control pursuant to this subsection shall notify the Director in writing pursuant to § 712(A)(3) of any upcoming long-term change in treatment or addition of new source as described in that section. The Director must review and approve the addition of a new source or long-term change in water treatment before it is implemented by the water system. The Director may require any such CWS or NTNCWS to conduct additional sampling or to take other action the Director deems appropriate to ensure that such CWS or NTNCWS maintain minimal levels of corrosion in the distribution system.
- d. Upon promulgation of these regulations, a CWS or NTNCWS is not deemed to have optimized corrosion control under this subsection, and shall implement corrosion control treatment pursuant to subsection (B)(3)(e) of this section unless it meets the copper action level.
- e. Any CWS or NTNCWS triggered into corrosion control because it is no longer deemed to have optimized corrosion control under this subsection shall implement corrosion control treatment in accordance with the deadlines in subsection (E) of this section.

Any such large CWS or NTNCWS shall adhere to the schedule specified in that subsection for medium-size CWS or NTNCWS, with the time periods for completing each step being triggered by the date the water system is no longer deemed to have optimized corrosion control under this subsection.

- C. Any small or medium-size CWS or NTNCWS that is required to complete the corrosion control steps due to its exceedance of the lead or copper action level may cease completing the treatment steps whenever the CWS or NTNCWS meets both action levels during each of the two consecutive sampling periods conducted pursuant to § 704 and submits the results to the Director.

If any such CWS or NTNCWS, thereafter, exceeds the lead or copper action level during any sampling period, the CWS or NTNCWS shall recommence completion of the applicable treatment steps, beginning with the first treatment step which was not previously completed in its entirety.

The Director may require a CWS or NTNCWS to repeat treatment steps previously completed by the CWS or NTNCWS where the Director determines that this is necessary to implement properly the treatment requirements of this section.

The Director shall notify the CWS or NTNCWS in writing of such a determination and explain the basis for the decision.

The requirement for any small or medium-size CWS or NTNCWS to implement corrosion control treatment steps in accordance with subsection (E) of this section (including CWS or NTNCWSs deemed to have optimized corrosion control under subsection (B)(1) of this section) is triggered whenever any small- or medium-size CWS or NTNCWS exceeds the lead or copper action level.

- D. Treatment steps and deadlines for large CWSs or NTNCWSs. Except as provided in subsection (B)(2) and (3) of this section, large CWSs or NTNCWSs shall complete the following corrosion control treatment steps (described in the referenced portions of §§ 705, 704, and 707) by the indicated dates.

1. Step 1: The CWS or NTNCWS shall conduct initial sampling §§ 704(D) (1) and 707(B) during two consecutive six-month sampling periods by January 1, 1993.
2. Step 2: The CWS or NTNCWS shall complete corrosion control studies (§ 705(C)) by July 1, 1994.
3. Step 3: The Director shall designate optimal corrosion control treatment (§ 705(D)) by January 1, 1995.
4. Step 4: The CWS or NTNCWS shall install optimal corrosion control treatment (§ 705(E)) by January 1, 1997.
5. Step 5: The CWS or NTNCWS shall complete follow-up sampling (§§ 704(D) (3) and 707(C)) by January 1, 1998.
6. Step 6: The Director shall review installation of treatment and designate optimal water quality control parameters (§ 705(F)) by July 1, 1998.
7. Step 7: The CWS or NTNCWS shall operate in compliance with the Director-specified optimal water quality control parameters (§ 705(G)) and continue to conduct tap sampling (§§ 704(D)(4) and 707(D)).

E. Treatment Steps and deadlines for small and medium-size CWSs or NTNCWSs. Except as provided in subsection (B) of this section, small and medium-size CWSs or NTNCWSs shall complete the following corrosion control treatment steps (described in the referenced portions of §§ 705, 704, and 707) by the indicated time periods.

1. Step 1: The CWS or NTNCWS shall conduct initial tap sampling (§§704(D)(1) and 707(B)) until the CWS or NTNCWS either exceeds the lead or copper action level or becomes eligible for reduced sampling under §704 (D)(5). A system exceeding the lead or copper action level shall recommend optimal corrosion control treatment (§705(A)) within six months after the end of the sampling period during which it exceeds one the action levels.
2. Step 2: Within 12 months after the end of the sampling period during which a systems exceeds the lead or copper action level, the Director may require the system to perform corrosion control studies (§ 705(B)). If the Director does not require the CWS or NTNCWS to perform such studies, the Director shall specify optimal corrosion control treatment (§ 705(D)) within the following timeframes:
  - a. For medium-size systems, within 18 months after the end of the sampling period during which such system exceeds the lead or copper action level.
  - b. For small systems, within 24 months after the end of the sampling period during which such system exceeds the lead or copper action level.
3. Step 3: If the Director requires a CWS or NTNCWS to perform corrosion control studies under Step 2, the CWS or NTNCWS shall complete the studies (§ 705(C)) within 18 months after the Director requires that such studies be conducted.
4. Step 4: If the CWS or NTNCWS has performed corrosion control studies under Step 2, the Director shall designate optimal corrosion control treatment (§ 705(D)) within 6 months after completion of Step 3.
5. Step 5: The CWS or NTNCWS shall install optimal corrosion control treatment (§ 705(E)) within 24 months after the Director designates such treatment.
6. Step 6: The CWS or NTNCWS shall complete follow-up sampling (§§ 704(D)(3) and 707(C)) within 36 months after the Director designates optimal corrosion control treatment.
7. Step 7: The Director shall review the CWS's or NTNCWS's installation of treatment and designate optimal water quality control parameters (§ 705(F)) within 6 months after completion of Step 6.
8. Step 8: The CWS or NTNCWS shall operate in compliance with the Director-designated optimal water quality control parameters (§ 705(G)) and continue to conduct tap sampling (§§ 704 (D)(4) and 707(D)).

**§ 707 SAMPLING REQUIREMENTS FOR WATER QUALITY PARAMETERS**

All large CWSs or NTNCWSs and all small and medium-size CWSs or NTNCWSs that exceed the lead or copper action level shall sample water quality parameters in addition to lead and copper in accordance with this section. The requirements of this section are summarized in the table at the end of this section.

**A. General Requirements:**

**1. Sample collection methods.**

- a. Tap samples shall be representative of water quality throughout the distribution system taking into account the number of persons served, the different sources of water, the different treatment methods employed by the CWS or NTNCWS, and seasonal variability. Tap sampling under this section is not required to be conducted at taps targeted for lead and copper sampling under § 704(A). [Note: CWSs or NTNCWSs may find it convenient to conduct tap sampling for water quality parameters at sites used for coliform sampling under § 404.]
- b. Samples collected at the entry point(s) to the distribution CWS or NTNCWS shall be from locations representative of each source after treatment. If a CWS or NTNCWS draws water from more than one source and the sources are combined before distribution, the CWS or NTNCWS must sample at an entry point to the distribution system during periods of normal operating conditions (i.e., when water is representative of all sources being used).

**2. Number of samples.**

- a. Except as provided in subsection (C)(3) of this section, CWSs or NTNCWSs shall collect two samples for each applicable water quality parameter at each entry point to the distribution system during each sampling period specified under subsections (B) of this section from the following number of sites.

**TABLE 700.2 WATER QUALITY PARAMETER SAMPLING SITE**

System size (# of people served)	# of sites for water quality parameters
>100,000	25
10,001 to 100,000	10
3,301 to 10,000	3
501 to 3,300	2
101 to 500	1
≤100	1

- b. CWSs or NTNCWSs shall collect two samples for each applicable water quality parameter at each entry point to the distribution system during each sampling period specified in subsection (B) of this section. During each sampling period specified in subsections (C) through (E) of this section, CWSs or NTNCWSs shall collect one sample for each applicable water quality parameter at each entry point to the distribution system.

**B. Initial sampling.** All large CWSs or NTNCWSs shall measure the applicable water quality parameters as specified below at taps and at each entry point to the distribution system during each six-month sampling period specified in § 704(D)(2). All small and medium-size CWSs or NTNCWSs shall measure the applicable water quality parameters at the locations specified below during each six-month sampling period specified in §704(D)(2) during which the CWS or NTNCWS exceeds the lead or copper action level.

**1. At taps:**

- a. pH;
- b. Alkalinity;

- c. Orthophosphate, when an inhibitor containing a phosphate compound is used;
- d. Silica, when an inhibitor containing a silicate compound is used;
- e. Calcium;
- f. Conductivity; and
- g. Water temperature.

2. At each entry point to the distribution system: all of the applicable parameters listed in subsection (B)(1) of this section.

C. Sampling after installation of corrosion control. Any large CWS or NTNCWS which installs optimal corrosion control treatment pursuant to § 706(D)(4) shall measure the water quality parameters at the locations and frequencies specified below during each six-month sampling period specified in § 704(D)(3)(a). Any small or medium-size CWS or NTNCWS which installs optimal corrosion control treatment shall conduct such sampling during each six-month sampling period specified in § 704(D)(3)(b) in which the CWS or NTNCWS exceeds the lead or copper action level.

1. At taps, two samples for:

- a. pH;
- b. Alkalinity;
- c. Orthophosphate, when an inhibitor containing a phosphate compound is used;
- d. Silica, when an inhibitor containing a silicate compound is used; and
- e. Calcium, when calcium carbonate stabilization is used as part of corrosion control.

2. Except as provided in subsection (C)(3) of this section, at each entry point to the distribution system, at least one sample no less frequently than every two weeks (biweekly) for:

- a. pH;
- b. When alkalinity is adjusted as part of optimal corrosion control, a reading of the dosage rate of the chemical used to adjust alkalinity, and the alkalinity concentration; and
- c. When a corrosion inhibitor is used as part of the optimal corrosion control, a reading of the dosage rate of the inhibitor used, and the concentration of orthophosphate or silica (whichever is applicable).

3. Any ground water system can limit entry point sampling described in subsection (C)(2) of this section to those entry points that are representative of water quality and treatment conditions throughout the water system. If water from untreated ground water sources mixes with water from treated ground water sources, the water system must monitor for water quality parameters both at representative entry points receiving treatment and representative entry points receiving no treatment. Prior to the start of any sampling under this subsection, the water system shall provide to the Director written information identifying the selected entry points and documentation, including information on seasonal variability, sufficient to demonstrate that the sites are representative of water quality and treatment conditions throughout the water system.

D. Sampling after the Director specifies water quality parameter values for optimal corrosion control. After the Director specifies the values for applicable water quality control parameters reflecting optimal corrosion control treatment under §705(F), all large CWSs or NTNCWSs shall measure the applicable water quality parameters in accordance with subsection (C) of this section and determine compliance with the requirements of § 705(G) every six months with the first six-month period to begin on either January 1 or July 1, whichever comes first, after the Director specifies the optimal values under § 705(F). Any small or medium-size CWS or NTNCWS shall conduct such sampling during each six-month period specified in this subsection in which the CWS or NTNCWS exceeds the lead or copper action level. For any such small and medium-size CWSs or NTNCWSs that is subject to a reduced sampling frequency pursuant to § 704 (D)(5) at the time of the action level exceedance, the start of the applicable six-month period under this subsection shall coincide with the start of the applicable sampling period under § 704 (D)(5). Compliance with Director-designated optimal water quality parameter values shall be determined as specified under § 705(G).

E. Reduced Sampling.

1. Any CWS or NTNCWS that maintains the range of values for the water quality parameters reflecting optimal corrosion control treatment during each of two consecutive six-month sampling periods under subsection (D) of this section shall continue sampling at the entry point(s) to the distribution system as specified in subsection (C)(2) of this section. Such

CWS or NTNCWS may collect two tap samples for applicable water quality parameters from the following reduced number of sites during each six-month sampling period.

**TABLE 700.3 REDUCED SAMPLING**

System size (# of people served)	Reduced # of sites for water quality parameters
>100,000	10
10,001 to 100,000	7
3,301 to 10,000	3
501 to 3,300	2
101 to 500	1
≤100	1

2.
    - a. Any CWS or NTNCWS that maintains the range of values for the water quality parameters reflecting optimal corrosion control treatment specified by the Director under § 705(F) during three consecutive years of sampling may reduce the frequency with which it collects the number of tap samples for applicable water quality parameters specified in subsection (E) (1) of this section from every six months to annually. This sampling begins during the calendar year immediately following the end of the sampling period in which the third consecutive year of six-month sampling occurs. Any water system that maintains the range of values for the water quality parameters reflecting optimal corrosion control treatment specified by the Director under §§705 (F) during three consecutive years of annual sampling under this subsection may reduce the frequency with which it collects the number of tap samples for applicable water quality parameters specified in subsection (E) (1) of this section from annually to every three years. This sampling begins no later than the third calendar year following the end of the sampling period in which the third consecutive year of sampling occurs.
    - b. A CWS or NTNCWS may reduce the frequency with which it collects tap samples for applicable water quality parameters specified in subsection (E)(1) of this section to every three years if it demonstrates during two consecutive sampling periods that its tap water lead level at the 90th percentile is less than or equal to the PQL for lead specified in Appendix C -Lead/Copper, that its tap water copper level at the 90th percentile is less than or equal to 0.65 mg/L for copper in §703(A)(2), and that it also has maintained the range of values for the water quality parameters reflecting optimal corrosion control treatment specified by the Director under § 705(F). Sampling conducted every three years shall be done no later than every third calendar year.
  3. A CWS or NTNCWS that conducts sampling annually shall collect these samples evenly throughout the year so as to reflect seasonal variability.
  4. Any CWS or NTNCWS subject to reduced sampling frequency that fails to operate at or above the minimum value or within the range of values for the water quality parameters specified by the Director under § 705(F) for more than nine days in any six-month period specified in § 705(G) shall resume distribution system tap water sampling in accordance with the number and frequency requirements in subsection (D) of this section. Such a water system may resume annual sampling for water quality parameters at the tap at the reduced number of sites specified in subsection (E)(1) of this section after it has completed two subsequent consecutive six-month rounds of sampling that meet the criteria of that subsection and/or may resume triennial sampling for water quality parameters at the tap at the reduced number of sites after it demonstrates through subsequent rounds of sampling that it meets the criteria of either subsection (E)(2)(a) or (E)(2)(b) of this section.
- F. Additional sampling by CWSs or NTNCWSs. The results of any sampling conducted in addition to the minimum requirements of this section shall be considered by the public water system and the Director in making any determinations (i.e., determining concentrations of water quality parameters) under this section or § 705.

**TABLE 700.4 SUMMARY SAMPLING REQUIREMENTS FOR WATER QUALITY PARAMETERS<sup>1</sup>**

SAMPLING PERIOD	PARAMETERS <sup>2</sup>	LOCATION	FREQUENCY
Initial Sampling	pH, alkalinity, orthophosphate or silica <sup>3</sup> , calcium, conductivity, temperature	Taps and at entry point(s) to distribution system.	Every 6 months
After installation of Corrosion Control	pH, alkalinity, orthophosphate or silica <sup>3</sup> , calcium <sup>4</sup>	Taps	Every 6 months
	pH, alkalinity dosage rate and concentration (if alkalinity adjusted as part of corrosion control), inhibitor dosage rate and inhibitor residual <sup>5</sup> .	Entry point(s) to distribution system.	No less frequently than every two weeks.
After Director Specifies Parameter Values for Optimal Corrosion Control	pH, alkalinity, orthophosphate or silica <sup>3</sup> , calcium <sup>4</sup>	Taps	Every 6 months
	pH, alkalinity dosage rate and concentration (if alkalinity adjusted as part of corrosion control), inhibitor dosage rate and inhibitor residual <sup>5</sup> .	Entry point(s) to distribution system <sup>6</sup> .	No less frequently than every two weeks.
Reduced Sampling	pH, alkalinity, orthophosphate or silica <sup>3</sup> , calcium <sup>4</sup>	Taps	Every 6 months annually <sup>7</sup> or every 3 years <sup>8</sup> reduced number of sites.
	pH, alkalinity dosage rate and concentration (if alkalinity adjustment as part of corrosion control), inhibitor dosage rate and inhibitor residual <sup>5</sup> .	Entry point(s) to distribution system <sup>6</sup> .	No less frequently than every two weeks.

<sup>1</sup> Table is for illustrative purposes; consult the text of this section for precise regulatory requirements.  
<sup>2</sup> Small and medium-size CWS or NTNCWSs have to sample for water quality parameters only during sampling periods in which the CWS or NTNCWS exceeds the lead or copper action level.  
<sup>3</sup> Orthophosphate must be measured only when an inhibitor containing a phosphate compound is used. Silica must be measured only when an inhibitor containing a silicate compound is used.  
<sup>4</sup> Calcium must be measured only when calcium carbonate stabilization is used as part of corrosion control.  
<sup>5</sup> Inhibitor dosage rates and inhibitor residual concentrations (orthophosphate or silica) must be measured only when an inhibitor is used.  
<sup>6</sup> Ground water systems may limit sampling to representative locations throughout the water system.  
<sup>7</sup> Water systems may reduce frequency of sampling for water quality parameters at the tap from every six months to annually if they have maintained the range of values for water quality parameters reflecting optimal corrosion control during 3 consecutive years of sampling.  
<sup>8</sup> Water systems may further reduce the frequency of sampling for water quality parameters at the tap from annually to once every 3 years if they have maintained the range of values for water quality parameters reflecting optimal corrosion control during 3 consecutive years of annual sampling. Water systems may accelerate to triennial sampling for water quality parameters at the tap if they have maintained 90th percentile lead levels less than or equal to 0.005 mg/L, 90th percentile copper levels less than or equal to 0.65 mg/L, and the range of water quality parameters designated by the Director under § 705(F) as representing optimal corrosion control during two consecutive six-month sampling periods.

**§ 708 SAMPLING REQUIREMENTS FOR LEAD AND COPPER IN SOURCE WATER**

- A. Sample location, collection methods, and number of samples.
  - 1. A CWS or NTNCWS that fails to meet the lead or copper action level on the basis of tap samples collected in accordance with § 704 shall collect lead and copper source water samples in

accordance with the following requirements regarding sample location, number of samples, and collection methods:

- a. Groundwater systems shall take a minimum of one sample at every entry point to the distribution system which is representative of each well after treatment (hereafter called a sampling point). The water system shall take one sample at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.
- b. Surface water systems shall take a minimum of one sample at every entry point to the distribution system after any application of treatment or in the distribution system at a point which is representative of each source after treatment (hereafter called a sampling point). The water system shall take each sample at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.

NOTE: For the purposes of this subsection, surface water systems include water systems with a combination of surface and ground sources.

- c. If a water system draws water from more than one source and the sources are combined before distribution, the water system must sample at an entry point to the distribution system during periods of normal operating conditions (i.e., when water is representative of all sources being used).
- d. The Director may reduce the total number of samples which must be analyzed by allowing the use of compositing. Compositing of samples must be done by certified laboratory personnel. Composite samples from a maximum of five samples are allowed, provided that if the lead concentration in the composite sample is greater than or equal to 0.001 mg/L or the copper concentration is greater than or equal to 0.160 mg/L, then either:
  - i. A follow-up sample shall be taken and analyzed within 14 days at each sampling point included in the composite; or
  - ii. If duplicates of or sufficient quantities from the original samples from each sampling point used in the composite are available, the water system may use these instead of resampling.

2. Where the results of sampling indicate an exceedance of maximum permissible source water levels established under § 709 (B)(4), the Director may require that one additional sample be collected as soon as possible after the initial sample was taken (but not to exceed two weeks) at the same sampling point. If a Director-required confirmation sample is taken for lead or copper, then the results of the initial and confirmation sample shall be averaged in determining compliance with the Director-specified maximum permissible levels. Any sample value below the detection limit shall be considered to be zero. Any value above the detection limit but below the PQL shall either be considered as the measured value or be considered as one-half the PQL.

B. Sampling frequency after CWS or NTNCWS exceeds tap water action level. Any CWS or NTNCWS which exceeds the lead or copper action level at the tap shall collect one source water sample from each entry point to the distribution system no later than six months after the end of the sampling period during which the lead or copper action level was exceeded. For sampling periods that are annual or less frequent, the end of the sampling period is September 30th of the calendar year in which the sampling occurs, or if the Director has established an alternate sampling period, the last day of that period.

C. Sampling frequency after installation of source water treatment. Any CWS or NTNCWS which installs source water treatment pursuant to § 709(A)(3) shall collect an additional source water sample from each entry point to the distribution system during two consecutive six-month sampling periods by the deadline specified in §709(A)(4).

D. Sampling frequency after the Director specifies maximum permissible source water levels or determines that source water treatment is not needed.

1. A CWS or NTNCWS shall sample at the frequency specified below in cases where the Director specifies maximum permissible source water levels under §709(B)(4) or determines that the public water system is not required to install source water treatment under § 709(B)(2).

- a. A CWS or NTNCWS using only groundwater shall collect samples once during the three-year compliance period (as that term is defined in § 104) in effect when the applicable Director determination under subsection (D)(1) of this section is made. Such water system shall collect samples once during each subsequent compliance period. Triennial samples shall be collected every third calendar year.
  - b. A CWS or NTNCWS using surface water (or a combination of surface and groundwater) shall collect samples once during each calendar year, the first annual sampling period to begin on year in which the applicable Director determination is made under subsection (D)(1) of this section.
2. A CWS or NTNCWS is not required to conduct source water sampling for lead and/or copper if the water system meets the action level for the specific contaminant in tap water samples during the entire source water sampling period applicable to the water system under subsection (D)(1)(a) or (b) of this section.
- E. Reduced sampling frequency.
- 1. A CWS or NTNCWS using only ground water may reduce the sampling frequency for lead and copper in source water to once during each nine-year compliance cycle (as that term is defined in §104) provided that the samples are collected no later than every ninth calendar year and if the water system meets one of the following criteria:
    - a. The water system demonstrates that finished drinking water entering the distribution system has been maintained below the maximum permissible lead and copper concentrations specified by the Director in §709(B)(4) during at least three consecutive compliance periods under subsection (D)(1) of this section; or
    - b. The Director has determined that source water treatment is not needed and the water system demonstrates that, during at least three consecutive compliance periods in which sampling was conducted under subsection (D)(1) of this section, the concentration of lead in source water was less than or equal to 0.005 mg/L and the concentration of copper in source water was less than or equal to 0.65 mg/L.
  - 2. A CWS or NTNCWS using surface water (or a combination of surface water and ground water) may reduce the sampling frequency in subsection (D)(1) of this section to once during each nine-year compliance cycle (as that term is defined in § 104) provided that the samples are collected no later than every ninth calendar year and if the water system meets one of the following criteria:
    - a. The CWS or NTNCWS demonstrates that finished drinking water entering the distribution system has been maintained below the maximum permissible lead and copper concentrations specified by the Director in §709(B)(4) for at least three consecutive years; or
    - b. The Director has determined that source water treatment is not needed and the CWS or NTNCWS demonstrates that, during at least three consecutive years, the concentration of lead in source water was less than or equal to 0.005 mg/L and the concentration of copper in source water was less than or equal to 0.65 mg/L.
  - 3. A CWS or NTNCWS that uses a new source of water is not eligible for reduced sampling for lead and/or copper until concentrations in samples collected from the new source during three consecutive sampling periods are below the maximum permissible lead and copper concentrations specified by the Director in §709(A)(5).

**§ 709 SOURCE WATER TREATMENT REQUIREMENTS**

CWSs or NTNCWSs shall complete the applicable source water sampling and treatment requirements (described in the referenced portions of subsection (B) of this section, and in §§ 704 and 708) by the following deadlines:

- A. Deadlines for Completing Source Water Treatment Steps:
  - 1. Step 1: A CWS or NTNCWS exceeding the lead or copper action level shall complete lead or copper source water sampling (§708(B)) and make a treatment recommendation to the Director (§709(B)(1)) no later than 180 days after the end of the sampling period during which the lead or copper action level was exceeded.

2. Step 2: The Director shall make a determination regarding source water treatment (§ 709 (B)(2)) within 6 months after submission of sampling results under Step 1.
3. Step 3: If the Director requires installation of source water treatment, the CWS or NTNCWS shall install the treatment (§709 (B)(3)) within 24 months after completion of Step 2.
4. Step 4: The CWS or NTNCWS shall complete follow-up tap water sampling (§704(D)(3)) and source water sampling (§708(C)) within 36 months after completion of Step 2.
5. Step 5: The Director shall review the CWS's or NTNCWS's installation and operation of source water treatment and specify maximum permissible source water levels (§709(B)(4)) within 6 months after completion of Step 4.
6. Step 6: The public water system shall operate in compliance with the maximum permissible lead and copper source water levels (§709 (B)(4)) and continue source water sampling (§ 708 (D)).

B. Description of Source Water Treatment Requirements:

1. CWS or NTNCWS treatment recommendation. Any CWS or NTNCWS which exceeds the lead or copper action level shall recommend in writing to the Director the installation and operation of one of the source water treatments listed in subsection (B)(2) of this section. A CWS or NTNCWS may recommend that no treatment be installed based upon a demonstration that source water treatment is not necessary to minimize lead and copper levels at users' taps.
2. Director determination regarding source water treatment. The Director shall complete an evaluation of the results of all source water samples submitted by the CWS or NTNCWS to determine whether source water treatment is necessary to minimize lead or copper levels in water delivered to users' taps. If the Director determines that treatment is needed, the Director shall either require installation and operation of the source water treatment recommended by the CWS or NTNCWS (if any) or require the installation and operation of another source water treatment from among the following: ion exchange, reverse osmosis, lime softening, or coagulation/filtration.

If the Director requests additional information to aid in his/her review, the CWS or NTNCWS shall provide the information by the date specified by the Director in his/her request. The Director shall notify the system in writing of the determination and set forth the basis for his/her decision.

3. Installation of source water treatment. Each CWS or NTNCWS shall properly install and operate the source water treatment designated by the Director under subsection (B)(2) of this section.
4. Director review of source water treatment and specification of maximum permissible source water levels. The Director shall review the source water samples taken by the CWS or NTNCWS both before and after the system installs source water treatment, and determine whether the CWS or NTNCWS has properly installed and operated the source water treatment designated by the Director. Based upon this review, the Director shall designate the maximum permissible lead and copper concentrations for finished water entering the distribution system. Such levels shall reflect the contaminant removal capability of the treatment properly operated and maintained. The Director shall notify the CWS or NTNCWS in writing and explain the basis for the decision.
5. Continued operation and maintenance. Each CWS or NTNCWS shall maintain lead and copper levels below the maximum permissible concentrations designated by the Director at each sampling point sampled in accordance with § 708. The CWS or NTNCWS is out of compliance with this subsection if the level of lead or copper at any sampling point is greater than the maximum permissible concentration designated by the Director.
6. Modification of the Director treatment decisions. Upon the Director's own initiative or in response to a request by a CWS or NTNCWS or other interested party, the Director may modify the determination of the source water treatment under subsection (B)(2) of this section, or maximum permissible lead and copper concentrations for finished water entering the distribution system under subsection (B)(4) of this section. A request for modification by a CWS or NTNCWS or other interested party shall be in writing, explain why the modification is appropriate, and provide supporting documentation. The Director may modify a determination where the Director concludes that such change is necessary to ensure that

the CWS or NTNCWS continues to minimize lead and copper concentrations in source water. A revised determination shall be made in writing, set forth the new treatment requirements, explain the basis for the Director's decision, and provide an implementation schedule for completing the treatment modifications.

7. Treatment decisions by EPA in lieu of the Director. Pursuant to the procedures in 40 CFR § 142.19, the EPA Regional Administrator may review treatment determinations made by the Director under subsections (B)(2), (B)(4), or (B)(6) of this section and issue Federal treatment determinations consistent with the requirements of those subsections where the Administrator finds that:
  - a. The Director has failed to issue a treatment determination by the applicable deadlines contained in § 709(A);
  - b. The Director has abused his/her discretion in a substantial number of cases or in cases affecting a substantial population; or
  - c. The technical aspects of the Director's determination would be indefensible in an expected Federal enforcement action taken against a system.

#### § 710 LEAD SERVICE LINE REPLACEMENT REQUIREMENTS

- A. CWS or NTNCWSs that fail to meet the lead action level in tap samples taken pursuant to § 704 (D)(3), after installing corrosion control and/or source water treatment (whichever sampling occurs later), shall replace lead service lines in accordance with requirements of this section. If a CWS or NTNCWS is in violation of § 706 or § 709 for failure to install source water or corrosion control treatment, the Director may require the public water system to commence lead service line replacement under this section after the date by which the CWS or NTNCWS was required to conduct sampling under § 704 (D)(3) has passed.
- B.
  1. A CWS or NTNCWS shall replace annually at least 7 % of the initial number of lead service lines in the distribution system. The initial number of lead service lines is the number of lead lines in place at the time the replacement program begins. The CWS or NTNCWS shall identify the initial number of lead service lines in its distribution system, including an identification of the portion(s) owned by the water system, based on a materials evaluation, including the evaluation required under § 704(A) and relevant legal authorities (e.g., contracts, local ordinances) regarding the portion owned by the water system. The first year of lead service line replacement shall begin on the date the action level was exceeded in tap sampling referenced in subsection (A) of this section. The first year of lead service line replacement shall begin on the first day following the end of the sampling period in which the action level was exceeded under subsection (A) of this section. If sampling is required annually or less frequently, the end of the sampling period is September 30th of the calendar year in which the sampling occurs. If the Director has established an alternate sampling period, then the end of the sampling period will be the last day of that period.
  2. Any water system resuming a lead service line replacement program after the cessation of its lead service line replacement program as allowed by subsection (F) of this section shall update its inventory of lead service lines to include those sites that were previously determined not to require replacement through the sampling provision under subsection (C) of this section. The system will then divide the updated number of remaining lead service lines by the number of remaining years in the program to determine the number of lines that must be replaced per year (7 percent lead service line replacement is based on a 15-year replacement program, so for example, systems resuming lead service line replacement after previously conducting two years of replacement would divide the updated inventory by 13). For those systems that have completed a 15-year lead service line replacement program, the Director will determine a schedule for replacing or retesting lines that were previously tested out under the replacement program when the system re-exceeds the action level.
- C. A CWS or NTNCWS is not required to replace an individual lead service line if the lead concentration in all service line samples from that line, taken pursuant to § 704(B)(3), is less than or equal to 0.015 mg/L.
- D. A CWS or NTNCWS shall replace that portion of the lead service line that it owns. In cases where the water system does not own the entire lead service line, the water system shall notify the owner of the line, or the owner's authorized agent, that the water system will replace the portion of the service line that it owns and shall offer to replace the owner's portion of the line. A water system is not required to bear the cost of replacing the privately-owned portion of the line, nor is it required to replace the privately-owned portion where the owner chooses not to pay the cost

of replacing the privately-owned portion of the line, or where replacing the privately-owned portion would be precluded by tribal, local or common law. A water system that does not replace the entire length of the service line also shall complete the following tasks.

1. At least 45 days prior to commencing with the partial replacement of a lead service line, the water system shall provide notice to the resident(s) of all buildings served by the line explaining that they may experience a temporary increase of lead levels in their drinking water, along with guidance on measures consumers can take to minimize their exposure to lead. The Director may allow the water system to provide notice under the previous sentence less than 45 days prior to commencing partial lead service line replacement where such replacement is in conjunction with emergency repairs. In addition, the water system shall inform the resident(s) served by the line that the water system will, at the water system's expense, collect a sample from each partially-replaced lead service line that is representative of the water in the service line for analysis of lead content, as prescribed under § 704(B)(3), within 72 hours after the completion of the partial replacement of the service line. The water system shall collect the sample and report the results of the analysis to the owner and the resident(s) served by the line within three business days of receiving the results. Mailed notices post-marked within three business days of receiving the results shall be considered "on time."
  2. The water system shall provide the information required by subsection (D)(1) of this section to the residents of individual dwellings by mail or by other methods approved by the Director. In instances where multi-family dwellings are served by the line, the water system shall have the option to post the information at a conspicuous location.
- E. The Director shall require a CWS or NTNCWS to replace lead service lines on a shorter schedule than that required by this section, taking into account the number of lead service lines in the CWS or NTNCWS, where such a shorter replacement schedule is feasible. The Director shall make this determination in writing and notify the CWS or NTNCWS of the findings within 6 months after the CWS or NTNCWS is triggered into lead service line replacement based on sampling referenced in subsection (A) of this section.
- F. Any CWS or NTNCWS may cease replacing lead service lines whenever first draw samples collected pursuant to § 704(B)(2) meet the lead action level during each of two consecutive sampling periods and the CWS or NTNCWS submits the results to the Director. If the first draw tap samples collected in any such public water system thereafter exceeds the lead action level, the public water system shall recommence replacing lead service lines, pursuant to subsection (B) in this section.
- G. To demonstrate compliance with subsections (A) through (D) of this section, a CWS or NTNCWS shall report to the Director the information specified in § 712(E).

#### **§ 711 PUBLIC EDUCATION AND SUPPLEMENTAL SAMPLING REQUIREMENTS**

All water systems must deliver a consumer notice of lead tap water sampling results to persons served by the water system at sites that are tested, as specified in subsection (D) of this section. A water system that exceeds the lead action level based on tap water samples collected in accordance with § 704 shall deliver the public education materials contained in subsection (A) of this section in accordance with the requirements in subsection (B) of this section. Water systems that exceed the lead action level must sample the tap water of any customer who requests it in accordance with subsection (C) of this section.

- A. Content of written public education materials.
1. Community water systems and non-transient non-community water systems. Water systems must include the following elements in printed materials (e.g., brochures and pamphlets) in the same order as listed below. In addition, language in subsections (A)(1)(a) through (b) and (A)(1)(c) of this section must be included in the materials, exactly as written, except for the text in brackets in these subsections for which the water system must include system-specific information. Any additional information presented by a water system must be consistent with the information below and be in plain language that can be understood by the general public. Water systems must submit all written public education materials to the Director prior to delivery. The Director may require the system to obtain approval of the content of written public materials prior to delivery.
    - a. IMPORTANT INFORMATION ABOUT LEAD IN YOUR DRINKING WATER. [INSERT NAME OF WATER SYSTEM] found elevated levels of lead in drinking water in some homes/buildings. Lead can cause serious health problems, especially for pregnant women and young children. Please read this information closely to see what you can do to reduce lead in your drinking water.

b. Health effects of lead. Lead can cause serious health problems if too much enters your body from drinking water or other sources. It can cause damage to the brain and kidneys, and can interfere with the production of red blood cells that carry oxygen to all parts of your body. The greatest risk of lead exposure is to infants, young children, and pregnant women. Scientists have linked the effects of lead on the brain with lowered IQ in children. Adults with kidney problems and high blood pressure can be affected by low levels of lead more than healthy adults. Lead is stored in the bones, and it can be released later in life. During pregnancy, the child receives lead from the mother's bones, which may affect brain development.

c. Sources of lead

1. Explain what lead is.

2. Explain possible sources of lead in drinking water and how lead enters drinking water. Include information on home/building plumbing materials and service lines that may contain lead.

3. Discuss other important sources of lead exposure in addition to drinking water (e.g., paint).

d. Discuss the steps the consumer can take to reduce their exposure to lead in drinking water.

1. Encourage running the water to flush out the lead.

2. Explain concerns with using hot water from the tap and specifically caution against the use of hot water for preparing baby formula.

3. Explain that boiling water does not reduce lead levels.

4. Discuss other options consumers can take to reduce exposure to lead in drinking water, such as alternative sources or treatment of water.

5. Suggest that parents have their child's blood tested for lead.

e. Explain why there are elevated levels of lead in the system's drinking water (if known) and what the water system is doing to reduce the lead levels in homes/buildings in this area.

f. For more information call us at (928) 871-7755 or visit our website at [www.navajopublicwater.org](http://www.navajopublicwater.org). For more information on reducing lead exposure around your home/building and the health effects of lead, visit EPA's website at <http://www.epa.gov/lead> or contact your health care provider.

2. Community water systems. In addition to including the elements specified in subsection (A)(1) of this section, community water systems must:

a. Tell consumers how to get their water tested.

b. Discuss lead in plumbing components and the difference between low lead and lead free.

B. Delivery of public education materials.

1. For public water systems serving a large proportion of non-English speaking consumers, as determined by the Director, the public education materials must contain information in the appropriate language(s) regarding the importance of the notice or contain a telephone number or address where persons served may contact the water system to obtain a translated copy of the public education materials or to request assistance in the appropriate language.

2. A community water system that exceeds the lead action level on the basis of tap water samples collected in accordance with § 704, and that is not already conducting public education tasks under this section, must conduct the public education tasks under this section within 60 days after the end of the sampling period of in which the exceedance occurred.

- a. Deliver printed materials meeting the content requirements of subsection (A) of this section to all bill paying customers.
- b.
  - i. Contact customers who are most at risk by delivering education materials that meet the content requirements of subsection (A) of this section to local public health agencies even if they are not located within the water system's service area, along with an informational notice that encourages distribution to all the organization's potentially affected customers or community water system's users. The water system must contact the local public health agencies directly by phone or in person. The local public health agencies may provide a specific list of additional community based organizations serving target populations, which may include or organizations outside the service area of the water system. If such lists are provide, systems must deliver education materials that meet the content requirements of subsection (A) of this section to all organizations on the provided list.
  - ii. Contact customers who are most at risk by delivering materials that meet the content requirements of subsection (A) of this section to the following organizations listed in 1 through 6 that are located within the water system's service area, along with an informational notice that encourages distribution to all the organization's potentially affected customers or community water system's users:
    - A. Public and private schools or school boards.
    - B. Women, Infants, and Children (WIC) and Head Start programs.
    - C. Public and private hospitals and medical clinics.
    - D. Pediatricians.
    - E. Family planning clinics.
    - F. Local welfare agencies.
  - iii. Make a good faith effort to locate the following organizations within the service area and deliver materials that meet the content requirements of subsection (A) of this section to them, along with an informational notice that encourages distribution to all potentially affected customers or users. The good faith effort to contact at-risk customers may include requesting a specific contact list of these organizations from the local public health agencies, even if the agencies are not located within the water system's service area:
    - A. Licensed childcare centers
    - B. Public and private preschools
    - C. Obstetricians-Gynecologist and Midwives.
- c. No less often than quarterly, provide information on or in each water bill as long as the system exceeds the action level for lead. The message on the water bill must include the following statement exactly as written except for the text in brackets for which the water system must include system-specific information: [INSERT NAME OF WATER SYSTEM] found high levels of lead in drinking water in some homes. Lead can cause serious health problems. For more information please call [INSERT NAME OF WATER SYSTEM] [or visit (INSERT YOUR WEB SITE HERE)]. The message or delivery mechanism can be modified in consultation with the Director; specifically, the Director may allow a separate mailing of public education materials to customers if the water system cannot place the information on water bills.
- d. Post material meeting the content requirements of subsection (A) of this section on the water system's Web site if the system serves a population greater than 100,000.
- e. Submit a press release to newspaper, television and radio stations.
- f. In addition to subsection (B)(2)(a) through (e) of this section, systems must implement at least three activities from one or more categories listed below. The educational content and selection of these activities must be determined in consultation with the Director.
  - i. Public Service Announcements
  - ii. Paid advertisements

- iii. Public Area Information Displays
  - iv. E-mails to customers
  - v. Public Meetings
  - vi. Household deliveries
  - vii. Targeted Individual Customer Contact
  - viii. Direct material distribution to all multi-family homes and institutions
  - ix. Other methods approved by the Director
- g. For systems that are required to conduct sampling annually or less frequently, the end of the sampling period is September 30th of the calendar year in which the sampling occurs, or, if the Director has established an alternate sampling period, the last day of that period.
3. As long as a community water system exceeds the action level, it must repeat the activities pursuant to subsection (B)(2) of this section as described in subsections (B)(3)(a) through (d) of this section.
- a. a community water system shall repeat the tasks contained in subsection (B)(2)(a), (b), (f) of this section every 12 months.
  - b. A community water system shall repeat the tasks contained in subsection (B)(2)(c) of this section with each billing cycle.
  - c. A community water system serving a population greater than 100,000 shall post and retain material on a publicly accessible Web site pursuant to subsection (B)(2)(d) of this section.
  - d. The community water system shall repeat the task in subsection (B)(2)(e) of this section twice every 12 months on a schedule agreed upon with the Director. The Director can allow activities in subsection (B)(2) of this section to extend beyond the 60-day requirement if needed for implementation purposes on a case-by-case basis; however, this extension must be approved in writing by the Director in advance of the 60-day deadline.
4. Within 60 days after the end of the sampling period in which the exceedance occurred (unless it already is repeating public education tasks pursuant to subsection (B)(5) of this section), a non-transient non-community water system shall deliver the public education materials specified by subsection (A) of this section as follows:
- a. Post informational posters on lead in drinking water in a public place or common area in each of the buildings served by the system; and
  - b. Distribute informational pamphlets and/or brochures on lead in drinking water to each person served by the non-transient non-community water system. The Director may allow the system to utilize electronic transmission in lieu of or combined with printed materials as long as it achieves at least the same coverage.
  - c. For systems that are required to conduct sampling annually or less frequently, the end of the sampling period is September 30th of the calendar year in which the sampling occurs, or, if the Director has established an alternate sampling period, the last day of that period.
5. A non-transient non-community water system shall repeat the tasks contained in subsection (B)(4) of this section at least once during each calendar year in which the system exceeds the lead action level. The 60-day requirement of subsection (B)(4) may be extended if needed for implementation purposes; however, this extension must be approved in writing by the Director in advance of the 60-day deadline.
6. A water system may discontinue delivery of public education materials if the system has met the lead action level during the most recent six-month sampling period conducted pursuant to § 704. Such a system shall recommence public education in accordance with this section if it subsequently exceeds the lead action level during any sampling period.
7. A community water system may apply to the Director, in writing (unless the Director has waived the requirement for prior Director-approval), to use only the text specified subsection (A)(1) of this section in lieu of the text in subsections (A)(1) and (A)(2) of this section and to perform the tasks listed in subsection (B)(4) and (B)(5) of this section in lieu of the tasks in subsection (B)(2) and (B)(3) of this section if:

- a. The system is a facility, such as a prison or a hospital, where the population served is not capable of or is prevented from making improvements to plumbing or installing point of use treatment devices; and
  - b. The system provides water as part of the cost of services provided and does not separately charge for water consumption.
8. A community water system serving 3,300 or fewer people may limit certain aspects of their public education programs as follows:
- a. With respect to the requirements of subsection (B)(2)(f) of this section, a system serving 3,300 or fewer must implement at least one of the activities list in that subsection.
  - b. With respect to the requirements of subsection (B)(2)(b) of this section, a system serving 3,300 or fewer people may limit the distribution of the public education materials required under that subsection to facilities and organizations served by the system that are most likely to be visited regularly by pregnant women and children.
  - c. With respect to the requirements of subsection (B)(2)(e) of this section, the Director may waive this requirement for systems serving 3,300 or fewer persons as long as system distributes notices to every household served by the system.
- C. Supplemental sampling and notification of results. A water system that fails to meet the lead action level on the basis of tap samples collected in accordance with § 704 shall offer to sample the tap water of any customer who requests it. The system is not required to pay for collecting or analyzing the sample, nor is the system required to collect and analyze the sample itself.
- D. Notification of results
- 1. Reporting requirement. All water systems must provide a notice of the individual tap results from the lead tap water sampling carried out under the requirements of §704 to the persons served by the water system at the specific sampling site from which the sample was taken (e.g., the occupants of the residence where the tap was tested).
  - 2. Timing of notification. A water system must provide the consumer notice as soon as practical, but no later than 30 days after the system learns of the tap sampling results.
  - 3. Content. The consumer notice must include the results of lead tap water sampling for the tap that was tested, an explanation of the health effects of lead, list steps consumers can take to reduce exposure to lead in drinking water and contact information for the water utility. The notice must also provide the maximum contaminant level goal and the action level for lead and the definitions for these two terms from § 104.
  - 4. Delivery. The consumer notice must be provided to persons served at the tap that was tested, either by mail or by another method approved by the Director. For example, upon approval by the Director, a non-transient non-community water system could post the results on a bulletin board in the facility to allow users to review the information. The system must provide the notice to customers at sample taps tested, including consumers who do not receive water bills.

## § 712 REPORTING REQUIREMENTS

All CWSs or NTNCWSs shall report all of the following information to the Director in accordance with this section.

- A. Reporting requirements for tap water sampling for lead and copper and for water quality parameter sampling.
  - 1. Except as provided in subsection (A)(1) (h) of this section, a water system shall report the information specified below for all tap water samples specified in § 704 and for all water quality parameter samples specified in § 707 within the first 10 days following the end of each applicable sampling period specified in §§ 704 and 707 (i.e., every six months, annually, every 3 years, or every 9 years).

- a. The results of all tap samples for lead and copper including the location of each site and the criteria under § 704(A)(3), (4), (5), (6), and/or (7) under which the site was selected for the public water system's sampling pool;
  - b. Documentation for each tap water lead or copper sample for which the water system requests invalidation pursuant to § 704(F)(2);
  - c. [Reserved];
  - d. The 90th percentile lead and copper concentrations measured from among all lead and copper tap water samples collected during each sampling period (calculated in accordance with § 703(A)(3), unless the Director calculates the water system's 90th percentile lead and copper levels under subsection (H) of this section);
  - e. With the exception of initial tap sampling conducted pursuant to § 704 (D)(2), the public water system shall designate any site which was not sampled during previous sampling periods, and include an explanation of why sampling sites have changed;
  - f. The results of all tap samples for pH, and where applicable, alkalinity, calcium, conductivity, temperature, and orthophosphate or silica collected under § 707(B) - (E);
  - g. The results of all samples collected at the entry point(s) to the distribution system for applicable water quality parameters under § 707(B) - (E);
  - h. A water system shall report the results of all water quality parameter samples collected under § 707(C)-(F) during each six-month sampling period specified in § 707(D) within the first 10 days following the end of the sampling period unless the Director has specified a more frequent reporting requirement.
2. For a NTNCWS, or a CWS meeting the criteria of § 711(C)(7)(a) and (b), that does not have enough taps that can provide first-draw samples, the water system must either:
    - a. Provide written documentation to the Director identifying standing times and locations for enough non-first-draw samples to make up its sampling pool under § 704(B)(5) by the start of the first applicable sampling period under § 704(D) that commences after promulgation of these regulations, unless the Director has waived prior Director- approval of non-first-draw sample sites selected by the water system pursuant to § 704(B)(5); or
    - b. If the Director has waived prior approval of non-first-draw sample sites selected by the water system, identify, in writing, each site that did not meet the six-hour minimum standing time and the length of standing time for that particular substitute sample collected pursuant to § 704(B)(5) and include this information with the lead and copper tap sample results required to be submitted pursuant to subsection (A)(1)(i) of this section.
  3. At a time specified by the Director, or if no specific time is designated by the Director, then as early as possible prior to the addition of a new source or any long-term change in water treatment, a water system deemed to have optimized corrosion control under §706(B)(3), or a water system subject to a sampling waiver pursuant to § 704(G), shall submit written documentation to the Director describing the change or addition. The Director must review and approve the addition of a new source or long-term change in treatment before it is implemented by the water system. Examples of long-term treatment changes include the addition of a new treatment process or modification of an existing treatment process. Examples of modifications include switching secondary disinfectants, switching coagulants (e.g., alum to ferric chloride), and switching corrosion inhibitor products (e.g., orthophosphate to blended phosphate). Long-term changes can include dose changes to existing chemicals if the system is planning long-term changes to its finished water pH or residual inhibitor concentration. Long-term treatment changes would not include chemical dose fluctuations associated with daily raw water quality changes.
  4. Any small water system applying for a sampling waiver under § 704(G), or subject to a waiver granted pursuant to § 704(G)(3), shall provide the following information to the Director in writing by the specified deadline:

- a. By the start of the first applicable sampling period in § 704(D), any small water system applying for a sampling waiver shall provide the documentation required to demonstrate that it meets the waiver criteria of §§ 704(G)(1) and (2).
  - b. No later than nine years after the sampling previously conducted pursuant to §704(G)(2) or §704(G)(4)(a), each small water system desiring to maintain its sampling waiver shall provide the information required by §704(G)(4)(a) and (b).
  - c. No later than 60 days after it becomes aware that it is no longer free of lead-containing and/or copper-containing material, as appropriate, each small water system with a sampling waiver shall provide written notification to the Director, setting forth the circumstances resulting in the lead-containing and/or copper-containing materials being introduced into the water system and what corrective action, if any, the water system plans to remove these materials.
  - d. By October 10, 2000, any small water system with a waiver granted prior to the promulgation of these regulations and that has not previously met the requirements of § 704(G)(2) shall provide the information required by that subsection.
5. Each ground water system that limits water quality parameter sampling to a subset of entry points under § 707(C)(3) shall provide, by the commencement of such sampling, written correspondence to the Director that identifies the selected entry points and includes information sufficient to demonstrate that the sites are representative of water quality and treatment conditions throughout the water system.
- B. Source water sampling reporting requirements.
1. A public water system shall report the sampling results for all source water samples collected in accordance with § 708 within the first 10 days following the end of each source water sampling period (i.e., annually, per compliance period, per compliance cycle) specified in § 708.
  2. With the exception of the first round of source water sampling conducted pursuant to § 708(B), the water system shall specify any site which was not sampled during previous sampling periods, and include an explanation of why the sampling point has changed.
- C. Corrosion control treatment reporting requirements. By the applicable dates under § 706, public water systems shall report the following information:
1. For public water systems demonstrating that they have already optimized corrosion control, information required in § 706(B)(2) or (3).
  2. For public water systems required to optimize corrosion control, their recommendation regarding optimal corrosion control treatment under § 705(A).
  3. For public water systems required to evaluate the effectiveness of corrosion control treatments under § 705(C), the information required by that subsection.
  4. For public water systems required to install optimal corrosion control designated by the Director under § 705(D), a letter certifying that the public water system has completed installing that treatment.
- D. Source water treatment reporting requirements. By the applicable dates in § 709, public water systems shall provide the following information to the Director:
1. If required under § 709(B)(1), their recommendation regarding source water treatment;
  2. For public water systems required to install source water treatment under § 709(B)(2), a letter certifying that the public water system has completed installing the treatment designated by the Director within 24 months after the Director designated the treatment.
- E. Lead service line replacement reporting requirements. Public water systems shall report the following information to the Director to demonstrate compliance with the requirements of § 710:
1. No later than 12 months after the end of a sampling period in which a system exceeds the lead action level in sampling referred to in § 710(A), the system must submit written documentation to the Director of the material evaluation conducted as required in § 704(A), identify the initial number of lead service lines in its distribution system at the time

the system exceeds the lead action level, and provide the system's schedule for annually replacing at least 7 percent of the initial number of lead services lines in its distribution system.

2. No later than 12 months after the end of a sampling period in which a system exceeds the lead action level in sampling referred to in § 710(A), and every 12 months thereafter, the system shall demonstrate to the Director in writing that the system has either:
  - a. Replaced in the previous 12 months at least 7 % of the initial lead service lines (or a greater number of lines specified by the Director under §710 (E)) in its distribution system, or;
  - b. Conducted sampling which demonstrates that the lead concentration in all service lines samples from an individual line(s), taken pursuant to § 704(B)(3), is less than or equal to 0.015 mg/L. In such cases, the total number of lines replaced and/or which meet the criteria in § 710(C) shall equal at least 7 % of the initial number of lead lines identified under subsection (A) of this section (or the percentage specified by the Director under § 710(E)).
3. The annual letter submitted to the Director under subsection (E)(2) of this section shall contain the following information:
  - a. The number of lead service lines scheduled to be replaced during the previous year of the public water system's replacement schedule;
  - b. The number and location of each lead service line replaced during the previous year of the public water system's replacement schedule;
  - c. If measured, the water lead concentration and location of each lead service line sampled, the sampling method, and the date of sampling.
4. Any water system which collects lead service line samples following partial lead service line replacement required by §710 shall report the results to the Director within the first ten days of the month following the month in which the water system receives the laboratory results, or as specified by the Director. The Director may eliminate this requirement to report these sampling results. Water systems shall also report any additional information as specified by the Director, and in a time and manner prescribed by the Director, to verify that all partial lead service line replacement activities have taken place.

F. Public education program reporting requirements.

1. Any water system that is subject to the public education requirements in § 711 shall, within ten days after the end of each period in which the water system is required to perform public education in accordance with §711(C), send written documentation to the Director that contains:
  - a. A demonstration that the system has delivered the public education materials that meet the content requirements in § 711(A) and the delivery requirements in § 711(B); and
  - b. A list of all the newspapers, radio stations, television stations, and facilities and organizations to which the water system delivered public education materials during the period in which the water system was required to perform public education tasks.
2. Unless required by the Director, a water system that previously has submitted the information required by subsection (F)(1) (b) of this section need not resubmit the information required by subsection (F)(1) (b) of this section, as long as there have been no changes in the distribution list and the water system certifies that the public education materials were distributed to the same list submitted previously.
3. No later than 3 months following the end of the sampling period, each system must mail a sample copy of the consumer notification of tap results to the Director along with a certification that the notification has been distributed in a manner consistent with the requirements of § 711(D).

G. Reporting of additional sampling data. Any CWS or NTNCWS which collects sampling data in addition to that required by this part shall report the results to the Director within the first ten days

following the end of the applicable sampling period under §§ 704, 707, and 708 during which the samples are collected.

- H. Reporting of 90th percentile lead and copper concentrations where the Director calculates a water system's 90th percentile concentrations. A water system is not required to report the 90th percentile lead and copper concentrations measured from among all lead and copper tap water samples collected during each sampling period, as required by subsection (A)(1) (d) of this section if:
1. The Director has previously notified the water system that it will calculate the water system's 90th percentile lead and copper concentrations, based on the lead and copper tap results submitted pursuant to subsection (H)(2) (a) of this section, and has specified a date before the end of the applicable sampling period by which the water system must provide the results of lead and copper tap water samples;
  2. The water system has provided the following information to the Director by the date specified in subsection (H)(1) of this section:
    - a. The results of all tap samples for lead and copper including the location of each site and the criteria under § 704(A)(3), (4), (5), (6), and/or (7) under which the site was selected for the water system's sampling pool, pursuant to subsection (A)(1)(a) of this section; and
    - b. An identification of sampling sites utilized during the current sampling period that were not sampled during previous sampling periods, and an explanation why sampling sites have changed; and
  3. The Director has provided the results of the 90th percentile lead and copper calculations, in writing, to the water system before the end of the sampling period.

#### **§ 713 RECORDKEEPING REQUIREMENTS**

Any CWS or NTNCWS subject to the requirements of this part, Part VII-Lead and Copper, shall retain on its premises original records of all sampling data and analyses, reports, surveys, letter, evaluations, schedules, Director-determinations, and any other information required by § 706 through § 708. Each public water system shall retain the records required by this section for no fewer than 12 years.