



New Mexico Environment Department

LEAD LINE INVENTORY HANDS ON WORKSHOP: DEVELOPING AND MAINTAINING A SERVICE LINE INVENTORY

November 15, 2023





Welcome and Acknowledgements

This workshop is supported by: The New Mexico Environment Department, Northwest New Mexico Council of Governments and Rural Community Assistance Corporation.

A special Thanks to our host the City of Gallup for the meeting space.



What will the training cover?

□ **Guidance general topics**

- ✓ Lead & Safe Drinking Water Act
- ✓ Lead Line Inventory
- ✓ Filling in the inventory template
- ✓ What happens after you submit your Lead Line Inventory?
- ✓ Public Outreach
- ✓ Replacement Plans
- ✓ Tips
- ✓ Discussion

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Lead & Safe Drinking Water Act



Goals of the Lead and Copper Rule

- Protect **public health** by minimizing lead and copper levels in drinking water
- Accomplished through:
 - **Removal** of all lead lines.
 - **Reduction** of corrosivity in the water
 - Corrosive water, if untreated, can dissolve lead and other metals from pipes and other components present in household plumbing.



2021- Lead and Copper Rule Revisions

Lead service line inventory due to DWB:
October 16, 2024

**For information regarding all things lead and copper:
Contact the Lead and Copper Administrator:
Diana Aranda**

Diana.Aranda@env.nm.gov (505) 372-8166

VISIT OUR WEBSITE: [Lead and Copper Program \(nm.gov\)](https://www.nm.gov/lead-and-copper)



Lead ban in the state of New Mexico

**The state of New Mexico
implemented its lead ban in 1987**



Lead Line Inventory

The initial service line inventory is intended to identify the materials within our distribution system.

The completed lead line inventory will help you:

- ❑ Create a lead line replacement plan.
- ❑ Create a plan to protect children in schools and childcare facilities.
- ❑ Replace all lead in the system

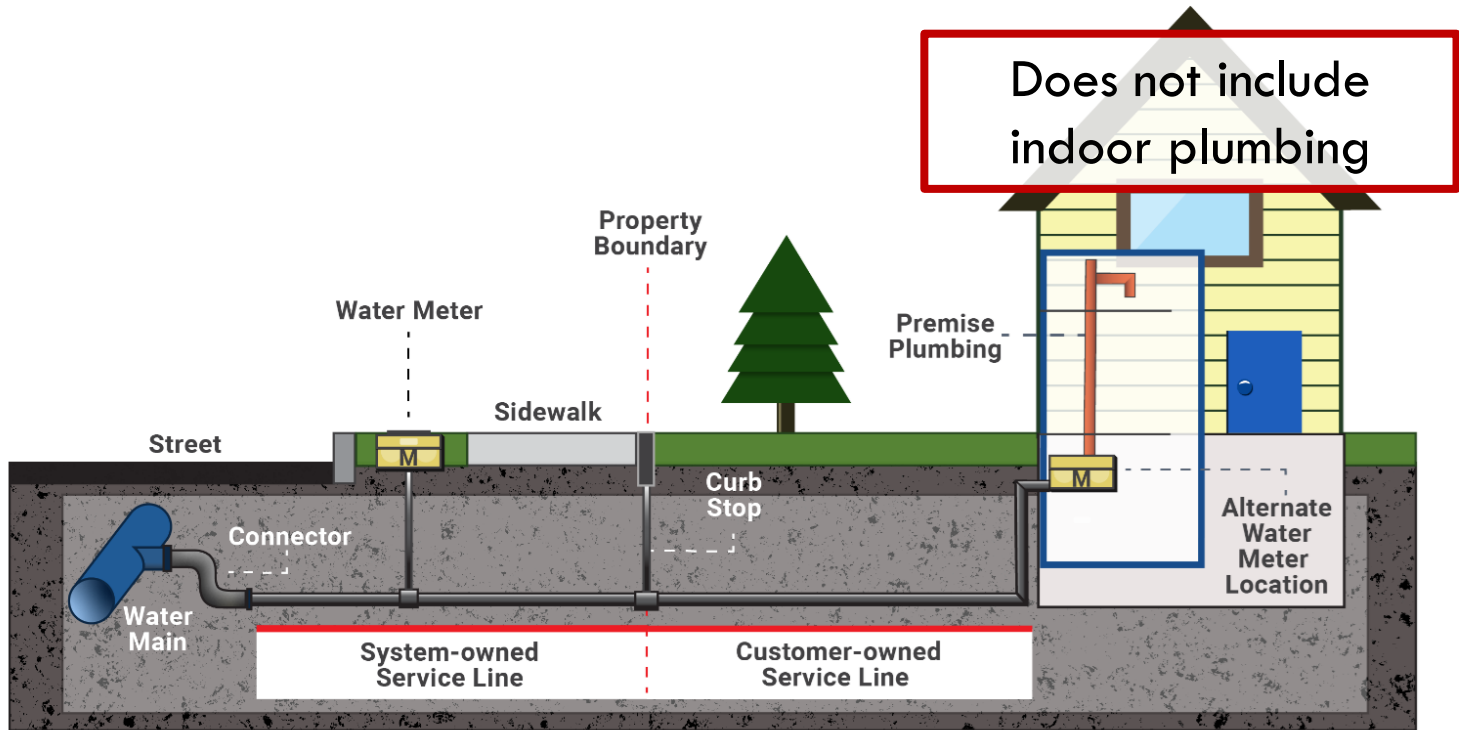


Lead Line Inventory



What is a service line?

Include both **Active** and **Inactive** service connections



LSLI Includes Both



What should be in the inventory?

- ❑ Lines connected to vacant or abandoned buildings, even if they are unoccupied and the water service is turned off.
- ❑ If a line is physically disconnected from the water system, it **does not** need to be inventoried. If it is ever reconnected, then the water system would have to update their inventory with the newly reconnected line.
- ❑ The only lines that need to be inventoried are ones that are connected to **and served by** the public distribution system.



Who needs to create a Service Line Inventory?

- All Community (C) and Non-transient, Non-community (NTNC) water systems, must create a service line inventory.
- This includes systems with only Non-Lead Service Lines.





Required Service Line Inventory material classifications

- The inventory must use one of the following four material classifications to describe the entire service line, including separate material classifications for the water system-owned and customer-owned portions of each service line where ownership is split:

Lead
Galvanized requiring replacement (GRR)
Non-lead (or the actual material, such as copper or plastic)
Lead status unknown service lines (or unknown)



Materials

Lead

- The service line is made of lead (40 CFR §141.84(a)(4)(i)).
- “a portion of pipe that is made of lead, which connects the water main to the building inlet” (40 CFR §141.2).
- **Lead Goosenecks, pigtails, or connectors:**
 - ▣ “a short section of piping, typically not exceeding **two feet**, which can be bent and used for connections between rigid service piping” (40 CFR §141.2).
 - ▣ If the only lead pipe serving the building is a lead gooseneck, pigtail, or connector, the service line is **not** considered an LSL under the initial inventory requirements of the LCRR.
 - ▣ Even so EPA recommends that the system track the material of all components that potentially contain lead, including connectors.



Materials

Galvanized Requiring Replacement (GRR)

- The galvanized service line is or ever was at any time **downstream** of an LSL 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 an LSL, it must presume there was an upstream LSL (40 CFR §141.84(a)(4)(ii))
- An example of a GRR service line is when the customer-owned portion from the meter to the building is galvanized, and the system-owned portion from the water main to the meter was previously lead but has been replaced. The customer-owned portion of the service line would be GRR.
- A galvanized service line that was never downstream of an LSL but is downstream or previously downstream of a lead gooseneck, pigtail, or connector is **not** considered GRR..



Materials

Non- Lead

- ❑ The service line is determined through an evidence-based record, method, or technique that it is not lead or Galvanized Requiring Replacement
- ❑ If a system can demonstrate that a galvanized service line was never downstream of an LSL, it may be classified as non-lead.
- ❑ The water system may classify the actual material of the service line (for example, galvanized, plastic, or copper) as an alternative to classifying it as non-lead.
- ❑ The term “non-lead” refers to the service line material only and does not include other potential lead sources present in solder, connectors, and other plumbing materials.



Materials

Lead Status Unknown

- The service line material is not known to be a lead, GRR, or non-LSL, such as where there is no documented evidence supporting material classification (40 CFR §141.84(a)(4)(iv)).
- Water systems have the option to use the terminology of unknown instead of lead status unknown service line (40 CFR §141.84(a)(4)(iv)).
- 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 determined through records or inspections (40 CFR §141.84(a)(4)(iv)).



Lead Goosenecks, Pigtails, or Connectors

- ❑ A lead gooseneck, pigtail, or connector is defined as “a short section of piping, typically not exceeding two feet, which can be bent and used for connections between rigid service piping” (40 CFR §141.2).
- ❑ If the only lead pipe serving the building is a lead gooseneck, pigtail, or connector, the service line is not considered a Lead Service Line
- ❑ EPA recommends that the system track the material of all components that potentially contain lead, including connectors.






Filling in the Lead Line Inventory Template




Access to EPA guidance and excel template

- [New Mexico Environment Department](#)
- Lead and copper rule DWB page:
 - ▣ [Lead and Copper Program \(nm.gov\)](#)

 **Lead and Copper Program**

[Drinking Water Bureau Home](#)
[Drinking Water Sampling](#)
[Lead and Copper Program](#)
[Public Drinking Water System Assistance](#)
[Water Infrastructure Projects and Funding](#)
[Utility Operator Certification Program](#)

 **Contact Us**
Drinking Water Bureau
Ph: 505-476-8620
877-654-8720
Utility Operator Certification:
UOCP.certification@env.nm.gov
E: drinking.water@state.nm.us

Lead and Copper Rule Revisions Service Line Inventory Compliance (Due Date October 16, 2024)

[Guidance for Developing and Maintaining a Service Line Inventory \(6.79 MB, August 4, 2022, 816-B-22-001\)](#)

[Lead and Copper Service Line Inventory Template \(1.53 MB, August 4, 2022\)](#)

On August 4, 2022, EPA released Guidance for Developing and Maintaining a Service Line Inventory to support water systems with their efforts to develop inventories and to provide states with needed information for oversight and reporting to EPA. The guidance provides essential information to help water systems comply with the Lead and Copper Rule Revisions requirement to prepare and maintain an inventory of service line materials by October 16, 2024. Specifically, EPA's Lead Service Line Inventory guidance:

- Provides best practices for inventory development and communicating information to the public.



Is there a tool that I need to use to do the LSLI?



Service Line Inventory Template




Date last updated: July 27, 2022

What is the purpose of this template?





The purpose of this draft template is to help water systems and states comply with the service line inventory requirements of the January 15, 2021 Lead and Copper Rule Revisions (LCRR). This template supplements the draft EPA document, *Guidance for Developing and Maintaining a Service Line Inventory* (2022) by providing fillable forms and tables that water systems can use to document their methods, organize their inventory, submit the initial inventory and inventory updates to the state, and document how they are making the inventory publicly available. This template also provides a checklist for state review. Note that EPA does NOT require systems use this template for their inventory. Refer to EPA's 2022 Inventory Guidance for minimum LCRR inventory requirements, recommendations, and disclaimers.

How is the template organized?

The worksheets in this template are color coded:

-  Yellow sheets are instructions and background.
-  Dark blue sheets are templates for systems.
-  The dark green sheet is a template for states.

The cells in this template are also color coded:

-  Gray cells are background or instructions.
-  Light blue cells are fillable cells for systems.
-  Aqua cells are the required fields in the Detailed Inventory worksheet.
-  Light green cells are fillable cells for states.

See the table below for a description of each worksheet.



Federally Required Elements

Tabs from the template excel sheet

PWS Information

Inventory Methods

Inventory Summary

Detailed Inventory

Public Accessibility Doc.



Public Water System Information

PWS Information

Purpose of this worksheet: For water systems to document basic system information.

Facility Information

Water System Name:

PWSID:	Population Served (number of people):	Number of Service Connections:	PWS Type:
			<input type="checkbox"/> CWS <input type="checkbox"/> NTNCWS

If you are a CWS, do multi-family residences comprise at least 20% of the structures you serve? *Select "Yes" or "No"*

Mailing Address

Street or P.O. Box:

City or Town:	State:	Zip Code:

System Contact Person

Name:	Title:
Telephone:	Email:

Person Who Prepared Inventory (if different from above)

Name:	Title/Affiliation:
Telephone:	Email:



Methods-Sources of Information

- Sources of information to identify materials include
 - Previous Materials Evaluation-examples Tier 1 lead tap sampling
 - Construction/plumbing codes-examples permits, and existing records or other documentation indicating service line material; local policy or ordinance adopting plumbing code
 - Water system records including maps, drawings, historical records on service connections, meter installation, capital improvement or master plans, & standard operating procedures
 - Inspection and records- examples distribution maps showing material, meter installation records, inspections
 - Additional Records Required by State-Asset Management plans



Inventory Methods

Inventory Methodology

PWS Name:

PWSID:

Enter Date Last Updated:

Purpose of this worksheet: For water systems to document the methods and resources they used to develop and update their inventory.

Part 1: Historical Records Review

Type of Record	Describe the Records Reviewed for Your Inventory and Indicate Your Level of Confidence (e.g., Low, Medium, or High)
1. Previous Materials Evaluation <i>Example: Locations of Tier 1 lead tap sampling locations that are served by a lead service line.</i>	
2. Construction Records and Plumbing Codes <i>Examples: Local ordinance adopting an international plumbing code. Permits for replacing lead service lines.</i>	
3. Water System Records <i>Examples: Capital improvement plans. Standard operating procedures. Engineering standards.</i>	
4. Distribution System Inspections and Records <i>Examples: Distribution system maps. Tap cards. Service line repair/replacement records. Inspection records. Meter installation records.</i>	
5. Additional Records Required by Your State	
6. Other Records	

Part 2: Identifying Service Line Material During Normal Operations

1. During which normal operating activities are you collecting information on service line material? Check all that apply.

- | | |
|-------------------------------------------------------------|----------------------------------------------------------------|
| <input type="checkbox"/> Water meter reading | <input type="checkbox"/> Water main repair or replacement |
| <input type="checkbox"/> Water meter repair or replacement | <input type="checkbox"/> Backflow prevention device inspection |
| <input type="checkbox"/> Service line repair or replacement | <input type="checkbox"/> Other |

If "Other", please explain:

2. Did you develop or revise standard operating procedures to collect service line material information? Select "Yes" or "No"

If "Yes", please describe:

Part 3: Service Line Investigations

1. Identify the service line investigation methods your system used to prepare the inventory (check all that apply). If a water system chooses an investigation method not specified by the state under 40 CFR §141.84(a)(3)(iv), state approval is required. **Note that investigations are not required by the LCRR but can be used by systems to assess accuracy of historical records and gather information when service line material is unknown.**

- | | |
|-----------------------------------------------------------------|---------------------------------------------------------|
| <input type="checkbox"/> Visual Inspection at the Meter Pit | <input type="checkbox"/> Water Quality Sampling - Other |
| <input type="checkbox"/> Customer Self-identification | <input type="checkbox"/> Mechanical Excavation |
| <input type="checkbox"/> CCTV Inspection at Curb Box - External | <input type="checkbox"/> Vacuum Excavation |
| <input type="checkbox"/> CCTV Inspection at Curb Box - Internal | <input type="checkbox"/> Predictive Modeling |
| <input type="checkbox"/> Water Quality Sampling - Targeted | <input type="checkbox"/> Other |
| <input type="checkbox"/> Water Quality Sampling - Flushed | |
| <input type="checkbox"/> Water Quality sampling - Sequential | |

If "Other", please explain:

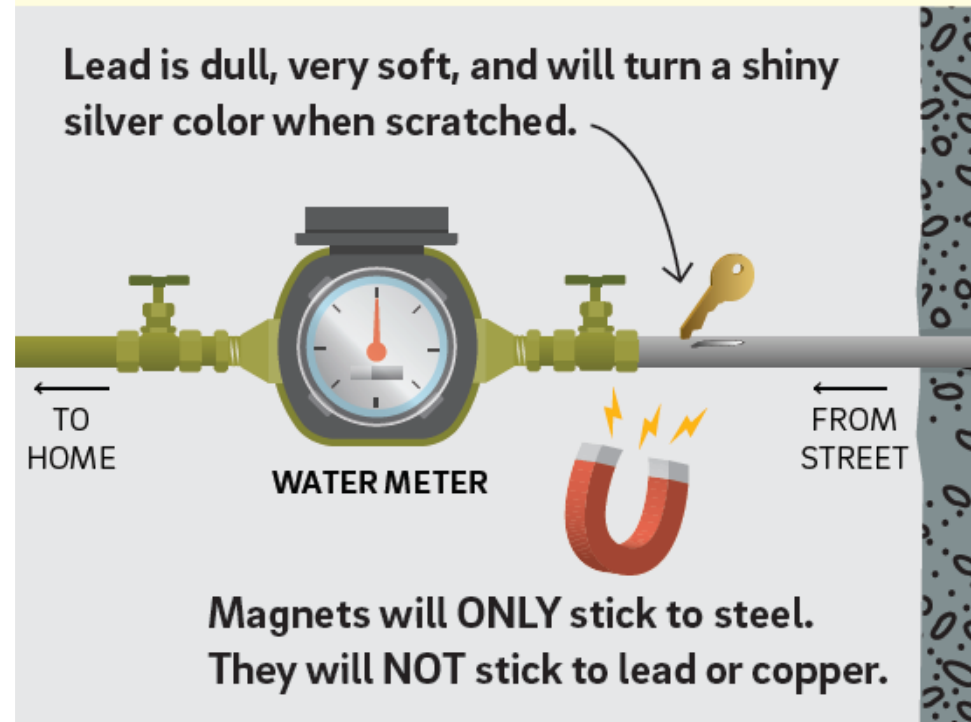
2. If "Predictive Modeling", please briefly describe the model and inputs used:

3. How did you prioritize locations for service line materials investigations? For example, did you consider environmental justice and/or sensitive populations, did you use predictive modeling, and/or did you target areas with high number of unknowns?



Service Line Investigation Methods

- Conduct visual inspections during repairs and site visits.
- ▣ Do the ***scratch and magnet test***.
 - If the pipe is a silver metallic color, the customer can carefully scratch the pipe with a key or coin.





Service Line Investigation Methods

- Visual inspection of a service line material:
 - Lead is a soft metal that is a dull, silver-gray color. It is easily scratched with a coin or key, and the scratched areas will be shiny. It is non-magnetic, meaning a magnet will not stick to it. Lead pipe is commonly attached to other pipe with a “wiped” joint.
 - Galvanized is a dull, silver-gray color that is difficult to scratch. A magnet will stick to it.



Plastic



Scratched Lead



Copper



Galvanized Steel & valve



Inventory Summary

Part 1. General Information

1. Is this the Initial Inventory or an Inventory Update ?	Select One
2a. Who owns the service lines in your system? <i>If other, please explain below.</i>	Select Ownership Type
2b. Is there documentation that defines service line ownership in your system, such as a local ordinance? <i>If yes, please describe below and explain where ownership is split (e.g., property line, curb stop).</i>	Select "Yes" or "No"
3a. Describe when lead service lines were generally installed in your system.	
3b. When were lead service lines banned in your system? Reference the state or local ordinance that banned the use of lead in your system.	
4. Do you have lead goosenecks, pigtails or connectors in your system?	Select "Yes" or "No" or "Don't Know"
5. What is your overall level of confidence in the inventory (<i>i.e.</i> , "Low", "Medium", or "High.") Please explain your rationale below.	

Part 2. Inventory Format

Describe your inventory format in the space provided below (*e.g.*, the **Detailed Inventory** worksheet, custom spreadsheet, GIS map). Provide the filename and/or web address if applicable. **Note that the state may require you to submit your detailed inventory of each service line in your distribution system.**



Inventory summary table

Part 3. Inventory Summary Table ¹

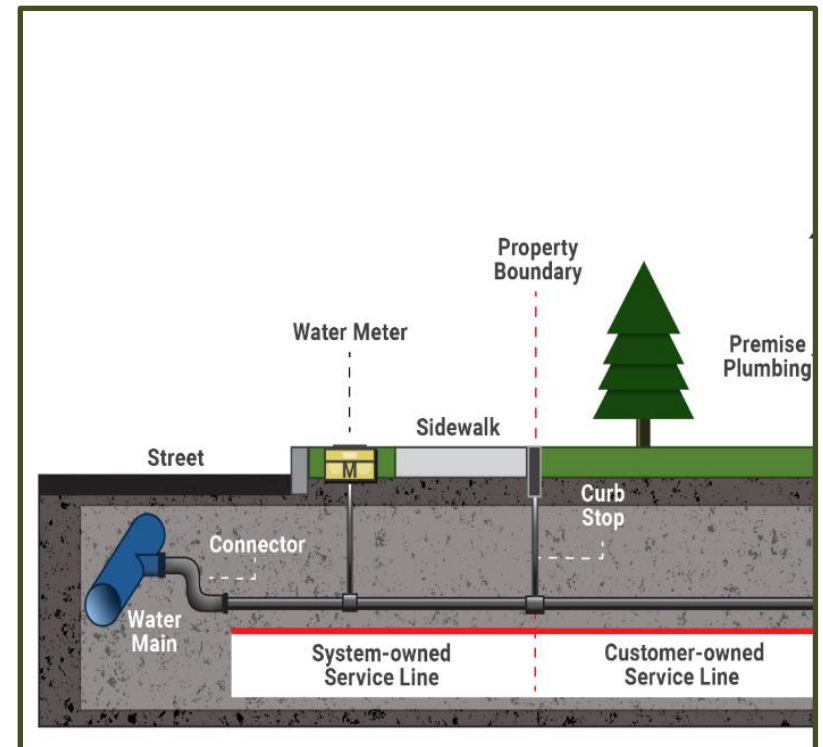
If you are using the **Detailed Inventory** worksheet, the classifications you select in the Column "Entire Service Line Material Classification" (Column X) will be used to calculate the total number of service lines for each of the four material classifications below. Otherwise, enter the number of service lines in the aqua-colored cells. **Remember this is the classification for the entire service line.**

Service Line Material Classification	Definition	Total Number of Service Lines (REQUIRED to be reported under the LCRR)
Lead	Any portion of the service line is known to be made of lead. ²	1
Galvanized Requiring Replacement (GRR)	The service line is not made of lead, but a portion is galvanized and the system is unable to demonstrate that the galvanized line was never downstream of a lead service line.	3
Non-Lead	All portions of the service line are known NOT to be lead or GRR through an evidence-based record, method, or technique.	2
Lead Status Unknown	The service line material is not known to be lead or GRR. For the entire service line or a portion of it (in cases of split ownership), there is not enough evidence to support material classification.	2
TOTAL		8



Detailed inventory elements-Required

- ✓ Location Identifier.
- ✓ System-Owned Portion Service Line Material Classification
- ✓ Customer-Owned Portion Service Line Material Classification
- ✓ Entire Service Line Material Classification
- ✓ Materials shall be classified:
 - Lead
 - Galvanized Requiring Replacement (GRR)
 - Unknown
 - non-lead service lines





Service line inventory excel sheet

□ Detailed Inventory

Detailed Inventory

PWS Name: _____
 PWSID: _____
 Date Last Updated: _____

Purpose of this worksheet: To provide a customizable format water systems can use to track materials for each service line in their distribution system.

General Instructions: Each row in this worksheet represents one service line connecting the water main to the customer's plumbing. The worksheet includes required and recommended elements; the columns v required by the LCRR. Systems can customize by adding or deleting columns. Important notes for each column are in Row 12; also see the **Template Instructions** worksheet for detailed instructions. Note that use them to see the headings and notes when entering data. The worksheet includes examples in rows 13 - 20 and is formatted for approximately 10,000 entries.

Location Information								
Unique Service Line ID	Location Identifier		Sensitive Population? (Yes/No)	Disadvantaged Neighborhood? (Yes/No)	System-Owned Portion Service Line Material Classification	If Non-Lead in Column G, Was Material Ever Previously Lead?	Service Line Installation Date	Service Line Size
	Street Address	Other Location Identifier						
<i>A Unique ID is recommended for each service line.</i>	<i>Water systems must track addresses of all service lines in their internal inventory. For the publicly accessible version, location identifiers are required for lead and galvanized requiring replacement. If the system does not use addresses for their location identifier, other options could include GPS coordinates, landmark, intersection, block, or other details to specify service line locations.</i>		<i>Select Yes if sensitive subpopulation, e.g., day care, school, multifamily home. If Yes-Other, describe in the Notes field.</i>	<i>Does location meet state affordability guidelines or other measures?</i>	<i>Dropdown list includes recommended subclassifications. If "Non-Lead Other", describe in Notes field</i>	<i>Select Yes, No, or Don't know. Important for determining if downstream/ customer-owned galvanized service line requires replacement</i>	<i>Date, year, or estimated date range when the service line was installed or replaced</i>	<i>Diameter in inches</i>
Example 1	1234 Test St., City, State, Zip Code	Intersection of Test and Elm St.	No	No	Non-Lead - Plastic	Yes	1997	2
Example 2	4321 Test St., City, State, Zip Code	Intersection of Test and Main St.	No	No	Non-Lead - Plastic	No	Fall 1980	2
Example 3	16 Capital St., City, State, Zip Code		No	No	Non-Lead - Copper	Don't know	1985	1 1/2
Example 4	1 Water Avenue, City, State, Zip Code		No	No	Unknown - Likely Lead		1940's	2
Example 5	67 Children's Place, City, State, Zip Code		Yes - Day Care	No	Unknown - Material Unknown		1950-1960	3/4
Example 6	30 Price Street, City, State, Zip Code		No	No	Lead-lined galvanized		1955	2
Example 7	123 System Ave., City, State, Zip Code	Building A	No	Yes	Non-Lead - Copper	Yes	2015	2
Example 8	123 System Ave., City, State, Zip Code	Building B	No	No	Non-Lead - Copper	Don't know	2015	2



Required Elements for Lead Line Inventory

Tabs from the template excel sheet

PWS Information

Inventory Methods

Inventory Summary

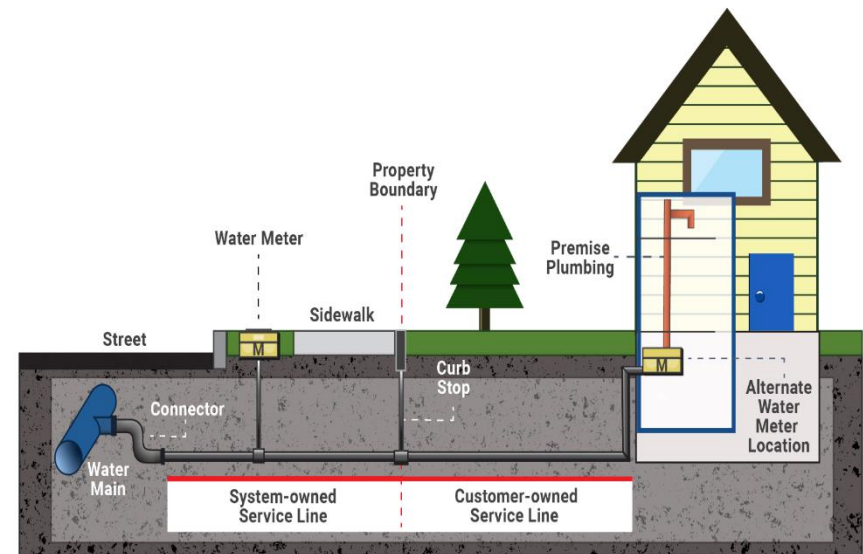
Detailed Inventory

Public Accessibility Doc.



Recommended –Federal inventory elements

- ❑ Likelihood that an unknown line is lead.
- ❑ Actual material of non-lead lines.
- ❑ Other line infrastructure that has lead but not considered for replacement
 - ❑ Lead goose necks, pigtails and connectors
 - ❑ Lead solder
 - ❑ Other lead infrastructure
- ❑ Other service line characteristics
 - ❑ Pipe diameter
 - ❑ Installation date
 - ❑ Details on sources or materials





Public Accessibility Documentation

Public Accessibility Documentation

PWS Name:

PWSID:

Enter Date Last Updated:

Purpose of this worksheet: For systems to provide documentation to states on how they met the public accessibility requirements of the LCRR.

1. Select the location identifiers that you use for your service line inventory. Check all that apply.

- Address
- Street
- Block
- Intersection
- Landmark
- GPS Coordinates
- Other

If "Other", please describe:

2. Does **every service line** have a location identifier?

Select "Yes" or "No"

If "No", explain. Remember that location identifiers are required for service lines that are lead and galvanized requiring replacement.

3. How are you making your inventory publicly accessible? Check all that apply. Remember that if your system serves > 50,000 people, you **must** provide the inventory online.

- Interactive online map
- Static online map
- Online spreadsheet
- Printed service line map
- Printed tabular data
- Information on water utility mailings or newsletter
- Hard copy information available in water system office



Submitting inventories

- NMED Drinking Water Bureau
 - Lead and Copper Rule Administrator Diana Aranda
 - Diana.Aranda@env.nm.gov (505) 372-8166

 - Where?
 - The Administrator is working on building an online submittal portal for inventory documents
- VISIT OUR WEBSITE:** [Lead and Copper Program \(nm.gov\)](#)
- When are inventories due?
 - October 16, 2024

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What happens after I submit my inventory?



Federal Requirement- making your inventory public

- All systems shall publicly post and update your inventory
 - Water systems must track addresses in your internal inventory. For the Public version, location identifiers are required for lead and galvanized requiring replacement(GRR). If you do not use addresses for this, you can use GPS coordinates, landmarks, intersection, or other.
- If you have lead, GRR, or unknown services lines, you must provide notification to persons served by these lines within **30 days after completing the initial** inventory



Other Required Information

- For confirmed Lead Service lines- system must provide opportunities to replace, funding programs, and statement that the system must replace its portion if property owners notify the system, they are replacing their portion
- CCR language- Community Water Systems must include instructions on how to access the inventory in your Consumer Confidence Report

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Tips for Starting a Lead Line Inventory



Tips for moving forward



Read and Review

- The excel template instructions
- EPA and other guidance's



Gather

- Use existing system asset inventory or use this inventory to begin one
- All existing historical documents, review and organize them
- GIS data (local county, source water protection plans, etc.)
 - Example: create a google earth file of your distribution system



Determine

- The number of public and private lines
- Provide a unique name/identification.
- Example: 100 connections plus 10 main lines = 110 inventory entries/rows

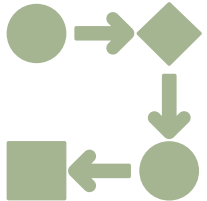


Tips for moving forward



Fill out

- The entire inventory with all the information you do know, based on the information you have gathered.
 - Keep accurate thorough notes of your methods as you go along.
- If you don't know the material information because you have yet not found historical documents, you can label as unknown.
- Now you know what you do not know!



Visualize

- New strategies for determining unknowns.
- Example: conduct a visual survey at water meter, where you can observe both the private and the public lines.
 - Document the event with photos of both sides of the meter



Test

- Magnet test (if lead, it will not stick)
- Scratch test (dull and soft = lead)



Tips for moving forward



Update

- Your inventory with every new piece of information or visual inspection that comes in



Submit inventory

- Before, Thursday Oct. 16, 2024.
- Details on where and how to submitted are currently being developed



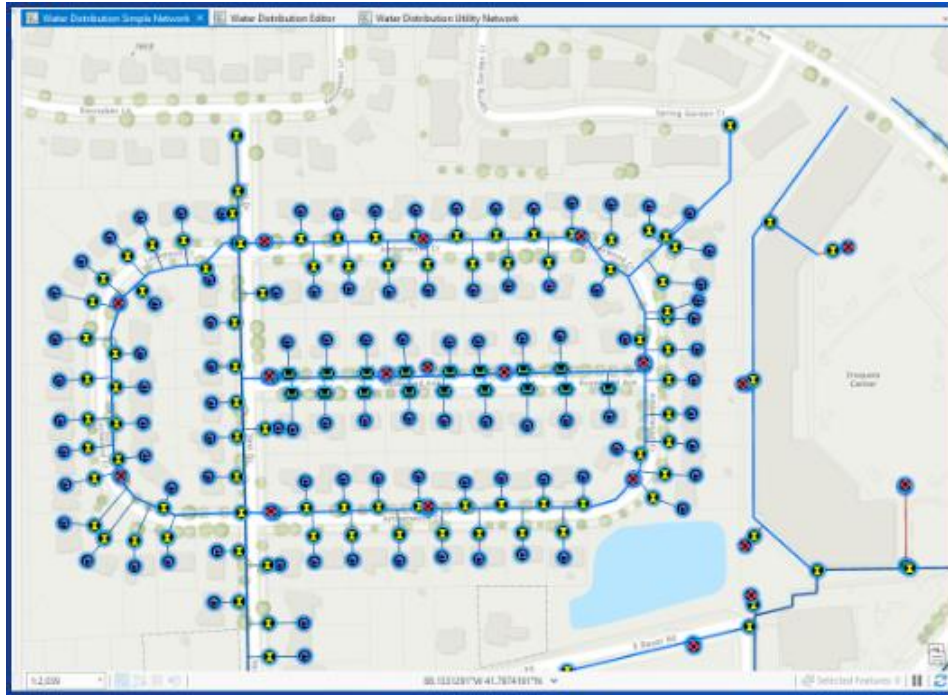
Remember- Even when you are done with the inventory, and confirming all materials, you still need to move forward with a replacement plan if you have lead lines.

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Discussion/Question?



Where are your service lines?



- How many of you have a system that already has an asset inventory ?
- If a line needs repairs, how do you go about locating, fixing and replacing?



Contact information

For information regarding all things lead and copper:

Contact the Lead and Copper Administrator:

Diana I. Aranda

Diana.Aranda@env.nm.gov

(505) 372-8166



Drinking Water Bureau Resources

More resources available at NMED Webpage:

Resources for Public Water Systems:

https://www.env.nm.gov/drinking_water/resources/

Lead and Copper Program:

https://www.env.nm.gov/drinking_water/lead-and-copper-program/

Enforcement Watch

<https://www.env.nm.gov/enforcement-watch/>