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PART Env-Ws 381 CORROSION CONTROL TREATMENT, LEAD AND COPPER ACTION LEVELS

Env-Ws 381.01 Purpose and Applicability.

(a) The purpose of these rules is to establish requirements for corrosion control treatment, source water treatment to remove lead, lead service line replacement, and lead education.

(b) The requirements of this part shall apply to community water systems and non-transient non-community water systems and their owners hereinafter referred to as a water system or water system owner, respectively.

(c) These requirements shall be triggered, in some cases, by exceeding the lead action level, the copper action level, or both, as measured in samples collected at consumers' water taps.

Source. #5422 eff 6-22-92 (See Revision Note at chapter heading for Env-Ws 300) #6521, eff 6-4-97, ss by #7734, eff 8-2-02

Env-Ws 381.02 Definitions.

(a) "Action levels" means the concentration of lead or copper in water specified in Env-Ws 381.03 which determines, in some cases, the treatment requirement contained in this part.

(b) "Acidification" means the addition of an acid to a water sample for the purpose of increasing the laboratory holding time.

(c) "Community water system" means "community water system" as defined in RSA 485:1-a,I, namely "a public water system which serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents."

(d) "Composite sample" means a collection of individual samples combined into one representative sample analyzed to determine the average conditions during a sampling period.

(e) "Corrosion inhibitor" means a substance capable of reducing the corrosivity of the water towards metal plumbing materials, including lead and copper, by forming a protective film on the interior surface of those materials.

(f) "Department" means the department of environmental services.

(g) "Effective control inhibitor residual" means a concentration sufficient to form a protective film on the interior walls of a pipe.

(h) "Excursion" means an occurrence 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 of values specified by the department.

(i) "First draw sample" means a one liter sample of tap water, collected in accordance with Env-Ws 381.16(b), that has been standing in the plumbing at least 6 hours but no longer than 10 hours and is collected without flushing the tap.

(j) "Large water system" means a water system that services more than 50,000 persons.

(k) "Lead service line " means a service line made of lead which connects the water main to the building inlet and any pigtail, gooseneck, or other fitting that is connected to such lead service line.

(l) "Medium sized system" means a water system that serves greater than 3,300 and less than or equal to 50,000 persons.

(m) "Metal coupon test" means a method used to evaluate the effectiveness of corrosion control treatment by placing a specimen into the water to measure the corrosiveness of the water. The rate of corrosion is measured by the loss of weight of the specimen between weighing time intervals.

(n) "Non-transient non-community water system" means "non-transient non-community water system" as defined in RSA 485:1-a,XI, namely "a system which is not a community water system and which regularly serves the same 25 people, or more, over 6 months per year."

(o) "Optimal corrosion control treatment" means the corrosion control treatment that minimizes the lead and copper concentrations at users' taps while insuring that the treatment does not cause a water system violation of the national primary drinking water rules.

(p) "Partial-system test" means a method used to evaluate the effectiveness of corrosion control treatment by measuring the rate of corrosion on an isolated portion of the distribution system with treatment as compared to other portions of the distribution system without treatment.

(q) "Pipe rig/loop test" means a method used to evaluate the effectiveness of corrosion control treatment by constructing a working model of a distribution system out of the same material as the actual distribution system and measuring the corrosiveness of the water in the model.

(r) "Practical quantitation limit" (PQL) means the lowest acceptable laboratory instrument calibration standard used to analyze a water sample.

(s) "Service line sample" means a one liter sample of water, collected in accordance with Env-Ws 381.16(g) and (h) that has been standing for at least 6 hours in a service line but no longer than 10 hours.

(t) "Single family structure" means a building constructed as a single family residence that is currently used as either a residence or a place of business.

(u) "Small water system" means a water system that serves 3,300 persons or fewer.

(v) "Treatment technique requirement" means "treatment technique requirement" as defined in Env-Ws 302.01.

Source. (See Revision Note at chapter heading for Env-Ws 300) #6521, eff 6-4-97, ss by #7734, eff 8-2-02

Env-Ws 381.03 Lead and Copper Action Levels.

(a) The lead action level shall be exceeded if the concentration of lead in more than 10% of tap water samples collected during any monitoring period conducted in accordance with Env-Ws 381.15 through Env-Ws 381.21 is greater than 0.015 mg/L, that is, if the 90th percentile as computed in (c) below, is greater than 0.015 mg/L.

(b) The copper action level shall be exceeded if the concentration of copper in more than 10% of tap water samples collected during any monitoring period conducted in accordance with Env-Ws 381.15 through Env-Ws 381.21 is greater than 1.3 mg/L, that is, if the 90th percentile as computed in (c) below, is greater than 1.3 mg/L.

(c) The 90th percentile lead and copper levels shall be computed as follows:

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- (1) The results of all lead or copper samples taken during a monitoring period shall be placed in ascending order from the sample with the lowest concentration to the sample with the highest concentration;
- (2) Each sample result shall be assigned a number ascending by single integers beginning with the number "one" for the sample with the lowest contaminant level;
- (3) The number assigned to the sample with the highest contaminant level shall be equal to the total number of samples taken;
- (4) The number of samples taken during the monitoring period shall be multiplied by 0.9;
- (5) The contaminant concentration in the numbered sample yielded by the calculation in (c) shall be the 90th percentile contaminant level; and
- (6) For water systems serving fewer than 100 people that collect 5 samples per monitoring period, the 90th percentile shall be computed by taking the average of the highest and second highest concentrations.

Source. (See Revision Note at chapter heading for Env-Ws 300) #6521, eff 6-4-97, ss by #7734, eff 8-2-02

Env-Ws 381.04 Summary of Lead and Copper Requirements.

(a) A water system exceeding the lead action level, the copper action level, or both, shall implement all applicable source water treatment requirements specified by Env-Ws 381.11 and Env-Ws 381.12.

(b) A water system owner who complies with the applicable corrosion control treatment requirements specified in Env-Ws 381.05 through Env-Ws 381.10 shall be deemed in compliance with the corrosion control treatment requirement.

(c) Lead service line replacement shall be accomplished by any system exceeding the lead action level after implementation of applicable corrosion control and source water treatment, as specified in Env-Ws 381.13.

(d) Lead education shall be required by any system exceeding the lead action level, as required by Env-Ws 381.14.

(e) Tap water monitoring for lead and copper, monitoring for water quality parameters, source water monitoring for lead and copper, and analyses of the monitoring results shall be completed in accordance with Env-Ws 381.15 through Env-Ws 381.31.

(f) Reporting requirements by a system owner to the department for any information required by the treatment provisions of this part shall be in accordance with Env-Ws 381.33.

(g) Record-keeping requirements by the system owner shall be in accordance with Env-Ws 381.34 and Env-Ws 304.

(h) Failure to comply with the applicable requirements of Env-Ws 381.02 through Env-Ws 381.35, including requirements established by the department pursuant to these provisions, shall constitute a violation of these rules for lead, copper, or both.

Source. #5422 eff 6-22-92 (See Revision Note at chapter heading for Env-Ws 300) #6521, eff 6-4-97, ss by #7734, eff 8-2-02

Env-Ws 381.05 Applicability of Corrosion Control Treatment Steps.

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(a) A system requiring corrosion control because it exceeded the lead or copper action level shall complete the applicable corrosion control treatment requirement identified in Env-Ws 381.09 and Env-Ws 381.10 by the deadlines established in this part.

(b) A large system owner shall complete the corrosion control treatment steps specified in Env-Ws 381.07 unless the department determines that the system is deemed to have optimized corrosion control under Env-Ws 381.06.

(c) A small system owner and a medium size system owner shall complete the corrosion control treatment steps specified in Env-Ws 381.08 unless the department determines that the system is deemed to have optimized corrosion control under Env-Ws 381.06.

Source. #5422 eff 6-22-92 (See Revision Note at chapter heading for Env-Ws 300) #6521, eff 6-4-97, ss by #7734, eff 8-2-02

Env-Ws 381.06 Definition of Optimized Corrosion Control Treatment.

(a) A system owner is deemed to have optimized corrosion control and shall not be required to complete the applicable corrosion control steps identified in Env-Ws 381.05 and Env-Ws 381.08 if the system satisfies one of the following:

(1) If the water system is small or medium-sized, it shall be deemed to have optimized corrosion control if the system meets the lead and copper action levels during each of 2 consecutive 6-month monitoring periods conducted in accordance with Env-Ws 381.15 through Env-Ws 381.21;

(2) Any size water system shall be deemed by the department to have optimized corrosion control treatment if the system owner has conducted activities equivalent to the corrosion control steps applicable to such system in Env-Ws 381.05 through Env-Ws 381.08;

(3) The department shall provide the system owner with written notice explaining the basis for its decision and shall specify the treatment control water quality parameters representing optimal corrosion control in accordance with Env-Ws 381.10 (e) and (f); or

(4) Any size water system shall be deemed to have optimized corrosion control if the system owner submits results of tap water monitoring conducted in accordance with Env-Ws 381.15 through Env-Ws 381.21 and source water monitoring conducted in accordance with Env-Ws 381.28 through Env-Ws 381.30 that demonstrates for 2 consecutive 6-month monitoring periods that the difference between the 90th percentile tap water lead level computed under Env-Ws 381.03(c), and the highest source water lead concentration is less than the practical quantitation level (PQL) for lead defined in 40 CFR 141.89(a)(1)(ii).

(b) A system which is deemed to have optimized corrosion control pursuant to (a) above and which has treatment in place shall continue to operate and maintain optimal corrosion control treatment.

(c) A system owner shall provide the department with the following information in order to support a determination under this section:

(1) The results of all test samples collected for each of the water quality parameters in Env-Ws 381.09(f);

(2) A report explaining:

a. The test methods used by the water system to evaluate the corrosion control treatments listed in Env-Ws 381.09(d);

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- b. The results of all tests conducted;
- c. The basis for the system's selection of optimal corrosion control treatment; and
- d. How corrosion control has been installed and how it is being maintained to ensure minimal lead and copper concentrations at consumers' taps.

(3) The results of tap water samples collected in accordance with Env-Ws 381.15 through Env-Ws 381.21 at least once every 6 months for one year after corrosion control has been installed.

(d) The owner of a small or medium-size water system 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 system meets the lead and copper action levels during each of 2 consecutive monitoring periods conducted pursuant to Env-Ws 381.15 and submits the results to the department.

(e) If any water system that ceased completing the treatment steps pursuant to (d) above exceeds the lead or copper action level during any subsequent monitoring period, the system owner shall recommence completion of the applicable treatment steps, beginning with the first treatment step which was not completed. The system shall repeat treatment steps previously completed by the system if the department determines that it is necessary to properly implement the treatment requirements of Env-Ws 381.05 through Env-Ws 381.08. The department shall notify the system owner in writing of such a determination and explain the basis for its decision.

(f) The requirements for the owner of any small or medium-size system to implement corrosion control treatment steps in accordance with Env-Ws 381.08, including systems deemed to have optimized corrosion control under Env-Ws 381.06(a)(2), shall be triggered whenever that system exceeds the lead or copper action level.

(g) The owner of a water system whose highest source water lead level is below the method detection limit shall be deemed to have optimized corrosion control if the 90th percentile tap water lead level is less than or equal to the practical quantitation level for lead for 2 consecutive 6-month monitoring periods.

(h) The owner of a water system deemed to have optimized corrosion control in accordance with this section shall continue to monitor for lead and copper at the tap at least once every 3 calendar years using the reduced number of sites specified in Env-Ws 381.17(b) and collecting the samples at times and locations specified in Env-Ws 381.21.

(i) The owner of a water system deemed to have optimized corrosion control pursuant to this part shall notify the department in writing pursuant to Env-Ws 381.33(g) of any change in treatment or the addition of a new source within 60 days.

(j) A system triggered into corrosion control because it is no longer deemed to have optimized corrosion control under this section shall implement corrosion control treatment in accordance with the deadlines established in Env-Ws 381.08. A large system owner shall adhere to the schedule specified for medium-size systems, with the time periods for completing each step being triggered by the date the system is no longer deemed to have optimized corrosion control.

(k) A water system owner deemed to have optimized corrosion control under this section shall:

- (1) Operate in compliance with optimal water quality parameters pursuant to Env-Ws 381.10;
- (2) Conduct lead and copper tap sampling pursuant to Env-Ws 381.20; and

- (3) Conduct water quality parameter sampling pursuant to Env-Ws 381.20.

Source. #5422 eff 6-22-92 (See Revision Note at chapter heading for Env-Ws 300); #6521, eff 6-4-97, ss by #7734, eff 8-2-02

Env-Ws 381.07 Corrosion Control Treatment, Steps and Deadlines for Large Systems.

(a) The owner of a large system in operation since January 1, 1992, except as provided in Env-Ws 381.06(a)(2) and (a)(4), shall complete the following corrosion control treatment steps, described in Env-Ws 381.09 through Env-Ws 381.10 and Env-Ws 381.15 through Env-Ws 382.27, by the dates specified in 40 CFR 141.81(d):

- (1) The system owner shall conduct initial monitoring as described in Env-Ws 381.18 and Env-Ws 381.24 during 2 consecutive 6-month monitoring periods;
- (2) The system owner shall complete corrosion control studies as specified in Env-Ws 381.09(d) through (i);
- (3) The system owner shall install optimal corrosion control treatment as specified in Env-Ws 381.10 (d);
- (4) The system owner shall complete follow-up sampling as specified in Env-Ws 381.19 and Env-Ws 381.25; and
- (5) The system owner shall operate in compliance with the department-specified optimal water quality control parameters as described in Env-Ws 381.10(g) and continue to conduct tap sampling as described in Env-Ws 381.20 and Env-Ws 381.26.

(b) In (a) above, the department shall:

- (1) Specify optimal corrosion control treatment as specified in Env-Ws 381.10; and
- (2) Review installation of treatment and specify optimal water quality control parameters as specified in Env-Ws 381.10(e) and (f).

Source. (See Revision Note at chapter heading for Env-Ws 300) #6521, eff 6-4-97, ss by #7734, eff 8-2-02

Env-Ws 381.08 Corrosion Control Treatment Steps and Deadlines for Small and Medium Size Systems.

(a) An owner of a small or medium-size system, except as provided in Env-Ws 381.06 (a), shall complete the corrosion control treatment steps described in Env-Ws 381.09 through Env-Ws 381.10, Env-Ws 381.15 through Env-Ws 381.21, and Env-Ws 381.22 through Env-Ws 381.27 by adhering to the following:

- (1) The system owner shall conduct initial tap sampling in accordance with Env-Ws 381.18 and Env-Ws 381.24 until the system either exceeds the lead or copper action level or becomes eligible for reduced monitoring under Env-Ws 381.21; and
- (2) A system exceeding the lead or copper action level shall recommend to the department optimal corrosion control treatment under Env-Ws 381.09(b) within 6 months after it exceeds one of the action levels.

(b) Within 12 months after a system exceeds the lead or copper action level, the department shall require the system to perform corrosion control studies as specified in Env-Ws 381.09(c) if the recommendation does not provide the corrosion control necessary to meet the lead or copper action levels specified in Env-Ws 381.03.

(c) If the department does not require the system to perform the studies described in (b) above, the department shall specify optimal corrosion control treatment as specified in Env-Ws 381.10(a) through (c) within the following time frames:

- (1) For a medium-size system, within 18 months after such system exceeds the lead or copper action level; and
- (2) For a small system, within 24 months after such system exceeds the lead or copper action level.

(d) If the department requires a system owner to perform corrosion control studies under (b) above, the system shall complete the studies as described in Env-Ws 381.09(d) through (i) within 18 months after the department requires that such studies be conducted.

(e) If the system owner has performed corrosion control studies under (b) above, the department shall specify optimal corrosion control treatment as described in Env-Ws 381.10(a) through (c) within 6 months after completion of the corrosion control studies.

(f) The system owner shall install optimal corrosion control treatment as described in Env-Ws 381.10(d) within 24 months after the department specifies such treatment.

(g) The system owner shall complete follow-up sampling as described in Env-Ws 381.19 and Env-Ws 381.25 within 36 months after the department specifies optimal corrosion control treatment.

(h) The department shall review the system's installation of treatment and specify optimal water quality control parameters as described in Env-Ws 381.10(e) and (f) within 6 months after completion of (g) above.

(i) The system owner shall operate in compliance with the department specified optimal water quality control parameters as described in Env-Ws 381.10(g) and continue to conduct tap sampling as described in Env-Ws 381.20 and Env-Ws 381.26.

Source. (See Revision Note at chapter heading for Env-Ws 300) #6521, eff 6-4-97, ss by #7734, eff 8-2-02

Env-Ws 381.09 Description of Corrosion Control Treatment Requirements.

(a) A system owner shall complete the corrosion control treatment requirements described below which are applicable to such system under Env-Ws 381.05 through Env-Ws 381.08.

(b) Based upon the results of lead and copper tap monitoring and water quality parameter monitoring, the owner of a small or medium-size water systems exceeding the lead or copper action level shall recommend to the department installation of one or more of the corrosion control treatments listed in (d) below, which the system believes constitutes optimal corrosion control for that system. The system shall conduct additional water quality parameter monitoring in accordance with Env-Ws 381.24 to assist the department in reviewing the system's recommendation.

(c) The owner of a small or medium-size system exceeding the lead or copper action level shall perform corrosion control studies under (d) below, to identify optimal corrosion control treatment for the system.

(d) A system owner 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 system:

- (1) Alkalinity and pH adjustment;
- (2) Calcium hardness adjustment;



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(3) 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; and

(4) Any other treatment method identified by the department which will provide optimal corrosion control treatment.

(e) The water system owner 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 systems of similar size, water chemistry and distribution system configuration.

(f) The system owner shall measure the following water quality parameters in any tests conducted under this section before and after evaluating the corrosion control treatments listed above:

(1) Lead;

(2) Copper;

(3) pH;

(4) Alkalinity;

(5) Calcium;

(6) Conductivity;

(7) Orthophosphate, when an inhibitor containing a phosphate compound is used;

(8) Silicate, when an inhibitor containing a silicate compound is used;

(9) Water temperature; and

(10) Any other water quality parameter identified by the department needed to evaluate the corrosivity of the water or the effectiveness of the corrosion control treatment.

(g) The system owner 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:

(1) Data and documentation showing that a particular corrosion control treatment has adversely affected other water treatment processes when used by another water system with comparable water quality characteristics; and

(2) Data and documentation demonstrating that the water system 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.

(h) The system owner shall evaluate the effect of the chemicals used for corrosion control treatment on other water quality treatment processes.

(i) On the basis of an analysis of the data generated during each evaluation, the water system owner shall recommend to the department in writing, the treatment option that the corrosion control studies indicate constitutes optimal corrosion control treatment for that system. The water system owner shall provide a rationale for its recommendation along with all supporting documentation specified in (d) through (h) above.

Source. (See Revision Note at chapter heading for Env-Ws 300) #6521, eff 6-4-97, ss by #7734, eff 8-2-02

Env-Ws 381.10 Department Evaluation, Approval, and Designation of Optimal Corrosion Control Treatment.

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(a) Having considered available information including, where applicable, studies performed under Env-Ws 381.09(d) through (i) and a system's recommended treatment alternative, the department shall:

(1) Approve the corrosion control treatment option recommended by the system owner if the treatment option recommended meets the lead and copper action levels as specified in Env-Ws 381.03; or

(2) Specify alternative corrosion control treatment(s) from among those listed in Env-Ws 381.09(d) if the treatment option recommended by the system owner fails to meet the lead and copper action levels as specified in Env-Ws 381.03.

(b) When specifying alternative corrosion control treatment, the department shall consider the following:

(1) The effects that the alternative corrosion control treatment will have on the water quality parameters and other water treatment process as listed in Env-Ws 381.09(d);

(2) The size and complexity of the water system;

(3) The certified operator grade level required to operate the system as specified in Env-Ws 367; and

(4) The operational and maintenance costs.

(c) The department shall notify the system owner of its decision on optimal corrosion control treatment in writing and explain the basis for this determination. When the department requests additional information to aid its review, the water system owner shall provide the information.

(d) Each system owner shall properly install and operate throughout the distribution system the optimal corrosion control treatment specified by the department under (a) through (c) above.

(e) The department shall evaluate the results of all lead and copper tap samples and water quality parameter samples submitted by the water system owner and determine whether the system has properly installed and operated the optimal corrosion control treatment specified by the department in (a) through (c) above.

(f) Upon reviewing the results of tap water and water quality parameter monitoring by the system, both before and after the system installs optimal corrosion control treatment, the department shall specify:

(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;

(3) The pH value shall be equal to or greater than 7.0, unless the department determines that meeting a pH level of 7.0 is not technologically feasible or is not necessary for the system to optimize corrosion control;

(4) 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 department determines is necessary to form a protective film on the interior walls of the pipes of the distribution system;

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(5) 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; and

(6) 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.

(g) The values for the applicable water quality control parameters listed above shall be those that the department determines to reflect optimal corrosion control treatment for the system.

(h) The department shall specify values for additional water quality control parameters determined by the department to reflect optimal corrosion control for the system and the department shall notify the system owner in writing of these determinations and explain the basis for its decisions.

(i) The owner of a system using 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 specified by the department as specified in (f) above for all samples collected under Env-Ws 381.19 through Env-Ws 381.21.

(j) Compliance with the requirements of this section shall be determined every 6 months pursuant to Env-Ws 381.26.

(k) A water system shall be out of compliance with the requirements of this section for a 6-month period if it has excursions for any department-specified parameter on more than 9 days during the period.

(l) The daily value, when determining if a system has an excursion, shall be calculated as follows:

(1) On days when more than one measurement for a water quality parameter is collected at a sampling location, the daily value shall be the average of all results collected during that day regardless of whether they are collected through continuous monitoring, grab sampling, or both;

(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; and

(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.

(m) The department shall not use the results in (l) above if the department determines that the data collected is from an obvious sampling error or from known errors in collection, processing, or transcription.

(n) A system owner may submit to the department a written request to modify the department's determination of the optimal corrosion control treatment under (a) through (c) above or optimal water quality control parameters under (e) and (f) above.

(o) The written request for modification pursuant to (n) above shall include:

(1) The system name;

(2) The system EPA identification number;

(3) A detailed explanation as to why the modification is appropriate; and

(4) Any supporting documentation to support the rationale of the request.

(p) The department shall respond to the modification request in writing and shall approve the modification if the alternative corrosion control treatment proposed continues to optimize corrosion control treatment.

(q) In approving the request, the department shall:

- (1) Set forth any new treatment technique requirements;
- (2) Explain the basis for its decision; and
- (3) Provide an implementation schedule for completing the treatment modifications.

Source. (See Revision Note at chapter heading for Env-Ws 300) #6521, eff 6-4-97, ss by #7734, eff 8-2-02; amd by #8351, eff 5-14-05

Env-Ws 381.11 Source Water Monitoring and Treatment Requirements.

(a) A system owner shall complete the applicable source water monitoring and treatment requirements, described in Env-Ws 381.12, Env-Ws 381.15 through Env-Ws 381.21, and Env-Ws 381.28 through Env-Ws 381.30 by adhering to the sequence specified in (b) through (g), below.

(b) A system exceeding the lead or copper action level shall:

- (1) Complete lead and copper source water monitoring as required by Env-Ws 381.28; and
- (2) Make a treatment recommendation to the department as specified in Env-Ws 381.12(a) within 6 months after exceeding the lead or copper action level.

(c) The department shall make a determination regarding source water treatment as specified in Env-Ws 381.12(b) within 6 months after submission of monitoring results under (b) above.

(d) If the department requires installation of source water treatment, the system shall install the treatment as specified in Env-Ws 381.12(c) within 24 months after completion of (c) above.

(e) The system owner shall complete follow-up tap water monitoring as specified in Env-Ws 381.19 and source water monitoring as specified in Env-Ws 381.29(c) within 36 months after completion of (c) above.

(f) The department shall review the system's installation and operation of source water treatment and specify maximum permissible source water levels in accordance with Env-Ws 381.12 (f) and (g) within 6 months after completion of (e) above.

(g) The system shall operate in compliance with the department-specified maximum permissible lead and copper source water levels as specified in Env-Ws 381.12(f) and (g) and continue source water monitoring as specified in Env-Ws 381.29(b), (c) and (d).

Source. (See Revision Note at chapter heading for Env-Ws 300) #6521, eff 6-4-97, ss by #7734, eff 8-2-02

Env-Ws 381.12 Source Water Treatment Requirements, System Owner Recommendation, Department Determination, and Treatment Operation and Maintenance.

(a) The owner of a system exceeding the lead or copper action level shall recommend in writing to the department the installation and operation of one of the source water treatments listed in (c)(2) below. A system owner 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.

(b) The department shall evaluate the results of all source water samples submitted by the water system owner to determine whether source water treatment is necessary to minimize lead or copper levels in water delivered to users' taps.

(c) In approving the source water treatment the department shall:

(1) Require installation and operation of the source water treatment recommended by the system owner if the treatment option meets the lead action level and copper action level as specified in Env-Ws 381.03; or

(2) Require the installation and operation of another source water treatment from among the following if the treatment option recommended by the system owner fails to meet the lead action level, the copper action level, or both as specified in Env-Ws 381.03:

- a. Ion exchange;
- b. Reverse osmosis,
- c. Lime softening; or
- d. Coagulation/filtration.

(d) If the department requests additional information to aid in its review, the water system owner shall provide the information within 90 days of the department's request. The department shall notify the system owner in writing of its determination and set forth the basis for its decision.

(e) Each system owner shall properly install and operate the source water treatment specified by the department under (c) above.

(f) The department shall review source water sample results collected before and after the installation of source water treatment to determine whether the system owner has properly installed and operated the source water treatment specified by the department.

(g) The department shall specify 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 department shall notify the system owner in writing and explain the basis for its decision.

(h) Each water system shall maintain lead and copper levels below the maximum permissible concentrations specified by the department at each sampling point monitored in accordance with Env-Ws 381.28 through Env-Ws 381.30. The system owner shall be deemed out of compliance with this paragraph if the level of lead or copper at any sampling point is greater than the maximum permissible concentration specified by the department.

(i) A system owner may submit to the department a written request to modify its determination of the source water treatment under (b) above, or modify its determination of maximum permissible lead and copper concentrations for finished water entering the distribution system under (f) and (g) above.

(j) The written request for modification pursuant to (i) above shall include:

- (1) The system name;
- (2) The system EPA number;
- (3) The rationale as to why the modification is appropriate; and
- (4) Documentation to support the rationale for the request.

(k) The department shall respond to the modification request in writing and shall approve the modification if the alternative source water corrosion control treatment proposed minimizes lead and copper levels at users' taps.

(l) In approving the request, the department shall:

- (1) Notify the system owner in writing setting forth the new treatment requirements;
- (2) Explain the basis for the department decision; and
- (3) Provide an implementation schedule for completion of treatment modifications.

(m) The department shall modify its determination where it concludes that such change is necessary to ensure that the system continues to minimize lead and copper concentrations in source water.

Source. (See Revision Note at chapter heading for Env-Ws 300) #6521, eff 6-4-97, ss by #7734, eff 8-2-02; amd by #8351, eff 5-14-05

Env-Ws 381.13 Lead Service Line Replacement.

(a) The owner of a system failing to meet the lead action level in tap samples collected pursuant to Env-Ws 381.19, after installing corrosion control source water treatment or both, whichever sampling occurs later, shall replace lead service lines in accordance with 40 CFR 141.84.

(b) If a system is in violation of Env-Ws 381.05 through Env-Ws 381.08 or Env-Ws 381.11 through Env-Ws 381.12 for failure to install source water or corrosion control treatment, the system owner shall commence lead service line replacement under 40 CFR 141.84 after the date by which the system was required to conduct monitoring under Env-Ws 381.19 has passed.

Source. (See Revision Note at chapter heading for Env-Ws 300) #6521, eff 6-4-97, ss by #7734, eff 8-2-02; amd by #8351, eff 5-14/05

Env-Ws 381.14 Lead Education.

(a) The owner of a system exceeding the lead action level shall issue public notice pursuant to Env-Ws 351 using the appropriate language as specified in Env-Ws 355.03.

(b) The owner of a water system exceeding the lead action level based on tap water samples collected in accordance with Env-Ws 381.15 through Env-Ws 381.21 shall perform lead education by providing the lead education language materials contained in (d) or (e) below in accordance with the delivery requirements of (j) below.

(c) Any additional information presented by a system owner shall be consistent with the information below and be in plain English that can be understood by lay-persons.

(d) The educational statement for a community water system shall read as follows:

"(1) Introduction. The United States Environmental Protection Agency (EPA) and (insert name of water supplier) are concerned about lead in your drinking water. Although most homes have very low levels of lead in their drinking water, some homes in the community have lead levels above the EPA action level of 15 parts per billion (ppb), or 0.015 milligrams of lead per liter of water (mg/L). Under Federal law we are required to have a program in place to minimize lead in your drinking water by (insert date when corrosion control will be completed for your system). This program includes corrosion control treatment, source water treatment, and public education.

We are also required to replace the portion of each lead service line that we own if the line contributes lead concentrations of more than 15 ppb after we have completed the comprehensive treatment program. If you have any questions about how we are carrying out the requirements of the lead regulation please give us a call at (insert water system's phone number). This brochure

explains the simple steps you can take to protect you and your family by reducing your exposure to lead in drinking water.

(2) Health effects of lead. Lead is a common metal found throughout the environment in lead-based paint, air, soil, household dust, food, certain types of pottery porcelain and pewter, and water. Lead can pose a significant risk to your health if too much of it enters your body. Lead builds up in the body over many years and can cause damage to the brain, red blood cells and kidneys. The greatest risk is to young children and pregnant women. Amounts of lead that won't hurt adults can slow down normal mental and physical development of growing bodies. In addition, a child at play often comes into contact with sources of lead contamination - like dirt and dust - that rarely affect an adult. It is important to wash children's hands and toys often, and to try to make sure they only put food in their mouths.

(3) Lead in drinking water. (i) Lead in drinking water, although rarely the sole cause of lead poisoning, can significantly increase a person's total lead exposure, particularly the exposure of infants who drink baby formulas and concentrated juices that are mixed with water. The EPA estimates that drinking water can make up 20 percent or more of a person's total exposure to lead.

(ii) Lead is unusual among drinking water contaminants in that it seldom occurs naturally in water supplies like rivers and lakes. Lead enters drinking water primarily as a result of the corrosion, or wearing away, of materials containing lead in the water distribution system and household plumbing. These materials include lead-based solder used to join copper pipe, brass and chrome plated brass faucets, and in some cases, pipes made of lead that connect your house to the water main (service lines). In 1986, Congress banned the use of lead solder containing greater than 0.2% lead, and restricted the lead content of faucets, pipes and other plumbing materials to 8.0%.

(iii) When water stands in lead pipes or plumbing systems containing lead for several hours or more, the lead may dissolve into your drinking water. This means the first water drawn from the tap in the morning, or later in the afternoon after returning from work or school, can contain fairly high levels of lead.

(4) Steps you can take in the home to reduce exposure to lead in drinking water. (i) Despite our best efforts mentioned earlier to control water corrosivity and remove lead from the water supply, lead levels in some homes or buildings can be high. To find out whether you need to take action in your own home, have your drinking water tested to determine if it contains excessive concentrations of lead. Testing the water is essential because you cannot see, taste, or smell lead in drinking water. Some local laboratories that can provide this service are listed at the end of this booklet. For more information on having your water tested, please call (insert phone number of water system).

(ii) If a water test indicates that the drinking water drawn from a tap in your home contains lead above 15 ppb, then you should take the following precautions:

(A) Let the water run from the tap before using it for drinking or cooking any time the water in a faucet has gone unused for more than 6 hours. The longer water resides in your home's plumbing the more lead it may contain. Flushing the tap means running the cold water faucet until the water gets noticeably colder, usually about 15-30 seconds. If your house has a lead service line to the water main, you may have to flush the water for a longer time, perhaps one minute, before drinking. Although toilet flushing or showering flushes water through a portion of your home's plumbing system, you still need to flush the water in each faucet before using it for drinking or cooking. Flushing tap water is a simple and inexpensive measure you can take to protect your family's health. It usually uses less than one or two gallons of water and costs less than (insert a cost estimate based on flushing two times a day for 30 days) per month. To conserve water, fill a couple of bottles for drinking water after flushing the tap, and whenever

possible use the first flush water to wash the dishes or water the plants. If you live in a high-rise building, letting the water flow before using it may not work to lessen your risk from lead. The plumbing systems have more, and sometimes larger pipes than smaller buildings. Ask your landlord for help in locating the source of the lead and for advice on reducing the lead level.

(B) Try not to cook with, or drink water from the hot water tap. Hot water can dissolve more lead more quickly than cold water. If you need hot water, draw water from the cold tap and heat it on the stove.

(C) Remove loose lead solder and debris from the plumbing materials installed in newly constructed homes, or homes in which the plumbing has recently been replaced, by removing the faucet strainers from all taps and running the water from 3 to 5 minutes. Thereafter, periodically remove the strainers and flush out any debris that has accumulated over time.

(D) If your copper pipes are joined with lead solder that has been installed illegally since it was banned in 1986, notify the plumber who did the work and request that he or she replace the lead solder with lead-free solder. Lead solder looks dull gray, and when scratched with a key looks shiny. In addition, notify the Water-Supply Engineering Bureau of the Department of Environmental Services in Concord about the violation.

(E) Determine whether or not the service line that connects your home or apartment to the watermain is made of lead. The best way to determine if your service line is made of lead is by either hiring a licensed plumber to inspect the line or by contacting the plumbing contractor who installed the line. You can identify the plumbing contractor by checking the city's record of building permits which should be maintained in the files of the (insert name of department that issues building permits). A licensed plumber can at the same time check to see if your home's plumbing contains lead solder, lead pipes, or pipe fittings that contain lead. The public water system that delivers water to your home should also maintain records of the materials located in the distribution system. If the service line that connects your dwelling to the water main contributes more than 15 ppb to drinking water, after our comprehensive treatment program is in place, we are required to replace the portion of the line we own. If the line is only partially owned by the (insert name of the city, county, or water system that owns the line), we are required to provide the owner of the privately-owned portion of the line with information on how to replace the privately-owned portion of the service line, and offer to replace that portion of the line at the owner's expense. If we replace only the portion of the line that we own, we also are required to notify you in advance and provide you with information on the steps you can take to minimize exposure to any temporary increase in lead levels that may result from the partial replacement, to take a follow-up sample at our expense from the line within 72 hours after the partial replacement, and to mail or otherwise provide you with the results of that sample within 3 business days of receiving the results. Acceptable replacement alternatives include copper, steel, iron, and plastic pipes.

(F) It is recommended that you have an electrician check your wiring. If grounding wires from the electrical system are attached to your pipes, corrosion may be greater. Check with a licensed electrician or your local electrical code to determine if your wiring can be grounded elsewhere. Do not attempt to change the wiring yourself because improper grounding can cause electrical shock and fire hazards.

(iii) The steps described above will reduce the lead concentrations in your drinking water. However, if a water test indicates that the drinking water coming from your tap contains lead concentrations in excess of 15 ppb after flushing, or after we have completed our actions to minimize lead levels, then you may want to take the following additional measures:

(A) Purchase or lease a home treatment device. Home treatment devices are limited in that each unit treats only the water that flows from the faucet to which it is connected, and all of the devices



require periodic maintenance and replacement. Devices such as reverse osmosis systems or distillers can effectively remove lead from your drinking water. Some activated carbon filters may reduce lead levels at the tap; however all lead reduction claims should be investigated. Be sure to check the actual performance of a specific home treatment device before and after installing the unit.

(B) Purchase bottled water for drinking and cooking.

(iv) You can consult a variety of sources for additional information. Your family doctor or pediatrician can perform a blood test for lead and provide you with information about the health effects of lead. State and local government agencies that can be contacted include:

(A) (insert the name of city or county department of public utilities) at (insert phone number) can provide you with information about your community's water supply, and a list of local laboratories that have been certified by EPA for testing water quality;

(B) (insert the name of city or county department that issues building permits) at (insert phone number) can provide you with information about building permit records that should contain the names of plumbing contractors that plumbed your home; and

(C) The Health Risk Assessment unit of the NH Department of Public Health at 271-4664 or the (insert the name of the city at (insert phone number) can provide you with information about the health effects of lead and how you can have your child's blood tested.

(v) The following is a list of some department approved laboratories in your area that you can call to have your water tested for lead. (Insert names and phone numbers of at least two laboratories)".

(e) The educational statement for a non-transient, non-community water system shall either include the text specified in (d) above, or shall include the following text in all of the printed materials it distributes through its lead education program:

(1) Introduction The United States Environmental Protection Agency (EPA) and [insert name of water supplier] are concerned about lead in your drinking water. Some drinking water samples taken from this facility have lead levels above the EPA action level of 15 parts per billion (ppb), or 0.015 milligrams of lead per liter of water (mg/L). Under Federal law we are required to have a program in place to minimize lead in your drinking water by [insert date when corrosion control will be completed for your system]. This program includes corrosion control treatment, source water treatment, and public education. We are also required to replace the portion of each lead service line that we own if the line contributes lead concentrations of more than 15 ppb after we have completed the comprehensive treatment program. If you have any questions about how we are carrying out the requirements of the lead regulation please give us a call at (insert water system's phone number). This brochure explains the simple steps you can take to protect yourself by reducing your exposure to lead in drinking water.

(2) Health effects of lead. Lead is found throughout the environment in lead-based paint, air, soil, household dust, food, certain types of pottery porcelain and pewter, and water. Lead can pose a significant risk to your health if too much of it enters your body. Lead builds up in the body over many years and can cause damage to the brain, red blood cells and kidneys. The greatest risk is to young children and pregnant women. Amounts of lead that won't hurt adults can slow down normal mental and physical development of growing bodies. In addition, a child at play often comes into contact with sources of lead contamination – like dirt and dust – that rarely affect an adult. It is important to wash children's hands and toys often, and to try to make sure they only put food in their mouths.

(3) Lead in drinking water. Lead in drinking water, although rarely the sole cause of lead poisoning, can significantly increase a person's total lead exposure, particularly the exposure of

infants who drink baby formulas and concentrated juices that are mixed with water. The EPA estimates that drinking water can make up 20% or more of a person's total exposure to lead.

Lead is unusual among drinking water contaminants in that it seldom occurs naturally in water supplies like rivers and lakes. Lead enters drinking water primarily as a result of the corrosion, or wearing away, of materials containing lead in the water distribution system and household plumbing. These materials include lead-based solder used to join copper pipe, brass and chrome-plated brass faucets, and in some cases, pipes made of lead that connect houses and buildings to water mains (service lines). In 1986, Congress banned the use of lead solder containing greater than 0.2% lead, and restricted the lead content of faucets, pipes and other plumbing materials to 8.0%.

When water stands in lead pipes or plumbing systems containing lead for several hours or more, the lead may dissolve into your drinking water. This means the first water drawn from the tap in the morning, or later in the afternoon if the water has not been used all day, can contain fairly high levels of lead.

(4) Steps you can take to reduce exposure to lead in drinking water.

(A) Let the water run from the tap before using it for drinking or cooking any time the water in a faucet has gone unused for more than 6 hours. The longer water resides in plumbing the more lead it may contain. Flushing the tap means running the cold water faucet for about 15-30 seconds. Although toilet flushing or showering flushes water through a portion of the plumbing system, you still need to flush the water in each faucet before using it for drinking or cooking. Flushing tap water is a simple and inexpensive measure you can take to protect your health. It usually uses less than one gallon of water.

(B) Do not cook with, or drink water from the hot water tap. Hot water can dissolve more lead more quickly than cold water. If you need hot water, draw water from the cold tap and then heat it.

(C) The steps described above will reduce the lead concentrations in your drinking water. However, if you are still concerned, you may wish to use bottled water for drinking and cooking.

(D) You can consult a variety of sources for additional information. Your family doctor or pediatrician can perform a blood test for lead and provide you with information about the health effects of lead. State and local government agencies that can be contacted include:

(1) [insert the name or title of facility official if appropriate] at [insert phone number] can provide you with information about your facility's water supply; and

(2) The Health Risk Assessment Unit of the NH Department of Public Health at 271-4664 or the [insert the name of the city or county health department] at [insert phone number] can provide you with information about the health effects of lead."

(f) A system owner in (d) or (e) above, may submit in writing to the department a request to delete information pertaining to lead services lines specified in (d)(4)(E) above.

(g) The request shall:

(1) Identify the water system name;

(2) Identify the water system EPA identification number; and

(3) Include documentation to support the rationale for the request.

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(h) The department shall respond to the request in writing and shall approve the request if it finds that the water system does not contain any lead service lines.

(i) The owner of a community water system shall include the following information in all public service announcements submitted under its lead education program to television and radio stations for broadcasting:

"(1) Why should everyone want to know the facts about lead and drinking water? Because unhealthy amounts of lead can enter drinking water through the plumbing in your home. That's why I urge you to do what I did. I had my water tested for (insert free or cost per sample). You can contact the (insert the name of the city or water system) for information on testing and on simple ways to reduce your exposure to lead in drinking water.

(2) To have your water tested for lead, or to get more information about this public health concern, please call (insert the phone number of the city or water system)".

(j) Delivery of a lead education program shall be as follows:

(1) In communities where greater than 20% of the population speaks a language other than English, lead education materials shall be communicated in English and in the language which is the second-most used;

(2) The owner of a community water system that exceeds the lead action level on the basis of tap water samples collected in accordance with Env-Ws 381.15 through Env-Ws 381.21, and is not already repeating lead education tasks pursuant to (j)(3), (j)(10) and (j)(11) below, shall, within 60 days:

a. Insert notices in each customer's water utility bill containing the information in (d) above, along with the following alert on the water bill itself in large print:

"SOME HOMES IN THIS COMMUNITY HAVE ELEVATED LEAD LEVELS IN THEIR DRINKING WATER. LEAD CAN POSE A SIGNIFICANT RISK TO YOUR HEALTH. PLEASE READ THE ENCLOSED NOTICE FOR FURTHER INFORMATION.";

b. Submit the information in (d) above, to editorial departments to at least one daily and weekly newspaper circulated throughout the community;

c. Deliver at least one pamphlet, brochures, or both that contain the lead education materials in (d) above to the following:

1. The principal of each public schools and chairperson of each local school board;
2. The health officer of the municipal health department;
3. The administrator of each women, infants, and children and head start program(↔) whenever available;
4. The administrator of each public and private hospital and clinic;
5. Pediatricians;
6. The administrator of each family planning clinics; and
7. The municipal welfare officer;

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- d. Submit the public service announcement in paragraph (i) of this section to a combination of at least 5 of the radio and television stations with the largest audiences that broadcast to the community served by the water system;
- (3) A community water system owner shall repeat the tasks contained in (j)(2)a., b., and c. above, every 12 months, and the tasks contained in paragraph (j)(2)d. above, every 6 months for as long as the system exceeds the lead action level;
- (4) The owner of a community water system having a billing cycle that does not include a billing within 60 days of exceeding the action level, or that cannot insert information in the water utility bill without making major changes to its billing system, may use a separate mailing to deliver the information in (d) above, as long as the information is delivered to each customer within 60 days of exceeding the action level;
- (5) The water system owner in (4) above, shall include with each mailing the language as specified in (j)(2)a.;
- (6) Within 60 days after it exceeds the lead action level, unless it is already repeating lead education tasks pursuant to (j)(7) below, a non-transient non-community water system owner shall deliver the lead education materials identified in (e) above, by:
- a. Posting informational posters on lead in drinking water in a public place or common area in each of the buildings owned by the water system owner; and
  - b. Distributing informational pamphlets or brochures on lead in drinking water to each person served by the non-transient, non-community water system; or
  - c. E-mail in lieu of or combined with printed materials as long as at least the same coverage is achieved;
- (7) A non-transient, non-community water system owner shall repeat the tasks contained in (6) above at least once during each calendar year in which the system exceeds the lead action level;
- (8) A water system owner may discontinue delivery of lead education materials if the system has met the lead action level during the most recent 6-month monitoring period conducted pursuant to Env-Ws 381.15 through Env-Ws 381.21; and
- (9) A system owner in (8) above shall recommence lead education in accordance with this section if it subsequently exceeds the lead action level during any monitoring period;
- (k) A community water system owner may submit to the department a written request to use the text specified in (e) above, in lieu of the text in (d) above, and perform the requirements listed in (j)(6) and (j)(7) above, in lieu of the tasks in (j)(2) above, if:
- (1) The system is a facility, such as a prison, hospital or nursing home, where the population served is not capable of or is prevented from making improvements to plumbing or installing point of use treatment devices; and
  - (2) The system provides water as part of the cost of services provided and does not separately charge for water consumption.
- (l) The written request shall include:
- (1) The system name;
  - (2) The system EPA identification number; and
  - (3) The rationale as to why the request to perform the alternate requirements is appropriate.

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(m) The department shall respond to the request in above in writing and shall approve the request if the system meets the criteria in (k) above.

(n) The owner of a community water system serving 3,300 or fewer people may omit the requirement of (j)(2)d. above, provided it distributes notices containing the information in (d) above, to every household served by the system.

(o) A water system owner may limit its lead education program as follows, provided it distributes notices containing the information in (d) above, to every household served by the system:

(1) A community or non-community water system serving 500 or fewer people may omit the public notification requirement in (j)(2)b. above; and

(2) May limit the distribution of lead education materials required under (j)(2)c. above, to facilities and organizations served by the system that are most likely to be visited regularly by children and pregnant women.

(p) A community or non-transient non-community system serving 501 to 3,300 people may submit a written request to the department to:

(1) Omit the requirements of (j)(2)b. above; and

(2) Limit the distribution of the lead education materials required (j)(2)c. above, to facilities and organizations served by the system that are most likely to be visited regularly by children and pregnant women.

(q) The request shall:

(1) Identify the water system name;

(2) Identify the water system EPA number; and

(3) The rationale as to why the request is appropriate.

(r) The department shall respond to the request in (q) above in writing and shall approve the request if it finds that the alternatives proposed adequately provides notice to the population served.

(s) The owner of a community water system serving 3,300 or fewer people that delivers lead education in accordance with (j)(11) and (j)(12) above shall repeat the required lead education tasks at least once during each calendar year in which the system exceeds the lead action level.

(t) The owner of a water system failing to meet the lead action level on the basis of tap samples collected in accordance with Env-Ws 381.15 through Env-Ws 381.21 shall offer to sample and analyze the tap water of any customer who requests it. The system owner shall not be required to pay for collecting or analyzing the sample.

Source. (See Revision Note at chapter heading for Env-Ws 300) #6521, eff 6-4-97, ss by #7734, eff 8-2-02; amd by #8351, eff 5-14-05

Env-Ws 381.15 Location of Lead and Copper Sampling Sites.

(a) By the applicable date for commencement of monitoring specified in paragraph Env-Ws 381.18(a) and (b), each water system owner 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 to ensure that the water system can collect the number of lead and copper tap samples required in Env-Ws 381.17. Each site from which first draw samples are collected shall be selected from this pool of targeted

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

(b) A water system owner shall use the information on lead, copper, and galvanized steel that it is required to collect under 40 CFR 141.42(d) when conducting a materials evaluation.

(c) When an evaluation of the information collected pursuant to 40 CFR 141.42(d) is insufficient to locate the requisite number of lead and copper sampling sites that meet the targeting criteria in (a), the water system owner shall review the sources of information listed below in order to identify a sufficient number of sampling sites.

(d) A water system owner, in the course of conducting routine system operations, including, but not limited to performing maintenance activities or checking service line materials, shall collect the following where applicable:

(1) 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;

(2) 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

(3) All existing water quality information, which includes the results of all prior analyses of the system or individual structures connected to the system, indicating locations that may be particularly susceptible to high lead or copper concentrations.

(e) The sampling sites selected for a community water system's sampling pool, known as tier 1 sampling sites, shall consist of single family structures that:

(1) Contain copper pipes with lead solder installed after 1982;

(2) Contain lead pipes;

(3) Are served by a lead service line; or

(4) Contain any combination of (1), (2), and (3) above.

(f) When multiple-family residences comprise at least 20% of the structures served by a water system, the system owner may include multiple family residences in (e) above, in its sampling pool.

(g) The owner of a community water system with insufficient tier 1 sampling sites shall complete its sampling pool with sites consisting of buildings, including multiple-family residences known as tier 2 sampling sites that:

(1) Contain copper pipes with lead solder installed after 1982;

(2) Contain lead pipes;

(3) Are served by a lead service line; or

(4) Contain any combination of (1), (2), and (3) above.

(h) The owner of a community water system with insufficient tier 1 and tier 2 sampling sites shall complete its sampling pool with sites consisting of single family structures that contain copper pipes with lead solder installed before 1983, known as tier 3 sampling sites.

(i) The owner of a community water system 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 paragraph, 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.

(j) The sampling sites selected for a non-transient non-community water system, known as tier 1 sampling sites shall consist of buildings that:

- (1) Contain copper pipes with lead solder installed after 1982;
- (2) Contain lead pipes;
- (3) Are served by a lead service line; or
- (4) Contain any combination of (1), (2), and (3) above.

(k) The owner of a non-transient non-community water system with insufficient tier 1 sites that meet the targeting criteria in (j) above shall complete its sampling pool with sampling sites that contain copper pipes with lead solder installed before 1983.

(l) If additional sites in (k) above, are needed to complete the sampling pool, the non-transient non-community water system owner shall use representative sites throughout the distribution system. For the purpose of this paragraph, 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.

(m) The owner of a water system whose distribution system contains lead service lines shall draw 50% of the samples collected during each monitoring period from sites that contain lead pipes, or copper pipes with lead solder, and 50% of the samples from sites served by a lead service line.

(n) A water system owner in (m) above, 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.

Source. (See Revision Note at chapter heading for Env-Ws 300) #6521, eff 6-4-97, ss by #7734, eff 8-2-02

Env-Ws 381.16 Lead and Copper Sample Collection Methods.

(a) Each tap sample for lead and copper collected in accordance with this part, with the exception of lead service line samples collected under Env-Ws 381.13, and samples collected in accordance with (g) below, shall be first-draw samples.

(b) Each first-draw tap sample for lead and copper shall be one liter in volume and have stood motionless in the plumbing system of each sampling site for at least 6 hours but no longer than 10 hours, in accordance with the following:

- (1) First-draw samples from residential housing shall be collected from the cold-water kitchen tap or bathroom sink tap; and
- (2) First-draw samples from a non-residential building shall be collected from an interior tap from which water is typically drawn for consumption.

(c) First-draw samples may be collected by the system owner or the system may allow residents to collect first-draw samples after instructing the residents of the sampling procedures specified in this section

(d) If a system owner allows residents to collect water samples:

- (1) Acidification to first-draw samples may be performed up to 14 days after the sample is collected to avoid resident(s) handling nitric acid; and

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- (2) The system shall not challenge, based on alleged errors in sample collection, the accuracy of sample results.
- (e) After acidification to re-dissolve the metals, the sample shall remain in the original container for the time specified in the approved EPA method before the sample is analyzed.
- (f) Non-first draw samples collected in lieu of first-draw samples pursuant to Env-Ws 381.17 shall be one liter in volume and collected at an interior tap from which water is typically drawn for consumption.
- (g) Each service line sample shall be one liter in volume and have stood motionless in the lead service line for at least 6 hours but no longer than 10 hours.
- (h) Lead service line samples shall be collected using one of the following 3 methods:
  - (1) At the tap after flushing the volume of water between the tap and the lead service line with the volume of water calculated based on the interior diameter and length of the pipe between the tap and the lead service line;
  - (2) By tapping directly into the lead service line; or
  - (3) If the sampling site is a building constructed as a single-family residence, by allowing the water to run until there is a change in temperature which would be indicative of water that has been standing in the lead service line.
- (i) A system owner shall collect each first-draw tap sample from the same sampling site from which it collected a previous sample. If, for any reason, the system owner cannot gain entry to a sampling site in order to collect a follow-up tap sample, the system owner 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.

Source. (See Revision Note at chapter heading for Env-Ws 300) #6521, eff 6-4-97, ss by #7734, eff 8-2-02; amd by #8351, eff 5-14-05

Env-Ws 381.17 Number of Lead and Copper Samples.

- (a) A system owner shall collect at least one sample during each monitoring period as specified in Env-Ws 381.18 from the number of sites listed in the "standard monitoring" column in Table 381-1.
- (b) A system owner conducting reduced monitoring during each monitoring period under Env-Ws 381.21 shall collect one sample from the number of sites specified in the "reduced monitoring" column of Table 381-1:

Table 381-1  
Number of Required Sampling Site

<u>System Size (Number of People Served)</u>	<u>Number of sites (Standard Monitoring)</u>	<u>Number of sites (Reduced Monitoring)</u>
>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
less than or equal to	5	5



(c) The samples collected pursuant to (b) above, shall be representative of the sites required for standard monitoring.

(d) The owner of a non-transient non-community or a community water system that does not have enough taps that can supply first-draw samples, may submit a written request to the department to substitute non-first-draw samples.

(e) The written request shall:

- (1) Identify the water system name;
- (2) Identify the water system EPA identification number;
- (3) Explain why there is an insufficient number of first-draw samples; and
- (4) Identify the number and the location of the non-first draw samples the system intends to collect.

(f) The department shall respond to the written request in writing and shall approve the request if it finds that the alternatives proposed are representative of first-draw sampling sites.

(g) The system owner in (d) above, shall 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.

Source. (See Revision Note at chapter heading for Env-Ws 300) #6521, eff 6-4-97, ss by #7734, eff 8-2-02

Env-Ws 381.18 Lead and Copper Monitoring.

(a) A large system owner shall monitor during 2 consecutive 6 month periods.

(b) A small or medium-size system owner shall monitor during each 6-month monitoring period until:

- (1) The system exceeds the lead or copper action level and is therefore required to implement the corrosion control treatment requirements under Env-Ws 381.05 through Env-Ws 381.08, in which case the system shall continue monitoring in accordance with Env-Ws 381.19; or
- (2) The system meets the lead or copper action levels during 2 consecutive 6-month monitoring periods, in which case the system may reduce monitoring in accordance with Env-Ws 381.21(a) through (h).

(c) For a public water system in operation since January 1, 1992, the first 6-month monitoring period for any size water system shall begin on the dates specified in 40 CFR 141.86 (d)(1).

Source. (See Revision Note at chapter heading for Env-Ws 300) #6521, eff 6-4-97, ss by #7734, eff 8-2-02

Env-Ws 381.19 Lead and Copper After Installation of Corrosion Control and Source Water Treatment.

(a) A large system in operation since January 1, 1992, which installs optimal corrosion control treatment pursuant to Env-Ws 381.07 shall monitor during 2 consecutive 6-month monitoring periods by the date specified in 40 CFR 141.81(d)(5).

(b) A small or medium-size system in operation since January 1, 1992, which installs optimal corrosion control treatment pursuant to Env-Ws 381.08 shall monitor during 2 consecutive 6-month monitoring periods by the date specified in 40 CFR 141.81(e)(6).

(c) A system owner installing source treatment pursuant to Env-Ws 381.11(d) shall collect an additional source water sample from each entry point to the distribution system during 2 consecutive 6-month monitoring periods by the deadline specified Env-Ws 381.11(e).

Source. (See Revision Note at chapter heading for Env-Ws 300) #6521, eff 6-4-97, ss by #7734, eff 8-2-02

Env-Ws 381.20 Monitoring Water Quality Parameters for Optimal Corrosion Control Treatment. After the department specifies the range of values for water quality control parameters under Env-Ws 381.10 (e) and (f), the system owner shall monitor during each subsequent 6-month monitoring period, with the first monitoring period to begin on the date the department specifies the range of optimal values under Env-Ws 381.10(e) and (f).

Source. (See Revision Note at chapter heading for Env-Ws 300) #6521, eff 6-4-97, ss by #7734, eff 8-2-02

Env-Ws 381.21 Reduced and Additional Lead and Copper Monitoring.

(a) The owner of a small or medium-size water system meeting the lead and copper action levels during each of 2 consecutive 6-month monitoring periods may reduce the number of samples in accordance with Env-Ws 381.17(b), and reduce the frequency of sampling to once per year.

(b) A water system owner maintaining the range of values for the water quality parameters reflecting optimal corrosion control treatment specified by the department under Env-Ws 381.10 (e) and (f) during each of 2 consecutive 6-month monitoring periods, may reduce the frequency of monitoring to once per year and reduce the number of lead and copper samples in accordance with Env-Ws 381.17(b) if the water system receives written approval from the department.

(c) The department, in making its determination in (b) above, shall review the following:

- (1) Water quality parameter results;
- (2) Type of treatment used; and
- (3) Any other information submitted to the department pursuant to Env-Ws 381.33.

(d) If the department determines that the system's sampling results for the treatment installed is at or above the minimum value or within the range of values for the water quality parameters specified Env-Ws 381.10, the department shall notify the system owner in writing that the system is eligible for reduced monitoring.

(e) The department shall review and revise its determination when the system owner submits new monitoring or treatment data, or when other data relevant to the number and frequency of tap sampling becomes available.

(f) The owner of a small or medium-size water system meeting the lead and copper action levels during 3 consecutive years of monitoring may reduce the frequency of monitoring for lead and copper from annually to once every 3 years.

(g) A water system owner maintaining the range of values for the water quality control parameters reflecting optimal corrosion control treatment specified by the department under Env-Ws

381.10 (e) and (f) during 3 consecutive years of monitoring may reduce the frequency of monitoring from annually to once every 3 years if they receive written approval from the department.

(h) The department, in making its determination in (g) above, shall review the following:

- (1) Water quality parameter results;
- (2) Type of treatment used; and
- (3) Any other information submitted to the department pursuant to Env-Ws 381.33.

(i) If the department determines that the system's sampling results for the treatment installed is at or above the minimum value or within the range of values for the water quality parameters specified Env-Ws 381.10, the department shall notify the system owner in writing that the system is eligible for reduced monitoring. The department shall review and revise its determination when the system owner submits new monitoring or treatment data, or when other data relevant to the number and frequency of tap sampling becomes available.

(j) A water system owner reducing the number of samples and frequency of sampling shall collect these samples from representative sites included in the pool of targeted sampling sites identified in Env-Ws 381.15. A water systems sampling annually or less frequently shall conduct the lead and copper tap sampling during the months of June, July, August or September unless the department has approved a different sampling period in accordance with (k) through (m), below.

(k) The department shall approve a different period for conducting lead and copper tap sampling for a system owner collecting a reduced number of samples.

(l) The period in (k) above, shall be no longer than 4 consecutive months and shall represent a time of normal operation where the highest levels of lead are most likely to occur.

(m) For a non-transient non-community water system 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 department shall designate a period that represents a time of normal operation for the system.

(n) A system owner monitoring annually who has been collecting samples during the months of June through September and who receives department approval to alter the sample collection period under (k) through (m) above, shall collect the next round of samples during a time period that ends no later than 21 months after the previous round of sampling.

(o) A system owner monitoring triennially who has been collecting samples during the months of June through September and who receives department approval to alter the sampling collection period under (k) above, shall collect the 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 shall be collected annually or triennially, as required by this part.

(p) An owner of any size water system that demonstrates for 2 consecutive 6-month monitoring periods that the tap water lead level calculated pursuant to Env-Ws 381.03 is less than or equal to 0.005 mg/L and the tap water copper level calculated pursuant to Env-Ws 381.03 is less than or equal to 0.65 mg/L may reduce the number of samples in accordance with Env-Ws 381.17 and reduce the frequency of sampling to once every 3 calendar years.

(q) The owner of a small or medium-size water system subject to reduced monitoring that exceeds the lead or copper action level shall resume sampling in accordance Env-Ws 381.20 and shall collect the number of samples specified for standard monitoring under Env-Ws 381.17. Such system owner shall also conduct water quality parameter monitoring in accordance with Env-Ws 381.22 during the monitoring period in which it exceeds the action level.

(r) A water system owner in (q) above may:

(1) Resume annual monitoring for lead and copper at the tap at the reduced number of sites specified in Env-Ws 381.17 after having completed 2 subsequent consecutive 6-month rounds of monitoring that meet the criteria of (a) above; or

(2) Resume triennial monitoring for lead and copper at the reduced number of sites, upon receipt of written approval from the department, which shall be granted after the water system demonstrates through subsequent rounds of monitoring that:

a. The water system meets the requirements of Env-Ws 381.21(f); or

b. The water system meets the requirements of Env-Ws 381.21(g).

(s) The results of any monitoring conducted in addition to the minimum requirements of Env-Ws 381.15 through Env-Ws 381.21 shall be considered by the system owner and the department in calculating the 90th percentile lead or copper level.

(t) The owner of a water system monitoring at a reduced frequency that fails to operate at or above the minimum value or within the range of values for the water quality parameters as specified under Env-Ws 381.10 for more than 9 days in any 6-month period as specified in Env-Ws 381.26 shall:

(1) Conduct tap water sampling for lead and copper at the frequency specified in Env-Ws 381.20; and

(2) Collect the number of samples specified for standard monitoring in accordance with Env-Ws 381.17.

(u) A water system owner in (t) above may resume annual monitoring for lead and copper at the tap and for water quality parameters within the distribution system at the reduced number of sites as specified in Env-Ws 381.17 after the system:

(1) Completes 2 subsequent 6-month rounds of monitoring that meet the criteria of (b) and (c) above; and

(2) Submits a written request to the department to resume reduced monitoring on an annual frequency.

(v) A system owner may resume triennial monitoring for lead and copper at the tap at a reduced number of sites after the system:

(1) Demonstrates through subsequent rounds of monitoring that it meets the criteria of (d) through (f) or (i) above; and

(2) Submits a written request to the department to resume triennial monitoring.

(w) The written request to reduce monitoring in (u) and (v) above shall:

- (1) Identify the system name;
- (2) Identify the system identification number; and
- (3) Explain the rationale for the request.

(x) The department shall respond to the request in writing and shall approve the request if it finds that the system has met the monitoring criteria specified in (u)(1) or (v)(1) above.

(y) A water system owner may reduce the number of water quality parameter tap water samples required in Env-Ws 381.27(a) and (b) and the frequency with which it collects such samples in accordance with Env-Ws 381.27(c) and (d). Such a system shall not resume triennial monitoring for water quality parameters at the tap until it demonstrates, in accordance with Env-Ws 381.27(c) and (d) that it has re-qualified for triennial monitoring.

(z) The owner of a water system subject to a reduced monitoring frequency under Env-Ws 381.21 that either adds a new source of water or changes any water treatment shall notify the department in writing within 60 days. The department shall require the system to resume sampling in accordance with Env-Ws 381.20 and collect the number of samples specified for standard monitoring under Env-Ws 381.17(a) or take other appropriate steps such as increased water quality parameter monitoring or re-evaluation of its corrosion control treatment given the potentially different water quality considerations if the system fails to meet the lead or copper action levels specified in Env-Ws 381.03.

Source. #5422 eff 6-22-92; amd by #5873, eff 7-26-94; ss by #6521, eff 6-4-97 (See Revision Note at chapter heading for Env-Ws 300) ss by #7734, eff 8-2-02; amd by #8351, eff 5-14-05

Env-Ws 381.22 Sample Collection Methods for Monitoring Water Quality Parameters.

(a) The owner of a small, medium, or large public water system exceeding the lead or copper action level shall monitor water quality parameters in addition to lead and copper in accordance Env-Ws 381.22 through Env-Ws 381.27.

(b) 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 system, and seasonal variability. Tap sampling as specified by Env-Ws 381.22 through Env-Ws 381.27 shall not be required to be conducted at taps targeted for lead and copper sampling under Env-Ws 381.15.

(c) A system owner may conduct tap sampling for water quality parameters at sites used for coliform sampling under Env-Ws 325.01.

(d) Samples collected at the entry point(s) to the distribution system shall be from locations representative of each source after treatment. If a system draws water from more than one source and the sources are combined before distribution, the system owner shall sample at an entry point to the distribution system during periods of normal operating conditions, that is, when water is representative of all sources being used.

Source. #5422 eff 6-22-92 (See Revision Note at chapter heading for Env-Ws 300) #6521, eff 6-4-97, ss by #7734, eff 8-2-02

Env-Ws 381.23 Number of Water Quality Parameter Samples.

(a) A system owner shall collect 2 tap samples for applicable water quality parameters during each monitoring period specified under Env-Ws 381.24 through Env-Ws 381.27 pursuant to Table 381-2 below:

Table 381-2  
Number of Sites for Water Quality Parameters

<u>Number of People Served</u>	<u>Number of Sites For Water Quality Parameters</u>
>100,000	25
10,001 - 100,000	10
3,301 - 10,000	3
501 - 3,300	2
101 - 500	1
less than or equal to 100	1

(b) Except as provided in (c) below, a system owner shall collect 2 samples for each applicable water quality parameter at each entry point to the distribution system during each monitoring period specified in Env-Ws 381.24. During each monitoring period specified in Env-Ws 381.25 through Env-Ws 381.27, a system owner shall collect one sample for each applicable water quality control parameter at each entry point to the distribution system.

(c) The owner of a system which obtains its water supply from ground water may limit entry point sampling described in (b) above to those entry points that are representative of water quality and treatment conditions throughout the system.

(d) If water from untreated ground water sources mixes with water from treated ground water sources, the system owner shall monitor for water quality parameters both at representative entry points receiving treatment and representative entry points receiving no treatment.

(e) Prior to the start of any monitoring under (c) above, the system owner shall provide to the department 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 system.

Source. (See Revision Note at chapter heading for Env-Ws 300) #6521, eff 6-4-97, ss by #7734, eff 8-2-02

Env-Ws 381.24 Initial Monitoring of Water Quality Parameters.

(a) A large water system owner shall measure the applicable water quality parameters as specified in (c) below, at taps and at each entry point to the distribution system during each 6-month monitoring period specified in Env-Ws 381.18.

(b) A small or medium-sized system owner shall measure the applicable water quality control parameters at the locations specified in (c) below during each 6-month monitoring period specified in Env-Ws 381.18 during which the system exceeds the lead or copper action level.

(c) Sample parameter(s) collected at the taps shall include:

- (1) pH;
- (2) Alkalinity;
- (3) Orthophosphate, when an inhibitor containing a phosphate compound is used;
- (4) Silica, when an inhibitor containing a silicate compound is used;
- (5) Calcium;
- (6) Conductivity;
- (7) Water temperature; and
- (8) Any other water quality parameter as determined by the department pursuant to Env-Ws 381.09(f).

(d) At each entry point to the distribution system, sampling parameters shall include all of the parameters listed in (c) above.

Source. (See Revision Note at chapter heading for Env-Ws 300) #6521, eff 6-4-97, ss by #7734, eff 8-2-02

Env-Ws 381.25 Monitoring Water Quality Parameters After Installation of Corrosion Control.

(a) A large system owner installing optimal corrosion control treatment pursuant to Env-Ws 381.07 shall measure water quality control parameters at the locations and frequencies specified in (c) and (d) below during each 6-month monitoring period specified in Env-Ws 381.19(a).

(b) A small or medium-size system owner installing optimal corrosion control treatment shall monitor the water quality control parameters at the locations and frequencies specified in (c) and (d) below, during each 6-month monitoring period specified in Env-Ws 381.19(b) in which the system exceeds the lead or copper action level.

(c) Sample parameters taken at taps shall include 2 samples for:

- (1) pH;
- (2) Alkalinity;
- (3) Orthophosphate, when an inhibitor containing a phosphate compound is used;
- (4) Silica, when an inhibitor containing a silicate compound is used;
- (5) Calcium, when calcium carbonate stabilization is used as part of corrosion control; and
- (6) Any other water quality parameter as determined by the department.

(d) Except as provided in Env-Ws 381.23(c), (d), and (e), at each entry point to the distribution system, one sample shall be collected at least every 2 weeks for pH.

(e) When alkalinity is adjusted as part of optimal corrosion control, the system owner shall document the dosage rate of the chemical used to adjust alkalinity and the alkalinity concentration.

(f) When a corrosion inhibitor is used as part of optimal corrosion control, the system owner shall document the dosage rate of the inhibitor used and the concentration of orthophosphate, silica, or other corrosion inhibitor.

Source. (See Revision Note at chapter heading for Env-Ws 300) #6521, eff 6-4-97, ss by #7734, eff 8-2-02; amd by #8351, eff 5-14-05

Env-Ws 381.26 Monitoring Water Quality Parameters After the Department Specifies Parameter Values for Optimal Corrosion Control.

(a) After the department specifies the values for applicable water quality control parameters reflecting optimal corrosion control treatment under Env-Ws 381.10 (e) and (f), a large system owner shall measure the applicable water quality control parameters in accordance with this section and determine compliance with the requirements of Env-Ws 381.10 (g) through (i) every 6 months, with the first 6-month period to begin on the date the department specified the range of optimal values under Env-Ws 381.10 (e) and (f).

(b) The owner of a small or medium-sized system shall conduct such monitoring during each 6-month period specified in Env-Ws 381.20 in which the system exceeds the lead or copper action level.

(c) For a small and medium-sized system that is subject to reduced monitoring frequency specified in Env-Ws 381.21 at the time of the action level exceedance, the end of the applicable 6-month period under this section shall coincide with the end of the applicable monitoring period under Env-Ws 381.21.

(d) Compliance with department-determined optimal water quality parameter values shall be determined as specified under Env-Ws 381.10(f) through (h).

Source. (See Revision Note at chapter heading for Env-Ws 300) #6521, eff 6-4-97, ss by #7734, eff 8-2-02

Env-Ws 381.27 Reduced and Additional Monitoring of Water Quality Parameters.

(a) A water system owner maintaining the range of values for the water quality parameters reflecting optimal corrosion control treatment during each of 2 consecutive 6-month monitoring periods under Env-Ws 381.26 shall continue monitoring at the entry point(s) to the distribution system as specified in Env-Ws 381.25(c).

(b) Such system owner shall collect 2 tap samples for applicable water quality parameters from the following reduced number of sites as stated in Table 381-3 during each 6-month monitoring period:

Table 381-3

Reduced Number of Sites for Testing Water Quality Parameters

<u>Number of People Served</u>	<u>Reduced Number of Sites for Water Quality Parameters</u>
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>100,000	10
10,001 - 100,000	7
3,301 - 10,000	3
501 - 3,300	2
101 - 500	1
Less than or equal to 100	1

(c) A water system owner maintaining the range of values for the water quality parameters reflecting optimal corrosion control treatment specified by the department under Env-Ws 381.10(e) and (f) during 3 consecutive years of monitoring within each 6 month period, may request that the department reduce the frequency with which it collects the number of tap samples for applicable water quality parameters specified in (a) above from every 6 months to annually.

(d) A water system owner maintaining the range of values for the water quality parameters reflecting optimal corrosion control treatment specified in Env-Ws 381.10(e) and (f) during 3 consecutive years of annual monitoring under this section, may reduce the frequency with which it collects the number of tap samples for applicable water quality parameters specified in (a) above, from annually to every 3 years.

(e) A water system owner may reduce the frequency with which tap samples are collected for applicable water quality parameters specified in Env-Ws 381.27(a) and (b) to every 3 years if the system demonstrates that:

- (1) During 2 consecutive monitoring periods that its tap water lead level at the 90th percentile is less than or equal to 0.005 mg/L, the practical quantitation level (PQL) for lead;
- (2) The tap water copper level at the 90th percentile is less than or equal to 0.65 mg/L for copper as specified in Env-Ws 381.03(b); and
- (3) The system has maintained the range of values for the water quality parameters reflecting optimal corrosion control treatment specified by the department under Env-Ws 381.10.

(f) A water system owner conducting sampling annually shall collect the sample(s) evenly throughout the year so as to reflect seasonal variability.

(g) A water system owner subject to reduced monitoring 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 department under Env-Ws 381.10 (e) and (f) for more than 9 days in any 6-month period specified in Env-Ws 381.10 (g) through (i) shall resume distribution system tap water sampling in accordance with the number and frequency requirements in Env-Ws 381.25.

(h) A water system owner in (g) above:

- (1) May resume annual monitoring for water quality parameters at the tap at the reduced number of sites specified in (a) and (b) above after having completed 2 subsequent consecutive 6-month rounds of monitoring that meets the criteria of Env-Ws 381.27 (a) and (b); or

(2) May resume triennial monitoring for water quality parameters at the tap at the reduced number of sites after demonstrating through subsequent rounds of monitoring that it meets the criteria of:

- a. Paragraphs (c) and (d) above; or
- b. Paragraph (e) above.

(i) The results of any monitoring conducted in addition to the minimum requirements of this section shall be considered by the system owner and the department in making any determinations, determining concentrations of water quality parameters, under this section or Env-Ws 381.09 and Env-Ws 381.10.

Source. (See Revision Note at chapter heading for Env-Ws 300) #6521, eff 6-4-97, ss by #7734, eff 8-2-02; amd by #8351, eff 5-14-05

Env-Ws 381.28 Monitoring For Lead and Copper In Source Water.

(a) The owner of a water system failing to meet the lead or copper action level on the basis of tap samples collected in accordance with Env-Ws 381.15 through Env-Ws 381.21, shall collect lead and copper source water samples in accordance with the following requirements:

(1) A system owner using groundwater shall:

- a. Collect a minimum of one sample at every entry to the distribution system which is representative of each well after treatment; and
- b. Collect one additional sample at the location specified in a. above, unless conditions make another location more representative of each source or treatment plant; and

(2) A system owner using surface water shall:

- a. Collect 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 or treatment; and
- b. Collect each sample at the same location specified in (2)a. above, unless conditions make another location more representative of each source after treatment.

(b) If a system draws water from more than one source and the sources are combined before distribution, the system owner shall sample at an entry point to the distribution system during periods when water is representative of all sources being used.

(c) An accredited laboratory or certified laboratory shall allow the use of composite samples.

(d) The timing of sampling for lead and copper shall be in accordance with (h) below, and Env-Ws 381.29(a) and not the dates specified in Env-Ws 326.01 through Env-Ws 326.12.

(e) Where the results of sampling indicate an exceedance of maximum permissible source water levels established under Env-Ws 381.12, the system owner shall collect one additional sample at the same sampling point as soon as practicable but no later than 14 days after notification of the sampling result.

(f) The results of the initial and confirmation sample shall be averaged in determining compliance with the department-specified maximum permissible levels.

(g) Any sample value below the detection limit shall be considered to be zero.

(h) A system owner exceeding the lead or copper action level at the tap shall collect one source water sample from each entry point to the distribution system within 6 months after the exceedance.

Source. (See Revision Note at chapter heading for Env-Ws 300) #6521, eff 6-4-97, ss by #7734, eff 8-2-02; amd by #8351, eff 5-14-05

Env-Ws 381.29 Lead and Copper Source Water Monitoring Frequency After Installation of Source Water Treatment.

(a) A system owner installing source water treatment pursuant to Env-Ws 381.11 shall collect an additional source water sample from each entry point to the distribution system during 2 consecutive 6-month monitoring periods by the deadline specified in Env-Ws 381.11(e).

(b) A system owner shall monitor at the frequency specified below in cases where the department specifies maximum permissible source water levels under Env-Ws 381.12 or determines that the system is not required to install source water treatment under Env-Ws 381.12(b).

(c) The owner of a water system using only groundwater shall collect samples once during the 3-year compliance period in effect when the applicable department determination under paragraph (b) of this section is made. Such systems shall collect samples once during each subsequent compliance period.

(d) A water system owner using surface water, or a combination of surface and groundwater, shall collect samples once during each year, with the first annual monitoring period to begin on the date on which the applicable department determination is made under (b) above.

(e) The owner of a water system shall not be required to conduct source water sampling for lead and copper if the system meets the action level for the specific contaminant in tap water samples during the entire source water sampling period applicable to the system under (c) or (d) above.

Source. (See Revision Note at chapter heading for Env-Ws 300) #6521, eff 6-4-97, ss by #7734, eff 8-2-02

Env-Ws 381.30 Lead and Copper Reduced Source Water Monitoring.

(a) The owner of a water system using only groundwater may reduce the monitoring frequency for lead and copper in source water to once during each 9-year compliance cycle if:

(1) The system demonstrates that finished drinking water entering the distribution system has been maintained below the maximum permissible lead and copper concentrations specified by Env-Ws 381.12 during at least 3 consecutive compliance periods under Env-Ws 381.29; or

(2) The system demonstrates that, during at least 3 consecutive compliance periods in which sampling was conducted under Env-Ws 381.29, 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.

(b) The owner of a water system using surface water, or a combination of surface water or ground water, may reduce the monitoring frequency in Env-Ws 381.29(b) and (c) to once during each 9-year compliance cycle if:

(1) The system demonstrates that finished drinking water entering the distribution system has been maintained below the maximum permissible lead and copper concentrations specified by Env-Ws 381.12 (d) and (e) for at least 3 consecutive years; or

(2) The system demonstrates that during at least 3 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.

(c) The owner of a water system using a new source of water shall not be eligible for reducing monitoring for lead or copper until concentrations in samples collected from the new source during 3 consecutive monitoring periods are below the maximum permissible lead and copper concentrations specified in Env-Ws 381.12.

Source. (See Revision Note at chapter heading for Env-Ws 300) #6521, eff 6-4-97, ss by #7734, eff 8-2-02

Env-Ws 381.31 Collection Procedures and Analytical Methods.

(a) Sample collection shall be conducted using the sample preservation type, container type, and maximum holding time procedures specified in Table 381-4 below:

Table 381-4  
Sampling Protocol for Corrosion Byproducts & Other Water Quality Factors

<u>Contaminant</u>	<u>Volume (ml)</u>	<u>Condition</u>	<u>Plastic or Glass</u>	<u>Hold Time</u>
Copper	1000	HNO <sub>3</sub> to lt pH 2	Plastic or Glass	6 months
Lead	1000	HNO <sub>3</sub> to lt pH 2	Plastic or Glass	6 months
Calcium	500	HNO <sub>3</sub> to lt pH 2	Plastic or Glass	6 months
pH	25	None	Plastic or Glass	Immediately
Alkalinity	100	Cool to 4°C	Plastic or Glass	14 days
Orthophosphate	50	Cool to 4°C	Plastic or Glass	48 hours
Specific Conductance	100	Cool to 4°C	Plastic or Glass	28 days
TDS	100	Cool to 4°C	Plastic or Glass	7 days
Silica	50	Cool to 4°C	Plastic or Glass	28 days
Temperature	--	--	--	Immediately

(b) Laboratory analyses for lead, copper, pH, conductivity, calcium, alkalinity, orthophosphate, silica, and temperature shall be conducted using the laboratory analytical methods specified in 40 CFR 141.23(k)(1).

(c) Analyses for lead and copper shall only be conducted by laboratories that have been certified or accredited by the department as set forth in Env-C 300 or by the EPA.

(d) To obtain certification to conduct analyses for lead and copper, laboratories shall conduct analyses for lead and copper in accordance with the criteria set forth in 40 CFR 141.89(a)(1).

(e) The department shall use previously collected monitoring data for purposes of monitoring, if the data were collected and analyzed in accordance with the requirements of this section.

(f) All lead and copper levels measured between the PQL and the method detection limit (MDL) shall be either reported as measured or shall be reported as 0.025 mg/L which is one-half the PQL.

(g) A sample result that is below the lead and copper MDL shall be reported as zero.

(h) All laboratory data shall be reported using the concentrations and equivalent values as shown in Table 381-5 below:

Table 381-5  
Reporting Concentrations and Use of Equivalent Values

<u>Chemical</u>	<u>Concentration</u>
Calcium	mg/L as CaCO <sub>3</sub>
Hardness	mg/L as CaCO <sub>3</sub>
Alkalinity	mg/L as CaCO <sub>3</sub>
Phosphate	mg/L as PO <sub>4</sub>
Silica	mg/L as SiO <sub>2</sub>

Source. (See Revision Note at chapter heading for Env-Ws 300) #6521, eff 6-4-97, ss by #7734, eff 8-2-02; amd by #8351, eff 5-14-05

Env-Ws 381.32 Invalidation of Lead or Copper Tap Water Samples.

(a) A sample invalidated under this section shall not be used to determine the lead or copper 90<sup>th</sup> percentile levels under Env-Ws 381.03(c) or toward meeting minimum requirements of Env-Ws 381.17.

(b) The department shall invalidate a lead or copper tap water sample if:

- (1) The laboratory conducting the analysis determines that improper sample analysis techniques caused erroneous results;
- (2) The department determines that the sample was taken from a site that did not meet the site selection criteria of this section;
- (3) The sample container was damaged in transit;
- (4) The laboratory results meet any of the criteria specified in Env-Ws 321.03(a); or
- (5) There is reason to believe that the sample was subject to tampering, based on a visual examination of the sample, information received from credible sources, or both.

(c) A water system owner shall report to the department the results of invalidated samples and supporting documentation for samples the system believes should be invalidated.

(d) To invalidate a sample under (b) above, the decision and the rationale for the decision shall be documented to the department in writing. The department shall not invalidate a sample solely on the grounds that a follow-up sample result is higher or lower than that of the original sample.

(e) A water system owner shall collect replacement sample(s) for any sample(s) invalidated under this section if, after the invalidation of one or more samples, the system has too few samples to meet the minimum requirements of Env-Ws 381.17.

(f) A water system owner shall collect any such replacement sample(s) in (e) above, as soon as possible, but no later than 20 days after the date the department invalidates the sample or by the end of the applicable monitoring period, whichever occurs later.

(g) Replacement samples collected after the end of the applicable monitoring period shall not be used to meet the monitoring requirements of a subsequent monitoring period.

(h) A water system owner shall collect replacement samples 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 monitoring period.

Source. #5422 eff 6-22-92; amd by #5873, eff 7-26-94 (See Revision Note at chapter heading for Env-Ws 300) #6521, eff 6-4-97, ss by #7734, eff 8-2-02; amd by #8351, eff 5-14-05

Env-Ws 381.33 Reporting Requirements.

(a) A water system owner shall report the information specified in (c) below, for all tap water samples collected pursuant to Env-Ws 381.15 through Env-Ws 381.21 and for all water quality parameter samples collected pursuant to Env-Ws 381.22 through Env-Ws 381.27 within the first 10 days following the end of each applicable monitoring period specified in Env-Ws 381.15 through Env-Ws 381.29.

(b) A water system owner shall report the information specified in (c) below for all water quality parameter samples collected pursuant to Env-Ws 381.25 through Env-Ws 381.27 within the first 10 days following the end of the monitoring period.

(c) The required report shall include:

(1) The results of all tap samples for lead and copper including the location of each site and the criteria under Env-Ws 381.15(e) through (h), (i), or both under which the site was selected for the system's sampling pool;

(2) Documentation for each tap water lead or copper sample for which the system owner requests invalidation pursuant to Env-Ws 381.32;

(3) The 90th percentile lead and copper concentrations measured from among all lead and copper tap water samples collected during each monitoring period calculated in accordance with Env-Ws 381.03(c) unless the department calculates the system's 90th percentile lead and copper levels;

(4) The results of all tap samples for pH, and where applicable, alkalinity, calcium, conductivity, temperature, and orthophosphate or silica collected under Env-Ws 381.24 through Env-Ws 381.27; and

(5) The results of all samples collected at the entry point(s) to the distribution system for applicable water quality parameters under Env-Ws 381.24 through Env-Ws 381.27.

(d) A water system owner shall not be required to report 90th percentile lead and copper concentrations to the department if:

(1) The department calculates the system's 90th percentile lead and copper concentrations, based on the lead and copper sample results measured from tap water samples collected during each monitoring period; and

(2) The system owner provides the following information to the department:

a. The results of all tap water samples for lead and copper, including the location of each site and the criteria under which the site was selected for the system's sampling pool; and

b. The identification of sampling sites used during the current monitoring period that were not sampled during previous monitoring periods, and an explanation why sampling sites have changed.

(e) With the exception of initial tap sampling conducted pursuant to Env-Ws 381.18, a system owner shall specify any site which was not sampled during previous monitoring periods and include and explanation of why the sampling sites has changed.

(f) The owner of a non-transient non-community water system or a community water system meeting the criteria of Env-Ws 381.14 (k)(1) and (2) that does not have enough taps that can provide first-draw samples shall:

(1) Provide written documentation to the department identifying standing times and locations for enough non-first-draw samples to make up the sampling pool under Env-Ws 381.17 by the start of the first applicable monitoring period unless the department has waived prior department approval of non-first-draw sample sites selected by the system owner pursuant to Env-Ws 381.17; or

(2) If the department has waived prior approval of non-first draw sample sites selected by the system, identify in writing, each site that did not meet the 6-hour minimum standing time and the length of standing time for that particular substitute sample collected pursuant to Env-Ws 381.17(d) and include this information with the lead and copper tap sample results pursuant to Env-Ws 381.33(a).

(g) No later than 60 days after the addition of a new source or any change in water treatment, a water system deemed to have optimized corrosion control under Env-Ws 381.06(a)(4) or a water system subject to reduced monitoring under Env-Ws 381.21 shall send written documentation to the department describing the change.

(h) The owner of a system using groundwater who limits water quality parameter monitoring to a subset of entry points as specified in Env-Ws 381.25 shall provide, by the start of such monitoring, written correspondence to the department that identifies the selected entry points and includes information sufficient to demonstrate that the sites are representative of water quality treatment and conditions throughout the system.

(i) Source water reporting requirements shall be as follows:

- (1) A water system owner shall report the sampling results for all source water samples collected in accordance with Env-Ws 381.28 through Env-Ws 381.30 within the first 10 days following the end of each source water monitoring period, annually, per compliance period, specified in Env-Ws 381.28 through Env-Ws 381.30; and
  - (2) With the exception of the first round of source water sampling conducted pursuant to Env-Ws 381.28(h), the system owner shall specify any site which was not sampled during previous monitoring periods, and include an explanation of why the sampling point has changed.
- (j) As required in Env-Ws 381.05 through Env-Ws 381.08, a system owner shall report the following information to the department by the dates specified in Env-Ws 381.05:
- (1) For systems demonstrating that they have already optimized corrosion control, information required in Env-Ws 381.06(a)(1), (a)(2), (a)(4) or (b);
  - (2) For systems required to optimize corrosion control, their recommendation regarding optimal corrosion control treatment under Env-Ws 381.09(b);
  - (3) For systems required to evaluate the effectiveness of corrosion control treatments under Env-Ws 381.09(d), the information required by that paragraph; and
  - (4) For systems required to install optimal corrosion control specified by the department under Env-Ws 381.10(a) through (c), a letter certifying that the system has completed installing that treatment.
- (k) A system owner shall report source water treatment by the applicable dates in Env-Ws 381.11 and shall provide the following information to the department:
- (1) If required under Env-Ws 381.12(a), the system's recommendation regarding source water treatment; and
  - (2) For systems required to install source water treatment under Env-Ws 381.12(b), a letter certifying that the system has completed installing the treatment specified by the department within 24 months after the department specified the treatment.
- (l) A system owner shall report to the department the following information concerning lead service line replacement as specified in Env-Ws 381.12:
- (1) Within 12 months after a system exceeds the lead action level in sampling referred to in Env-Ws 381.13(a), the system shall:
    - a. Demonstrate in writing to the department that it has conducted a materials evaluation, including the evaluation in Env-Ws 381.15(a) through Env-Ws 381.15(j) to identify the initial number of lead service lines in its distribution system; and
    - b. Provide the department with the system's schedule for replacing annually at least 7% of the initial number of lead service lines in its distribution system;
  - (2) Within 12 months after a system exceeds the lead action level in sampling referred to in Env-Ws 381.13(a), and every 12 months thereafter, the system shall demonstrate to the department in writing that the system has either:



a. Replaced in the previous 12 months at least 7% of the initial lead services line or a greater number of lines specified by the department under Env-Ws 381.13 in its distribution system; or

b. Conducted sampling which demonstrates that the lead concentration in all first flush samples from an individual line(s), taken pursuant to Env-Ws 381.16(g), is less than or equal to 0.015 mg/L;

c. The total number of lines replaced which meet the criteria in Env-Ws 381.13(b) shall be equal to

1. At least 7% of the initial number of lead lines identified under (1)(1) above; or

2. The percentage specified by the department under Env-Ws 381.13;

(3) The annual report submitted to the department under (2) above shall contain the following information:

a. The number of lead service lines scheduled to be replaced during the previous year of the system's replacement schedule;

b. The number and location of each lead service line replaced during the previous year of the system's replacement schedule; and

c. If measured, the water lead concentration and location of each lead service line sampled, the sampling method, and the date of sampling.

(m) Any system which collects lead service line samples following partial lead service line replacement required by Env-Ws 381.13 shall:

(1) Report the results to the department within the first 10 days of the month following the month in which the system receives the laboratory results; and

(2) Report any additional information as specified by the department, in a time and manner prescribed by the department, to verify that all partial lead service line replacement activities have taken place.

(n) A water system owner subject to the lead education requirements of Env-Ws 381.14 shall, within 10 days after the end of each period in which the system is required to perform lead education, submit to the department:

(1) Documentation that the system owner has delivered lead education materials that meet the requirements of Env-Ws 381.14; and

(2) A list of all newspapers, radio stations, television stations, facilities, and organizations to which the system owner delivered lead education materials during the period in which the system was required to perform lead education tasks.

(o) A water system owner that has previously submitted to the department the information required in (n)(2) above, shall not be required to resubmit the information, as long as there have been no changes in the distribution list and the system owner certifies to the department that the lead education materials were distributed to the same list submitted previously.

(p) Any system owner collecting sampling data in addition to that required by this part shall report the results to the department within the first 10 days following the end of the applicable monitoring period during which the samples were collected under Env-Ws 381.18 through Env-Ws 381.30.

Source. (See Revision Note at chapter heading for Env-Ws 300) #6521, eff 6-4-97, ss by #7734, eff 8-2-02; amd by #8351, eff 5-14-05

Env-Ws 381.34 Record-keeping Requirements. A system owner subject to the requirements of this part shall retain on their premises original records of all sampling data and analyses, reports, surveys, letters, evaluations, schedules, department determinations, and any other information required by Env-Ws 381.05 through Env-Ws 381.35. Each water system owner shall retain the records required by this section for at least 12 years.

Source. (See Revision Note at chapter heading for Env-Ws 300) #6521, eff 6-4-97, ss by #7734, eff 8-2-02

Env-Ws 381.35 Variances and Exemptions.

(a) The granting of a variance or exemption shall be subject to the conditions specified in Env-Ws 340 through Env-Ws 349 and Env-Ws 308.

(b) The department shall require a public water system owner to use bottled water, point-of-use devices, point-of-entry devices or other means as a condition of granting a variance from the requirements of this part to avoid an unreasonable risk to health.

(c) A public water system owner shall use bottled water and point-of-use devices or other means, but not point-of-entry devices, as a condition of granting an exemption from corrosion control treatment requirements for lead and copper in Env-Ws 381.05 through Env-Ws 381.08 and Env-Ws 381.09 through Env-Ws 381.10 to avoid an unreasonable risk to health.

(d) The department shall require a public water system owner to use point-of-entry devices as a condition of granting an exemption from the source water and lead service line replacement requirements for lead and copper under Env-Ws 381.11, Env-Ws 381.12 or Env-Ws 381.13 to avoid an unreasonable risk to health.

(e) A public water system owner using bottled water as a condition of receiving a variance or an exemption from the requirements of Env-Ws 308, 317.01(a) and (b), Env-Ws 317.40(a), and Env-Ws 316.01(a), or an exemption from the requirements of Env-Ws 381.05 through Env-Ws 381.13 shall meet the requirements of this section.

(f) The water system owner shall develop and put in place a monitoring program that provides reasonable assurances that the bottled water meets the requirements of Env-Ws 308.30.

(g) The system owner shall monitor the bottled water as specified in Env-Ws 308.30.

(h) The system owner shall receive a certification from the bottled water company that:

(1) The bottled water source has been approved by the department as specified in Env-Ws 389.04; and

(2) The bottle water company has conducted monitoring in accordance with Env-Ws 308.30 and Env-Ws 389.

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(i) The system owner shall provide the certification to the department in the first quarter after it supplies bottled water and annually thereafter.

(j) The system owner shall be fully responsible for the provision of sufficient quantities of bottled water to every person supplied by the public water system via door-to-door bottled water delivery.

(k) In requiring the use of point-of-entry devices as a condition for granting an exemption from the treatment technique requirements for lead and copper under Env-Ws 381.11 through Env-Ws 381.13, the use of the device shall not cause increased corrosion of lead and copper bearing materials located between the device and the tap that could increase contaminant levels at the tap.

Source. #7734, eff 8-2-02

**APPENDIX**

<b>Rule Section(s)</b>	<b>State Statute(s) Implemented</b>	<b>Federal Statute(s)/ Regulation(s) Implemented</b>
Env-Ws 381	RSA 485:3, I;485:3, VII	40 CFR 141.80