Lead & Copper Rule

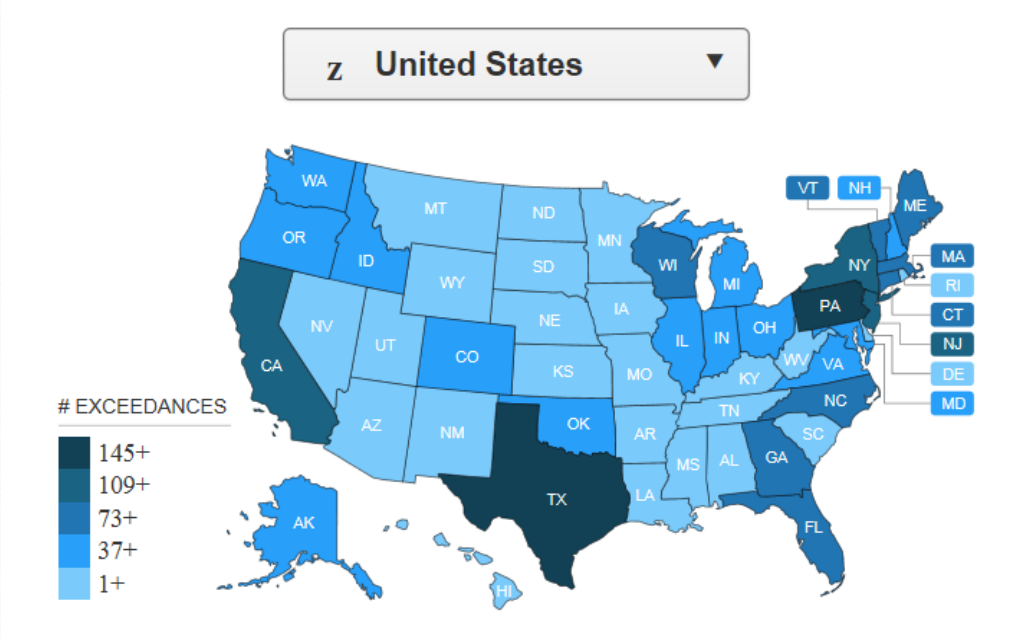
Wyoming Association of Rural Water Systems Fall Conference

US EPA R8 Drinking Water Program

Natalie Cannon

September 2016

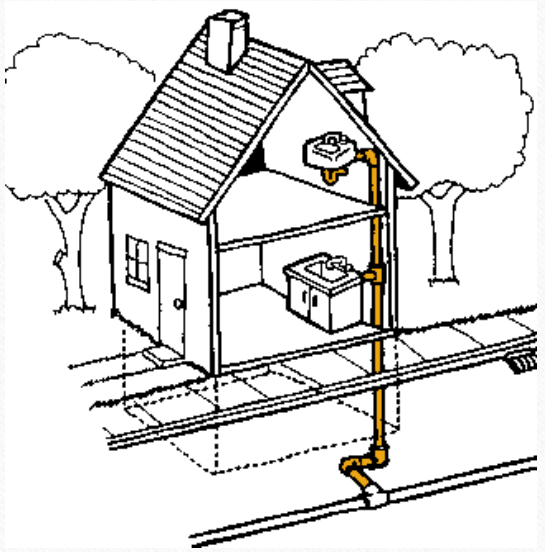
In the past 3 years, 16 Public Water Systems have exceeded the Action Level for Lead in Wyoming



Source: http://www.usatoday.com/story/news/2016/03/11/nearly-2000-water-systems-fail-lead-tests/81220466/

Presentation Talking Points

- Lead and Copper Rule (LCR) Overview
- Communications from R8
- Updated Training
- Updated Tap Sampling Protocol & Plan
- Consumer Notice
- Calculating Your 90th Percentile
- Steps following an Action Level Exceedance
- Corrosion Control
- Upcoming LCR Trainings



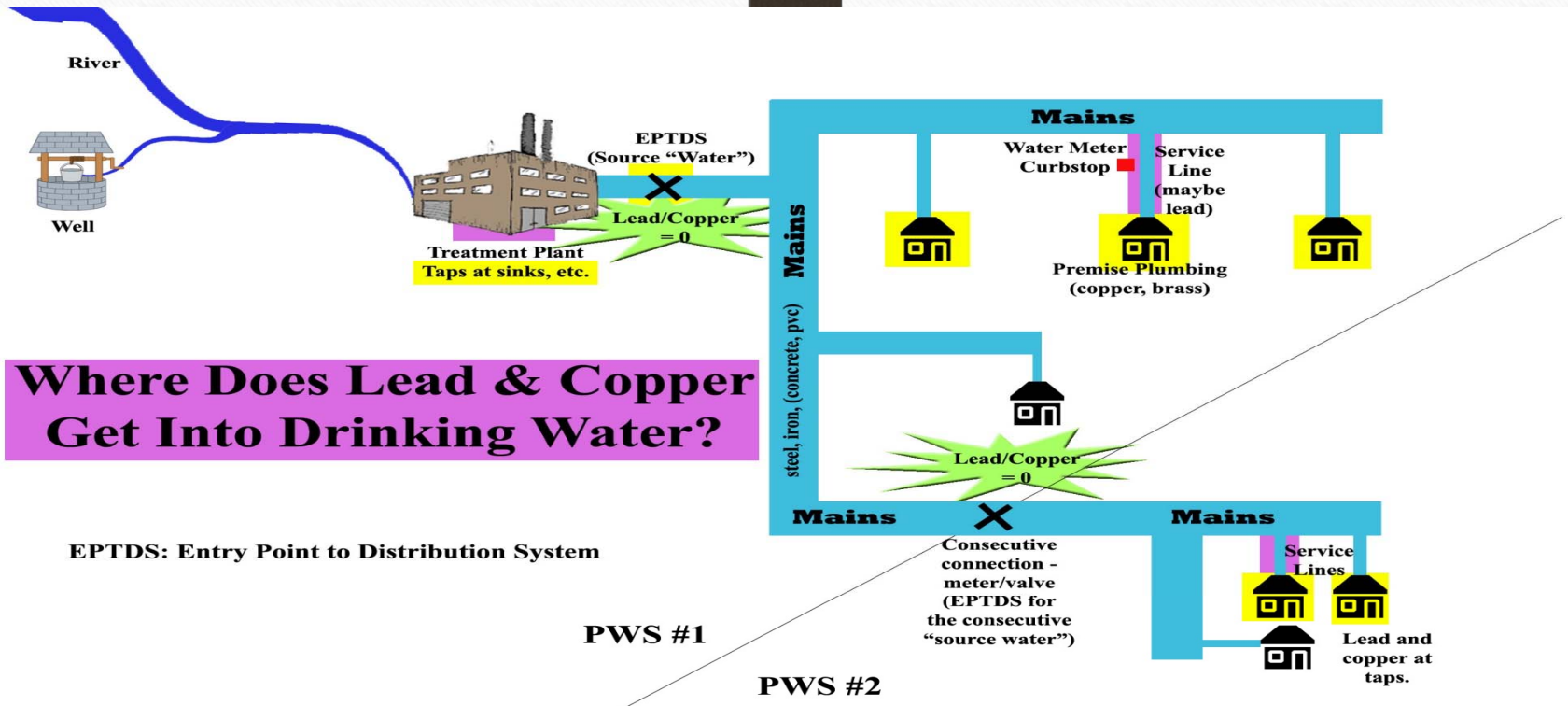
Lead and Copper Rule Overview

- The LCR was originally published in 1991
- New LCR Revision is under development and the proposed LCR is expected next year (2017)
- The rule sets Action Levels rather than Maximum Contaminant Levels (MCL):

  Lead (Pb) = 0.015 mg/L

  Copper (Cu) = 1.3 mg/L

- The Action Level is calculated based on the 90th percentile of all the samples taken in the distribution system (e.g. of 10 samples collected, if **two samples** are above the Action Level, then the Action Level has been exceeded)



Where Does Lead & Copper Get Into Drinking Water?

EPTDS: Entry Point to Distribution System

Lead and Copper Sampling:

- Source (flush before sample)
- Taps (do not flush before sample)

May 2016 - Email from Natalie

Dear [PWS]

I wanted to introduce myself to you as the new Lead and Copper Rule (LCR) Manager here at EPA Region 8. I've probably worked with you under my last role here at EPA as the IOC/SOC/VOC Rule Manager. There is no higher priority for the EPA than protecting public health and ensuring the safety of our nation's drinking water. Along with all of you, we are working diligently to address the risks from lead in drinking water supplied by Wyoming public water systems. As water system operators, you are critical partners in this effort. I am writing to let you know about recent updates we have made to our LCR materials, provide information that will help you comply with the LCR, and request verification of your existing site sampling plan.

Updated Training on the LCR

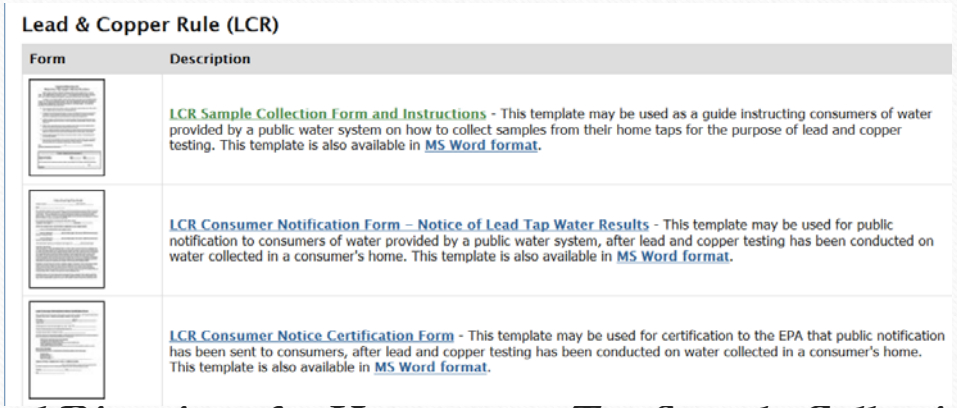
- We have updated our training presentation on the LCR with information targeted at what all water system operators need to know about the rule. The updated slides are posted on Drinking Water Online so you can access the information anytime. Please take a moment to flip through the presentation: https://www.epa.gov/region8-waterops/lead-and-copper-rule-lcr-presentation

Updated Tap Sampling Protocol

- We have recently updated the sampling protocol for lead and copper to account for the latest information and national guidance. ***Please review this prior to collecting any lead and copper samples, and provide these instructions to homeowners who collect compliance samples.*** This "Suggested Directions for Homeowner Tap Sample Collection Procedures" form is posted on Drinking Water Online: https://www.epa.gov/region8-waterops/lead-and-copper-suggested-directions-homeowner-tap-sample-collection-procedures

The Current Sample Collection Protocol in Online!

https://www.epa.gov/region8-waterops/reporting-forms-and-instructions-reporting-forms#lcr



Pick up a copy of the "Suggested Directions for Homeowner Tap Sample Collection Procedures – Revised February 2016" from the back of the room

Use the Current Sample Collection Protocol!

Collecting lead and copper samples according to the current protocol is critical to obtaining representative results. Here are some tips to remember:

- Minimum of 6 hours of stagnant water in the pipes prior to sample collection. DO NOT intentionally flush the water line before the start of the 6 hour period.
- Use a kitchen or bathroom cold-water faucet that has been used for consumption in the past few weeks
- If the home has a POE, like a water softener, then select a different sampling site
- If the home has a POU, like an RO unit under the sink, then select a tap that is not connected to it
- DO NOT remove the aerator prior to sampling
- If any plumbing repairs or replacements have occurred at the home, note this on your sample label

Revised Version: February 2016

These samples are being collected to determine the lead and copper levels in your tap water. This sampling effort is required by the U.S. Environmental Protection Agency and your State under the Lead and Copper Rule, and is being accomplished through a collaboration between the public water system and their consumers (e.g. residents).

Collect samples from a tap that has not been used for at least 6 hours. To ensure the water has not been used for at least 6 hours, the best time to collect samples is either early in the morning or in the evening upon returning from work. Be sure to use a kitchen or bathroom cold water tap that has been used for drinking water consumption in the past few weeks. The collection procedure is described below.

1. Prior arrangements will be made with you, the costumer, to coordinate the sample collection. Dates will be set for sample kit delivery and pick-up by water system staff.
2. There must be a minimum of 6 hours during which there is no water used from the tap where the sample will be collected and any taps adjacent or close to that tap. Either early mornings or evenings upon returning home are the best sampling times to ensure that the necessary stagnant water conditions exist. Do not intentionally flush the water line before the start of the 6 hour period.
3. Use a kitchen or bathroom cold-water faucet for sampling. If you have water softeners on your kitchen taps, collect your sample from the bathroom tap that is not attached to a water softener, or a point of use filter, if possible. Do not remove the aerator prior to sampling. Place the opened sample bottle below the faucet and open the cold water tap as you would do to fill a glass of water. Fill the sample bottle to the line marked "1000-mL" and turn off the water.
4. Tightly cap the sample bottle and place in the sample kit provided. Please review the sample kit label at this time to ensure that all information contained on the label is correct.
5. If any plumbing repairs or replacement has been done in the home since the previous sampling event, note this information on the label as provided. Also if your sample was collected from a tap with a water softener, note this as well.
6. Place the sample kit in the same location the kit was delivered to so that water system staff may pick up the sample kit.
7. Results from this monitoring effort and information about lead will be provided to you as soon as practical but no later than 30 days after the system learns of the tap monitoring results. However, if excessive lead and/or copper levels are found, immediate notification will be provided (usually 1-2 working days after the system learns of the tap monitoring results).

Call_____at_____if you have any questions regarding these instructions.

TO BE COMPLETED BY RESIDENT

Water was last used: Time_____ Date_____
Sample was collected: Time_____ Date_____

Sample Location & faucet (e.g. Bathroom sink): _____

I have read the above directions and have taken a tap sample in accordance with these

LCR Tap Sample Site Plan

- Now is the perfect time to review and verify your LCR tap sampling sites. Please fill out the LCR Tap Sample Site Plan https://www.epa.gov/region8-waterops/lead-and-copper-tap-sample-site-plan and email it to me by **June 30, 2016**.

LEAD AND COPPER RULE
Lead and Copper Tap Sample Site Plan
Region 8 – Wyoming and R8 Tribal

THE NUMBER OF LEAD/COPPER SAMPLE SITES REQUIRED IS BASED ON THE POPULATION OF THE PWS AS SUMMARIZED BELOW:

PWS ID: _____

SYSTEM NAME: _____

ADDRESS: _____

CONTACT PERSON: _____

PHONE NUMBER: _____

EMAIL ADDRESS: _____

SYSTEM TYPE: ☐ CWS ☐ NTNC

POPULATION:
- ☐ >100,000
- ☐ 10,001 to 100,000
- ☐ 3,301 to 10,000
- ☐ 501 to 3,300
- ☐ 101 to 500
- ☐ ≤ 100

Minimum Number of Tap Sample Sites Required for the Lead and Copper Rule

System Population	Minimum Number of Tap Sample Sites	
	Standard Monitoring	Reduced Monitoring
10,001 to 100,000	60	30
3,301 to 10,000	40	20
501 to 3,300	20	10
101 to 500	10	5
Less than 101	5	5

LEAD AND COPPER SAMPLE SITE SELECTION FORM

PWS NUMBER: _____

Make sure you include all regular and backup sites and add as many pages as you need.

No	Site Name & Address	Tier 1, 2, 3, Other	(R)egular sample site or (B)ack-up site	Plumbing Material	Date of Construction/Notes
1					
2					
3					
4					

Review Your LCR Sampling Plan

- All LCR sampling sites are in the Distribution System
- Water systems must identify the highest priority (Tier) sites to sample. Community public water systems must sample at all Tier 1 sites if they have enough Tier 1 sites to choose from.
  - Tier #1 sites: Single family structures that contains copper pipes with lead solder installed between 1983 and 1988, or contain lead pipes and/or served by a lead service line (LSL). If the PWS has LSLs, then it must collect 50% of the samples from the LSL. If there are not enough LSLs for 50%, the PWS must sample at all sites with LSLs.

What if the PWS does not have Tier 1 Sites?

- If the PWS does not have enough Tier 1 sites to choose from, then it must collect LC samples from Tier 2 sites. If there are not enough Tier 1 and Tier 2 sites, then Tier 3 sites must be used:
- For Community PWSs:
  - Tier #2 sites: Buildings (i.e. apartment buildings) that contain the above materials
  - Tier #3 sites: Single family structures that contain copper pipes with lead solder installed before 1983

Region 8 Tier Structure	
If you are a CWS	**If you are a NTNCWS**
Tier 1 sampling sites are single family structures**:** • With copper pipes with lead solder installed between 1983 and 1988*; or • contain lead pipes; or • are served by a lead service line. **Tier 2** sampling sites consist of buildings (i.e. apartment buildings, schools, hospitals): • with copper pipes with lead solder installed between 1983 and 1988, or • contain lead pipes; and/or • served by a lead service line. **Tier 3** sampling sites are single family structures with copper pipes having lead solder installed before 1983. Tier "**Other**": • All other structures.	**Tier 1** sampling sites consist of buildings: • with copper pipes with lead solder installed between 1983 and 1988*; or • contain lead pipes; or • are served by a lead service line. **Tier 2** sampling sites consist of buildings with copper pipes with lead solder installed before 1983. Tier "**Other**": • All other structures.

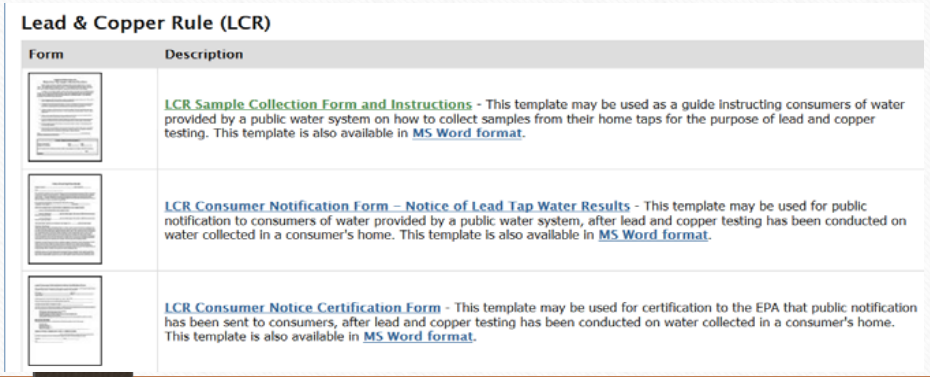
Pick up a Cheat Sheet from at LCR Booth!

Thank you Ross & Maria ☺

Come see us at the EPA booth for assistance with your LCR Plan!

Consumer Notice

- Once you receive the results from the lab, you must notify the home owner of their LC results within 30 days of receiving the results from the lab. PWSs must also send 1 example notice along with a certification that the notices have been distributed to EPA r8dwu@epa.gov.
- Use the form located on Drinking Water Online: *https://www.epa.gov/region8-waterops/reporting-forms-and-instructions-reporting-forms#lcr*



Calculate Your 90th Percentile

	**LCR Public Education Materials for Community Systems serving less than 3300** - When the 90th percentile for Community (C) water systems (population < 3,300) exceeds the action level for lead, this template may be used to complete the required Public Education activities. This template is also available in **MS Word format**.
	**LCR 90th Percentile Calculator** - This MS Excel spreadsheet can be used to calculate 90th Percentile values used to determine the action levels for both Lead (Pb) and Copper (Cu) by the linear interpolation method.

PWS Name: _____

Monitoring Period: _____

Enter your sample results here:

Sample #	Cu mg/L	Pb mg/L
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

Rank	Cu mg/L	Pb mg/L
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

#Cu Obs	0
0.9 * 0	0
Cu #0	
Cu #0	
90th% Cu	
#Pb Obs	0
0.9 * 0	0
Pb #0	
Pb #0	
90th% Pb	

Simply enter your data and Voila!

Thank you Charles ☺

Exceeding an Action Level for Lead and Copper

If a PWS exceeds the Action Level for Lead and/or Copper, it must perform certain actions that lead towards corrosion control:

1. Monitoring of L/C increases to once every 6-months and sampling size doubles
2. Distribution of public education materials (lead only)
3. Monitoring of L/C at the "source" (EPTDS)
4. Collection of water quality parameters at the source
5. Collection of water quality parameters at taps
6. Submit a recommendation for source water treatment
7. Submit a recommendation for optimal corrosion control

Implementation of Corrosion Control

- Corrosion Control:
  - Typically Orthophosphate or Sodium Silicate Feed System
  - Once installed, must be continuously operated
  - CANNOT be discontinued without EPA approval
  - Required ongoing water quality monitoring and reporting
- If Lead and Copper Levels Persist:
  - Optimize treatment
  - Replace lead service lines

Work Closely with the LCR Rule Manager to Ensure All Requirements are Being Met

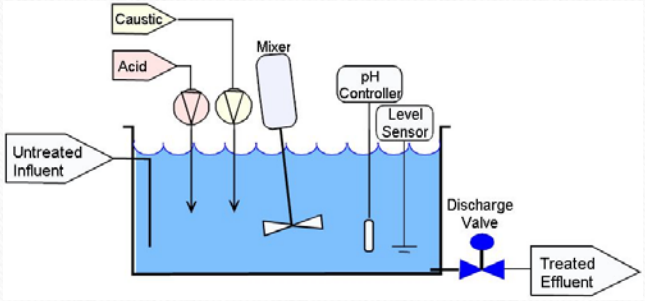
If Your PWS Exceeds the Action Level

- Very Short Deadlines so Sample for LC EARLY – **Do Not Wait!!**
  - Public Education (PE) is due within 60 days of the end of the Monitoring Period.

    i.e. PWS on annual schedule exceeds AL, monitoring period is June 1 – September 30, PE is due November 30th.
  - Water Quality Parameters (WQP) are to be collected within 6 months of the beginning of the Monitoring Period.

    i.e. PWS on annual schedule exceeds AL, monitoring period is June 1 – September 30, WQP are due November 30th.

Water System Changes



- If your PWS is considering a change in treatment, source(s), or population; you **must** submit a description of the proposed changes to the EPA and the WY DEQ ASAP. The EPA must approve the addition of a new source or change in treatment before it is implemented.
- Examples of these changes include:
  1. Addition of a new treatment process.
  2. Modification of an existing treatment process, including:
     - i.e. Switching coagulants, secondary disinfectants, or corrosion inhibitors
     - i.e. Changes to dose of existing chemicals or other long-term changes to finished water.

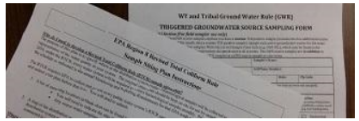
NOTE: Long-term treatment changes do not include chemical dose fluctuations associated with daily raw water quality changes.

Change to PWS form

Use the form located on Drinking Water Watch:

https://www.epa.gov/region8-waterops/reporting-forms-and-instructions-reporting-forms#chg

Reporting and Forms



Reporting, Forms and Instructions

- Reporting Forms
- Public Notification
- Consumer Confidence Reports

Changes to Public Water Systems (CHG)

Form	Description
	Wyoming System Change Form - This form should be completed and submitted to EPA Region 8 when a Public Water System in **Wyoming** is making changes to any source, treatment, water system facility (WSF), or management. The form is also available in MS Word format.

Upcoming LCR Trainings:

- 8-hour training focused on Lead and Copper
- 5 locations throughout Wyoming
- Look for an invitation in your email!

- Lander, WY
  - 430 Garfield St.
  - **10/4/16**
- Sheridan, WY
  - 932 Kroe Lane
  - **10/19/16**
  -
- Cody, WY
  - Address pending
  - **12/6/16**
- Glenrock, WY
  - Address pending
  - **1/10/17**
- Green River, WY
  - Address pending
  - **2/9/17**

Key Points to Remember:

- Submit your LCR Tap Sample Site Plan to r8dwu@epa.gov
- Sample According to your Plan
- Perform Consumer Notice:
  - CN Form to Homeowners + CN Certification to EPA
- Calculate your 90th Percentile
- If you exceed the Action Level …

Contact Natalie!

Questions?

Please contact the EPA Lead and Copper Rule Manager

Natalie Cannon

cannon.natalie@epa.gov

(303) 312-6625