ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
DIVISION OF WATER
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Minimum Requirements to Verify Service Line Material

Records Review

Water systems must review any and all records available that may indicate service line materials in the distribution system.

- Previous materials inventories, such as that required by the 1991 Lead and Copper Rule
- Records indicating installation date after lead ban (statewide ban was January 1, 1988)
  - Aerial photos
  - PVA records
  - Board of Realty records
  - Tax documents
  - Codes and ordinances
- Historic construction and plumbing codes that ban use of lead
- Construction and plumbing permits
- Distribution system plans and maps
- Tap cards
- Meter installation records that indicate material of service lines
- Inspection records
- Historic capital improvement plans or master plans
- Standard operating procedures
- Construction specification manuals and as-built construction drawings (plans, etc.)

Visual Verification

Visual verification includes field inspections, customer inspection/visualization, and use of devices like cameras, lead detection kits, and lead pipe detection tools.

- Visual inspection, when used, must include *at least* one point on the straight pipe (i.e., the service line, not any connectors) on the system-owned section and one point on the customer-owned section of the service line.
- Visual inspections may be possible from the meter pit
- Visual inspection during routine operations:
  - main line replacement and repair
  - service line replacement and repair
  - meter replacement and repair
  - meter turn-on and turn-offs
  - new service installation
  - meter vault/box/lid maintenance
  - cross-connection/backflow inspection
- Customer inspection
  - Request and document as much evidence from the customer as feasible (photos, description of method(s) used to detect material, etc.)
- Excavation: Vacuum truck, potholing, manual
- Visual inspection using CCTV[1]
- Buried pipe detection tools
- Lead detection strips or kits – ensure the pipe is not coated in lead-based paint

[1] Be aware of the potential for pipe scale disturbance when disturbing lead or galvanized pipes. For more information, view Harmon et al., 2022.

Customer Engagement

Engage customers for assistance identifying service line materials, and to collaborate on service line replacements when needed.

- Mail a flyer: use this flyer template or this letter template
- Have customers take this EPA on-line quiz to determine service line material: www.epa.gov/ProtectYourTap
- Include this bill insert provided by EPA
- American Water Works Association provides Consumer Tools
- Provide customers with this flyer by the LSLR-Collaborative: Identifying Service Line Material

Alternative Methods

These methods may provide additional information that could be used to determine service line materials. Not all the methods listed provide definitive information about the service line material.

- Targeted or Sequential water sampling: Use the 5th liter and a wide-mouth bottle to get the most accurate results. Compare to 1st liter samples to better demonstrate that any lead detected is from the service line, not the premise plumbing. Follow a scientifically-developed, peer-reviewed method for best results.[2]
- Service line diameter – pipes > 2" diameter are generally not lead
- Predictive or statistical models[3]
- X-ray fluorescent analyzers; for example, Thermo Fisher XRF analyzer, Olympus handheld XRF, or Geotech handheld XRF analyzer.

Insufficient Verification Methods & Records

These methods and documents may be used as a resource to verify service line materials, but are not sufficient on their own. DOW suggests, if used, that they be paired with one or more of the records mentioned above.

- Senior employee/retiree affidavit – senior employees have a lot of knowledge of the history of the distribution system and make an excellent resource to narrow down the search process, but are not a definitive resource for identifying the material of each service line
- Records that are found to have low accuracy – water systems may start out using records that seem informative, only to later find they have low accuracy. There should be a process to verify the accuracy of records, or to update the materials classification should a series of records previously used prove to be inaccurate
- Incomplete records – records that indicate age of plumbing renovations or dates that meters were changed, but aren't specific about whether service lines were changed at the same time, for example, are helpful for narrowing down the search field, but may be inconclusive as to the service line material or installation date.

[2] For an overview of methods, see: Hensley, K., Bosscher, V., Triantafyllidou, S., and Lytle, D. A. 2021. Lead service line identification: A review of strategies and approaches. AWWA Water Science, 3(3), e1226.
[3] View the Predictive Modeling Resources document provided by DOW at www.tinyurl.com/drinkingwatercompliance