

Service Line Inventory (SLI) Question & Answer Document

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General SLI Questions:

Q: What if a system does not complete and submit their inventory to the Department by October 16, 2024?

A: Failure to complete the SLI and submit it to the Department by October 16, 2024 is in violation of 40 CFR §141.80(a)(3), and 40 CFR § 141.84(a). Completion of the inventory is essential to all other portions of the regulation, such as completion of a lead service line replacement plan and a lead and copper sampling plan. Due to the importance of this requirement, EPA has determined that failure to complete SLI is a health-based, treatment technique violation which will require Tier 2 PN. *The enforcement for these violations will be handled by EPA*

Q: Where does the service line end in the cases where the meter is not inside the home? (e.g. the meter is in a meter pit in the yard)

A: The service line ends once it enters the home. If there is a meter inside the home then the service line ends at the meter, i.e. on the other side of the meter would be considered premise plumbing.

Q: What if the property owner denies access for the water system to investigate the service line on the customer-side?

A: Unfortunately, the service line would be classified as “unknown” until the material is determined. With that said, here are some options/suggestions.

- Consider that customers may be more apt to allow access if they are informed of the importance of the service line inventory and the human health consequences of having lead service lines. As a water system, it is important to communicate this information with your customers and try to get “buy-in” on the inventory and possible replacement process. The communication should include a commitment to replacing any impacted landscaping and/or hardscaping.
- Can you find any records regarding the install and material of the customer-side service line? If you have a record of the customer-side material, but you need to verify the record because it shows the pipe was installed prior to 1991 or prior to a lead ban ordinance, you can verify the record by asking the customer to take a picture of the service line where it enters inside the home. You should give them parameters for a good picture so that you can determine the pipe material from the picture. The picture determination can be used as the field verification method called “Visual inspection at Existing Access Point” in the DEP template. If you do not have any records of the customer-side, the photo method would have to be combined with another point on the customer side, or 5th liter water sampling if the system does not have corrosion control treatment.

- Some property deeds include utility line easements. If not, can you consider an easement with the property owner or a “utility agreement”? During training, we heard from a water system that had successfully gone the easement route. Can something be added to any existing agreement for the meter on the customer property?

Q: Who is responsible for determining service line material for a hospital (or other single building) that is a consecutive water system with its own PWS ID because they treat the water with a chemical within the building?

A: Since EPA requires all CWS & NTNC to complete an inventory, both the selling system and the consecutive system would need to capture the service line and service line material. If the consecutive has multiple buildings then they would need to inventory each line that serves each building, but in the cases where there is just one line the single service connection will essentially be inventoried twice, once by the seller and once by the consecutive.

Q: How should the following situation be reflected in the service line inventory: one service line is tapped into the water main and then branches to several customers?

A: Each branch should be identified with a unique ID. Each service line consists of the main line plus the individual branch. If the line is split ownership, the water system portion pipe material remains the same and the customer side material should be noted for each of the branches. If the address is the same, you can note the different houses in the street address 2 section (column J of the PA SLI form).

If the line is owned solely by the water system or solely by the customer. Please mark the ownership type (column H in the PA SLI form) as “joint” to be able to enter the two different material types, in the comment field you could specify that the service line is owned solely by the water system or customer. Each branch would be a different service line entry in the PA SLI form, and each would have its own unique ID.

Q: Once the inventories are submitted to DEP, will these be *confidential* records?

A: The inventories will be interfaced with our electronic data base. This information will not be posted to our public website, but they will not be protected if there is a “Right to Know Request” for the information.

Q: Is the BIL funding for inventory development/lead service line removals from PENNVEST in the form of grants or loans?

A: Both grants and low interest rate loans are available from PENNVEST. Which type of funding your system receives will depend on system and project specifics. For more information about funding contact PENNVEST <https://www.pennvest.pa.gov/Pages/default.aspx>.

Service Line Category Questions:

Q: If a lead gooseneck is upstream of a galvanized line, the line would be galvanized requiring replacement, correct? Why did PA decide that lead goosenecks, pigtails and connectors upstream of a galvanized line make the line galvanized requiring replacement? In CA and VA, the lines do not need replaced if a lead gooseneck is upstream of the galvanized. I have also included some verbiage from the LCRR:

(c) Operating procedures for replacing lead goosenecks, pigtails, or connectors.

(1) The water system must replace any lead gooseneck, pigtail, or connector it owns when encountered during planned or unplanned water system infrastructure work.

(2) The water system must offer to replace a customer-owned lead gooseneck, pigtail, or connector; however, the water system is not required to bear the cost of replacement of the customer-owned parts.

(3) The water system is not required to replace a customer-owned lead gooseneck, pigtail, or connector if the customer objects to its replacement.

(4) The replacement of a lead gooseneck, pigtail, or connector does not count for the purposes of meeting the requirements for goal-based or mandatory lead service line replacements, in accordance with paragraphs (f) and (g) of this section, respectively.

(5) Upon replacement of any gooseneck, pigtail, or connector that is attached to a lead service line, the water system must follow risk mitigation procedures specified in § 141.85(f)(2).

(6) The requirements of paragraphs (c)(1), (2), (3), and (5) of this section do not apply if state law includes lead connectors in the definition of lead service lines, prohibits partial lead service line replacements, and requires systems to remove all lead service lines irrespective of a system's 90th percentile lead level.

“Galvanized Requiring Replacement” where a galvanized service line is or was at any time downstream of a lead service line or is currently downstream of a “Lead Status Unknown” service line. If the water system is unable to demonstrate that the galvanized service line was never downstream of a lead service line, it must presume there was an upstream lead service line.

A: It is DEPs intention to include lead goosenecks, pigtails and connectors in the definition of a galvanized requiring replacement service line in forthcoming revisions to the PA lead and copper rule to be consistent with the guidance being provided during training.

There are several reasons why PA intends to include lead goosenecks, pigtails and connectors in the definition of a galvanized requiring replacement service line, which I have outlined below.

Justifications:

- Research has proven that galvanized lines absorb lead from upstream sources (examples of related research papers are provided in the bullets below). Research has also shown that most lead goosenecks, pigtails and connectors are connected to a galvanized service line because galvanized lines are more ridged than other materials of service lines such as lead, copper and plastic.
 - McFadden, M., et al. 2011. Contributions to Drinking Water Lead from Galvanized Iron Corrosion Scales. Journal American Water Works Association; 103(4), pp 76– 89. DOI: 10.1002/j.1551–8833.2011.tb11437.x
 - HDR. "An Analysis of the Correlation between Lead Released from Galvanized Iron Piping and the Contents of Lead in Drinking Water." 2009, archive.epa.gov/region03/dclead/web/pdf/galvanized%20project%20report.pdf.
 - Clark, B N., et al. "Lead Release to Drinking Water from Galvanized Steel Pipe Coatings." Environmental Engineering Science, vol. 32, no. 8, 2015, pp. 713-21, doi:doi:10.1089/ees.2015.0073.
- EPA acknowledges that lead goosenecks, pigtails and connectors are a concern and a source of lead as evidenced below and DEP believes that by EPA not including them as “lead upstream” of a galvanized line is a contradiction and less protective of public health.
 - In relation to monitoring locations, EPA requires all LCR samples to be collected at lead service line (LSL) locations, however, for water systems that don’t have enough LSL locations they are required to collect the rest of their samples at Tier 3 locations. 40 CFR §141.86(a)(5) specifies that “Tier 3 sampling sites consist of single-family structures that contain galvanized lines identified as being downstream of a lead service line (LSL) currently or in the past, or known to be downstream of a lead gooseneck, pigtail or connector.” From page 4228 of the preamble in the federal LCRR EPA states that revisions to the Tiering requirements “ensures that priority is given to highest risk lead sources in the absence of LSLs; galvanized service lines that have been impacted by a lead source such as lead goosenecks, pigtails and connectors. Galvanized lines that are or were downstream of a

lead source such as a LSL can contribute to lead in drinking water. These lines have zinc coating containing lead that can leach into drinking water when corroded. They also can capture lead from upstream lead sources and release lead if water quality changes or these pipes are disturbed.”

- 40 CFR §141.84(c) requires a water system to replace any lead gooseneck, pigtail, or connector when encountered during infrastructure work (specified in the language you provided below).
- EPA/Federal Government are allowing federal funding to be used to replace/remove lead connectors. From section 2.1.3 of the EPA *Guidance for Developing and Maintaining a Service Line Inventory*, “The LCRR requires that when lead connectors are encountered, they be removed or disconnected. In addition, funding sources, such as the Drinking Water State Revolving Fund (DWSRF), Bipartisan Infrastructure Law (BIL), and Water Infrastructure Improvements for Nations Act (WIIN), can be used to pay for lead connector removal and replacement.”
- In addition, section 2.1.3 of the EPA Guidance specifies the following regarding goosenecks, pigtails, and connectors: “EPA encourages water systems to identify the location and material of goosenecks and pigtails (connectors) and to include this information in their inventories. This would allow water systems to track and manage this potential source of lead, improve asset management, and increase transparency with customers. This could also help water systems identify where lead connectors are or were previously upstream of galvanized pipe and to manage this additional potential source of lead in their system. As previously discussed, lead from an upstream source can adsorb onto the galvanized pipe over time.” The highlighted sentence above again, contradicts their regulation and decision to not include these lead connectors in their definition of galvanized requiring replacement.
- In response to existing research and the lack of clear direction provided by EPA within the LCRR language and their inventory guidance, DEP has chosen the path that will provide the greatest public health protection.

Q: Our permit was issued July 1991. However, we purchase our water from a city that still has some lead goosenecks. We have some galvanized pipe in our system, would they need to be classified as "galvanized requiring replacement" because of the lead goosenecks in the selling system?

A: For this situation, the lead goosenecks that are in the selling water system are not going to affect the classification of your service lines. When we say “downstream” we are only talking about downstream from your water main along the service line and into the home (see the graphic below). You would need to have records that indicate that there was never a lead service line or lead connector anywhere between your water main and the home (along each service line), but again the selling system’s lead will not affect that.



Q: A few years ago, our water system completed partial service line replacements on the system side with copper. Once the lines were replaced, we disposed of (or overwrote) the old records indicating what the line was previously. Without knowing if the water system side was ever lead, if the customer side is galvanized, does the system have to indicate the entire line is “Galvanized Requiring Replacement”?

A: Yes

Q: What if a lead gooseneck is 6 ft. long, is it still not considered a lead service line?

A: The EPA definition for lead goosenecks says it is “A short section of piping, typically not exceeding two feet, which can be bent and used for connections between rigid service piping”. Therefore, if it exceeds two feet then it should be considered a lead service line.

SLI Form Questions:

Q: Once a service line (unique ID) is added to the inventory, what happens if the service line should no longer be used (the structure was demolished and the tap/line is capped or removed) and permanently no longer providing service. How should this be reflected in the inventory?

A: Once the service line is added the inventory you can make edits to the information with the exception of the unique ID this can never change and the service line cannot be deleted from the inventory completely. If using the SLI form developed by PA DEP, the system should capture this under Column F “Record Type” and change to *inactive*.

Q: What if we come across service lines that are not connected on the customer side. There is the water system side, but the customer hasn’t connected yet. Should I enter the service line with the customer material questions blank?

A: Since there isn’t a customer side and the water system is not providing service, keep a separate list of these potential services. If the customer connects before October 2024, then add the service line to your inventory. This way the customer side material and inventory questions can be documented accurately upon connection.

Q: If I conducted field verifications to confirm that a portion (either water system-side or customer-side) of the service line is made of a non-lead material and determine that it is two different non-lead materials (e.g. copper and PVC), how do I enter that into the SLI form?

A: If possible, determine which material comprises the longest length of that portion of the service line. For example, the service line is copper from the curb stop to the home and then switches to PVC just before and into the home. In this situation, since copper makes up the majority of the line, you would indicate that the service line is “copper” in the SLI form under the column titled “Material” and then under the “Additional Comments” column you should manually type that there is a short portion of PVC line and where it is located. This will allow you to properly document material for the entire line and will guarantee that if asked by DEP to see the evidence used for the determination (e.g. a photo) there is a decent explanation for the discrepancy.

Important Note: If either of the materials identified are not “non-lead”, such as lead or galvanized with lead previously upstream, even if the majority of the line is a “non-lead” material, the line will need to be classified as either “lead” or “galvanized requiring replacement” and cannot be considered a “non-lead” line.

Q: What if my system already has a database with some of this information, do we have to use the spreadsheet entering one service line at a time?

A: If at all possible, systems should use the Excel version of the SLI Form 3930-FM-BSDW0042a. However, for larger systems that may already have a database with existing information necessary for the inventory, DEP does offer an alternate spreadsheet template which allows copying and pasting of large amounts of data. Systems must follow the instructions for this alternate template, or the upload of the information will not work. Systems interested in this alternate form may e-mail ra-padwis@pa.gov to request the alternate template and corresponding instructions.

Note: DEP will not be able to accept any form other than, the SLI excel form 3930-FM-BSDW0042a, the “alternate” template, or the word version of the form developed by DEP.

Evidence for Non-Lead Questions:

Note: for most questions regarding sufficient evidence for Non-Lead Category, water systems should be directed to the *Sufficient Evidence for Non-Lead Job Aid*, which can be found at the following link. [Microsoft Word - Non-lead Job Aid \(state.pa.us\)](https://www.state.pa.us/microsofword-non-lead-job-aid)

Q: What if I have high confidence in my records from 1965; you are saying this is not sufficient evidence?

A: Correct, but if you have high confidence in records for a neighborhood or similar area built at the same time, you can do representative field sampling using Michigan’s EGLE guidance for representative field verification, which is explained starting on page 3 of the guidance:

At times it may be helpful to see what the pipe material looks like as it enters the home to help determine what the customer owned portion of the service line is made of, however, those inspections should be made by water system personnel that are properly trained to identify pipe material. Please note however, use of that method to determine service line material is not required, just an option.

Q: If I have court recorded development plans that specify that lead service lines were not used in a development prior to 1991, can that be used the same as an ordinance?

A: Yes, but only because the development plan was recorded with the court and therefore legally enforceable. Other legally enforceable alternatives to an “ordinance”, include official rules and regulations or plumbing codes for a town, municipality, or water system.

Q: Can we assume that a service line is “Non-lead” without the need for additional verification if we can determine that it is a large diameter based on meter size?

A: Based on information provided by water systems across the state and by EPA in their guidance, DEP will accept that a meter >2” in diameter can be used as a sole method for categorizing a service line as “Non-lead”. Any diameter 2” or less will still need to be verified following the requirements outlined in the *Sufficient Evidence for Non-Lead Job Aid* (see the top of this section for a link). Please note that it is still necessary to provide the service line material in the SLI in these instances (e.g. copper, PVC, etc.) but that may be easily determined by viewing the line entering/exiting the meter.

Q: Is DEP planning on developing guidance related to use of predictive models for determining service line material?

A: DEP does not anticipate developing specific guidance for models, but we do have the following expectations when water systems utilize this method:

- The water system should be able to defend that the model uses data that is statistically representative for each portion of the distribution system for which it was applied. Most modeling companies will provide details regarding minimum number of system specific inputs needed in order for the model to provide statistically representative results. It is very important to note that water systems are expected to carefully follow all manufacturer guidance relative to specific minimum data inputs required for the selected model.
- The minimum # of field verification inputs that are determined to be representative of a distribution system or the neighborhoods within a distribution system will most likely depend on applicable distribution system construction characteristics of the neighborhood. For example: a neighborhood built in 1980’s may not need as many points as a neighborhood built in the 1930’s; most reputable modeling companies will provide water systems with methods for selecting appropriate representative locations for field verification.
- Any model should be considered as a living application that should be continually updated as service line inventory work is done. In general, the more verified data that is input to the model, the more accurate the model will be.

Q: We have records of service line material that was originally installed in 1974 and then we have historical visual inspection data that has been collected by water system personnel since 2010 that has confirmed the service line material. However, this visual inspection data may not have documented the observation location as >18” from the curb box. Is this enough evidence to categorize a line as “non-lead” or do I need to verify the service line material again?

A: Records should not be used as a “stand-alone” method unless it meets one of the conditions outlined within the *Sufficient Evidence for Non-Lead Job Aid* (see the top of this section for a link). DEP recommends that the visual inspection occur >18” from the meter pit or curb box to confirm no splicing has occurred along the line; however, if the water system has high confidence in a field verification record which occurred after 1991 at a point closer to the meter pit or curb box, the record can be considered a single point of field verification. In a service line with joint ownership, a single point of field verification is sufficient for the shorter side of the service line, which is typically the system-side or in this case it can be used to verify your original record from 1974. Therefore, no further verification is necessary.

For the customer owned portion of the service line, material observed at the curb stop or observed along the customer side should be compared to the material entering the residence. When these two verification points align, no additional documentation is needed. However, it is important to note that, in instances where these two verification points do NOT align, an additional verification is needed if that line was installed prior to 1991.

Records of visual inspections that occurred prior to the publication of the Pennsylvania Lead Ban in January 1991, are considered data that should be re-examined as part of the records review. When entering the method into the service line inventory, this would be referenced as “records review” not “field verification”. That record can then be used in combination with another method described in the *Sufficient Evidence for Non-Lead Job Aid*.

Q: Our water system plans on utilizing the EGLE method to verify our records and we’re going to field verify 20% of our service lines in each neighborhood, or the appropriate number based on the “Minimum Number of Service Lines Requiring Physical Verification” chart in neighborhoods with $\geq 1,500$ service lines. If we find a discrepancy between the records we have and what was field verified, does that change anything or add any additional steps to the process?

A: In this situation, we recommend the following steps:

Step 1: Determine if there is any reason why that particular record might be wrong. This may involve conducting additional records review, contacting the customer to determine if they had altered the line without your knowledge, interviewing additional water system staff to determine if undocumented maintenance may have been performed, etc.

- If a legitimate reason for the discrepancy is found, then there is no need for additional actions and the water system should continue on with the predetermined number of excavations/verifications. Please note that this still counts as a discrepancy in records even though a legitimate reason was determined.*
- If a legitimate reason for the discrepancy is NOT found, continue to Step 2.

Step 2: Excavate/verify the connection on either side of the discrepancy to determine if there is a pattern of inaccurate records for that area, or if the discrepancy was an anomaly. Please note that these extra verifications are not able to be counted towards the minimum required number of lines that need to be field verified; they are “extra” lines to confirm that the discrepancy was an anomaly.

- If both connections on either side of the discrepancy match water system records, then continue on with the remainder of the predetermined number of excavations/verifications.*
- If any of the connections on either side of the original discrepancy doesn’t match water system records, then statistical analysis is no longer an acceptable method of verification for that portion of the water system.** Note: In this case, it may just be one particular portion of the neighborhood where the statistical analysis can no longer be used. For example, the homes on the road where the discrepancies were found were built in 1972, but the remainder of the neighborhood was built in 1974 & 1975 and no

extensively in our training that we have started conducting, I would suggest you and your MHC try to attend one of these trainings.

SLI Questions Specific to Nontransient Noncommunity (NTNC) Water Systems

Q: For noncommunity water systems with their own source, what is considered the service line and how do we confirm that it is non-lead?

A: The service line would be the line from the well to the building inlet. If there are multiple buildings, then it would also include the additional lines to each of the buildings.

For your NTNC systems, first you would want to see if there were any records to determine when the school was constructed or piping size/materials listed, schematics. Some of these may be with the municipality for planning and construction of the buildings (aerial photographs, tax records, sewage planning, occupancy permits). If the building/service lines were constructed after 1991 then there would not be a concern for lead lines, but you still need to identify what the service line is made of.

For those service lines (buildings) prior to 1991, if you don't have records identifying the line material, your best options for verifying "non-lead" include:

- Identify the pipe material as it enters the building from the well (this is considered "Visual inspection at existing access point" in the template) **AND one (1) of the following:**
 - Collect a "special" lead sample that represents the line coming from the well. If the system does not have corrosion control treatment, this sample can be collected at the Entry Point. This would be a targeted service line sample (5th liter or sequential monitoring- not a first draw).
 - Excavate a point somewhere along the line closer to the well- unless you were able to view the line leading from the wellhead (such as those from a well pit) then you would not have to dig. However, if you have any reason to believe that there are other pipe materials somewhere on the service line then test pit(s) at additional location(s) may be necessary.

Questions regarding DEP expectations for SLI review:

Q: What level of review will the Department conduct on Service Line Inventories?

A: The level of review will be commensurate with the regulations that are in place at the time of the review. With the submission of the initial inventory (due October 16, 2024), the Department's review will consist of a "completeness" review. Completeness means that the Department will review the inventory to ensure: 1) that each service line has been categorized as lead, GRR, non-lead (with non-lead material specified), or unknown; 2) that the method(s) used in making determination have been documented; and 3) each service line has been assigned a unique identifier. During sanitary survey's staff will "spot check" random service lines and request to see the documentation used to determine the line is "non-lead".

Q: Is the Department approving inventories?

A: No. There are currently no regulatory requirements for Department approval.