



**Department
of Health**

The Lead and Copper Rule

**New York Rural Water Association
Fall 2016 Training**

Question: Define a Tier 1, Tier 2 and Tier 3 sample site

- Tier 1 sites are single family structures that contain copper pipes with lead solder installed between 1982 and 1986. Tier 1 sites are also those sites served by a lead service line or contain lead plumbing.
- Tier 2 sites are buildings, including multifamily residences with copper pipes with lead solder installed between 1982 and 1986 or are served by a lead service line; and
- Tier 3 sites are single family structures with copper pipes have lead solder installed before 1983.

How Lead Gets into Drinking Water

- 💧 Lead enters drinking water when it comes in contact with plumbing materials such as lead pipes or lead solder or faucets, valves made of brass
- 💧 This interaction is referred to as corrosion
- 💧 Factors including time of contact, condition of plumbing and certain characteristics of the water affect corrosion
- 💧 Can be in source water, although uncommon

Not A New Issue....



The original lead water-supply piping of ancient Pompeii

“Hence gout and stone afflict the human race; Hence lazy jaundice with her saffron face; Palsy, with shaking head and tott’ring knees. And bloated, dropsy, the staunch sot’s disease; Consumption, pale with keen but hollow eye, And sharpened feature, shew’d that death was nigh. The feeble offspring curse their crazy sires, and, tainted from his birth, the youth expires.”

Description of lead poisoning by an anonymous Roman hermit, translated by Humelbergius Secundus, 1829.

Purpose

- 💧 Protect public health by minimizing lead and copper levels in drinking water, by reducing corrosivity and replacing plumbing materials such as service lines, interior plumbing or solder.
- 💧 Because lead and copper in drinking water is mainly due to the corrosion of service lines and household plumbing materials, tap water samples are collected at kitchen or bathroom taps of residences and other buildings.

What Are the Health Effects?

- 💧 Lead:
 - #1 – *Lowered IQ in children*
 - Damage brain and kidneys
 - Interfere with production of red blood cells
- 💧 Copper:
 - Gastrointestinal distress
 - Liver or kidney damage
 - Life-threatening to those with Wilson's Disease

Applicability

- 💧 All Federal Community and NTNC systems
- 💧 Divided into size categories:

Size	Population Served
Small	25 – 3,300
Medium	3,301 – 50,000
Large	>50,000

Changes Over the Years

- 💧 Original Rule: June 7, 1991
- 💧 Revisions:
 - June 29, 1992
 - June 30, 1994
 - January 12, 2000
 - June 29, 2004
 - October 10, 2007
- 💧 Revisions are not in Part 5!

Lead and Copper Monitoring Requirements

Sampling Requirements

- Required for all Federal Community and NTNC
- Population determines number of samples collected

Population	Standard Number of Sites	Reduced Number of Sites
>100,000	100	50
10,001 – 100,000	60	30
3,301 – 10,000	40	20
501 – 3,300	20	10
101 – 500	10	5
≤100	5	5

But I Don't Have 5 Taps.....

- 💧 Fewer than 5 taps for human consumption, the rule allows two alternatives:
 - Collect one sample from each tap, collect remaining number of samples from same taps on different days to meet minimum required number of sites.
 - Collect one sample from each tap used for human consumption – must be approved in writing by LHD.

Tier 1 Sites – Community Systems

- 💧 Single Family Structures ONLY
 - Lead service line (any age)
 - Lead pipes within home (any age)
 - Copper pipes with lead solder (1982 – 1986)

Tier 2 Sites – Community Systems

- 💧 Buildings, Including Multi-Family Residences
 - Lead service line (any age)
 - Lead pipes within building (any age)
 - Copper pipes with lead solder (1982 – 1986)

Tier 3 – Community Systems

- 💧 Single Family Structures ONLY
 - Copper pipes with lead solder installed before 1983
- 💧 Completing Sampling Pool – sites representative of plumbing materials found throughout the system

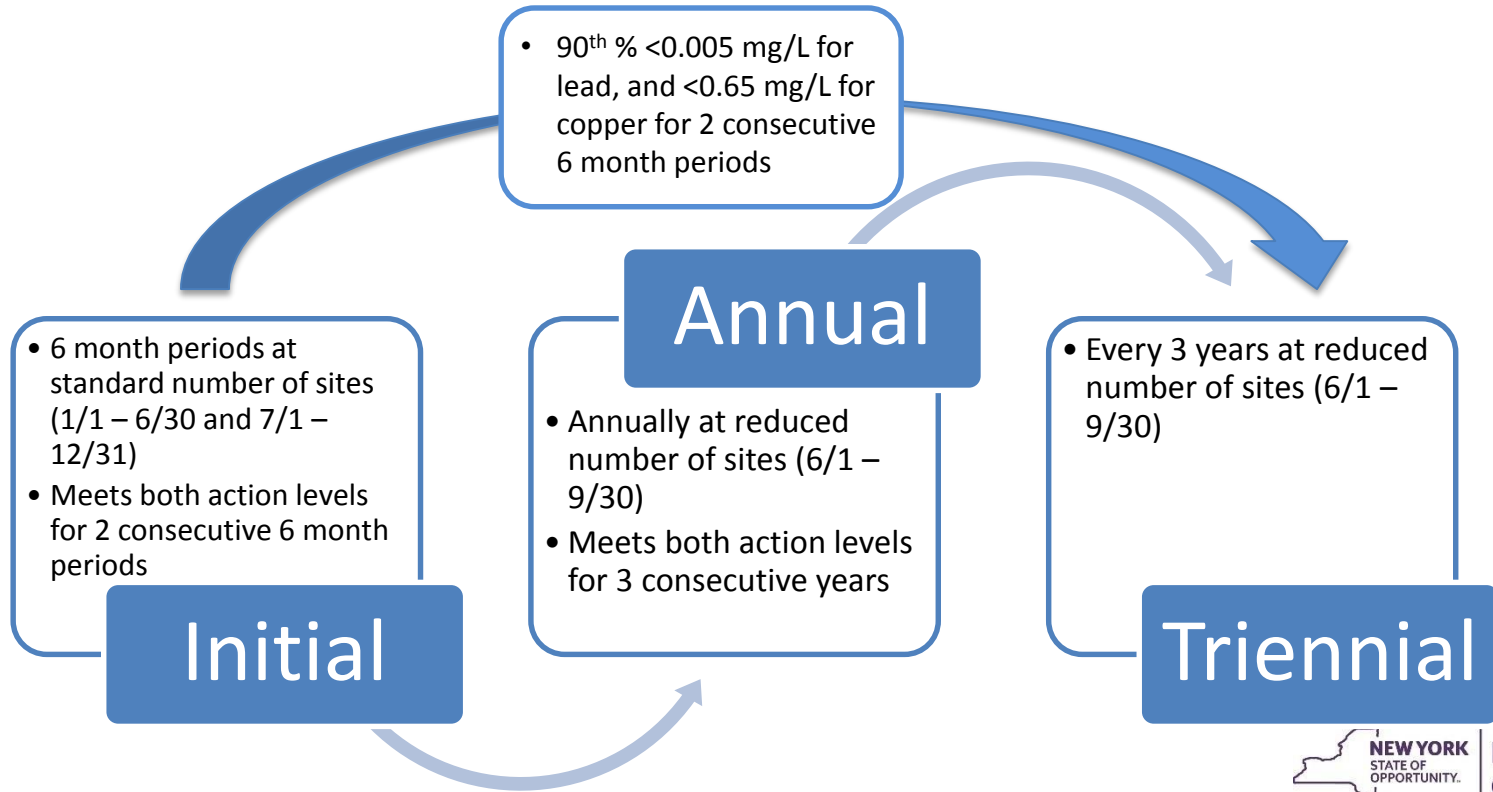
Tier 1 Sites – NTNC Systems

- 💧 Lead service line (any age)
- 💧 Lead pipes within building (any age)
- 💧 Copper pipes with lead solder (1983 – 1986)

Tier 3 – NTNC Systems

- 💧 Copper pipes with lead solder installed before 1983
- 💧 Completing Sampling Pool – sites representative of plumbing materials found throughout the system

Sampling Schedule



Treatment and/or Source Changes

- 💧 Must notify LHD of any upcoming treatment changes or source changes. May require:
 - Return to standard monitoring at standard number of sites
 - Increase water quality parameter monitoring
 - Re-evaluate corrosion control treatment

Some Examples....

- 💧 Switching secondary disinfectants (e.g. chlorine to chloramines)
- 💧 Switching coagulants (e.g. alum to ferric chloride)
- 💧 Switching corrosion inhibitor products (e.g., ortho to blended phosphate)
- 💧 Changing dosage of existing chemicals if it affects pH or residual inhibitor concentration

9 Year “Waiver”

- 💧 Applies to systems serving <3,300 people
- 💧 Reduces tap monitoring to once every 9 years
- 💧 Systems must meet specific materials criteria
- 💧 Can issue a partial waiver
- 💧 States can require additional activities as waiver condition

9 Year Waiver - Lead

- 💧 Free of all lead-containing materials
 - No plastic pipes or service lines with lead plasticizers
 - No lead service lines, lead pipes, lead soldered pipe joints, leaded brass or bronze alloy fittings and fixtures unless they meet the requirements of the “Lead Free” law

9 Year Waiver - Copper

- 💧 No copper pipes or copper service lines

9 Year Waiver

- Must have completed one 6-month round of monitoring since meeting materials criteria
- 90th percentile levels must be:

Lead criteria: ≤ 0.005 mg/L

Copper criteria: ≤ 0.65 mg/L

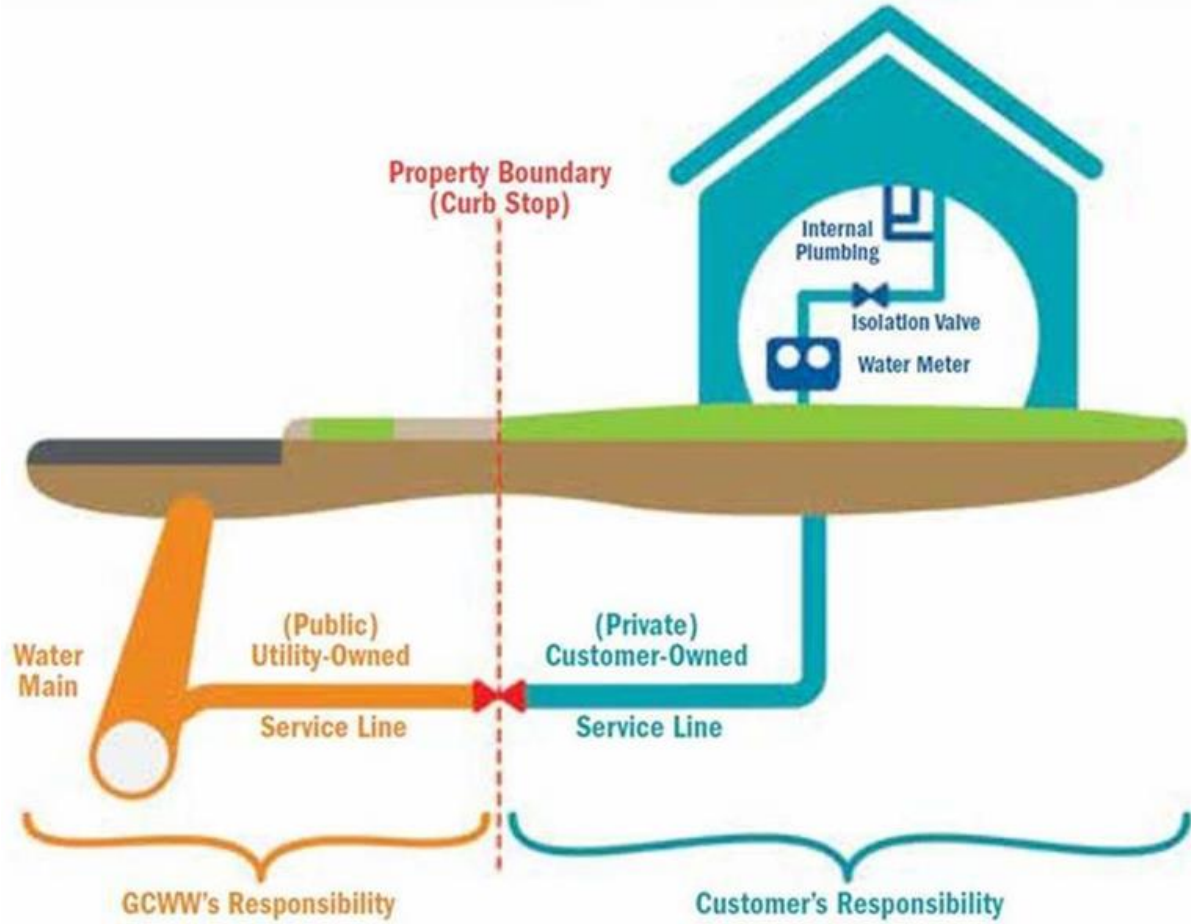
- Must continue to monitor once every 9 years and submit materials criteria form
- PWS - 211 & DOH - 4301

Systems with Optimal Water Quality Parameters

- 💧 Any systems that have OWQPs set (including all systems >50,000) must also be in compliance with these to move to reduced monitoring.
- 💧 NOTE: These system do NOT have to be in compliance with the copper action level to move to reduced monitoring.
- 💧 Any system that has an excursion must return to 6 month monitoring at the standard number of sites.

What Is A Lead Service Line?

- 💧 A service line made of lead which connects the water main to the building inlet and any lead pigtail, gooseneck or other fitting which is connected to such lead line.



What Do They Look Like?



- 💧 Dull gray color and are very soft.
- 💧 If pipe is made of lead, a scratch will turn a bright silver color.
- 💧 Sometimes connected to indoor plumbing using a solder “bulb” or compression fitting

Site Identification

- 💧 Original rule required a materials evaluation of the distribution system
- 💧 Identify a pool of targeted sampling sites larger than the number required
- 💧 Select sample locations from this pool
- 💧 Samples are required to be collected from the same sites during each round of monitoring

Materials Survey

- 💧 Plumbing codes, permits, records
- 💧 Inspections and records from distribution system maintenance
- 💧 Water quality information
- 💧 Talk to your retired operators
- 💧 Collect the information during day to day activities

Some cities know where lead water service lines are, others have “very rough to no idea”

By LINDSEY SMITH • APR 1, 2016



LINDSEY SMITH / MICHIGAN RADIO

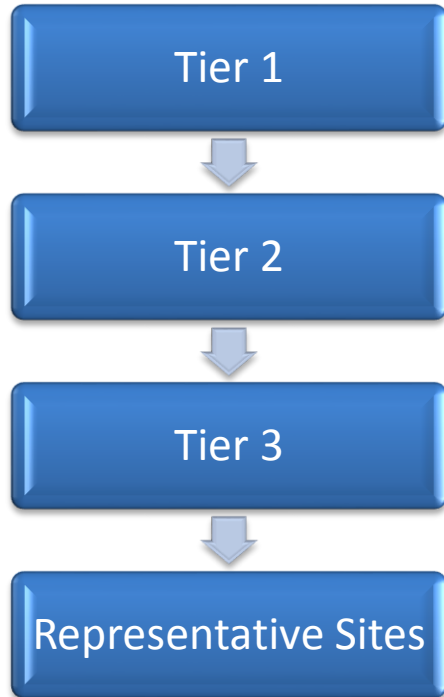
The [water crisis in Flint](#) revealed that the city really has no clue where its lead service lines are. UM-Flint estimated there are at least [4,000 lead service lines in Flint](#), but there are another [11,000 lines](#) that are made of an “unknown” material.

But I Don't Have Any Records....

- 💧 1900 – 1920 seem to be common installation time
- 💧 Even if your system didn't exist then, check the older homes that are now connected for interior lead pipes

Selection Process

Community Water Systems



NTNC Water Systems



Lead Service Lines

- 💧 Any systems that contain lead service lines shall draw:
 - 50% of samples from sites containing lead pipes or copper pipes with lead solder
 - 50% of samples from sites served by lead service lines

Reasoning Behind All This...

- 💧 Site selection protocol is designed to identify locations that are likely to have the highest levels of lead and/or copper.
- 💧 Required to sample at these sites to better ensure that possible high levels are caught and appropriate treatment is provided.

What happens when homeowners drop out?

- Have a sufficient number of preapproved sites on hand
- Distribute a sufficient number of bottles to ensure enough samples are collected
- Collect samples early enough in the monitoring period

COLLECTING THE SAMPLES



Sample Collection Method

- 💧 First draw, 1 liter samples
- 💧 Minimum 6 hour standing time (NO MAXIMUM)
- 💧 In homes – from cold water kitchen tap or bathroom sink tap.
- 💧 Non-residential buildings – interior tap from which water is typically drawn for consumption
- 💧 Do not include faucets with point-of-use or point-of-entry treatment devices designed to remove inorganic contaminants
- 💧 Residents can collect samples**

Sample Collection

- 💧 It is up to YOU to train residents properly!
- 💧 Written instructions should be provided
- 💧 Aerators should **not** be removed
- 💧 Pre-stagnation flushing discouraged
- 💧 Wide mouth bottles should be used
- 💧 Residents should certify collection meets requirements



SAMPLE INVALIDATION

Reasons to Invalidate

- 💧 Laboratory error
- 💧 Sample collected from a site that did not meet the site selection criteria
- 💧 Sample container damaged in transit
- 💧 Substantial reason to believe sample was subject to tampering

Process

- 💧 System must report all results and all supporting documentation to LHD.
- 💧 Decision and rationale must be in writing.
- 💧 Cannot invalidate just because a follow-up sample result is higher or lower.

Replacement Samples

- 💧 Replacement samples must be collected if, after invalidation, system does not meet its minimum number of required samples.
- 💧 Taken as soon as possible, but no later than:
 - 20 days after LHD invalidation, or
 - End of monitoring period, whichever occurs later.
- 💧 Collected at same location or at location different from those already used during the monitoring period.

Additional Sample Collection

- 💧 Systems may resample any sites they wish, but....
 - If they are first draw samples collected within the appropriate time period, and samples cannot be invalidated, all results must be used in 90th percentile calculation.

Samples that Count

- 💧 ALL samples from that system's targeted sampling pool collected during the monitoring period, even if you don't like the results or think they are unrepresentative
- 💧 ALL confirmation samples collected at sites within the pool during the MP
- 💧 ALL samples returned to the PWS by homeowners

Samples that Don't Count

- 💧 Customer requested samples if they do not meet the targeted sampling pool criteria
- 💧 Samples collected outside of the monitoring period

What Must Be Reported to LHD?

- 💧 Results of all tap samples including location of site and Tier met
- 💧 Documentation for invalidation, if requested
- 💧 90th percentile (unless LHD agrees to calculate)
- 💧 Written explanation for change in sample location

Due
October
10th if on
reduced
monitoring
schedule.

Due July 10th
or January
10th if on 6
month
monitoring
schedule.



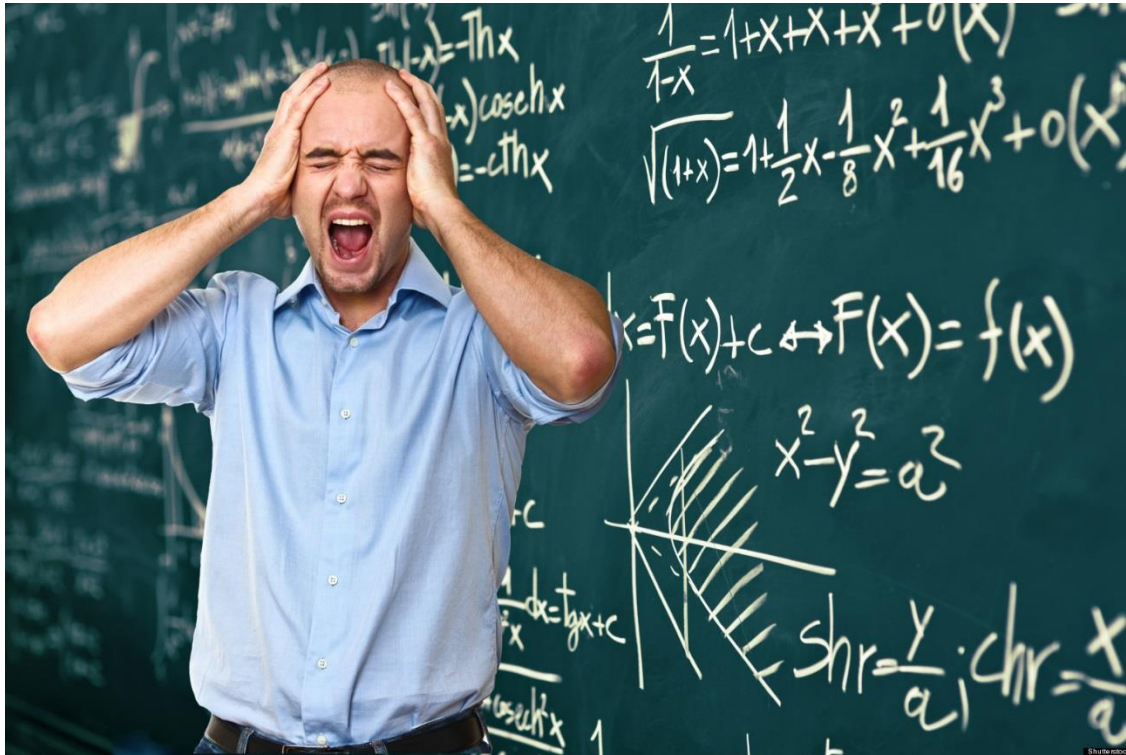
NEW YORK
STATE OF
OPPORTUNITY.

Department
of Health

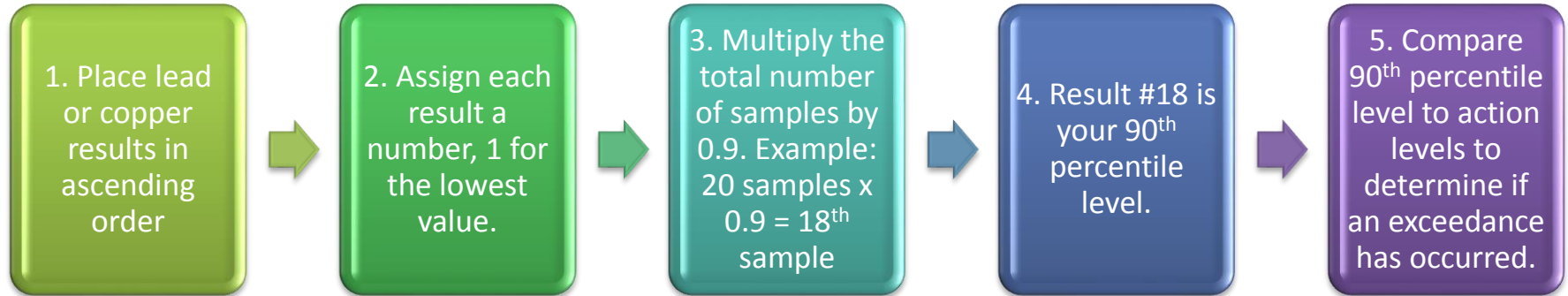
Systems with Waivers

- 💧 In addition to previous slide:
 - Materials certification every 9 years
 - If no longer meets materials criteria, must notify LHD within 60 days

90th Percentile Calculation



Calculating the 90th Percentile: >5 Samples



NOTE: ALL 1st draw samples collected within the compliance period must be used in the 90th percentile calculation unless they have been invalidated by the LHD.

Calculating the 90th Percentile: ≤ 5 Samples

- 💧 5 Samples: Average of the 2 highest results is the 90th percentile
- 💧 < 5 Samples: Highest result is the 90th percentile

Action Levels

Lead	0.015 mg/L
Copper	1.3 mg/L

- Measured at the 90th percentile (e.g., if 100 samples, no more than 10 may exceed the action level).
- Exceedance of an Action Level *is not a violation*
- Triggers additional requirements

Let's do Math!

You are the water operator of Crayon Canyon, NY. You are required to collect 10 lead and copper samples every 3 years. You receive the following results from your lead and copper sampling:

Address	Year Constructed	LSL?	Lead (mg/l)	Copper (mg/l)
42 SILVER ST	1985	N	0.002	0
14 PINK ST	1918	Y	0.017	0.001
65 RECTANGLE RD	1976	N	0.005	0.31
1 CIRCLE ST	1925	Y	0.067	0.45
25 YELLOW ST	1985	N	0.001	0.37
67 BLUE ST	1912	Y	0.013	0.64
19 PURPLE ST	1914	Y	0.006	0
54 COBALT COURT	1986	N	0.001	0
91 BROWN BLVD	1965	N	0.001	0.82
84 RED ROW	1904	Y	0.008	1.4

Let's do Math!

Calculate the 90th
percentile for lead:

Step 1: Sort your
spreadsheet from smallest
to largest

Step 2: Multiple your total
number of samples by 0.9
($10 \times 0.9 = 9$)

Step 3: Highlight the 9th
highest result

Answer: 0.17 ugl

Address	Year Constructed	LSL?	Lead (mg/l)	Copper (mg/l)
25 YELLOW ST	1985	N	0.001	0.37
54 COBALT COURT	1986	N	0.001	0
91 BROWN BLVD	1965	N	0.001	0.82
42 SILVER ST	1985	N	0.002	0
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Let's do Math!

Calculate the 90th
percentile for copper:

Step 1: Sort your
spreadsheet from smallest
to largest

Step 2: Multiple your total
number of samples by 0.9
($10 \times 0.9 = 9$)

Step 3: Highlight the 9th
highest result

Answer: 0.82 mg/l

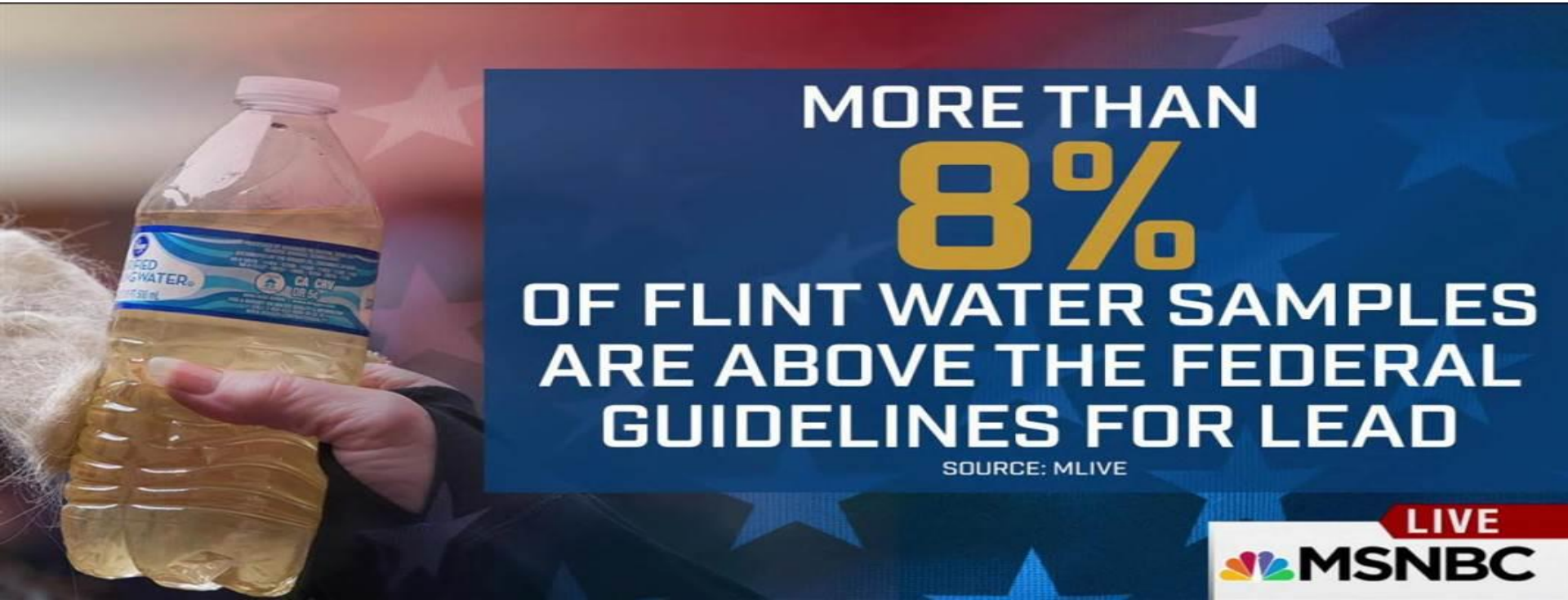
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Houston, We have a problem

Crayon Canyon has a lead action level exceedance.

The 90th percentile is 0.017 mg/l and the action level is 0.015 mg/l

So, according to the reg, is this a problem?

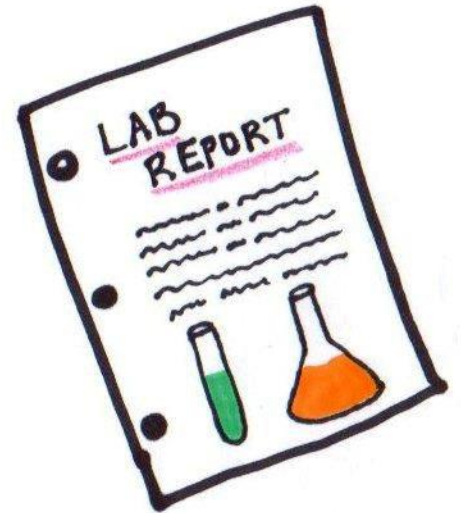


**MORE THAN
8%
OF FLINT WATER SAMPLES
ARE ABOVE THE FEDERAL
GUIDELINES FOR LEAD**

SOURCE: MLIVE



Result Notifications



What Must Be Reported to Residents?

- 💧 Systems must provide notification to occupants of the residence of tap water results from that location. Regardless of:
 - 💧 Individual result
 - 💧 90th percentile
- 💧 No later than 30 days after receiving results.

What Must Be Reported to Residents?

- 💧 Must include:
 - Lead result
 - Health effects of lead
 - Steps to reduce exposure to lead in drinking water
 - Contact info for water system
 - Action level, MCLG, and definitions

What Must Be Reported to LHD?

💧 Must include:

- Sample copy of customer notification
- Certification that it has been distributed

💧 When?

- December 31st if system is on reduced monitoring
- September 30th or March 31st if system is on 6 month monitoring

Additional Guidance/Resources

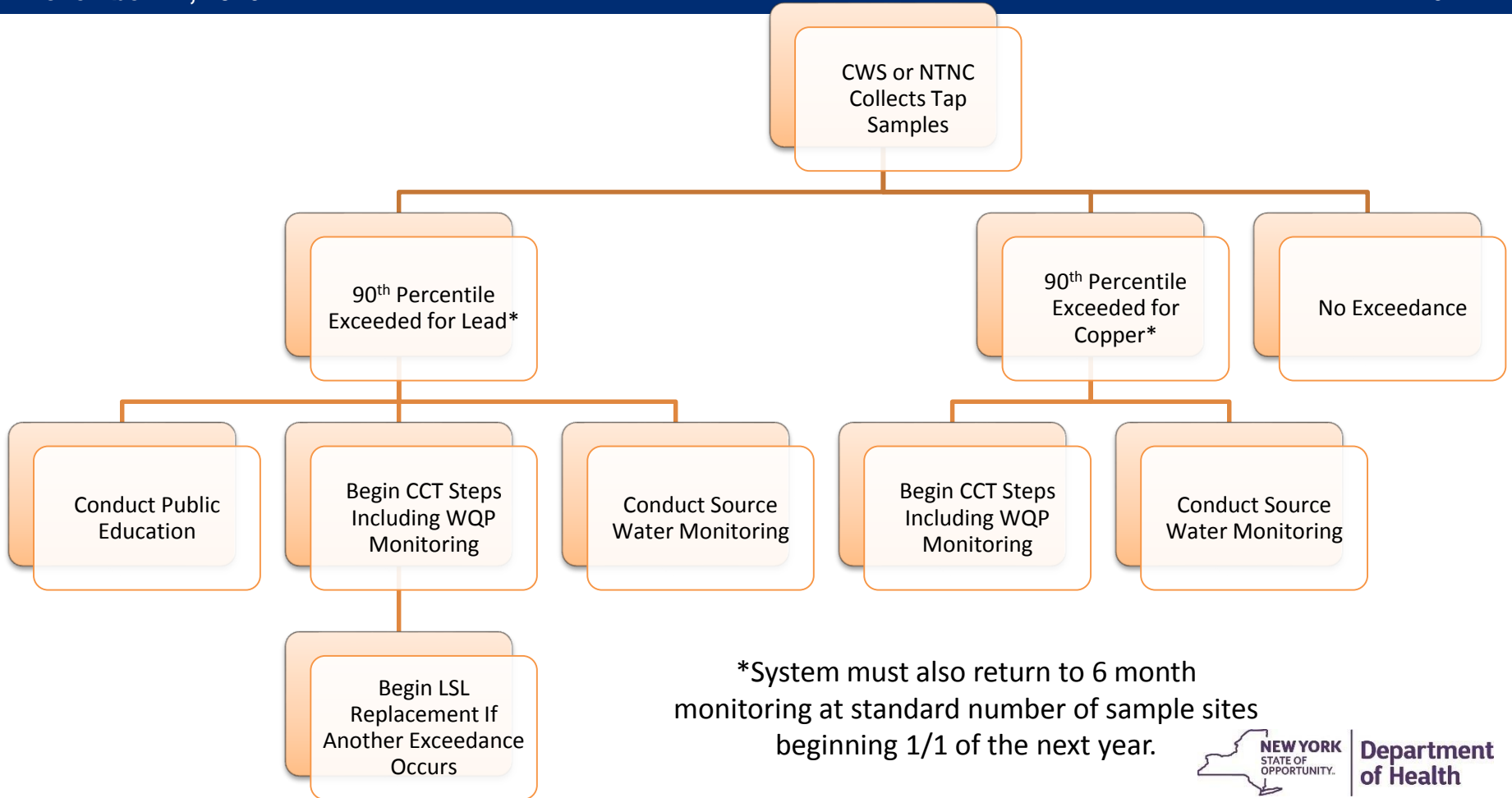
- ◆ Federal Register - <http://www.ecfr.gov/cgi-bin/retrieveECFR?gp=&SID=1df9c0c568457f6928809b5ee36bc643&mc=true&n=pt40.23.141&r=PART&ty=HTML#sp40.23.141>
- ◆ EPA's Lead and Copper Rule Monitoring and Reporting Guidance for Public Water Systems (March 2010) – <http://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100DP2P.txt>
- ◆ EPA Memo – Clarification of Recommended Tap Sampling Procedures for Purposes of the Lead and Copper Rule (2/29/16) – https://www.epa.gov/sites/production/files/2016-02/documents/epa_lcr_sampling_memorandum_dated_february_29_2016_508.pdf
- ◆ EPA's Monitoring Waivers under The Lead and Copper Rule Minor Revisions for Systems Serving 3,300 or Fewer People (April 2000) - <http://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P1005EIV.txt>





OH NO! Its An Action
Level Exceedance!





*System must also return to 6 month monitoring at standard number of sample sites beginning 1/1 of the next year.

Source Water Monitoring

- Collected at each entry point to distribution
- Collected within 180 days of the end of the monitoring period which the Pb or Cu AL is exceeded
- SW treatment recommended when Pb >0.010 mg/l and Cu >0.8 mg/l

If no SW Treatment is Required

- Collect once every 9 years if:
 - SW lead ≤ 0.005 mg/l
 - SW copper ≤ 0.065 mg/l
 - Levels are maintained for 3 consecutive years
- Source water treatment is not common. Consult with your LHD if it is required at your system.

PUBLIC EDUCATION – LEAD EXCEEDANCE ONLY!



There is no public notification requirement for exceeding the copper action level... Sort of

** must be included in AWQR

Content – In This Order

1. IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER.....
2. Health effects of lead.
3. Sources of lead.
4. Explain possible reasons for lead in the water.
5. Water system contact information

Community Water Systems

- 💧 Must also include:
 - 💧 Tell consumers how to get water tested.
 - 💧 Discuss lead in plumbing and difference between low lead and lead free.

Community Water Systems

Must complete the following tasks within 60 days (November 30th if on reduced monitoring).....

Delivery Requirements

- 💧 Appropriate language(s), if needed.
- 💧 Every 12 Months: Must be delivered to all bill-paying customers.
- 💧 Every 12 Months: Contact public health agency for lists of organizations to contact.

Customers That Must Be Contacted:

- 💧 Public and private schools
- 💧 WIC and Head Start programs
- 💧 Public and private hospitals and medical clinics
- 💧 Pediatricians
- 💧 Family planning clinics
- 💧 Local welfare agencies

Contact Customers

- 💧 Good-faith effort to contact:
 - Licensed childcare centers
 - Public and private preschools
 - OBGYNs and midwives

During Each Billing Cycle

- 💧 No less often than quarterly
- 💧 Provide the following statement on or in each water bill as long as system exceeds:

[WATER SYSTEM] found high levels of lead in drinking water in some homes. Lead can cause serious health problems. For more information please call [WATER SYSTEM] or visit [website here].

Additional Tasks

- 💧 >100,000 - Post material on the water system's website (must stay posted)
- 💧 Submit press release to newspaper, TV, and radio stations twice a year*

Additional Tasks

Every 12 months - At least 3 of the following*:

- 💧 Public Service Announcements
- 💧 Paid advertisements
- 💧 Public area information displays
- 💧 Emails to customers
- 💧 Public meetings
- 💧 Household deliveries
- 💧 Targeted individual customer contact
- 💧 Direct material distribution to all multi-family homes and institutions
- 💧 Other methods approved by the State



NTNC Systems

- 💧 Due by November 30th:
 - Post informational posters in common areas
 - Distribute informational pamphlets and/or brochures on lead to each person served (can do this electronically).
 - Must repeat at least once during each calendar year in exceedance.

Resident Requested Sampling

- 💧 All systems that have a lead exceedance must also offer to sample the tap water of any customer who requests it.
- 💧 Not required to pay for collecting or analyzing the sample, nor is the system required to collect and analyze the sample itself.

Discontinuing Public Education

- 💧 System can cease public education if the system has met the lead action level during the most recent 6 month monitoring period.
- 💧 If system exceeds again, must recommence public education.

Reporting Requirements

- 💧 Within 10 Days of Due Date (December 10th when on reduced monitoring):
 - Demonstration that met materials content and delivery requirements
 - List of all newspapers, TV, radio, and facilities and organizations delivered to
 - If not the first time, can just certify this was all done again

Additional Resources/Guidance

- 💧 EPA's Implementing the Lead Public Education Provision of the Lead and Copper Rule: A Guide For Community Water Systems (June 2008) - <http://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=60001I4N.txt>
- 💧 EPA's Implementing the Lead Public Education Provision of the Lead and Copper Rule: A Guide for NTNC Water Systems (June 2008) - <http://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=60001I2F.txt>
- 💧 EPA's Public Education Posters on Lead Service Lines - <https://www.epa.gov/dwreginfo/public-education-posters-lead-service-lines>
- 💧 EPA's Is There Lead In My Drinking Water? Pamphlet (February 2005) - <http://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=500025PW.txt>

WQP Monitoring After Installation of Corrosion Control

- 💧 >50,000 – This was completed in 1997
- 💧 <50,000 – In the two 6-month monitoring periods after OCCT is installed

What Are We Sampling For Now??

2 Samples at Taps in DS for:

- 💧 pH
- 💧 Alkalinity
- 💧 Orthophosphate (if used)
- 💧 Silica (if used)
- 💧 Calcium (if calcium carbonate stabilization is used)

Each Entry Point for:

- 💧 pH
- 💧 If adjusting alkalinity:
 - Dosage rate of chemical used
 - Alkalinity concentration
- 💧 If a corrosion inhibitor is used:
 - Dosage rate of chemical used
 - Concentration of chemical used (ortho or silica)

How Often Are We Doing This??

In the Distribution System:

- 💧 2 six month periods after installation of OCCT

At Each Entry Point:

- 💧 At least one sample no less frequently than every 2 weeks

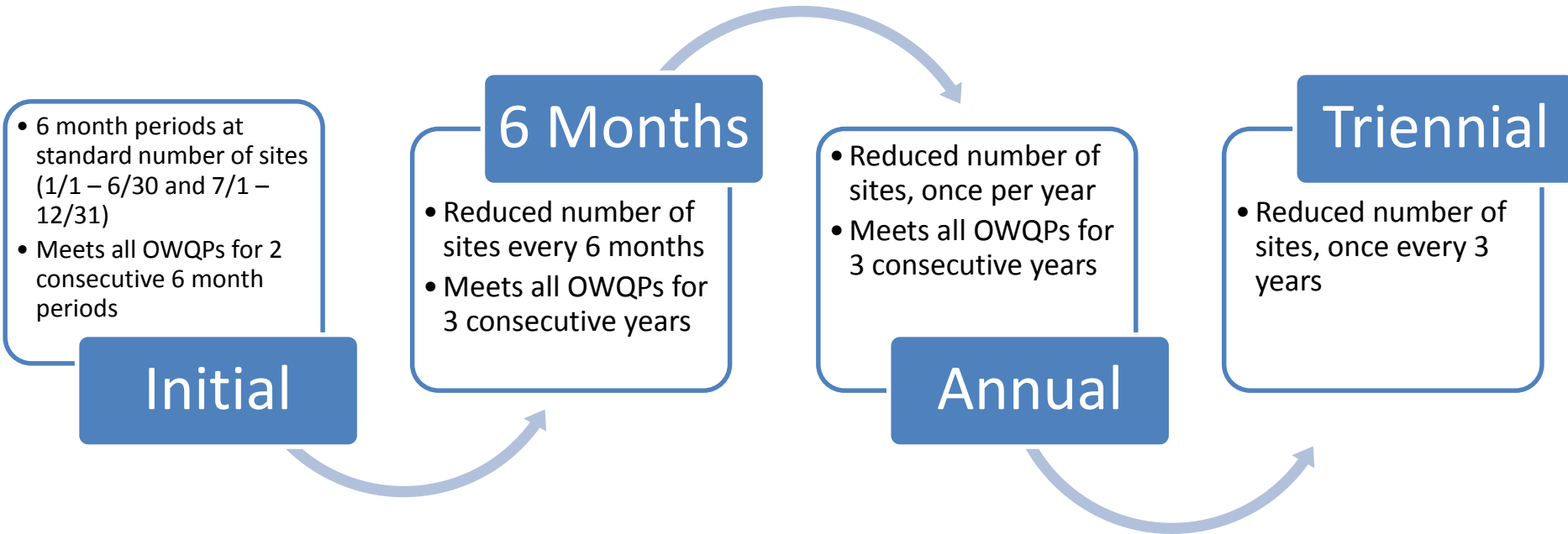
Optimal Water Quality Parameters

- 💧 Set by State based on all lead and copper tap samples and WQP sampling that was completed prior to and after OCCT was installed
 - Minimum value or range for pH at each entry point
 - Minimum pH for all tap samples (>7.0)
 - If corrosion inhibitor is used – minimum value or range at each entry point and in DS
 - If alkalinity adjustment is used – minimum value or range at each entry point and in DS
 - If calcium carbonate stabilization is used – minimum value or range for calcium in DS
 - Any additional parameters set by the State

Monitoring After OWQPs Are Set

- 💧 >50,000 – Began in 1998 or 1999
- 💧 <50,000 – Begins January 1 or July 1st after State specifies OWQPs

Sampling Schedule



Sampling Schedule

- 💧 Can jump to every 3 years if during 2 consecutive monitoring periods:
 - 90th percentile for lead is <0.005 mg/L
 - 90th percentile for copper is <0.65 mg/L
 - In compliance with OWQPs
- 💧 Must continue sampling at entry points every 2 weeks

Determining Compliance With OWQPs

- 💧 Based on a daily value, which is:
 - Days when more than 1 measurement is taken – Daily value is the average of all results
 - Days when only 1 measurement is taken – Daily value is the result of that measurement
 - Days when no measurement is taken – Daily value is the value from the most recent day when measurements were taken

OWQP Excursions

- 💧 Excursion – any day that the daily value is below a minimum value or outside the range for OWQPs
- 💧 System is out of compliance if it has excursions on more than 9 days in any 6 month period
- 💧 Must resume 6 month monitoring at standard number of sites
- 💧 Does this effect lead and copper sampling?

Yes!

- 💧 A system cannot move to reduced monitoring if it is not in compliance with all of its optimal water quality parameters.
- 💧 And if you are on reduced monitoring and have an excursion for 9 or more days in a 6 month period, you must return to 6 month monitoring at the standard number of sites.

What Has To Be Reported?

- Results of all tap samples for pH, alkalinity, calcium, conductivity, temperature, and orthophosphate or silica
- Results of all entry point samples for WQPs

Due
October
10th if on
reduced
monitoring
schedule.

Due July 10th
or January
10th if on 6
month
monitoring
schedule.

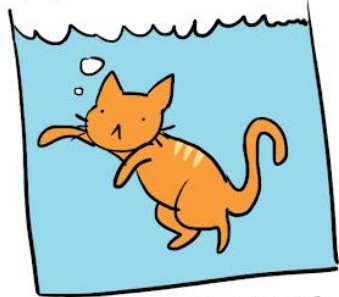
Additional Guidance/Resources

- EPA's How to Determine Compliance with OWQPs as Revised by the Lead and Copper Rule Minor Revisions (February 2001) - <http://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=901U0100.txt>
- EPA's Revised Guidance Manual for Selecting Lead and Copper Control Strategies (March 2003) - <http://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100999U.txt>
- EPA Memo – Lead and Copper Rule Requirements for Optimal Corrosion Control Treatment for Large Drinking Water Systems (11/3/15) - https://www.epa.gov/sites/production/files/2015-11/documents/occt_req_memo_signed_pg_2015-11-03-155158_508.pdf
- EPA's Optimal Corrosion Control Treatment Evaluation Technical Recommendations & Templates (March 2016) - <https://www.epa.gov/dwreginfo/optimal-corrosion-control-treatment-evaluation-technical-recommendations>




HOW TO CALCULATE THE VOLUME OF A CAT ?

WE CAN PUT IT IN A TANK
OF WATER AND MEASURE
THE RISE ON WATER LEVEL



SAID THE ENGINEER

WE CAN CALCULATE THE
VOLUME INTEGRAL OVER
IT'S FULL BODY

$$V(\text{CAT}) = \int \text{dx}^3$$


SAID THE MATHEMATICIAN

LET'S SUPPOSE THE
CAT IS SPHERICAL



SAID THE PHYSICIST

3

SOURCE WATER TREATMENT



Source Water Sampling Requirements

- 💧 Groundwater –
 - 1 at each entry point (must be after treatment)
- 💧 Surface Water –
 - 1 at each entry point (must be after treatment)
- 💧 Must be collected within 6 months – March 31st of the next year if on reduced monitoring

Reporting Requirements

- 💧 Results of all samples due April 10th of the following year (if system is on reduced monitoring when exceedance occurs)
- 💧 Recommendation for treatment is also due April 10th.

Treatment Options

- 💧 No treatment
- 💧 Ion exchange
- 💧 Reverse osmosis
- 💧 Lime softening
- 💧 Coagulation/filtration

Source Water Monitoring and Treatment Requirements				
Action	Deadline for Completing Action		Number of Months from ALE	
	Source Water Treatment (SOWT) Required	SOWT Not Required	SOWT Required	SOWT Not Required
Step 1: System monitors at each EP & submits recommendation	180 days after the end of the monitoring period during which the lead and/or copper action level was exceeded (3/31 of the following year)		180 days	
Step 2: State determines if SOWT is required.	6 months after receipt of results & recommendation		12 months	
Step 3: System installs SOWT	24 months after State required SOWT	N/A	36 months	N/A
Step 4: System conducts follow-up monitoring	12 months after installation	N/A	48 months	N/A
Step 5: State sets MPLs for lead & copper	Within 6 months after installation	N/A	54 months	N/A

Continued Monitoring

- 💧 Unless source water treatment is required, no additional sampling is required at the source



LEAD SERVICE LINE REPLACEMENT

When All Else Fails.....

- 💧 If a system has installed corrosion control and/or source water treatment and is still exceeding the lead action level the system is required to begin a lead service line replacement program.
- 💧 OR.. If the system doesn't install the required corrosion control and/or source water treatment.

Program Requirements

- 💧 Annually replace at least 7% of the initial number of lead service lines in the DS.
- 💧 Based on a 15-year program.
- 💧 First year begins on the first day following end of the monitoring period.
 - If on reduced monitoring – October 1st

Service Line Samples

- 💧 Not required to replace a line if the lead concentration is <0.015 mg/L.
- 💧 Sampling Requirements:
 - 1 liter, motionless in line for at least 6 hours, then collect:
 - At tap after flushing appropriate volume of water to ensure sample is from lead line – based on calculations
 - Tapping directly into the lead service line
 - Allowing water to run until there is a significant change in temperature

Ownership Issues

- 💧 Rule says only required to replace portion owned by the system but..
 - Must notify owner and offer to replace their portion as well (not required to pay for this!)

If Owners Say No...

- 💧 Provide notice of work a least 45 days prior
- 💧 Provide guidance on minimizing lead levels
- 💧 Collect a sample from the line within 72 hours after replacement, and report results to owner and/or residents within 3 business days of receiving results.
 - 💧 Results must also be reported to the LHD by the 10th day of the next month

Ceasing the Replacement Program

- 💧 Systems can cease replacing lines whenever their tap samples meet the lead action level for 2 consecutive monitoring periods.
- 💧 If exceedance occurs again, must recommence replacement program.
 - 💧 Must update its inventory of lead lines to include previously sampled lines that were not replaced

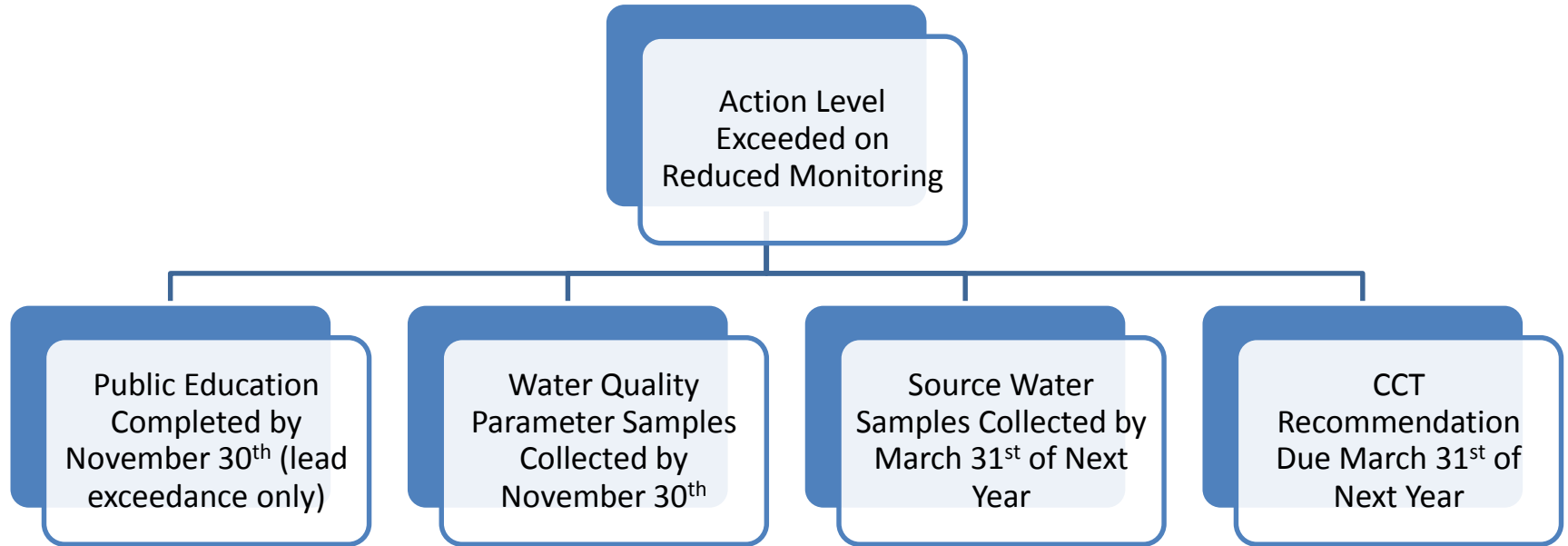
Reporting Requirements

- 💧 12 months after end of monitoring period:
 - 💧 Materials evaluation
 - 💧 Initial number of lead service lines in DS
 - 💧 Schedule for annually replacing at least 7%
 - 💧 Demonstrate that at least 7% have been replaced
 - 💧 Any sampling conducted on individual lines
- 💧 Every 12 months thereafter:
 - 💧 Demonstrate that at least 7% have been replaced
 - 💧 Any sampling conducted on individual lines

Additional Resources/Guidance

- 💧 EPA's Notification and Reporting Requirements for Partial Lead Service Line Replacement under the Lead and Copper Rule (April 2000) - <http://nepis.epa.gov/Exe/ZyPDF.cgi?Dockery=901U0200.txt>

To Summarize...



And in case
you have
forgotten why
we are doing
all this.....





**Department
of Health**

Thank you April Kellerhouse and Hyland
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preparing much of this presentation
(except the jokes)

QUESTIONS?

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