

Change is in the Air – A Look at the Lead and Copper Rule Revisions



Today is September 2, my son's 5th birthday. Change is in the air. The morning feels very autumnal. I'm sitting on the deck with my laptop computer and although it feels like fall, it will be 95 degrees this afternoon. But you can still feel the change in the air. I get emotional when thinking about my youngest turning a year older. It makes me feel five years older.

A recent training session was held at Rock Springs Ranch 4-H Center south of Junction City. Rock Springs Ranch has been visited by 4-Hers for generations. An operator in attendance remarked that we were using the same plates he'd used as a boy in that same cafeteria. "It's nice that some things don't change," he said. Amen.

Later that same day, I ruined the good mood for everyone by bringing up the changes coming with the Lead and Copper Rule Revisions (LCRR) at a KRWA training session. As a water professional, if seeing your youngest child have another birthday doesn't make you feel five years older, LCRR definitely will. I'm about to ruin your day if you were blissfully unaware of what is in store for your water system. I apologize.

A review of the LCRR

I don't know anyone who is opposed to getting the lead out. The original Lead and Copper Rule (LCR) was published in 1991 due to lead's tragic affect on children's development. Lead gets into the water

from corrosion of lead water lines, faucets and fixtures. Water systems were required to perform an evaluation on their system materials and identify any areas that were at risk for lead exposure. The sampling schedule was intense. Many systems in Kansas added corrosion control to their treatment processes to ensure their water was not corrosive. Lead service lines (LSLs) were replaced by Millions of dollars' worth of replacement projects. Then, in April 2015, the Flint, Michigan water treatment plant switched water sources, resulting in very corrosive finished water that dissolved lead from an aging distribution system into the water. Tragic, irreversible damage was done to tens of thousands of children in that city. Regulatory reports were falsified, lies were told, fingers were pointed and charges were filed.

Fast forward to January of 2021. Despite the 78,000 or so comments on the draft version, EPA released the LCRR with no changes. There was no major announcement from KDHE, so many water suppliers in Kansas were unaware of any changes. The purpose of this article is to briefly explain what

changes are coming for water systems and how to begin to navigate those changes. This is not intended to be a deep dive into the rule. If you are restless one night, you can find and read the entire LCRR at www.Regulations.gov. Keep in mind, EPA is working on an even newer version of the rule, the Lead and Copper Rule Improvements (LCRI) with a release expected in fall of 2023, so even MORE changes are to come.

The first thing to know is that the LCRR applies to every community water system. The compliance date for the rule is October 15, 2024. Even if a water system has no lead or copper in its distribution system, the system still must comply. The LCRR contains Action Levels (AL) for lead and copper. The current AL for lead is 0.015 parts per million (ppm) or 15 parts per billion (ppb). The new rule also contains a Trigger Level (TL) for lead at 10 ppb. Systems exceeding the TL will have additional monitoring and treatment requirements. The AL for copper is 1.3 ppm or 1300 ppb. The LCRR does not have many changes to the "Copper" part of the rule, thankfully.

The first thing to know is that the LCRR applies to every community water system. The compliance date for the rule is October 15, 2024. Even if a water system has no lead or copper in its distribution system, the system still must comply.

An AL exceedance does not equate to a violation. Compliance is based on the 90th percentile, meaning that 10 percent of compliance samples must exceed the AL before getting into trouble. If your system takes ten (10) samples, the 9th highest result is the one that matters. If a water system's 90th percentile sample exceeds the lead AL, they must distribute public notice, increase sampling frequency and look at installing or optimizing corrosion control treatment. If any individual sample exceeds 15 ppb for lead, the water system must take a follow-up sample and assess the location to find the lead. Systems with AL exceedances will also have Lead Service Line Replacement (LSLR) requirements. Sample locations with known LSLs will be required to sample a "First" and "Fifth" liter sample to test for lead in both the household plumbing and the service line.

All water systems must test for lead in 20 percent of elementary schools and licensed daycare facilities connected to the water system each year until all are sampled or have declined to participate. Under the LCRR, a water system's

"certifications", KDHE-speak for the signed papers that they must get in Topeka to be compliant, will increase from two (2) certifications to 22! KDHE has a plan to simplify the process, but there will be a lot more signatures required under LCRR.

Fortunately, for most water systems, the sampling procedures will not change much with the new rule. Some of those details may change, and there is a lot more on the sampling portion of the LCRR. Those details will come in the weeks and months leading up to the October 2024 compliance date. Let's focus on what requirements are in the

The LCRR includes the LSL Inventory (LSLI) requirements. All community water systems are required to inventory every service line in their distribution system.

LCRR that EPA says will not change.

The goal of the LCRR is to get the lead out. In order for water systems to replace lead lines, they must know where they are. The LCRR includes the LSL Inventory (LSLI) requirements. All community water systems are required to inventory every service line in their distribution system. The customer's materials, the service line and interior plumbing materials are also required to be known. There's a lot packed into those few sentences. Let's start from the beginning.

KDHE is responsible for enforcing the LCRR rules in Kansas, they have created a spreadsheet that water systems must use for their LSLI. Go to <https://www.kdhe.ks.gov/547/Lead-Copper-Rule> to download the required spreadsheet. Filling out the spreadsheet is going to be quite a task. This thing is 26 columns across, one for each letter in the alphabet. The depth of the spreadsheet will depend on how many connections are on the water system. My RWD has 379 connections, so our spreadsheet will be 379 rows deep. Each connection must be included in the inventory. Let's go through this thing like the alphabet!

EASY ACCESS AND PROTECTION

for septic and sewer systems

Clearly identify the clean-out location and sewer/septic system with Oldcastle Infrastructure grade-level enclosures and curb boxes. Round, rectangular, and square enclosures provide clean-out protection for turf and concrete installations. Curb boxes offer multiple depths, plus the height is adjustable. Available in a variety of materials and strengths with the Sewer marking.

MADE IN THE USA



For further information contact:
 RiverRoad Marketing | 314-422-5398 | Riverroadmarketing@gmail.com



Oldcastle Infrastructure
A GRW COMPANY

oldcastleinfrastructure.com

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
WATER SYSTEM ID NUMBER	SYSTEM SPECIFIC ID	SERVICE ADDRESS	WATER MAIN MATERIAL	CONNECTOR OR GOOSENECK MATERIAL	WAS LEAD EVER UPSTREAM OF THIS SERVICE?	PWS-OWNED SERVICE LINE MATERIAL	WAS PWS-OWNED SERVICE LINE EVER LEAD?	PWS-OWNED SERVICE LINE SIZE	YEAR PWS-OWNED SERVICE LINE INSTALL DATE	PRIVATE SIDE SERVICE LINE MATERIAL	PRIVATE SIDE SERVICE LINE SIZE	PRIVATE SIDE SERVICE LINE INSTALL DATE	BUILDING TYPE	POINT-OF-ENTRY OR POINT-OF-USE TREATMENT PRESENT?

A 26-column spreadsheet!

Column A is the water system ID. This is the official regulatory ID number for the water system. They all begin with “KS” followed by seven digits: KS20XXXXX. The ID number can be found on most official KDHE documentation, but a call to the local KDHE District Office will give you the information pretty efficiently.

Column B is a system-specific ID that water systems can use if they want to identify the service lines by something other than the service address. There are no requirements on using Column B, it is entirely optional. **Column C** is the address that the line serves. Pretty simple so far? The first three columns can reasonably be completed by 100 percent of water systems.

Hopefully every water system has adequate records or maps that show what each main is made of. At this point in the spreadsheet, a system must pick from the drop-down list. KDHE

The above graphic shows the 26-column "Lead Service Line Inventory" that is being requested by KDHE to be completed by every water system for EVERY CUSTOMER by October 2024.

requires specific answers in the spreadsheet for uniformity. **Column D** wants the material of the water main the service line is connected to. Everyone must choose whether the water main material is: Polyvinyl Chloride (PVC), Ductile Iron Pipe (DIP), Cast-Iron Pipe (CIP), Leaded Joint Cast-Iron, High-Density Polyethylene (HDPE), Cross-Linked Polyethylene (PEX) or Asbestos-Cement (also known as Transite).

Hopefully every water system has adequate records or maps that show what each main is made of.

Column E requires the material of the connector or gooseneck. Again, a water system must choose from a list. Connecting material options are: Lead, Copper, Polyethylene, Other Non-Lead, and Unknown.

Column F asks the question, “Was Lead Ever Upstream of This Service?”. Some studies have shown that galvanized lines can capture lead particles released upstream. With this in mind, EPA treats galvanized pipes downstream of lead like lead lines. If a water system does not know what is upstream of the galvanized pipe, it will likely be treated as a “Galvanized Line Needing Replacement”, which is another wrinkle in the LCRR that may see changes. The point is, if the water system cannot identify what is upstream of the galvanized line, it may be treated the same as a lead line.

SARGENT

Drilling

727 York Ave.
Salina, KS 67401
785-829-0963

COMPLETE MUNICIPAL,
INDUSTRIAL AND AGRICULTURAL
WELL AND PUMP SERVICE

- ◆ Well Drilling
- ◆ Pump Repairs & Installation
- ◆ Test Holes/Wells
- ◆ Well Rehabilitations
- ◆ Video Surveys
- ◆ Pump Efficiency Testing
- ◆ Full Service Machine Shop

Proudly Serving the Midwest Since 1954

P	Q	R	S	T	U	V	W	X	Y	Z
STRUCTURE - PRIMARY PLUMBING MATERIAL 1	STRUCTURE SECONDARY PLUMBING MATERIAL 2	YEAR (RANGE) STRUCTURE PLUMBING MATERIAL INSTALLED	THIS LOCATION WILL BE USED FOR LEAD AND COPPER SAMPLE SITE PLAN?	REPLACE GOOSENECK/PIGTAIL CONNECTOR	LSL CATEGORY IN INVENTORY	SAMPLE SITE SELECTION CRITERIA (SITE TIER)	WOULD THIS COUNT AS FULL LSLR IF LEAD IS REMOVED?	REQUIRES RESIDENT NOTIFICATION IF LSL DISTURBED	REQUIRES RISK MITIGATION (POU OR PITCHER FILTER)	SOURCE OF INFORMATION USED SERVICE LINE IDENTIFICATION

Moving right along, **Column G** asks for the materials of the water system-owned portion of the line. Options for line material construction are: Lead, Copper, Galvanized Steel, PVC, HDPE, PEX, Asbestos-Cement or Other Non-Lead. Hopefully, most water systems will be able to refer to the same maps they got their water main materials information from.

Column H asks if the service line was lead in the past. **Column I** requires the service line size and **Column J** wants the year the line was installed. If current staff or the maps do not contain the needed information, interview former employees to see what they remember. Look at the plans and specifications for any water main replacement projects. The project's plan may have specs that show what construction materials were used.

Some water systems use computer modeling or Artificial Intelligence (AI) to predict what the construction materials are. Any critical thinker can do the same. If water lines in a given neighborhood were all laid at the same time and the city has good information on some of those service lines, it's reasonable to assume the other homes have similar materials.

Now is when things get tricky. The LCRR requires water systems to find the same information about the private side of the service lines. In Kansas, most water systems have meters outside on an easement. The utility has a legal right to dig and work on its lines. Most systems' ownership ends at the water meter, meaning the utility has no right or authority to break ground on the privately owned property. Even so, water systems are being required to verify the Private Side Service Line: Material (**Column K**), Size (**Column L**), and Installation Date (**Column M**). Some systems may be able to identify the private line size and material by looking at the meter setter, however,

many installation procedures include stubbing out a given number of feet of pipe for the plumber to hook on to, far away from the system's setter. So, looking at the setter may not work in all instances.

One of KDHE's long-term lead and copper sampling plans is to use their LSLI spreadsheet as a sampling site plan. The goal is to use the LSLI results to ensure systems are sampling at the proper locations. The LCRR has Tiers for sampling priority; homes with lead services and/or interior plumbing being most critical. The spreadsheet has requirements for private homes' internal plumbing. **Column N** asks for Building Type: Single Family, Multi-Family, Building or Other. A business, school, city building, etc., is considered a Building. LCRR prioritizes Single- and Multi-Family homes as sampling locations.

Column O asks for Point-Of-Use (POU) or Point-Of-Entry (POE)

treatment. POU treatment is generally an under-sink carbon or RO filtration for drinking water. If a customer is filtering or treating the water, that location is not a good sample spot due to potential water chemistry changes. POE treatment is usually a softener or whole-home filtration system. Either scenario could leave water corrosive which will likely impact sample results.

Columns P and Q ask for the Structure Plumbing Materials. There are six options for both Primary and Secondary plumbing materials in the structure. **Column R** asks for the Date Range the Structure Plumbing Material Was Installed. This column has date ranges: Before 1989, Between 1989 and 2014, and After 2014. Why are those dates relevant? The Lead Ban, prohibiting the use of lead in public water supplies and any plumbing connected to those systems, went into effect in June of 1988. Any plumbing

M&A
Miller & Associates
CONSULTING ENGINEERS, P.C.

Kansas Office:
320 West 4th Street
Colby, KS 67701
785.460.1956

Nebraska Offices:
Kearney
McCook
Holdrege

WATER ENGINEERING
WASTEWATER ENGINEERING
SURVEYING • SITE DEVELOPMENT
ENVIRONMENTAL SERVICES

www.miller-engineers.com

KANSAS RURAL WATER association

ABOUT ONLINE RESOURCES TECHNICAL ASSISTANCE TRAINING CONFERENCE MEMBERSHIP

TECHNICAL ASSISTANCE > Downloads

Kansas Rural Water Association provides technical assistance for water systems in many areas. Below you may find a selection.

- Financing
- KAN STEP
 - KAN STEP Gallery
 - Assistance via KDHE Contract
 - Assistance via KWO Contract
 - Apprenticeship Programs
 - Rate Reviews
 - Consumer Confidence Reports
 - Downloads
- Mapping
 - Our GIS Department
 - The Process
 - Past & Current Projects
 - Mapping Products
 - Mapping Subsidy Program
 - District Address Mapping Interactive Tool
- Letters & Tech Assistance
 - Letters for Employment
 - Training
 - Technical Assistance
 - Kansas Water Quality Area Sign
- RFP for Long Range Plan for KRWA

Date	Title	Description
Aug 5, 2022	Lead Service Line Inventory Customer Survey Spreadsheet	Editable Lead Service Line Inventory Customer Survey Spreadsheet
Aug 5, 2022	Lead Service Line Inventory Customer Survey Mapping Subsidy Program	Lead Service Line Inventory Customer Survey Mapping Subsidy Program
Dec 30, 2021	KRWA Application for Employment	Use this application form for the \$1000 Dennis
Oct 18, 2021	KRWA Application for Employment	KRWA Application for Employment
Oct 4, 2021	Kris Kline Job Description	The Kansas Rural Water Association is please
Jul 12, 2021	RFP for Long Range Plan for KRWA	The Board of Directors of the Kansas Rural Water Association is seeking proposals for long range plan development.

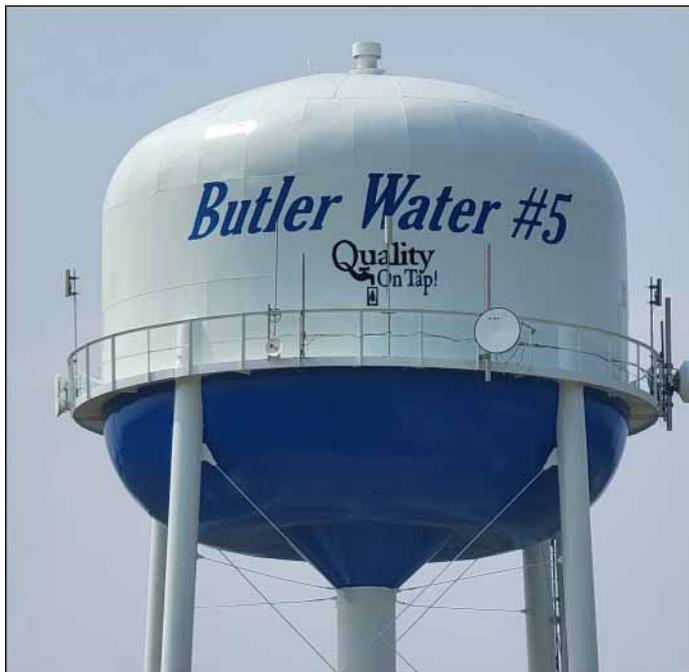
installed before 1989 has a chance of being leaded. In 2014, the Reduction of Lead in Drinking Water Act, reduced the allowable lead content in brass and alloys that come into contact with drinking water to less than 0.25 percent. Any plumbing installed after 2014 should meet the new definition of Lead Free. I'm not defending these definitions, just attempting to explain them.

Where does a water system even begin to get information on private plumbing materials? This is quite an ask of the Federal Government. KRWA has created a Lead Service Line Inventory Survey that water systems can download from www.krwa.net/downloads. The survey is intended to inform customers of the regulatory requirements facing the water system and plead for their

participation. If the customer gives a friendly one-fingered salute, document that and move on. There is too much work involved in the LSLI to get bogged down on customers who refuse to inform the water system.

Column S asks if This Location Will Be Used for the Lead and Copper Sample Site Plan. KDHE intends to do away with all the paper associated with the current Lead and Copper Testing process. When LCRR testing is due, water systems will review the LSLI spreadsheet to ensure the sample sites chosen are correct and the inventory is up to date. The idea is to make the process more streamlined. Did I mention that EPA is increasing the number of certifications from 2 to 22!

Columns T through Y are highlighted in yellow and locked to editing. The cells will auto-calculate based on the answers given in the other cells. The yellow columns will help KDHE track sampling Tiers and lead line replacement progress if a water system should exceed the AL or TL for lead and need to have a LSLR Plan. KDHE intends to create some guidance for the LSLR Plan creation. Some required elements of the LSLR Plan are: 1) Standard Operating Procedures (SOPs) for identifying the composition of unknown service lines; 2) LSL replacement; 3) notifying



"Providing solutions for informative decisions on storage tanks."

Inspection + Service + Coating + Repair

www.tankspek.com 800.624.1023 info@tankspek.com

JOPLIN, MO BAXTER SPRINGS, KS BERRYVILLE, AR

TANKSPEK CORP
TOWER INSPECTIONS + CONSULTING SERVICES



customers before working on LSLs and mitigation strategies for after the work; 4) a LSLR prioritization strategy for disadvantaged consumers; and, 5) a strategy to accommodate customers unable or unwilling to fund replacement of their water lines. I wouldn't get too worked up on these requirements quite yet. When KDHE's guidance document is released, we should better understand the specifics.

If you've made it this far, you must be a glutton for punishment. I recommend taking notice of anytime a service line is exposed and documenting what is found. **Column Z** is the Source of Information Used for Service Line Identification. Wherever the information on the SERVICE LINE came from, write it there. If it's in the plans and specs for that project, write Construction Plans. If the line is exposed and the operator remembers it, write Visual by Excavation. It doesn't need to be complicated. Systems can also add columns on the end. If a customer did give the operator a one-fingered salute, make a Column AA and write Declined or One-Fingered Salute or whatever makes sense to

Change is not always bad. Unfortunately, nowadays it's always expensive. The changes to how water systems handle lead lines are coming. And they will affect every water system in the country, leaded or not. The best time to start preparing for those changes is now.

document the progress of the spreadsheet.

The LSLI spreadsheet is intended to be updated as services are added and infrastructure is replaced. Systems must submit an updated version to KDHE at least every time lead and copper sampling is due. My recommendation is to start. Download the sheet and take time to input service addresses and the information you know. I would hope that is a "rain day" job but since we have had so few, it's probably a low priority. At the very least, inform the water system board/council/decision makers of the LSLI requirements. Someone in the system will have to spend hours working on it.

Change is not always bad. Unfortunately, nowadays it's always expensive. The changes to how water systems handle lead lines are coming. And they will affect every water system in the country, leaded or not. The best time to start preparing for those changes is now.

Daryn Martin began work with KRWA in August 2019. He previously was a Water Program Inspector and Environmental Program Administrator at KDHE's Wichita office.



Prior to joining KDHE, he worked as an operator in the El Dorado Water Treatment Plant. He holds a Class IV water operator certification.

ELLIOTT GROUP
TRU INSURANCE SOLUTIONS

RECENT DIVIDENDS PAID

2016—33.3%	2017—27.2%	2018—20.7%
2019—21.6%	2020—10.9%	2021—20.5%

Since 1994 RWDs in Kansas have received over \$7,200,000!

Coverages include:
 Property | General Liability | Auto | Cyber | Workers Compensation
 Inland Marine | Fidelity Bonds | Directors and Officers Liability

www.elliottinsurancegroup.com

3645 SW Burlingame RD · Topeka, KS 66611 · 785.267.4840
 Program underwritten by EMC Insurance Companies, Associate Member of KRWA