Lead and Copper Sampling Plans

NJARNG Facilities
2018

First Round – Sampling Plan

Sample Collection Documentation:
Chain of Custody (Attachment A)
Water Sample Collection Form (Attachment B)
Out Of Order Sign (Attachment C)
Non-Potable Water Sign (Attachment D)

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Sampling Procedure

- PLEASE READ THESE INSTRUCTIONS BEFORE OPENING THE SAMPLE BOTTLE -

- The water at each designated sample faucet must remain stagnant for a minimum of 8 hours prior to sampling. Facilities will be contacted in advance, and instructed to take actions necessary (such as attaching a "do not use" sign or tag to the faucet) to prevent use at the designated sample faucet during that stagnation period.
- Do not sample from outside hose spigots
- Each first draw sample for lead and copper must be 1 liter in volume and have stood motionless in the plumbing system of each sampling site for at least 8 hours
- Do not perform pre-stagnation flushing (flushing the tap for a specified period of time prior to starting the minimum 8-hour stagnation time)
- Wide-mouth bottles should be used for all lead and copper compliance samples
- Do not remove and/or clean the aerators prior to or during lead and copper sample collection
- Do not allow the faucet to contact the mouth of the bottle at any time

Sampling Methods

1. Do not use any water from the exact tap/faucet from which the sample is being collected for a minimum of 8 hours prior to sample collection. Do not intentionally flush the tap before the start of the 8-hour stagnation period.
2. Coordinate with the facility armorer in advance to identify faucets that are commonly used to collect the sample from. Do not collect a sample from a tap that has a point of use treatment unit (e.g. filter). If you do collect a sample from a tap that has a point of use treatment and/or if you have a treatment unit on the water line entering the building, be sure to document it.
3. Do not remove the aerator prior to sampling. If a faucet is attached to a hose, remove the hose, and record that you did so.
4. First Draw Sample: Place the opened wide-mouth sample bottle below the faucet and open the **cold** water tap as you would do to fill a glass of water. Fill the sample bottle to the line marked "1000-mL" and turn off the water.
5. Tightly cap the sample bottle and fill out the sample bottle label.
6. Second Draw Sample: Before taking a second draw sample, turn the faucet on, and allow the water to run for 30 sec – 15 min depending on the size of the building (small buildings will need less time to clear the pipes of stagnant water). Record the flush time on the Water Sample Collection Form (Appendix B).

7. Record sample collection data on the Water Sample Collection Form and note the following information on the bottle label:
   a. If any plumbing repairs or replacement had been done in the building since the previous sampling event.
   b. If your sample was collected from a tap that was treated by an in-facility water treatment unit (e.g. filter, water softener, etc.).
   c. Review the bottle label to ensure that all information contained on the label is correct

Laboratory Requirements:

Guidance for Lead and Copper - Approved Analytical Methods and Reporting Requirements

Lead and Copper

The lead (Pb) Practical Quantitation Limit (PQL) is 0.005 mg/L and the copper (Cu) PQL is 0.050 mg/L [40 CFR 141.89(a) (1) (ii)]. For compliance with the federal Safe Drinking Water Lead and Copper Rule, the Division of Water Supply and Geoscience (DWSG) requires that lead and copper results be submitted using reporting limits no higher than their respective regulatory PQLs. Lower reporting limits are allowed.

Lead

The approved US Environmental Protection Agency methods for lead are categorized below by methodology and the source of the approved method. The most current listing of EPA approved methods for lead analysis can be accessed in sections 141.23 (k) (1) and Subpart C Appendix A of 40 CFR 141.

Lead Methodology	EPA	Standard Methods	ASTM	Other
Atomic Absorption Graphite Furnace		3113 B (18th, 19th 21st, 22nd editions) 3113 B-99, 04, 10 (SM online)	D3559-96, 03, 08 D	
ICP Mass Spectrometry	200.8			
Atomic Absorption, Platform	200.9			

Differential Pulse Anodic Stripping Voltammetry				Method 1001
Axially Viewed ICP- atomic emission spectrometry	200.5, Revision 4.2			

Copper

The approved EPA methods for copper are categorized below by methodology and the source of the approved method. The most current listing of EPA approved methods for lead analysis can be accessed in sections 141.23 (k)(1) and Subpart C Appendix A of 40 CFR 141.

Copper Methodology	EPA	Standard Methods	AST M	Other
Atomic Absorption; Graphite Furnace		3113 B (18th, 19th, 21st, 22nd editions) 3113B-99, 04,10 online	D1688-95, 02, 07, 12 C	
Atomic Absorption; Direct Aspiration		3111 B (18th 19th, 21st, 22nd editions) 3111 B-99 (online)	D 1688-95, 02, 07, 12 A	
Inductively Coupled Plasma	200.7	3120 B (18th, 19th, 20th, 21st, 22nd editions) 3120B-99 (online)		
ICP- Mass Spectrometry	200.8			
Atomic Absorption Platform	200.9			
Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES)	200.5, Revision 4.2			
Colorimetric				Hach Method 8026 Hach Method 10272

Each laboratory must document that laboratory personnel have previous experience sampling for lead and have been properly trained to conduct USEPA Method 200.8 or other methods for the analysis of lead in drinking water (USEPA Method 200.9k USEPA Method 200.5, SM3113B, ASTM3559-D) provided that the reporting limit by the laboratory for that method is less than or equal to 2 µg/L.

Plan of Action

Lead Action Level (AL): **15ppb**
Copper Action Level: **1.3ppm**

If lead and/or copper AL IS NOT exceeded:

1. The sampler must submit the following information to the facility armorer and/or shop personnel within 30 days of receiving laboratory results.

    - Results of lead and copper test from each faucet tested
    - Explanation of the health effects of lead and copper
    - Steps consumers can take to reduce exposure to lead in drinking water
    - Contact information for the water system
    - Maximum contaminant level goal (MCLG) for lead and copper
    - Allowable Level for lead and copper
    - Definition of Maximum Contaminant Level Goal (MCLG and AL from 40 CFR. 141.153© of the Consumer Confidence Rule

2. Laboratory results must be posted inside the facility.
3. No follow-up sampling needed.

If lead and/or copper AL IS exceeded:

- Notification to facility armorer and regional supervisor and/or shop personnel within 48 hours after receiving results.
    - If 1st draw is above the AL and 2nd draw is above the AL, a Non-Potable water sign (Attachment D) will be attached to the faucet. Faucet water supply will be shut off. Tag out and lock out equipment will be attached to faucet.
    - If 1st draw is above AL and 2nd draw is below AL, a sign will be given to post at faucet explaining ways to reduce lead in water.

- All faucets above AL will be retested within 6 months of receiving results from laboratory.
- Results from the 6 month faucet re-test will follow rules above. If re-test is also above AL, all faucets and supply water will be tested.
- EMB will contact water purveyor for any assistance they can provide in resolving the matter.