



EPA's Final Lead and Copper Rule Improvements Technical Fact Sheet: Inventory Validation October 2024

Accurate service line inventories are essential to ensure replacement of all lead and galvanized requiring replacement (GRR) service lines. To increase the accuracy of inventories, the final Lead and Copper Rule Improvements (LCRI) requires all water systems to validate a subset of non-lead service lines in their inventory unless a waiver is approved by the State. The validation tests the reliability of certain methods, techniques, and alternative sources of information used to identify non-lead service lines in the inventory; facilitates action to remedy inventory discrepancies; and provides systems, States, and consumers with additional confidence in the accuracy of the inventory.

What are the inventory validation steps?

Step 1: Identify the validation pool. To identify which service lines require validation, water systems must first identify the validation pool. The validation pool consists of all non-lead service lines in the inventory **excluding** those that are identified by the following:

1. Records that indicate the service line was installed after the federal lead ban became enforceable or the compliance date of a State or local lead ban, whichever is earlier.
 - The federal lead ban became enforceable on June 19, 1988. Check with the State or local government to verify the compliance date for any State or local lead bans.
 - Non-lead lines identified by exclusively using other records must be **included in the validation pool**.
2. Visual inspection of the pipe exterior at a minimum of two points.
 - For example, a service line identified as copper based on a one-point visual inspection at the meter pit is required to be in the validation pool. However, if this service line material was also visually inspected a second point, such as inside the home, it would be excluded from the validation pool.
3. Previously replaced lead or GRR service lines.

Service line inventories can change over time as systems investigate unknown service lines and replace lead and GRR lines. Water systems must use the inventory from the **current year** to identify your validation pool.

Reminder: "Non-Lead" is where the service line is determined through an evidence-based record, method, or technique not to be a lead or GRR service line.

Step 2: Determine the minimum number of validations required. Use Table 1 to determine the minimum number of validations required based on the size of the validation pool from Step 1.

For example, if a water system has 2,150 non-lead service lines in the validation pool, the minimum number of validations required is 341. If a water system has 1,000 non-lead service lines in the validation pool, the minimum number of validations required is 20% of 1,000 or 200.

Step 3: Randomly select service lines to be validated. Next, randomly select service lines from the validation pool for visual inspection. The minimum number of service lines that must be selected is the number from Step 2. Water systems can use tools such as a random number generator or lottery method to select service lines to validate. This approach is intended to minimize bias in the selection so that the validation results all non-lead service lines in the inventory.

Step 4: Validate the service line material through a two-point visual inspection. The next step is to validate that the service lines identified in Step 3 are non-lead by conducting visual inspection at a minimum of two points along the service line exterior. For example, visual inspection of the service line could be conducted by excavation (such as potholing), viewing the service line material in the meter pit or stop box, or viewing the service line entering the building. If the water system has already conducted a one-point visual inspection, then one additional visual inspection at a different point along the line is required.

Table 1. Minimum Number of Validations Required	
Size of Validation Pool	Number of Validations Required
<1,500	20% of validation pool
1,500 to 2,000	322
2,001 to 3,000	341
3,001 to 4,000	351
4,001 to 6,000	361
6,001 to 10,000	371
10,001 to 50,000	381
>50,000	384

Where ownership of the service line is shared:

- Water systems must conduct visual inspections on both portions of the service line such that one point is on the publicly owned portion and the other point is on the privately owned portion..
- If only one portion is included in the validation pool, water systems must conduct at least one point of visual inspection on the unconfirmed portion of the service line. See the example below.

If access to private property is needed to complete the validation and the water system cannot gain access, the water system must randomly select another non-lead service line in Step 3 to validate instead.

Example: A non-lead service line is included in the validation pool because the system-owned portion is copper due to a previous partial replacement, and the customer portion is estimated to be non-lead based on materials observed in other homes built around the same time in the same neighborhood.

Required Action: If this line is randomly selected for validation, confirm that the customer-owned portion of the service line is non-lead through at least one point of visual inspection of the pipe exterior.

Step 5: Submit results to the State. Water systems must submit the following to the State:

- A list of the locations of any non-lead service lines identified to be a lead or GRR service line as well as the method(s) used to categorize the service lines as a result of the assessment.
- The specific version (including the date) of the service line inventory used to determine the number of non-lead service lines in the validation pool.

When must validation be completed?

For systems on a 10-year mandatory replacement schedule and systems that have reported only non-lead lines in their inventories, validation must be completed by December 31, 2034 (i.e., no later than December 31 following seven years after the compliance date), and the validation results are due to the State by January 30, 2035. States will establish a validation deadline for water systems conducting mandatory service line replacement on a shortened deadline. For systems on a deferred deadline, States will establish a deadline no later than three years prior to the deadline for completing mandatory service line replacement.

What If a lead or GRR service line is identified?

If a water system identifies a lead or GRR service lines during validation, water systems must:

- Provide the State with those service line locations and the method(s) used to categorize the service lines.
- Update the service line inventory.
- Comply with any actions required by the State to address the inventory inaccuracy.

Water systems should evaluate the methods used to categorize non-lead service lines if inaccuracies are found and work with the State to determine whether they are isolated events that are unlikely to occur again or broader issues with the identification method used. If a broader issue is identified water systems may need to recategorize some non-lead service lines as unknown based on validation results and utilize another identification method or conduct additional field investigations.

Can water systems be waived from the LCRI validation requirements?

Yes. Water systems that completed validation efforts prior to the compliance date of the rule provided that the validation methodologies are at least as stringent as the LCRI requirements can submit a written request with supporting documentation to the State. The State must provide written approval of the waiver to the system.

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