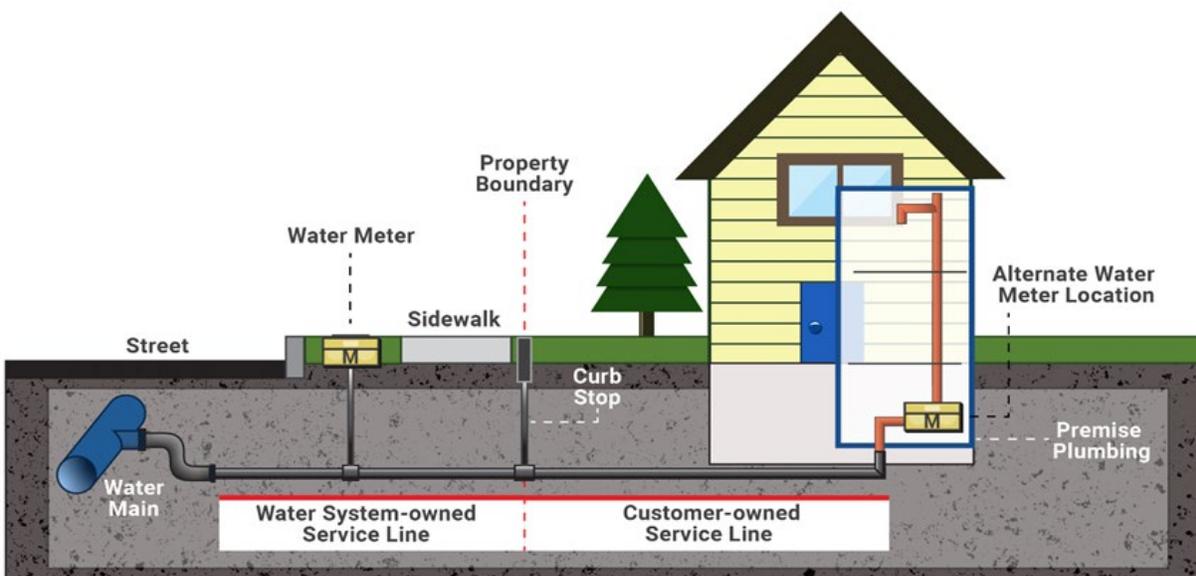


Lead and Copper Rule Revised (LCRR)

Service Line Inventory

Operator Training



Bureau of Safe Drinking Water

2023 v4



pennsylvania
DEPARTMENT OF ENVIRONMENTAL
PROTECTION

Lesson 1: Service Line Inventory

Introduction

Objectives:

After this lesson, you will be able to:

- Explain the purpose of the service line inventory
- Describe the service line inventory requirements
- Identify what needs to be included in the inventory and the records that systems must review to create their service line inventory

Who is affected by the Lead and Copper Rule Revisions?

The Lead and Copper Rule Revisions applies to:

- All **Community Water Systems**
- All **Non-Transient Noncommunity Water Systems**

Background: Lead and Copper Rule Revisions (LCRR)

The LCRR was published January 15, 2021. These revisions apply to 40 CFR Parts 141 and 142. The compliance date for these revisions is **October 16, 2024**.

This new rule focuses on a suite of actions to address lead contamination in drinking water. The new rule is meant to improve the current Lead and Copper Rule and further reduce lead exposure resulting in increased public health protection.

A copy of the LCRR can be found here:

<https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-141/subpart-I>

Since Pennsylvania will not have a rule in place by the compliance date, please refer to **40 CFR § 141.84** *Lead service line inventory* requirements.

Lead and Copper Rule Improvements (LCRI)

Since the publication date of LCRR, there was a change in administration. The EPA announced in the Federal Register notice from December 17, 2021, that it did not expect to change the requirements for the initial service line inventories.

Other aspects of the regulation may change with the **Lead and Copper Rule Improvements (LCRI)**. EPA is still developing LCRI and should finalize these changes to the regulation prior to October 16, 2024.

Please look for more information as it becomes available on the EPA's website:

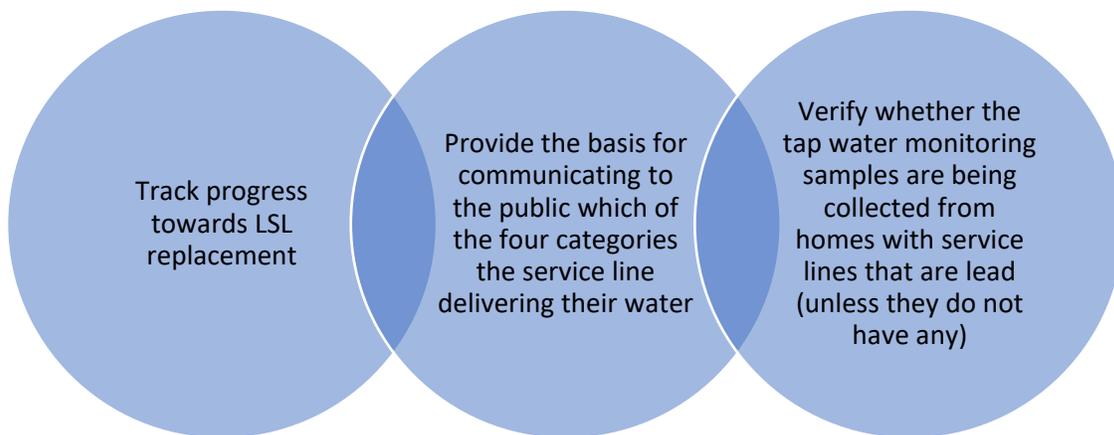
<https://www.epa.gov/ground-water-and-drinking-water/revised-lead-and-copper-rule>

2021 Bipartisan Infrastructure Law (BIL)

The Bipartisan Infrastructure Law (BIL) appropriated \$15 billion dollars nationwide over the next 5 years. Pennsylvania should be receiving approximately \$87 million each year for the next 5 years for lead service line replacements and inventory development. The money will be administered from the EPA through the state Drinking Water State Revolving Funds (DWSRF) through PENNVEST.

Google search “Pennvest IJJA” for information on the funding available, or use this direct link:

<https://www.pennvest.pa.gov/Information/Funding-Programs/Pages/IJJA.aspx>

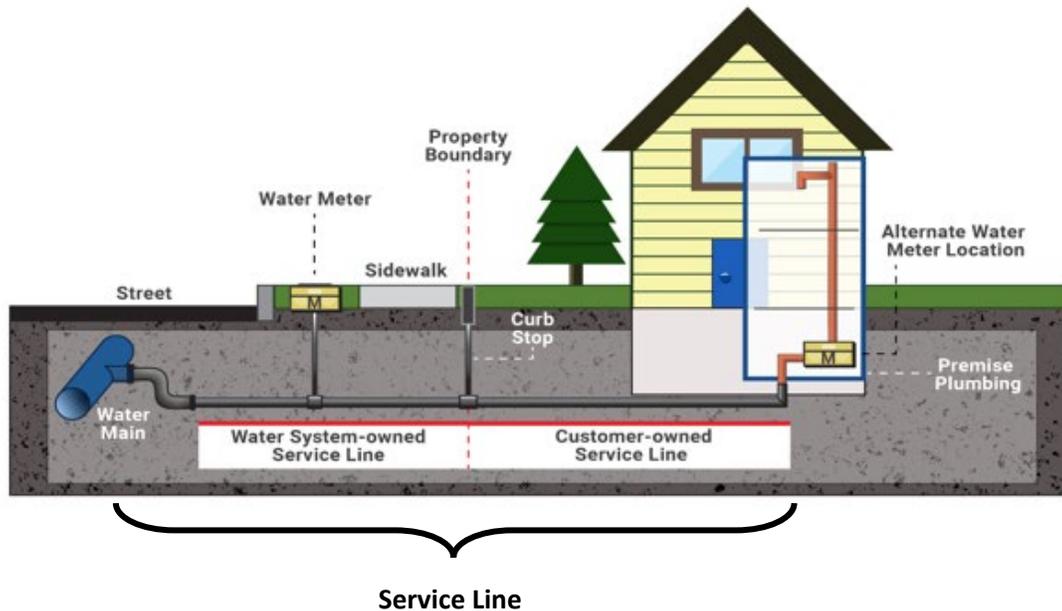
Purpose of the Service Line Inventory

The purpose of the service line inventory is to track a systems progress to full lead service line replacement. The service line inventory will provide the basis for communicating to the public, customers, residents, and other persons served by the water system which of the four categories of service line is delivering the water they consume. The final purpose of the inventory is a way for the Department to verify whether monitoring samples are being collected from homes with service lines that are lead unless the system does not have any.

Having a complete and accurate service line inventory is the first step to compliance with the LCRR/LCRI. All activities required by the regulation builds from this initial service line inventory. The focus is on finding the lead service lines and galvanized service lines that require replacement throughout the distribution system, so that replacement and sampling activities target these most vulnerable areas of the system.

Service Line Defined (25 Pa Code §109.1)

Service line: the pipe which connects the water main to the building inlet that may be owned by the water system, the property owner, or both.



This diagram depicts a common residential connection in which the ownership is split at the curb stop or property line.

NOTE: For NTNC systems the service line is considered the line from the well or source to the building inlet (meter or pressure tank).

A service line may be considered a lead service line, a galvanized service line requiring replacement, a non-lead service line, or a lead status unknown service line.

Which systems need to complete a service line inventory? (40 CFR §141.84(a))

All **community** and **non-transient noncommunity** water systems must develop an inventory to identify the material of all service lines connected to the public water distribution system. **This inventory is due to the Department by October 16, 2024.**

When is the service line inventory due? (40 CFR §141.84(a)(1))

This initial service line inventory is due to the Department **by October 16, 2024.**

Overview of the Requirements of the Service Line Inventory (40 CFR §141.84)

The service line inventory must:

- Include **all** service lines
- Use system information to help identify the material(s) of service lines
- Categorize/classify each service line
- Identify and track each service line material(s) as they are encountered
- Be updated
- Be publicly accessible
- Include a location identifier for each service line

Requirement: Include all service lines (40 CFR § 141.84(a)(2))

The first of the requirements is that the service line inventory needs to identify **all** service lines regardless of ownership status. Where service line ownership is joint, the inventory would include both the portion of the service line owned by the water system, and the customer owned portion of the service line.

For each jointly owned service line, the system will need to identify the material(s) for **each** portion of the service line. Remember, some *lead* service lines may have only been **partially** removed under the previous rule. This is still considered **one** service line in the inventory, but its materials may be made up of different types. We will discuss how these lines are categorized by the different materials later in this lesson.

Requirement: Use any information on lead and galvanized or steel piping (40 CFR § 141.84(a)(3))

The following information and records must be reviewed when systems complete their initial service line inventory:

- All construction and plumbing codes, permits and existing records or other documentation which indicates service line materials
- All water system records including distribution system maps and drawings
- Historical records on each service connection
- Meter installation records
- Historical capital improvement or master plans
- Standard Operating Procedures
- All inspections and records of the distribution
- Any other records required by the state- existing water quality information

All construction, plumbing codes, permits and existing records or other documentation which indicates the service line materials used to connect structures to the distribution system.

- Plumbing permits indicating when existing structures were renovated, and service lines were replaced. These permits should include the location and date of replacement and possibly an inspection record that accompanied the permit.
- Construction and plumbing codes may indicate when lead service lines were used and when they were prohibited. Some municipalities may have adopted their own codes and ordinances.
- Municipal tax records would typically contain the date of home construction, which when cross referenced with construction practices at the time could indicate the likelihood of a lead service line.
- Systems should also review their materials evaluation from the LCR already required.

The requirement for materials evaluation is not new. This already in our exists in our current lead and copper rule 25 PA Code §109.1103(g) to determine lead and copper sample site selection.

All water system records including distribution system maps and drawings. Already in our state regulations are mapping requirements in 25 PA Code § 109.706. A systems distribution map should include the size, location, and construction material of the pipes.

Historical records of each service connection could give detailed information on material location and size.

- Tap cards, ledgers, or drill cards

Meter installation records may contain service line material. The meter size and type can indicate service line size and building usage. Most lead service lines are 2 inches or less in diameter.

Capital improvement or master plans should be reviewed, in order to identify historical installation patterns to determine when lead service lines were used in the system.

Standard Operating Procedures (SOPs) may relay the allowable materials for service lines and repairs.

Inspections and records of the distribution system that indicates service line materials.

- Customer complaints
- Investigation of leaks
- Inspection of meters
- Cross-connection inspections
- Anytime the water system has the opportunity to view the service line (main breaks, valve installation, meter installation)

Any other source required by the Department.

- Existing water quality information (areas with higher lead and copper results)

Requirement: Service line categorization (40 CFR §141.84(a)(4))

Each service line, or portion of the service line where ownership is joint, must be categorized in the following manner:

- Lead
- Galvanized Requiring Replacement (GRR)
- Non-Lead
- Lead Status Unknown

Lead

A service line where any portion of pipe that is made of lead, which connects the water main to the building inlet.

Note: A service line with only a lead gooseneck, pigtail, or connector, would not be considered a lead service line under LCRR.

Lead goosenecks, pigtails, and connectors

In LCRR, these short sections of lead pipe (<2 feet) are not considered a lead service line alone. During the inventory process, if these items are identified, systems should be keeping track of them for future removal.

After October 16, 2024, if lead goosenecks, pigtails, or connectors are encountered (e.g. service line is dug up for repairs or replacement) water systems would need to replace these connectors with non-lead connectors. Removal of lead connectors would not count towards lead line replacement. When these lead connectors are replaced it would require public education for the disturbance.

Galvanized Requiring Replacement (GRR)

If the galvanized line is or ever was downstream of any portion of a lead service line, lead gooseneck, pigtail or connector, or service line of unknown material. *The water system must be able to demonstrate that the galvanized service line was never downstream of a lead service line. Otherwise it must be considered galvanized requiring replacement.*

Why are we concerned with galvanized service lines?

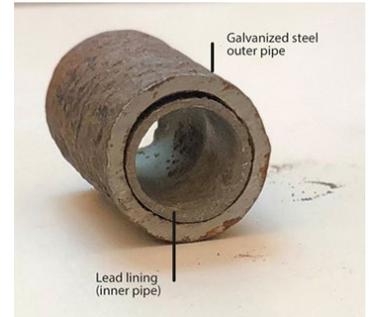
Galvanized pipes are iron pipes that have been dipped in a protective zinc coating to prevent corrosion and rust. Galvanized piping was commonly installed in homes built before 1970 and was an alternative to lead pipe for service lines.

There is focus of concern on galvanized pipes because they can be source of *lead exposure*.

1. Galvanized lines can capture lead released from upstream lead pipes. This stored

lead can be released into the home. The release can vary in concentration and can happen over a long period of time. In-home galvanized plumbing can also be a potential source of lead exposure if the house has or ever had a lead service line.

2. The zinc coating on galvanized pipes contains lead that can corrode and leach into the drinking water. Older galvanized pipes manufactured before 2014 contain a higher percentage of lead (0.5 % - 1.4%). Newer galvanized pipes must meet the 0.25% lead by weight.
3. Lead-lined galvanized pipes are galvanized lines in which the inside of the pipe were lined with lead. These types of lines were used in the eastern part of the United States. These pipes are usually larger diameter than typical LSLs and sometimes have a rusty appearance. According to manufacturing records from 1904 of the “Lead Lined Iron Pipe Company” these lines were installed in distribution systems in the PA towns of Scranton, Indiana and Reading.



What is meant by “Downstream”: Downstream refers to the galvanized pipe positioned after a lead connector or pipe in the same service line.

Non-Lead

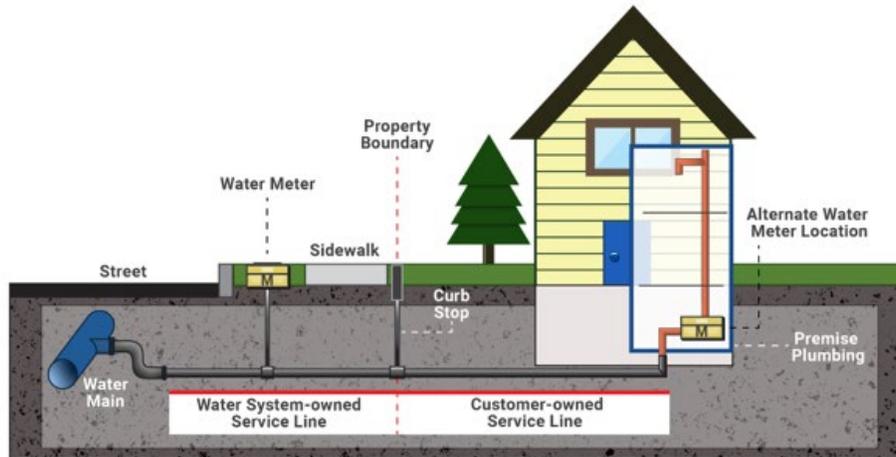
A service line which is determined through evidence-based record, method, or technique not to be lead or galvanized requiring replacement. *The water system shall identify the actual material for all “Non-lead” service lines.*

Lead Status Unknown

When the service line material is not known to be lead, galvanized requiring replacement, or non-lead service line, such as where there is no documented evidence supporting material classification. *Water systems may elect to provide more information regarding their unknown lines as long as the inventory clearly distinguishes unknown service lines from those where the material has been verified through records or inspection. (e.g. unknown-likely lead, unknown- unlikely lead)*

The DEP inventory spreadsheet discussed in lesson 4, will automatically categorize the service line based upon the information that is entered into the spreadsheet.

The table on the following page represents the service line designation when the ownership of the line is split between both the water system and the customer.



System-Owned Portion		Customer-Owned Portion		Service Line Classification ¹	
Material Type		Material Type			
Lead or lead-lined		Any material		Lead	
Any material		Lead or lead-lined		Lead	
Unknown		Any material but lead or lead-lined		Lead Status Unknown	
Any material but lead or lead-lined		Unknown		Lead Status Unknown	
Any material but lead, lead-lined, galvanized, or unknown		Any material but lead, lead-lined, galvanized, or unknown		Non-Lead ¹	
System-Owned Portion		Customer-Owned Portion			
Lead Connector Upstream?	Material Type	Lead Connector Upstream?	Material Type		
No	Any material but lead, lead-lined, or unknown	No	Galvanized		Non-Lead
No	Galvanized	No	Any material but lead, lead-lined, or unknown		Non-Lead
No	Galvanized	No	Galvanized		Non-Lead
No	Not previously lead	No	Galvanized		Non-Lead
Yes or Not sure	Galvanized	Any response	Any material but lead, lead-lined or unknown		Galvanized Requiring Replacement
Yes or Not sure	Any material but lead, lead-lined or unknown	Any response	Galvanized		Galvanized Requiring Replacement
No	Any material but lead, lead-lined or unknown	Yes or Not sure	Galvanized		Galvanized Requiring Replacement
Any response	Previously lead or unsure if previously lead	Any response	Galvanized		Galvanized Requiring Replacement

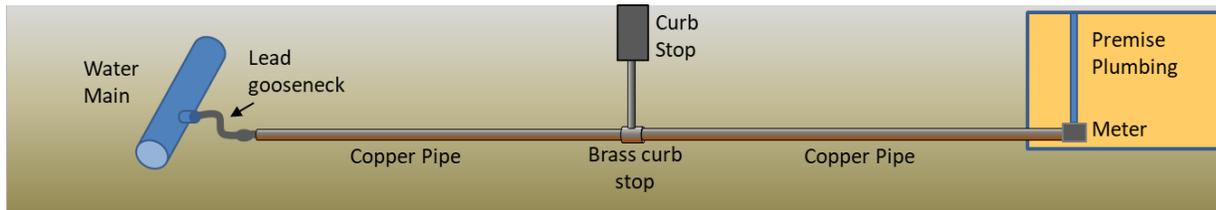
¹ The presence of lead connectors, goosenecks, or pigtails is only relevant to the determination of Galvanized Requiring Replacement.

Knowledge check – Service line categorization practice

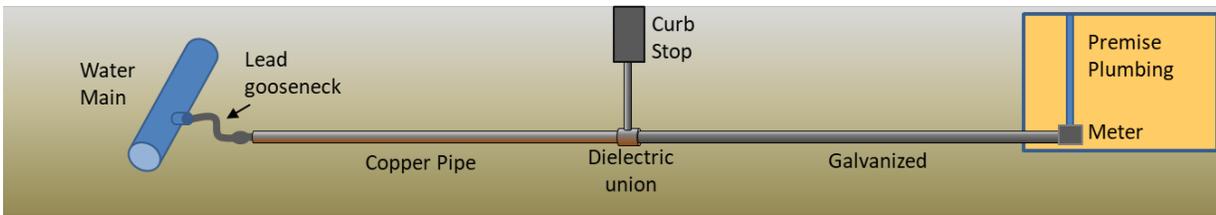
Service Line Categorization

Identify which of the four categories (lead, galvanized requiring replacement, non-lead, lead status unknown) the *complete* service line would be considered.

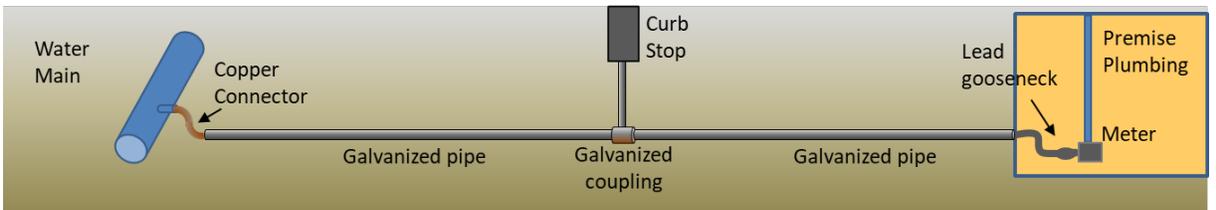
A.



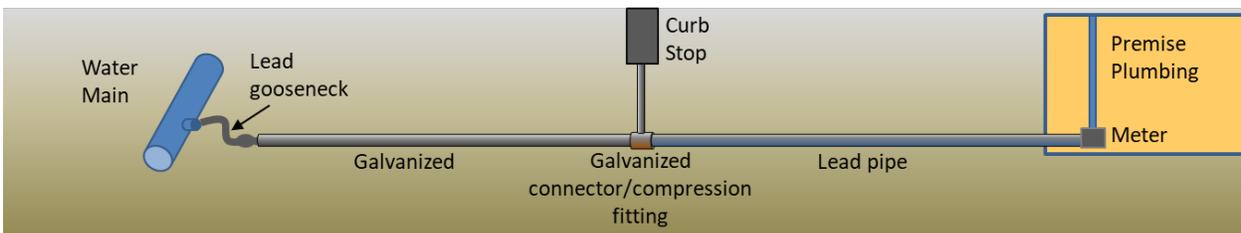
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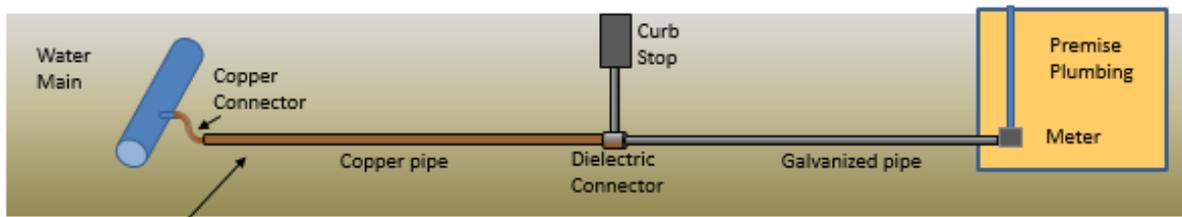
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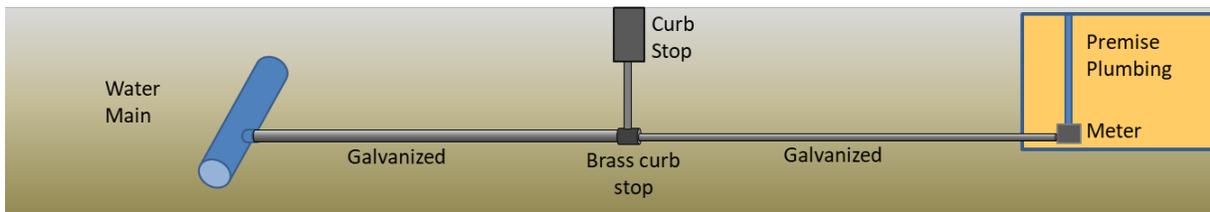


E.

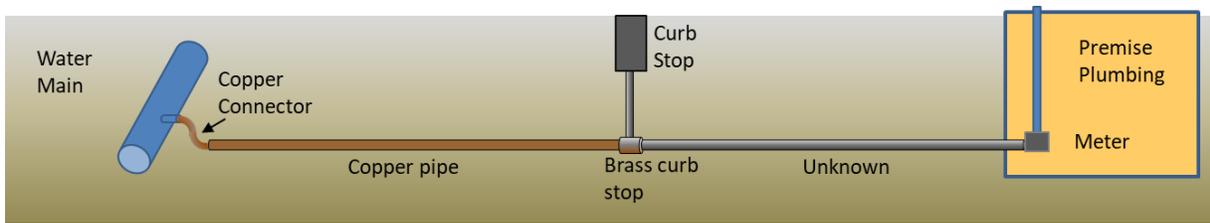


Partial lead line replacement
done in 2016

F.



G.



Systems with “Unknown” service lines (40 CFR §141.84(a))

For this initial inventory a system may have several unknown service lines. Remember systems with joint ownership, both the water system-owned and the customer-owned portions must be identified. If either side is unknown, then the line is categorized as an unknown service line. Systems with unknown lines are treated like lead lines until it is determined that they are not lead.

After October 16, 2024, updates to the inventory are required until...

- All unknowns are identified
- All lead service lines, and galvanized requiring replacement lines are replaced
- Non-lead verification

Identifying unknown service lines is required through the normal course of public water supply operations such as main installation/repairs or water meter readings/replacements.

All water systems with lead service lines or unknown service lines must create a Lead Service Line Replacement (LSLR) plan. The replacement rate would be based on the total number of lead service lines plus the number of galvanized requiring replacement plus the number of unknown service lines.

Systems with unknown service lines would also be required to implement risk mitigation measures after a disturbance (i.e. meter or meter setter replacement, or removal of a gooseneck, pigtail, or connector) of an unknown individual service line (40 CFR §141.85).

Systems will also need to inform consumers annually that they are served by a lead service line or lead status unknown service line.

Requirement: Identify and track each service line (40 CFR §141.84(a)(5))

Water systems will need to identify and track service line materials in the inventory as they are encountered during normal operations such as when systems are physically reading water meters or performing maintenance activities.

- Meter repair/replacement
- Service line repair/replacement
- Water main repair/replacement
- Backflow prevention projects
- Other street repair or capital projects with open excavations

This inventory will be constantly changing as systems encounter what are unknown materials. This could change their service line designations. Anytime the system gets to physically view material they need to documenting and cross referencing what their inventory has for that service line.

Requirement: Update the inventory (40 CFR §141.84(a)(6))

After the initial inventory, systems are required to submit updated service line inventories annually to the Department within 30 days of the end of the tap sampling monitoring period. Systems with inventories that contain only non-lead service lines are not required to provide the inventory updates unless they discover any service lines requiring replacement within their distribution.

Systems with all non-lead service lines (40 CFR §141.84(a)(6)(i))

Water systems must meet the verification methods of non-lead service lines as discussed in lesson 4 of this training. These systems would need to notify the Department within 30 days of identifying service lines that require replacement.

The water system would then need to submit an updated service line inventory in accordance to the approved schedule by the Department.

Requirement: Service line inventories must be publicly accessible (40 CFR §141.84(a)(8))

For systems with a population > 50,000 shall make their inventory available online.

For systems with a population < 50,000 shall provide it to consumers when the inventory is requested.

For systems with non-lead service lines only, may use a written statement which includes the sources of information that was used to make those determinations.

Requirement: Location identifier (40 CFR §141.84(a)(8)(i))

The inventory must include a location identifier (unique ID) for each service line. This location identifier can and most likely should be the same identifier used in the publicly available version of the inventory. The water system should maintain the specific street address that corresponds with the Unique ID in its records. Using an identifier for the written inventory submitted to the Department and made available to the public ensures privacy information related to each individual homeowner is protected.

Knowledge Check: Service line Inventory Requirements

1. Which water system types are required to prepare a service line inventory?
2. When is the initial service line inventory due to the Department?
3. Name at least three types of information(records) water systems must use to identify service line materials and prepare their inventory?
4. If service lines in the water system are split ownership, meaning that the system owns a portion and the customer owns a portion, would that line be considered one or two service lines in the inventory?

5. Which of the following are service line categories under LCRR:
- a. Lead
 - b. Non-lead
 - c. Non-lead with lead connectors
 - d. Lead status unknown
 - e. Galvanized Requiring Replacement

Key Points

- Under the LCRR all community and non-transient noncommunity water systems will need to develop a service line inventory for all service lines in their distribution system.
- Water systems will need to review historical records that identify service line material to prepare their initial service line inventory.
- Each service line will need to be classified as: lead, galvanized requiring replacement, non-lead, or lead status unknown.
- Water systems will need to track and identify service line materials as they are encountered throughout their normal activities.
- The service line inventory is required to be publicly accessible.
- Each service line will need a unique location identifier.
- The service line inventory is due to the Department by October 16, 2024.
- After this initial submission, the service line inventory will need to be updated at least annually as service line materials are identified and/or lead service lines are replaced.

Lesson 2: Records Review

Objectives

By the end of the lesson on records review, you will be able to:

- Determine where your system should start regarding records review for the service line inventory
- Describe the records that are required to be reviewed to complete the service line inventory
- Identify what needs your system will have to complete your service line inventory

Where do systems start to prepare a service line inventory?

Under the LCRR the water system needs to know what the material of all portions of the service lines regardless of ownership. Some systems may have very good records for their portions of the service lines but not so much information for the customer-owned portions of the service lines.

Systems need to start compiling their records now so that they can fill in the gaps and get additional information or possibly summon customer participation activities. Then decide what additional work they may need to do to make their inventory complete. Remember the October 16, 2024 due date is for systems to identify all service lines in their inventory not to *verify* all of the service line material.

Building the service line inventory is going to be an evolving process as information is gained or updated.

Water systems must review the following records:



- ✓ Distribution system maps and drawings
- ✓ Previous materials evaluations
- ✓ Construction and plumbing codes
- ✓ Existing records
- ✓ Historical records of each service connection/tap cards
- ✓ Meter installation records
- ✓ Capital improvement or master plans
- ✓ SOPs
- ✓ Inspection records of the distribution
- ✓ Tax records
- ✓ Existing water quality information

Water systems may use other sources of information not listed above.

Customer Surveys

Water systems may have to rely on customer participation to help fill in the gaps or check their records as to the customer-owned portion of the service line. Customers may want to perform

a scratch test, magnet test, or swab the service line as it enters the home or building and then report that information back to the water system.

Water systems could send a bill insert or letter/email to customers asking for their help in the service line inventory by scheduling the water system personnel to inspect the service line entering the home.

EPA has developed a guide to walk consumers through determining if they have a lead service line. The “Protect Your Tap – a quick check for lead” can be found at the following link:

<https://www.epa.gov/ground-water-and-drinking-water/protect-your-tap-quick-check-lead-0>

Scratch & Magnet test



Lead

- Dull silver gray
- Soft- easily scratched (appear shiny)
- Magnet will NOT stick



Galvanized

- Silver gray
- Difficult to scratch
- Magnet will stick



Copper Pipes

- Copper/bronze colored
- Magnet will NOT stick



Considerations for records review

This will be a lot of data to compile and sort so water systems should begin organizing their records now. Some helpful hints to consider:



Staff available to review records



Where to obtain the necessary information on each type of record



Scan paper records and add them to a database- compile data



Document material type and size during any type of upgrades or inspections



GIS- mapping

Water systems will want to identify staff available to review and organize their records. It is important that anyone working on the inventory and record review understand how to properly read each type of record to capture the required information. Systems may want to scan paper records and enter information into a database so they can easily access the files. If a water system is conducting any kind of upgrades, utility work, or inspections they need to be documenting the service line material type and size. This allows the system to corroborate between what the records say and what is visibly present. This would also establish a confidence level in the systems records as well. Water systems may also find it easier to view and access information in GIS mapping. This gives the water system an easy view of the information they have.

A thorough records review is a good first step in developing an inventory of your service lines. It is likely not the only method that a system will use to identify their pipe material. Records review is an essential piece to determine what other methods a system may need to use and which areas within their distribution system they would want to focus their efforts.

Focus activities on service lines installed prior to January 1991

Our Pennsylvania Lead Ban went into effect January 6, 1991. Although systems are required to identify the materials of all service lines. Water systems should prioritize their efforts to those service lines that were installed prior to 1991.

Focus activities on service lines that are 2 inches or less in diameter

Most lead service lines are 2 inches or less in diameter.

Lesson 3: Methods to Identify Service Lines

Objectives

By the end of this lesson, you will be able to

- Describe the different methods that systems may use to identify the material of their service lines
- Identify resources to get additional information on service line identification

Methods to Identify Service Lines

Let's discuss the methods of service line identification and the tools to directly identify service lines, and some of the screening techniques to predict the presence of lead service lines.

There are several methods for identifying service lines:

- Visual inspections
- Camera/Curb box inspections
- CCTV Internal pipe scope
- Potholing/Vacuum excavation
- Targeted service line sampling

As technology develops in this area, there may be additional methodologies that are not included in this list.

Visual Inspections

The material composition of a service line can be identified through visual inspection.

Water systems shall identify and track service line materials in the inventory as they are encountered during the course of their normal operations (e.g. checking service line material when reading water meters or performing maintenance activities).

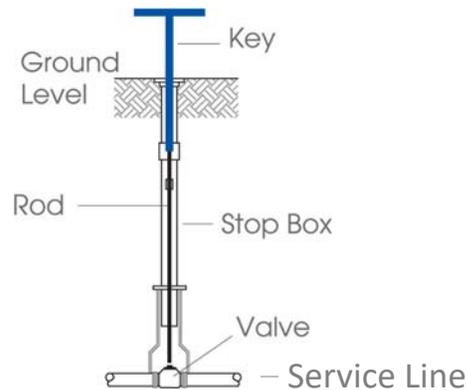
Water systems may want to request access to the customer's home/building to verify the composition of customer-owned portion of the service line.



Example of a lead line wipe joint

Camera Curb Box Inspections (Exterior of Pipe)

Water systems may consider curb box inspections as a low impact way to determine the material of their service lines. The curb box is a hollow tube that leads to the shut-off valve.



Cutaway view of the curb box

Cameras are used to take pictures of the exterior piping on either side of the curb box. These images are then sent away for identification.



Lead Service Line



Non-Lead Service Line



Unable to Determine

Some challenges include locating or accessing the curb box and cleaning out debris from the box so that both sides of the valve can be inspected. Some imagery may not be clear enough to be able to see the characteristic bulb-shaped “wipe joint” which facilitates identification.

Camera Pipe Scope (Interior of Pipe)

Some utilities have successfully used fiber optics closed circuit TV camera technology to visually inspect the interior of the service line. To complete this type of inspection the service would have to be shut-off in order to send the camera through the disconnected meter or other valve on the service line.

One major benefit to this type of inspection is that more of the service line can be visually inspected, the entire length of the service line, rather than just portions of the service line.

One draw back of this inspection is that once inside the pipe, the interior pipe walls may be coated with corrosion or scale deposits which can conceal the pipe wall surface making identification impossible.

Potholing or Vacuum Excavation

Potholing also known as vacuum excavation or hydrovacing is another technology water systems could use to identify their service line materials. This technique uses high pressure air or water to remove the soil, which is then vacuumed up. Prior to excavation, systems would need to identify other utilities and mark the locations where the holes are to be excavated. Once excavated, the holes allow for visual inspection and photos to be taken prior to restoring the holes.

This is less disruptive and cheaper than digging up an entire service line. However, multiple holes may be needed to capture partial replacements, splicing, or key areas of the service line. *Please see Lesson 4 verification requirements for non-lead service lines.*

Targeted Service Line Sampling

Another method that could be used to determine the likelihood of lead lines would be targeted sampling of a service line. With this type of special study water sampling, we are not talking about compliance sampling required by the regulation. This sampling is done to determine the likelihood of a lead service line being present.

There are several sampling strategies that a system could use:

- Flushed sampling
- 5th liter sampling
- Sequential sampling

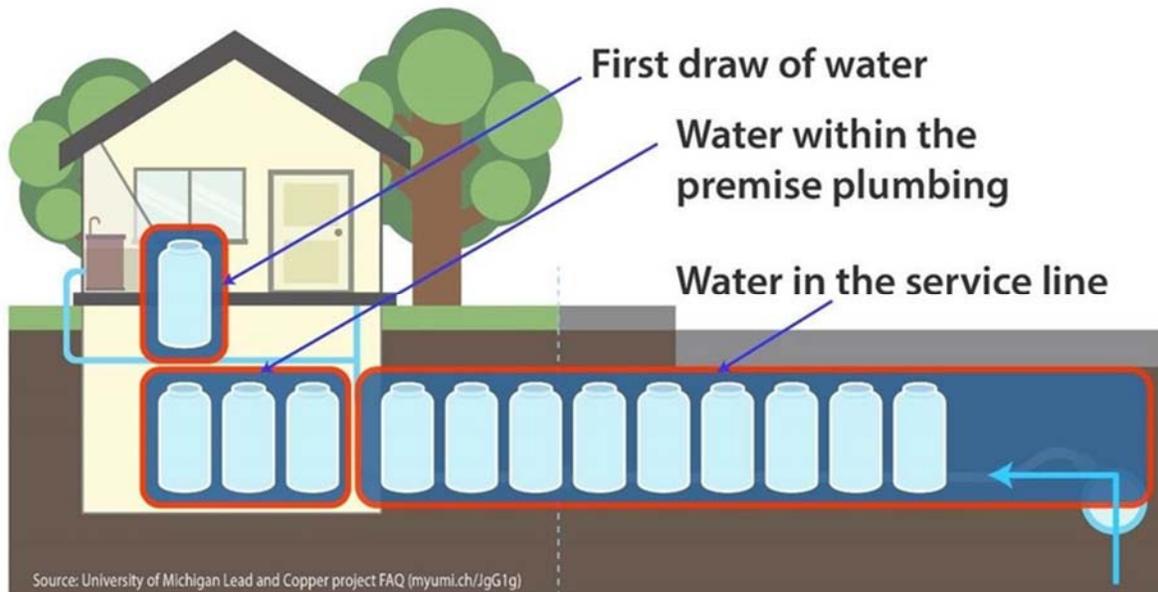
With these types of sampling, we don't want to capture the premise plumbing water we want to capture the service line water.

These samples would not work to determine "non-lead service line" because of corrosion control films on the pipe interior, but this method could be used to determine LSL or GRR if lead is detected prior to the tap.

The key to using water quality sampling for identifying LSLs is establishing a **community-specific threshold**, sample results above which may indicate that an LSL is present.

The volume of flushed water or the liter to be focused for analysis may vary line by line.

Another thing to note would be seasonal variability in water temperatures. Sampling should be conducted in the warmer months for worst case results.



Sequential Sampling

For more information on these sampling techniques please see the *EPA Guidance for Developing and Maintaining a Service Line Inventory*.

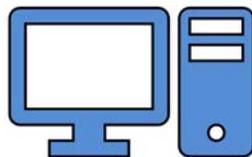
Systems utilizing targeted sampling to determine the likelihood of a lead service line:

Any systems taking these types of samples to determine the likelihood of a lead service line, should mark on their chain of custody “not reportable to DEP” or mark the sample type as “S”.

If any lead result from these targeted service line samples is greater than 15 ppb, this would still require one-hour notification to the Department.

Computer or predictive modeling

Computer or predictive modeling looks for patterns in data to develop rules or algorithms. These models use attributes from known service line materials at specific locations to make inferences about unknown locations. The models compile several layers of data. The model will then estimate the probability that a service line is lead, which can help systems to prioritize their investigations. As systems verify service line materials, the system model should be updated.



Other Methods to Identify Lead Service Lines

As technologies advance, there may be additional methods developed to determine service line make-up other than the ones mentioned in this lesson.

Resources

Environmental Protection Agency

- EPA has developed “*Guidance for Developing and Maintaining a Service Line Inventory*”, for systems to refer to as they are completing their service line inventories. It can be found at the following link:

<https://www.epa.gov/ground-water-and-drinking-water/revised-lead-and-copper-rule>

The Lead Service Line Replacement Collaborative

- The collaborative website has useful information on replacement practices, preparing inventories, communication resources, policies and more. Their website is:

<https://www.lslr-collaborative.org/>

Association of State Drinking Water Administrators

- ASDWA website:

<https://www.asdwa.org/>

Lesson 4: Service Line Inventory Form

Objectives – Service Line Inventory Form (SLI)

By the end of the lesson on the Service Line Inventory Form, you will be able to:

- Identify the information needed to complete the service line inventory
- Locate web tutorials on completion of the service line inventory
- Describe the service line inventory submission requirements

Service Line Inventory Requirements

The requirement for a water system to conduct a SLI is located in 40 CFR § 141.84:

“All water systems must develop an inventory to identify the materials of service lines connected to the public water distribution system.”

- The inventory must meet the requirements of § 141.84, as reviewed in Lesson 1 of this course.
- This initial inventory is due to the Department by October 16, 2024.

Service Line Inventory Form Templates

DEP has two templates:

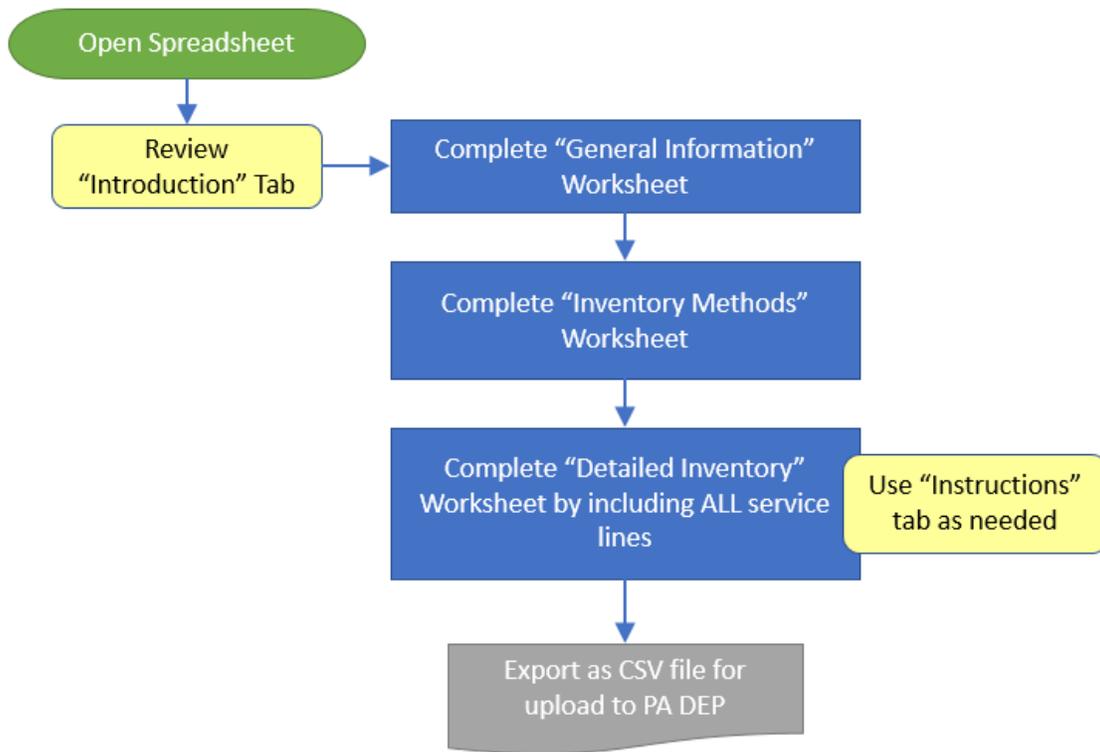
- **Excel Workbook Version** - Recommended for any size system. This template can be found on our eLibrary, document ID #: **3930-FM-BSDW0042a**
- **Word Version** - Recommended for systems with no more than five service connections.

DEP SERVICE LINE INVENTORY SPREADSHEET INSTRUCTIONS

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Recommended Process:



DEP SERVICE LINE INVENTORY SPREADSHEET INSTRUCTIONS

I. Introduction

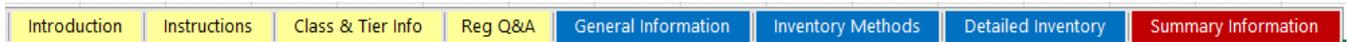
The purpose of this template is to help water systems comply with the Service Line Inventory requirements of the January 15, 2021 Lead and Copper Rule Revisions (LCRR). This template provides fillable forms and tables that water systems can use to document their methods, organize their inventory, export the inventory for submission to the state, and document how they are making the inventory publicly available. Note that DEP does NOT require systems to use this template for their inventory, but it is recommended.

For the spreadsheet to function properly, please use Microsoft Excel® 2013 or newer.

Questions on the use of the spreadsheet can be directed to the Bureau of Safe Drinking Water at RA-PADWIS@pa.gov

How is the template organized?

This workbook contains several worksheets, which are accessed by clicking the tabs at the bottom of the workbook window. They appear like this:



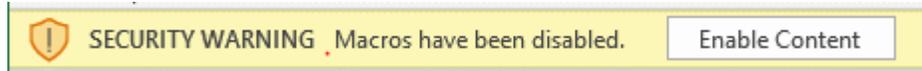
The tabs are color-coded as follows:

Template Organization		
Worksheet Type	Worksheet Name	Description
Background	Introduction	Introductory template information
	Instructions	Contains detailed instructions for systems.
	Class & Tier Info	Contains information on: <ul style="list-style-type: none"> - how service line classification is determined when ownership is split between the system & customer; - how LCRR tap sampling tiers are determined.
	Regulatory Q&A	Explains the service line inventory requirements of the January 15, 2021 LCRR in Q&A format.
Templates for Water Systems	General Information	For systems to document relevant information about their system.
	Inventory Methods	For systems to document the methods and resources they used to develop their service line inventory.
	Detailed Inventory	For systems to organize their detailed inventory. Each row equals one service line connecting the water main to the customer's plumbing. Separate columns track locational information, the system-owned portion, the customer-owned portion, other possible sources of lead, and information for assigning a tap sample tiering classification.
Summary	Summary Information	This sheet automatically generates totals based on information in the Detailed Inventory worksheet.

DEP SERVICE LINE INVENTORY SPREADSHEET INSTRUCTIONS

Template Use:

Open the spreadsheet. If you have a large amount of data it may take a few minutes. Please be patient. Upon opening, you may see this message at the top of the spreadsheet; click on "Enable Content" before you begin:

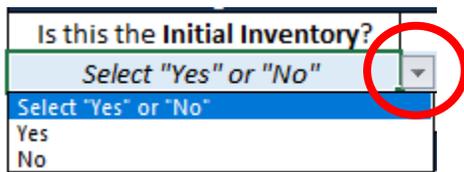


Note that you may need to add additional Trusted Locations in the Trust Center Settings of Excel in order to run the macros. These locations may include server drives and/or locations where you intend to save the file for use. The following steps may be taken:

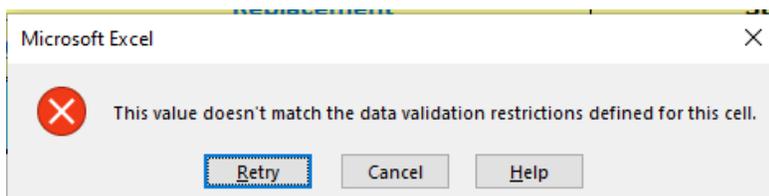
1. Excel Options > Trust Center > Trust Center Settings > Trusted Locations
2. Check the box to "Allow Trusted Locations on my network"
3. Select "Add new location"
4. Browse to select the folder (or server) where the file will be saved, check the "Subfolders of this location are also trusted" box, and then OK

Drop-down menus:

Some cells require you to use a drop-down menu to select an option. To access the drop-down menu, simply click into the cell and the drop-down arrow will appear to the right of the cell, as shown here:



If you type an answer into the drop-down cell rather than using the drop-down, you will receive this error message below. Click Cancel and the cell will be cleared.



Input Cell Color Formatting:

	Table Key
	All light blue fields should be completed
	If a selection from a dropdown menu causes the cell color to change to light brown, additional information needs to be entered in the Additional Comments field.
	If a cell or set of cells is XX'd out, these questions should not be answered.
	A pinkish-red cell indicates a duplicate value

DEP SERVICE LINE INVENTORY SPREADSHEET INSTRUCTIONS

II. General Information Worksheet

General Information

To begin, click on the “General Information” tab.

1. For the initial inventory, select “Yes” in the first column. The initial inventory date should be the date you complete the inventory.

General Information			
Revision Tracking			
Is this the Initial Inventory? <i>Select "Yes" or "No"</i>	Enter Initial Inventory Date:	Is this an Updated Inventory? <i>Select "Yes" or "No"</i>	Enter Updated Inventory Date:

2. Complete the Facility Information. Remember you can only fill-in cells that are light blue. Note: The Detailed Inventory will not work correctly if you do not answer question 1-4 in the facility information.

Facility Information		
Water System Name:		
PWSID (7-digit number):	Total Population Served (number of people):	Number of Service Connections 0

NOTE: You cannot manually complete the cell for “Number of Service Connections”. This will auto-populate as you enter service lines on the Detailed Inventory tab.

3. Next complete the “Public Access Documentation” section:

Public Access Documentation	
How is the system making its inventory accessible to the public? Check all that apply. NOTE: <i>If the system serves > 50,000 people, the inventory MUST be provided on-line.</i>	
<input type="checkbox"/> Interactive on-line map	<input type="checkbox"/> Information on water utility mailings or newsletter
<input type="checkbox"/> Static on-line map	<input type="checkbox"/> Hard copy information available in water system office
<input type="checkbox"/> Printed service line map	<input type="checkbox"/> Other
<input type="checkbox"/> Printed tabular data	
If "Other", please describe:	

DEP SERVICE LINE INVENTORY SPREADSHEET INSTRUCTIONS

III. Inventory Methods Worksheet

Inventory Methods

Part 1. Historical Records Review

The LCRR specifies the types of historical records that water systems must review to develop their initial service line inventory. These record types are listed in the **Part 1. Historical Records Review table**.

To use the table:

- First use the drop-down in the far-right column to indicate the level of confidence you have in the records (low, medium, or high). For example, if you have recent records from a distribution system repair, you may have high confidence in this record.
- Once you select a level of confidence, the column for “Describe the Records Reviewed” will turn light blue and be available for entry.

Inventory Methodology			
PWS Name: ABC Water			
PWSID: 86478787			
Part 1: Historical Records Review			
Type of Record	Examples	Describe the Records Reviewed	Level of Confidence in Records
1. Previous Materials Evaluation	<i>Locations of Tier 1 lead tap sampling locations that are served by a lead service line.</i>		High
2. Construction and Plumbing Codes and Records	<i>Local ordinance adopting an international plumbing code. Permits for replacing lead service lines.</i>		No Records

First, use the dropdown to select the level of confidence in the record. Once selected, the “Describe the Records Reviewed” cell will open for entry.

Part 2: Identifying Service Line Material During Normal Operations

1. Check each box that indicates during which normal operating activity(ies) your water system collects service line material information.
2. Use the dropdown menu to indicate if you developed or revised your standard operating procedures. If yes, provide a brief explanation of the SOP.

Part 3: Service Line Investigations		
1. Identify the service line investigation methods used by the system to prepare this inventory (check all that apply).		
Column A: File/Record Review	Column B: Analytics	Column C: Physical Inspection
<input type="checkbox"/> Customer Self-Identification	<input type="checkbox"/> Statistical Analysis	<input type="checkbox"/> Visual Inspection at Curb Box
<input type="checkbox"/> Previous Materials Evaluation	<input type="checkbox"/> Modeling	<input type="checkbox"/> CCTV Inspection Inside Pipe
<input type="checkbox"/> Installation Record (e.g., tap card)	<input type="checkbox"/> Water Quality Sampling	<input type="checkbox"/> CCTV Inspection Outside Pipe (Curb Box)
<input type="checkbox"/> Repair or Replacement Record	<input type="checkbox"/> Other analytics technique	<input type="checkbox"/> Mechanical Excavation (e.g., Potholing, Trenching)
<input type="checkbox"/> Other type of record review		<input type="checkbox"/> Other physical inspection method

Part 3: Service Line Investigations

1. Check each box that indicates the investigative methods used to prepare your inventory.
2. Use the space provided to describe how service line locations are selected for physical inspection.

DEP SERVICE LINE INVENTORY SPREADSHEET INSTRUCTIONS

IV. Detailed Inventory Worksheet

Detailed Inventory

You will be entering all data into **row 7** in the worksheet.



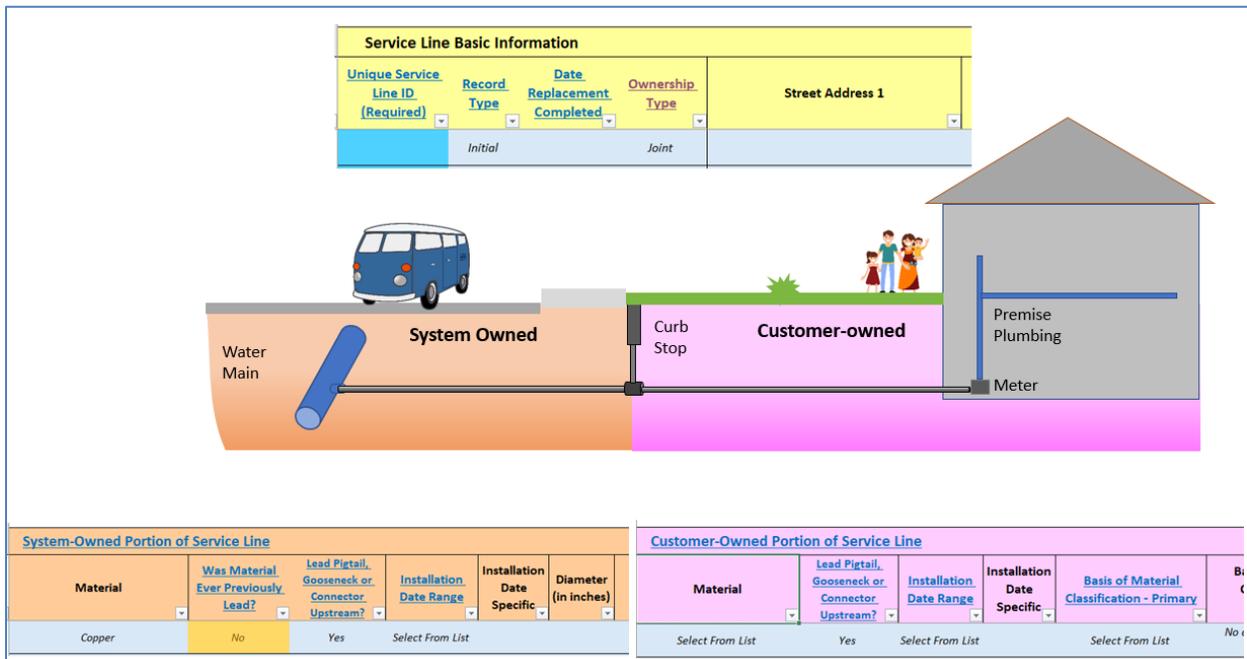
How many service connections are in your system? _____

- **NOTE:** The first 3 columns with green headings will be auto-populated based on how you complete other data columns in the sheet.
 - **Column A: Service Line Classification** – This column will display the category classification of the complete service line (e.g., Non-lead)
 - **Column B: Sufficient Evidence for Non-Lead?**
 - **Column C: LCRR Sampling Tier**

PWSID:		
<u>Service Line Classification</u>	<u>Sufficient Evidence for Non-Lead?</u>	<u>LCRR Sampling Tier</u>
<i>Answer all system & customer owned questions</i>	<i>Not Applicable</i>	<i>Answer all questions</i>

Layout of Detailed Inventory Worksheet:

The worksheet is organized into yellow, light orange, pink, and purple sections by column. As depicted in the diagram below, the yellow column headings represent the **overall** service line information; the light orange columns represent the **system-owned portion**, and the pink columns represent the **customer-owned portion**. The purple columns are for information used to determine the sampling tier (not shown).



DEP SERVICE LINE INVENTORY SPREADSHEET INSTRUCTIONS

Service Line Basic Information:

1. Begin with **column E Unique Service Line ID**.

<u>Unique Service Line ID (Required)</u>	<u>Record Type</u>	<u>Date Replacement Completed</u>	<u>Ownership Type</u>
	<i>Initial</i>		<i>Joint</i>

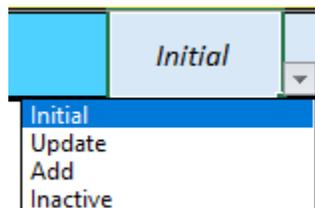
Create a naming system for your system with unique IDs for each service line. The naming rules are:

- Can contain up to 30 characters
- Can use letters and/or numbers in any combination
- **DO NOT** use spaces or other special characters (i.e., *, !, @, etc.)
- Can use dash (-) or underscore (_)
- Lowercase letters will be converted to uppercase

Some water systems use a numbering system (e.g., 1001, 1002) or simply the location address as the unique identifier (e.g., 101DOGWOOD, 104DOGWOOD)

2. Columns F and G: Record Type and Date Replacement Completed

- This is a drop-down menu. Click into the cell, then click on the drop-down arrow to access the options as shown below.



Initial	Use this designation for all entries in the initial inventory submitted on or before October 16, 2024
Update	Use this designation when submitting an updated inventory, to indicate the record is being revised <ul style="list-style-type: none"> • If the update is due to a service line replacement, enter the replacement date in Column G
Add	Use this designation to add more service lines to an existing inventory
Inactive	Use this designation to indicate a record is being inactivated. Records cannot be deleted. Example: Property was made into a parking lot and the service line was decommissioned. Add comment explaining inactivation in columns Y and/or AH.

DEP SERVICE LINE INVENTORY SPREADSHEET INSTRUCTIONS

3. Column H: Ownership Type

- Indicate whether the entire service line is owned by the system, the customer, or jointly.
 - Most Common: Select *Joint* if the system owns a portion (e.g. from the main to the curb stop), and the customer owns the other portion.
- If the Ownership Type selected is System, any answers entered in the Customer-Owned columns will be grayed out, and vice versa.

<u>Customer-Owned Portion of Service Line</u>			
Material	<u>Lead Pigtail, Gooseneck or Connector Upstream?</u>	<u>Installation Date Range</u>	Installation Date Specific
Select From List	Yes	Select From List	

- **NOTE:** If the service line is not jointly owned, but the user would like to submit information about two different segments of the line (e.g. main to curb stop/curb stop to house), select **Joint ownership**. Comments clarifying the ownership status may be entered under Question 4 on the General information tab or in columns Y and/or AH of the Detailed Inventory.

4. Columns I-L: Address Information

- Enter the address information for the service line
- If the address has already been entered these cells will turn pink with red text

5. Columns M and N: School?/Childcare Facility?: Indicate if the service line provides water to a school and/or childcare facility.

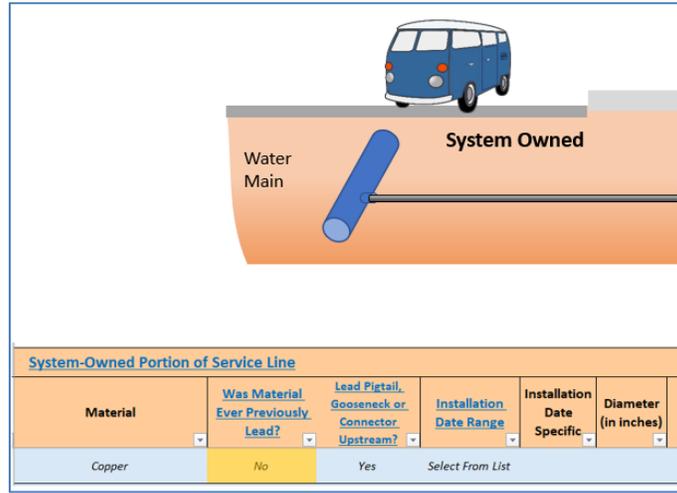
- A childcare facility is "a location that houses a licensed provider of childcare, day care, or early learning services to children as determined by the State licensing agency."
- A school is "any building associated with public, non-public/private, or charter institutions that primarily provides teaching and learning for elementary or secondary students.
 - An elementary school contains students in grades up to and including grade 8 (includes pre-school).
 - A secondary school contains students in grades no less than 9 and no greater than 12.

<u>School?</u>	Childcare Facility?
No	No
<div style="border: 1px solid black; padding: 2px;"> No Yes, Elementary Yes, Secondary Yes, All Grades </div>	

DEP SERVICE LINE INVENTORY SPREADSHEET INSTRUCTIONS

System-Owned Portion of the Service Line:

6. **Column O** begins the **System-Owned** portion of the service line.



The diagram shows a cross-section of the ground with a blue van on top. Below the ground surface, a blue pipe labeled 'Water Main' is connected to a grey pipe labeled 'System Owned'. Below the diagram is a screenshot of the spreadsheet form titled 'System-Owned Portion of Service Line'. The form has several columns with dropdown menus. The 'Material' column is set to 'Copper'. The 'Was Material Ever Previously Lead?' column is set to 'No'. The 'Lead Pigtail, Gooseneck or Connector Upstream?' column is set to 'Yes'. The 'Installation Date Range' column is set to 'Select From List'. The 'Installation Date Specific' column is set to a dropdown arrow. The 'Diameter (in inches)' column is set to a dropdown arrow.

Material	Was Material Ever Previously Lead?	Lead Pigtail, Gooseneck or Connector Upstream?	Installation Date Range	Installation Date Specific	Diameter (in inches)
Copper	No	Yes	Select From List		

NOTE: If the system owns the entire service line, the questions for the customer-owned portion (pink columns) are automatically grayed out. In this case, answer the system-Owned portion questions for the entire service line.

In **Column O, Material**, select the type of pipe material from the drop-down by selecting the cell first, then clicking the drop-down arrow. The material options include:

- Lead
- Lead-lined galvanized
- Galvanized
- Copper
- Cast iron, lined
- Cast iron, unlined
- HDPE – high density polyethylene
- PVC – Polyvinyl chloride
- CPVC – chlorine treated PVC
- PEX – cross-linked polyethylene
- ABS – acrylonitrile butadiene styrene
- PB – polybutylene
- Asbestos cement
- Other non-lead material
- Unknown
- Unknown – likely lead
- Unknown – unlikely lead



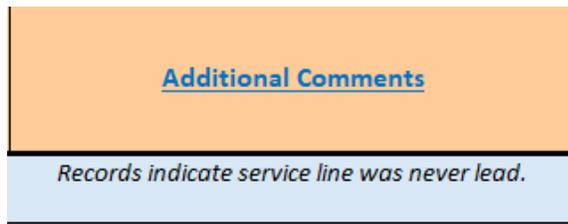
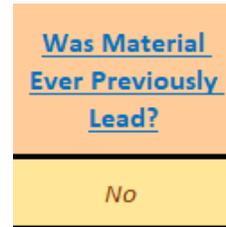
Circle the material(s) above that are used for service lines in your system.

In the inventory, you can indicate “Unknown” for service lines that you have yet to determine the material composition. Alternatively, the form allows you to selection Unknown-likely lead or -unlikely lead based on the material research and evaluation you have completed when the initial inventory is submitted. These identifiers are to be used by the system to help focus continued material identification efforts.

DEP SERVICE LINE INVENTORY SPREADSHEET INSTRUCTIONS

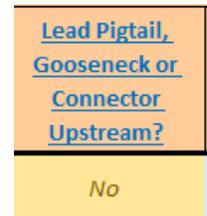
7. Column P: Was Material Ever Previously Lead?

- This question is asked because previous lead pipes upstream of a galvanized section means that the galvanized section will be classified as Galvanized Requiring Replacement. The worksheet will determine this classification for you.
- If you select “No”, the cell turns yellow (as shown to the right), which indicates you should put additional information in the Additional Comments field (Column Y). In the comments field, explain the verification methods that were used to determine that the material was never previously lead (e.g. records review). Example:



8. Column Q: Lead Pigtail, Gooseneck, or Connector Upstream?

- Indicate if there is a lead pigtail, gooseneck or connector between the main and the system-owned portion of the service line.
- Note that it defaults to “Yes”. Change this as appropriate using the drop-down.
- If you select “No”, you’ll notice the cell turns yellow (as shown below), which indicates you should put additional information in the comments field (Column Y). For this column, you should explain the verification methods that were used to determine that there is not a lead pigtail, gooseneck or connector upstream (e.g. records review or field study).



9. Column R and S: Installation Date Range and Installation Date Specific

- Column R is a drop-down list of 10-year ranges to indicate the timeframe in which the service line was installed. If you know the specific date of install, place it in column S (MM/DD/YYYY). Example:

<u>Installation Date Range</u>	<u>Installation Date Specific</u>
<i>2000 - 2009</i>	<i>12/13/2004</i>

10. **Column T: Diameter in Inches** - Enter the service line pipe inner diameter, in inches. Use up to two decimal places (e.g., 1¾ inch = 1.75).

DEP SERVICE LINE INVENTORY SPREADSHEET INSTRUCTIONS

11. **Columns U, V, W, and X: Basis of Material Classification 1 and 2, Field Verification Method, and Date of Field Verification.** Use these columns to identify the methods employed to determine the service line material. For more details on each method, see the EPA Document: [Guidance for Developing and Maintaining a Service Line Inventory \(EPA 816-B-22-001\)](#)

Basis of Material Classification - Non-Field Method	Basis of Material Classification - Non-Field Method	Basis of Material Classification - Field Method	Date of Field Verification
<i>Non-field method</i>	<i>Non-field method</i>	<i>Field method</i>	

- The choices for “non-field” methods include the following.
 - *Records review*
 - *Modeling/statistical analysis*
 - *Water Sampling (No CCT).*
 - This can only be used as evidence for non-lead by systems that do not have corrosion control treatment installed.
 - *Other (explain in the comments field)*
- Column W: Field Verification Method options include:
 - *Visual inspection at existing access point*
 - This includes any access points in which you can clearly determine the material type of the service line, such as a meter pit, or the service line entry to the basement at the customer side.
 - *CCTV inspection inside pipe – full-length*
 - *CCTV inspection outside pipe – at curb box*
 - *Mechanical Excavation, 1 location*
 - *Mechanical Excavation, 2 locations*
 - *Mechanical Excavation, 3+ locations (described below)*
 - *Other – enter in comments field*

DEP SERVICE LINE INVENTORY SPREADSHEET INSTRUCTIONS

SUFFICIENT EVIDENCE FOR NON-LEAD:

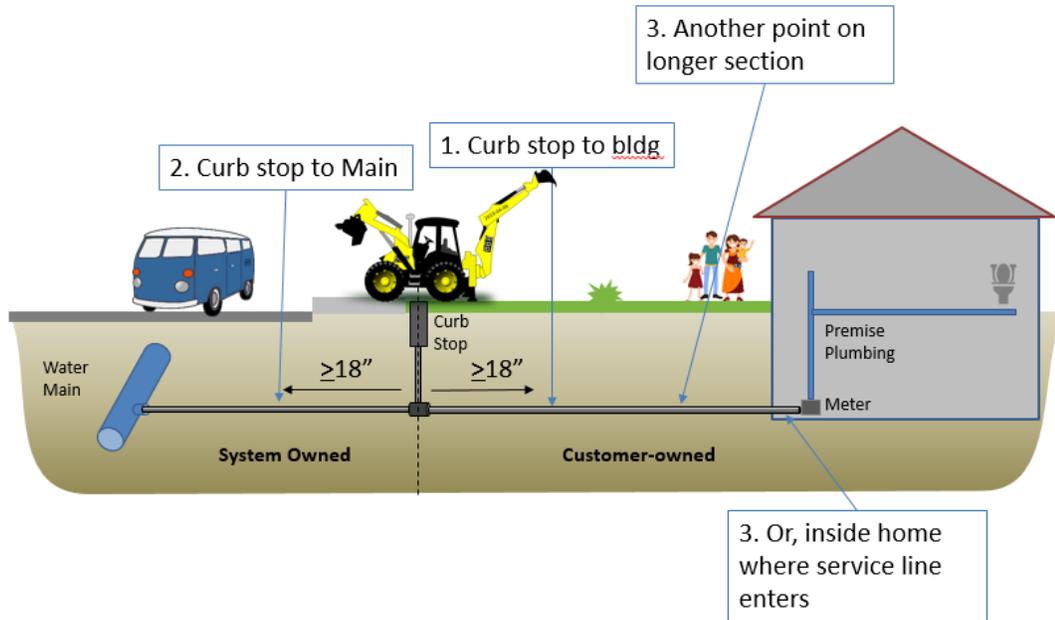
- If your investigation concludes that the pipe material is non-lead (e.g. copper), you are expected to show sufficient evidence through one of the “stand-alone” verification options, or a combination of 2 or more other methods as described below.
 - **“Stand-Alone” Records Method Options:** If you are able to use one of the following records verification methods, you do not need an additional method to verify the pipe is non-lead:
 - Records indicating installation/replacement date after January 6, 1991 (the effective date of the PA Lead Ban) – **OR** –
 - Record of a local ordinance prohibiting lead service line installation and water system records indicating service line installation/replacement after the ordinance effective date.
 - **Combination of Two (or more) Other Methods**
 - If your system records do not meet either of the criteria above, you may use any TWO other investigation techniques from the dropdown lists in columns U – W. This includes using any combination of two of:
 - Records review
 - Modeling/Statistical analysis
 - Water sampling
 - Field verification
 - Visual inspection at existing access point
 - This includes any access points in which you can clearly determine the material type of the service line, such as a meter pit, or the service line entry to the basement at the customer side.
 - CCTV inspection outside pipe – at curb box
 - Mechanical Excavation, 1 location if complete service line is owned by one entity
 - Mechanical Excavation, 2 locations if joint ownership
 - Other method reviewed by DEP
 - For example, a system may have records that indicate a service line is copper that was installed in 1985. Since this is prior to the PA lead ban a second verification of the records is expected. The system chooses to verify the records through CCTV inspection at the curb box.

Representative Field Verification of Records

- If a system has high confidence in records from an area (e.g., neighborhood) built prior to the lead ban or ordinances, the system can field verify a statistically sound subset. DEP expects that systems follow the [Michigan EGLE “Minimum Service Line Material Verification Requirements”](#) to determine the statistically sound subset. This method can only be used to verify existing service line records.

DEP SERVICE LINE INVENTORY SPREADSHEET INSTRUCTIONS

- **“Stand-Alone” Field Method Options:** If you do not have any other method options there are two stand-alone field method options. Use ONE of the following verification methods:
 - Internal CCTV inspection over the full length of the service line – **OR** –
 - Mechanical excavation in at least 3 locations over the length of the service line as follows (visual below):
 - Curb stop to building:
 - A minimum of 18 inches from the curb stop
 - If the distance to the building is less than 18 inches, halfway to the building
 - Curb stop to water main:
 - A minimum of 18 inches from the curb stop
 - If the distance to the water main is less than 18 inches, halfway to the main
 - Third point (choose one):
 - Inside the home where the service line enters (inspected by water system personnel, not customer)
 - A second excavation point in the longer section of service line that is at least halfway between the first point and the building or water main



Columns U, V, W, and X are tied to Column B “Sufficient Evidence for Non-lead”. The spreadsheet determines if there is enough evidence for the non-lead designation by looking at the basis of material classifications identified by the water system. The water system is expected to use a stand-alone method described above or a combination of methods, also described above.

DEP SERVICE LINE INVENTORY SPREADSHEET INSTRUCTIONS

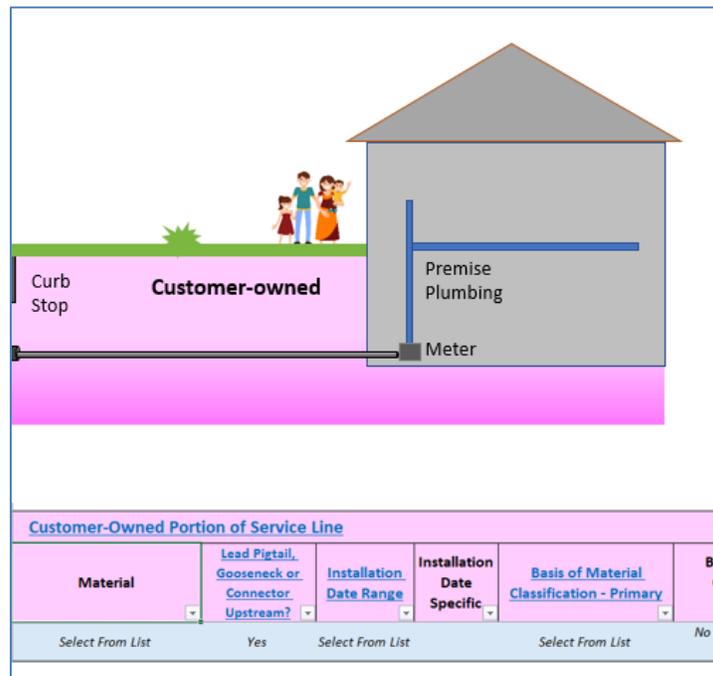
- For example, if “Records review” is identified as the sole method in “Basis of Material Classification” and the service line was installed prior to 1991, the spreadsheet will indicate “No” in column B. An additional evidence-based method of material classification is expected since the service line was installed prior to the PA Lead Ban Act of 1991.

<u>Service Line Classification</u>	<u>Sufficient Evidence for Non-Lead?</u>
Non-Lead	No

- NOTE: If a water system has a record of a local ordinance prohibiting lead service line installation and water system records indicating service line installation/replacement after the ordinance effective date, choose “Records review” as the first basis in Column U and “other” as the second basis in column V. In the Additional Comments field in Column Y, please explain when the ordinance was effective that prevented lead service line installation.

Customer-Owned Portion of the Service Line:

- Column Z begins the **Customer-Owned** portion of the service line starting with the material type of the customer-owned portion.
- Columns Z through AH in the Customer-owned portion are the same as Columns O through Y of the System-owned portion, except for Column P (Was Material Ever Previously Lead). Column P does not have an equivalent column in the customer-owned portion, since it does not matter if the material was previously lead in the customer-owned portion.
- See the instructions above by header title for columns Z through AH.



DEP SERVICE LINE INVENTORY SPREADSHEET INSTRUCTIONS

Additional Information to Assign Tap Monitoring Tier

Columns AI through AL: Fill out information in these columns to automatically assign Tiers to tap sampling monitoring locations.

Additional Information to Assign Tap Monitoring Tiering			
<u>Service Line Connected To:</u>	<u>POE Treatment Present?</u>	Interior Building Plumbing Contains Lead Solder?	Current LCR Sampling Site?
Select From List	Select From List	Select From List	No

- Column AI, Service Line Connected To:** Indicate if the service line is connected to a Single-Family Residence (SFR), Multi-Family Residence (MFR), or Other type of building
 - The building is considered a single family residence if one service line provides drinking water for one family.
 - The building is considered a multi-family residence if one service line provides drinking water for multiple families (e.g., apartment complex where there is only a single service line).
 - If the connection cannot be categorized as an SFR or MFR choose Building/Other.
- Column AJ - POE Treatment Present?** Locations with Point-Of-Entry (POE) treatment for Lead are not eligible for sampling under the Lead and Copper Rule. Point-of-entry (POE) treatment devices are used when the whole building is served with treated water.
 - IMPORTANT:** If the location has a Point-Of-Use (POU) filter, collect the sample from a different tap used for dispensing potable water. For example, if the kitchen tap has a filter, collect a sample from the bathroom tap. Do not remove the filter to collect the sample.
- Column AK - Interior Building Plumbing Contains Lead Solder?:** Indicate for this service line by using the Yes, No, or Not Sure options.
- Column AL - Current LCR Sampling Site?** Indicate by using the Yes/No dropdown.

Adding the service line to the inventory list:

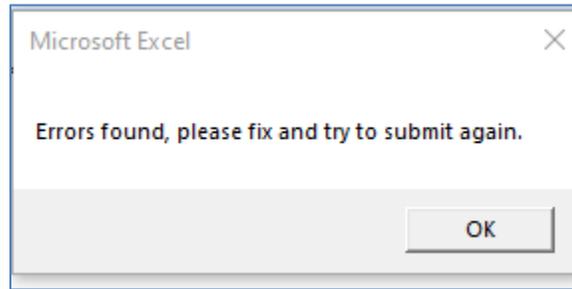
- When row 7 has been completely filled out, click on the "Add To Inventory" button at the far right (column AM):

Add To Inventory

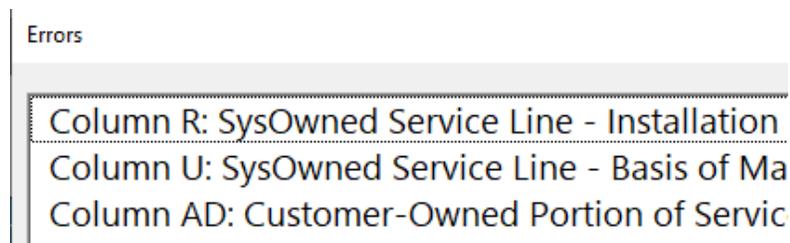
- The values will be transferred to the list below. Values in the list cannot be edited directly.

DEP SERVICE LINE INVENTORY SPREADSHEET INSTRUCTIONS

- The system will run an error check. If you receive the error message below, click OK.



Upon clicking OK, a window will appear that describes the errors that need to be corrected. Here is an example snippet:



Editing Service Line Data You Have Already Entered:

Rows may be edited by re-entering the desired Unique Service Line ID in Column E, Row 7. This will call up the previously entered information for that service line ID, which can then be edited and re-entered.

Service Line Basic Information			
<u>Unique Service Line ID (Required)</u>	<u>Record Type</u>	<u>Date Replacement Completed</u>	<u>Ownership Type</u>
	<i>Initial</i>		<i>Joint</i>

Type the Unique ID here and the existing record information will appear in row 7 for you to edit

DEP SERVICE LINE INVENTORY SPREADSHEET INSTRUCTIONS

V. Summary Information Worksheet

Summary Information

You cannot enter data in this worksheet. Rather the table will provide the answers provided in other tabs of the workbook.

Service Line Classification Summaries: The total number of Lead, Galvanized Requiring Replacement, Lead Status Unknown, and Non-Lead services lines is displayed. Breakout information regarding Schools & Daycares is also provided.

Tap Sampling Monitoring Locations by Tier: A breakdown of the tap sampling location Tier assignments based on the information entered in the Detailed Inventory.

VI. Exporting the Inventory for State Upload

Once the inventory is final, use the "Export All To CSV" button at the top of the **Detailed Inventory tab** to create the export files.

Export All To Csv

- A folder called "PA_SLI" will be created on your desktop and the export files will be placed inside the folder.
- Three export files will be created with "General", "Methods", and "Detail" appended to the file name.
- Each export file name will be date stamped using YYYYMMDD format.
- The date stamp appears at the beginning of the file name so that the export files will automatically sort by date.

Knowledge Check

1. Water System ABC has high confidence in their records that indicate copper service lines were installed for a residential area in the summer of 1994. **Is this sufficient evidence for each service line to be designated as non-lead in this residential area? If no, what else is needed?**
2. At the Raging River Water system, all the service line records were wiped out in the great flood of 1990. However, the town has a record of an ordinance prohibiting the installation of lead pipes after January 1, 1986.
 - The town also has records of when each residential development was built.
 - **For a development built in 1988, are these records sufficient evidence for a non-lead designation of the service lines?**
3. A system has joint ownership of service lines in which the homeowner owns from the curb box into the house. The system has records that show the complete service line was installed in 1979.
 - As part of the service line investigation, the system received permission from each homeowner to enter the house and visually inspect the service line entering the house.
 - It was determined that this entire neighborhood has copper service line entering at the house.
 - **Is this sufficient evidence to designate the entire service line as non-lead?**
4. A system planned to use a 3-point excavation along a service line to verify non-lead designation. They did one excavation and found it was lead. Do they need to continue with the other points?