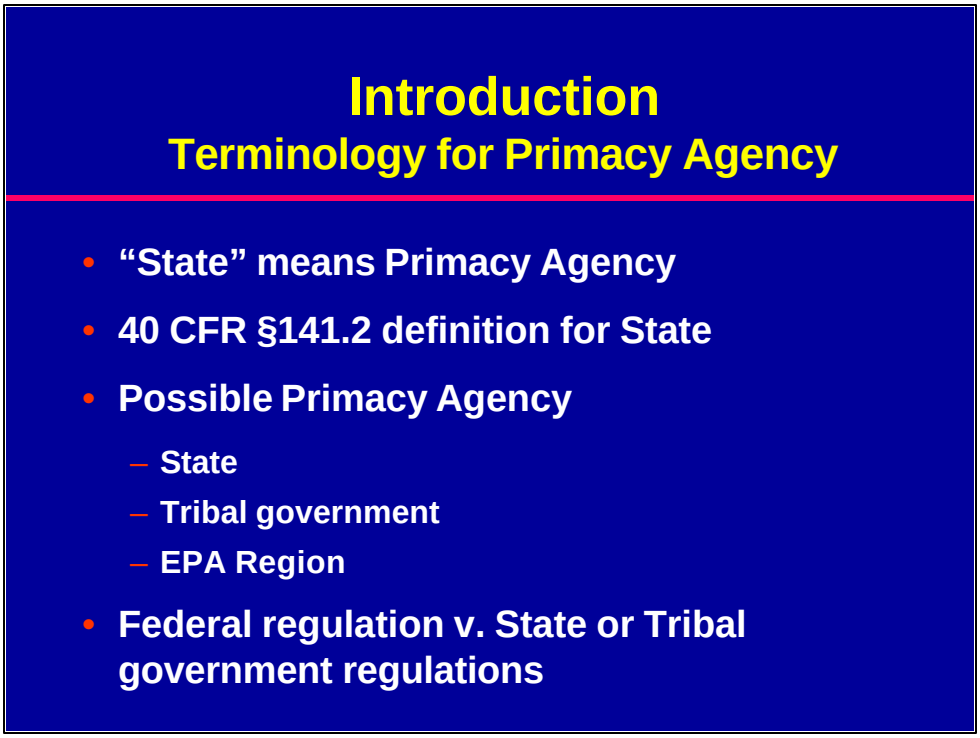
COMPREHENSIVE LEAD AND COPPER RULE TRAINING

January 2001

Introduction
Purpose of This Training

- Improve consistent implementation nationally
- Present the Lead and Copper Rule Minor Revisions (LCRMR)
- Explain primacy issues
- Present SDWIS reporting



Throughout the rule and in this presentation we generally use the term "State" to mean the primacy agency.

40 C.F.R. Section 141.2 defines the term State: "...the agency of the State or Tribal government which has jurisdiction over public water systems. During any period when a State or Tribal government does not have primary enforcement responsibility pursuant to section 1413 of the Act, the term 'State' means the Regional Administrator, U.S. Environmental Protection Agency."

Several of the minor revisions contain language allowing a "State," or primacy agency, to define additional requirements of systems in order to ensure maximum protection against lead and copper contamination. Much of this language was intended to help those primacy States with laws forbidding regulations that are more stringent than Federal regulations.

If a State or Tribal government has primacy for the Lead and Copper Rule, that agency is required to adopt the minor revisions that are more stringent than the 1991 LCR into their regulations. For those revisions that are less stringent, States have the choice whether or not to incorporate these revisions into their regulations. EPA Regions are the primacy agency for States and Tribal governments that do not have primacy for the Lead and Copper Rule. In these cases the entire LCRMR as codified in the Code of Federal Regulations applies and there is not distinction between the less stringent and more stringent provisions of the LCRMR.

After a brief introduction to the Lead and Copper Rule (LCR) and Lead and Copper Rule Minor Revisions (LCRMR), we will provide a more in-depth discussion of each of the above topics.

For all topics, except the Primacy and Implementation section, we will:

1. Discuss the basic requirements under the LCR.

2. Summarize what's changed under the LCRMR.

   As we go through this presentation, we will note those revisions with which States and systems were required to begin implementation on April 11, 2000. These revisions are clarifications to the LCR or are more stringent than the LCR. ***They are preceded by the symbol*** "✪". These provisions must also be adopted by the State to retain primacy. Those revisions without this symbol are generally less stringent than the LCR and the State may not be able to implement them until the provisions are incorporated into its regulations.

3. Utilize examples drawn from real world experiences noted during data verifications to illustrate how States and systems must implement the requirements. Worksheets and problem examples will permit you to test your understanding of the rules.

4. Discuss how State reporting to SDWIS has changed.

In the Primacy and Implementation Section, we will review primacy revision application requirements, discuss special primacy conditions of the LCRMR, and recap those provisions that must be adopted for a State to maintain primacy compared to those that cannot be implemented unless adopted.

In Section 9 of this manual, we have included Supplemental Information. There you will find examples on the revised procedure for determining compliance with optimal water quality parameters and tables that summarize system or State reporting requirements.

LCR Overview
Health Effects of Lead

- **Children are highly susceptible**
  - Impaired mental development
  - IQ deficits
  - Shorter attention span
  - Lowered birth weight
  - Altered heme synthesis and Vitamin D metabolism
- **Adults**
  - Increased blood pressure
- **EPA set MCLG at zero**

Children are highly susceptible to lead poisoning. Epidemiological evidence shows that children who ingest lead suffer impaired mental development as shown by IQ deficits and decreased attention spans. There is also evidence that lead can stunt growth by altering heme synthesis and vitamin D metabolism.

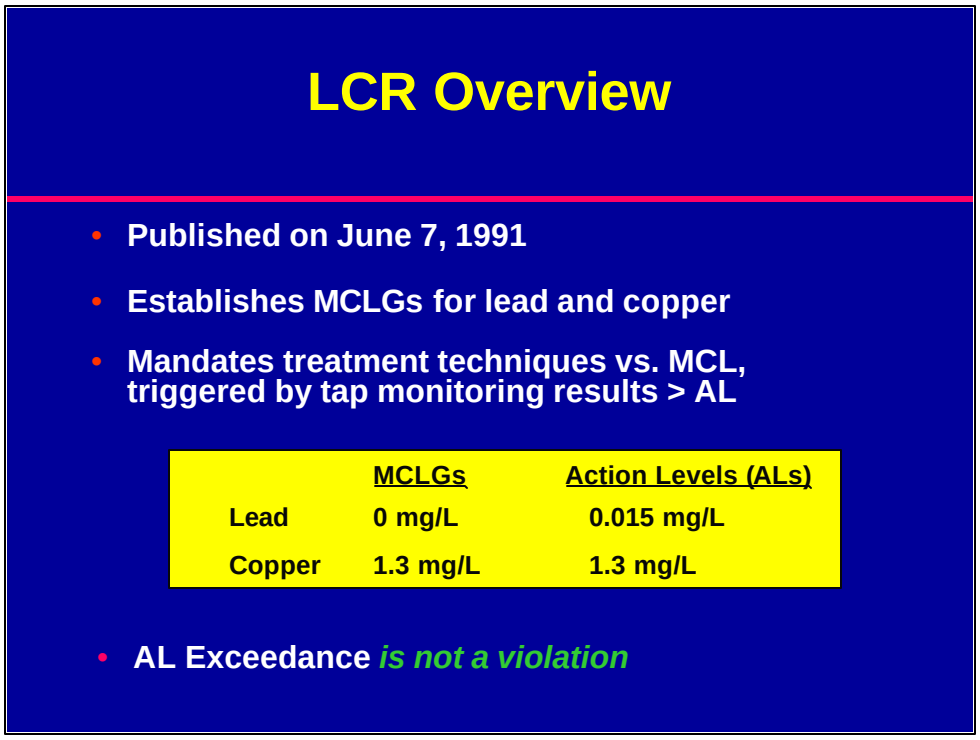
Adults exposed to lead ingestion may also experience negative health effects including increased blood pressure. At higher levels, lead can be toxic to the liver and kidney.

The EPA set the MCLG for lead at zero based on three considerations: 1) It was difficult to identify clear threshold exposure levels below which there are no risks of adverse health effects, 2) A substantial portion of the sensitive population was exceeding acceptable blood lead levels, 3) Lead was classified as a probable carcinogen (Class B2).

LCR Overview
Health Effects of Copper

- Stomach and intestinal distress
- Complications of Wilson's Disease
- Chronic exposure can cause liver disease in genetically predisposed individuals
- EPA set MCLG at 1.3 mg/L

- Copper is an essential nutrient - provided through food.
- Acute exposure can cause gastrointestinal irritation (nausea, vomiting, diarrhea, etc.).
- Chronic exposure can cause liver disease in genetically predisposed individuals.
- Principle source of copper in drinking water is leaching from household plumbing.

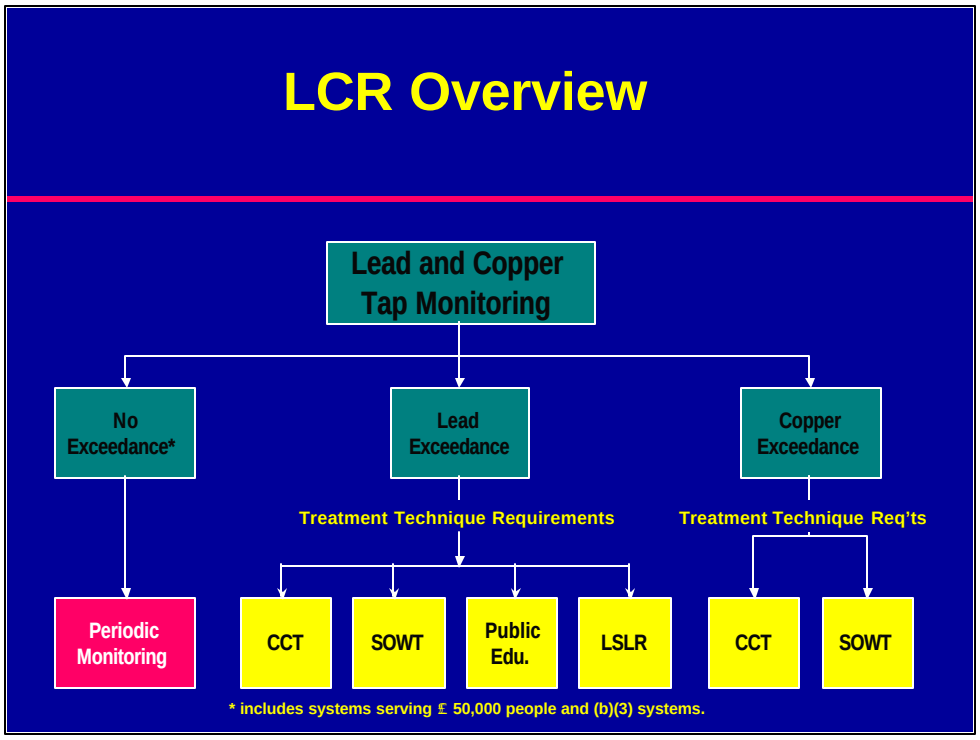


The original Lead and Copper Rule was first published on June 7, 1991. This rule was revised by technical amendments published on July 15, 1991 (56 FR 32113), June 29, 1992 (57 FR 28786) and June 30, 1994 (59 FR 33860).

The LCR establishes non-enforceable health goals called Maximum Contaminant Level Goals (MCLGs) for lead and copper. These concentrations represent levels at which no known or anticipated health effects would occur.

There is no maximum contaminant level (MCL) for the LCR. Instead, a system's tap monitoring results must be at or below the lead and copper action levels to avoid further treatment. To determine whether an action level has been exceeded, the value at the 90th percentile of all lead or copper samples collected is compared against its respective action level. We will go through some examples on how to calculate the 90th percentile level a little later in this training.

Exceedance of an action level is not a violation. Instead, it determines whether systems need to undertake additional monitoring and treatment technique requirements.



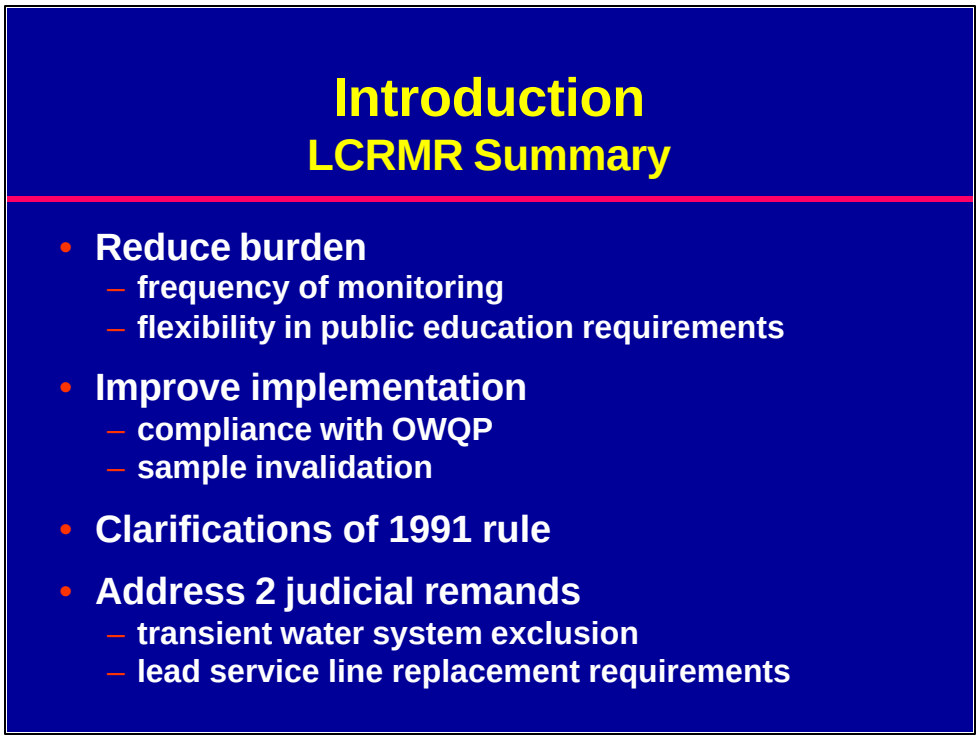
A system that serves 50,000 or fewer people that does not exceed either the lead and copper action level, or a system that meets the criteria under §141.81(b)(3), is required to conduct periodic lead and copper tap monitoring. A system qualifies under §141.81(b)(3) *(also known as a (b)(3) system),* if for 2 consecutive 6-month rounds it can show that the difference between the 90th percentile tap water lead level and the highest source water lead concentration, is less than the Practical Quantitation Level for lead of 0.005 mg/L.

In addition to lead and copper tap monitoring, a system that exceeds the lead action level is triggered into the following treatment technique requirements:

- corrosion control treatment (CCT);
- source water treatment (SOWT) steps *(depending on source water levels, this requirement may include monitoring and no treatment)*
- public education regarding lead; and
- lead service line replacement (LSLR) when treatment fails to adequately control lead levels *(this requirement does not apply to systems that have no lead service lines).*

In addition to lead and copper tap monitoring, a system that exceeds the copper action level is triggered into the following treatment technique requirements:

- CCT; and
- source water treatment *(depending on source water levels, this requirement may include monitoring and no treatment).*



The LCRMR reduce monitoring and reporting requirements. Systems that meet certain criteria can eliminate some monitoring requirements for lead and copper at the tap and at the source, and for water quality parameters (WQPs).

The LCRMR provide more flexibility in the mode of delivery for public education, especially for non-transient non-community water systems (NTNCWSs) and those community water systems (CWSs) that serve 3,300 or fewer.

The LCRMR improve implementation with provisions that were highly desired by systems and states. For instance, the way compliance with optimal water quality parameters (OWQP) is determined has changed. Further, under the minor revisions, States now have the flexibility to invalidate samples.

Clarify what EPA intended in the original Lead and Copper Rule ("the 1991 Rule") and in some cases add requirements that EPA originally intended to promote consistent national implementation.

Address 2 judicial remands:

- Issue 1: Whether transient non-community water system (TNCWS) should continue to be excluded from regulation. Based on a review of existing studies, EPA believes there are minimal non-carcinogenic adverse health effects resulting from exposure to lead in drinking water at such systems. The rationale for this continued exclusion is discussed in detail in the preamble to the LCRMR (65 FR 1954)
- Issue 2: The Definition of "control" of lead service lines (LSLs). This issue will be discussed in more detail in the Replacement of Lead Service Lines section and is also discussed in the preamble to the LCRMR (65 FR 1963).

The LCRMR was published on January 12, 2000

As we go through this presentation, we will note those revisions with which States and systems were required to begin implementation on April 11, 2000. These revisions are clarifications to the LCR or are more stringent than the LCR. ***They are preceded by the symbol*** "✪". These provisions must also be adopted by the State to retain primacy. Those revisions without this symbol are generally less stringent than the LCR and the State may not be able to implement them until the provisions are incorporated into its regulations.

Introduction

SDWIS Reporting Issues to Be Addressed

- Effective Date
- Milestone reporting
- Sample reporting
- Violation reporting
- Enforcement/Follow-up actions and linking
- Significant Non-Compliers (SNC)
- Data transfer file format (DTF)

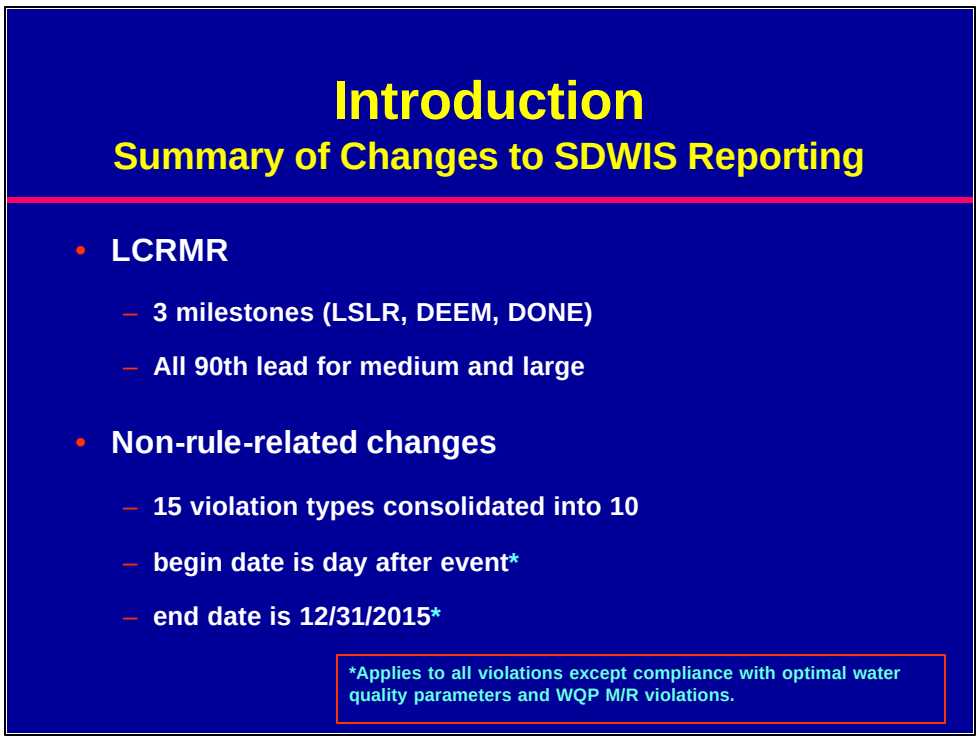
SDWIS Reporting will be addressed in detail as we go through the different modules of this training. Specifically, we will discuss when the new reporting requirements become effective and the changes to milestone, sample, and violation reporting.

EPA has stated in the past that all violations for the LCR reported to SDWIS should have a return to compliance associated with them. In the compliance examples we will talk about reporting enforcement and follow-up actions and how to link them to violations. We will also review SNC definitions.

We will present a cursory review of DTF procedures and then show you how to report violations, sample, and milestones using selected examples from each of the modules.

Section 9 of this manual, Supplemental Information, contains several tables that summarize State reporting requirements as follows:

- Comparison of Required Reporting for Milestones and 90th Percentile Levels under the LCR and LCRMR on page A-38 (also repeated in this section on page 14);
- Revisions to Lead and Copper Violation Reporting on page A-39 to A-40 (also repeated in this section on pages 15 and 16);
- Schedule for Reporting Revised Milestones, Lead 90th Percentile Data, and Consolidated Violations on page A-41;
- Basis for Determining that a System is “Deemed” to have Optimized Corrosion Control Treatment on page A-42;
- Changes to Violation Definitions on page A-43 through A-45;
- State Enforcement Follow-up Actions That Must Be Reported to SDWIS/FED on page A-46;
- When Intentional No-Action Applies on page A-47; and
- Revised Definition of Compliance Achieved by Violation Type on page A-48 through A-52.



LCRMR

Only 3 milestones are reported:

- LSLR = System required to begin lead service line replacement.
- DEEM = a milestone that indicates that the system is deemed to be optimized along with an indicator reflecting the basis of the optimization (e.g., meets requirements under §141.81(b)(1), or (b)(3), or State has designated optimal water quality parameters.) EPA is requesting that this milestone be reported by 2/15/01. 1 of 3 reason codes are reported for this milestone.
- DONE = a milestone that indicates that the system had completed all steps required of them: optimization of corrosion control, installation of any source water treatment required by the State; and replacement of lead service lines, if required. No reason codes are reported for this milestone.

LCRMR add a requirement for State to report all 90th percentile lead values for large and medium-size systems. There is no change from the LCR requirements for States to report 90th percentile lead values for small systems in those monitoring periods in which the lead action level is exceeded; and 90th percentile copper values for all size systems for those monitoring periods in which the copper action level is exceeded. Ninetieth percentile lead and copper levels will now be reported as sample records. Refer to the next page for a summary of the changes to milestone reporting requirements.

Non-rule related changes

EPA consolidated some of the similar or like violation types under the same code; thereby reducing the number of violation types from 15 to 10. Refer to pages 15 and 16 of this section. There you will see a table that summarizes the violation changes. We will discuss these as we go through the training.

EPA changed the begin date to the day after the event to better characterize the violation. In addition, EPA revised the compliance period end dates. This change will more accurately portray the length of time a system is in violation. The change will also facilitate tracking of significant non-compliers (SNCs), because a system may be a SNC for longer than the 12-month period for which SNCs are determined. The change to the begin and end dates do not apply to violations for failure to comply with optimal water quality parameters and failure to comply with water quality parameter monitoring and reporting (M/R) requirements.

Introduction
Effective Date for SDWIS/FED

- **Most requirements/provisions are effective 90 days after LCRMR published (4/11/00)**
- **FR lists 5/15/00 as earliest date for reporting new requirements and codes**
- **Option to report under old or new until 1/11/02**

Reporting under new requirements is mandatory 24 months after promulgation (January 12, 2002). Please note that the *Federal Register* notice for the LCRMR lists the mandatory reporting deadline as January 14, 2002 (i.e., the first Monday after January 12, 2002).

States may continue to report under the old requirements until January 11, 2002.

After January 11, 2002, SDWIS/FED will no longer convert or accept data which does not meet the LCRMR reporting requirements.

Will provide a warning message in the SDWIS/FED error reports approximately 6 months before the cutoff date as a reminder that data is being submitted which will not be accepted after January 11, 2002.

The schedule for reporting in accordance with the new requirements is also summarized on page A-41 in Section 9.

Introduction

Effective Date for SDWIS/FED

- **SDWIS/FED will convert data reported, as necessary and appropriate, until 1/11/02**
- **After 1/11/02, SDWIS/FED will not convert or accept data which does not meet new requirements**
- **Provide warning messages in Errors Reports**
- **Converted data will be identified on SDWIS/FED Error Reports until 1/11/02**
- **After 1/11/02, data reported that is not consistent with new requirements will be rejected**

- SDWIS/FED has already been modified to accept the new reporting requirements and codes.
- Conversion of Violation types - Refer back to pages 15 and 16 of this section.
- WQP M/R … 54 & 55 converted to 53
- WQP Noncompliance … 60 converted to 59
- OCCT/SOWT Study/Recommendation … 61 converted to 57
- OCCT/SOWT Installation/Demonstration … 62 converted to 58

Introduction
Milestones Summary

- **Reduction of reported Milestones (was 11; now 3)**
- **Two new Milestones (DEEM and DONE)**
- **CU90 Exceedances reportable as Samples (being converted by SDWIS/FED)**
- **PB90 Exceedances no longer reportable as Milestone… must be reported as Sample**
- **Remainder of pre-LCRMR Milestones are rejected by SDWIS/FED**

- Will no longer post unwanted Milestones
- CU90 exceedances reported as Milestones will be converted to Samples
- PB90 exceedances no longer reportable or maintained as Milestones … must be reported as Samples

Introduction
Violation Summary

- Consolidation of Violation Types … 15 to 10
- LCRMR changes non-compliance portrayal
- Begin date - day after requirement missed
- End date - defaulted to December 31, 2015 until RTC reported and linked to violation

Please note that when States are switching over to the new reporting requirements, they should not revise pre-existing violation begin dates. This is because enforcement actions are linked to violation begin dates. Thus modifying pre-existing begin dates will cause these links to be broken.

Introduction and Overview
Enforcement

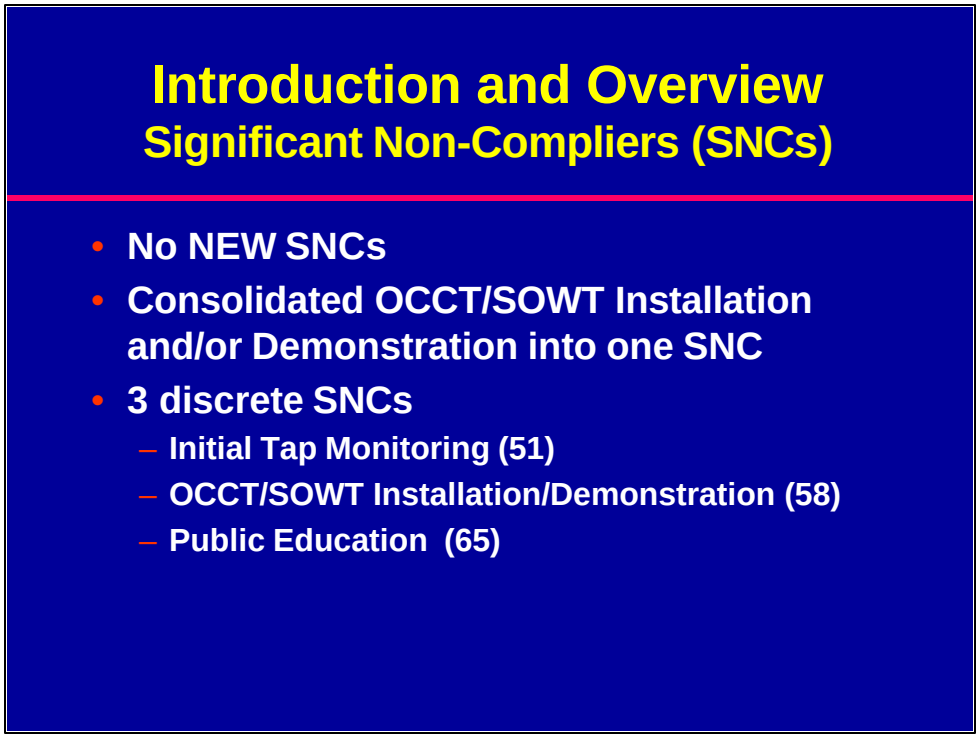
- **Continued reporting required for all formal actions, and when compliance is achieved (RTC)**
- **New Use for "Intentional No-Action" enforcement**

Example: System has LSL replacement violation, but is at or below lead action level for 2, subsequent, consecutive monitoring periods

Reporting requirements for all formal actions, including systems which have Returned to Compliance (RTC), continue. RTC is reported as **EOX** or **SOX**.

States should report "Intentional No-Action" (instead of the traditional RTC) for open-ended Violations when the original requirement has been overcome by time or circumstances making completion of the requirement unnecessary. "Intentional No Action" is reported as **EO6** or **SO6**.

We will discuss the use of Intentional No-Action in more detail in Section 7. In addition, a summary of when to report Intentional No-Action is provided in Section 9 on page A-47. Also refer to pages A-48 through A-52 in Section 9 for a definitions of return to compliance for each LCR violation type.



SNC Definition Under the Lead and Copper Rule Minor Revisions

Initial Pb/Cu Tap M/R

Based on amount of time out of compliance.

Definition: A system which has not returned to compliance within:

- 3 months for large systems,
- 6 months for medium systems,
- 12 months for small systems.

The State **must** report the RTC (properly linked to the appropriate violation) to SDWIS/FED:

- during the same quarter (real-time) in which the RTC occurred for large systems,
- within 3 months after the end of the quarter in which the RTC occurred for medium systems,
- within 3 months after the end of the quarter in which the RTC occurred for small systems.

Note: *If a medium system returns to compliance within 9 months from the end of the compliance period or a small system returns to compliance within 15 months from the end of the compliance period, and the State chooses to report the RTC in real-time during the 3-month reporting lag period, the system will not become an SNC.*

Treatment Installation /Demonstration (OCCT or SOWT)

Only systems with 90th percentile lead levels of $\geq$ 0.030 mg/L.

Definition: System with this violation & 90th percentile lead level of $\geq$ 0.030 mg/l in most recent monitoring period.

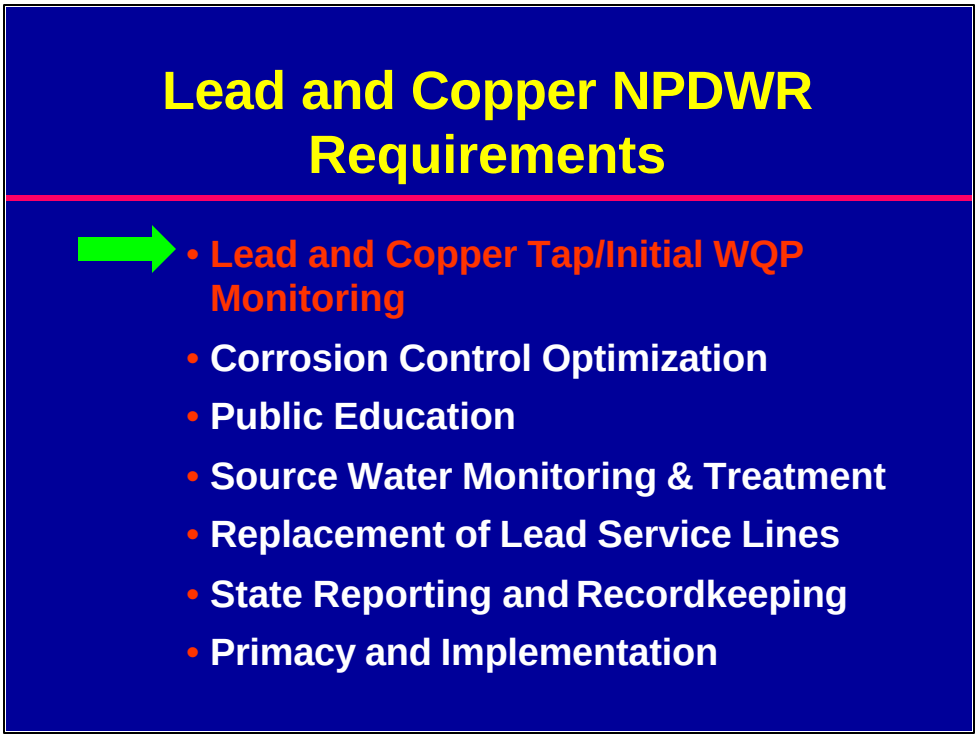
Public Education

Only systems with 90th percentile lead levels of $\geq$ 0.030 mg/L.

Definition: System with this violation & 90th percentile lead level of $\geq$ 0.030 mg/l in most recent monitoring period.

Introduction and Overview
Significant Non-Compliers (SNCs)

Initial Pb/Cu Tap M/R	Has not achieved compliance, and/or a RTC record reported to SDWIS/FED (properly linked to the appropriate violation) within: • 3 months for large systems • 6 months for medium systems • 12 months for small systems
OCCT/SOWT Installation, *or* Public Education	System with this violation & 90th percentile lead level of $\geq$ 0.030 mg/l in most recent monitoring period

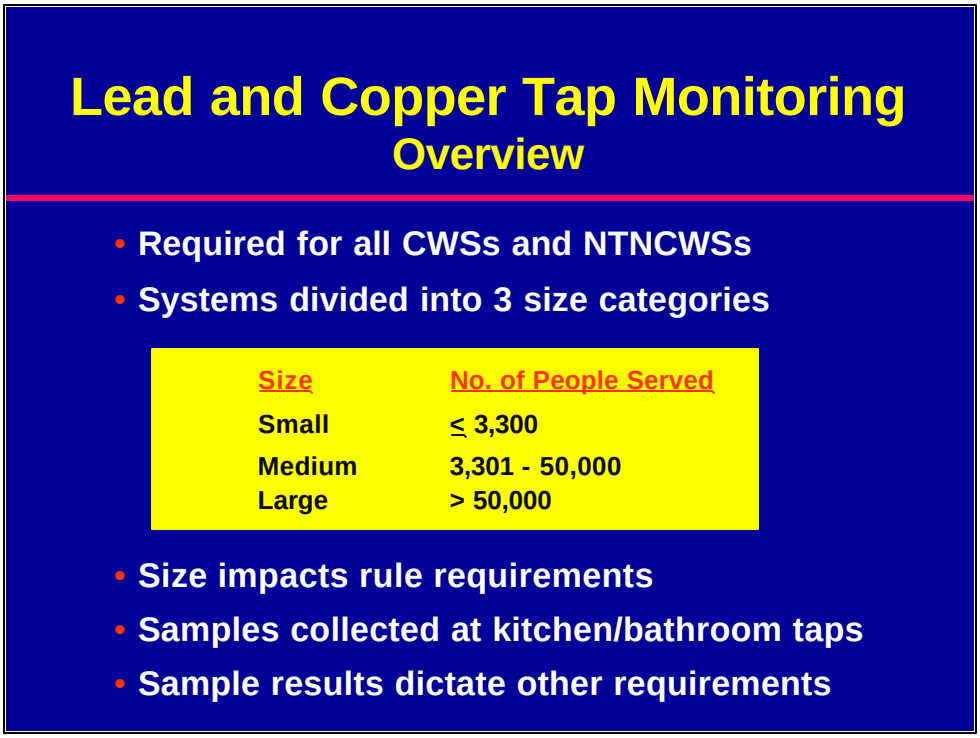


NPDWR = National Primary Drinking Water Regulations

For each section, except Primacy and Implementation, we will present:

- LCR basic requirements
- Minor revisions
- Compliance examples
- SDWIS reporting

In the Primacy and Implementation Section, we will review primacy revision application requirements, discuss special primacy conditions of the LCRMR, and recap those provisions that must be adopted for a State to maintain primacy compared to those that cannot be implemented unless adopted.



Lead and copper tap monitoring applies to all CWSs and NTNCWSs.

Systems are divided into 3 broad size categories (large, medium, and small). System size is a factor in determining the number of samples that must be collected, as well as the applicability and timing of some of the provisions.

Size	**No. of people served**
Small	less than or equal to 3,300
Medium	3,301 to 50,000
Large	more than 50,000

Most regulations require sampling at entry points to the distribution system. Because lead and copper in drinking water is primarily due to the corrosion of distribution and household plumbing materials, tap water samples are collected at kitchen or bathroom taps of residences and other buildings. This requirement significantly complicates sample collection, requiring systems to coordinate with the people they serve.

As will be discussed in more detail in the slides that follow, tap monitoring results are the primary driving force for determining a system's ongoing monitoring requirements and whether it needs to undertake any of the treatment technique requirements.

Lead and Copper Tap Monitoring
Site Selection

Sample from Highest Risk Homes (Tier 1)

- **Copper pipes with lead solder installed after 1982, but before State's lead ban**
- **Lead pipes**
- **Lead service lines**

Systems must sample at locations where the highest lead levels are likely to be found. The LCR established a tiering system for prioritizing sampling sites (see boxes below). A materials evaluation is required to help classify sampling sites into tiers.

CWSs

Tier l sampling sites are single family structures:
- with copper pipes with lead solder installed after 1982 *(but before effective date of their State's lead ban)* or contain lead pipes; and/or
- that are served by a lead service line.

Note: When multiple-family residences comprise at least 20% of the structures served by a water system, the system may count them as Tier 1 sites.

Tier 2 sampling sites consist of buildings, including multiple-family residences:
- with copper pipes with lead solder installed after 1982 *(but before effective date of their State's lead ban)* or contain lead pipes; and/or
- that are served by a lead service line.

Tier 3 sampling sites are single family structures w/ copper pipes having lead solder installed before 1983.

NTNCWSs

Tier l sampling sites consist of buildings:
- with copper pipes with lead solder installed after 1982 *(but before effective date of their State's lead ban)* or contain lead pipes; and/or
- that are served by a lead service line.

Tier 2 sampling sites consist of buildings with copper pipes with lead solder installed before 1983.

Tier 3 Not applicable.

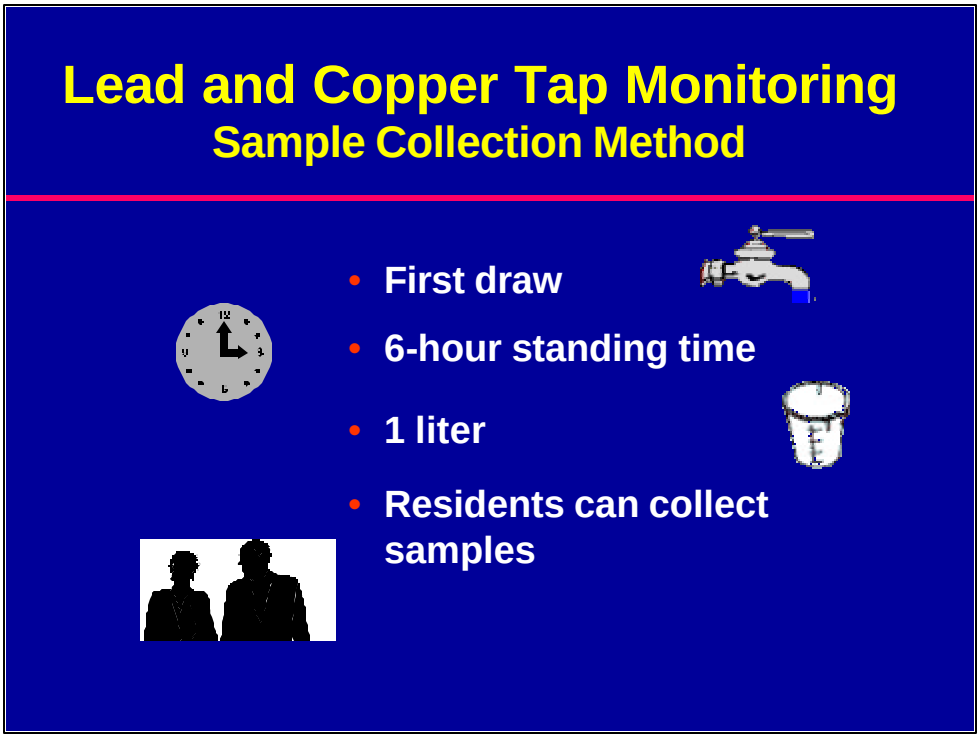
Lead and Copper Tap Monitoring
Site Selection

- CWS: Collect Tier 1 Ô Tier 2 Ô Tier 3
- NTNCWS: Collect Tier 1 Ô Tier 2
- Minimum number of required sites identified by rule

Under the LCR, systems were required to complete their sampling pool with Tier 1 sites. If they could not find enough Tier 1 sites, then they were to use Tier 2 sites, followed by Tier 3 sites (CWSs only). In addition, systems with LSLs in their distribution system were required to collect at least half of their samples from sites served by LSLs. Systems whose samples did not contain all Tier 1 sites or an insufficient number of LSLs were required to send a letter to the State explaining why they could not identify enough of these sites.

The LCR states that faucets with point-of-use devices or homes with point-of-entry treatment devices that are designed to remove inorganic contaminants cannot be used as sampling sites. However, EPA issued guidance (*Lead and Copper Rule Guidance Manual Volume I: Monitoring*, September 1991) that stated if these were the only available sites, the water system should select the highest risk sites and monitor at these locations.

Once monitoring begins, a system must use the same sites, unless the site is no longer accessible to the system or no longer fits the requirements of a priority site.



Sampling must comply with specified sampling techniques and analytical methods.

Under the LCR, all lead and copper tap samples were required to be:

- 1 liter in volume
- collected at inside tap that was used for drinking water (residence at kitchen or bathroom)
- collected after the water had stood motionless in the plumbing for at least 6 hours
- collected without flushing the tap.

At least one sample is collected from each sampling location.

Residents were allowed to collect the samples. In instances where this was done, the system had to instruct the homeowner on proper sampling procedures. Systems were also required to submit to the State with their lead and copper results, a certification that homeowners received these instructions.

Lead and Copper Tap Monitoring

Minimum Number of Tap Samples

System (Population)	No. of Sampling Sites (Routine)	No. of Sampling Sites (Reduced)
> 100,000	100	50
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
≤ 100	5	5

This represents the minimum number of sampling sites. Systems may collect from additional sampling locations if they meet the sample selection criteria.

Systems must collect the routine number of sites unless they qualify for reduced monitoring.

Note: A system serving 100 or fewer people is required to collect a minimum number of 5 samples regardless of whether or not it is on reduced monitoring.

Lead and Copper Tap Monitoring
Action Levels

Lead	**0.015 mg/L**
Copper	**1.3 mg/L**

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

Lead and copper analytical results are evaluated against an action level, not an MCL. The 90th percentile level cannot be higher than the action level. That is, no more than 10 percent of the samples can be higher than the action level. All samples that meet the proper site selection and sample collection procedures are used to determine the 90th percentile calculation, even if the system samples more sites than required.

If exceed lead AL, system must:

Begin corrosion control treatment steps which includes WQP monitoring

Conduct source water monitoring and install source water treatment if needed

Deliver public education

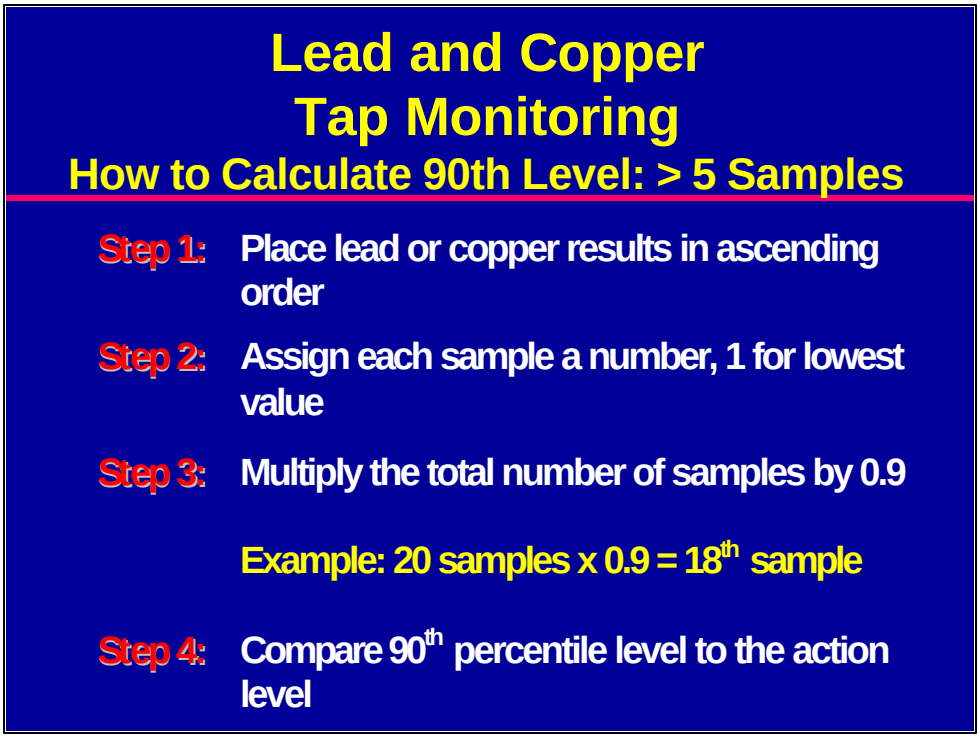
Replace LSL if system still exceeds lead action level after installing treatment

If exceed copper AL, system must:

Begin corrosion control treatment steps which included WQP monitoring

Conduct source water monitoring and install source water treatment if needed

Public education and lead service line replacement are not required.



Step 1: Place all lead results or copper results for one monitoring period in ascending order. The 90th percentile values for lead and copper are determined separately.

Step 2: Assign each sample a number, with 1 being the sample with the lowest value.

Step 3: Multiply the total number of samples by 0.9 to determine the 90th percentile level.

EXAMPLE

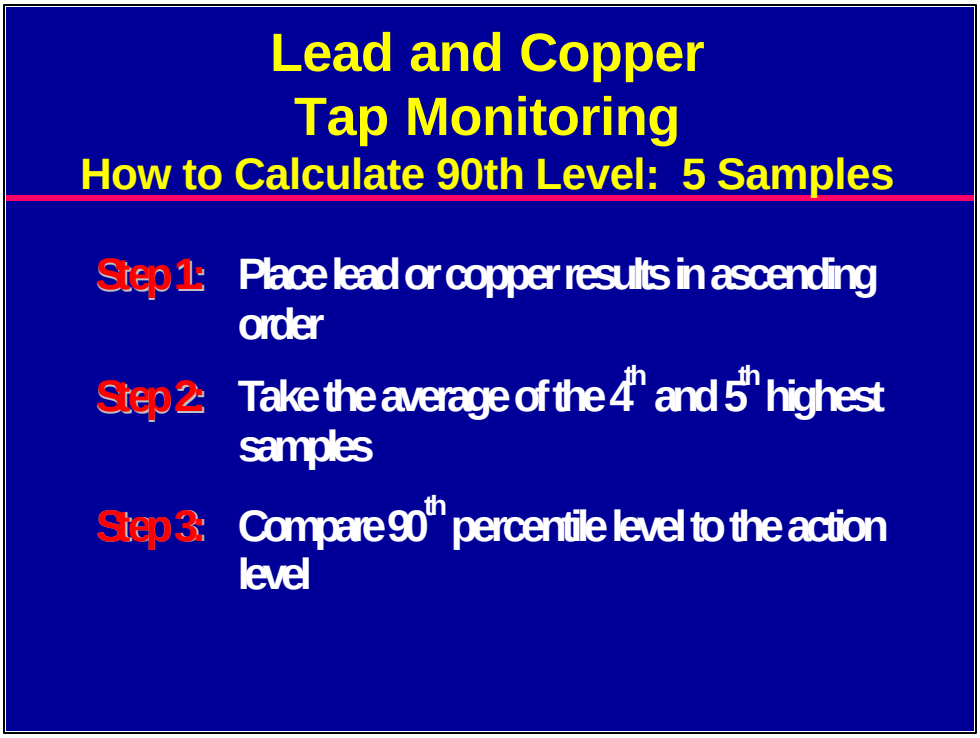
Assume the system was required to collect 20 samples. Multiply the number of samples by 0.9 or expressed as an equation:

20 samples x 0.9= 18th sample

In this example, the 18th sample is the 90th percentile level.

Step 4: Compare the 90th percentile level to the action level. In this example, the system or State would compare the 18th highest sample for lead and for copper to their respective action levels to determine whether an exceedance occurred.

Note: Some systems may collect more than the minimum requirement. In this case, the 90th percentile level is still computed by multiplying the number of samples by 0.9. When the 90th percentile sample is not a whole number (e.g., 22 samples x 0.9 = 19.8), the 90th percentile sample can be determined using rounding (20th sample). ***The 90th percentile level can also be calculated using interpolation.***



Step 1: Place all lead results or copper results for one monitoring period in ascending order. The 90th percentile values for lead and copper are determined separately.

Step 2: For systems collecting 5 samples, the 90th percentile level is computed by averaging the 4th and 5th value.

Step 3: Compare the 90th percentile level to the action level.

Note: Systems that are required to collect a minimum of 5 samples must collect 5 samples even if 5 taps are not available.

Lead and Copper Tap Monitoring
Initial Monitoring

Start Dates for Monitoring

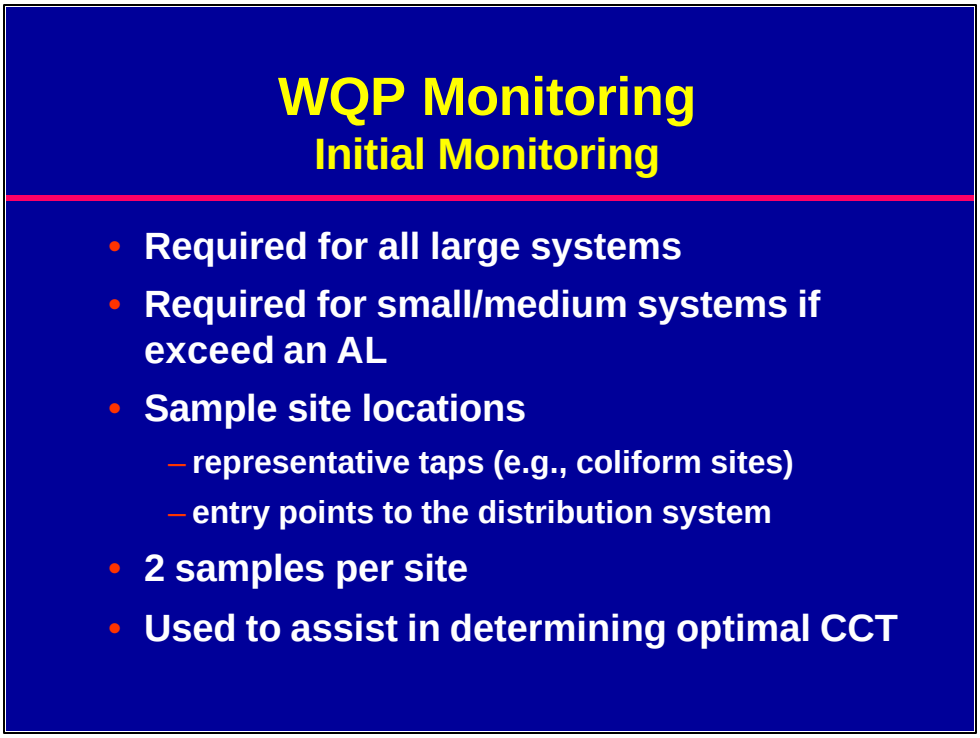
Jan. 1992: Large Systems (> 50,000)

July 1992: Medium-Size Systems (3,301-50,000)

July 1993: Small Systems (£ 3,300)

6-month monitoring periods (Jan - June), (July - December)

- The LCR specifies dates by which a system was required to begin monitoring. The date was dependent on the size of the system (i.e., population served) and was specified for discrete 6-month monitoring periods that ran from Jan to June and from July to December.
- Large systems are required to conduct **two**, 6-month rounds of monitoring.
- Small or medium systems are required to conduct **one**, 6-month round of monitoring.
  - If the system is at or below the lead or copper action level, it is required to conduct a second round of monitoring during the next 6 months.
  - If the system is above the lead or copper action level, it is not required to conduct lead and copper tap monitoring until it completes installing corrosion control treatment.



For all large systems, initial WQP monitoring occurs during the same 6-month monitoring periods as initial tap monitoring. Small and medium systems that exceed the lead and/or copper action level must monitor before the end of each six-month initial tap monitoring period during which the action level is exceeded.

WQPs are used to determine the corrosivity of the water in the system, and if needed to help the State determine the type of corrosion control that a system should install and how the system should operate this treatment. WQPs include:

- pH
- alkalinity
- calcium
- conductivity
- water temperature
- orthophosphate and/or silica, when inhibitors are used

WQPs monitoring occurs at:

- taps to get samples that are representative of water quality throughout the distribution system *(systems can use same sites as ones used for lead and copper tap monitoring or those used for total coliform sampling)* and
- entry points to the distribution system to get samples that are representative of the source after treatment. *(If 2 or more sources are combined before distribution, sample must be representative of all sources used.)*

During initial WQP monitoring, 2 samples are collected at each tap and entry point location. Sampling should occur on different days.

WQP Tap Monitoring
Minimum Number of Tap Samples

System (Population)	No. of Sampling Sites (Routine)	No. of Samples
> 100,000	25	50
10,001 to 100,000	10	20
3,301 to 10,000	3	6
501 to 3,300	2	4
101 to 500	1	2
≤ 100	1	2

The rule specifies the minimum number of WQP tap sampling sites. 2 samples must be collected from each sampling site. This monitoring should occur on different days. Systems may collect from additional sampling locations.

Systems must collect the routine number of samples unless they qualify for reduced monitoring.

We will discuss WQP monitoring that occurs after the installation of corrosion control treatment and how a system qualifies for reduced WQP tap monitoring in the Corrosion Control Optimization Section.

Reduced Monitoring for Pb/Cu
Criteria

Systems serving	Criteria	Frequency
< 50,000	Meets both action levels for 2 consecutive 6 months	Annual
	Meets both action levels for 3 consecutive years	Triennial
Any size system that is required to collect WQPs	Meets OWQPs for 2 consecutive 6 months	Annual
	Meets OWQPs for 3 consecutive years	Triennial

Small and medium-size systems (those serving ≤ 50,000 people) can reduce to **annual** monitoring at the reduced number of sites if:

1. They are at or below the lead and copper action level for 2 consecutive 6 months, ***or***
2. They have installed corrosion control treatment and meet their optimal water quality parameters (OWQPs) for 2 consecutive 6-month monitoring periods.

OWQPs = specific ranges or minimums that are determined by the State for each relevant WQP that indicate that a system is operating corrosion control treatment at a level that most effectively minimizes corrosion in the distribution system. OWQPs will be discussed in more detail in the next section of the presentation.

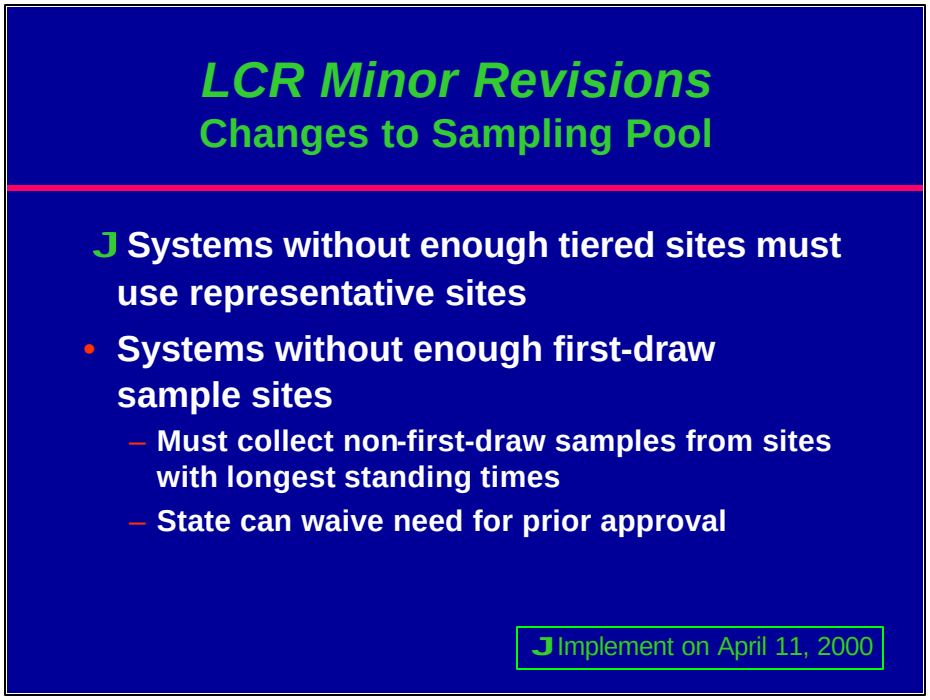
Large systems (serve > 50,000 people) can only reduce to **annual** monitoring if they meet their OWQPs for 2 consecutive 6-monitoring periods.

Small and medium-size systems (those serving ≤ 50,000 people) can reduce to triennial monitoring (once every 3 years) at the reduced number of sites if:

1. They are at or below the lead and copper action level for 3 consecutive years, ***or***
2. They meet their OWQPs for 3 consecutive years (if applicable).

Under the LCR, large systems (serve > 50,000 people) can only reduce to triennial monitoring if they meet their OWQPs for 3 consecutive years.

Note: A system that is on reduced lead and copper tap monitoring must revert to 6-month tap monitoring at the routine number of sites, if it exceeds either action level or, if applicable, does not meet its OWQP specifications. The system can return to reduced monitoring if it again meets the criteria listed above.



Use Representative Sites

The LCRMR clarify that a CWS without enough Tier 1, 2, or 3 sampling sites, or a NTNCWS without enough Tier 1 or 2 sites must complete its sampling pool with representative sites. A representative site is one in which the plumbing materials used at that site would be commonly found at other sites served by the water system.

This revision also clarifies that all systems are required to collect samples from a minimum number of sites, even if a sufficient number of high-risk sites are not available. This means that a system with ***fewer than five taps will need to collect more than one sample from a given tap on different days*** to meet minimum sampling requirements. There can be variability in lead and copper levels at different taps within the same building and even at the same tap at different points in time.

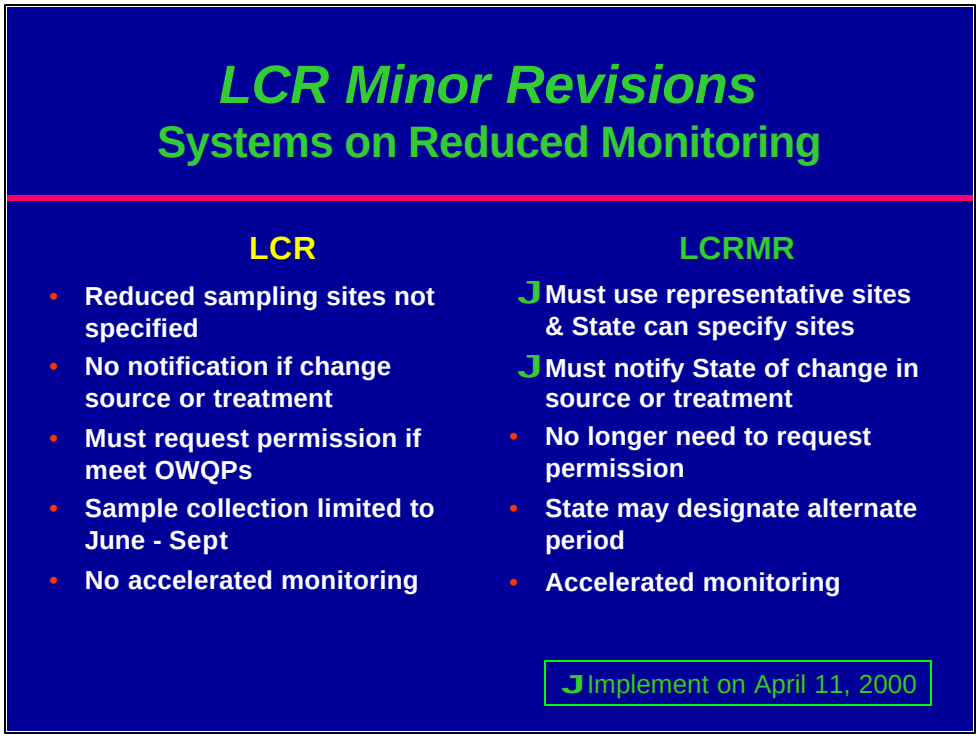
Systems that cannot locate enough "tiered" sites should add to their sampling pool those sites with copper plumbing installed subsequent to local implementation of the lead ban (typically 1988 or 1989), provided these sites can be considered "representative".

Use of Non-First-Draw Samples

Addresses problems of NTNCWSs and some CWSs (such as prisons or hospitals) that may not have periods of normal operation where the water has stood motionless for at least 6 hours. These systems must collect as many first-draw samples as possible and remaining ones from sites with the standing times that are as close to 6 hours as possible. Samples must be 1 liter in volume and collected from interior taps.

States can require the system to receive up-front approval for this sampling plan or waive the up-front requirement. If States:

- ***Require*** prior approval, the system must provide written documentation that identifies sampling times and locations of the non-first-draw samples which the system proposes to use to complete its sampling pool prior to sampling.
- ***Do not require*** prior approval, the system must identify each site that did not meet the 6-hour minimum standing time and the length of standing time for that particular sample, and submit this information at the same time that it submits its lead and copper tap sample results.



Use of Representative Sites

LCRMR clarify that the reduced sampling sites must be representative of those used during standard monitoring. States have the option of specifying where these samples must be collected.

Change in Treatment or an Addition of a New Source

Any system that monitors less frequently than every six months must notify the State of a change in treatment or an addition of a new source. They must provide the State with this information within 60 days after making the change, unless the State requires earlier notification. ***States also have the discretion to require additional monitoring or other actions to ensure optimal corrosion control treatment is maintained.***

Request for Reduced Monitoring

Systems subject to WQP monitoring are no longer required to request reduced monitoring status from States. However, States must notify the system in writing when they determine a system is eligible to begin reduced lead and copper tap monitoring. This change applies to both annual and triennial reduced monitoring.

Systems serving 50,000 or fewer people that are at or below the lead and copper action levels are automatically eligible for reduced monitoring. This has remained unchanged from the 1991 Rule.

Alternate Period/Accelerated Reduced Monitoring

The State's designation of an alternate monitoring period and accelerated monitoring are discussed in more detail on the next two pages.

LCR Minor Revisions
Reduced Monitoring (Continued)

- States can approve alternate monitoring period
- Should assist seasonal NTNCWSs
- Alternate period must be:
  - ≤ 4 consecutive months
  - time of normal operation when highest likely lead levels
- Transition period specified

States can approve a sampling period other than June through September for systems that are on reduced monitoring. States must keep records of these decisions.

This revision should assist seasonal NTNCWSs that do not operate during summer months because these systems would no longer need to make special arrangements to collect samples.

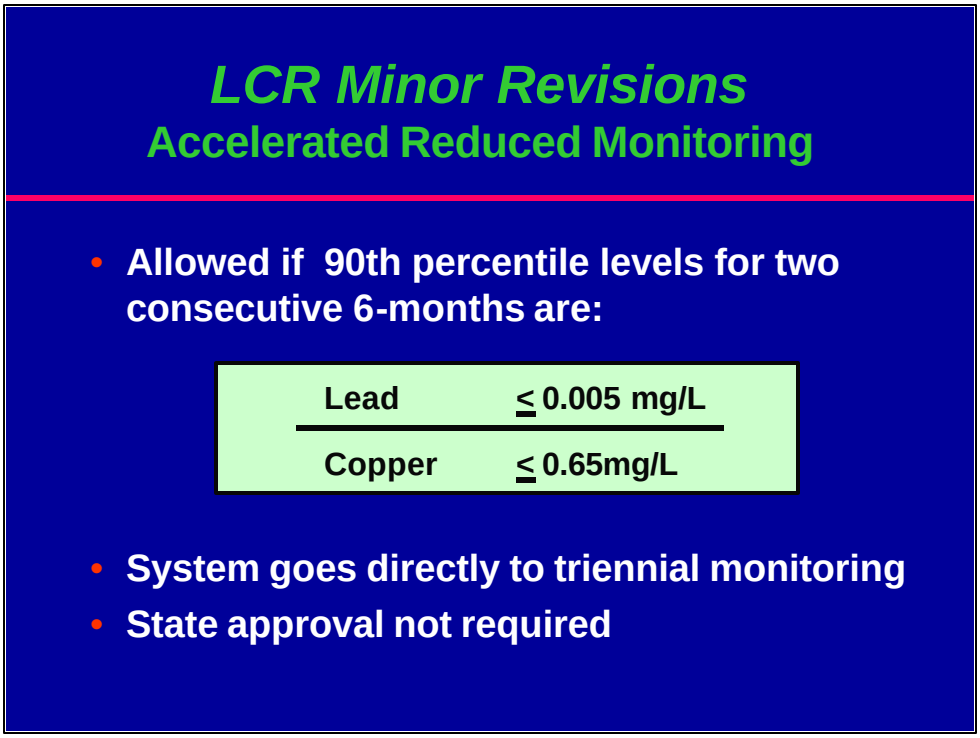
The alternate period must:

- be no longer than 4 consecutive months;
- represent a time of normal operation, when highest levels of lead are most likely to occur (not required for NTNCWSs if the State does not know this information).

> **Note:** If a State plans to specify alternative periods for CWSs, it must outline how it will determine when the highest lead levels are likely to occur, as a special primacy condition in its primacy package.

LCRMR specify a one-time **transition period** for switching to the new monitoring period:

- Systems monitoring annually must collect their next round of samples no later than 21 months after the previous round.
- Systems monitoring triennially must collect their next round of samples no later than 45 months after the previous round.
- Small systems with monitoring waivers must collect their next round of samples before the end of the 9-year period. (Monitoring waivers are discussed in detail later this presentation.)



The LCRMR contain an accelerated reduced monitoring provision. It allows systems to reduce lead and copper tap sampling to once every 3 years and to collect samples at the reduced number of sites after only 2 consecutive, 6-month periods of monitoring, if they have the following 90th percentile lead and copper levels at the tap:

- lead level of less than or equal to 0.005 mg/L; ***and***
- copper level of less than or equal to 0.65 mg/L.

This provision may benefit new systems, in addition to those water systems that are in the process of installing CCT and whose 90th percentile lead and copper levels meet the criteria for accelerated reduced monitoring after conducting the required two rounds of follow-up sampling subsequent to the installation of corrosion control treatment. It will also be available for systems that are triggered into a new set of two, six-month, rounds of full tap sampling due to changes in treatment or source water.

EPA decided not to allow accelerated reduced monitoring for one contaminant when the other contaminant has a 90th percentile level above the specified threshold level. The rationale for this decision is that there is less of a risk that there may be an undetected problem if both lead and copper levels are at or below the threshold levels than if only one of the contaminant levels is less than or equal to the threshold level and that there is more uncertainty in the case where one of the contaminant levels is higher than the threshold level.

The LCRMR do not require systems to obtain prior State approval to monitor on this accelerated schedule.

LCR Minor Revisions
Sample Invalidation

States may invalidate tap sample if:

- **Improper sample analysis**
- **Site selection criteria not met**
- **Sample container damaged**
- **Sample subjected to tampering**

A system may request that a State invalidate a lead or copper tap sample if it can document that at least one of the following conditions has occurred:

- The laboratory documents that the sample was analyzed improperly.
- The sample was taken from an improper site.
- The sample container was damaged in transit.
- The sample was subject to tampering.

Sample Invalidation
Documentation

- System can request sample invalidation if:
  - All sample results are presented to State
  - Documentation is provided for samples to be invalidated
- State decision to invalidate sample:
  - Must be in writing
  - Cannot be made based on earlier sample results
- Invalidated samples not counted for compliance

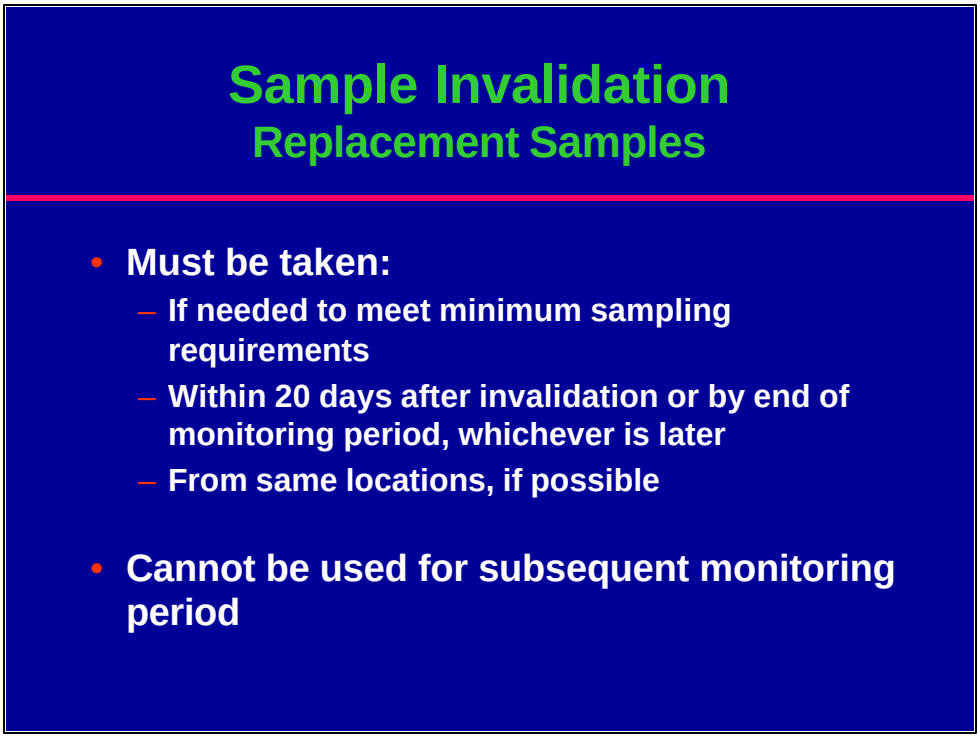
To request sample invalidation, a system must report the results of all the samples to the State, and provide supporting documentation for all the samples it believes should be invalidated.

The State must present its decision on whether or not to invalidate a sample in writing.

The State cannot invalidate a sample simply because the results of a sample are higher or lower than that of a sample from the same location that was collected in a previous monitoring period.

The State must maintain any records of sample invalidation requests and decisions.

Invalidated samples do not count for compliance and should not be included in the 90th percentile calculation.



Systems are only required to collect replacement sample(s) when they would have too few samples to meet minimum sampling requirements due to the invalidation of their sample(s).

Replacement samples are taken no later than 20 days after the date the sample was invalidated, or by the end of the monitoring period, whichever occurs later.

Replacement samples are taken from the same locations as the invalidated samples, or if the system cannot do this, at locations that have not already been used for sampling during that monitoring period.

Systems cannot use these replacement samples to meet the monitoring requirements of a subsequent monitoring period. For example, 2 replacement samples are collected in July 2001 for 2 invalidated samples that were collected during the January to June 2001 monitoring period. The system cannot include these 2 replacement samples as part of their samples for July to December 2001.

Note: If a system is on annual monitoring and the date on which the State invalidates the sample does not allow the system to collect a replacement sample during June - September, the system can collect the replacement sample outside the June - September time period, as long as it is collected no later than 20 days after the date the sample was invalidated, or by the end of the monitoring period, whichever occurs later. For example, the State invalidates the sample on October 15, 2000. The system has until November 4, 2000 (i.e., 20 days after the State's invalidation decision) to collect the replacement samples.

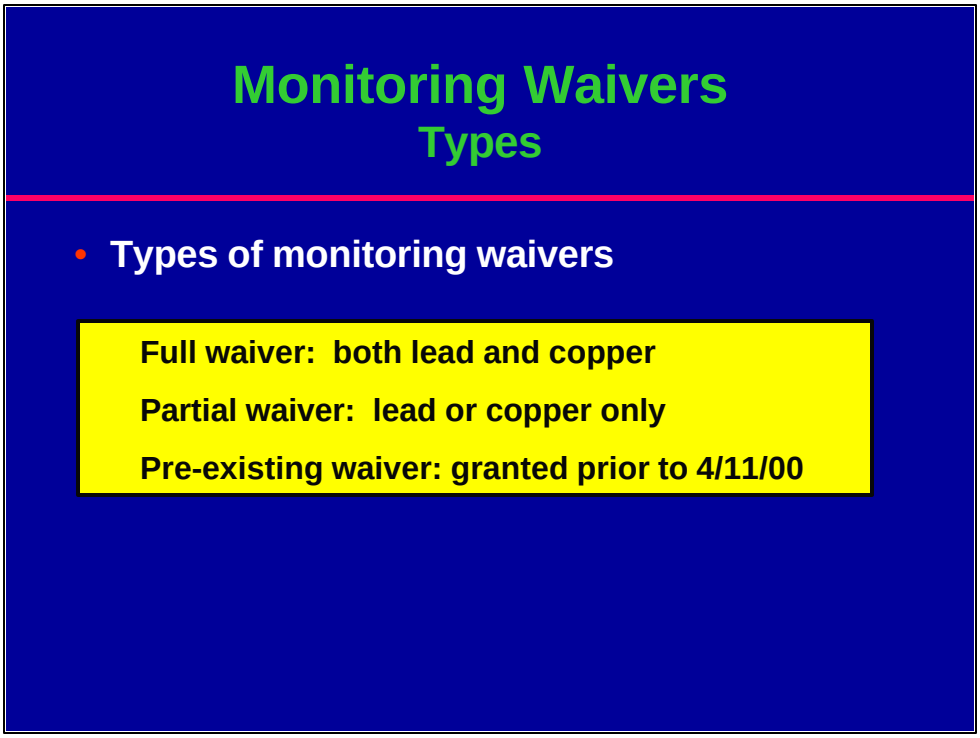
LCR Minor Revisions
Monitoring Waivers

- **Applies to systems serving ≤ 3,300 people**
- **Reduces tap monitoring to once every 9 years**
- **Systems must meet specific materials and monitoring criteria**
- **States must grant approvals in writing**
- **States can require additional activities as waiver condition**

States can grant monitoring waivers to small systems serving 3,300 or fewer people that would allow these systems to conduct lead and/or copper tap monitoring once every 9 years. To qualify, systems must meet specific materials and monitoring criteria.

Systems cannot start monitoring according to the waiver until they receive approval from the State in writing. States can also require the system to perform additional activities, as a condition of the waiver.

States must keep records of all decisions pertaining to waivers.



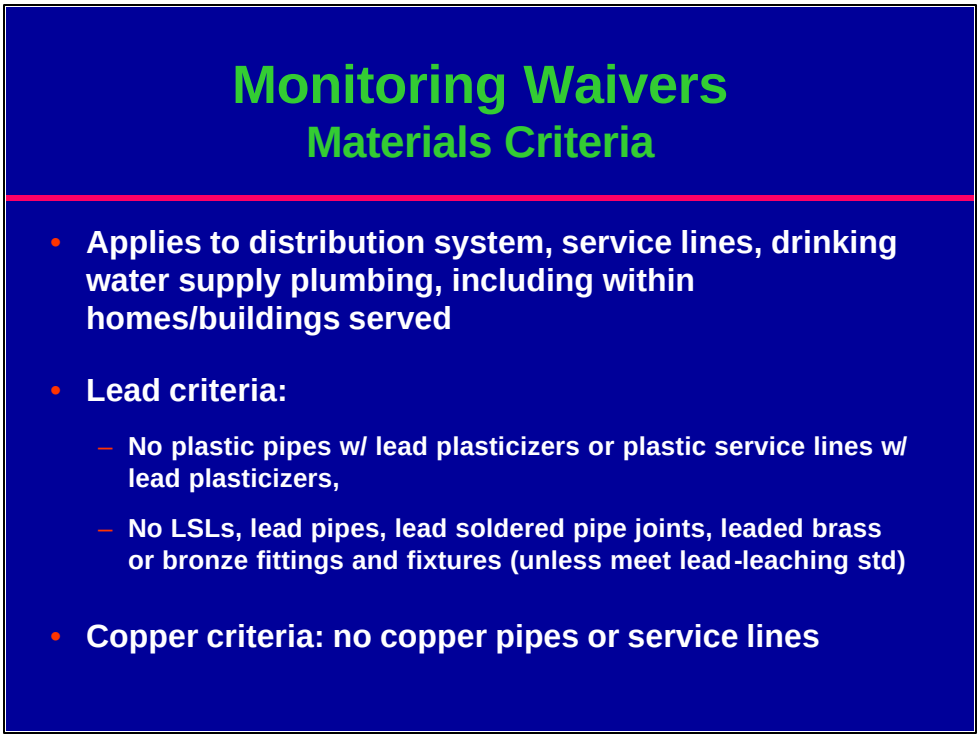
Types of monitoring waivers

To qualify for a full waiver (for both lead and copper), systems must certify to the State and provide supporting documentation to the State that they meet specific materials criteria for lead and copper in their distribution system and drinking water plumbing.

To qualify for a partial waiver for either lead or copper, systems only need to meet the materials criteria for that particular contaminant for which they are requesting a waiver. The monitoring schedule is not affected for the contaminant for which the system did not receive a waiver.

Pre-existing waivers were granted by some States based on guidance provided to EPA Regions in 1995. [U.S. Environmental Protection Agency. Apr. 4, 1995. Memo from Robert J. Blanco, Director, Drinking Water Implementation Division, to O. Thomas Love, Chief, Water Supply Branch, Region 6. All Plastic Systems -- Compliance with the Lead and Copper Rule.] A pre-existing waiver is a lead and copper monitoring waiver that was granted prior to the effective date of the LCRMR of April 11, 2000.

In some cases, before granting the pre-existing waiver, States required a system to conduct at least one round of standard tap water monitoring. Under the LCRMR, pre-existing waivers will remain in effect as long as the water system meets the ongoing waiver monitoring requirements and continues to meet the plumbing material eligibility requirements.

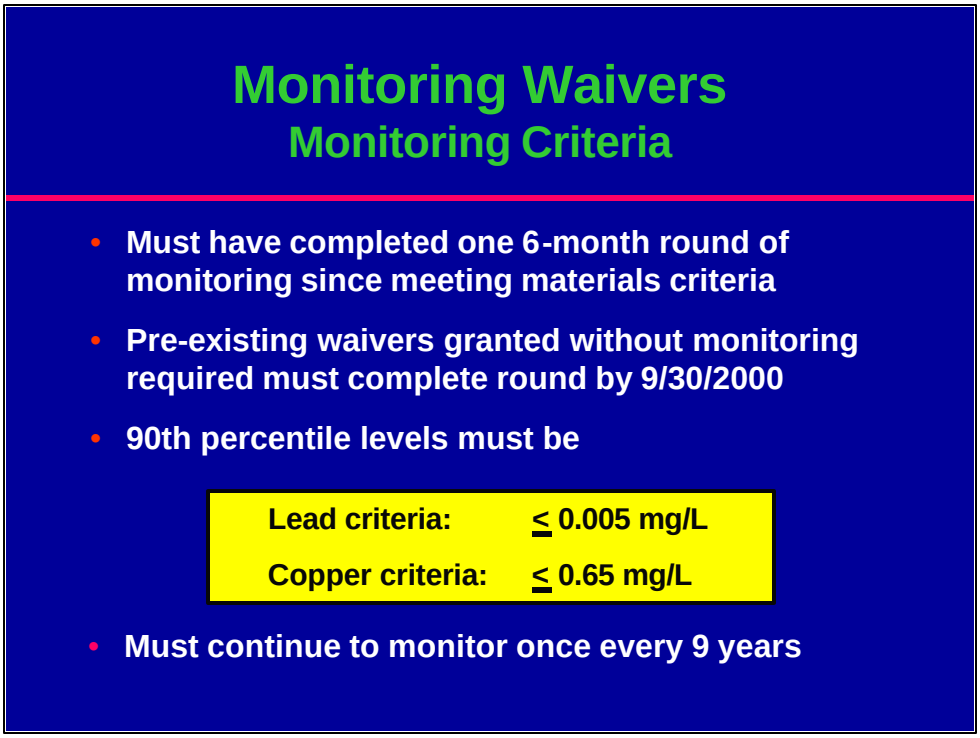


System must certify, with appropriate supporting documentation, that the distribution system and service lines and all drinking water supply plumbing, including plumbing conveying drinking water within all residences and buildings connected to the system, are free of lead-containing and copper-containing materials.

A system is considered to be free of lead-containing materials if it contains no plastic pipes with lead plasticizers or plastic service lines with lead plasticizers and if it is free of lead service lines, lead pipes, lead soldered pipe joints, and leaded brass or bronze fittings and fixtures, unless such fittings and fixtures meet the specifications of any lead-leaching standard established pursuant to 42 U.S.C. 300g-6(e) (SDWA section 1417(e)). Currently NSF Standard 61, Section 9 meets this criteria.

NSF standard 61, section 9 limits the amount of lead that is allowed to be released (or leached) into drinking water from endpoint devices used to dispense drinking water such as faucets. NSF and other organizations test products such as faucets to determine whether they meet this standard. Those products that meet this standard carry a certification mark. For more information, visit NSF's website at www.nsf.org.

Systems are considered free of copper-containing materials if they contain no copper pipes or copper service lines.



New waivers

Systems **must have completed at least one 6-month round** of standard tap water monitoring for lead and copper, subsequent to becoming free of lead-containing and copper-containing materials, at sites approved by the State and from the number of sites required for standard monitoring. 90th percentile levels must be:

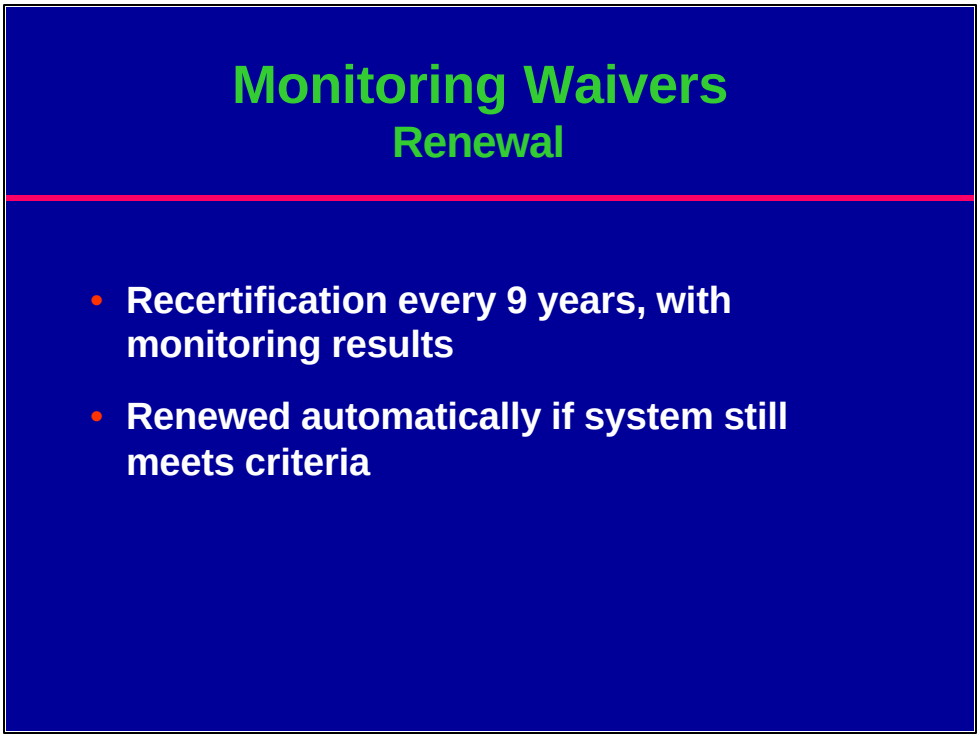
- $\leq$ 0.005 mg/L (to qualify for a full waiver or for a partial waiver for lead).
- $\leq$ 0.65 mg/L for copper (to qualify for a full waiver or for a partial waiver for copper).

Systems must continue to monitor once every 9 years.

Pre-existing waivers

If a pre-existing waiver was granted and 1) monitoring was not required as a condition of the waiver or, 2) the system conducted monitoring in which its lead and copper 90th percentile levels were not $\leq$ 0.005 mg/L and $\leq$ 0.65 mg/L, respectively, the system must complete a round of standard monitoring by 9/30/2000.

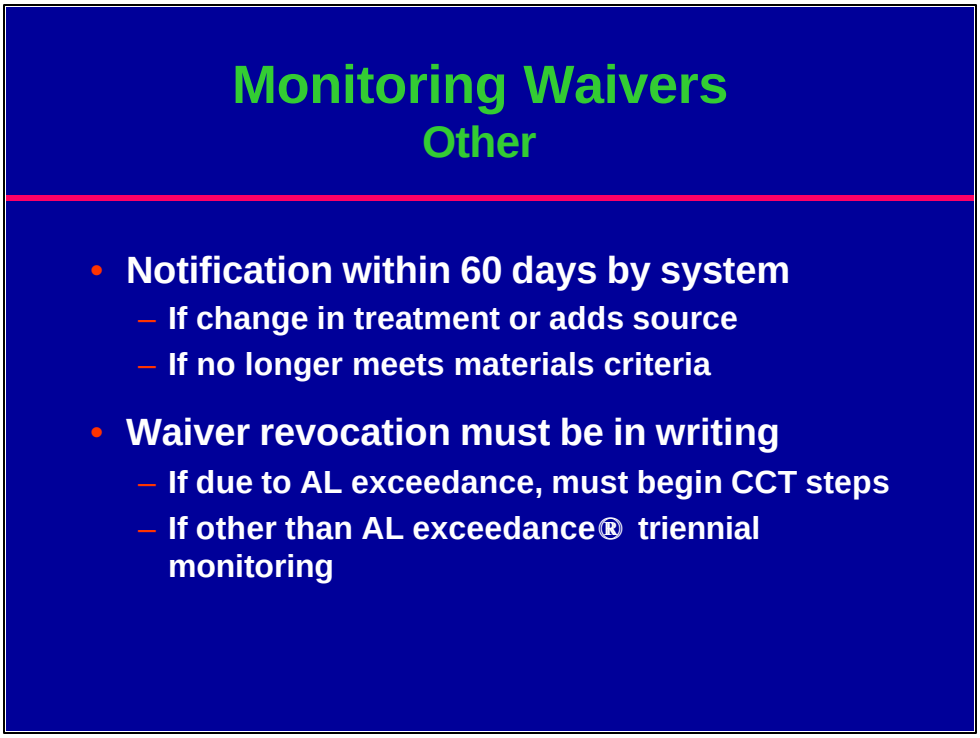
- The lead and copper 90th percentile levels must meet the lead and copper monitoring criteria listed above in order for the system to remain eligible for a monitoring waiver.
- If the system satisfies the monitoring criteria, it must continue monitoring once every 9 years.



Waiver renewals

- Systems must submit a re-certification that they are lead-free and/or copper-free every nine years, along with their lead and copper tap water results and 90th percentile calculations. States can require this information sooner.
- If system still meets criteria, waiver is renewed automatically.

EPA has developed guidance document to assist States and small water systems understand the monitoring waiver provisions. This document is entitled, *Monitoring Waivers under The Lead and Copper Rule Minor Revisions for Systems Serving 3,300 or Fewer People,* April 2000, EPA 815-R-99-021.



Notification within 60 days by the system

- If a system has received a waiver, and later adds a new source or changes treatment, it must notify the State in writing within 60 days after the change, unless the State requires earlier notification. A State may add to or modify the waiver conditions, if the State deems it necessary.
- If a system becomes aware that it is no longer free of lead-containing or copper-containing materials, it must notify the State in writing within 60 days.

Waiver revocation must be in writing

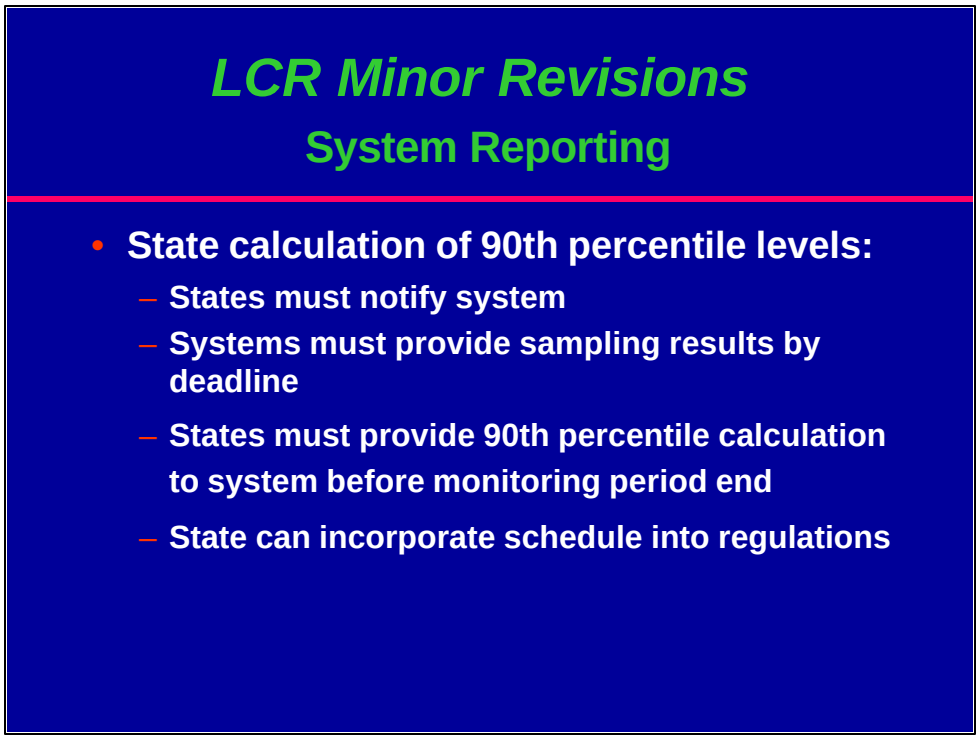
- If a State revokes a waiver, it must notify the system in writing and include the basis of its decision.
- If the reason is **due to an action level exceedance**, the system must implement the CCT requirements and follow the CCT deadlines specified in §141.81(e) for medium and small systems.
- If the reason is **other than an action level exceedance**, the system must collect lead and copper tap samples at least triennially, using the reduced number of sample sites.
- A system may reapply for another waiver if it subsequently meets the waiver criteria.

LCR Minor Revisions
Sample Analysis

- Holding time has been revised to be consistent with other metals
- Refers to minimum time allowed after samples have been acidified and before analysis

Holding time for acidified samples

The LCRMR make the minimum holding time for lead and copper samples consistent with that for other metals. The minimum holding time refers to the length of time a sample must remain in its original container after it has been acidified and before it can be analyzed. The impact of this provision is a reduction in the holding time from 28 hours to 16 hours.



Other changes to system reporting requirements were discussed on previous slides. These included elimination of redundant or unnecessary requirements, and new documentation that must be provided by systems. The summary of system reporting changes are provided on pages A-35 through A-37 in Section 9 of your notebook.

Elimination of system calculation and reporting of 90th percentile levels

States have the flexibility to eliminate the requirement that systems calculate and report 90th percentile lead and copper values for all monitoring periods. Some States may already verify these calculations for some systems. States can eliminate this calculation for all or some subset of systems if:

1. States notify the system in advance that they will calculate the 90th percentile levels and have specified when the system must provide them with tap water results (must be prior to end of monitoring period).
2. The system provided the results of all tap water samples by the deadline specified by the State, including each sampling site location, site selection criteria, and identification and explanation of any changes to sampling sites.
3. States must provide the results of the calculations in writing, to the system before the end of the monitoring period to allow them to take timely additional action if needed (e.g., WQP monitoring).

States can incorporate directly into their regulations, the schedule that specifies when the system must provide monitoring results/supporting documentation and when the State will report the 90th percentile levels to the system.

The State's calculation of the 90th percentile level does not affect when monitoring or contingent actions (e.g., WQPs, public education) must be completed. States must maintain records pertaining to any State-calculated 90th percentile levels.

LCR Minor Revisions
System Reporting (Continued)

- **Elimination of justification letters for:**
  - **Use of non-tier 1 sites**
  - **Insufficient LSL sample sites**
- **Elimination of sample certifications for:**
  - **first-draw**
  - **resident-collected samples**

Systems are no longer required to send States justification letters when they collect samples from other than Tier 1 sites or when fewer than 50% of their samples are from sites with LSLs, lead pipes, or copper pipes with lead solder. Systems are also no longer required to certify that each tap sample is first-draw or that samples collected by residents were only done so after the water system informed the residents of the proper sampling procedures. EPA eliminated these two requirements because it believes that continuing to require systems to provide these letters every monitoring period imposes a burden that can no longer be justified.

Systems should still retain in their files the information regarding the basis of their site selection. States should review this documentation during on-site inspections.

LCR Minor Revisions
Summary of Tap Monitoring & Reporting Revisions

- **Changes to Sampling Pool**
  - J Use of representative sites if insufficient tiered sites
  - – Use of non-first draw samples
- **Reduced monitoring**
  - J Must use representative sites & State can specify sites
  - J Notification of change in treatment/new source
  - – No longer need to request permission to reduce Pb/Cu tap monitoring after meeting OWQPs
  - – State may designate alternate period
  - – Accelerated reduced monitoring

J Implement on April 11, 2000

The LCRMR are contained in: Federal Register, Vol. 65, No. 8. Drinking Water Regulations; Maximum Contaminant Level Goals and National Primary Drinking Water Regulations for Lead and Copper; Final Rule; (Wed., Jan 12, 2000)

LCRMR Revision	Where to Find It
Use representative sites, if system has insufficient number of tiered sites	§§141.86(a)(5) & (7)
Use of non-first draw samples & associated system reporting requirements	§141.86(b)(5) & 141.90(a)(2)(i)-(ii)
Reduced sampling sites must be representative & State can specify location	§§141.86(c)& (d)(4)(iv)
Report change in treatment of new source for systems on reduced monitoring	§§141.86(d)(4)(vii) & (g)(4)(iii), §141.90(a)(3)
System no longer submit written request for reduced lead and copper tap monitoring when meeting OWQPs	§§141.86(d)(4)(ii) & (iii)
Alternate period for reduced monitoring	§141.86(d)(4)(iv)(A)
Accelerated reduced monitoring	§141.86(d)(4)(v)

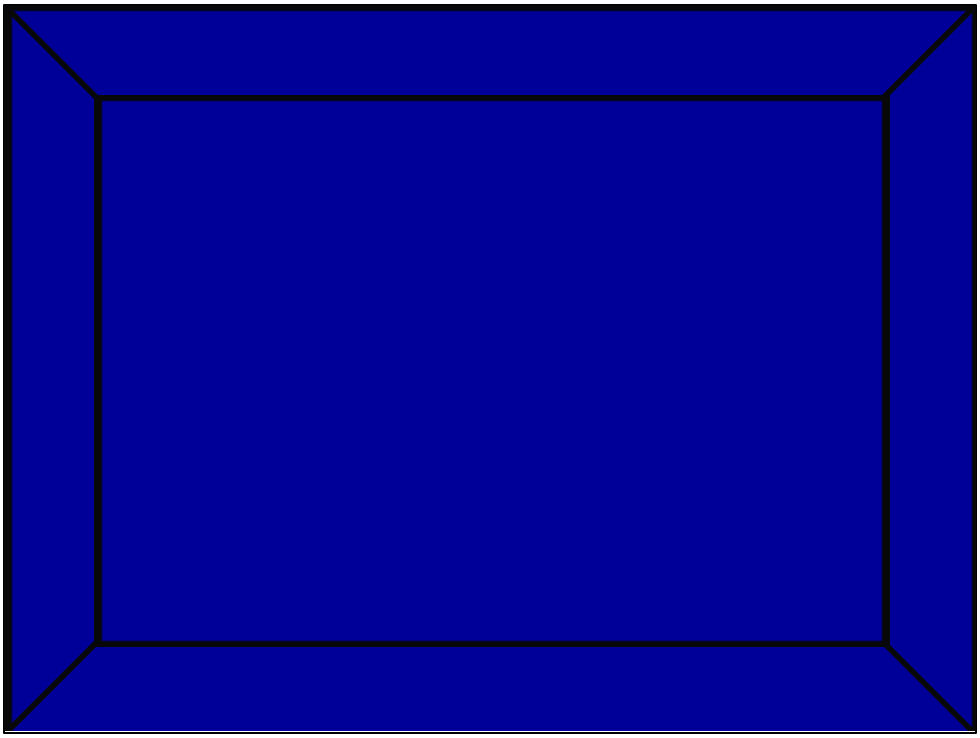
LCR Minor Revisions
Summary of Tap Monitoring & Reporting Revisions (Continued)

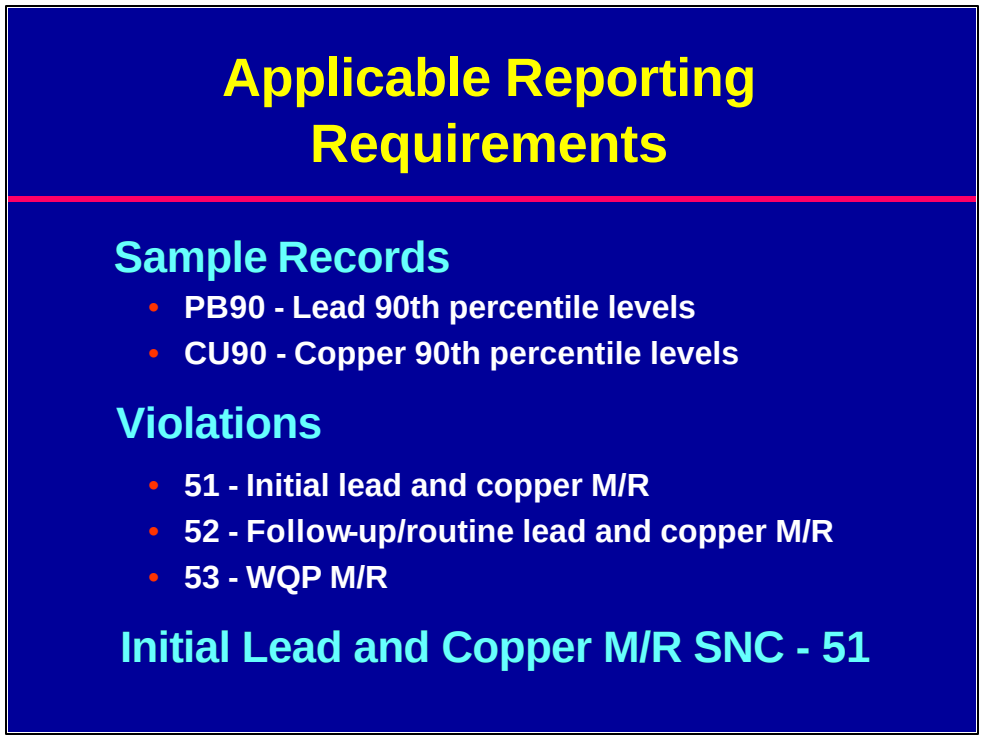
- Sample Invalidation
- Monitoring waivers
- Reduced holding time
- Reporting changes
  - elimination of sampling justifications
  - elimination of sample collection certifications
  - 90th percentile calculation by State

Please note: A summary of all revisions to System reporting requirements is provided in Section 9 of this manual on pages A-35 though A-37.

LCRMR Revision	Where to Find It
Sample invalidation & associated system reporting requirements	§§141.86(f) & 141.90(a)(1)(ii)
Monitoring waivers & associated system reporting requirements	§§141.86(g) & 141.90(a)(4)(i)-(iv)
Reduced holding times for acidified samples prior to analysis	§141.86(b)(2)
State calculation of 90th percentile level	§141.90(h)
Other system reporting requirements for lead and copper tap monitoring and WQP monitoring	§141.90(a)

Remember: States have the option to adopt all, some, or none of the provisions that are less stringent than the LCR.





Samples

All lead 90th percentile non-exceedances must be reported as sample records. In addition, all lead and copper 90th percentile exceedances must be reported as sample records. In the past, lead exceedances could be reported as either a milestone or sample record. Copper exceedances were reported as milestone records.

Until January 11, 2002, SDWIS/FED will convert lead or copper exceedances that are reported as milestone records to sample records. After this date, lead or copper exceedances must be reported as sample records or they will be rejected.

Violations (Contaminant Code = 5000)

Violation that pertain to lead and copper tap monitoring and initial WQP monitoring are:

- 51 violation = initial lead and copper tap monitoring and reporting (M/R) violation
- 52 violation = follow-up or routine lead and copper tap M/R violation
- 53 violation = initial WQP M/R

Compliance Portrayal:

The begin date for the 51 and 52 violations is the day after the compliance period. The end date is defaulted to December 31, 2015 until return to compliance (RTC) is reported and linked to violation. For the 53 violation, the begin and end date of the compliance period is the first and last day, respectively, of the designated 6-month compliance period.

Significant Noncompliers (SNCs)

An Initial Pb/Cu Tap M/R is based on amount of time a system is out of compliance

Definition: A system which has not returned to compliance and/or which does not have a RTC record reported to SDWIS/FED (properly linked to the appropriate violation) with in:

- 3 months for large systems,
- 6 months for medium systems, and
- 12 months for small systems.

Applicable Reporting Requirements

Lead Results

- ALL Lead 90th Percentile Results (PB90) required for all Large and Medium systems
- Reporting of Lead 90th Percentile Exceedances for Small systems continues

Large system serves more than 50,000 persons

Medium System serves 3,301 to 50,000 persons

Small system serves 3,300 persons or fewer

New requirement for ALL 90th percentile results to be reported for Medium-sized systems.

Only lead 90th percentile exceedances are required to be reported for Small systems; however; all values will be accepted if reported.

Applicable Reporting Requirements

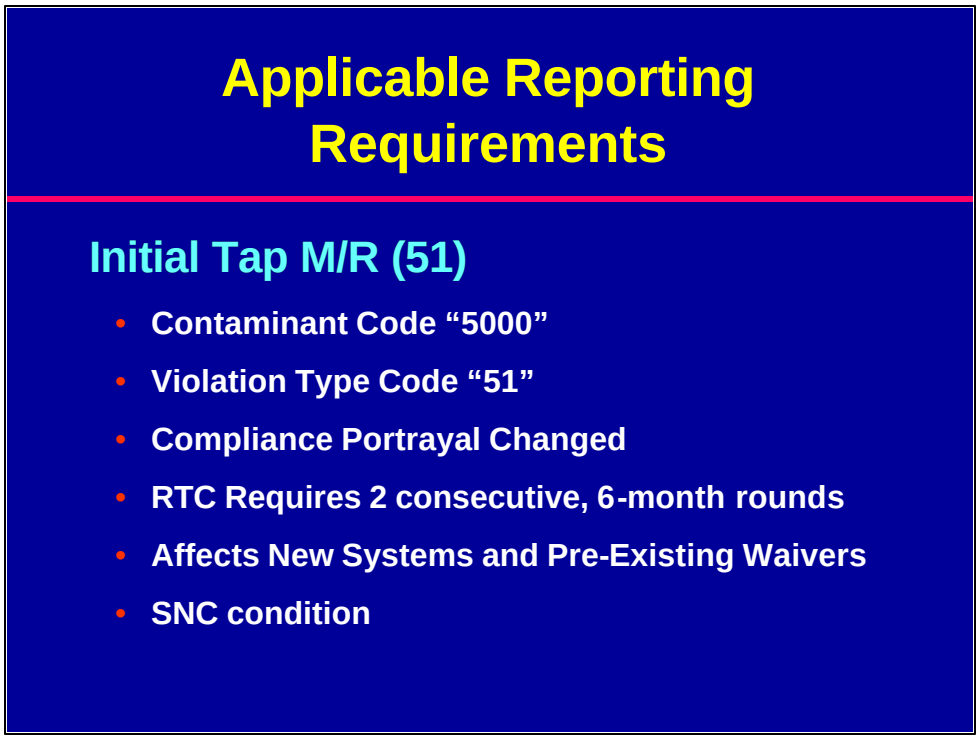
Copper Results

- Copper 90th Percentile (CU90) Exceedances now reportable as Sample
- Copper 90th Percentile (CU90) Milestone will be converted to a Sample until January 11, 2002
- Non-exceedances will not be accepted

CU90 Sample is new … previously reported 90th percentile exceedance as a Milestone and ONLY a Milestone … SDWIS/FED had no capability to accept a CU90 Sample prior to the LCRMR implementation.

Copper exceedances which are submitted as Milestones will be converted to Sample records until January 11, 2002. After that date they will be rejected.

SDWIS/FED does not accept copper sample or milestone records which do not exceed the Copper action level.



Compliance portrayal has changed for Initial Tap violations. The violation begins the first day after the missed designated monitoring period. Previously, a State would have reported one violation for each of the two 6-month periods. Now a single violation is reported. This change affects systems which have never monitored and new systems.

A system will return to compliance (RTC) when it meets all appropriate M/R requirements as mentioned above, for **two consecutive**, 6-month monitoring periods. Previously, when a system incurred a M/R violation and subsequently conducted the required monitoring, it was considered "returned to compliance". However this is inconsistent with the regulation which requires two consecutive, 6-month rounds of monitoring to achieve compliance with the Initial Tap monitoring requirements. The same applies to Follow-Up monitoring. Therefore, EPA has changed the definition for returned to compliance for these monitoring conditions. Previously reported violations and RTC data need not be changed. New violations for these requirements must be reported in this manner. Therefore, a single 51 violation will cover the first day after the first missed designated monitoring period through sampling completion of the second 6-month consecutive designated monitoring period. The only exception to the requirement for two consecutive 6-month rounds of sampling is for those medium and small systems which exceed the action level. These systems have basically completed their monitoring requirements because they are now triggered into CCT activities.

A system that has a M/R violation and is on reduced annual or triennial lead or copper tap monitoring, is granted a monitoring waiver, or has a pre-existing waiver, must complete one round of monitoring to return to compliance.

Applicable Reporting Requirements

Lead and Copper Initial Tap SNC

Initial Tap (51) Violation qualifies for SNC when the system fails to complete Initial Tap Monitoring and/or RTC within:

- **Large: 6 months + 3 months**
- **Medium: 6 months + 6 months**
- **Small: 6 months + 12 months**

Implementation of the LCRMR retains the additional time for a system to return to compliance prior to it being designated as a significant noncomplier (SNC).

The SDWIS/FED algorithm not only considers the time periods referenced above, it adds an additional quarter of time before it queries the violations to allow RTC actions which may have been reported at the end of the period to be posted to SDWIS/FED due to EPA's normal one quarter reporting lag. The bottom line is, EPA gives LCR violation reporting every opportunity to RTC BEFORE EPA designates SNCs.

Applicable Reporting Requirements

Follow-up/Routine Tap M/R Violations

- **Contaminant Code "5000"**
- **Violation Type Code "52"**
- **Follow-Up and Routine Monitoring Compliance Portrayal Changed**
- **RTC Sometimes Requires 2 consecutive 6-month rounds**
- **NOT SNC condition**

Basically the same as Initial Tap violations. The exceptions are:

- Once a system achieves reduced monitoring (annual, triennial, or 9-year), and for those systems which were granted a pre-existing waiver (when only one round of monitoring is required) the system would naturally return to compliance whenever it met all of the requirements in the next round of designated monitoring.

- This violation type is not an SNC condition.

Note: New violation condition for Routine monitoring/reporting. Once a system is on routine monitoring, a system has 60 days from the addition of a new source or a change in treatment to notify the State of the change. Failure to do so is to be reported as a 52 violation.

Applicable Reporting Requirements

Enforcement/RTC

- **Formal Enforcement Follow-up actions are Required Reporting**
- **Enforcement/follow-up action must be linked to the violation**
- **Compliance Period/Violation Period End Date is replaced by the RTC action date; therefore, RTC must be reported**

All formal enforcement/follow-up actions are required to be reported to SDWIS/FED. A returned to compliance, or "RTC", (EOX or SOX = compliance achieved action) is classified as an "other" action type and is also required reporting for this rule.

Because SDWIS/FED defaults a future compliance period/violation period end date of 12/31/2015 for these violations, RTC reporting is required. When the RTC record is reported and LINKED to the violation, the defaulted end date is replaced with the RTC enforcement/follow-up action date. Therefore, reporting RTC actions and the appropriate violation link data is required.

A list of State enforcement follow-up actions that must be reported to SDWIS/FED is provided in Section 9, Supplemental Information, on page A-46. Changes to the definitions of RTC, resulting from the LCRMR and other EPA decisions, are provided in Section 9 on pages A-48 through A-52.

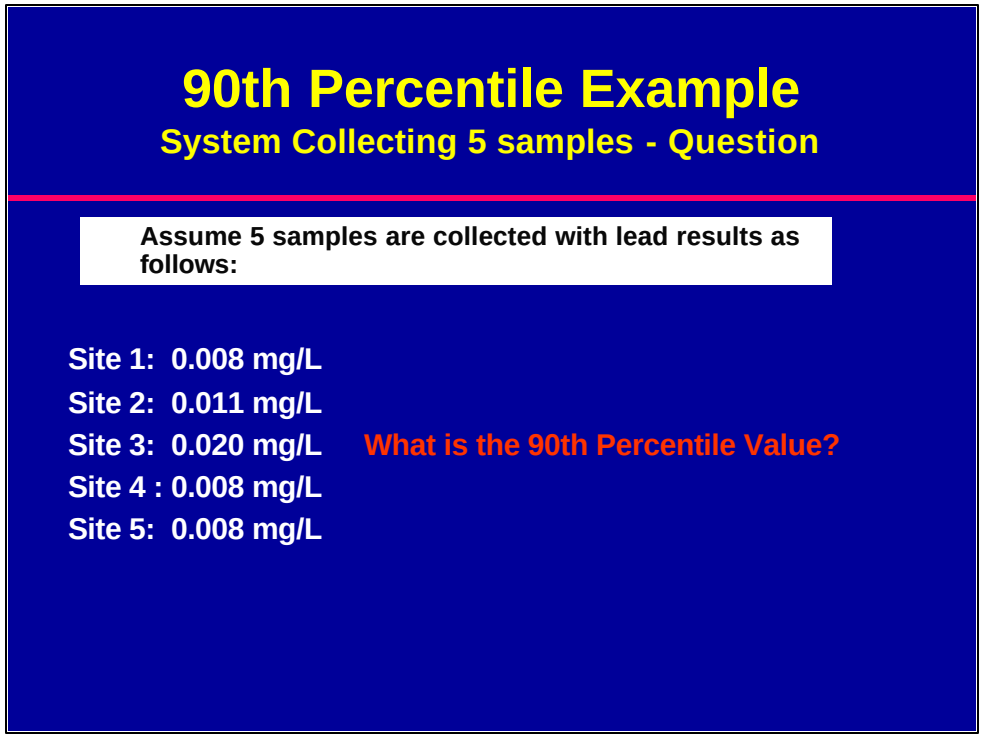
Applicable Reporting Requirements

Initial WQP M&R (53)

- Contaminant Code "5000"
- Violation Type Code "53"
- Traditional begin and end dates
- 6-month compliance period
- RTC reporting required

EPA has not revised the way in which initial WQP M/R violations are to be reported. The begin and end dates are the first and last days of the 6-month period in which the monitoring must be completed. For large systems, initial tap and entry point sampling for WQPs is conducted during the same sampling periods as initial lead and copper tap monitoring. For medium and small systems, it is conducted during each of the initial six-month monitoring periods in which the lead or copper action level is exceeded.

SDWIS/FED does not default the end date to 12/31/2015 for WQP violations.



This example shows how to determine the 90th percentile level when a system is required to collect 5 samples.

90th Percentile Example

System Collecting 5 samples - Answer

Step 1: Order results from lowest to highest:

No 1: 0.008 mg/L
No 2: 0.008 mg/L
No 3: 0.008 mg/L
No 4: 0.011 mg/L
No 5: 0.020 mg/L

Step 2: Average the 4th & 5th samples highest samples to get 90th percentile value = 0.016 mg/L

$$\frac{0.011 \text{ mg/L} + 0.020 \text{ mg/L}}{2} = 0.0155 \text{ mg/L}$$

Step 3: Compare to lead action level Ô Exceedance

For systems collecting 5 samples, the 90th percentile level is computed by averaging the 4th and 5th value. This is the only time that the 90th percentile level is determined using the average.

In this example, the 90th percentile level = 0.016 mg/L, as shown in the equation below.

$$\frac{0.011 \text{ mg/L} + 0.020 \text{ mg/L}}{2} = 0.0155 \text{ mg/L}$$

This rounds up to 0.016 mg/L

This system has exceeded the lead action level because its 90th percentile level is higher than the lead action level of 0.015 mg/L.

Note: EPA's policy when calculating data for compliance purposes, is to round-off by dropping the digits that are not significant. The last significant digit is increased by one unit if the digit dropped is 5 or higher. If the digit is 4 or lower, the preceding number is not changed. This policy is outlined in Water Supply Guidance 21, Joseph A. Cotruvo, Ph.D., Director of Criteria and Standards Division, ODW; Memorandum - "Procedures for Rounding-Off Analytical Data to Determine Compliance with Maximum Contaminant Levels Present in NIPDWR." April 6, 1981.

90th Percentile Example

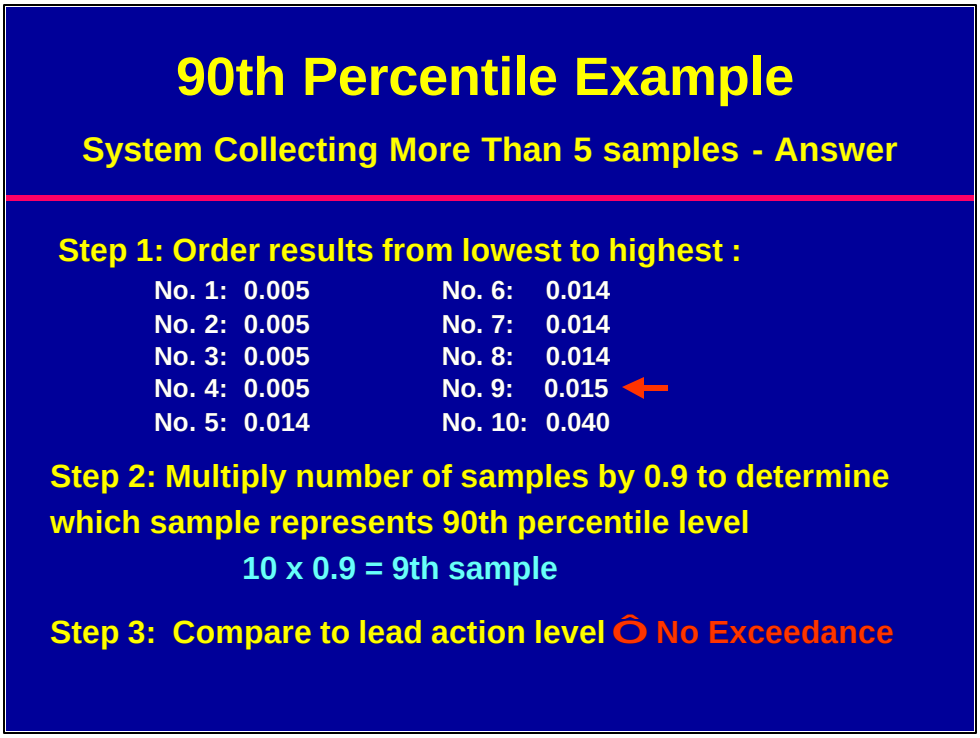
System Collecting More Than 5 samples- Question

Assume 10 samples are collected with lead results as follows:

Site 1:	0.005 mg/L
Site 2:	0.015 mg/L
Site 3:	0.005 mg/L
Site 4 :	0.014 mg/L
Site 5:	0.014 mg/L
Site 6:	0.005 mg/L
Site 7:	0.040 mg/L
Site 8:	0.014 mg/L
Site 9:	0.014 mg/L
Site 10:	0.005 mg/L

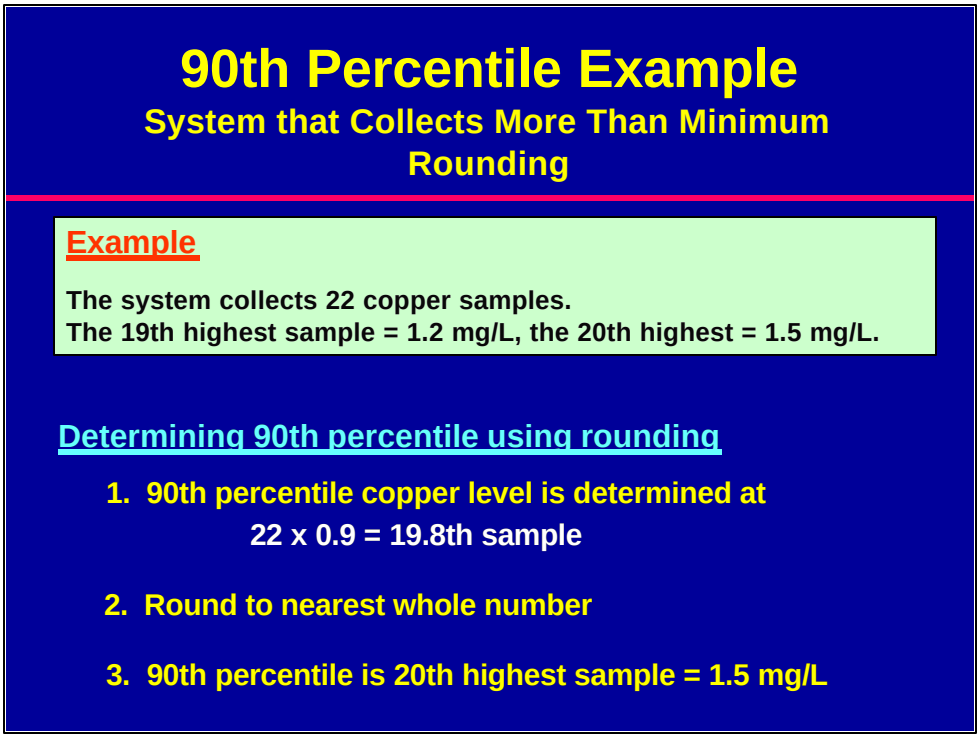
What is the 90th Percentile Value?

This example shows how to determine the 90th percentile level when a system is required to collect more than 5 samples.



In this example, the 90th percentile value is the 9th highest sample. The lead level of this sample is 0.015 mg/L and is at the lead action level of 0.015 mg/L. Therefore, the system ***has not exceeded*** the lead action level.

The same procedure is used to determine the copper 90th percentile level.

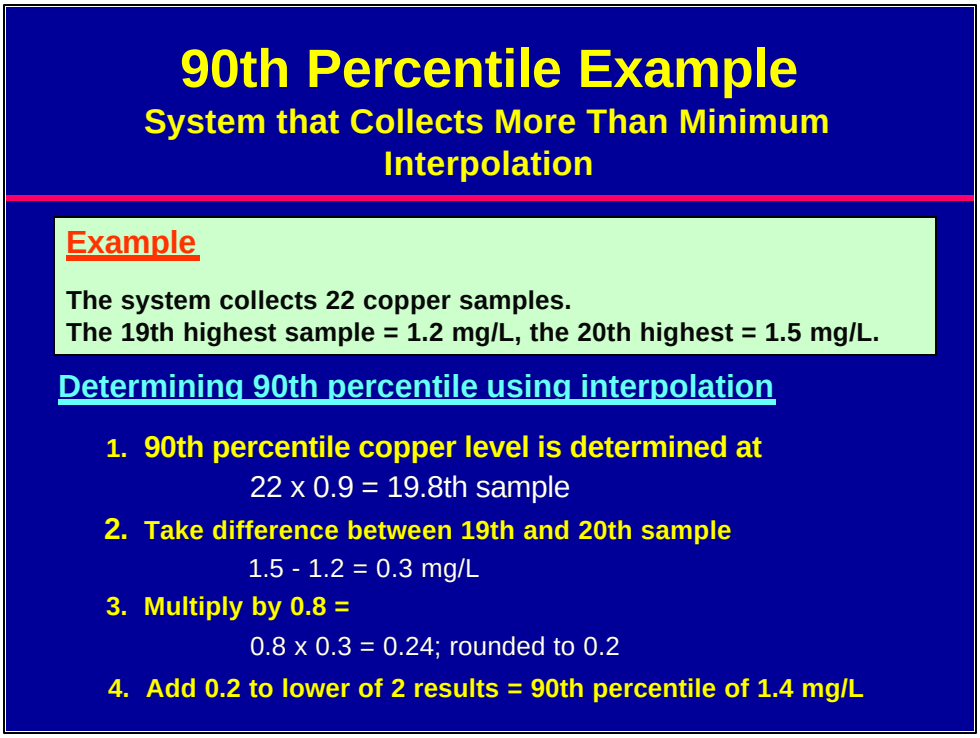


For systems collecting more than the minimum number of samples, the 90th percentile value can be determined using rounding or interpolation.

Using rounding

If our example, 22 samples are collected. The 90th percentile level is the 19.8th sample. Rounded up, the 90th percentile value is the 20th sample or 1.5 mg/L, which is an exceedance of the copper action level of 1.3 mg/L.

The next page shows how the 90th percentile level would be determined using interpolation for this same set of data.



Using interpolation

To determine the 90th percentile value using interpolation, you would:

1. Multiply the number of samples by 0.9 to determine which sample represents your 90th percentile level. This step is the same regardless of whether you use rounding or interpolation.

   22 samples x 0.9 = 19.8th sample

2. Subtract the difference between the two samples between which your 90th percentile falls. In this example you subtract the 19th sample of 1.2 mg/L from the 20th sample of 1.5 mg/L.

   1.5 mg/L - 1.2 mg/L = 0.3 mg/L

3. Multiply the difference by 0.8.

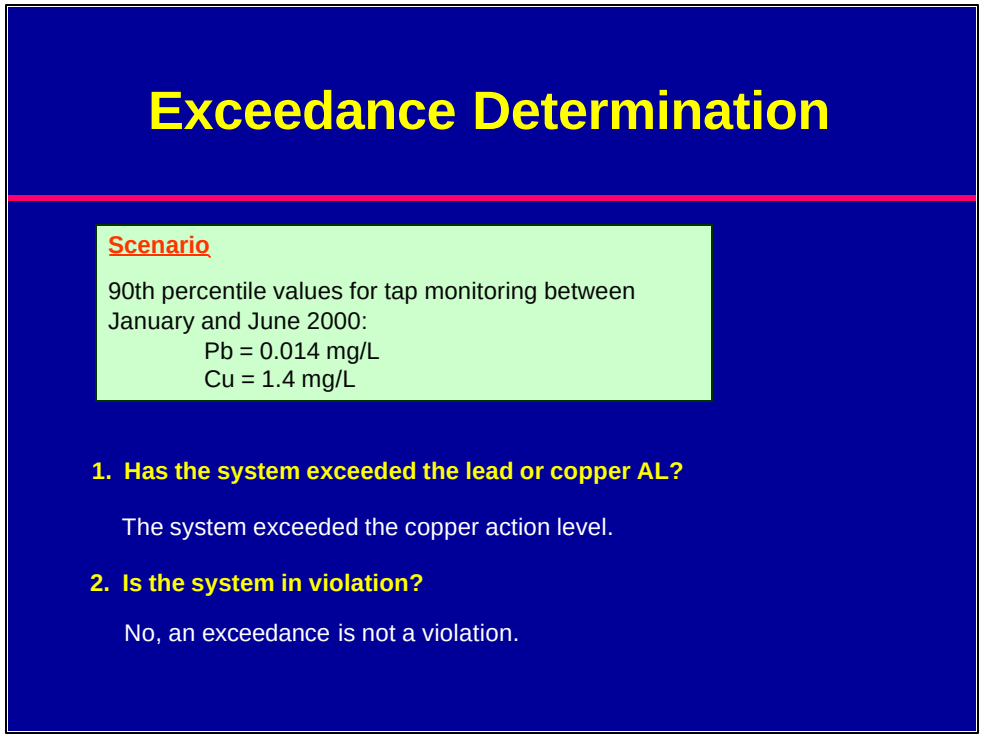
   0.3 x 0.8 = 0.24 mg/L

   When rounded to the number of significant figures, **the difference is 0.2 mg/L**. The 90th percentile level is 0.8 higher than the 19th sample. If the 90th percentile was 19.6, the difference would be multiplied by 0.6.

4. Add 0.2 to the lower of the two sample results, in this example to the 19th sample result of 1.2 m/L .

   0.2 + 1.2 = 1.4 mg/L

Using interpolation, the 90th percentile level is 1.4 mg/L.



Answer 1

The 90th percentile lead level is 0.014 mg/L, which is below the lead action level of 0.015 mg/L. The 90th percentile copper level is 1.4 mg/L and exceeds the copper action level of 1.3 mg/L.

Answer 2

The system is not in violation for exceeding an action level. However, exceeding an AL triggers additional treatment requirements.

State Calculation of 90th Percentile

Scenario for Small System

- 1/1/01 - 6/30/01: System required to conduct monitoring
- 2/15/01: State notifies system that it will calculate 90th percentile
- 5/31/01: State deadline for results/supporting documentation from system
- 6/27/01: System provides results and supporting documentation
  Pb 90th = 0.014 mg/L
  Cu 90th = 1.4 mg/L
- 6/29/01: System receives 90th percentile from the State

1. **Is the system in violation?**

   The system has not violated a Federal requirement.

2. **What problem might occur because system learned its 90th percentile values on 6/29/01?**

   System may be unable to meet its WQP monitoring requirements.

Answer 1

The State is performing the 90th percentile calculation for the system. The system did not meet the deadline specified by the State for reporting its tap water sample results and supporting documentation (i.e., sampling site location, site selection criteria, and identification and explanation of any changes to sampling sites). This is not a federal violation; however, States may report it to EPA.

Answer 2

The system exceeded the copper action level and is required to conduct WQP monitoring before June 30, 2001. The system did not learn of the exceedance until June 29, 2001 and therefore, may have difficulty fulfilling its WQP M/R requirements. Had the system submitted the tap monitoring results earlier, there would have been less risk of missing the WQP deadline if there was an exceedance.

Remember: States cannot calculate and report 90th percentile lead and copper values for all or some systems unless they have incorporated this flexibility into their regulations.

Violation Determination

Scenario for Large Water System

System reports 90th percentile values for tap monitoring between January 1, 2001 and December 31, 2001:
Pb: 0.012 mg/L; Cu: 1.1 mg/L

Note: System collected only 28 of 30 required samples by 12/31/01

1. **Has the system exceeded the lead or copper AL?**

   No, a 90th percentile value cannot be calculated until the required number of samples have been collected and analyzed.

2. **Is the system in violation?**

   Yes, the system incurred a Routine Tap M/R violation (52 violation type code).

3. **How does the system return to compliance?**

   It must meet monitoring and reporting requirements for 1 period.

Answer 1

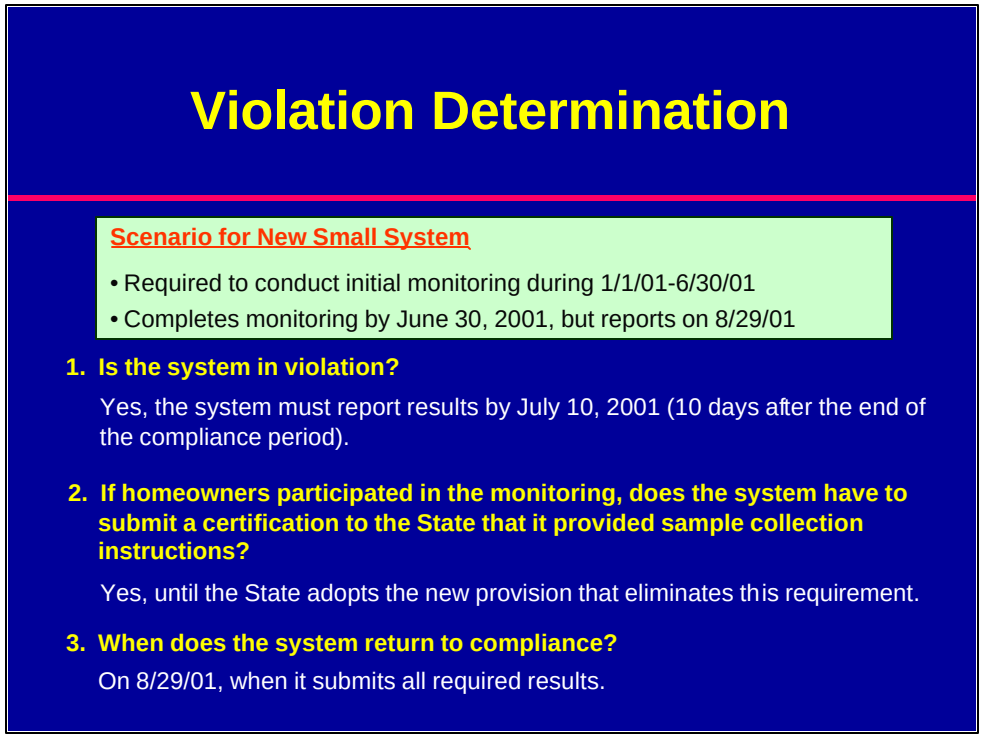
A 90th percentile value cannot be calculated until the required number of samples have been collected and analyzed in accordance with §§141.86 and 141.89.

Answer 2

The system is in violation for failure to meet its lead and copper tap monitoring and reporting (M/R) requirements. The violation type is a routine lead and copper tap M/R violation. In this example, the begin date for this violation is October 1, 2001 (because the system is on annual monitoring and required to collect samples during June and September). The end date is defaulted to December 31, 2015.

Answer 3

The system will return to compliance when it collects samples that meet the sampling, analytical, and reporting requirements for one monitoring period.



Answer 1

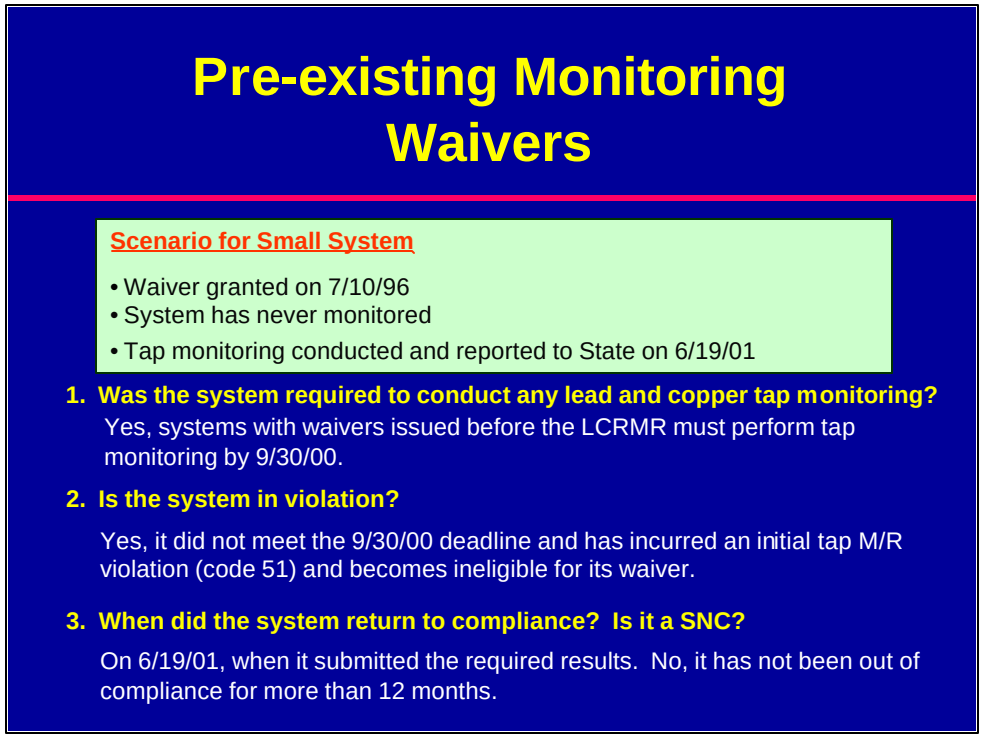
A system has until the 10th day following the end of the compliance period in which to report its lead and copper tap results and other supporting documentation (or by July 10th in this example). In this example, the system has an initial lead and copper tap M/R violation (51 violation type code). The begin date for this violation is July 1, 2001; the end date is defaulted to December 31, 2015.

Answer 2

The LCRMR no longer requires systems to provide certification that homeowners collected samples after having received sampling instructions. As this provision is less stringent than the requirements of the LCR, it must first be adopted by the State before it can be implemented.

Answer 3

The system returns to compliance once it provides the monitoring results and all other relevant supporting documentation to the State (by August 29, 2001). The system is not an SNC because it returned to compliance within 12 months of the violation.



Answer 1

A system that was granted a waiver prior to April 11, 2000 (i.e., a pre-existing waiver) and that never conducted lead and copper tap monitoring must collect one set of samples by September 30, 2000.

Answer 2

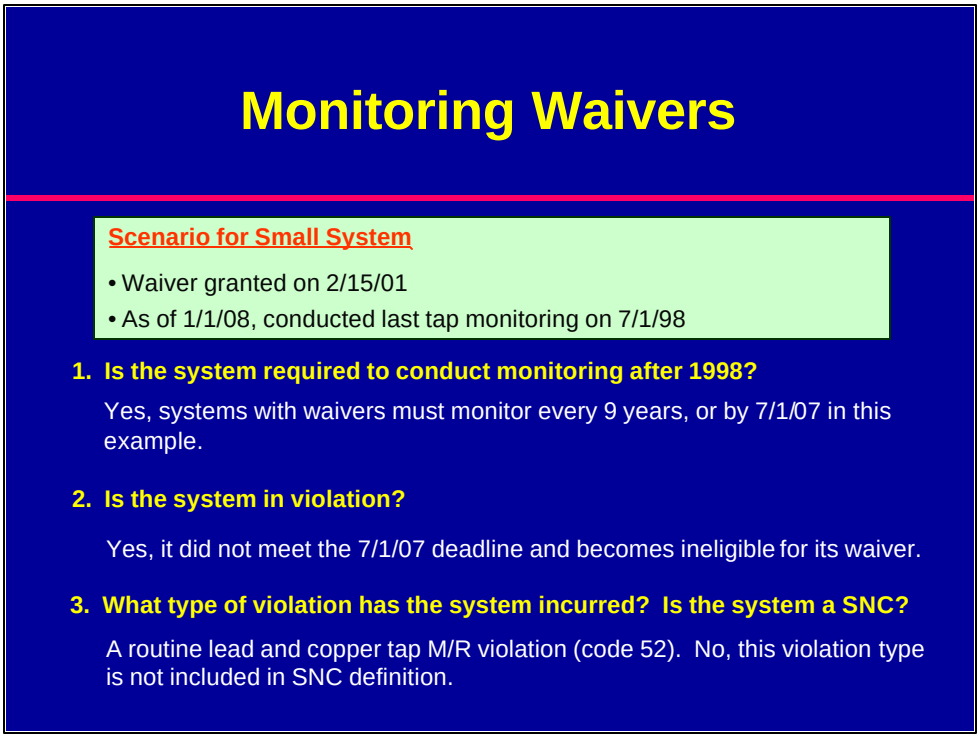
The system is in violation because it did not meet the September 30, 2000 deadline. Since this violation pertains to the first set of lead and copper M/R requirements, the system has incurred an initial lead and copper M/R violation (51 violation code). The begin date of this violation is October 1, 2000; the end date is defaulted to December 31, 2015. This system did not conduct the required monitoring and therefore, becomes ineligible for its waiver. The system may reapply for a waiver once it conducts the monitoring that shows that the system has lead and copper 90th percentile levels that are $\leq$ 0.005 mg/L and $\leq$ 0.65 mg/L, respectively.

Answer 3

An initial lead and copper tap M/R significant noncomplier (SNC) is defined as a system that does not return to compliance within:

- 3 months for large systems
- 6 months for medium systems
- 12 months for small systems.

The system in this example is not an SNC because it is a small system and was out of compliance for approximately 9 months.



Answer 1

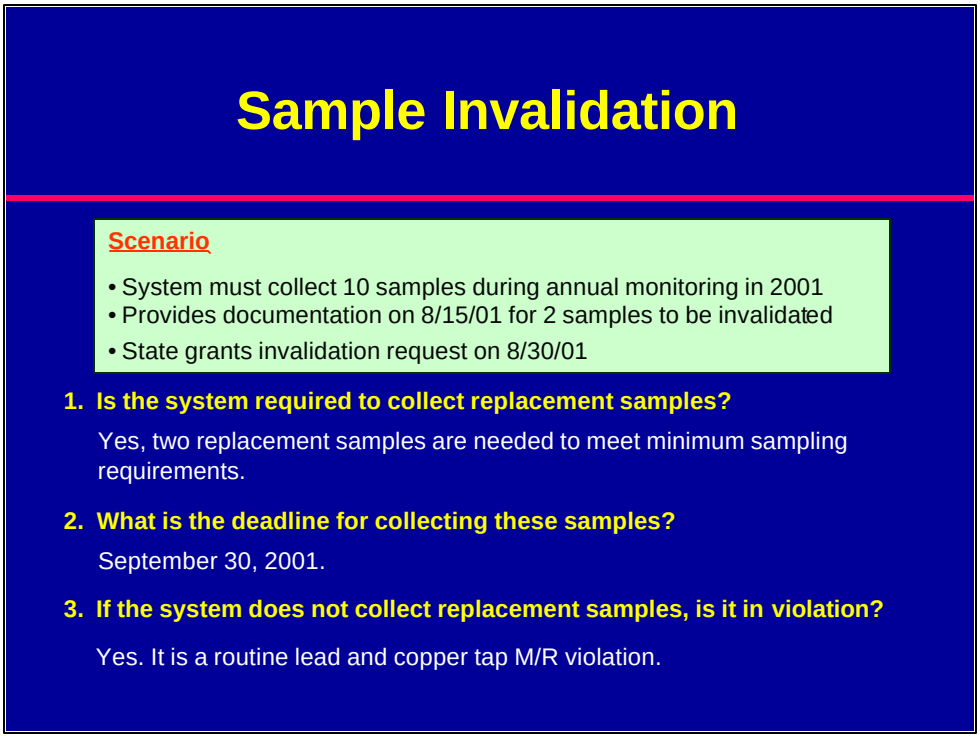
A system that was granted a waiver under the LCRMR must monitor once every 9 years from the last date it monitored. In this example, the system last monitored on July 1, 1998 and must collect its next round of samples by July 1, 2007.

Answer 2

The system is in violation because 9 years has passed since it last monitored. The violation is a routine lead and copper tap M/R violation (violation code 52). The begin date of this violation is July 2, 2007. The end date is defaulted to December 31, 2015. The system would lose its waiver because it no longer meets the waiver criteria. The system could reapply for a waiver once it has collected its samples, and the lead and copper 90th percentile levels are $\leq$ 0.005 mg/L and $\leq$ 0.65 mg/L, respectively.

Answer 3

As the violation did not occur during initial monitoring, it is considered a routine lead and copper M/R violation. The system in this example is not a SNC because a routine lead and copper M/R violation is not considered in the SNC calculation.



Answer 1

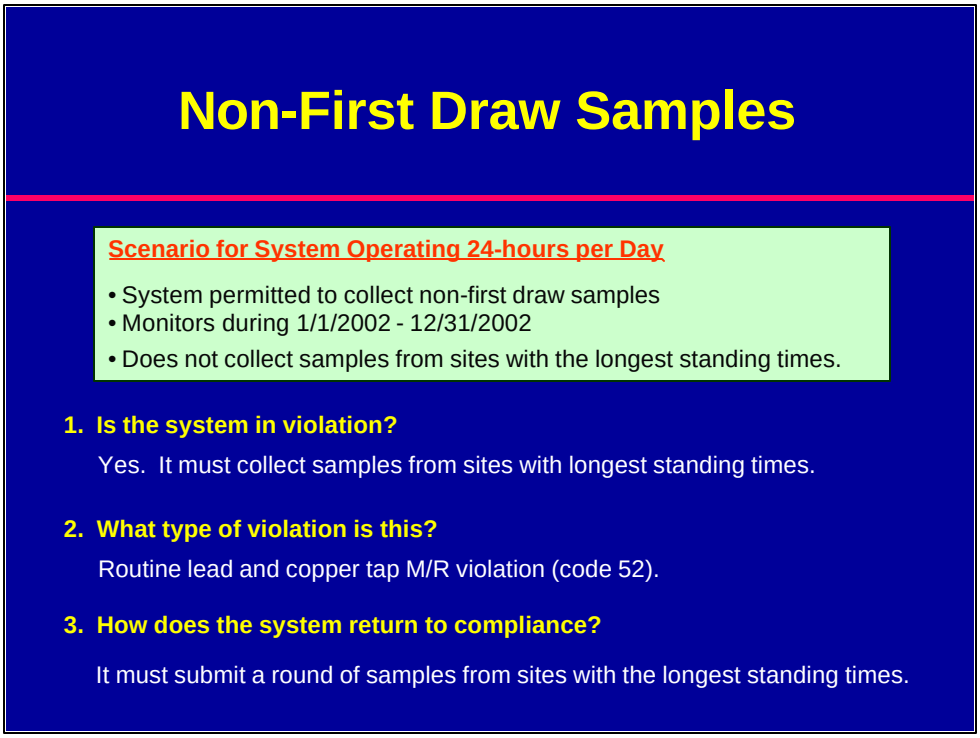
A system must collect replacement samples if they are needed to meet sampling requirements. In this example, the system would have been left with 8 valid samples and would not have met the minimum sampling requirements without collecting replacement samples.

Answer 2

The deadline for collecting these samples is within 20 days of the State's decision to invalidate the samples or by the end of the monitoring period, whichever is later. In this example, the deadline would be the end of the monitoring period (or by September 30, 2001).

Answer 3

Yes, failure to collect timely, required replacement samples is a lead and copper tap M/R violation. Because the system is on annual monitoring, the specific violation type would be a routine lead and copper M/R violation. Please note, that a system could also incur this violation during initial monitoring (for new systems or ones with pre-existing waivers that are monitoring for the first time) or during follow-up lead and copper tap monitoring. If the violation occurred during initial monitoring, the State would report a 51 violation. If the violation occurred during follow-up lead and copper tap monitoring, the State would report a 52 violation.



Answer 1

A system that does not have enough or any sampling locations that can provide first-draw samples must collect as many first-draw samples as possible, and then collect the remaining ones from sites with the longest standing times.

The system in this example had no sites from which it could obtain first-draw samples. The system is in violation because it did not collect its samples from locations with the longest standing times.

Systems are required to either:

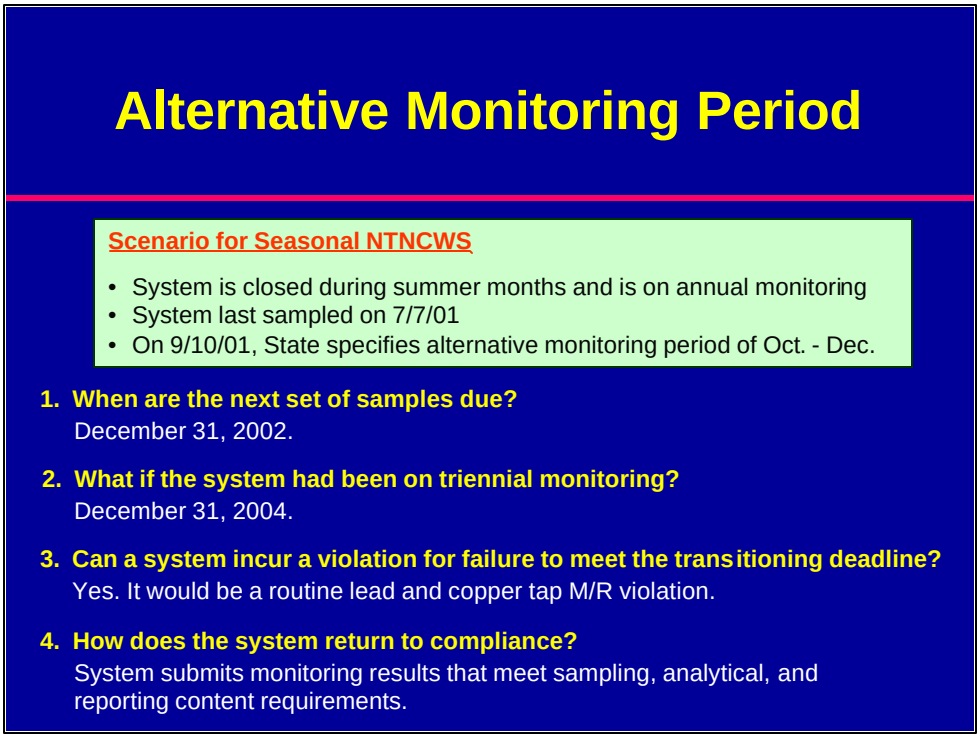
1. receive prior approval of a sampling plan for the collection of non-first draw samples, ***or***
2. provide documentation with their lead and copper sample results that identifies each site that did not meet the 6-hour minimum standing time and the length of standing time for that particular sample.

Answer 2

Failure to collect non-first draw samples from sites with the longest standing times is a lead and copper tap M/R violation. Because the system is on annual monitoring, the specific violation type would be a Routine lead and copper M/R violation (52 violation code). Assuming that this system is required to sample during June - September, the begin date of this violation is October 1, 2002; the end date is defaulted to December 31, 2015. Also note that a system could also incur this violation during initial monitoring (for new systems or ones with pre-existing waivers that are monitoring for the first time) or during follow-up lead and copper tap monitoring.

Answer 3

The system must collect samples from the appropriate sites during June - September (or other months approved by State).



Answer 1

The LCRMR allow a **maximum** of 21 months for a system on annual monitoring to transition to the new monitoring schedule or April 7, 2003 in this example. However, since this system must collect its samples during October - December, it only has until December 31, 2002 to complete this monitoring (a little under 18 months).

Answer 2

A system on triennial monitoring is allowed a **maximum** of 45 months to transition to a new monitoring period. Had this same system been on triennial monitoring, it only would have had until December 2004 to conduct its next set of monitoring (a little under 42 months).

Answer 3

If this system misses the December 31, 2002 deadline for monitoring and reporting or does not follow proper sampling procedures, it would incur a lead and copper tap M/R violation. Because this requirement is specific to systems on reduced monitoring, a system can only incur a routine lead and copper M/R violation for failure to meet the deadline for transitioning to the new monitoring schedule.

Answer 4

The system would return to compliance after it submitted monitoring results in subsequent monitoring period that met the sampling, analytical, and reporting content requirements. The earliest that the system collect these samples would be during October - December 2003.

Reduced Monitoring

Scenario

- Small system never completed 2 rounds of initial monitoring in 2, consecutive, 6-month periods, but has never exceeded action levels
- State approved reduction to triennial monitoring, and current monitoring period is 1/01/99 - 12/31/01
- System last sampled on 6/28/98

1. **Did the system meet the requirements for reduced monitoring?**

   No. The system must complete two rounds of standard monitoring in two consecutive, six-month compliance periods to qualify for annual monitoring.

2. **What if the system had completed two rounds of initial monitoring, but the samples were not collected in consecutive periods?**

   System must collect 2 consecutive 6-month rounds.

Answer 1

Because the system never met the requirements for reduced monitoring, it must return to the original, standard monitoring schedule and collect two consecutive rounds of monitoring. After completing two, consecutive, six-month compliance periods and confirm that they are at or below the action level, small or medium systems can collect samples at an annual frequency and at the reduced number of sites. Any size system can be reduced to annual monitoring if they meet their OWQPs, if applicable, for two consecutive, six-month compliance periods.

The system in this example can return to a triennial monitoring frequency if it:

- is at or below the action level for 3 consecutive years; or
- has lead level of $\leq$ 0.005 mg/L and copper level of $\leq$ 0.65 mg/L for 2 consecutive, 6 months, and
- the State has adopted the accelerated reduced monitoring provision under the LCRMR.

Answer 2

The rule specifies that a system must conduct two ***consecutive*** 6-month rounds of monitoring.

Accelerated Reduced Monitoring

Scenario for New Water System (population 5,500)

- System put into service on 1/10/00.
- Completes first round of initial monitoring by 6/30/00:
  Pb 90th = 0.008 mg/L; Cu 90th = 0.60 mg/L
- Completes second round of initial monitoring by 12/31/00:
  Pb 90th = 0.005 mg/L, Cu 90th = 0.60 mg/L

1. Is this system eligible for accelerated reduced monitoring?

No. Although it met the criteria for copper, the system did not meet the lead criteria, which require a 90th percentile value of less than or equal to 0.005 mg/L for two, consecutive, six-month periods.

2. Could the system be reduced to annual monitoring?

Yes. The system met the requirements for annual monitoring at a reduced number of sites.

Answer 1

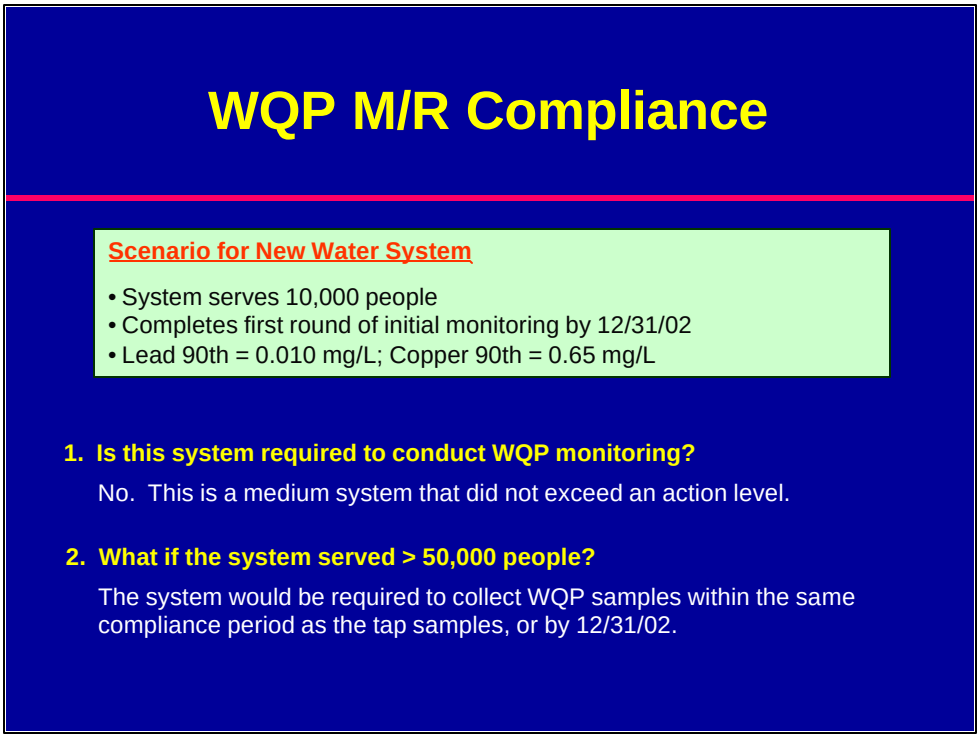
LCRMR permit systems to reduce to triennial monitoring after completing **two, consecutive, 6-month rounds** if they meet the following 90th percentile lead and copper levels at the tap:

- Lead levels of less than or equal to 0.005 mg/L; and
- Copper levels of less than or equal to 0.65 mg/L.

As the first round of sampling for this system was below the action level for lead but exceeded the above threshold, the system was ineligible for accelerated reduced monitoring. Accelerated reduced monitoring for one contaminant is not allowed when the other contaminant has a 90th percentile level above the specified threshold level.

Answer 2

The system was below the lead and copper action levels for two, consecutive, six-month rounds and therefore is eligible for annual monitoring. In addition, the system may collect a reduced number of samples: at 20 sites instead of 40.

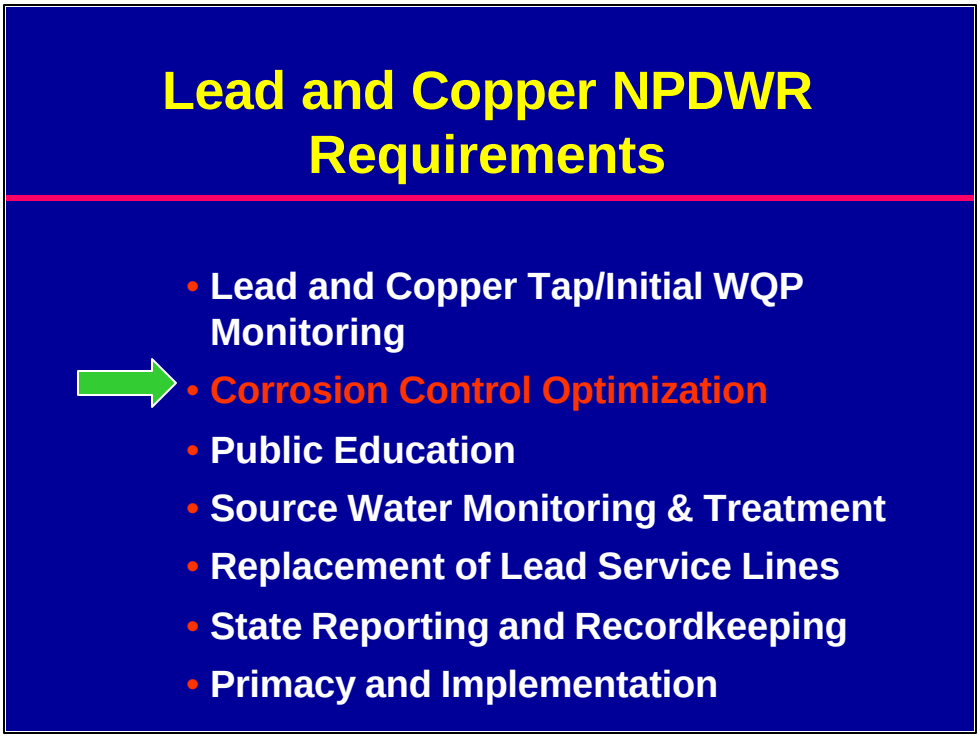


Answer 1

Medium and small water systems are only required to conduct WQP monitoring during those compliance periods in which they exceed the lead or copper action level. In this example, the system was a medium-size system and was below both action levels. Therefore, no WQP monitoring is required.

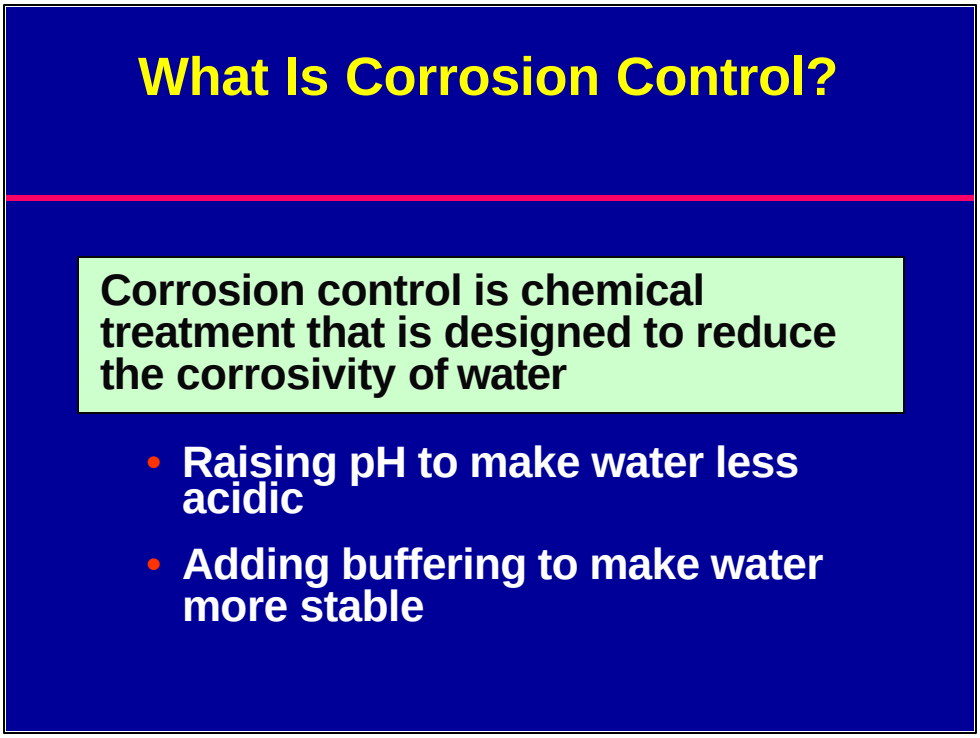
Answer 2

All large systems are required to conduct initial WQP monitoring, regardless of whether they exceed an action level. The system in this example is a new system and is conducting lead and copper monitoring for the first time.



This section discusses:

- Systems that must begin corrosion control treatment steps;
- Systems that have negligible levels of lead and copper in their distribution system and are not required to install corrosion control (i.e., are already considered to have optimized treatment); and
- Systems that have completed treatment steps that are equivalent to those described in the 1991 LCR prior to December 7, 1992.

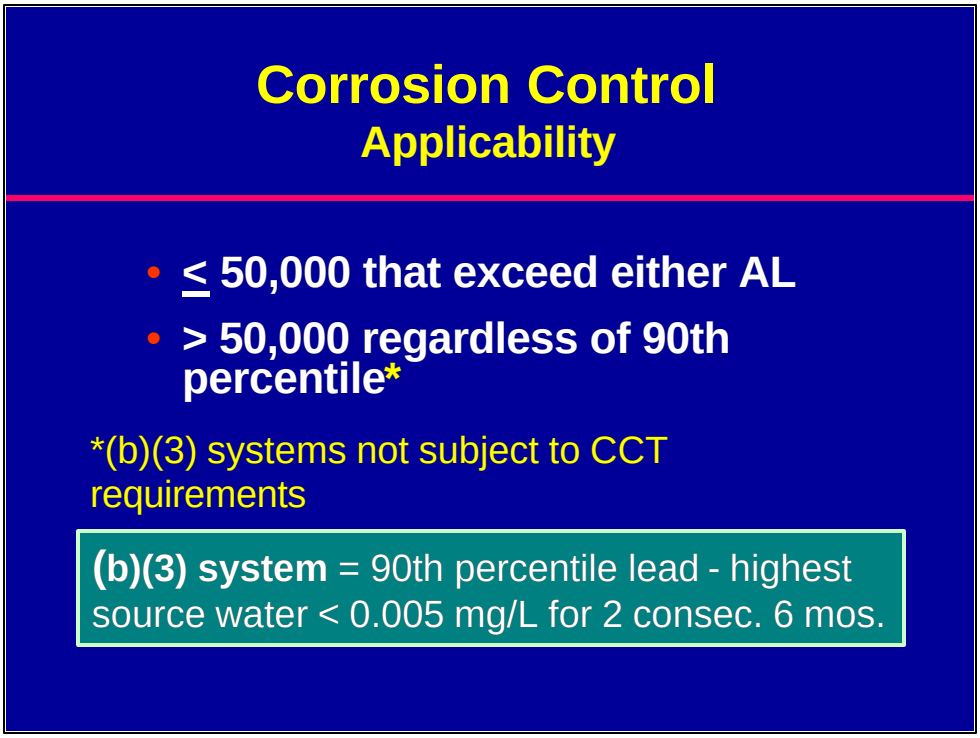


Because corrosion of lead and copper plumbing is the primary means by which lead and copper enters drinking water, corrosion control treatment may be required to help prevent lead and copper contamination of drinking water.

A variety of water quality parameters, including pH, alkalinity, temperature, and hardness, affect the corrosivity of water. Different types of treatment are used to address different water characteristics. For example, corrosion of plumbing materials occurs more quickly if the water flowing through lead and/or copper plumbing has a low pH or low alkalinity. If water is "aggressive" or corrosive, chemicals can be added to the water to adjust pH or alkalinity, thereby making it more stable or less aggressive. As will be discussed later in this section, the LCR requires some systems to perform corrosion control studies. As part of this study, a system must evaluate three types of treatments to determine which will provide optimal corrosion control:

- alkalinity and pH adjustment;
- calcium hardness adjustment; and
- addition of a phosphate- or silicate-based corrosion inhibitor.

Optimal Corrosion Control = "the corrosion control that minimizes lead and copper concentrations at users' taps while insuring that the treatment will not cause the water system to violate any National Primary Drinking Water Regulations".



A system must follow the corrosion control treatment (CCT) steps outlined in the regulation unless the system has already optimized corrosion control. A system can be optimized even if it has not installed CCT if it is:

- A small or medium-size system that is at or below both the lead and copper action levels (ALs) during two consecutive monitoring periods
- A (b)(3) system. Also, note that a system can qualify as a (b)(3) system after it installs corrosion control treatment.

Systems that meet the requirements of 141.81(b)(3), also known as (b)(3) systems are those systems that have demonstrated that they have very little corrosion entering the distribution system. A system qualifies as a (b)(3) system if for 2 consecutive 6-month rounds it can show that the difference between the 90th percentile tap water lead level and the highest source water lead concentration, is less than the Practical Quantitation Level for lead of 0.005 mg/L.

Note: The LCRMR expand the definition of a (b)(3) systems. This revision is discussed in more detail later in this section.

A small or medium-size system (i.e., those serving 50,000 or fewer) must begin CCT steps if it exceeds either the lead or copper AL.

All large systems (i.e., those serving more than 50,000), with the exception of (b)(3) systems, must begin CCT even if their 90th percentile lead or copper levels are ≤ the action level.

Corrosion Control Treatment
Steps

- Study/Treatment Recommendation by System
- State Treatment Determination
- Treatment Installation
- Follow-up Pb/Cu Tap & WQP Monitoring
- State-Specified Operating Parameters

We will go through each of these steps in more detail in the pages that follow.

Corrosion Control Optimization Study

- State discretion for ≤ 50,000
- Required for > 50,000, unless (b)(2) or (b)(3) system
- 18 months to complete
- System must identify constraints for:
  - pH and alkalinity adjustment
  - calcium hardness adjustment
  - corrosion inhibitors
- Fully document treatment recommendation

A study was required by July 1, 1994 for all large systems (> 50,000 people), unless they qualified for (b)(3) status. As discussed earlier, (b)(3) systems are not subject to corrosion control requirements, unless they no longer meet the (b)(3) criteria. Additional studies are not required for systems that meet the criteria in §141.81(b)(2) *(also known as a (b)(2) system)*. These systems performed these studies prior to December 31, 1992.

The study must evaluate the effectiveness of each of the following treatments:

- Alkalinity and pH adjustment;
- Calcium hardness adjustment; and
- The addition of a phosphate or silicate based corrosion inhibitor.

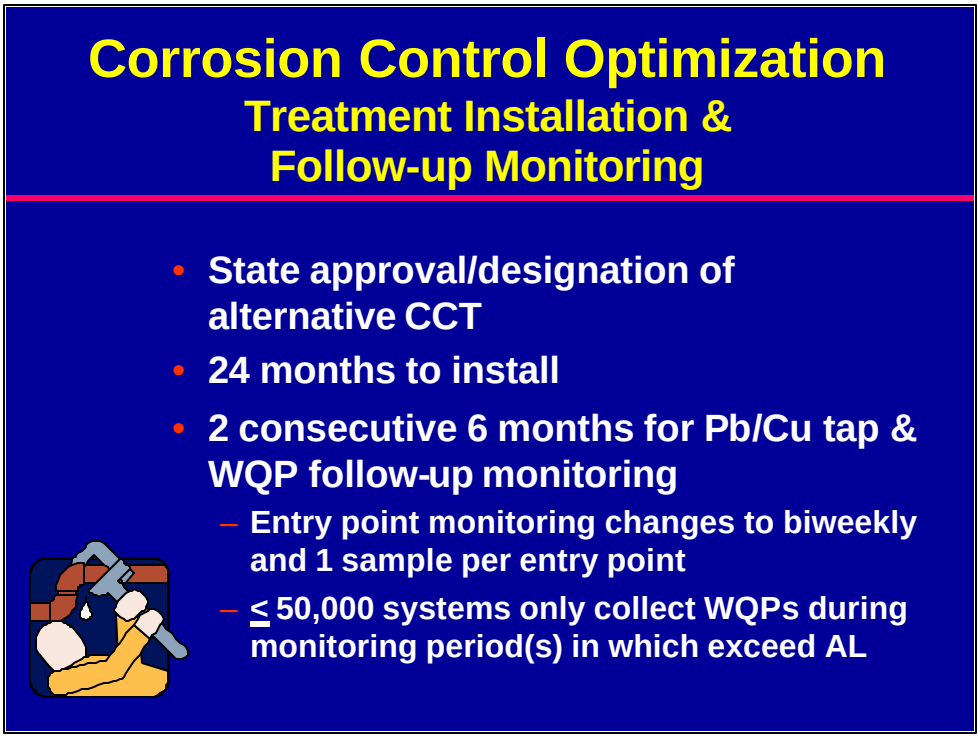
Systems serving ≤ 50,000 are required to recommend optimal corrosion control treatment within 6 months after exceeding an action level. The State determines whether these systems need to conduct a corrosion control treatment study. The State is required to make this decision within 12 months after a system exceeds the lead or copper action level.

Large systems were required to conduct this study by July 1, 1994. Small or medium-size systems are required to complete the study within 18 months after the State requires the study to be conducted. **Note:** A system that was a medium-size system during initial monitoring and later became a large system, would not be required to complete a study by July 1, 1994. Instead, the study would be due within 18 months after the State notified them that a study was required.

The system must identify constraints that limit or prohibit the use of a particular corrosion control treatment and document such constraints with at least one of the following:

- Data and documentation showing that a particular corrosion control treatment has adversely affected other water treatment processes when used by another water system with comparable water quality characteristics; and/or
- Data and documentation demonstrating that the water system has previously attempted to evaluate a particular corrosion control treatment and has found that the treatment is ineffective or adversely affects other water quality treatment processes.

For more information on CCT, refer to Lead and Copper Rule Guidance Manual; Volume II: Corrosion Control Treatment. (NTIS PB-93-101583).



State approval/Designation of treatment

After considering the information from the corrosion control study (where applicable), and a system's recommended treatment alternative, the State will either approve the treatment recommended by the system or designate alternative corrosion control treatment. The schedule for the decision is based on the system size and whether a study was required as follows:

System size	State Treatment Decision Due
Large	January 1, 1995 (i.e., 6 months after system submits study and recommendation)
Medium (no study)	within 18 months after system exceeds an AL
Medium (w/study)	6 months after study completion
Small (no study)	within 24 months after system exceeds an AL
Small (w/study)	6 months after study completion

Installation of treatment

Systems have 24 months to install treatment. For large system, treatment was to be installed by January 1, 1997.

Follow-up monitoring

Systems must conduct two consecutive 6-month rounds of lead and copper tap and WQP monitoring immediately following the installation of treatment. During follow-up monitoring, systems are required to collect 2 sets of WQP samples on different days at each of the required tap sites during each of the two, consecutive 6-month periods. The frequency of monitoring at entry points increases to no less frequently than every 2 weeks. The number of WQP samples collected at each entry point location changes from 2 samples to 1.

For large systems, follow-up monitoring was due by January 1, 1998. Small and medium-size systems were required to conduct follow-up lead and copper tap monitoring. For small and medium-size systems, WQP monitoring is only required during each of the 6-month follow-up monitoring periods in which they exceeded the lead or copper action level.

Corrosion Control Optimization
Designation of OWQPs

State-specified Operating Parameters Become Compliance Measures

- **pH**
- **alkalinity**
- **calcium**
- **orthophosphate**
- **silica**

State sets OWQPs within 6 months of receiving follow-up results

The State uses the lead and copper and WQP data collected before and after the installation of CCT to set WQP ranges or minimums (called optimal water quality parameters or OWQPs) that indicate that a system is operating corrosion control treatment at a level that most effectively minimizes the lead and copper concentrations at users' taps. The State sets ranges or minimums for the following OWQPs at entry points and within the distribution system (i.e., tap samples) within 6 months of receiving lead and copper and WQP follow-up monitoring results:

- pH
- alkalinity *(when alkalinity is adjusted)*
- orthophosphate *(when a phosphate inhibitor is used)*
- silica *(when a silicate inhibitor is used)*
- calcium *(when calcium carbonate stabilization is used as part of corrosion control)*

The State can designate values for additional water quality control parameters. In addition, OWQPs set by the State are federally-enforceable standards. As discussed in more detail later in this section, failure to meet these OWQPs can lead to a violation.

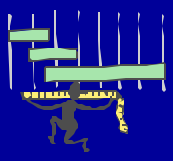
The concentration of each applicable WQP is measured at entry points and at a specified number of sites within the distribution system. Measurements at the entry points also include a reading of the dosage rate of the chemical used to adjust the alkalinity (if applicable) and a reading of the dosage rate of the inhibitor used (if applicable).

Corrosion Control Optimization
Monitoring after OWQPs Specified

WQP tap monitoring every 6 months*

Reduced tap WQP monitoring if system in compliance with OWQPs for:

- **2 consecutive 6 months Ô reduced no. of sites**
- **3 consecutive years of 6-month monitoring Ô annual frequency**
- **3 consecutive years of annual monitoring Ô triennial frequency**



Entry point remains biweekly

*** Systems serving ≤ 50,000 people, and ≤ both ALs, are not required to collect WQPs**

After the State sets OWQPs, a system can qualify for a reduction in the amount of monitoring conducted at tap locations **only**. This reduction does not apply to entry point WQP monitoring that remains at a frequency of every two weeks.

If the system is in compliance with its OWQPs after 2 consecutive, 6-month monitoring periods, it can reduce the number of sample sites at which it collects tap samples from the standard number to the reduced number. However, 2 samples are still required at each location.

System size	Standard no. of sites	Reduced no. of sites
>100,000	25	10
10,001-100,000	10	7
3,301 to 10,000	3	3
501 to 3,300	2	2
101 to 500	1	1
≤ 100	1	1

A system that is in compliance with its OWQPs for 3 consecutive years, can qualify for annual WQP tap monitoring.

A system that is in compliance with its OWQPs for 3 consecutive years of tap monitoring at the annual frequency, can qualify for triennial WQP tap monitoring.

Remember: A small or medium-size system is not required to conduct WQP monitoring during any monitoring period that it is at or below the lead or copper action level, unless required by the State.

Corrosion Control Optimization
Discontinuing Treatment Steps

≤ 50,000 can stop CCT steps if at or below both ALs for 2 consecutive monitoring periods

Must recommence steps if exceed during any subsequent round

A small or medium-size system can discontinue corrosion control treatment steps if it is at or below the lead and copper action levels for two, consecutive, 6-month monitoring periods. Although not required by the LCR, the system has the option to continue to conduct lead and copper tap monitoring, while implementing the corrosion control treatment steps. For example, a small or medium-size system could continue collecting lead and copper tap samples while the State was determining whether the system needed to conduct a study, during the time period that the system was required to conduct a study, and/or during the 24-month period for treatment installation. If the system was at or below both action levels during two consecutive, 6-month monitoring periods (and monitoring met the requirements in §141.86), it could discontinue the corrosion control treatment steps.

If in any future monitoring the system again exceeds either action level, it must begin CCT steps again, beginning with the treatment step that did not complete or where the State determines the system should start.

LCR Minor Revisions
Optimized Systems with CCT

LCRMR clarify that "optimized" systems with treatment in place must:

- **Maintain corrosion control treatment; and**
- **Meet requirements that State determines are needed to maintain optimal treatment**

- Implement on April 11, 2000

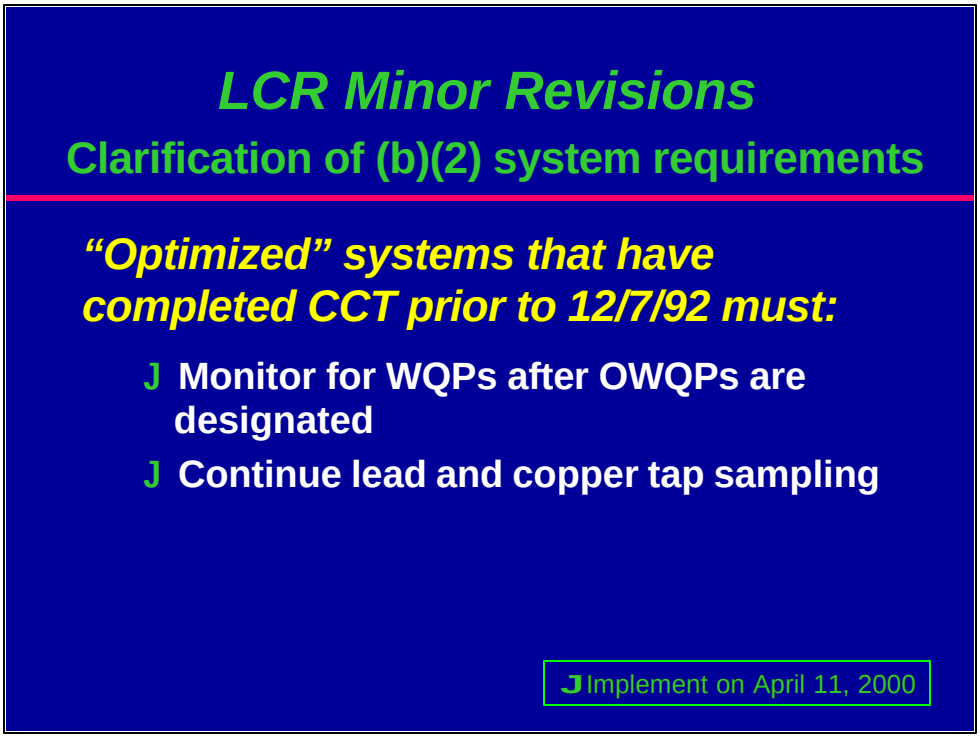
These LCRMR provisions ***clarify*** the requirements for systems that are "deemed to have optimized corrosion control" and have **treatment in place**, but which are not required to collect WQPs. These systems include:

1. Small or medium-size systems that have completed treatment steps that are equivalent to those in the LCR, prior to the 1991 Rule (i.e. before 12/7/92) and
2. Systems that installed treatment after 12/7/92, and then meet the criteria in:
   - 141.81(b)(1) = a small or medium system that is at or below both action levels during two consecutive 6-month rounds of monitoring
   - 141.81(b)(3) = a system has minimally corrosive water in their distribution systems.

States must ensure treatment is properly operated and maintained at all times. In many cases, appropriate operational controls are already in place. Controls may involve dosage logs, WQP monitoring, and other monitoring.

Systems must meet any requirements the State deems are needed to ensure this treatment is maintained, such as additional monitoring. States must maintain records of any additional requirements that they impose on a water system.

Remember: A system can also be optimized even if it has not installed CCT. A system can qualify as a (b)(1) or (b)(3) system without installing CCT.



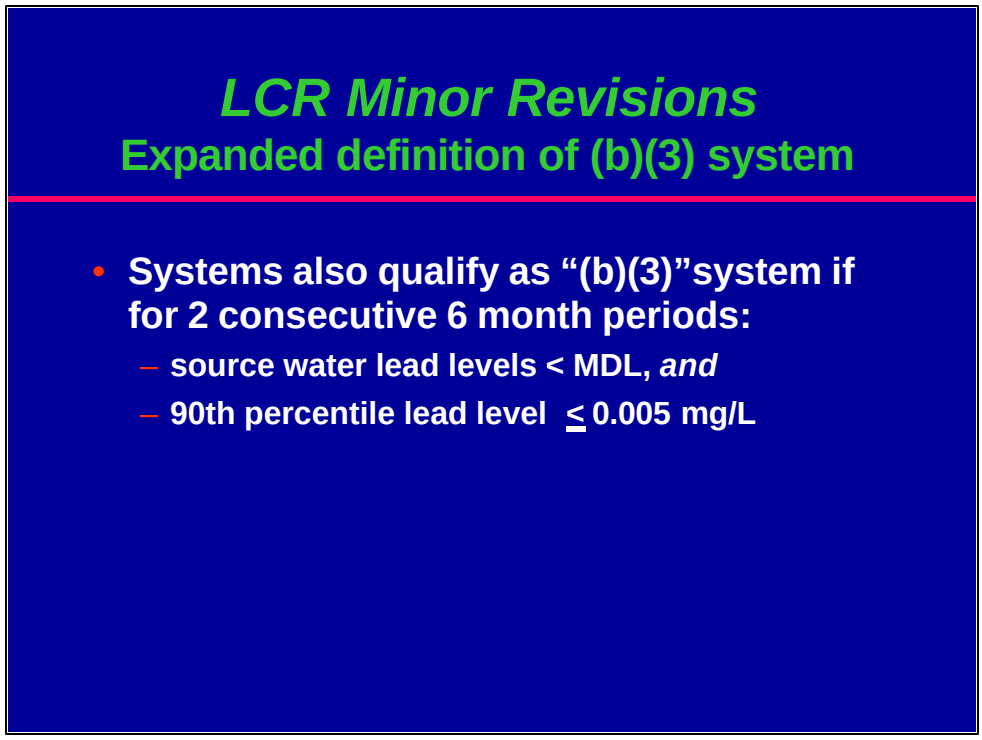
These LCRMR provisions outline requirements for systems that are deemed to have optimized corrosion control after demonstrating that they completed CCT steps equivalent to those described in the 1991 Rule, prior to 12/7/92 (also known as (b)(2) systems). The LCR was unclear regarding what monitoring requirements applied to systems that meet the (b)(2) criteria.

These changes are intended to ***clarify*** the language of the original rule.

(b)(2) systems must:

1. Routinely monitor for water quality parameters after the State designates optimal water quality parameters (OWQPs), [except those systems that serve 50,000 and fewer people and no longer exceed an action level.] Entry point WQP monitoring is conducted every 2 weeks. Tap WQP monitoring is conducted every 6 months at the standard number of sites, until the system qualifies for reduced WQP tap monitoring. WQP monitoring would not be required for small and medium-size systems during any monitoring period in which they do not exceed the lead or copper action level, unless required by the State.

2. Continue lead and copper tap sampling at a frequency of once every 6 months at the standard number of sites, until the system qualifies for reduced monitoring.



Expanded (b)(3) definition: Systems can now also be deemed "optimized" under §141.81(b)(3) by demonstrating that source water lead levels are below the Method Detection Limit (MDL) *and* the 90th percentile lead level is ≤ 0.005 mg/L for 2 consecutive, 6-month monitoring periods.

This new criterion was added because systems with undetectable source water lead levels and low 90th percentile lead levels could be precluded from qualifying as a (b)(3) system, under the 1991 LCR. This is because source water levels that are below the MDL must be reported as 0; whereas, levels above the MDL, but less than 0.005 mg/L must be reported as 0.0025 mg/L. This point is more clearly illustrated in the two examples below.

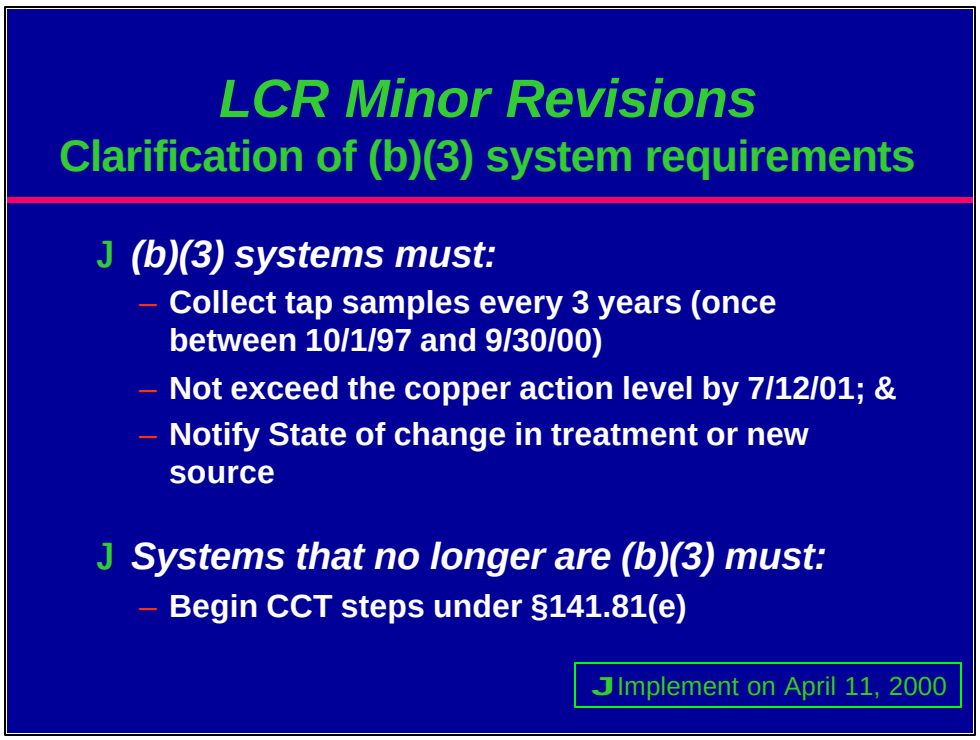
- **Example 1:** A system with source water lead levels just below a MDL of 0.001 mg/L and a 90th percentile tap level of 0.005 mg/L would not be deemed to be optimized using the 1991 (b)(3) criteria, which requires the difference to be < 0.005 mg/L. The difference here would be 0.005 mg/L, as shown in the following equation:

  0.005 mg/L - 0 mg/L = 0.005 mg/L.

- **Example 2:** With a lead MDL of 0.001 mg/L, a system with source water levels of 0.0011 mg/L and a 90th percentile of 0.005 mg/L would be optimized under the 1991 criteria because the source levels could be reported as 0.0025 mg/L. The difference here would be 0.0025 mg/L, as shown in the following equation:

  0.005 mg/L - 0.0025 mg/L = 0.0025 mg/L.

The (b)(3) criteria primarily applies to large systems and allows them to forego WQP monitoring. However, States may want to require those large systems that qualify as (b)(3) systems after installing CCT to conduct WQP monitoring. Systems meeting the new (b)(3) criterion must follow the requirements of §141.81(b)(3), including the revisions that are discussed on the next page.



The LCRMR clarify the monitoring requirements for systems that qualify as (b)(3) systems. The LCR was ambiguous regarding monitoring requirements for these systems.

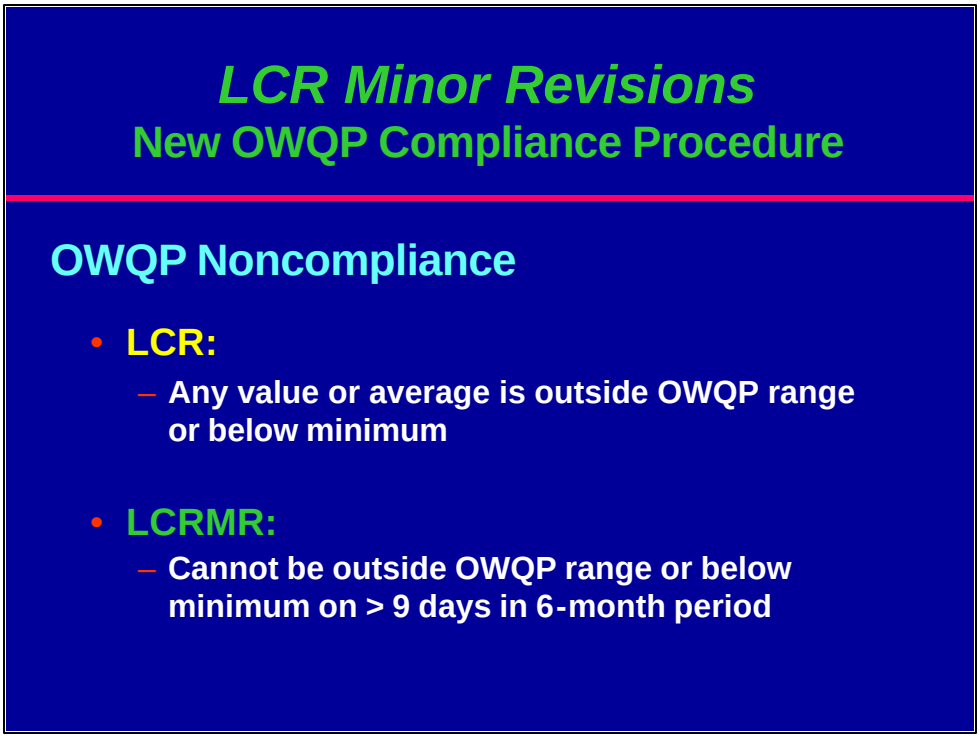
The LCRMR require (b)(3) to:

1. Conduct one round of monitoring between 10/1/97 and 9/30/00 at the reduced number of sites, and collect lead and copper tap samples at least once every 3 years, thereafter ***(Clarification of 1991 Rule).*** Some States already require triennial or more frequent monitoring. In these instances, there will be no need to change already existing monitoring periods.
2. Not exceed the copper action level by 7/12/01**.** The LCR did not contain language that prevented systems from qualifying as (b)(3) systems if they exceeded the copper action level. The LCRMR correct this oversight by specifying that systems that exceed the copper action level on or after July 12, 2001 no longer qualify as a (b)(3) system and must begin CCT steps. The July 12, 2001 date is 18 months after the rule was published in the *Federal Register* and allows systems time to make changes to reduce copper levels and to conduct 2 additional rounds of monitoring.
3. Notify States in writing of any change in treatment or addition of a new source within 60 days of the change, unless they require earlier notification. States may require systems to conduct additional monitoring or other activities to ensure that optimal corrosion control is maintained. States must keep records of any decisions that require a system to conduct additional actions in response to the change in treatment/source addition.

Systems that no longer meet the (b)(3) criteria

The LCRMR specify that any system that no longer meets the (b)(3) criteria must begin CCT steps. Large systems must follow the corrosion control treatment schedule for medium-size systems outlined in §141.81(e) *(because the deadlines for large systems have already passed)*, beginning with the requirement to complete a corrosion control study. These systems must complete this study within 18 months of the date they were triggered into the corrosion control treatment steps.

Note: The State may require the system to continue to collect source water samples in order to confirm their (b)(3) status.



EPA developed **new criteria for evaluating compliance**. Under the 1991 Rule, any value outside the OWQP range or below the OWQP minimum set by the State would result in a violation. Systems were allowed to take confirmation samples within 3 days and average the two results. Problems with the old approach are:

- Disincentive for those monitoring more often than the required biweekly frequency.
- Averaging is not a sound approach, as shown in the example below.

Example: Assume an OWQP pH range of 7.3 to 7.8 for a system. Averaging would make attainment of a passing average possible in a case where a caustic feed pump is used at the wellhead or at the end of a water plant feeding into the system, and the system is not adequately controlling the pump. The system could collect a sample with a pH of 6.9. Three days later, they could collect a second sample with a pH of 8.4. Both results are outside of the OWQP range. The average (7.6) is within the range, but the process control is poor.

Although, adoption of this new procedure is not required to maintain primacy, EPA strongly encourages States to do so, as it should result in fewer violations and it more accurately characterizes systems with process control problems.

LCR Minor Revisions
New OWQP Compliance Procedure (Cont.)

- **New criteria for evaluating OWQP compliance:**
  - **Compliance based on a 6-month period**
  - **First 6-month period begins when State specifies OWQPs**
  - **Daily values determined for each WQP at each sampling location**
  - **Daily values determined even if no monitoring has occurred**

The LCRMR do not change WQP monitoring frequencies; only the way in which compliance is determined. Compliance determinations are always based on a 6-month period, regardless of the system's monitoring schedule (daily, biweekly, semi-annually, annually, etc.) or whether systems are collecting WQPs at taps or entry points. The first six-month period begins on the date the State specifies OWQPs.

Daily values must be determined for each WQP at each sampling location. Daily values are determined based on the frequency of sampling for the parameter at the sampling location. It is quite possible for a system to collect several samples a day for a given WQP at one sampling location and to conduct annual monitoring at another. Although the term "daily values" contains the word "daily", in many instances, the daily value represents a measurement that was collected more or less frequently than once per day.

If measurements for the parameter are collected at the sampling location:

- more frequently than once a day, the daily value is the average of all the results measured at the sampling location for the parameter during the day (regardless of whether the results are measured through continuous monitoring, grab samples, or both). *(A State can use another procedure than averaging for determining compliance, if it outlines this approach in its special primacy considerations and EPA approves it.)*
- no more frequently than once a day at a sampling location, but no less frequently than every six months, the daily value is each measurement collected during the six-month period that is being evaluated.
- less frequently than once every six months, the daily value is(are) the most recent measurement(s) taken, even if that measurement was collected during a previous monitoring period. For example, a system is on annual WQP tap monitoring during 2000. The system collects measures pH at the tap on January 10, 2000 (pH = 7.5) and June 20, 2000 (pH = 7.6). For the 6-month period of January to June 2000, there are two daily values because both measurements were collected during the 6-month period being evaluated. For the 6-month period of July to December 2000, only the most recent value of 7.6 is used. Thus, daily values are calculated even if no monitoring has occurred.

LCR Minor Revisions
New OWQP Compliance Procedure (Cont.)

Excursions

- **Excursion = "daily value" below the minimum value or outside the OWQP range**
- **Multiple excursions on same day count as 1 excursion**
- **Cannot have excursions on > 9 days during 6 month monitoring period**
- **> 9 days in 6 month period with excursions = violation**
- **Systems in violation return to standard Pb/Cu tap and WQP tap monitoring**

An excursion is any "daily value" for a WQP that is below the minimum value or outside the range of OWQPs set by the State.

To determine the duration of the excursion:

1. Count the first day that the sample is outside the OWQP range or below the minimum. Use the date that the sample was collected and not the day the State receives the results.
2. Stop counting days when a sample result from the same location and for the same parameter meets the OWQP range or is above the minimum value. Do not count the day the sample falls within the OWQP or is above the minimum value in the calculation.
3. Repeat this procedure any time a measurement does not meet the OWQP specifications.

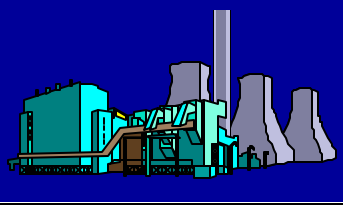
A system cannot have an excursion on more than a total of 9 days during a 6-month period. The 9 days can be consecutive or occur anytime in the 6-month monitoring period. This is roughly equivalent to no excursions for 95% of the time.

Systems with excursions on more than 9 days are in violation and must report this to the State within 48 hours of determining their noncompliance. These systems revert back to standard monitoring for WQPs and for lead and copper tap monitoring, if they qualified for reduced monitoring based on meeting OWQPs.

Please note, that a system can have an "unresolved excursion" from a previous 6-month monitoring period that may need to be considered in the current 6-month period that is being evaluated. This point is more clearly explained in the OWQP examples that are located in Section 9, beginning on page A-1. These examples are from the guidance document, *How to Determine Compliance with Optimal Water Quality Parameters as Revised by the Lead and Copper Rule Minor Revisions*, February 2001, EPA 815-R-99-019. Solutions to these examples are also provided in Section 9 on pages A-24 through A-34.

LCR Minor Revisions
Representative WQP Entry Point Monitoring

- Applies to ground water systems
- Limits entry point WQP monitoring to representative sites after CCT installed
- Must demonstrate sites are representative of water quality conditions throughout system



Representative sites for entry point WQPs

Some ground water systems, especially in the western States, can have dozens or even more than a hundred wells and it can be difficult and expensive to conduct biweekly monitoring at each entry point. Ground water systems subject to WQP monitoring requirements after the installation of CCT may limit their entry point monitoring to those locations that are representative of water quality conditions throughout the system. This provision does not apply to surface water systems because these systems typically do not have large numbers of entry points.

At a minimum, these systems must monitor for WQPs both at some points receiving treatment and at some points receiving no CCT if the water from those points mixes with other treated source water in the system.

Systems taking advantage of this provision are required to provide sufficient documentation to the State to demonstrate that the locations monitored are representative of water quality throughout the system. The specific documentation to be provided may vary depending on the system's characteristics and State's specific reporting requirements.

The documentation supporting the selection of these representative sites must be submitted to the State prior to the start of any routine WQP monitoring that uses representative sites.

States must maintain records of any decisions pertaining to representative entry point WQP monitoring.

LCR Minor Revisions
Accelerated Reduced Tap WQP Monitoring

- Applies to > 50,000
- Applies to distribution ("tap") WQP monitoring

- Allows systems to monitor triennially for tap WQPs more quickly than before
- System must for 2 consecutive monitoring periods:
  - qualify for accelerated Pb/Cu tap monitoring &
  - be in compliance w/ OWQPs

Accelerated Reduced WQP monitoring

In general, this provision will apply to large systems (those serving > 50,000 people) because unless required by the State, small and medium systems that are at or below both action levels are not subject to WQP monitoring requirements.

A system can reduce to a triennial monitoring schedule for WQP tap samples without conducting interim rounds of monitoring, if it:

1. demonstrates during 2 consecutive monitoring periods that:
   - its 90th percentile lead levels are $\leq$ 0.005 mg/L (i.e., PQL) and
   - its 90th percentile copper levels are $\leq$ 0.65 mg/L (i.e., 1/2 action level),
2. is in compliance with its OWQP ranges or values.

The system does not need State approval to monitor on an accelerated schedule.

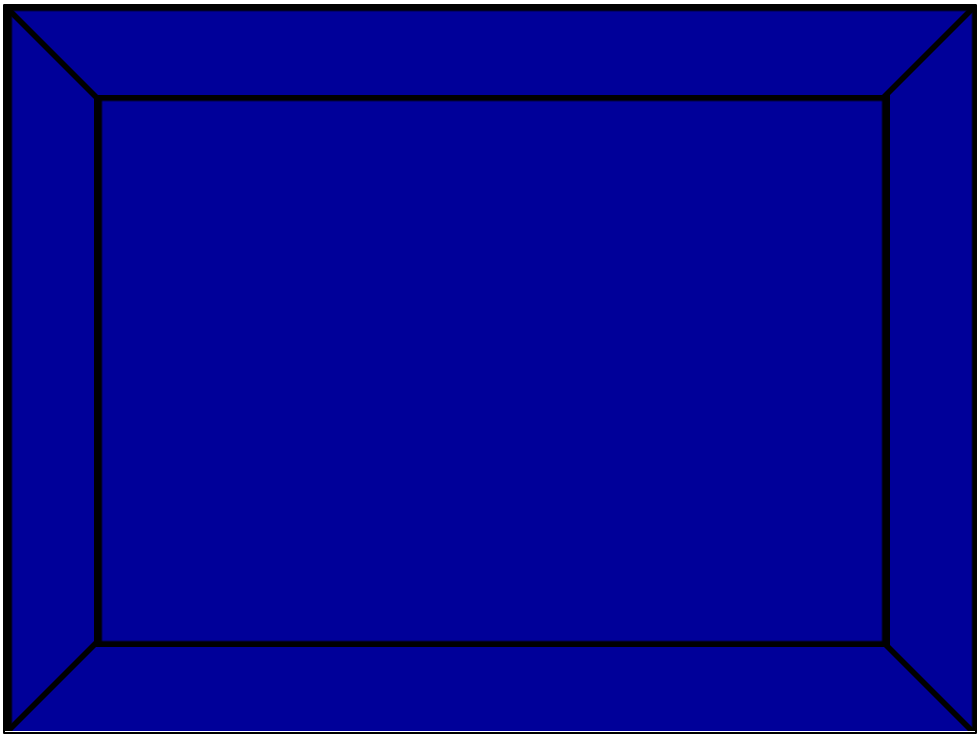
This provision does not impact entry point WQP monitoring. After the installation of treatment, entry point WQP monitoring is still required at a minimum frequency of every 2 weeks.

LCR Minor Revisions
Summary of CCT Revisions

- Clarification of treatment operation and monitoring requirements for:
  - Systems with CCT installed
  - (b)(3) systems
- (b)(3) systems cannot exceed the copper AL
- System with source lead < MDL can qualify as (b)(3) system
- New OWQP compliance procedure
- Representative WQP entry point monitoring
- Accelerated reduced WQP "tap" monitoring

Implement on April 11, 2000

LCRMR Revision	Where to Find It
Continued requirements for systems with CCT that are not required to conduct WQP monitoring	§141.81(b)
Continued requirements for (b)(2) systems with treatment in place prior to 12/7/92	§141.81(b)(2)
Continued requirements for (b)(3) systems	§§141.81(b)(3)(ii)-(v)
Requirement for (b)(3) systems to not exceed the copper action level	§141.81(b)(3)(iv)
Allowance for systems with source water below MDL to qualify as (b)(3) system	§141.81(b)(3)(i)
Change in compliance procedure for OWQPs	§141.82(g) & §141.87(d)
Representative WQP entry point monitoring & associated system reporting requirements	§§141.87(c)(3) & 141.90(a)(5)
Accelerated reduced WQP tap monitoring	§141.87(e)(2)(ii)

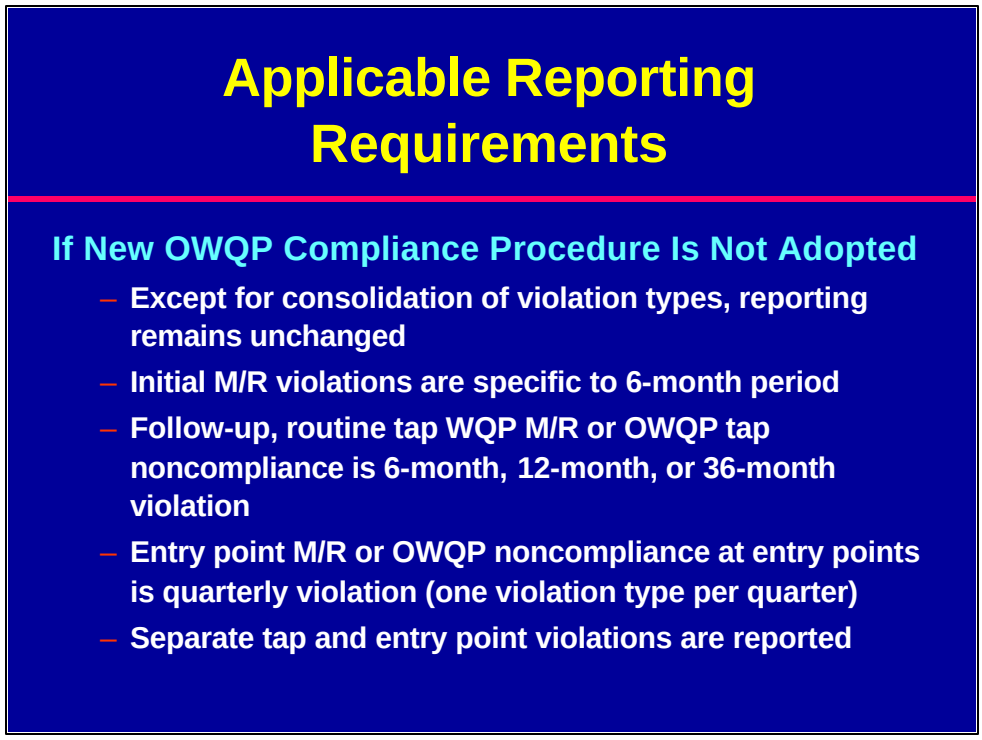


Applicable Reporting Requirements

- **Reported as 53 violation type**
  - **Initial WQP M/R (pre-LCRMR code = 53)**
  - **Follow-up or routine entry point WQP M/R (pre-LCRMR code = 54)**
  - **Follow-up or routine tap WQP M/R (pre-LCRMR code = 55)**
- **Reported as 59 violation type**
  - **WQP Entry Point Noncompliance (pre-LCRMR code = 59)**
  - **WQP Tap Noncompliance (pre-LCRMR code = 60)**

All WQP M/R violations are consolidated under the violation code type 53. All violations resulting from noncompliance with OWQPs are reported as a 59 violation type regardless of whether they occur at the entry point or tap.

The 53 violation and 59 violation types are the only violation types in which the begin date is ***not*** the day after the end of the compliance period and the end date is ***not*** defaulted to December 31, 2015. The begin and end dates for these two violation types depend on whether the State has adopted the new procedure for determining compliance with OWQPs. A more detailed explanation of the difference in reporting requirements is discussed on the next three pages.



If the State *has not* adopted the new OWQP compliance procedure . . .

The reporting of begin and end dates remains unchanged from that described in the original LCR monitoring guidance (i.e., Lead and Copper Rule, Definitions and Federal Reporting for Milestones, Violations and SNCs, May 1992), except that SDWIS/FED can accommodate a WQP tap M/R violation with a compliance period of 36 months. Previously, SDWIS/FED accepted WQP tap M/R violations with a compliance period of 6 or 12 months only.

- **Initial WQP M/R**

  For an initial WQP M/R violation, the begin date is the first day of the 6-month monitoring period in which the monitoring was required to be conducted and the end date is the last day of this period. If a system is out of compliance for both its entry point and tap WQP monitoring requirements during initial monitoring, only one violation is reported.

- **Follow-up/RoutineWQP M/R and OWQP Noncompliance Violations**

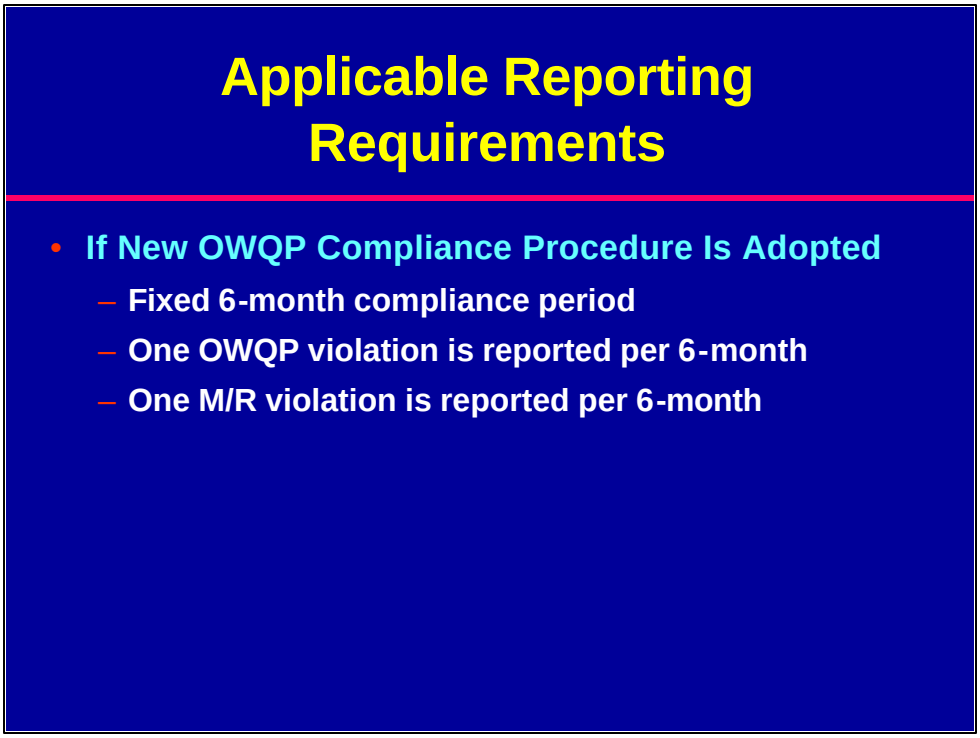
  After corrosion control treatment has been installed, monitoring for tap and entry point WQPs occurs on different monitoring frequencies (i.e., entry point monitoring is biweekly, and tap WQP monitoring is semi-annual, annual, or triennial). In addition, the State may set OWQPs with which the system must comply.

  Entry Point WQP Violations

  All entry point WQP violations and OWQP noncompliance violations are quarterly violations. All entry point M/R violations that occur in one quarter are reported as one violation. Similarly, all entry point OWQP noncompliance violations that occur in a quarter are reported as one violation. If both M/R and OWQP noncompliance violations occur during the same quarter, both violation types are reported.

  Tap WQP Violations

  Tap WQP M/R and OWQP noncompliance violations are 6-month, 12-month, or 36-month violations. A system can incur both a tap M/R and OWQP non-compliance violation during the same compliance period. In this event, two separate violations are reported (i.e., a separate 53 and 59 violation type).



If the State *has* adopted the new OWQP compliance procedure . . .

- ***Initial WQP M/R***

  An initial WQP M/R violation would occur before the State sets OWQPs. Therefore, the procedure for reporting this violation is the same whether or not the State adopts the new OWQP compliance procedure. Refer back to page 22 for more detail.

- ***Follow-up/RoutineWQP M/R and OWQP Noncompliance Violations***

  A 6-month fixed compliance period is used to report both entry point or tap WQP M/R violations. This change was made because the revised procedure for determining compliance with OWQPs is always based on a 6-month period, regardless of the system's monitoring schedule (e.g., daily, biweekly, semi-annually, annually, triennially) or whether the WQP results are from an entry point or tap samples. The violation is specific to the 6-month period for which compliance with OWQPs is being determined. This means that if a system annual WQP tap monitoring and it did not conduct its monitoring, it would incur two, separate, 6-month violations. Similarly, if the system did not conduct its triennial WQP tap monitoring, it would incur six, separate, 6-month violations.

  To simplify reporting, **any** combination of WQP noncompliance violations during a 6-month period will be reported as a **single** violation for that 6-month period. Similarly, one M/R violation is reported per 6-month period, regardless of whether the system incurred a violation at both a tap and entry point location.

  The begin date for a 53 or 59 violation is the first day of the compliance period. The end date is the last day of the compliance period. To facilitate compliance tracking, the State may designate a January to June or July to December period.

Applicable Reporting Requirements

WQP M/R & OWQP Noncompliance Violations

Regardless of whether the new OWQP compliance procedure is adopted:

- **RTC must be reported**
- **Intentional No-Action candidate apply in certain circumstances**
- **No SNC conditions**

A large system must continue to monitor every 6-month period beginning from the day the State designates the optimal water quality parameters. During the 6-month period, it will be conducting entry point monitoring no less frequently than every two weeks. Therefore, it can not make up for missed samples and must complete all WQP monitoring requirements in the following 6-month period before it may be returned to compliance.

For a medium or small system, WQP monitoring is only required during the period of lead and/or copper tap exceedance; however, because this information is used to evaluate the need for, or effectiveness of CCT, one round of WQP monitoring at both taps and entry points must be completed before the system is considered to be RTC.

To return to compliance with WQP Noncompliance violations, a system must complete all WQP monitoring at all locations for an entire six-month period and cannot incur an OWQP noncompliance violation.

Those medium and small systems which incurred a WQP noncompliance (TT) violation and subsequently fell below the lead and copper action levels are no longer required to monitor for WQPs. These systems do not actually return to compliance. In this scenario, where they are no longer required to monitor, the Primacy Agency should report an “Intentional No-Action” Enforcement/Follow-up Action record (code SO6 if reported by the State or EO6 if reported by EPA) instead of an RTC. For a complete list of circumstances under which an intentional no-action should be reported in lieu of an RTC, refer to page A-47.

A system cannot become an SNC for incurring a WQP monitoring or WQP noncompliance violation.

Applicable Reporting Requirements

OCCT Treatment Technique Violations

- **No violation code changes to:**
  - **OCCT study/recommendation (57 violation code)**
  - **OCCT Installation/Demonstration (58 violation code)**
- **Consolidated OCCT/SOWT Installation and/or Demonstration into one SNC**

The violation type code 57 has been expanded to include both:

- optimal corrosion control treatment study and/or recommendation violations, and
- source water recommendation violations.

The violation type code 58 has been expanded to include both:

- optimal corrosion control treatment installation/demonstration violations, and
- source water treatment installation violations.

The begin date for both 57 and 58 violations is the day after the event was required to be completed. The end date is defaulted to December 31, 2015.

With the consolidation of the OCCT and SOWT installation violation types, EPA will no longer produce separate SNCs for these two violations. Instead, EPA will list a system that meets the OCCT Installation SNC criteria or SOWT Installation SNC criteria as a Treatment Installation/Demonstration SNC.

The basic definition for this SNC has remained the same, a system that incurs a treatment installation violation and has a 90^{th} percentile lead level of $\geq$ 0.030 mg/l in most recent monitoring period.

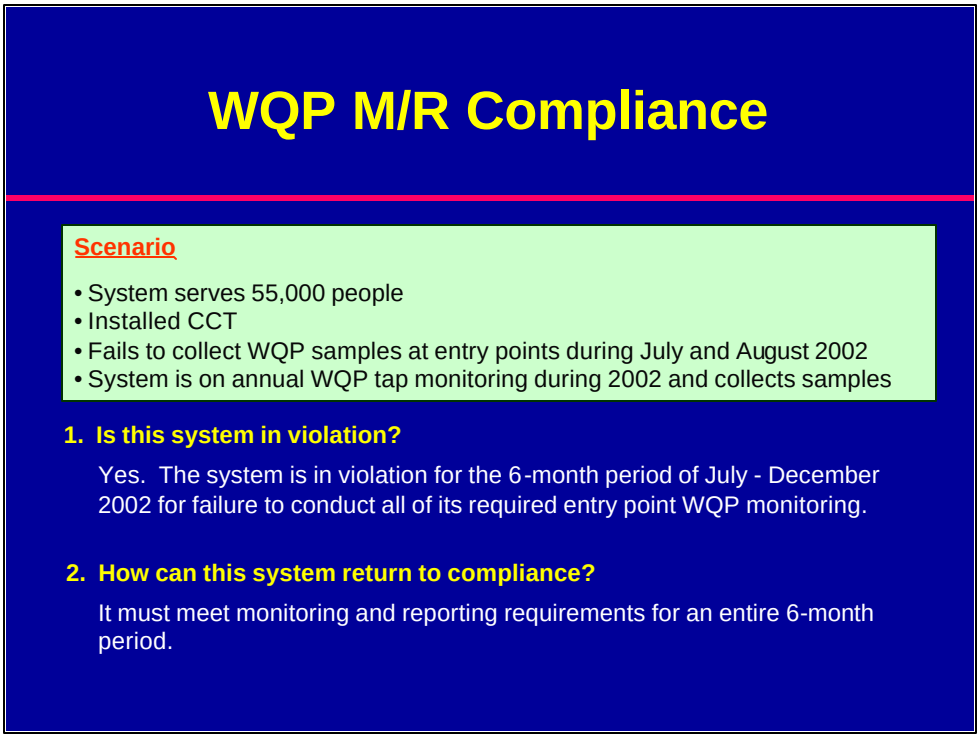
Applicable Reporting Requirements

OCCT Treatment/Study Recommendation

- **Large systems are only subject to Study violation**
- **Medium and small subject to both Recommendation and Study violation**

OCCT Study/Recommendation Violation is reported for those medium and small systems failing to make a recommendation. If the State also requires a study and the system fails to meet those requirements, a second OCCT/Study Recommendation (57) would be reported.

Large systems must conduct a study and the recommendation is a specific part of the study, therefore, large systems will only be subject to the Study violation.



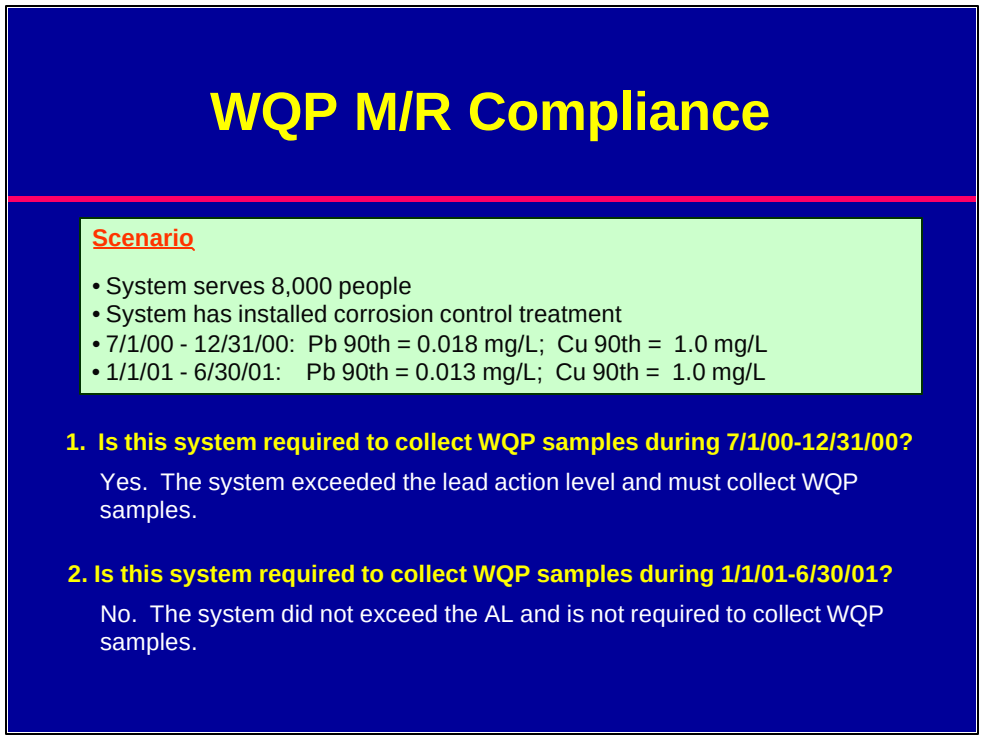
Answer 1

Routine WQP monitoring is required for all large systems, except (b)(3) systems. Once treatment is installed, entry point WQP monitoring is required no less frequently than every 2 weeks. In this example, the system would incur a WQP M/R violation (53 violation type code).

If the State has adopted the OWQP compliance procedure under the LCR, the begin date for the violation in this example would be July 1, 2002. The end date would be December 31, 2002. If the State has not adopted the new compliance procedure, entry point M/R violations that occur after the system has installed corrosion control treatment are still quarterly violations. The system would incur two violations. The first would have a begin date of July 1, 2002 and an end date of September 30, 2002. The second violation would have a begin and end date of October 1, 2002 and December 31, 2002, respectively.

Answer 2

Unlike initial and follow-up sampling that occur for a limited period of 12 months each, this system cannot make up the 2 months of missed samples for routine entry point WQP monitoring. Therefore, a system cannot return to compliance for routine entry point WQP monitoring until it successfully monitors and reports for an entire 6-month period.



Answer 1

Yes, medium and small systems are required to collect entry point WQP samples in the same compliance period(s) in which they exceed an action level. The system should have collected entry point WQP samples at least every two weeks during July 1 - December 31, 2000. Unless the system is on reduced tap WQP monitoring, it is also required to collect 2 samples at a minimum of 3 WQP tap sampling sites (i.e., the minimum number of WQP tap samples for this size system) during this 6-month monitoring period.

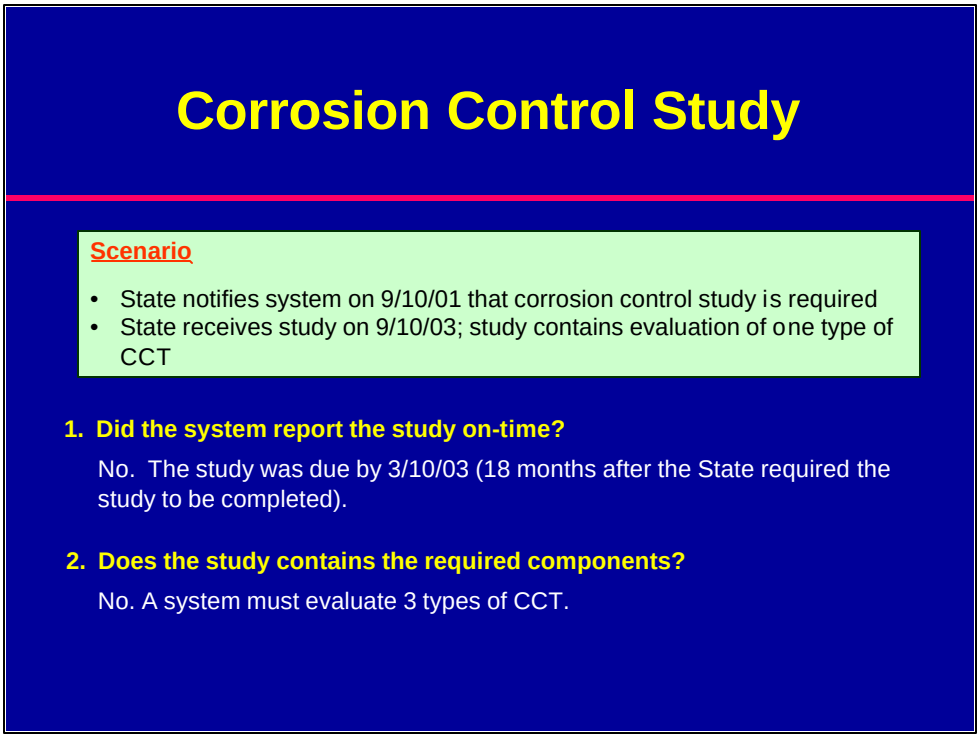
The system would have met the criteria for reduced WQP tap monitoring if it were required to conduct WQP monitoring in prior monitoring periods and it was in compliance with its OWQPs for at least 4 consecutive years. Remember the first, two consecutive, 6 months allow a system to reduce the number of tap sampling sites. For systems serving 10,000 and fewer people, the number of WQP tap sites remains the same under standard and reduced monitoring. The next three years of semi-annual monitoring allow the system to reduce the frequency of tap WQP monitoring to annually. Under the scenario presented above, it is unlikely that a medium-size system would have conducted 4 consecutive years of WQP monitoring by 2000.

The system in this example would not qualify for accelerated reduced WQP monitoring because it must satisfy the following two conditions:

- demonstrates for 2 consecutive monitoring periods that its 90^{th} percentile lead level is $\leq$ 0.005 mg/L and 90^{th} percentile copper level is $\leq$ 0.65 mg/L, and
- be in compliance with its OWQP requirements.

Answer 2

No. The system is a medium-size system and did not exceed either action level, and therefore, is not required to conduct WQP monitoring during this 6-month period.



Answer 1

A system has 18 months to complete a study. For small or medium systems, the 18 months begins from the date that the State determines that a study is required. For a large system that was in operation by 1992, the deadline is specified in the regulation and the study must be completed by July 1, 1994.

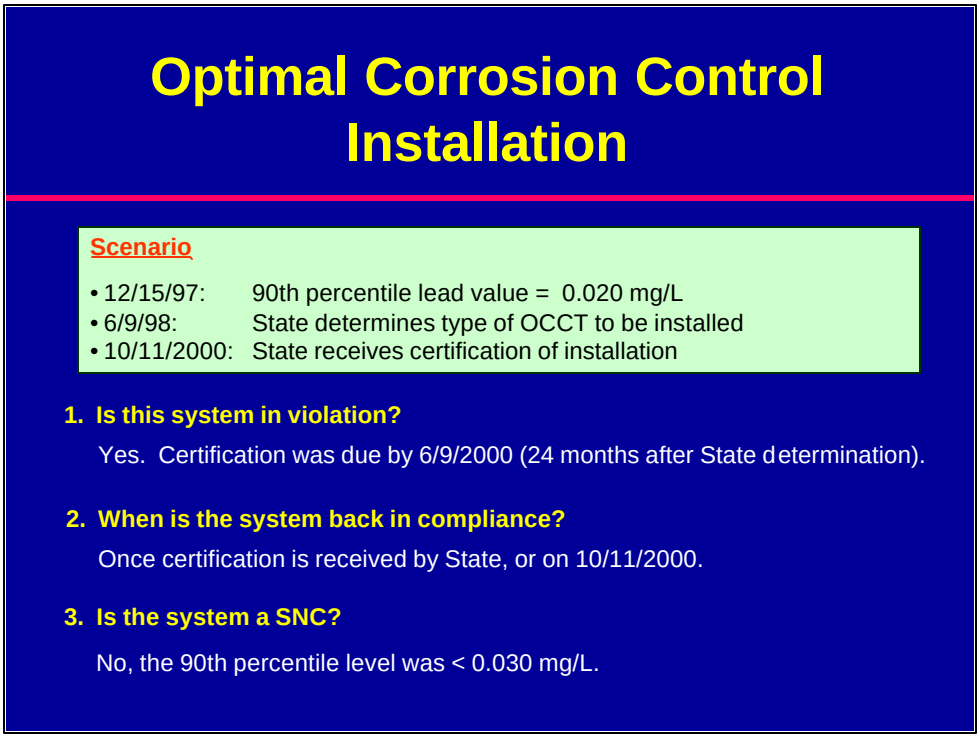
Answer 2

The system submitted the study on-time but it was incomplete. The study must evaluate the effectiveness of each of the following treatments:

- Alkalinity and pH adjustment;
- Calcium hardness adjustment; and
- Addition of a phosphate or silicate based corrosion inhibitor.

The system must also identify constraints that limit or prohibit the use of a particular corrosion control treatment and document these constraints.

Note that this system incurred a study violation (violation type 57). Only one 57 violation should be reported for the system even though it failed to meet two conditions (i.e., the study was both late and incomplete). The begin date for this violation in this example is March 11, 2003. The end date is defaulted to December 31, 2015.



Answer 1

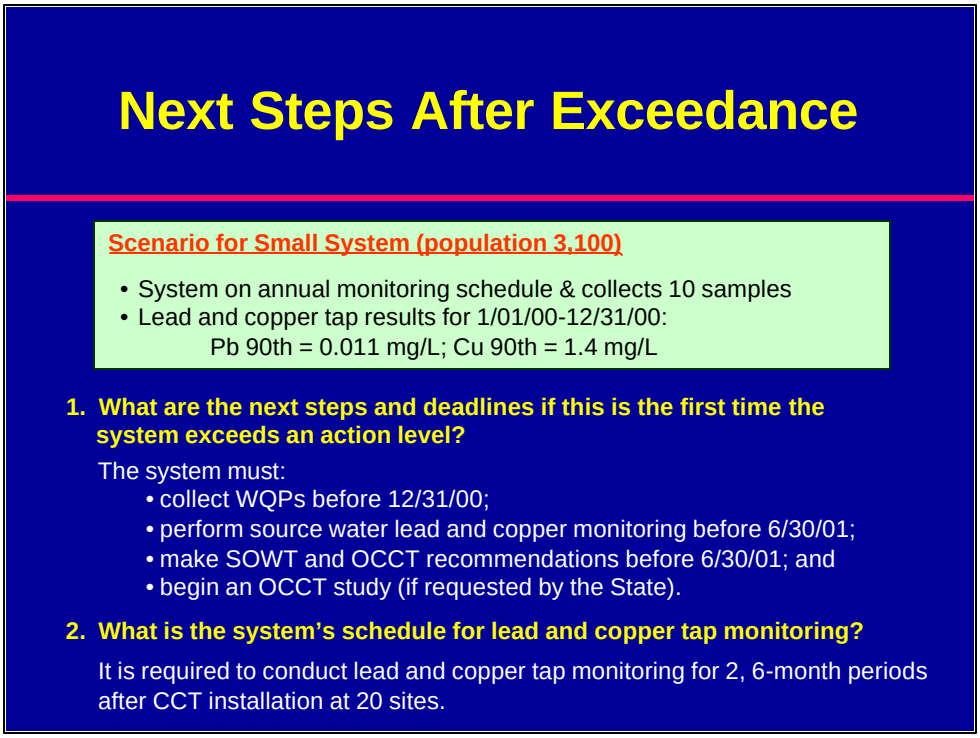
A system has 24 months after the State determines the type of OCCT to be installed to complete installation and provide a certification to the State that the treatment is properly operating. This system has incurred a treatment installation violation (58 violation code). The begin date for the violation in this example is June 10, 2000 (i.e., the day after the deadline for installing CCT has passed). The end date is defaulted to December 31, 2015.

Answer 2

The system submitted its certification on October 11, 2000. The system is back in compliance once it has certified that is has properly installed the treatment that was specified by the State.

Answer 3

A system is considered to be a significant noncomplier (SNC) if it does not install OCCT on-time and the lead 90th percentile level of its most recent monitoring period is $\geq$ 0.030 mg/L.



Answer 1

The system exceeded the copper action level and is triggered into the following required steps:

- System must collect WQPs within the same compliance period as the exceedance, or 12/31/00 in the example.
- System must collect one source water sample for lead and copper at each entry point to the distribution system, within six months of the exceedance, or by 6/30/01.
- System must provide Optimal Corrosion Control Treatment and Source Water Treatment recommendations to the State within six months after the exceedance, or by 6/30/01.
- Within 12 months after the exceedance, the State may require the system to prepare an Optimal Corrosion Control Study. The study is due 18 months after the State requires the system to prepare it. (Alternatively, the State may not require the system to perform a study and specify OCCT within 24 months after the exceedance.)

Answer 2

After the installation of treatment, the system must resume standardized monitoring at the standard number of sites. In this example, the system must collect a minimum of 20 samples each period, instead of the minimum number of 10 samples required during annual monitoring. The system is eligible for reduced monitoring again after it completes two, consecutive, six-month rounds where:

- the 90th percentile values are at or below the lead and copper action levels; or
- the system meets OWQPs, if applicable.

System that Increases Size to > 50,000

Scenario for Medium System that Becomes A Large System

- 2/11/00: System adds new connections and increases size from 45,000 to 75,000 people
- Monitoring results during annual tap monitoring conducted during 1999
  Lead 90th = 0.010 mg/L; Copper 90th = 1.1 mg/L

1. **What are the system's corrosion control treatment requirements?**
   - System completes a corrosion control study and submits recommendation within 18 months from State notification
   - State determines CCT within 6 months of study/recommendation submittal
   - System installs treatment within 24 months
2. **What are the system's monitoring requirements?**

   System conducts follow-up lead and copper and WQP monitoring for 2 consecutive, 6 months following treatment installation. System continues on semi-annual monitoring until it qualifies for reduced monitoring by meeting its OWQPs.

Answer 1

This system has increased the number of people served and now qualifies as a large system. Unless, the system can qualify as a (b)(3) system, it is now triggered into corrosion control treatment requirements. The State should notify the system as soon as practicable, about its new requirements.

- 18 months from this notification, the system must complete a corrosion control study and submit a CCT recommendation
- 6 months from this submission, the State must notify the system regarding the type of treatment that it must install
- within 24 months from the State's CCT decision, the system must complete installing CCT.

Answer 2

The system must complete follow-up lead and copper tap and WQP monitoring during the two, consecutive, 6-month monitoring periods that immediately follow the system's installation of corrosion control treatment. Remember, that entry point WQP monitoring increases to at least every two weeks, but the number of samples from each entry point decreases from 2 sample to 1.

Once the State sets OWQPs (within 6 months of follow-up monitoring), the system must continue to collect lead and copper tap and WQP samples.

- ***If the system qualifies for accelerated reduced monitoring*** because its lead levels are $\leq$ 0.005 mg/L and copper 90th percentile level is $\leq$ 0.65 mg/L and it meets its OWQPs for 2 consecutive 6-month periods, it can immediately monitor for both lead and copper tap and WQP tap once every 3 years. Entry point WQP monitoring continues at a minimum frequency of once every two weeks.
- ***If the system <u>does not</u> qualify for accelerated reduced monitoring, but does not exceed either action level,*** it must monitor every 6 months until it qualifies for reduced monitoring by meeting its OWQPs. Please note, although this system was on annual tap monitoring, the system can no longer qualify for reduced lead and copper tap monitoring simply because it is at or below the action level. This provision is only available to small and medium-size systems.
- ***If the system exceeds either action level,*** it must monitor every 6 months until it qualifies for reduced monitoring by meeting its OWQPs.

Lead and Copper NPDWR Requirements

- Lead and Copper Tap/Initial WQP Monitoring
- Corrosion Control Optimization
- Public Education
- Source Water Monitoring & Treatment
- Replacement of Lead Service Lines
- State Reporting and Recordkeeping
- Primacy and Implementation

Public Education
Applicability

- Any system that > lead AL
- Continues as long as AL is exceeded

STOP: Whenever at or below lead AL for 1 monitoring period

Recommence: If exceed in subsequent period

Public education only is required if a system exceeds the lead action level. Public education is not required if a system exceeds the copper AL only.

Public education must be delivered until the system no longer exceeds the lead action level.

Public education is again required if the system exceeds the ***lead*** action level in any subsequent monitoring period.

Public Education
Mandatory Language

- Minimum Content Specified in Rule
  - Introduction
  - Health Effects
  - Sources of Lead
  - Steps at Home

- System Can Add Information
- Not the same as Public Notification

The LCR specifies mandatory public education language that must be included in a system's public education materials. The language discusses steps that the system is taking to minimize lead, the health effects of lead, the sources of lead contamination, and measures that individuals can take to minimize their lead exposure. Systems can also add other information to the public education materials if it is consistent with the mandatory language.

Public notification is not the same as public education. Public notification must be provided whenever a system is in violation for failure to meet monitoring and reporting requirements or treatment technique requirements. There is specific notification language that is required whenever a system is in violation of the LCR monitoring and reporting requirements or treatment technique requirements. For the specific public notification requirements, refer to §141.201 & §§141.203 - 141.206.

Public Education
Delivery Requirement for CWSs

Within 60 days of exceeding Lead Action Level:

- **Bill stuffers**
- **Pamphlets to sensitive groups (e.g., pediatricians)**
- **Major newspapers**
- **Public Service Announcement (PSA) to radio/TV**

The public education requirements are different for CWSs and NTNCWSs.

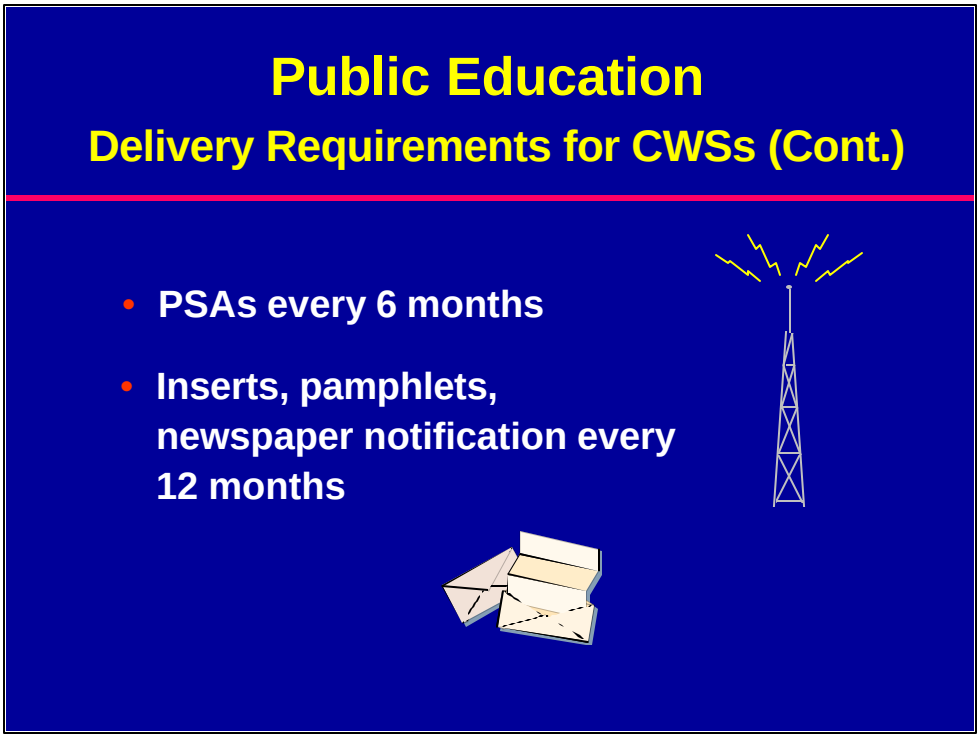
CWS requirements under the LCR

Within 60 days of exceeding the lead action level, **a CWS** must:

- Insert notices in each customer's water utility bill;
- Deliver pamphlets and/or brochures that contain the public education materials to facilities and organizations that provide services to pregnant women and children;
- Submit information to the editorial departments of the major daily and weekly newspapers circulated throughout the community; and
- Deliver public service announcements (PSAs) to radio and television stations.

As explained on the next page, the frequency of public education delivery drops to semi-annually or annually, depending on the requirements.

Please note that the 60-day requirement only applies when a system first exceeds the lead action level or when it again exceeds again after having one or more monitoring periods at or below the lead action level.



CWS requirements under the LCR (continued)

Under the LCR, all CWSs were required to repeat PSAs every 6 months for as long as the system exceeded the lead action level.

All other public education requirements (billing inserts, pamphlets/brochures, and newspaper notification) were required to be repeated annually for as long as the system exceeded the lead action level.

Public Education
Delivery Requirements for NTNCWSs

- Within 60 days of lead exceedance
  - posters in public places and buildings served
  - pamphlets/brochures to each person served
- Repeat annually

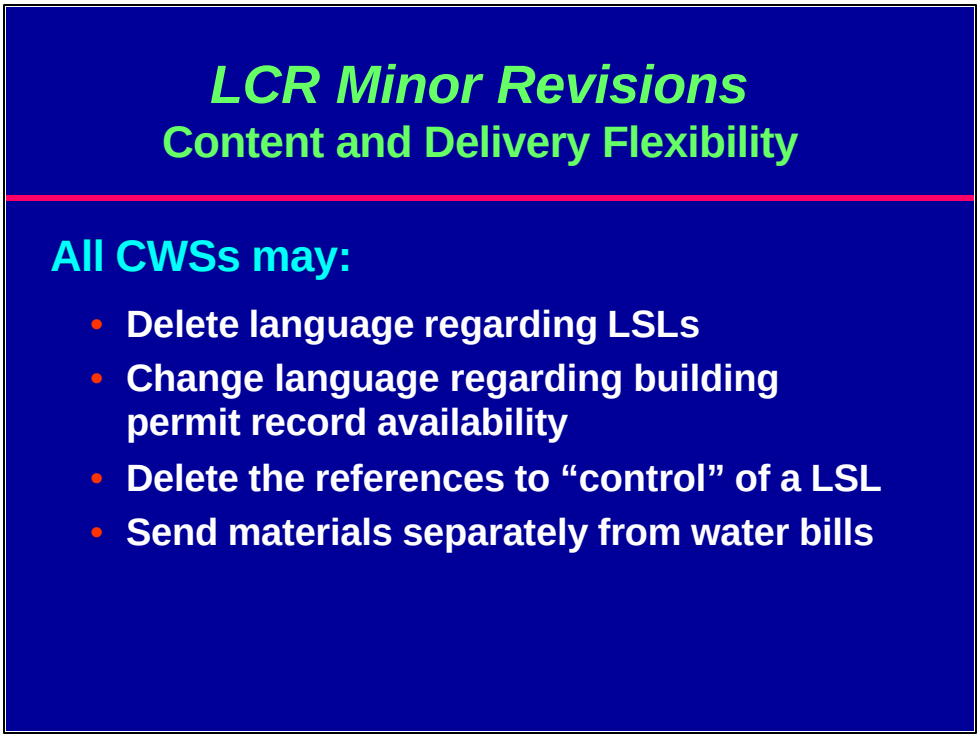
NTNCWS requirements under the LCR

Under the LCR, NTNCWSs were required to deliver the the same mandatory written language as CWSs pertaining to lead health effects and steps that homeowners can take to minimize exposure to lead.

Public education was distributed by:

- posting informational posters in public places or in common areas of buildings served by the system, and
- distributing informational pamphlets and/or brochures to each person served by the NTNCWSs.

A NTNCWS was required to repeat this information annually for as long as it exceeded the lead action level.



The LCRMR offer some flexibility in making revisions to the mandatory public education language and the distribution of public education materials.

CWSs can:

- delete reference to lead service lines (LSLs) from their public education language, if they do not have any LSLs, and States approve this change.
- change the language regarding the availability of building permit records and consumer access to these records, if the records are not available and States approve this change.
- delete the references to "control" of a LSL because this term is no longer used in the LCRMR (i.e, the LCRMR requires systems to replace LSL that they “own” vs. “control”).
- use up old public education material even after the LCRMR takes effect.
- do a separate mailing of public education materials if the system has difficulty sending the materials with the regular bills. Systems must include the mandatory "alert" language in the bill or on the outside of the envelope, and deliver the mailing within 60 days of exceeding the lead action level and every 12 months thereafter for as long as the system exceeds the lead action level. The system can also satisfy the annual delivery requirement for those customers that receive water bills by including the mandatory language in its consumer confidence report. However, the alert must be included in the front of the consumer confidence report.

The LCRMR contain provisions that allow small systems to reduce their public education requirements.

CWSs serving ≤ 3,300 people are not required to deliver PSAs. As discussed previously, the 1991 LCR required CWSs to deliver PSAs every 6 months for as long as the system exceeded the lead action level. With the elimination of the PSAs, CWSs serving ≤ 3,300 people would repeat public education on an annual basis until they no longer exceed the lead action level.

CWSs serving ≤ 500, and those CWSs serving 501 - 3,300 people with State permission:

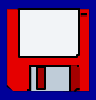
- Do not have to submit information to newspapers, and
- Can limit the distribution of pamphlets to facilities served by the system that most regularly serve pregnant women and children, but must also:
  - mail or hand deliver the public education materials to all customers who don't already receive water bills;
  - must deliver to a wider audience if State requires them to do so.

LCR Minor Revisions

Content and Delivery Flexibility (Cont.)

NTNCWSs may:

- Use specified alternative language
- Delete references to LSLs in their language
- Use electronic transmission



Special-case CWSs (prisons, hospitals) may:

- Use NTNCWS language and delivery methods

NTNCWS may:

- Use alternative language that is more suited to their type of systems. For example, the alternative language does not contain a section on *Steps you can take in the home to reduce exposure to lead in drinking water*. Systems must obtain State approval to use this language, unless the State waives this requirement.
- Delete references to LSLs in their public education materials if they do not have these LSLs and they obtain State permission.
- Distribute public education materials electronically instead of, or with printed materials, as long as this achieves at least the same coverage.

Special-case CWSs may request in writing permission to use the alternate language and delivery methods allowed for NTNCWSs. States also can waive the requirement for these systems to obtain prior approval.

> A special-case CWS is a facility, such as a prison or hospital, where the population served is not capable of or is prevented from making improvements to plumbing or installing point-of-use treatment devices and where the system provides water as part of the cost of services provided and does not separately charge for water consumption.

LCR Minor Revisions
Compliance Reporting to State

More Timely Reporting

- **LCR**
  - Due by December 31st
- **LCRMR**
  - Due within 10 days after each period in which public education was required
  - States can allow system to forego resubmission of distribution list

Implement on April 11, 2000

Systems must report completion of all required public education tasks to the State within 10 days after the date by which the system is required to complete the 60 day, semi-annual, and/or annual public education tasks. This replaces the requirement to report once per year by December 31. The rationale for accelerating the public education reporting requirement is to improve compliance because, in addition to making the requirements easier to enforce, it also will encourage water systems that exceed the lead action level to deliver the public education program in a more timely manner.

This revision will require those CWSs that must deliver PSAs to radio and television stations every six months to submit two letters to the State during a calendar year instead of the single letter initially required. However, with the elimination of PSAs for CWSs serving 3,300 or fewer people, most systems that are required to deliver public education will be subject to annual requirements only and thus, will be required to submit one letter.

States can allow systems to omit the public education distribution list as part of their public education compliance letter, ***if*** they have already submitted this information previously to their State and the systems certify that this list has not changed.

States must maintain records of any decisions regarding the resubmission of detailed documentation to demonstrate completion of public education tasks.

LCR Minor Revisions

Summary of Public Education Revisions

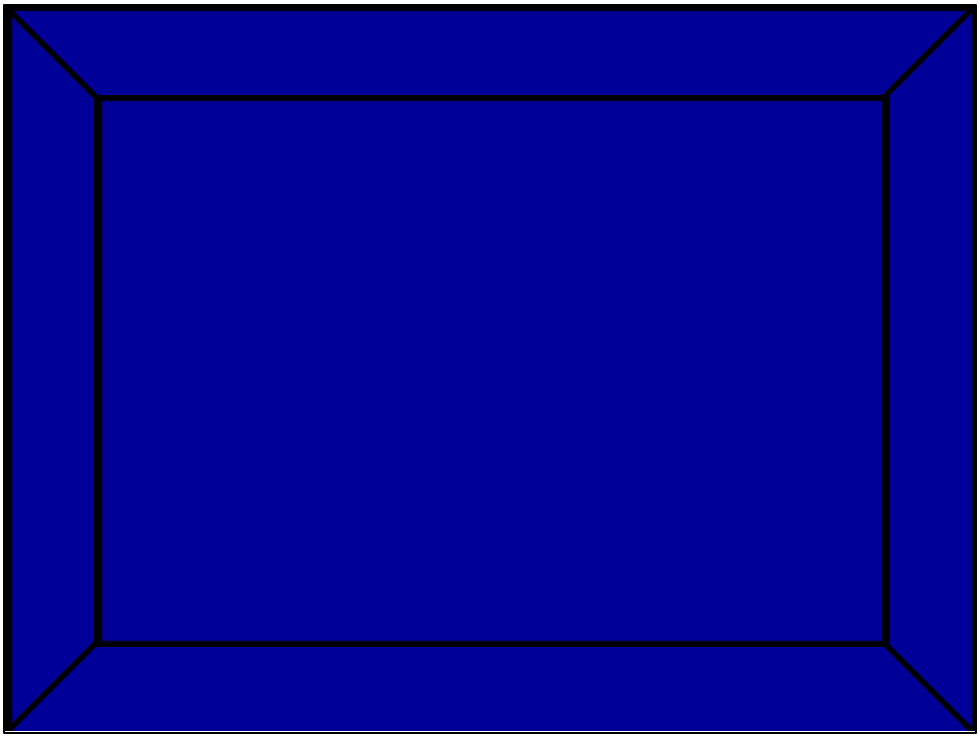
- Allow content and delivery flexibility
  - delete obsolete or irrelevant language
  - mail notices separately from water bill
- Reduce requirements for CWSs serving ≤ 3,300
- Make NTNCWSs requirements more appropriate
  - specific NTNCWSs language
  - use of electronic transmission
- Treat special-case CWSs like NTNCWSs

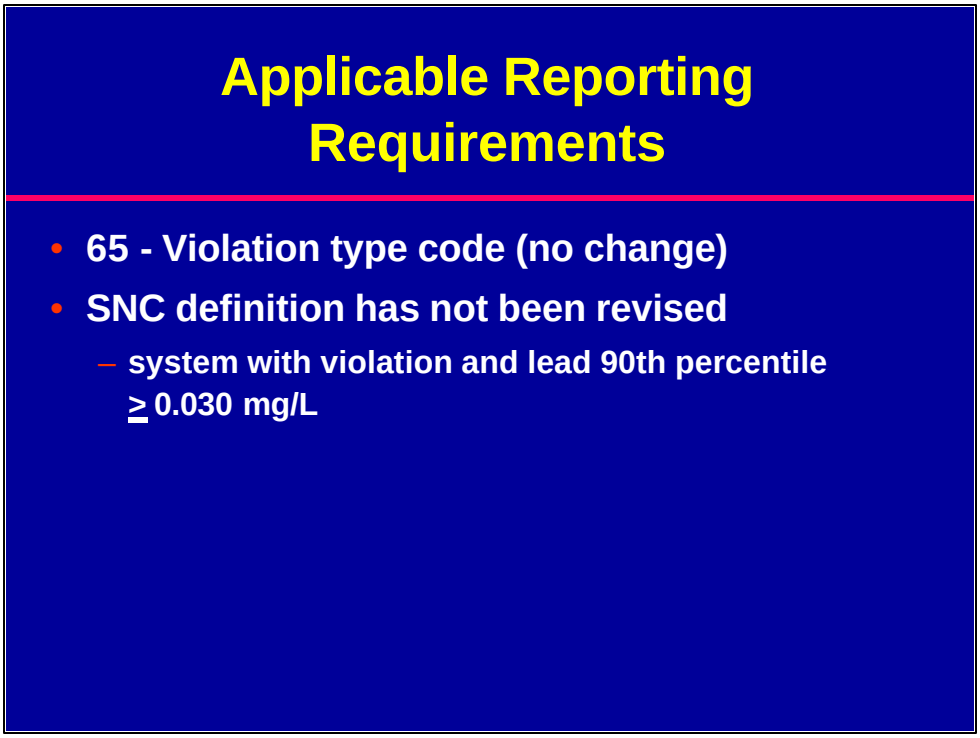
J Require more timely system compliance reporting

J Allow system to forego resubmission of distribution list

J Implement on April 11, 2000

LCRMR Revision	Where to Find It
Delete obsolete or irrelevant language (reference to LSL, control of LSLs, building records)	§141.85(a)(1)(i) & §141.85(a)(2)
Mail notices separately from water bill	§141.85(c)(2)(i)
Reduce requirements for CWSs serving ≤ 3,300	§§141.85(c)(8)(i)-(ii)
Provide specific NTNCWS mandatory language	§§141.85(a)(2)(i)-(iv)
Allow use of electronic transmission by NTNCWSs	§141.85(c)(4)(ii)
Allow special-case CWSs to use NTNCWS language and delivery requirements	§§141.85(c)(7)(i)-(ii)
More timely compliance reporting	§141.90(f)
Allow system to forego resubmission of distribution list	§141.90(f)(2)





Violation

The period of violation is described by the first day after the 60-day, 6-month, or 1-year compliance period in which the public education requirements were to be performed. The violation period ends when the State determines those requirements have been met.

The system has 10 days after the end of the 60-day, 6-month or 1-year compliance period to report to the State. This 10-day period is not added to the compliance period. In other words, the system does not have 70 days to meet its requirements. It has 60 days to meet the requirements and 10 days to report.

As with other treatment technique violations, SDWIS/FED will default a compliance period end date of December 31, 2015. When the State reports the RTC enforcement/follow-up action data (including the required violation link data), SDWIS/FED will replace the defaulted end date with the RTC date. This method more accurately describes how long the system took to perform the public education requirements.

SNC

A Public Education SNC is still defined as a system that incurs a public education violation and its 90th percentile lead level is 0.030 mg/l or higher in its most recent monitoring period.

Applicable Reporting Requirements

Public Education

- **ONE Public Education (PE) Violation must be reported for EACH discrete PE compliance period requirement (i.e., 60 days, semi-annual, and annual)**
- **PWS could incur 3 separate violations in first 14 months after exceedance**
- **10-day period to report to State is not included**

Depending on the specific requirement and PWS type, the time frames include the following:

- "60 days after the end of the designated monitoring period" of a lead action level exceedance;
- "6 months after the 60 days" for repeat public service announcements for a CWS; and
- "12 months after the 60 days " (for both CWSs and NTNCWSs) for repeat notices to customers and delivery of pamphlets and brochures.

Even though there are multiple requirements under each of the discrete PE requirement periods, only one violation is reported for each discrete PE period.

The rule allows 10 days after the date by which the system is required to complete the 60-day, semi-annual, or annual requirement to report to the State that it has conducted this requirement. This 10-day period is not included in the violation begin date.

Public Education

Scenario

- CWS serves 6,000 people
- 1/1/99-12/31/99: Pb 90th percentile = 0.014 mg/L; Cu 90th percentile = 0.9 mg/L
- 1/1/00-12/31/00: Pb 90th percentile = 0.020 mg/L; Cu 90th percentile = 0.9 mg/L

1. **Is this system required to deliver public education?**

   Yes, it exceeded the lead action level.

2. **What is the system required to do and in what timeframe?**

   Within 60 days of exceedance (by 3/1/01), must send notices with water bill, provide newspaper notification, deliver pamphlets/brochures, & PSAs.

3. **When is the system required to report compliance to the State?**

   By March 11, 2001.

Answer 1

The system must deliver public education because it exceeded the lead action level. (Public education is not required if the system exceeds the copper action level.)

Answer 2

This example assumes that the system did not exceed the lead action level in the previous monitoring period. Therefore, it must within 60 days of exceeding the lead action level:

- Insert notices in each customer's water utility bill;
- Submit information to the editorial departments of the major daily and weekly newspapers circulated throughout the community;
- Deliver pamphlets and/or brochures that contain the public education materials to facilities and organizations that provide services to pregnant women and children; and
- Deliver PSAs to radio and television stations.

If the system had not completed these activities within 60 days, it would incur a 65 violation. The begin date would be March 2, 2001 and the end date would be defaulted to December 31, 2015.

Note: If the State calculates the 90th percentile level for the system, the 60 days begins when the State notifies the system of the exceedance. This example assumes that the system calculated the 90th percentile level on December 31, 2000.

Answer 3

Systems must report completion of all required public education tasks to the State within 10 days after each period in which the tasks were required to be completed. *This replaces the requirement to report once per year by December 31*. In this example, the system was required to deliver public education within 60 days of the exceedance or by March 1, 2001. Therefore, the compliance letter for the 60-day requirement is due on March 11, 2001.

Public Education

Scenario

- CWS serves 50 people
- 1/1/-12/31/01: Pb 90th percentile = 0.017 mg/L;
  Cu 90th percentile = 1.2 mg/L

1. **Is this system required to deliver public education?**

   Yes it exceeded the lead action level.

2. **If the system does not deliver PSAs is it in violation?**

   The system is not in violation ***if*** the State has adopted the small system public education provisions.

Answer 1

A system must deliver public education when it exceeds the lead action level.

Answer 2

Under the LCRMR, CWSs serving ≤ 3,300 people are not required to deliver PSAs. However, the State must have incorporated these provisions into its State drinking water regulations before they can implement them.

Public Education

Scenario

- NTNCWS serves 4,000 people
- 1/1/-6/30/01: Pb 90th percentile = 0.012 mg/L;
  Cu 90th percentile = 1.6 mg/L

1. Is this system required to deliver public education?

No, public education is not triggered by a copper action level exceedance.

Answer

The system exceeded the copper action level only. Public education requirements are not triggered by a copper exceedance.

Public Education

Scenario

- CWS serves 2,800 people
- System first delivered public education on February 1998
- System continues to exceed the lead action level in 1999 and 2000
- 1/1/-6/30/01: Pb 90th percentile = 0.020 mg/L; Cu 90th percentile = 0.9 mg/L
- 7/1/-12/31/01: Pb 90th percentile = 0.012 mg/L; Cu 90th percentile = 0.9 mg/L

1. **Is this system required to deliver public education during 2001?**

   Yes, the system is required to deliver public education by February 2001.

2. **If the system did not deliver any public education during 2001, how does the system come back into compliance?**

   The system must complete one more round of public education.

Answer 1

A CWS must repeat public education every 12 months until it has one monitoring period in which the lead 90th percentile level is at or below the lead action level. In this example, the system must complete its annual requirement by February 15 of each year. The system was not below the lead action level until monitoring that was conducted during July – December 2001, thus the system can discontinue public education in the 2002 and thereafter, if it continues to be at or below the lead action level.

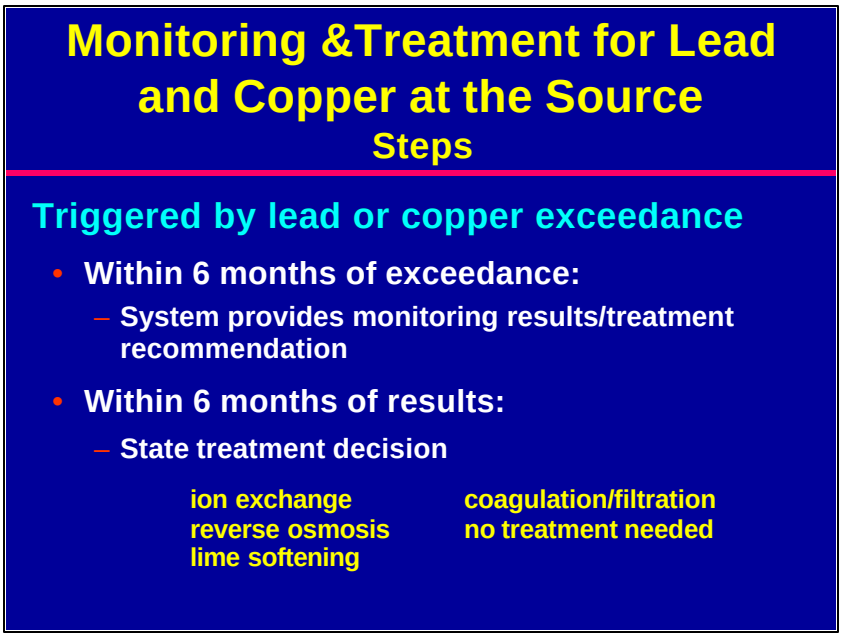
Answer 2

If the system did not deliver public education during 2001, it would incur a public education violation for failure to meet its annual requirements (65 violation type code). The begin date for this violation would be March 1, 2001 and the end date would be defaulted to December 31, 2015.

A system cannot return to compliance for public education, until it fulfills the public education requirement for which it is in violation. However, the system can add language to its public education materials that explains that it did not exceed the lead action level in its most recent monitoring period.

Lead and Copper NPDWR Requirements

- Lead and Copper Tap/Initial WQP Monitoring
- Corrosion Control Optimization
- Public Education
- Source Water Monitoring & Treatment
- Replacement of Lead Service Lines
- State Reporting and Recordkeeping
- Primacy and Implementation



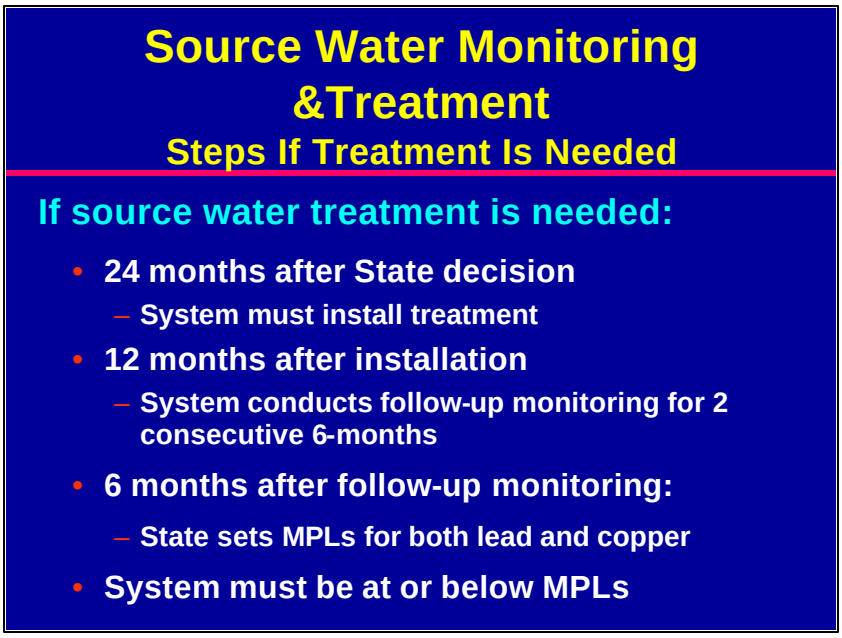
Monitoring/Treatment Recommendation

Within 6 months of exceeding the lead or copper action level, systems must collect source water samples. The sample location, collection methods, and number of samples required is the same as for Phase II/V contaminants. Ground water systems must take at least one sample at every entry point to the distribution system which is representative of each well after treatment. Surface water systems must take at least one sample at every entry point to the distribution after the application of treatment or in the distribution system at a point which is representative of each source after treatment. Compositing is also allowed under the LCR.

Systems must also provide to the State a source water treatment recommendation with their source water monitoring results. This recommendation is based on source water monitoring results. A source water treatment study is not required. Systems should consider: ion exchange, reverse osmosis, lime softening, and coagulation/filtration. A system can also recommend that no source water treatment is needed. EPA's guidance document Lead and Copper Rule Guidance Manual Volume II: Corrosion Control recommends source water treatment when the concentration of lead in the source water is greater than 0.005 mg/L or the concentration of copper in source water is greater than 0.800 mg/L.

State Decisions

Within 6 months of receiving the system's results and recommendation, the State must determine whether source water treatment is needed. If the State determines this treatment is needed, then the State must require either the installation of treatment recommended by the system or specify the installation of other source water treatment. This decision and the basis for this decision must be provided to the system in writing.



Source Water Treatment

A system that is required to install source water treatment must complete installing this treatment within 24 months of State's decision to install treatment. Failure to do so is a treatment technique violation.

Follow-up Monitoring

A system must collect lead and copper tap samples and source water samples during two, consecutive, 6-months immediately following the installation of treatment. This must be completed no later than 36 months after the State determines the type of source water treatment to be installed. ***A system must complete these two, consecutive, 6-months of follow-up monitoring, even if the system is now at or below the lead and copper action level in tap water monitoring.***

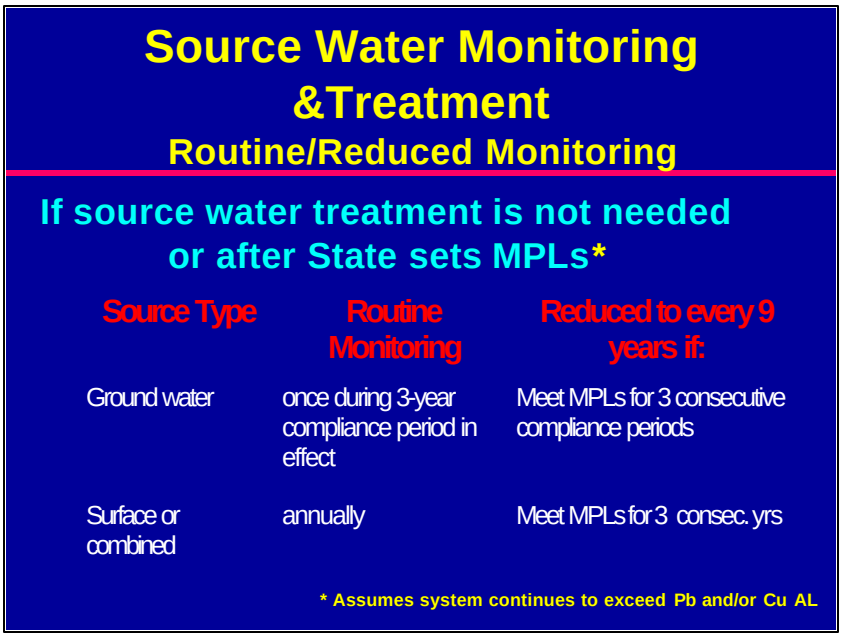
State sets MPLs

Based on the monitoring data that was collected before and after the installation of source water treatment, the State sets maximum permissible levels (MPLs) for lead and copper. The State established MPLs for both lead and copper, even if the system only exceeded the action level for one of these contaminants in tap water samples.

MPLs = maximum level of lead and copper that is allowed in finished water entering the distribution system.

Must be at or below MPLs

Systems that are above either MPL incur a treatment technique violation. A system can take a confirmation sample within 2 weeks of the original sample. The results of the original and confirmation samples are averaged to determine whether a system is in compliance with its MPLs. MPLs are federally-enforceable standards.



Routine Monitoring

Systems using ground water as their only source must monitor during 3-year compliance periods. These are the same compliance periods that were established under the Standardized Monitoring Framework (SMF) for Phase II/V contaminants (e.g., 1993 - 1995, 1996 - 1998, 1999 - 2001, 2002 - 2004, etc.). Therefore, systems can coordinate their source water monitoring for lead and copper with other monitoring requirements.

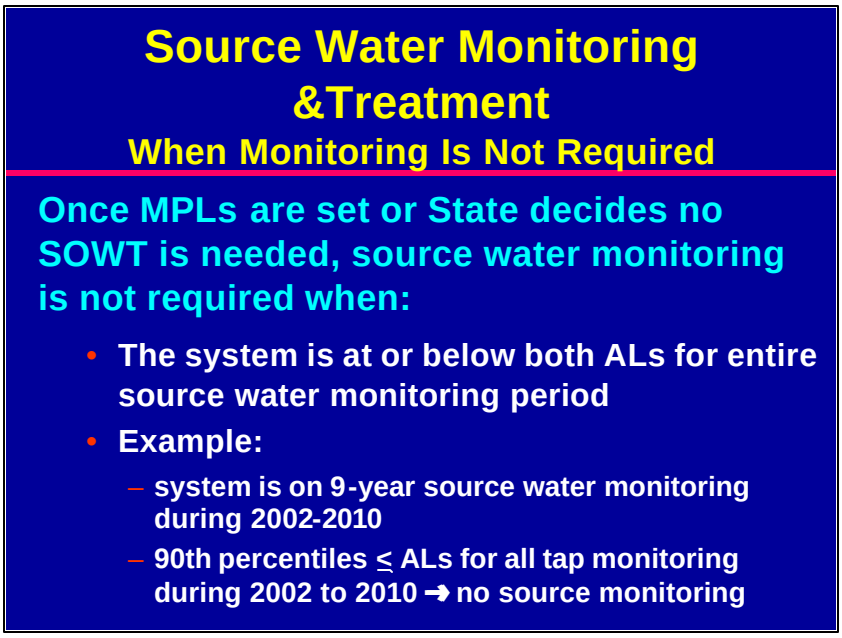
Systems using surface water or surface water combined with ground water must monitor annually. The first annual monitoring period begins on the date that the State specifies maximum permissible source water levels or determines that no treatment is required.

Reduced Monitoring

Systems that qualify for reduced monitoring can reduce the frequency of monitoring to once every 9 years. The 9-year schedule follows the 9-year monitoring cycle established under the SMF (i.e., 1993 - 2001, 2002- 2010), etc.

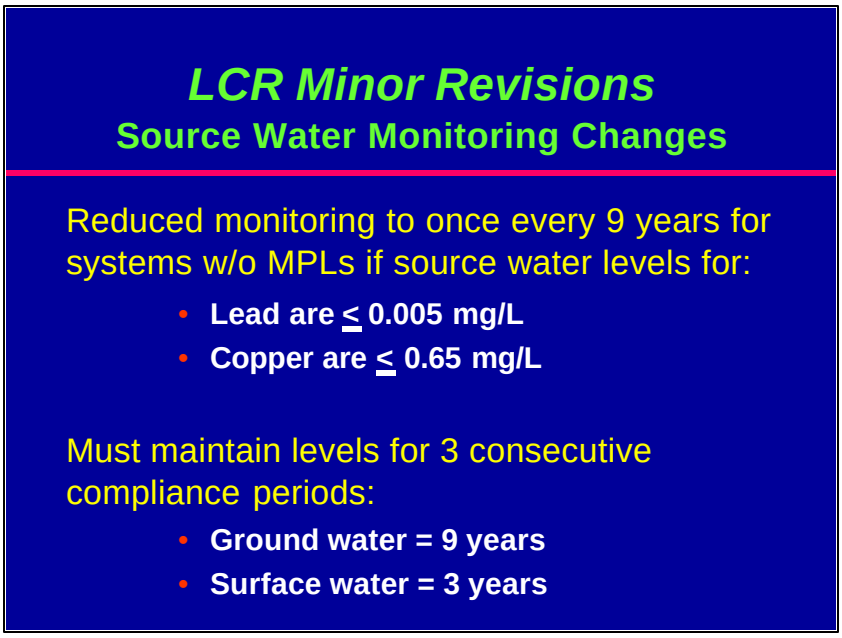
- A ground water systems qualifies for reduced monitoring if it does not exceed either the lead or copper MPL for 3 consecutive, 3-year compliance periods (equals 9 years).
- A surface water system or system using a combined source qualifies for 9-year monitoring if it does not exceed either MPL for 3 consecutive years.

NOTE: Once a system qualifies for reduced monitoring, it is not required to return to standard monitoring. In other words, an exceedance of an action level or of an MPL does not impact a system's reduced source water monitoring schedule.



Once a system exceeds either the lead or copper action level, it is always subject to source water monitoring requirements. However, after the State has designated MPLs or determined that the system is not required to install source water treatment, the system ***is not required to collect any source water samples*** if its 90th percentile lead or copper level does not exceed the action level during the entire source water monitoring period in effect.

For example, a system qualifies for reduced source water monitoring for the compliance cycle of 2002-2010. During this time period, the system is on triennial lead and copper tap monitoring. It conducts lead and copper tap monitoring during 2001-2003, 2004-2006, 2007-2009, and 2010-2012. Both the lead and copper 90th percentile levels are below the lead and copper action levels for all four monitoring periods. The system is not required to conduct source water monitoring.



Reduced source water monitoring

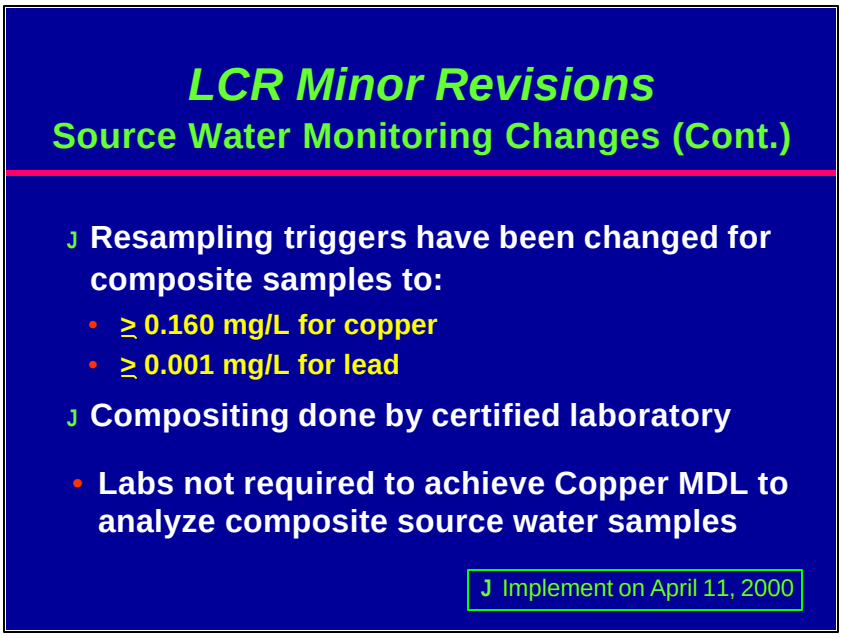
The LCRMR expand the universe of systems that can qualify for reduced source water monitoring at a frequency of once every 9 years. The 1991 LCR did not allow systems that exceeded an action level, but for which the State did not set MPLs, to reduce the frequency of source water monitoring.

Systems exceeding an action level after the State has determined that source water treatment is not needed, can reduce the frequency of source water monitoring if:

- source water lead concentrations are ≤ 0.005 mg/L; and
- source water copper concentrations are ≤ 0.65 mg/L
  AND
- the system maintains these levels for 3 consecutive compliance periods.

Ground water systems would qualify for reduced monitoring after 3 consecutive, 3-year compliance periods or after 9 years.

Surface water systems (or those using a combined source) would qualify after 3 consecutive years.



Resampling triggers for composite samples

In those States where compositing of source water samples is allowed, the resampling trigger for copper has been increased from 0.001 mg/L or 0.002 mg/L (depending on the method used) to 0.160 mg/L. The lead resampling trigger has been slightly changed from > 0.001 mg/L to ≥ 0.001 mg/L. Since up to five samples may be composited for analysis, the resampling triggers are one-fifth of the levels above which EPA recommends source water treatment. (EPA recommends source water treatment when source water lead levels exceed 0.005 mg/L or source water copper levels exceed 0.800 mg/L.)

The LCRMR does not revise the requirements in the event that the resampling trigger is exceeded. If the lead or copper resampling trigger is exceeded then either:

- The system must collect a follow-up sample and have it analyzed within 14 days at each sampling point included in the composite; or
- If duplicates of or sufficient quantities from the original samples from each sampling point used in the composite are available, the system may use these instead of resampling.

The LCRMR incorporate the requirements for source water sample location, number of source water samples, and collection methods directly into §141.88(a)(1) and eliminate the reference to §141.23. Further, the LCRMR specify that compositing must be done by a certified laboratory.

Laboratory certification for composite samples

Changes to the composite source water resampling triggers for lead and copper necessitate revisions to the laboratory certification procedures pertaining to composite source water samples. Laboratories no longer have to achieve the copper MDL in order to analyze composite source water samples. The copper resampling trigger of 0.160 mg/L is sufficient to prove laboratory capability requirements under §141.89(a)(1)(ii)(B).

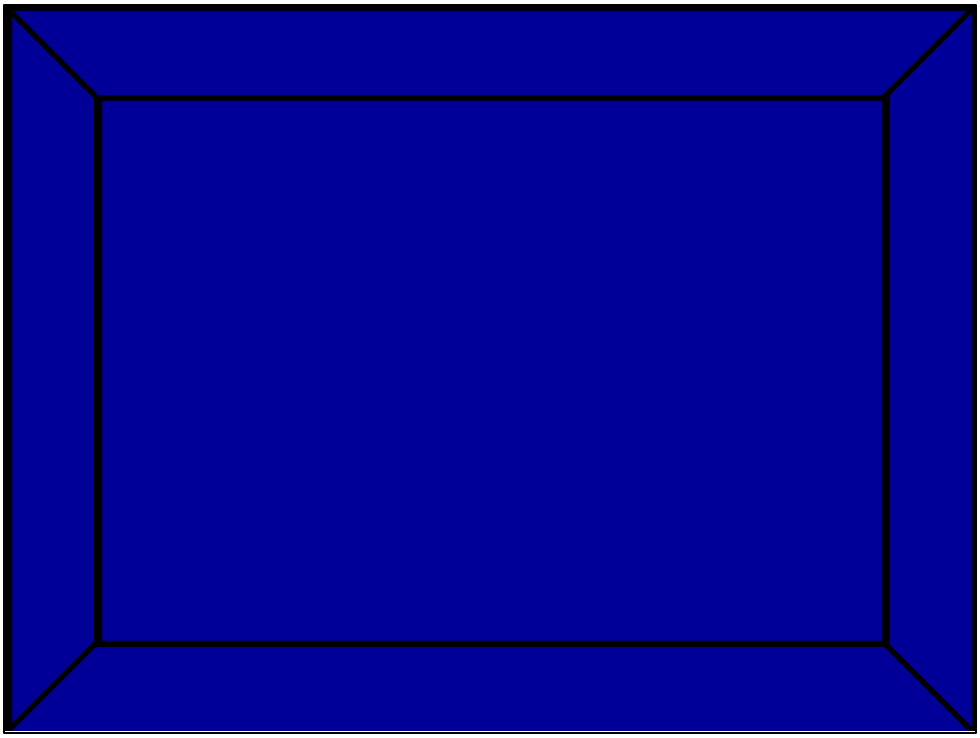
LCR Minor Revisions

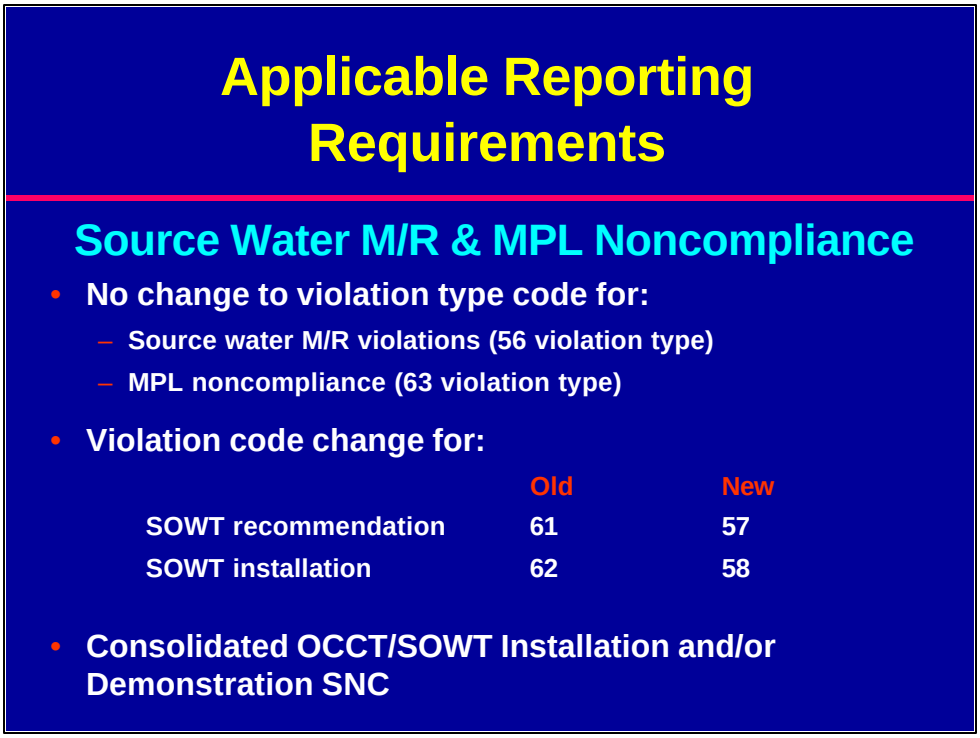
Summary of Source Water Monitoring Revisions

- Reduced monitoring for systems w/o MPLs
- Revisions to source water resampling triggers for composite samples
- Compositing by certified lab
- Labs not required to achieve Copper MDL to analyze composite source water samples

Implement on April 11, 2000

LCRMR Revision	Where to Find It
Reduced monitoring for systems w/o MPLs	§§141.88(e)(1) & (2)
Revisions to source water resampling triggers for composite samples	§141.88(a)(1)(iii)
Compositing by certified laboratory	§141.89(a)(1)(iv)
Labs are not required to achieve Copper MDL	§141.89(a)(1)(iii)





The violation type codes have not been changed for:

- Source water M/R violations. All source water M/R violations continue to be reported using the 56 violation code.
- Maximum Permissible Level (MPL) noncompliance. A violation type code 63 is still to be used to report systems that exceed their lead and/or copper MPLs.

Violation codes associated with a source water treatment (SOWT) recommendation or SOWT installation violation have been changed.

A 57 violation is used to report either:

- A system's failure to meet its a source water treatment recommendation requirements (formerly a 61 violation type), or
- A system's failure to meet its corrosion control study/recommendation requirements.

A 58 violation is used to report either:

- A system's failure to meet its a source water treatment installation requirements (formerly a 62 violation type), or
- A system's failure to meet its optimal corrosion control treatment installation requirements.

EPA will list a system that meets the OCCT Installation SNC criteria or SOWT Installation SNC criteria as a Treatment Installation/Demonstration SNC.

The basic definition for this SNC has remained the same, a system that incurs a treatment installation violation and has a 90^{th} percentile lead level of $\geq$ 0.030 mg/l in most recent monitoring period.

Applicable Reporting Requirements

Source Water M/R & MPL Noncompliance

- **Converted the end dates to 12/31/2015**
- **Source water follow-up monitoring requires two consecutive, 6-month rounds - *only 1 M/R violation is reported***
- **Monitoring is conducted AFTER the lead or copper action level exceedance (No Grandfathering)**

Like lead and copper tap monitoring, there can be 3 types of source water monitoring requirements: Initial, Follow-up, and Routine. The initial monitoring consists of one 6-month round. Follow-up requires 2 consecutive 6-month rounds, and the Routine monitoring is one round within 3-year compliance periods for groundwater and one round within a 1-year period for surface water systems or systems with a combined source. In addition, systems on routine monitoring can qualify for reduced monitoring in which source water samples are collected once every 9 years.

Only 1 M/R violation is reported for failure to sample for either lead or copper, or both lead and copper per designated monitoring period.

Initial source water monitoring is conducted AFTER the lead or copper tap action level(s) is exceeded. Even if the State requires lead and copper be monitored routinely with the inorganic monitoring, the samples must be taken AFTER the lead or copper tap exceedance. There are no provisions in the LCR/LCRMR for grandfathering of data.

For follow-up source water monitoring, only one M/R violation is reported. The begin date of the violation is the day after the first round missed. RTC may not be reported until 2 consecutive 6-month rounds are completed.

For routine or reduced source water monitoring, the compliance period is annual, triennial, or every 9 years. The begin date of a violation is the day after the compliance period in which the source monitoring was to be conducted. RTC is reported once the system properly conducts the source water monitoring.

Applicable Reporting Requirements

MPL Noncompliance

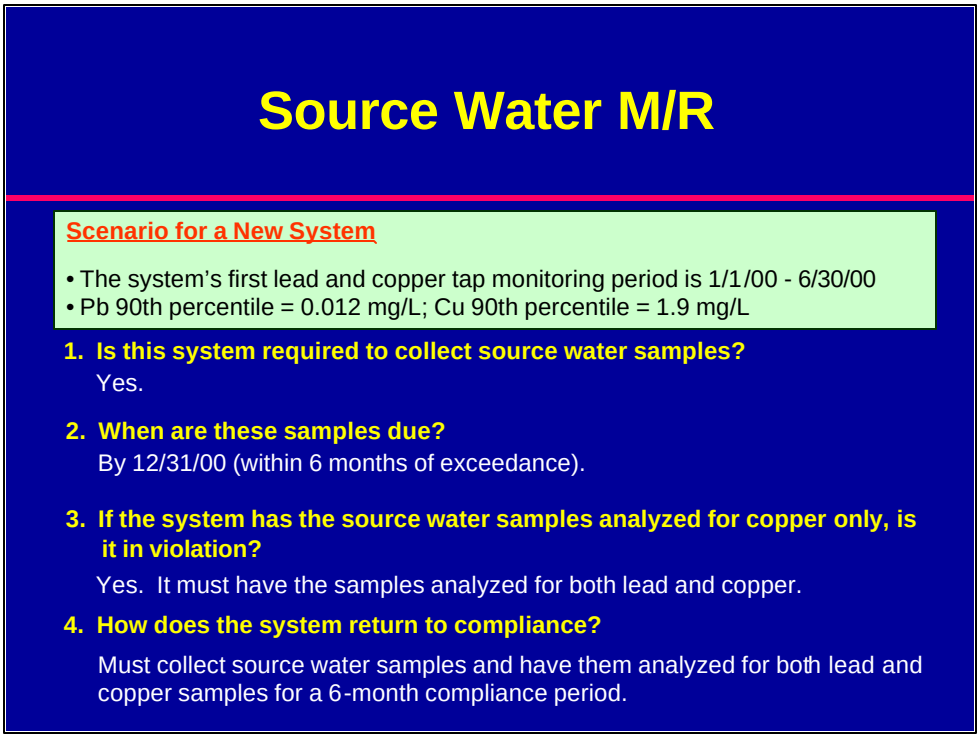
- A system may incur separate Violations for exceeding the Lead MPL and the Copper MPL
- Only ONE MPL Noncompliance Violation must be reported for a single contaminant regardless of how many entry points are in violation
- Contaminant code is:
  - 1022 = Copper
  - 1030 = Lead
  - reported in lieu of 5000 code that is used for all other LCR or LCRMR violations

If a system exceeds the MPL for only Lead or only Copper in more than one source water sample, the State would report a single 63 violation for that period, for that contaminant.

If a system exceeds the MPL for both Lead and Copper, the State would report two 63 violations.

To simplify reporting, only ONE Lead or ONE Copper violation is required to be reported in each designated monitoring period, regardless of how many entry points incur an exceedance.

There are no SNC conditions for source water monitoring, failure to provide a source water recommendation, or failure to meet source water treatment installation requirements.



Answer 1

A system that exceeds the lead or copper action level must collect source water samples at each entry point to the distribution system.

Answer 2

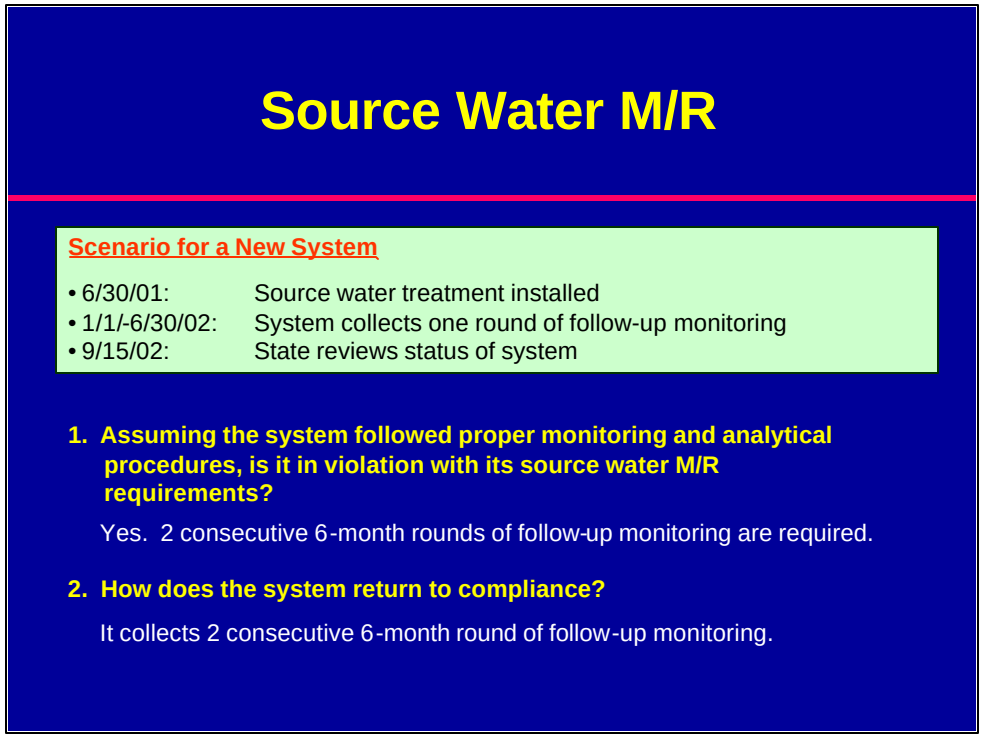
This monitoring must be completed within 6 months of the end of the compliance period in which the exceedance occurred. The system must also provide a source water treatment recommendation, even is the recommendation is that no treatment is required.

Answer 3

The system must collect both lead and copper tap samples even if exceeds only one of the action levels. The system in this example would incur an initial source water M/R violation (56 violation type code). The begin date of this violation would be January 1, 2001(i.e., the day after the compliance period of 7/1/00 to 12/31/00 in which initial source water monitoring was required). The end date would be defaulted to December 31, 2015.

Answer 4

To achieve compliance for an initial source water M/R violation, the system must properly fulfill its source water monitoring and reporting requirements for one, 6-month monitoring period.



Answer 1

All systems that are required to install SOWT must collect follow-up source water samples during two, consecutive, six-month compliance periods. The State uses the data to set MPLs for lead and copper in source water. In this example, the system is in violation for failure to collect the first, six-month period of its source water follow-up monitoring that was required to be conducted during July 1 to December 31, 2001 (56 violation type code). This monitoring was required to be conducted during the compliance period July 1 to December 31, 2001. The begin date for this violation is the day after the end of the first missed compliance period or January 1, 2002 in this example. The end date is defaulted to December 31, 2015.

Answer 2

To achieve compliance, the system must collect two, consecutive round of source water samples. In this example, if the system conducts source water monitoring during July 1 - December 31, 2002, it would return to compliance.

Source Water M/R

Scenario

- On 9-year source water monitoring cycle of 1/1/02 - 12/31/10
- Lead and Copper 90th percentile results are as follows:
  - 1/1/00 - 12/31/02: Pb 90th = 0.006 mg/L; Cu 90th = 1.1 mg/L
  - 1/1/03- 12/31/05: Pb 90th = 0.007 mg/L; Cu 90th = 1.0 mg/L
  - 1/1/06 - 12/31/08: Pb 90th = 0.006 mg/L; Cu 90th = 1.2 mg/L
  - 1/1/09 - 12/31/11: Pb 90th = 0.007 mg/L; Cu 90th = 1.5 mg/L

1. Is the system required to collect source water samples during 1/1/02 - 12/31/10?

If tap samples were collected during 2009 or 2010, then yes. If tap samples were collected during 2011, then no source water samples are required. However, source water monitoring must be conducted during the next compliance cycle of 1/1/11 to 12/31/19.

Answer

The system exceeded the copper action level during the tap monitoring period of Jan. 2009 to Dec. 2011, but did not have exceedances in any of the prior monitoring periods. If the system collected the sample during 2009 or 2010, the exceedance would occur during the 9-year source water compliance period of January 1, 2002 - December 31, 2010, and therefore, source water sample would be required.

If lead and copper tap samples were collected during 2011, the system would not be required to collect source water samples during January 1, 2002 - December 31, 2010 because no 90th percentile levels exceeded the lead or copper action level during this 9-year source water monitoring period. However, the system would be required to conduct source water monitoring sometime during January 1, 2011 - December 31, 2019 because it exceeded the copper action level based on tap samples collected in 2011.

Source Water M/R

Scenario
- System is a surface water system
- System exceeds the lead action level
- State determines no source water treatment is needed
- Source water monitoring results are as follows:

  1/1/00 - 12/31/00: Pb = 0.005 mg/L; Cu 90th = 0.6 mg/L
  1/1/01- 12/31/01: Pb = 0.005 mg/L; Cu 90th = 0.5 mg/L
  1/1/02 - 12/31/02: Pb = 0.005 mg/L; Cu 90th = 0.6 mg/L

1. What is the system's source water monitoring schedule after 2002?

Under the LCRMR, this system can monitor once every 9 years because it has maintained source water lead levels of ≤ 0.005 mg/L and source water copper levels of ≤ 0.65 for 3 consecutive years.

Answer

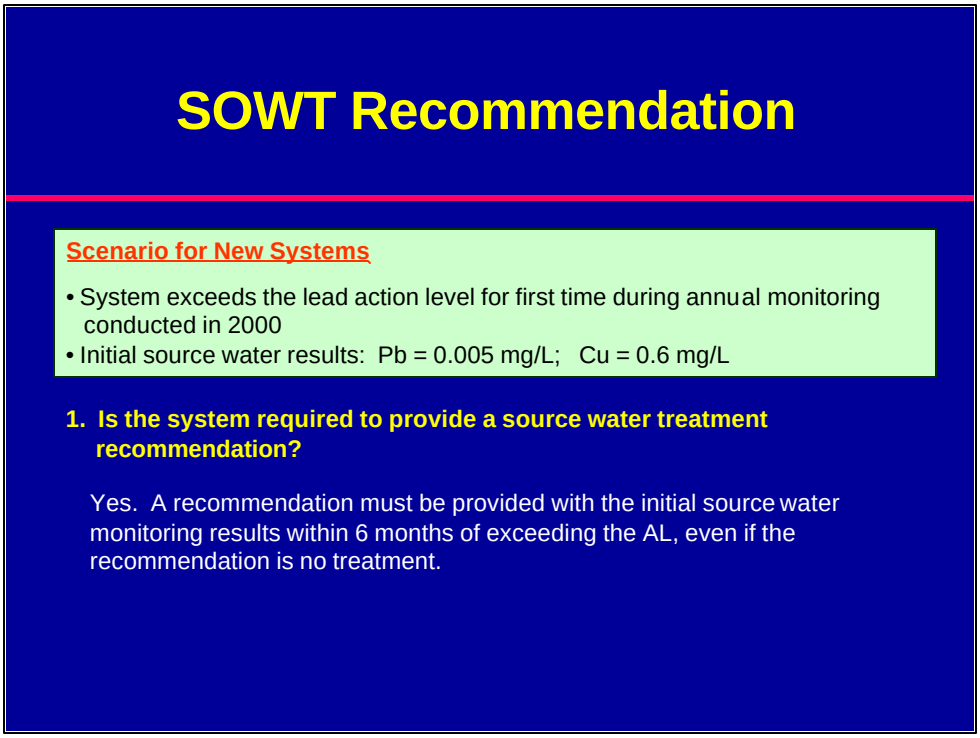
Under the LCRMR, systems exceeding an action level after the State has determined that source water treatment is not needed, can reduce the frequency of source water monitoring to once every 9 years if:

- source water lead concentrations are ≤ 0.005 mg/L; and
- source water copper concentrations are ≤ 0.65 mg/L

  AND
- the system maintains these levels for 3 consecutive compliance periods.

The system in this example is a surface water system and qualifies for 9-year source water monitoring after meeting the above criteria for 3 consecutive years of annual monitoring. A system that uses a combination of surface and ground water would also qualify after 3 consecutive years of annual monitoring. If the system used a ground water source exclusively, it would qualify for 9-year source water monitoring after meeting the above criteria for 3 consecutive, 3-year compliance periods.

Remember: If the system is at or below the lead and copper level for the entire source water monitoring period in effect, it does not need to conduct source water monitoring.



Answer

A system is required to conduct initial source water monitoring and to provide a treatment recommendation within 6 months of when ***it first exceeds*** lead or copper action level. The system may recommend that no treatment be installed as its recommendation. A system that does not provide this recommendation within 6 months would incur a treatment technique violation with a revised violation type code of 57.

SOWT Installation

Scenario
- 1/15/1998: State determines type of SOWT to be installed
- 7/15/2000: System installs SOWT
- Most recent tap monitoring results: Pb 90th = 0.035 mg/L; Cu 90th = 1.2 mg/L

1. **Is the system in violation?**

   Yes. The system did not install SOWT on-time (within 24 months of State decision).

2. **Is the system an SNC?**

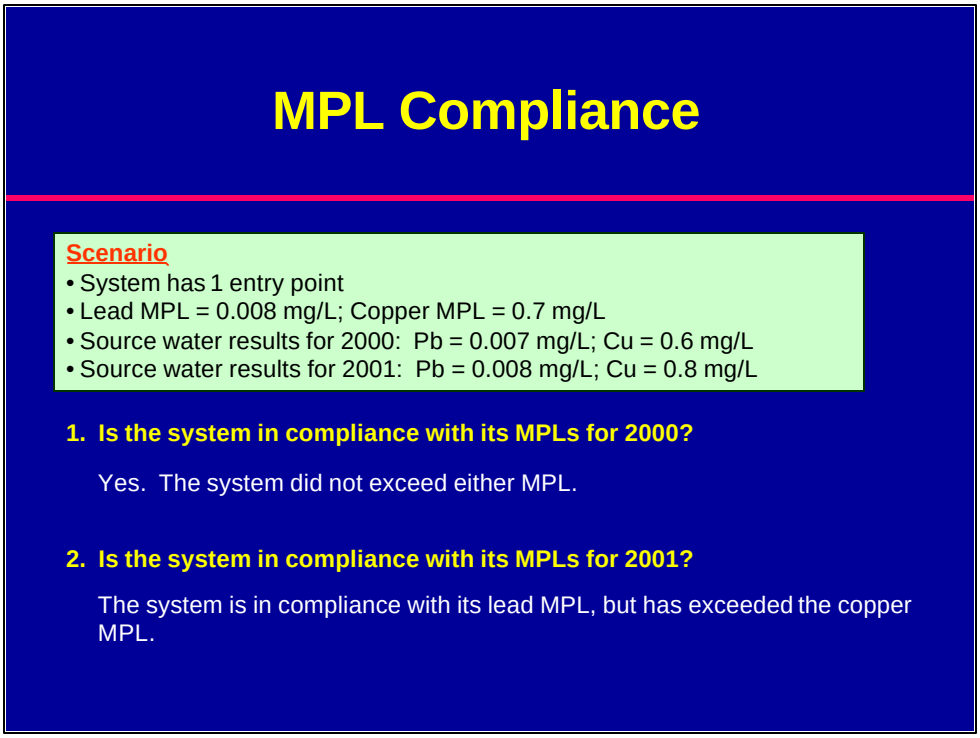
   Yes because the system incurred a SOWT violation and its most recent lead 90th percentile level was ≥ 0.030 mg/L.

Answer 1

A system must complete the installation of source water treatment (SOWT) and submit a certification that this treatment has been installed within 24 months of the State's decision regarding the type of SOWT to be installed. The system in this example incurred a SOWT installation violation (revised violation type code 58). The begin date for the violation in this example is January 16, 2000, (i.e., the day after the 24-month deadline for treatment installation). The end date is defaulted to December 31, 2015.

Answer 2

A system can become a SNC if it incurs a SOWT installation violation and the 90th lead level for its most recent tap monitoring is ≥ 0.030 mg/L.



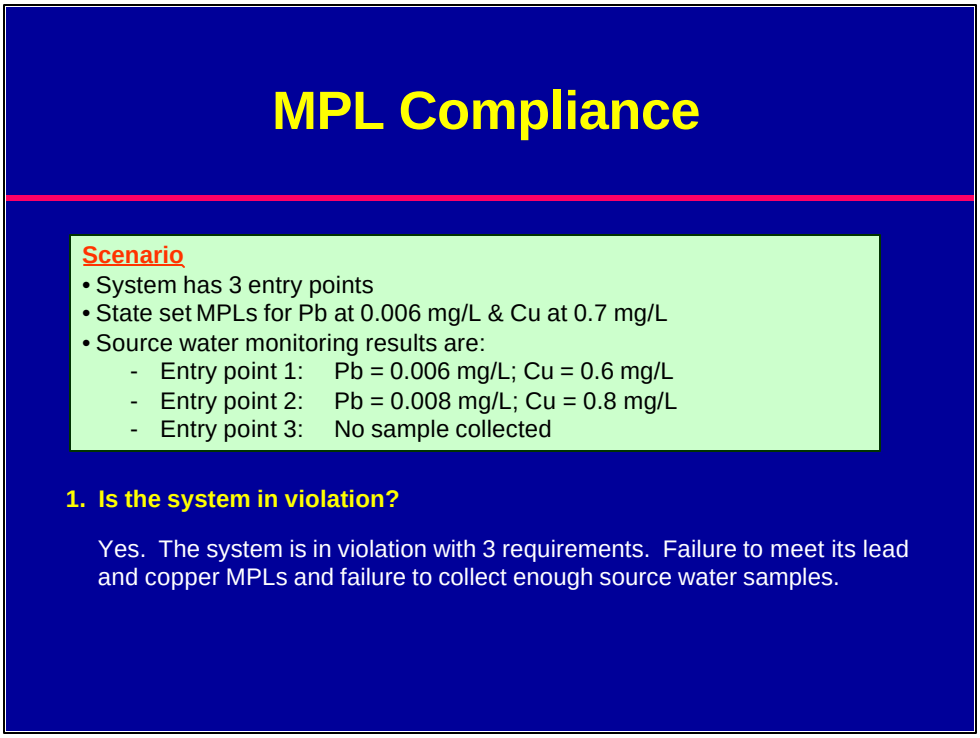
Answer 1

The system is in compliance with its MPLs for source water monitoring conducted in 2000 because both the lead and copper source water results are below their respective MPLs.

Answer 2

During 2001, the system exceeded the copper MPL and therefore is in violation. Failure to meet either MPL is a treatment technique violation (63 violation type code). The contaminant code for this violation is 1022 (for noncompliance with copper MPL). Remember, a 63 violation is the only one in which the State cannot use the contaminant code of 5000. Either the contaminant code of 1022 (for copper) or 1030 (for lead) must be specified. The begin date for the violation in this example is January 1, 2002, (i.e., the day after the end of the annual compliance period of 1/1/01 to 12/31/01). The end date is defaulted to December 31, 2015.

Please note that this system could have collected a confirmation sample within 2 weeks of the original sample. If the average of the original confirmation sample had been at or below the MPL, the system would have been in compliance with its copper MPL requirements.



Answer

An MPL violation can be incurred if the system exceeds the MPL for lead or for copper in any sample collected. Therefore, the system would have MPL violations for both copper and lead, even though the system failed to collect all the required samples. In addition, the system would also incur a source water M/R violation for failure to collect source water samples at all entry points.

Therefore, the system in this example has 3 violations as follows:

- Source water M/R (56 = violation type code)
- MPL noncompliance with copper (63 = violation type, 1022 = contaminant code)
- MPL noncompliance with lead (63 = violation type, 1030 = contaminant code)

Lead and Copper NPDWR Requirements

- Lead and Copper Tap/Initial WQP Monitoring
- Corrosion Control Optimization
- Public Education
- Source Water Monitoring & Treatment
- Replacement of Lead Service Lines
- State Reporting and Recordkeeping
- Primacy and Implementation

Triggered by Continued Exceedance of Lead Action Level

A system must begin replacing lead service lines (LSLs) if it continues to exceed the lead action level after installing corrosion control treatment and/or source water treatment (in whichever sampling occurs later).

The State can also require lead service line replacement (LSLR) if the system is in violation for failure to install treatment after the follow-up monitoring date has passed.

7% Replaced each year

The system must replace at least 7% of the initial number of LSLs in its distribution system. The initial number = the number of LSLs in place at the time the replacement program began.

The initial number of lines is identified through materials evaluation, including the one required prior to initial lead and copper tap monitoring.

First year of replacement begins on date the lead action level was exceeded.

State can require shorter replacement schedule

The State can place a system on a faster replacement schedule (i.e, replace more than 7% per year). If the State determines that a faster schedule is feasible, it must document the decision in writing and notify the system within 6 months of its being triggered into LSLR.

No Replacement for Individual Lines at or Below 0.015 mg/L

A system is not required to replace an individual LSL if the lead concentration of all samples from the line is less than or equal to 0.015 mg/L.

Monitoring Methods

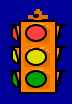
The procedure for collection is explained in §141.86(b)(3). The service line sample must be 1 liter in volume and have stood in the line for at least six hours. The sample can be collected in one of the following ways:

1. At the tap after flushing the volume of water between the tap and the LSL. The volume of water is calculated based on the interior diameter and length of the pipe between the tap and the lead service line;
2. Tapping directly into the LSL; or
3. For single-family residences, allowing the water to run until there is a significant change in temperature which would be indicative of water that has been standing in the LSL.

NOTE: These samples are not used in 90th percentile calculations. Their sole purpose is to determine whether a LSL needs to be removed.

LSLR
Continued Applicability

LSLR stops when ≤ Pb AL for 2 consecutive monitoring periods



LSLR recommences if system again exceeds lead AL

A system is no longer required to continue replacing lead service lines if it meets the lead action level for **two**, consecutive, monitoring periods. The monitoring periods can be of any duration (e.g., 6 month, annual, or triennial).

If in **any** subsequent monitoring period, the system again exceeds the lead action level, it must again begin replacing lead service lines.

REMEMBER: It takes 2 consecutive monitoring periods to stop replacement, but only 1 monitoring period to trigger a system back into LSLR.

Systems must replace the portion of the LSL that they own. This definition is consistent with the 1994 court ruling in which the courts vacated the Agency's definition of "control" except for that portion owned by the water system.

Under the LCRMR, systems still are not required to replace a LSL if the lead concentration in all service line samples from that line is less than or equal to 0.015 mg/L.

The provision that allowed systems to submit documentation demonstrating that the system controlled less than the entire line has been eliminated, because the rule no longer presumes that systems control the entire length of the LSL.

Systems must document in their files the portions of LSLs that they own and the relevant legal authorities. The LCRMR do not require systems to submit this information to the State.

LCR Minor Revisions
Partial LSL Replacement

- Clarify who receives offer from system to replace privately-owned portion
- Strengthen requirements for partial LSLR
  - Notification prior to partial LSLR
  - Samples collected after partial LSLR
  - New reporting requirements for systems

- Implement on April 11, 2000

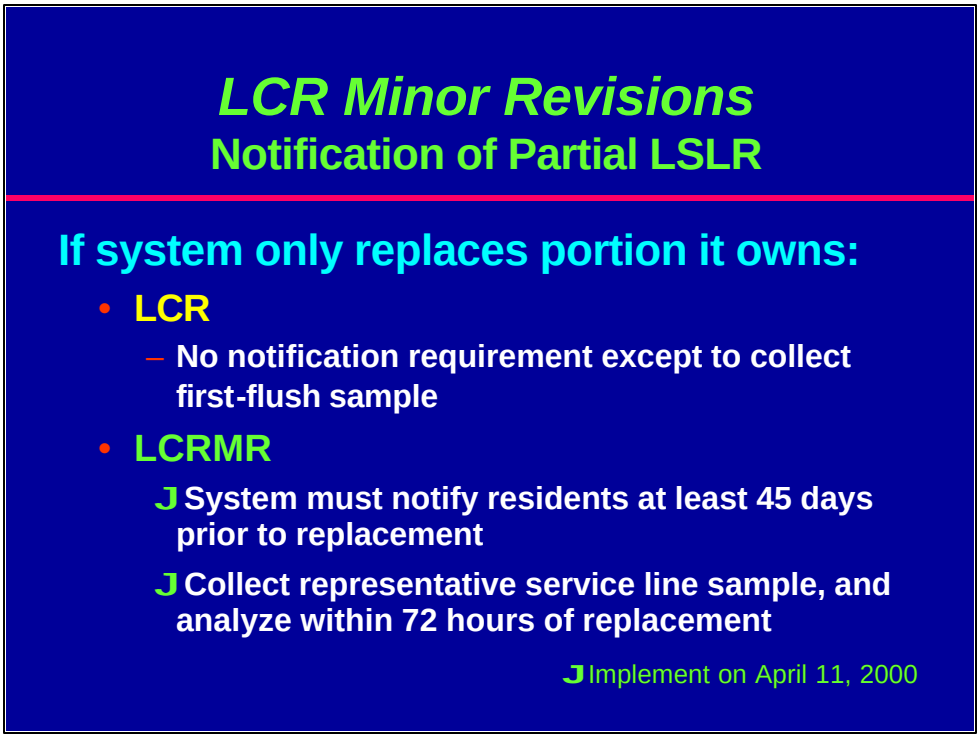
The LCRMR:

- Clarify who receives the offer from the system to replace the privately-owned portion of the LSL.
- Strengthen the system's requirements when it does not replace the privately-owned portion of the line regarding:
  - notification requirements to residents prior to partial LSLR;
  - sample collection requirements following partial LSLR; and
  - system reporting compliance with partial LSLR requirements to the State.

Each is of these requirements is discussed in more detail on the following three slides.

The LCRMR **clarify** that the offer to replace the privately-owned portion of the LSL must be made to the owner of the property (or the owner's authorized representative), rather than to the user. Under the LCR, it was unclear whether this offer was to be made to the users or building owner. Confusion could arise in the case where a building is rented, because the user(s) may not be the same as the building owner(s). The LCRMR also include language that allows systems to forego this offer if replacing the privately-owned portion is precluded by State, local, or common law.

The cost of replacing the privately-owned portion of the line is still the responsibility of the line owner. This portion of the provision has not changed from the 1991 LCR.



The LCRMR strengthen the notification requirements in the event that the offer to replace the privately-owned portion of the line is not accepted or the system is otherwise precluded from replacing the privately-owned portion. This situation would result in partial LSL replacement and systems must:

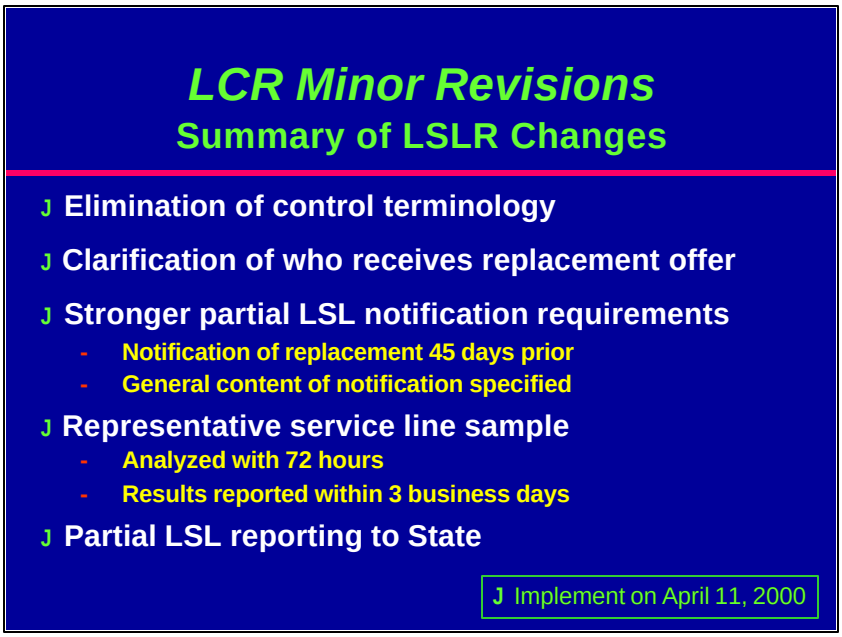
1. **Notify all residents served by the line being replaced, at least 45 days prior** to partial replacement. States can allow systems to provide less advanced notice if the line is being replaced in conjunction with emergency repairs. This notification must also inform the users of a possible temporary increase in lead levels and the measures they can take to reduce their exposure.
2. **Collect a sample representative of the water in the service line** and have it analyzed for lead within 72 hours after the partial LSL replacement. The LCRMR clarify that systems must pay for this analysis.

3. **Report the results** of the analysis to the owner and residents within 3 business days of receiving these results (including those that are not billing units). Systems can post the results in conspicuous places in common areas for multi-family residents. The results are also considered to be sent "on-time" if they are post-marked within 3 business days.

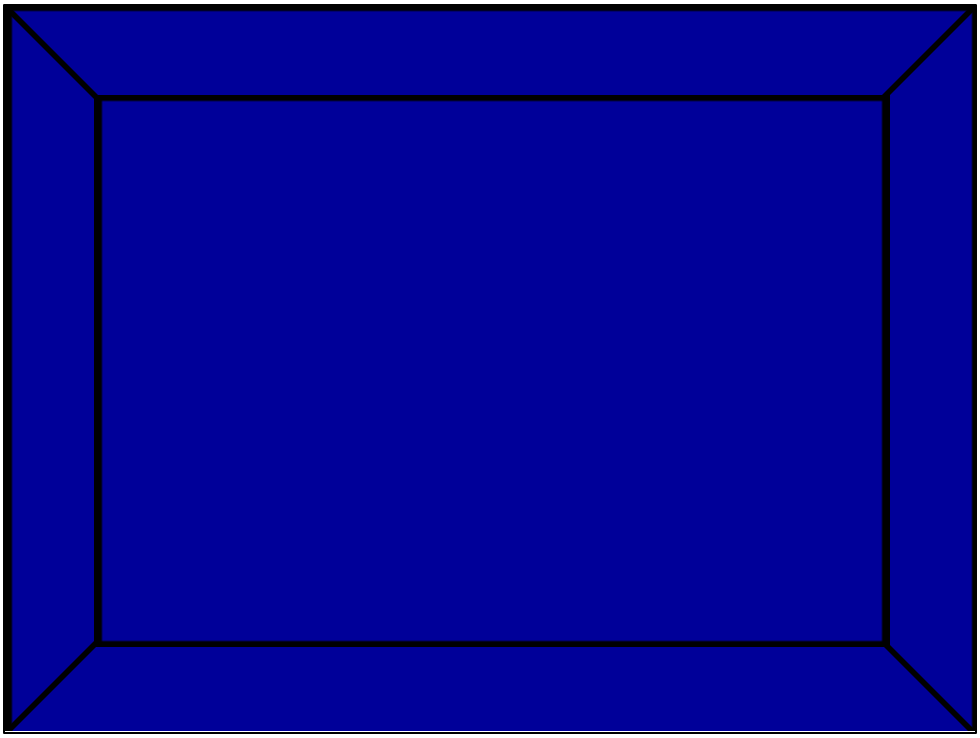
Note: Number 2 and 3 replace the original requirement to collect a first-flush tap water sample if the resident(s) so desire within 14 days of the partial replacement.

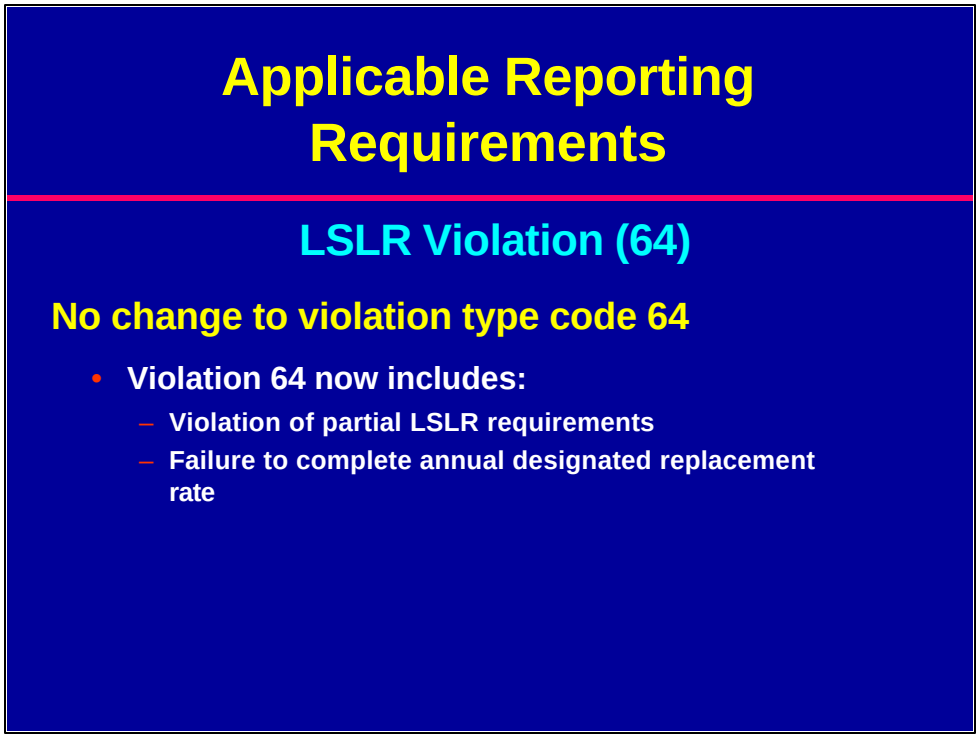
4. **Submit these monitoring results to the State** within 10 days of the month following that in which the system receives the results. For example, if a system collected the samples in September, and received the results during September, then it would be required to submit these results to the State no later than October 10th. A system can submit all of the partial lead service line monitoring results that it receives during any one month in a single report to the State. However, the system cannot save monitoring results from month to month and submit them collectively to the State in one report, without State approval. The LCRMR give States the option to eliminate or modify the reporting of post-partial lead service line monitoring results. States must describe in their primacy packages how they will verify compliance with partial LSL replacement requirements.

EPA has developed a guidance document, entitled, *Notification and Reporting Requirements for Partial Lead Service Line Replacement under the Lead and Copper Rule*, April 2000, EPA 815-R-99-022. This document also provides example letters that systems can use to ask the line owners/agents if they want their portion of the line replaced, notify their users of the partial replacement, and inform residents of the post-replacement analytical results.



LCRMR Revision	Where to Find It
Elimination of control terminology	Deleted from rule language
Clarification of who receives replacement offer	§141.84(d)
Stronger partial LSL notification requirements	§141.84(d)(1)
Representative service line sample	§141.84(d)(1)
Partial LSL reporting to State	§141.90(e)(4)





The LCRMR expand the definition of what constitutes an LSLR violation. Under the LCR, a system incurred this violation if it did not meet its annual replacement rate and/or report the supporting documentation that demonstrated that it met its replacement requirements. In those instances where the system does not replace the entire line up to the building inlet (also known as partial replacement). Systems replacing only a portion of a LSL, can incur a violation if they do not:

- Provide notice and guidance to residents at least 45 days before LSLR begins (unless the State allows a shorter notification period because the partial replacement is being done in conjunction with emergency repairs);
- Collect a tap sample within 72 hours of completing the partial LSLR;
- Mail and/or post results of the analysis to the owner and residents within 3 days of receipt of the results; ***or***
- Report information that the State deems necessary to assess whether the system met its partial LSLR monitoring and notification requirements.

EPA did not create separate violation types for failure to conduct the notification, monitoring, and reporting requirements associated with partial LSLR. Failure to conduct these activities is included as a treatment technique violation and is reported using the 64 violation code.

Applicable Reporting Requirements

LSLR Violation (64)

- Begin dates based on initial reason for violation
- One LSLR violation reported at a time
- If LSLR violation is resolved, report a new violation for subsequent noncompliance
- Intentional No-Action may apply

The begin date of the violation is based on the reason for the violation. If the reason is due to:

- ***Failure to meet the annual replacement rate requirements***, then the violation begins the first day after the end of the designated 12-month replacement year. *(Remember, the first year of LSLR begins when the State determines the PWS is triggered into LSLR.)*

- ***Failure to meet partial LSLR requirements***, then the violation begin date is the first day after the due day of the partial replacement project (i.e., notification to the resident prior to partial LSLR, sampling of water in service line and reporting results to users, and/or appropriate reporting to State.)

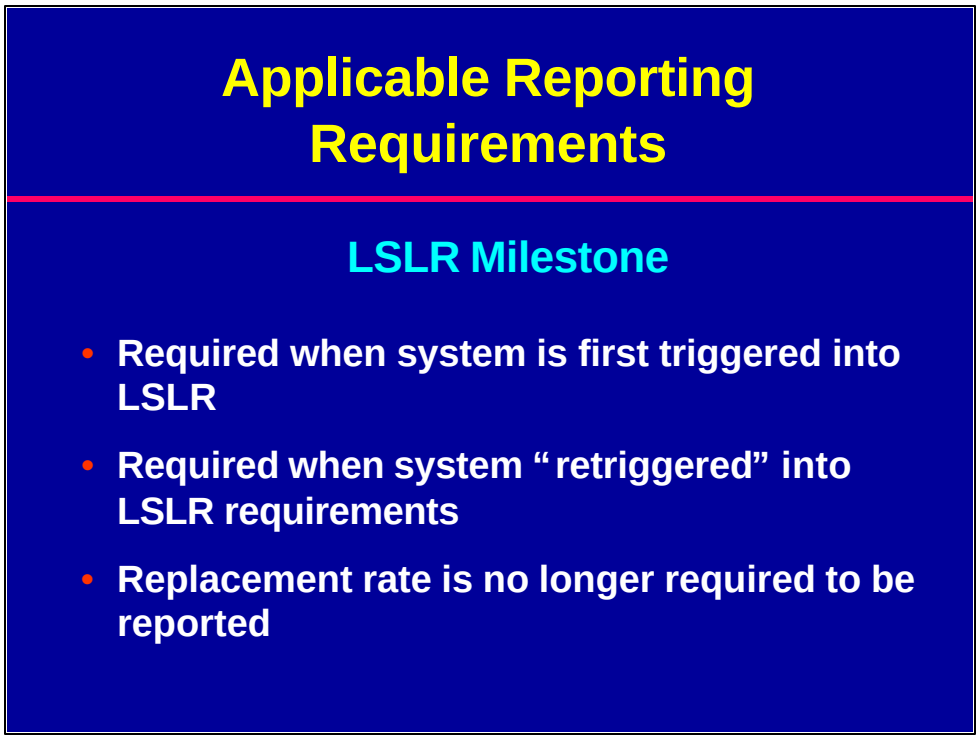
The end date is defaulted to December 31, 2015, regardless of the reason for the violation.

In an effort to simplify violation reporting for LSLR noncompliance, EPA will require only one violation to be open at a time for any and all conditions of LSLR noncompliance. For instance, if a system fails to notify residents prior to partial LSLR, it should incur a LSLR violation. If the system fails to meet other partial LSLR requirements and/or does not replace the full 7% of its lines on time, the LSLR violation initially reported will suffice and the State would not be required to enter additional LSLR violations. If the system returned to compliance, the initial LSLR violation would no longer be open and additional LSLR noncompliance beyond the RTC would call for a new LSLR violation to be opened. These points are illustrated in the examples below.

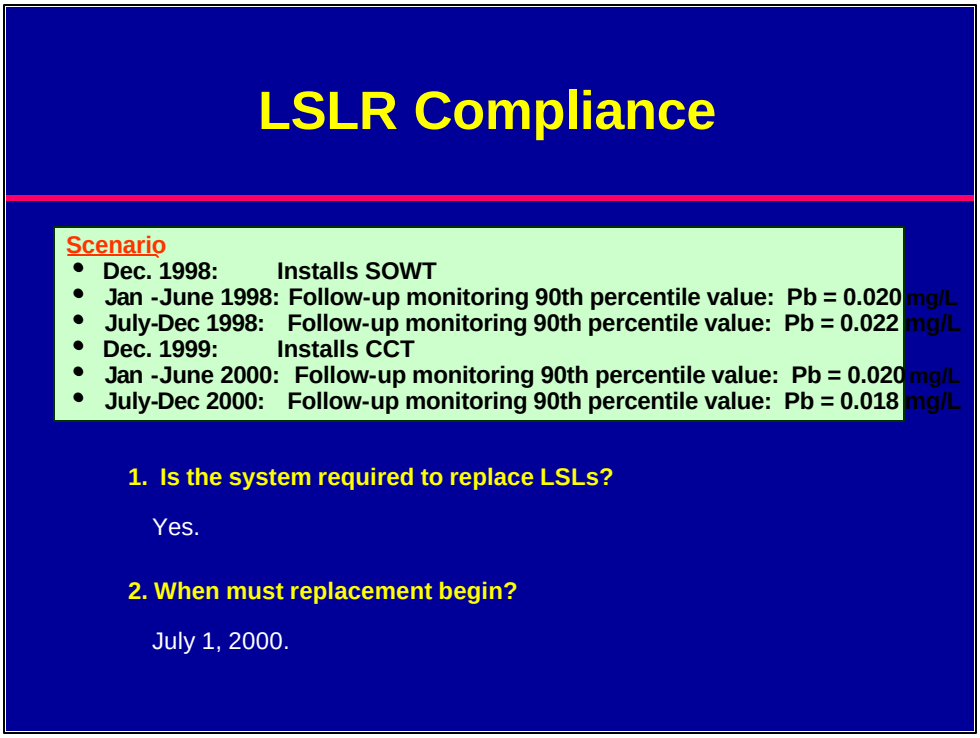
Example 1: The system was required to notify residents and owners of the LSL sample results by March 1, 2002 but did not do so until July 30, 2002. Further, the system was required to replace 7% of its LSLs by June 30, 2002, but did not finish this replacement until September 1, 2002. Under this scenario, only one violation is reported because the initial reason for the violation (notification of the LSL results) was not corrected before the system missed the deadline for replacing 7% of its lines. The begin date of the violation is based on the initial reason for the violation and is March 2, 2002. Because there are two causes for the violation, the system does not RTC until it also replaces 7% of its line. The end date of December 31, 2015 is replaced by the RTC date of September 1, 2002.

Example 2: Assume the same situation as presented in Example 1, except that the system notified the residents and owners by April 1, 2002 instead of by July 30, 2002. Under this scenario, two violations would be reported because the system returned to compliance for the initial cause of the violation before it failed to replace 7% of its lines.

Note: If a system has an outstanding violation and it is at or below the lead action level for 2, consecutive monitoring periods, it can discontinue LSLR requirements. In this instance, the State would report an "Intentional No-Action" instead of RTC. This point is illustrated on the last page of this section.



States must report, on a quarterly basis, those systems which are required to replace lead service lines and the date the system was required to start the replacement. ***States must also report this milestone if systems are triggered back into LSLR requirements due to a subsequent exceedance***. Under the LCRMR, States are no longer required to report those systems on an accelerated replacement schedule, the annual replacement rate, or submit a separate report for those systems which are in compliance with their replacement schedule. Replacement rates for LSLs which have already been reported to SDWIS/FED prior to January 12, 2000 will be archived, and will no longer be available in SDWIS/FED. However, States still must report a violation for systems that do not meet their replacement schedules.



Answer 1

The system is required to replace LSLs because it continued to exceed the lead action level after treatment has been installed.

Answer 2

The first year of LSLR begins on the first day after the end of the compliance period in which the system exceeded the lead action level in samples collected after the installation of OCCT and/or SOWT (whichever is later); in this example, July 1, 2000.

EPA anticipates that most systems that are required to install treatment will only be required to install OCCT because source water lead or copper levels are generally low. In this instance, the samples collected after the installation of OCCT will determine whether the system is required to replace lead service lines.

LSLR Compliance

Scenario

- **Dec. 1998: Installs SOWT**
- **Jan-June 1998: Follow-up monitoring 90th percentile value: Pb = 0.020 mg/L**
- **July-Dec 1998: Follow-up monitoring 90th percentile value: Pb = 0.022 mg/L**
- **Dec. 1999: Installs CCT**
- **Jan-June 2000: Follow-up monitoring 90th percentile value: Pb = 0.012 mg/L**
- **July-Dec 2000: Follow-up monitoring 90th percentile value: Pb = 0.011 mg/L**

1. Is the system required to replace LSLs? If so, when?

No. It did not exceed the lead action level after CCT was installed.

Answer

The system is not required to replace LSLs because it did not continue to exceed the lead action level after the later of the two treatments was installed.

Answer

The system must begin LSLR on July 1, 2000 because it continued to exceed the lead action level after treatment. Although, it was below the lead action level during July - December of 2000, it must have ***two*** consecutive monitoring periods at or below the lead action level. Therefore, if the system monitors during January - June 2001 and is at or below the lead action level, it can discontinue LSLR monitoring. In reality, if this system monitors early in the January - June 2001 monitoring period, it has time to determine if it is eligible to discontinue LSLR before it needs to replace any lines. However, the system needs to allow itself enough time to meet the 7% replacement rate should it be unable to have 2 consecutive rounds of tap monitoring that are at or below the lead action level.

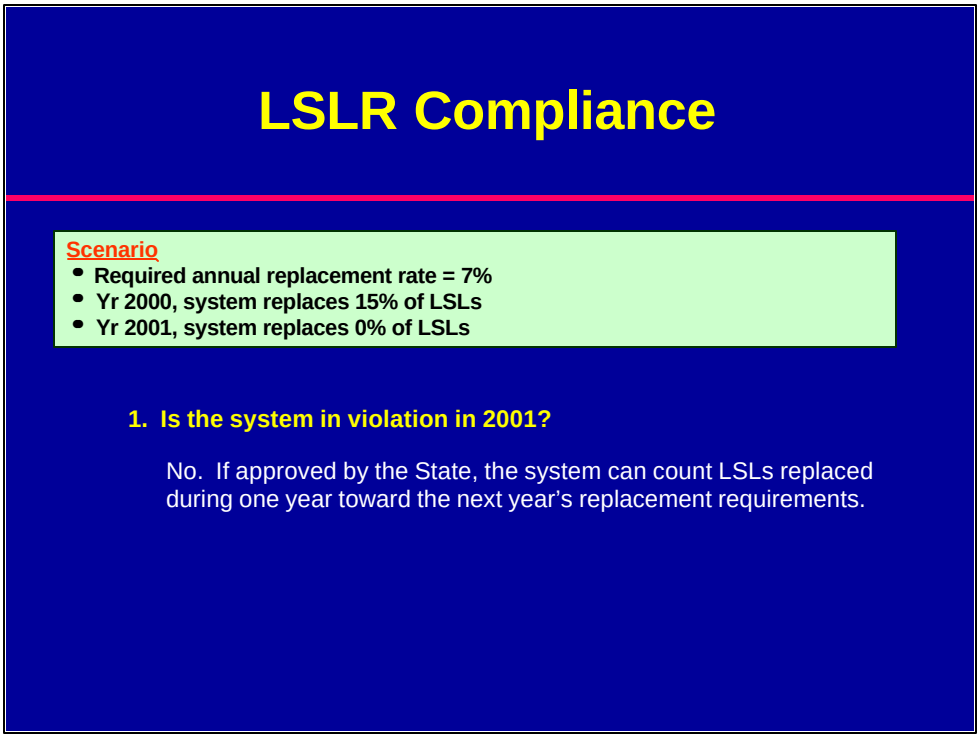
Answer

The system is in compliance because it met the 10% replacement rate and submitted documentation to that effect within 12 months. This system replaced 6% of the LSLs and demonstrated through LSL monitoring that the remaining 4% of the lines contribute ≤ 0.015 mg/L. A system is not required to replace any lines that contribute ≤ 0.015 mg/L and can count these LSLs toward the its annual replacement requirement. However, the system must provide the LSL monitoring results as part of its annual LSL compliance letter to the State.

The annual letter must contain:

- The number of LSLs scheduled to be replaced during the previous year of the system's replacement schedule;
- The number and location of each LSL replaced during the previous year of the system's replacement schedule;
- If measured, the water lead concentration and location of each LSL sampled, the sampling method, and the date of sampling.

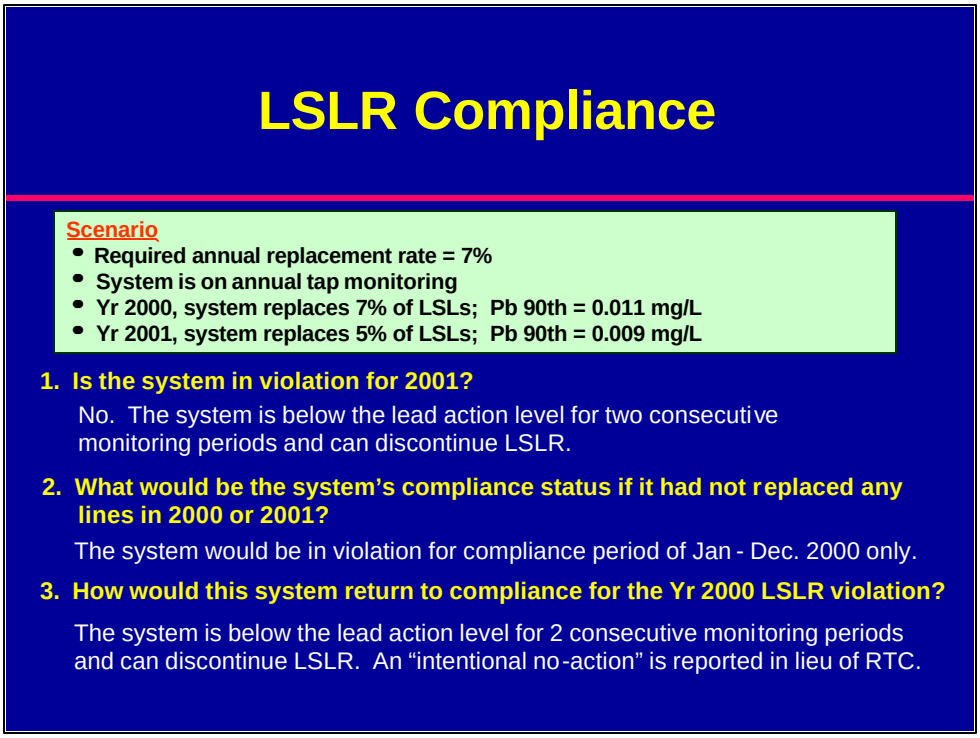
In addition, the first annual letter must contain a written demonstration that the system conducted a materials analysis to identify the initial number of LSLs in its distribution system, and a schedule for replacing at least 7 percent per year of the initial number of these LSLs.



Answer

A system may find it easier to replace all the LSLs in a given area; this may result in the system's replacing more than 7% of its lines in a given year. During the first year of replacement, the system must provide the State with a schedule for replacing at least 7% of its LSLs each year as part of its annual LSL compliance letter. Through this letter, the State would be made aware of the system's plans for replacing two-years' worth of LSLs in one year.

The system still is required to submit an annual compliance letter each year, even if no lines are replaced.



Answer 1

A system can discontinue LSLR whenever it is at or below the lead action level for two consecutive monitoring periods.

Answer 2

During 2000, the system was not eligible to discontinue LSLR because it only had one monitoring below the lead action level. The system met the criteria for discontinuing LSLR in 2001, therefore, no replacement was required during this year. The system has incurred a LSLR violation (64 violation type code), which is a treatment technique violation. The begin date of this violation would be January 1, 2001. The end date would be defaulted to December 31, 2015.

Answer 3

Once the system is at or below the lead action level for 2, consecutive, monitoring periods it can cease lead service line replacement. In this example, the State would report an **"Intentional No-Action"** (code SO6) in lieu of RTC (code EOX or SOX) and link it to the violation. If the system exceeds the lead action level in a subsequent round of monitoring, it must again begin lead service replacement.

Partial LSLR Compliance

Scenario

- **Owner does not want privately-owned LSL portion replaced**
- **2/15/01: system notifies owner of partial replacement, impacts, protective measures**
- **3/1/01: system replaces the portion that it owns**
- **3/1/01: system collects LSL sample**
- **3/15/01: system receives analytical results**
- **3/30/01: system reports results to residents served by line**
- **5/10/01: system provides results to the State**

1. Is the system in violation?

Requirement	Is the system in violation?
Notification prior to pLSLR	Not if pLSLR done w/emergency repairs
LSLR sample	No, collected within 72 hours of pLSLR
Results to residents	Yes, was not done within 3 business days
Results to State	Yes, due by 4/10/01, unless State modifies req't

Answer

When the system does not replace the privately-owned portion, it must fulfill the following requirements:

1. **Notify all residents served by the line being replaced, at least 45 days prior to partial replacement (pLSLR).**

   The system was required to deliver this notification by 1/14/01 unless the State allowed the system to provide less advanced notice because the LSL was being replaced in conjunction with emergency repairs.

2. **Collect a sample representative of the water in the service line** and have it analyzed for lead within 72 hours after the partial LSLR. The system collected the sample on the same day it completed pLSLR and, therefore, met the 72 hour deadline.

3. **Report the results** of the analysis to the owner and residents within 3 business days of receiving these results. To be in compliance, the system would have had to mail the results by March 20, 2001.

4. **Submit these monitoring results to the State** within 10 days of the month following that in which the system receives the results. These results were due on April 10, 2001, unless the State had eliminated or modified this reporting requirement.

Answer 1

In this example, the system has a LSLR violation (i.e., type 64) for failure to notify owners residents within 3 business days of receiving the analytical results of the lead sample. The begin date of this violation is the first day after the system was required to provide these results, or March 31, 2002 in this example. The end date is defaulted to December 31, 2015. The end date will be replaced by May 31, 2002, (i.e., the date the system returned to compliance for this violation), when the State reports RTC and links the action to the violation.

The system incurred a second LSLR violation for failure to replace 7% of its lines by December 31, 2002. The begin date for this violation is the day after the end of the designated 12-month replacement period, or January 1, 2003. The end date is defaulted to December 31, 2015.

Note: If any new reasons for the system incurring a LSLR violation occur before the system RTC for failing to replace 7% of the lines in 2002, a new violation is not assigned to the system. Instead, the system cannot RTC until it corrects all of the reasons for the violation.

Answer 2

a. The system would only have one LSLR violation because the initial reason for the violation had not been corrected before the system failed to met its replacement schedule. The system cannot RTC until all the reasons for the violation have been corrected. Under this scenario, the begin date would be dictated by the reason that initiated the violation. In this example, failure to notify the owners/residents of the analytical results occurred before the system failed to meet its replacement schedule. Thus, the begin date for this violation is March 31, 2002.

b. If the system were at or below the lead action level for 2, consecutive, monitoring periods, the system can discontinue LSLR requirements. The State would report an **"Intentional No-Action"** and link it to the violation.

Lead and Copper NPDWR Requirements

- Lead and Copper Tap/Initial WQP Monitoring
- Corrosion Control Optimization
- Public Education
- Source Water Monitoring & Treatment
- Replacement of Lead Service Lines
- State Reporting and Recordkeeping
- Primacy and Implementation

Remember, Section 9 of this manual, Supplemental Information, contains several tables that summarize State reporting requirements as follows:

- Comparison of Required Reporting for Milestones and 90th Percentile Levels under the LCR and LCRMR on page A-38 (also repeated in this section on page 14);
- Revisions to Lead and Copper Violation Reporting on page A-39 (also repeated in this section on pages 15 and 16);
- Schedule for Reporting Revised Milestones, Lead 90th Percentile Data, and Consolidated Violations on page A-41;
- Basis for Determining that a System is "Deemed" to have Optimized Corrosion Control Treatment on page A-42;
- Changes to Violation Definitions on page A-43;
- State Enforcement Follow-up Actions That Must Be Reported to SDWIS/FED on page A-46;
- When Intentional No-Action Applies on page A-47; and
- Revised Definition of Compliance Achieved by Violation Type on page A-48.

State Reporting Requirements
LCR

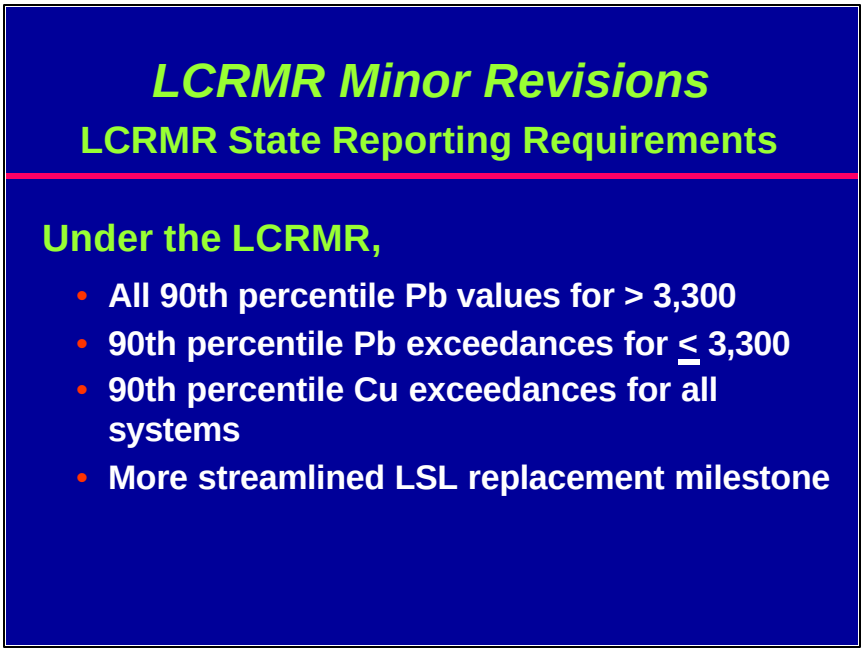
Under the LCR, States reported each system that:

- **Exceeded lead or copper AL and date**
- **Required to complete CC study & date study received**
- **State determined CCT, date, and installed OCCT**
- **State designated OWQPs & date**
- **Required to install SOWT, date, and installed SOWT**
- **State set MPLs**
- **Required to replace LSLs, on accelerated schedule, and in compliance with schedule**

Under the LCR, States were required to report the name and PWS ID number of each PWS:

- which exceeded the lead and copper action levels and the date upon which the exceedance occurred;
- required to complete the corrosion control study and the date the State received the results of the study;
- for which the State designated optimal corrosion control treatment, the date of the determination, and each system that completed installation of the treatment;
- for which the State designated OWQPs and the date of the determination;
- which the State required to install source water treatment, the date of the determination, and each system that completed installation of the treatment;
- for which the State specified maximum permissible source water levels; and
- required to begin replacing lead service lines, each public water system for which the State established an accelerated replacement schedule; and each system reporting compliance with its replacement schedule.

Note: EPA requested that States report 90th percentile lead levels for all large systems.

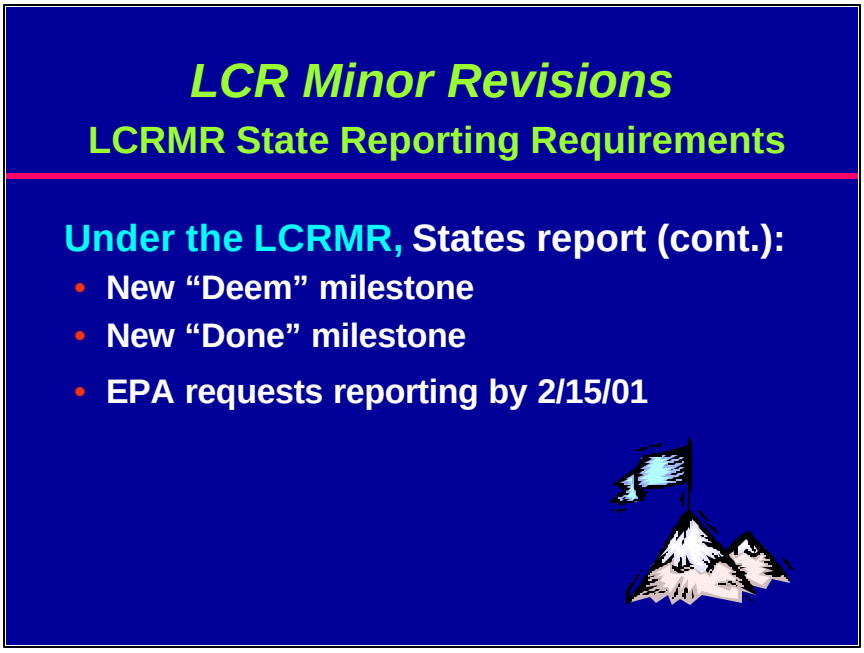


States must report the 90th percentile values and the first and last dates of the monitoring period for which the 90th percentile value were calculated for the following:

- All 90th percentile lead values for systems serving 3,301 or more people, regardless of whether these values are at, above, or below the action level.
- Those lead 90th percentile levels that are above the lead action level of 0.015 mg/L for small systems (25 - 3,300 people).
- Those copper levels that are above 1.3 mg/L for all system sizes.

States must still report a milestone for systems that are required to begin replacing LSLs, but States are no longer required to report whether the system is on an accelerated replacement schedule, or submit a separate report of those systems that are in compliance with their replacement schedules. States must still report violations to EPA for systems that **are not** in compliance with their LSLR requirements.

Note: The State must report another LSLR milestone for any system that is required to resume lead service line replacement.



States must report a new **Deem milestone** for each system for which States have:

- Designated OWQPs;
- Deemed to be optimized because it serves ≤ 50,000 and is at or below the lead and copper action level for 2 consecutive, 6-month monitoring periods; ***or***
- Deemed to be optimized because it has minimal levels of corrosion in its distribution systems [i.e., (b)(3) system].

For each of these systems, States must report the date it first determined that the system satisfied the DEEM milestone criteria and one of 3 reason codes. These codes are explained in more detail on the next page.

States must report a **Done milestone** for each system that has implemented optimal corrosion control, completed installation of source water treatment and/or completed LSLR. States need to report the latest of the following:

- Date the State designates OWQPs or deems the system to have optimized corrosion control because it meets the requirements of §141.81(b)(1) or (b)(3);
- Date the State designates MPLs for systems required to install SOWT, or the date the State determines source water treatment is not needed; ***or***
- Date the system completes LSLR or becomes eligible to stop LSLR because it is at or below the lead action level for two consecutive, 6-month monitoring periods.

There are no reason codes associated with the **Done milestone**.

EPA is requesting that States report by February 15, 2001, those systems the meet the Done and/or Deem milestone criteria by January 11, 2001. After January 11, 2001 the Done and/or Deem milestone must be reported within 45 days after the end of the quarter in which the State determined the system met the Done or Deem milestone criteria.

Note: To facilitate reporting, States may report a date of April 11, 2000 for any system that meets the **Done** and/or **Deem** criteria on on before this date. However, EPA prefers that the States report the actual date that the system met the criteria.

LCR Minor Revisions

Deem Milestone

C817 Code Value	Definition	Day Reported to SDWIS/FED
B1	System ≤ 50,000 that is at or below both ALs for 2 consecutive 6 months	State determines system met (b)(1) criteria
WQP	A (b)(2) system or one for which State has designated OWQPs	Date State Designates OWQPs
B3	A (b)(3) system	State determines system met (b)(3) criteria

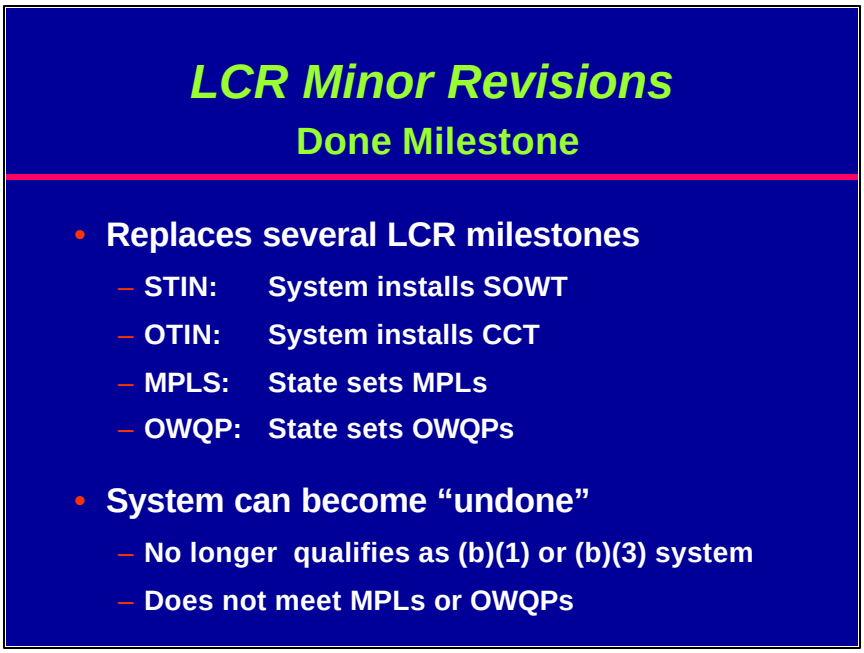
States must report ***one of 3 reason codes*** (C817 code value) for the **Deem milestone.**

- The code value **B1** applies to systems that are deemed to have optimized corrosion control by meeting the criteria under §141.81(b)(1). It applies to systems serving 50,000 or fewer people that are at or below the lead and copper action levels during each of two, consecutive, 6-month monitoring periods. The date for this reason code is the date the State determines that the system met the (b)(1) criteria. ***If the system met the (b)(1) criteria after installing CCT and the State set OWQPs, report the reason code WQP instead of B1.***

- The code value **WQP** applies to: any system for which the State has designated OWQPs ***or*** a system that is deemed according to criteria in §141.81(b)(2). A system meets the criteria of §141.81(b)(2) (i.e., is a (b)(2) system) if the State has determined (DEEMED) that it has optimized corrosion control before December 7, 1992, based on review of water quality parameters, a report on the evaluation and selection of OCCT, a report on OCCT installation and maintenance, and tap sample results. The date for this reason code is the date the State designates OWQPs.

- The code value **B3** applies to systems that are deemed according to criteria in §141.81(b)(3) ***without installing corrosion control treatment***. These systems have minimally corrosive water in the distribution system, and have demonstrated for two, consecutive, 6-month periods that the difference between the 90th percentile tap water lead level and the highest source water lead concentration is < 0.005 mg/L. Also, the LCRMR expand the definition to include systems whose source water lead levels are below the Method Detection Limit of 0.005 mg/L and whose 90th percentile lead level is ≤0.005 mg/L. In addition, after July 12, 2001, a system no longer qualifies as a (b)(3) system if it exceeds the copper action level. The date for this reason code is the date State determines that the system met the (b)(3) criteria. ***If the system met the (b)(3) criteria after installing CCT and the State set OWQPs, report the reason code WQP instead of (b)(3).***

Remember, a system can meet the DEEM milestone criteria without actually being required to physically install corrosion control treatment (as may be the case with a (b)(1) or (b)(3) system).



The DONE milestone replaces the requirement to report separate milestones for each system that is required to: install source water treatment; that has installed the State-designated source water treatment; required to install corrosion control treatment; that has installed State-designated corrosion control treatment; and for which the State has specified maximum permissible source water levels (MPLs) and/or OWQPs.

Some systems can become **"Undone"** because they no longer meets the Done criteria. This situation would occur if:

- a (b)(1) system subsequently exceeds the action level;
- a (b)(3) system no longer meets the (b)(3) criteria because it:
  - exceeds the lead or copper action level,
  - the difference between the 90th percentile lead level and the highest source water lead concentration level exceeds 0.005 mg/L; or
  - source water lead levels are no longer below the Method Detection Limit of 0.005 mg/L and/or 90th percentile lead level is higher than 0.005 mg/L; or
- a system does not in compliance with its OWQPs or MPLs.

In these instances, the State would modify the Done milestone by adding a milestone end date that corresponds to when the system no longer met the Done criteria. The end date signifies that additional monitoring requirements, or lead service line replacement, or modifications to the corrosion control treatment process, have been triggered. The milestone end date must be reported to SDWIS/FED within 45 days after the end of the quarter in which the State determined the system no longer met the Done criteria.

If, in the future, a system again met the DONE criteria, the State would report another milestone record for the new DONE status, with a milestone begin date corresponding to the date the State determined the system met the DONE criteria for the second time.

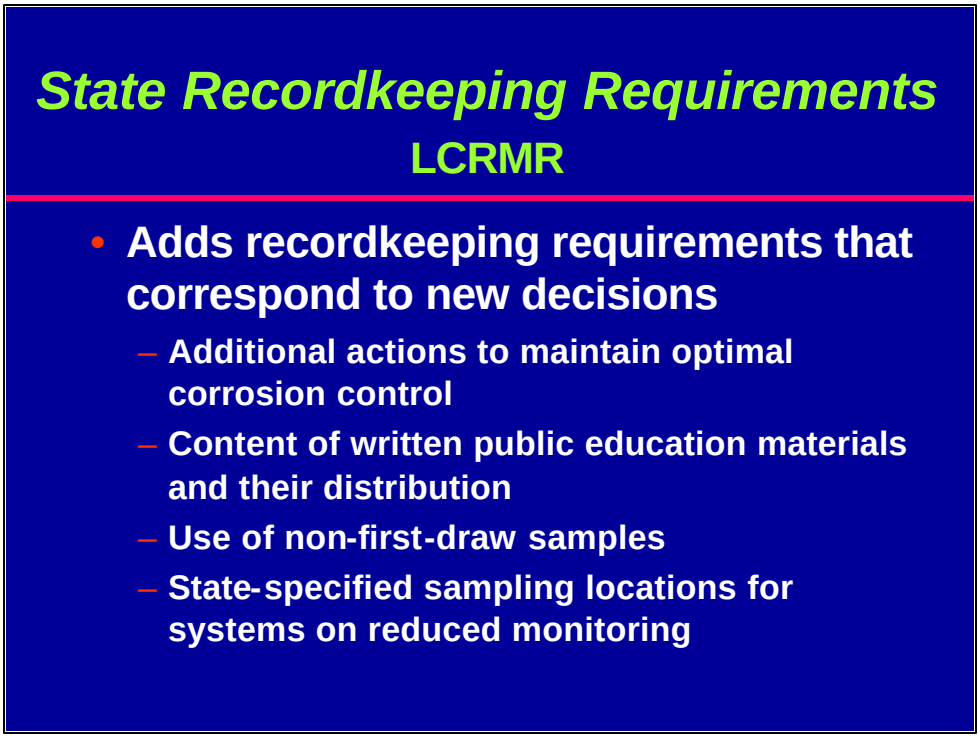
Note: It is possible that a system may achieve the "Done" status more than once. If multiple "Done" situations occur ***before January 11, 2000*** for the same system, only report the "Done" milestone for the most recent situation.

Schedule for reporting new requirements

EPA completed modifications to the Safe Drinking Water Information System (SDWIS) ahead of the May 14, 2000 schedule in the LCRMR. SDWIS began accepting new data as early as January 20, 2000.

States have the option of reporting the old information until January 11, 2002.

By January 12, 2002, States must report in accordance with the new requirements only.



States must maintain records of the following:

Additional actions to maintain optimal corrosion control

Any additional requirements that States determine are needed to maintain optimal corrosion control for those water system that have installed corrosion control treatment, or that change treatment or add a new source.

Content of public education materials

Any decisions that States make regarding:

- Changes to mandatory public education language (such as deletion of reference to LSLs, consumer access to records).
- Use of NTNCWS alternate mandatory language and delivery methods for special-case CWSs, if States require them to obtain prior approval.
- Allowances for CWSs serving 501 to 3,300 to omit newspaper notification and/or limit distribution of pamphlets.
- Need for small systems to provide pamphlets to additional facilities than those that primarily provide services to pregnant women and to children.

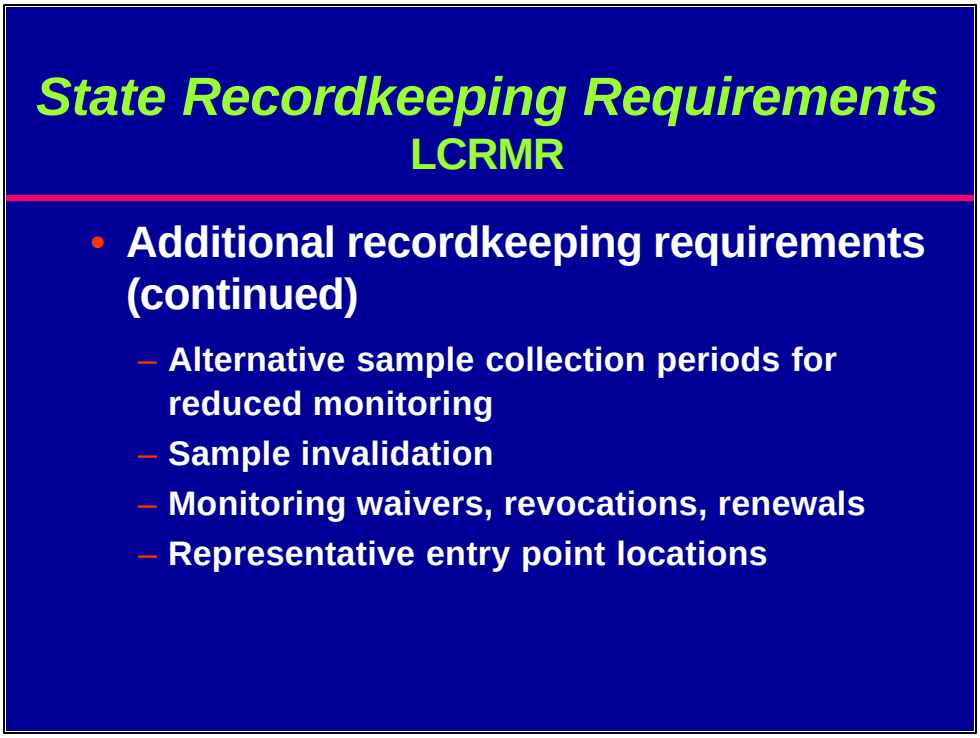
Use of non-first draw samples

State decisions regarding a system's use of non-first-draw sample to complete its sampling pool.

Sampling locations for systems on reduced monitoring

Any decisions that States make regarding which sampling locations must be used.

Note: Records must be kept for 12 years. This requirement has not changed.



States must maintain records of the following:

Alternate sample collection periods for reduced monitoring

Any system-specific determinations to alternative sample collection periods for systems subject to reduced monitoring.

Sample invalidation

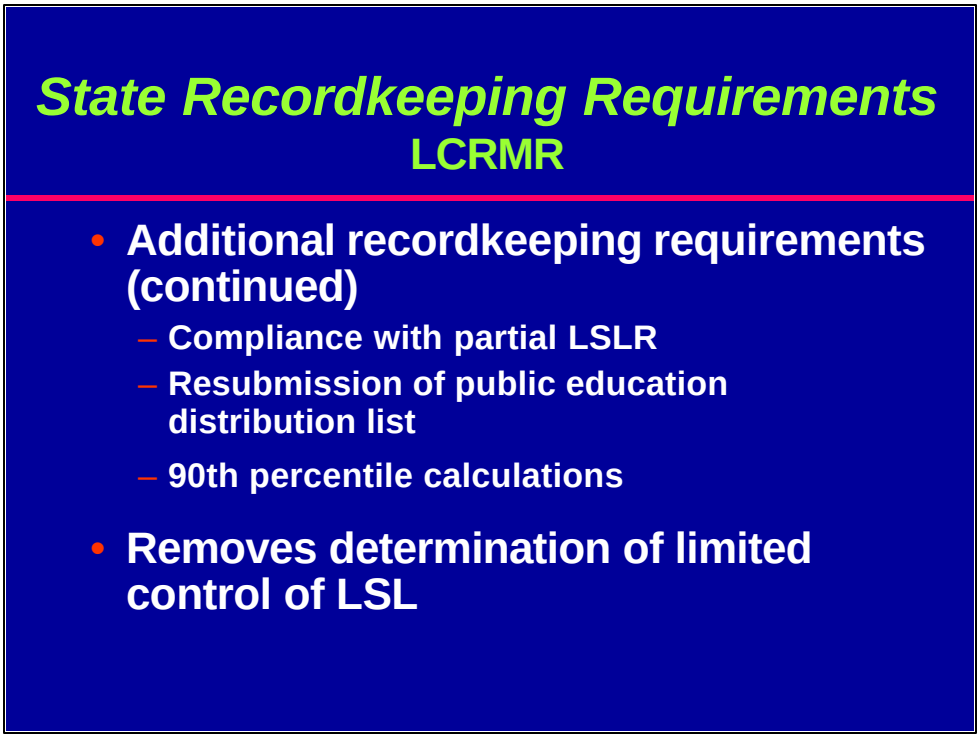
Decisions regarding the invalidation of a sample.

Monitoring waivers, revocations, renewals

Records pertaining to system-specific decisions regarding a small system's waiver application, any conditions for granting the waiver; waiver revocations and the reasons for this decision; and waiver renewals.

Representative entry point locations

Decisions on which entry point sites must be used by ground water systems wishing to limit WQP entry point monitoring to representative sites.



States must maintain records of the following:

Compliance with LSL replacement

Decisions on what information must be provided by system to demonstrate compliance with partial LSLR notification and monitoring requirements.

Resubmission of public education distribution list

Any system-specific decisions regarding the resubmission of detailed documentation to demonstrate completion of public education tasks.

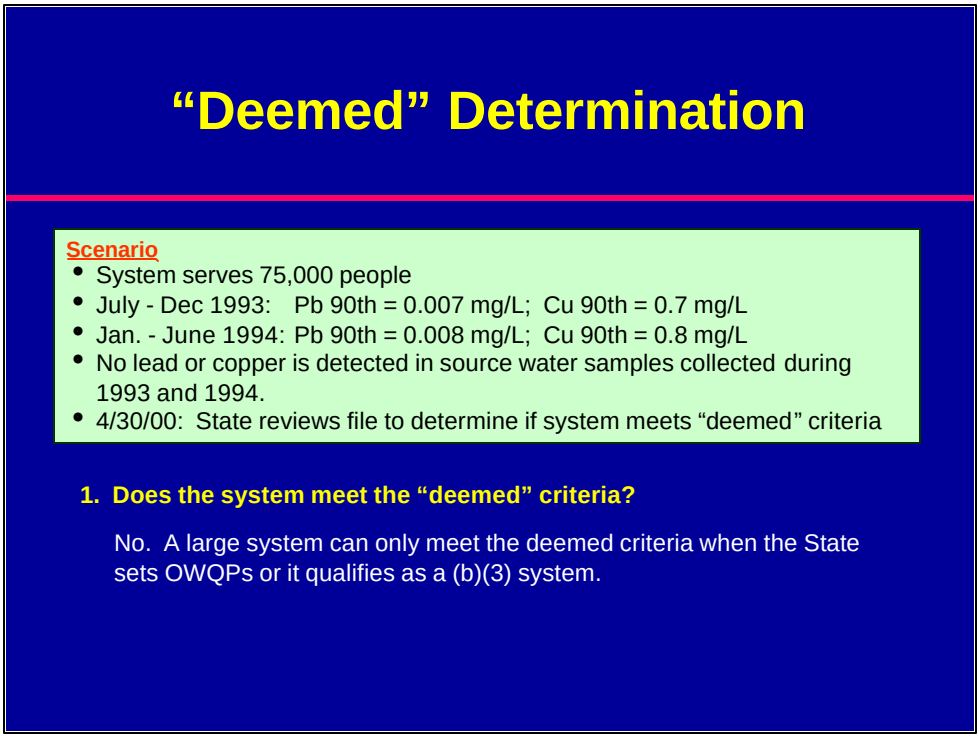
90th percentile calculations

Decisions involving 90th percentile calculations, such as deadline for system to submit monitoring data and any calculations performed by the State in lieu of the system.

Removes determination of limited control of LSL

The LCRMR eliminate the need for a system to submit documentation that demonstrates that it has limited control of a line and for States to maintain records of this documentation. This was required as part of §142.14(d)(8)(vii).


State Reporting
Compliance Examples



Answer

A system that is at or below the lead and copper action level for two consecutive 6-months meets the criteria of §141.81(b)(1) (i.e., is a (b)(1) system). This criteria only applies to small and medium-size systems (i.e., those serving $\leq$ 50,000 people).

A large system meets the "deemed" criteria:

1. If it qualifies as a (b)(3) system or
2. When the State sets OWQPs.

These criteria also apply to small or medium-size systems.

The system in this example does not qualify as a (b)(3) system and therefore, will not be "deemed" until the State sets OWQPs.

Note: If the system in this example had served 50,000 or fewer people, then the system would have met the deemed criteria on June 30, 1994.

"Deemed" Determination

Scenario

- System serves 55,000 people
- Jan - June 1992:
  source Pb = 0.005 mg/L; Pb 90th = 0.007 mg/L; Cu 90th = 1.2 mg/L
- July - Dec 1992:
  source Pb = 0.005 mg/L; Pb 90th = 0.008 mg/L; Cu 90th = 1.4 mg/L
- July - Dec 2000:
  source Pb = 0.005 mg/L; Pb 90th = 0.008 mg/L; Cu 90th = 0.8 mg/L

1. **Does the system meet the "deemed" criteria?**

   Yes, on Dec. 31, 2000 when it meets the (b)(3) criteria, based on the LCRMR definition.

2. **What if the system was at or below the copper action level during monitoring conducted in 1992.**

   The system would have met the deemed criteria on Dec. 31, 1992.

Answer 1

Under the LCR, the system meets the definition of a (b)(3) system on June 30, 1992 because the difference between its 90th percentile and source water level is less than 0.005 mg/L. However, based on the 1992 data, the system does not meet the (b)(3) criteria under the LCRMR because it exceeds the copper action level.

The system conducts monitoring during July - December 2000 in which it is below the copper action level and the difference between its lead 90th percentile level and source water level remains below 0.005 mg/L. Therefore, the system meets the (b)(3) criteria under the LCRMR, and thereby the "deemed" criteria on December 31, 2000.

Answer 2

If the system had been at or below the copper action level during initial monitoring that was conducted in 1992, it would have met the (b)(3) criteria under both the LCR and LCRMR. The date that the system met the "deemed" criteria would have been December 31, 1992 instead of December 31, 2000.

"Deemed" & "Done" Determinations

Scenario

- System serves 35,000 people
- System has lead service lines
- July - Dec. 31 1992: Pb 90th = 0.020 mg/L; Cu 90th = 1.2 mg/L
- Dec. 15, 1996: System installs CCT
- Jan - June 1997: Pb 90th = 0.007 mg/L; Cu 90th = 0.8 mg/L
- July to Dec 1997: Pb 90th = 0.007 mg/L; Cu 90th = 0.8 mg/L
- May 15, 1998: State designates OWQPs

1. **Does the system meet the "deemed" criteria?**
   Yes, on 5/15/98, when the State sets OWQPs.
2. **Does the system meet the "done" criteria?**
   Yes, also on 5/15/98.
3. **What if it had exceeded the lead AL level during 1997?**
   No, the system would have been triggered into LSLR and would not be "done" until LSLR completed or no longer required.

Answer 1

Any size system meets the "Deem" criteria when the State sets OWQPs. Although the system in this example qualified as a (b)(1) system during follow-up monitoring conducted after the installation of CCT, the B1 reason code should not be reported. Instead, the B1 reason code is reserved for systems that meet the (b)(1) criteria ***without installing treatment***.

Answer 2

The system meets the "Done" criteria when the State set OWQPs unless:

1. The system is required to install source water treatment and has not completed installing this treatment by the date the State designates OWQPs.
2. The system is subject to lead service line replacement requirements and has not completed these requirements by the date the State designates OWQPs.

Remember: To facilitate reporting, States may report a date of April 11, 2000 for any system that meets the **Done** and/or **Deem** criteria on or before this date. However, EPA prefers that the States report the actual date that the system met the criteria (or 5/15/98 in this example.)

Answer 3

If the system had exceeded the lead action level in the monitoring that was conducted after the system installed treatment, it would be triggered into LSLR. The system in this instance would not be "Done" until it completed replacing all of its LSLs or it no longer was subject to the LSLR requirements (i.e., at or below the lead action level for 2 consecutive monitoring periods.)

"Done" Determination

Scenario

- System serves 500 people
- Initial monitoring:
  - July - Dec. 1993: Pb 90th = 0.007 mg/L; Cu 90th = 1.2 mg/L
  - Jan - June.1994: Pb 90th = 0.007 mg/L; Cu 90th = 1.1 mg/L
- Reduced monitoring during Aug 2001:
  - Pb 90th = 0.008 mg/L; Cu 90th = 1.5 mg/L
- Monitoring after CCT installation:
  - Jan - June 2004: Pb 90th = 0.006 mg/L; Cu 90th = 0.7 mg/L
  - July - Dec 2004: Pb 90th = 0.007 mg/L; Cu 90th = 0.6 mg/L
- May 1, 2005: State designates OWQPs

1. Does the system meet the "Done" criteria?

June 31, 1994	Done, meets (b)(1) criteria
Aug 2001	Undone because exceeds copper AL
May 1, 2005	Done, State sets OWQPs.

Answer

This example illustrates a system that met the "Done" criteria but because of a subsequent exceedance no longer meets the "Done" criteria. In this example, the system first met the "Done" criteria during initial monitoring that was conducted during 1993 and 1994 because it was below the lead and copper action level for 2, consecutive, 6-month monitoring periods (i.e., it was a (b)(1) system). During reduced monitoring that was conducted during August 2001, the system exceeded the copper action level. The system no longer qualified as a (b)(1) system.

The system again met the "Done" criteria when the State set OWQPs. If the system had continued to exceed the copper action level after the installation of treatment, the system would still meet the "Done" criteria. A copper exceedance does not trigger LSLR requirements and therefore, the setting of OWQPs represents the latest event that qualifies as system as being "Done".

States need to keep track of changes in a system's "Done" status.

Remember: When a system no longer meets the DONE criteria, the milestone is "UNDONE" and the status is changed by modifying the milestone record by reporting the milestone **END DATE**.

SDWIS/FED Reporting
Milestones

DEEM Milestone

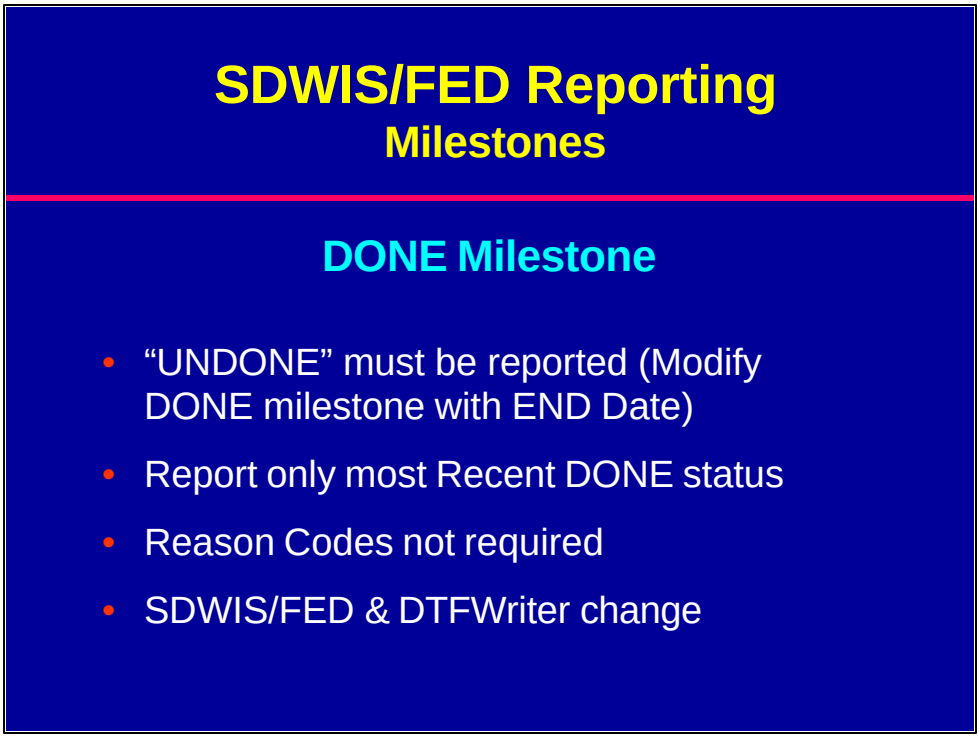
- Reason Code (C817) used for DEEM milestone
- Represents the basis for the State's determination that a system is "deemed" to be optimized under the LCR/LCRMR
- Permitted values: B1, WQP, and B3

- **B1 =** systems serving ≤ 50,000 or fewer people that are at or below the lead and copper action levels during each of two consecutive 6-month monitoring periods. The date for this reason code is the date State determines that the system met the (b)(1) criteria. ***If the system met the (b)(1) criteria after installing CCT and the State set OWQPs, report the reason code WQP instead of (b)(1).***

- **WQP =** systems that are deemed according to criteria in §141.81(b)(2) *or* for which the State has set OWQPs. The date for this reason code is the date State designates OWQPs.

- **B3 =** systems that have for two consecutive 6-month periods that the difference between the 90th percentile tap water lead level and the highest source water lead concentration is < 0.005 mg/L. Under LCRMR, also includes systems whose source water lead levels are below the Method Detection Limit of 0.005 mg/L and whose 90th percentile lead level is ≤ 0.005 mg/L. The date for this reason code is the date State determines that the system met the (b)(3) criteria. ***If the system met the (b)(3) criteria after installing CCT and the State set OWQPs, report the reason code WQP instead of (b)(3).***

Remember: After July 12, 2001, a system no longer qualifies as a (b)(3) system if it exceeds the copper action level.



Report only Most Recent Done Status when reporting DONE for the first time.

When a system no longer meets the DONE criteria, the milestone is "UNDONE" and the status is changed by modifying the milestone record by reporting the milestone **END DATE**.

If and when, the system meets the DONE criteria, a second DONE milestone should be reported.

SDWIS/FED Reporting
Milestones

SDWIS/FED Implementation

- Conversion of PB90 and CU90 to samples
- Rejection of discontinued milestones
- Requesting DEEM milestones be reported by February 15, 2001(req'd bby Jan. 11, 2002)
- Continued tracking of discrete Milestones by State
- Missed milestones reported as violations

SDWIS/FED Implementation:

Database frozen and LCR data archived. Milestones no longer required (CCSR, CCSC, OTDE, OTIN, STDE, STIN, WQPS, MPLS) were deleted, and CU90, PB90 converted to Sample records.

Unwanted milestones will be displayed on the error reports until January 11, 2002. After which time, they will be rejected.

SDWIS/FED Reporting
Milestones

SDWIS/FED Milestone Record Format

DATA ELEMENT Number	Name	Type	Length	Format/Comment
C101	PWS ID	A/N	9	SSxxxxxxx
C801	Milestone ID	Number	4	nnnn
C803	Milestone Date	Date	8	YYYYMMDD
C804	Milestone End Date	Date	8	YYYYMMDD
C805	Milestone Code	A/N	4	DEEM, DONE, LSLR
C813	Milestone Comment	A/N	40	text field
C815	Milestone Value	Decimal	7.8	nnnnnnn.nnnnnnnn*
C817	Milestone Reason Code	A/N	4	B1, B3, WQP

* Milestone Value no longer valid for LCRMR violations as of January 2000

REQUIRED MILESTONE DATA:

PWS-ID

Milestone-ID: must be unique for this PWS in the input file

Milestone Date: the day system met the milestone criteria for DEEM, DONE, OR, date State determines system must begin LSLR. (**Note:** The date of April 11, 2000 is acceptable for systems meeting the DEEM or DONE criteria on or before this date.)

Milestone End Date: Day system no longer meets DONE criteria, only valid for DONE milestone

Milestone Code: DEEM, DONE, or LSLR

Milestone Value: No longer valid for LCRMR violations

OPTIONAL ATTRIBUTES: Milestone Comment: 40 character text field

- **SDWIS/FED DEFAULTS:** NONE
- **EXCEPTION CONDITIONS:** NONE

SDWIS/FED Reporting
Milestones

DTF Transaction Form

Form ID	Data Qualifiers Qual 1	Qual 2	Qual3	Action Code	Data Element Number	Data Element Value	N/A	Batch Seq. Num.
1-2	3-11	12-18	19-25	26	27-31	32 - 71	72-74	75-80
C4	DC1234567	0001		I	C803	19940701		010715
C4	DC1234567	0001		I	C805	DEEM		010715
C4	DC1234567	0001		I	C817	B1		010715
C4	DC1234567	0002		I	C803	19940701		010715
C4	DC1234567	0002		I	C805	DONE		010715
C4	DC1234567	0002		I	C813	B1 criteria		010715
C4	DC1234567	0002		M	C804	20010801		030011
C4	DC1234567	0002		M	C813	Exceeded Copper August 2001		030011

All Milestones reported as “C4” DTF Transactions Form

This example shows the State’s first reporting of the DEEM milestone with reason code - Followed by the DONE milestone with a comment. The Comment is optional. The Reason Code is required for DEEM and not valid for other LCRMR milestones.

NOTE: When systems become “UNDONE” only the Milestone End Date needs to be submitted. Because the DONE milestone exists on the database, it must be submitted as a “M” (MODIFY) transaction.

A second DONE milestone would be reported when the State designated OWQPs in May of 2005.

Remember: It is possible that a system may achieve the “Done” status more than once. If multiple “Done” situations occur ***before January 11, 2000*** for the same system, only report the “Done” milestone for the most recent situation.

SDWIS/FED Reporting
Summary

SDWIS/FED
Reporting and Implementation
Summary

SDWIS/FED Reporting
Summary

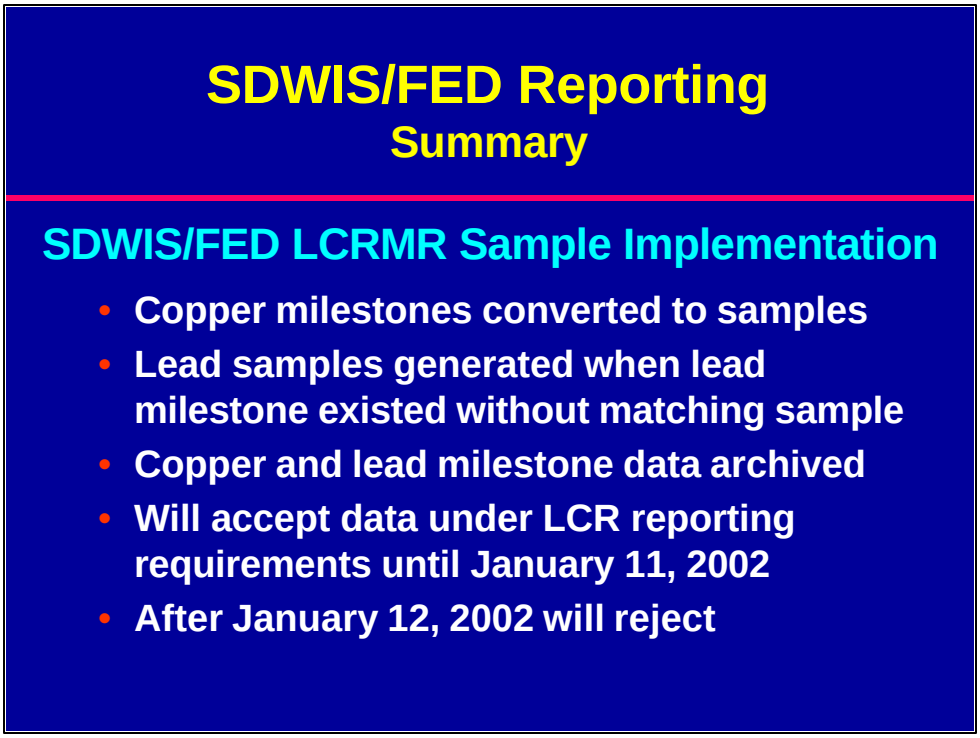
Sample Records

PB90 - Lead 90th percentile levels

- All for Large and Medium
- ONLY exceedances required for Small

CU90 - Copper 90th percentile levels

- Exceedances only for ALL systems sizes



With implementation of the LCRMR in SDWIS/FED the following changes were made:

- All copper milestones were converted to sample records and the milestone data was archived.
- Lead samples were generated when the lead milestone record existed and no matching sample record existed.
- All lead milestone records were archived.
- SDWIS/FED does not generate milestones from 90th sample exceedances as of January 2000.

States may continue to submit data under the LCR (old) reporting requirements until January 11, 2002. After that date, SDWIS/FED will no longer convert data, and will reject data which does not meet the correct format and/or content.

SDWIS/FED Reporting
Summary

Pb/Cu Sample Record

Data Element

Number	Name	Type	Length	Format/Comment
C101	PWS ID	A/N	9	SSxxxxxxx
C2101	Sample ID	Number	5	nnnnn
C2103	Sample Begin Date	Date	8	yyyymmdd
C2105	Sample End Date	Date	8	yyyymmdd
C2107	Sample Contaminant Code	A/N	4	Cu90, Pb90
C2111	Sample Result	Number	7.8	nnnnnnn.nnnnnnnn

REQUIRED SAMPLE DATA:

- PWS-ID
- Sample-ID - must be unique for this PWS
- Sample Begin Date and End Date = first and last day of designated monitoring period for which 90th Percentile Result was calculated (e.g., 6-month, 12-month/annual, 3-year, 9-year periods) [e.g., 1/1/2001, and 6/30/2001]
- Sample contaminant code = Cu90, Pb90
- Sample Analysis Result = 90th Percentile Result (e.g., 1.72 mg/L)

OPTIONAL ATTRIBUTES:

- Sample Reconciliation ID C2139 is a 40 character field for alternative sample identifier

SDWIS/FED DEFAULTS: NONE

INVALID ATTRIBUTES:

- Sample META Data attributes are not valid for LCR/LCRMR data (attributes required for unregulated monitoring samples, e.g., altitude, etc.)

EXCEPTION CONDITIONS: NONE

SDWIS/FED Reporting
Summary

General Violation Information

- 15 pre-LCRMR Violations
- 10 post-LCRMR Violations
- No new Violations under LCRMR
- Five Violations previously reported as discrete Violations have been consolidated for reporting with other Violations

In an attempt to reduce the reporting burden on States, the Data Sharing Committee recommended and EPA adopted, reductions in the number and type of violations reportable to EPA.

The LCRMR clarify how WQP compliance is to be determined and actually reduce the number of violations to be reported. More details later.

15 pre-LCRMR Violations … 51 through 65

10 post-LCRMR Violations … 51-53, 56-59, 63-65

Consolidations

- 54 & 55 with 53 - WQP M/R
- 60 with 59 - WQP Tap and Entry Point
- 61 with 57 - Treatment Study/Recommendation (OCCT/SOWT)
- 62 with 58 - Treatment Installation

SDWIS/FED Reporting
Summary

Typical Noncompliance Portrayal

Noncompliance traditionally has been portrayed by a Compliance Period … Begin Date and End Date (or Begin Date and Duration in months) of the monitoring period in effect

Noncompliance has traditionally been portrayed by a period of time related to the associated monitoring frequency period's begin and end date. Discussions have been ongoing between EPA, States, water systems, and the public, as to whether this method accurately portrays violation conditions. The public finds it confusing and the water systems do not believe it to be accurate. Strong arguments have been made on both sides of the issue.

The LCR/LCRMR have requirements which do not "fit" into a monitoring frequency period and thus required a different approach. Specifically, milestone activities such as CCT Study, and OCCT Installation. In addition, several monitoring requirements are one-time requirements (two consecutive rounds of initial and follow-up monitoring). EPA has addressed these issues as discussed on the next two pages:

SDWIS/FED Reporting
Summary

NEW Violation Noncompliance

- Begins when the monitoring event or requirement due date is missed, with the exception of WQP non-compliance and WQP M/R violations
- Ends when the monitoring requirements have been fulfilled or requirement has been completed (RTC reported to SDWIS)
- Portrayed as the actual time it took the system to complete the event or fulfill the requirement past the due date

New terms and definitions:

Compliance Period: The period associated with the overall period of time or frequency interval established for a requirement. (e.g., 6-month, annual, triennial, or nine-year waiver period).

Monitoring Period: The specific period within the compliance period in which the system was designated to perform the requirement. (e.g., June-September).

Event Due Date: The due date or deadline for an event (e.g., installation completion date).

Non-Compliance Period: The first day after the due date of the requirement to the day compliance achieved. (e.g., October 1, 2000 to August 1, 2002).

SDWIS/FED Reporting
Summary

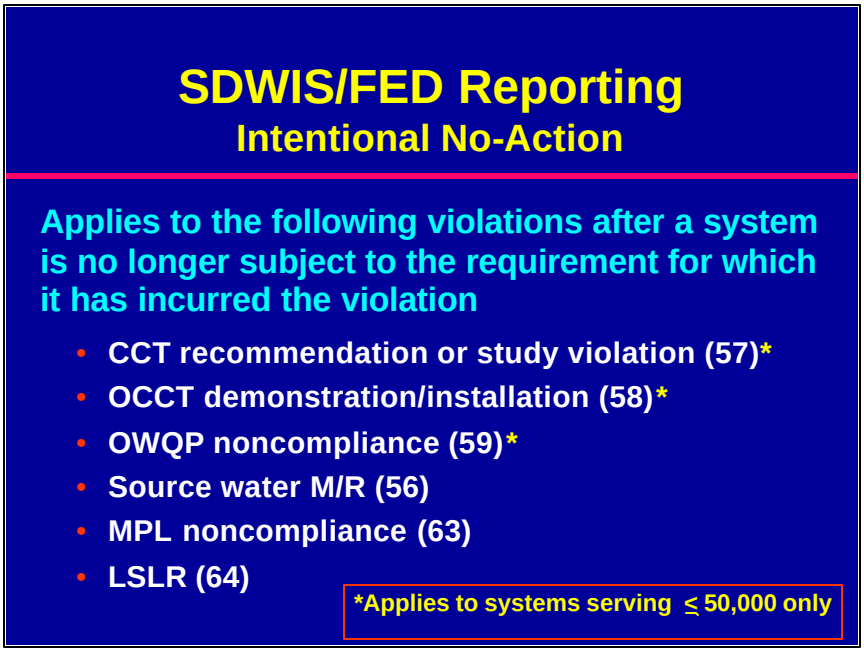
NEW Violation Non-compliance

- Compliance Period End Date (or Duration) should not be specified when these Violations initially reported to SDWIS/FED
- SDWIS/FED defaults end date of 12/31/2015
- RTC Enforcement Action date replaces defaulted 12/31/2015 date
- Intentional No-Action would also replace defaulted 12/31/2015 date

Upon receipt of Enforcement stating that the system has Returned to Compliance, SDWIS/FED will replace the defaulted 12/31/2015 end date with the Enforcement Date.

Until receipt of an Enforcement stating that the system has Returned to Compliance, SDWIS/FED will use 12/31/2015 as the Compliance Period End Date and the Violation will be considered current or outstanding.

Intentional No-Action is discussed in detail on the next page.



Intentional No-Action applies to the following violations after the system is no longer subject to the requirement for which it has incurred the violation.

More specifically, report Intentional No-Action under the following circumstances if the system has not corrected the violation and is no longer subject to the requirements.

- For a small or medium size system that is at or below both action levels for two, consecutive monitoring periods after incurring any of the following violations or for a system that is deemed to meet the criteria of §141.81(b)(3) after the date by which it is required to begin corrosion control treatment steps:
  - CCT recommendation (57 violation type),
  - CCT study (57 violation type),
  - OCCT installation/demonstration requirements (58 violation type), *or*
  - OWQP noncompliance (59 violation type) *[**Note:** Do not report Intentional No-Action if the State requires the system to conduct WQP monitoring regardless of its 90th percentile level.]*
- For any size system that is at or below both action levels for the entire source water monitoring period in effect after incurring any of the following violations:
  - follow-up, routine, or reduced source water M/R (56 violation type), *or*
  - MPL noncompliance (63 violation type)
- For any size system that is at or below the lead action level for two consecutive monitoring periods after incurring the following violation:
  - LSLR (64 violation type).

Note: Intentional No-Action does not apply to public education or WQP M/R violations. A system must return to compliance for these violation types.

SDWIS/FED Reporting
Summary

SDWIS/FED Violation Record Layout

DATA ELEMENT Number	Name	Type	Length	Format/Comment
C101	PWS ID	A/N	9	SSxxxxxxx
C1101	Violation ID	A/N	7	FFxnnnn
C1103	Contaminant Code	Number	4	1022, 1030, or 5000
C1105	Violation Type Code	Number	2	51-53, 56-59, 62-65
C1107	Compliance Period Begin	Date	8	YYYYMMDD
C1109	Compliance Period End, or	Date	8	YYYYMMDD
C1111	Compliance Period Duration	Number	3	# of months

GENERAL LCR Violation Reporting Requirements:

PWS ID format …

SS USPS State code or EPA Region number

xxxxxxx 7-characters, alphanumeric

Violation ID format …

FF 2-digit Fiscal Year,

x - A number if the Violation ID is/was user-supplied

- The letter “G” if the Violation ID is to be generated
- The letter “V” if the Violation ID was previously generated nnnn 4-digit number

Violation Contaminant Code...

5000 - for all violation types except MPL TT violation (63=1022 for copper/1030 for lead)

Violation Dates format...

EPA standard is YYYY/MM/DD, however MM/DD/YYYY is acceptable

Violation End Date and duration…

End date and duration (C1109 and C1111) shall not be reported for LCR violations except WQP (53 and 59). SDWIS default of 12/31/2015.

SDWIS/FED Reporting
Summary

Four Monitoring and Reporting Violations

- 51 - Initial Tap Lead and Copper
- 52 - Follow-up / Routine Lead and Copper
- 53 - Water Quality Parameter (WQP)
- 56 - Source Water

SDWIS/FED Reporting
Summary

Initial, Follow-up/ Routine Tap M/R

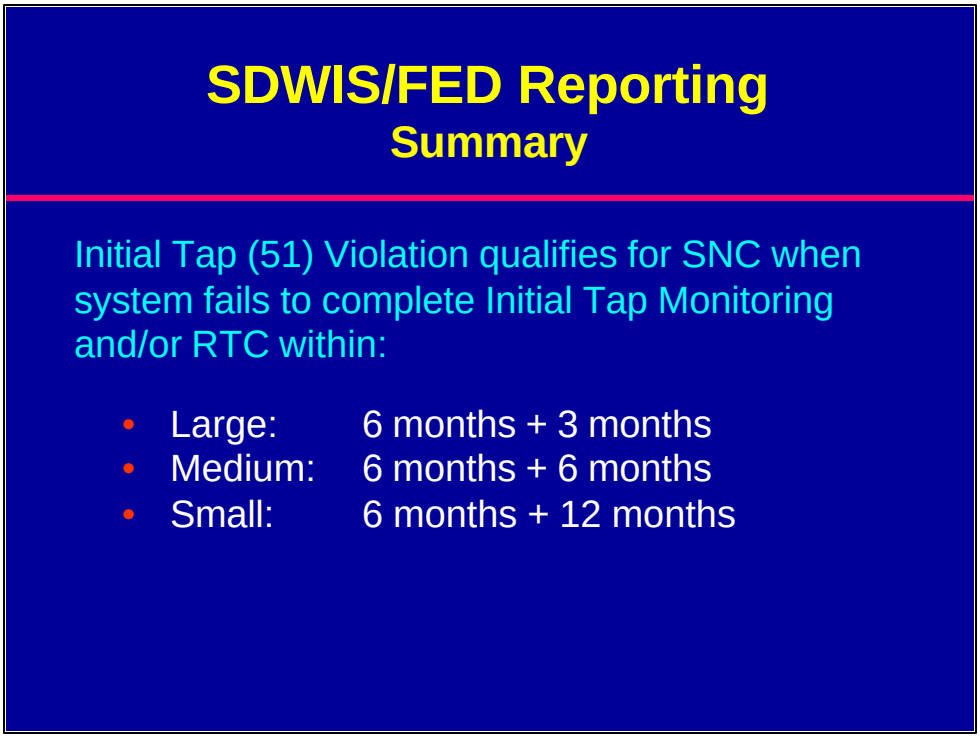
- Contaminant Code “5000”
- Violation Type Codes “51” and “52”
- New criteria = 60 day notification to State of change in source or treatment (type 52)
- Compliance Portrayal Changed
- RTC May require 2 consecutive 6-month rounds
- SNC condition for Initial Tap ONLY

Compliance portrayal has changed for Initial Tap violations. The violation begins the first day after the missed designated monitoring period. Previously, the State would have reported one violation for each of the two, 6-month periods. Now a single violation is reported. This change affects systems which have never monitored and new systems.

A system will return to compliance (RTC) when it meets all appropriate M/R requirements, for **two, consecutive,** 6-month monitoring periods unless the system is on reduced monitoring or on a waiver.

A system that has a M/R violation and is on reduced annual or triennial lead or copper tap monitoring, is granted a monitoring waiver, or has a pre-existing waiver, must complete one round of monitoring to return to compliance.

Previously reported violations and RTC data need not be changed. New violations for these requirements must be reported in this manner.



Implementation of the LCRMR retains the additional time for a system to return to compliance prior to it being designated as a significant noncomplier (SNC).

The SDWIS/FED algorithm not only considers the time periods referenced above, it adds an additional quarter of time before it queries the violations to allow RTC actions which may have been reported at the end of the period to be posted to SDWIS/FED due to EPA's normal one quarter reporting lag. The bottom line is, EPA gives LCR violation reporting every opportunity to RTC BEFORE EPA designates SNCs.

SDWIS/FED Reporting
Summary

Initial Tap Follow-up & Routine M/R Implementation

- Converted compliance period end date to 12/31/2015
- Will convert follow-up and routine end dates to 12/31/2015 in Sept 2000 (estimated)
- Only 1 violation reported when 2 consecutive 6-month monitoring periods required

Initial implementation only converted the initial tap compliance period end date to 12/31/2015. Recent decision to implement follow-up and routine monitoring violations in the same manner as initial tap require conversion of the compliance period end dates of 12/31/2015.

SDWIS/FED Reporting
Summary

SDWIS/FED LCRMR WQP Implementation

- Converted Pre-Existing WQP M/R Violations to 53 (violation types 54 and 55 to type 53)
- Converted Pre-Existing WQP TT Violations to 59 (tap violation type 60 to type 59)
- Pre-existing WQP Violation begin dates unchanged
- Standard compliance period
- No SNC conditions

Conversion of the pre-existing WQP M/R and Noncompliance (Treatment Technique) violations in SDWIS/FED took place in January 2000 during the implementation of the LCRMR in SDWIS/FED. The database was frozen prior to the conversion for a historical reference to that violation data.

The appearance of multiple "53" monitoring violations resulted, because of that conversion. However, those violations have different violation begin and/or end dates and are not viewed as "duplicates", but rather as valid multiple violations of the same type.

If the State adopts the revised procedure for determining compliance with OWQPs, a system will only incur one M/R, and/or one noncompliance (Treatment Technique) violation during each 6-month compliance period. To eliminate some of the reporting and tracking burden associated with a violation which could occur every 2 weeks, all entry point M/R violations for a given system occurring in a given 6-month period will be reported as one WQP M/R violation. Similarly, if a system incurs both a tap and entry point M/R violation during the same 6-month compliance period, you would report a single violation for the 6-month compliance period. On the other hand, if a system incurred both entry point and tap WQP M/R violations with different compliance periods which overlap, the State would report two separate 53 violations, one for each period.

The begin and end dates are the first and last days of the designated 6-month period. SDWIS/FED does not default the end date to 12/31/2015 for WQP violations.

Remember: WQP M/R and Noncompliance violations are 2 different violation types and both must be reported even if they occur during the same compliance period.

SDWIS/FED Reporting
Summary

LCR WQP Non-Compliance

- A single entry point WQP Noncompliance Violation must be reported for any system in which the WQP values of any sample collected during the quarter are below the minimum value or outside the range established by the State per §141.82(g)
- Tap WQP non-compliance periods are 6, 12, or 36 months

Systems that do not adopt the new OWQP compliance procedure of the LCRMR, will continue to report WQP noncompliance violations as quarterly violations. Tap WQP non-compliance violation compliance periods are 6, 12, or 36 months.

Because the first period in which the system must meet its OWQPs is triggered from when the State designates OWQPs, the first month of the 6-month follow-up monitoring period will not necessarily coincide with the typical January through June and July through December periods. SDWIS/FED will calculate the period based on the begin and end date submitted or the begin date and number of months in the duration field.

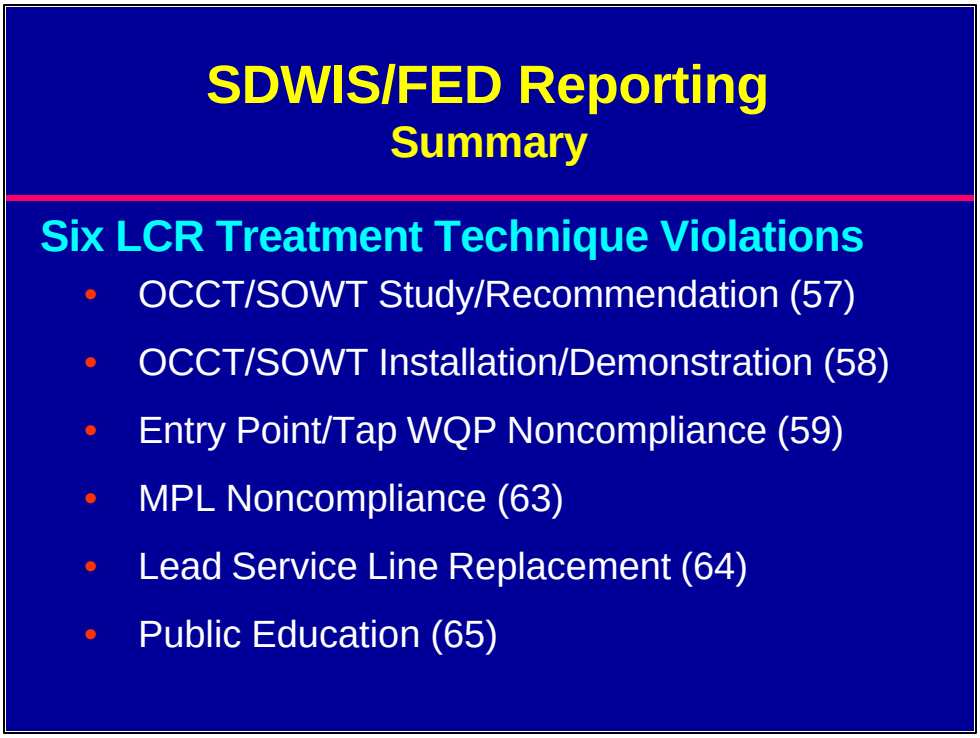
SDWIS/FED Reporting
Violations

LCRMR WQP Non-Compliance (TT)

- LCRMR established fixed 6-month periods
- Compliance determinations are always based on a 6-month period, regardless of the system's monitoring schedule (e.g., daily, biweekly, semi-annually, annually, triennially) or whether the WQP results are from an entry point or tap samples
- ANY combination is a single violation

OWQP compliance determinations under the LCRMR are always based on a 6-month period, regardless of the system's monitoring schedule (e.g., biweekly, semi-annually, annually, triennially), or whether the WQP results are from an entry point or tap samples.

This type of violation can only occur ***after*** the State has designated OWQPs. To simplify reporting, any combination of WQP noncompliance violations during a 6-month period will be reported as a ***single*** violation for that 6-month period. To return to compliance with WQP Noncompliance (TT) violations, a system must complete all WQP monitoring at all locations and be in compliance with all parameters for an entire 6-month period.



Violation Type is in parentheses.

SDWIS/FED Reporting
Summary

OCCT Treatment Technique Violations

- **No violation code changes to:**
  - **OCCT study/recommendation (57 violation code)**
  - **OCCT Installation/Demonstration (58 violation code)**
- **Consolidated OCCT/SOWT Installation and/or Demonstration into one SNC**
- **Converted violation end date to 12/31/2015**

The violation type code 57 has been expanded to include both:

- optimal corrosion control treatment study and/or recommendation violations, and
- source water recommendation violations.

The violation type code 58 has been expanded to include both:

- optimal corrosion control treatment installation/demonstration violations, and
- source water treatment installation violations.

The begin date for both 57 and 58 violations is the day after the event was required to be completed. The end date is defaulted to December 31, 2015.

With the consolidation of the OCCT and SOWT installation violation types, EPA will no longer produce separate SNCs for these two violations. Instead, EPA will list a system that meets the OCCT Installation SNC criteria or SOWT Installation SNC criteria as a Treatment Installation/Demonstration SNC.

The basic definition for this SNC has remained the same, a system that incurs a treatment installation violation and has a 90^{th} percentile lead level of $\geq$ 0.030 mg/l in most recent monitoring period.

SDWIS/FED Reporting
Summary

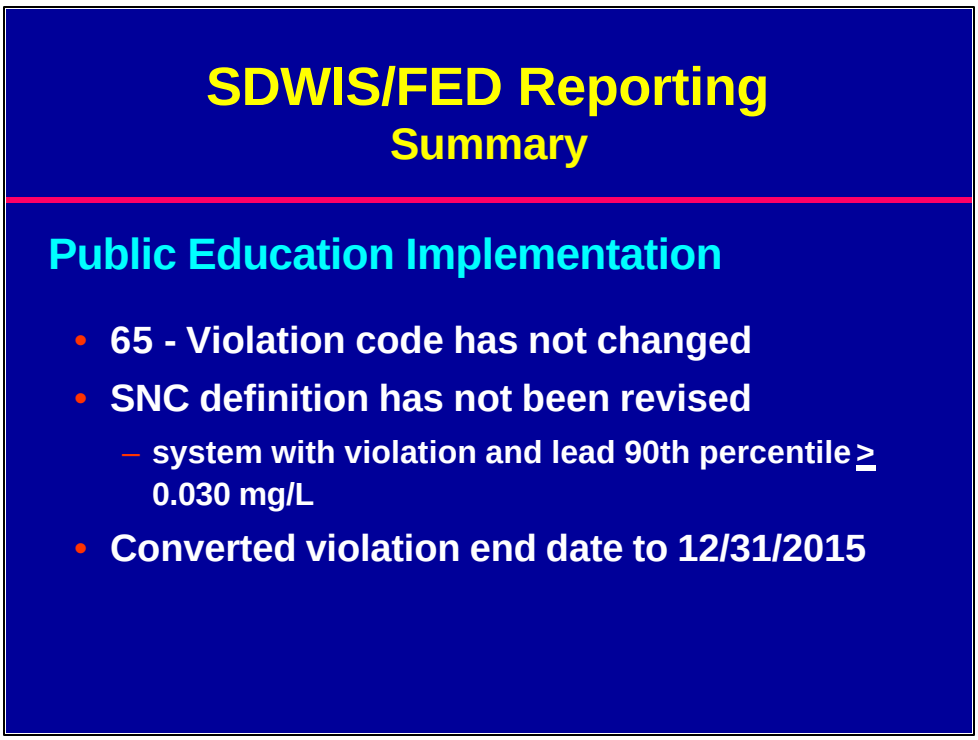
Treatment Study/Recommendation (OCCT)

- **Large systems are only subject to Study violation**
- **Medium and small subject to both Recommendation and Study violation**

OCCT Study/Recommendation Violation is reported for those medium and small systems failing to make a recommendation. If State also requires a study and the system fails to meet those requirements, a second OCCT/Study Recommendation (57) would be reported.

Large systems must conduct a study and the recommendation is a specific part of the study, therefore, large systems will only be subject to the Study violation.

A SOWT Recommendation is due within 6 months of the exceedance; Installation is required within 24 months of the State's determination of the type of SOWT to be installed.



Violation

The period of violation is described by the first day after the 60-day, 6-month, or 1-year compliance period in which the public education requirements were to be performed. The violation period ends when the State determines those requirements have been met.

The system has 10 days after the end of the 60-day, 6-month or 1-year compliance period to report to the State. This 10-day period is not added to the compliance period. In other words, the system does not have 70 days to meet its requirements. It has 60 days to meet the requirements and 10 days to report.

As with other treatment technique violations, SDWIS/FED will default a compliance period end date of December 31, 2015. When the State reports the RTC enforcement/follow-up action data (including the required violation link data), SDWIS/FED will replace the defaulted end date with the RTC date. This method more accurately describes how long the system took to perform the public education requirements.

SNC

A Public Education SNC is still defined as a system that incurs a public education violation and its 90th percentile lead level is 0.030 mg/l or higher in its most recent monitoring period.

SDWIS/FED Reporting
Summary

Public Education

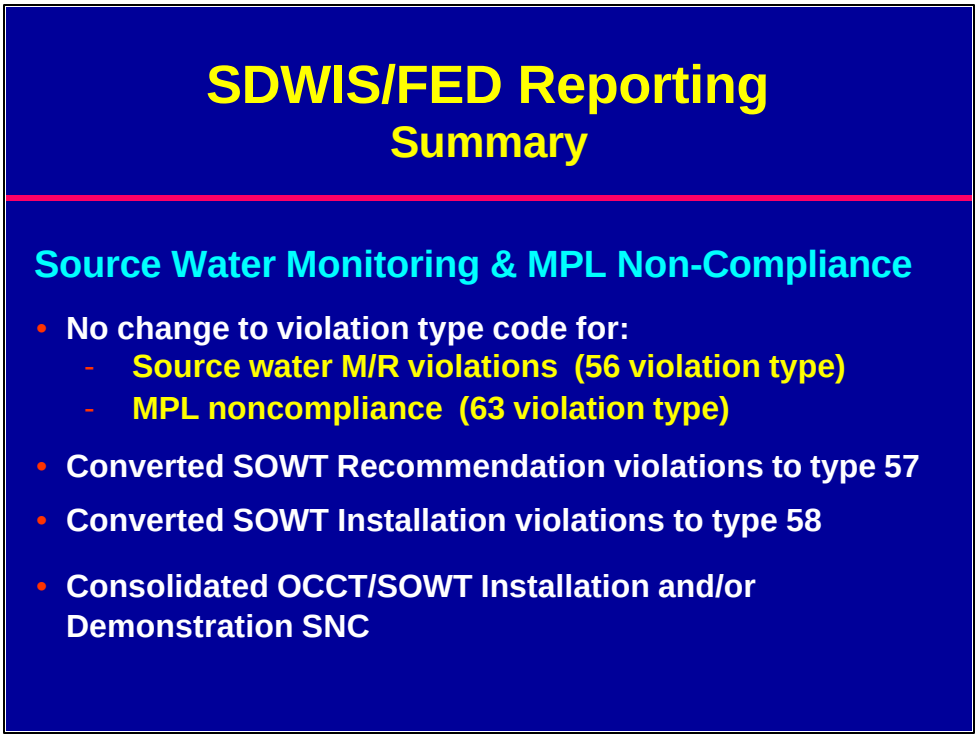
- ONE Public Education (PE) Violation must be reported for EACH discrete PE compliance period requirement (i.e., 60 day, semi-annual, and annual)
- PWS could incur 3 separate violations in first 14 months after exceedance
- 10-day period to report to State is not included

Depending on the specific requirement and PWS type, the time frames include the following:

- "60 days after the end of the designated monitoring period" of a lead action level exceedance.
- "6 months after the 60 days" for repeat public service announcements for a CWS.
- "12 months after the 60 days " (for both CWSs and NTNCWSs) for repeat notices to customers and delivery of pamphlets and brochures.

Even though there are multiple requirements under each of the discrete PE requirement periods, only one violation is reported for each discrete PE period.

The rule allows 10 days from the end of the due date for the system to report to the State. This 10-day period is not included in the violation begin date.



The violation type codes have not been changed for:

- Source water M/R violations. All source water M/R violations continue to be reported using the 56 violation code.
- Maximum Permissible Level (MPL) noncompliance. A violation type code 63 is still used to report systems that exceed their lead and/or copper MPLs.

Violation codes associated with a source water treatment (SOWT) recommendation or SOWT installation violation have been changed.

A 57 violation is used to report either:

- A system's failure to meet its a source water treatment recommendation requirements (formerly a 61 violation type), or
- A system's failure to meet its corrosion control study/recommendation requirements.

A 58 violation is used to report either:

- A system's failure to meet its a source water treatment installation requirements (formerly a 62 violation type), or
- A system's failure to meet its optimal corrosion control treatment installation requirements.

EPA will list a system that meets the OCCT Installation SNC criteria or SOWT Installation SNC criteria as a Treatment Installation/Demonstration SNC.

The basic definition for this SNC has remained the same, a system that incurs a treatment installation violation and has a 90^{th} percentile lead level of $\geq$ 0.030 mg/l in most recent monitoring period.

SDWIS/FED Reporting
Summary

Source Water M/R & MPL Noncompliance

- **Converted the end dates to 12/31/2015**
- **Source water follow-up monitoring requires two consecutive, 6-month rounds - only 1 M/R violation is reported.**
- **Monitoring is conducted AFTER the lead or copper action level exceedance (No Grandfathering)**

Like lead and copper tap monitoring, there can be 3 types of source water monitoring requirements: Initial, Follow-up, and Routine.

- Initial monitoring consists of one 6-month round.
- Follow-up requires 2 consecutive 6-month rounds.
- Routine monitoring is one round within 3-year compliance periods for groundwater and one round within a 1-year period for surface water systems or systems with a combined source.

In addition, systems on routine monitoring can qualify for reduced monitoring in which source water samples are collected once every 9 years.

Only 1 M/R violation is reported for failure to sample for either lead or copper, or both lead and copper per designated monitoring period.

Initial source water monitoring is conducted AFTER the lead or copper tap action level(s) is exceeded. Even if the State requires lead and copper be monitored routinely with the inorganic monitoring, the samples must be taken AFTER the lead or copper tap exceedance. There are no provisions in the LCR/LCRMR for grandfathering of data.

For follow-up source water monitoring, only one M/R violation is reported. The begin date of the violation is the day after the first round missed. RTC may not be reported until 2, consecutive, 6-month rounds are completed.

SDWIS/FED Reporting
Summary

MPL Noncompliance

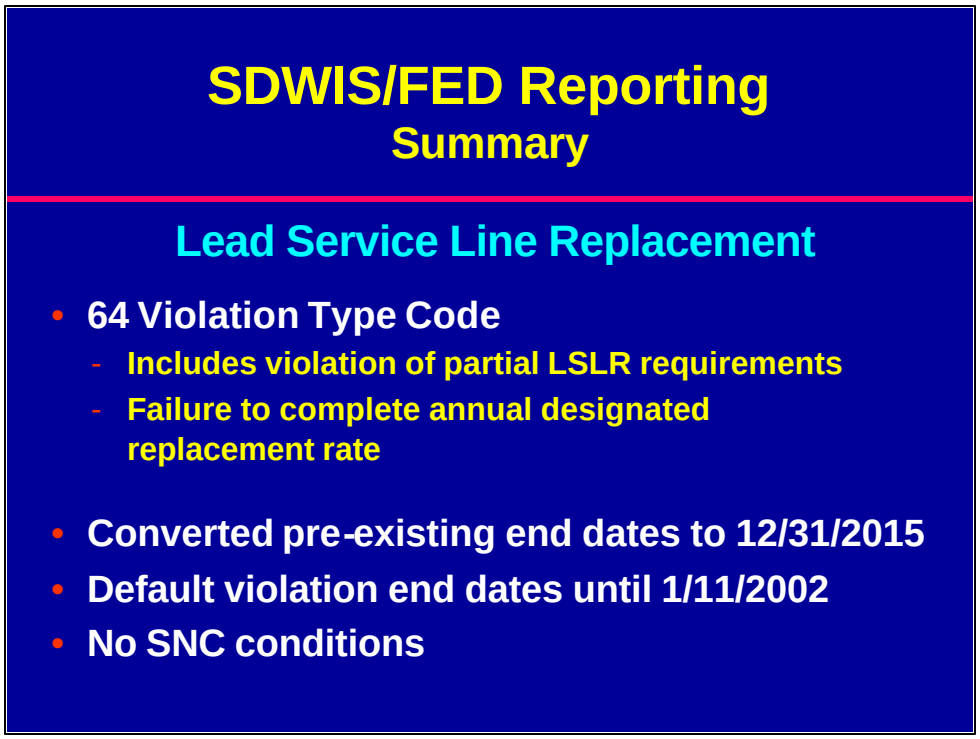
- A system may incur separate Violations for exceeding the Lead MPL and the Copper MPL
- Only ONE MPL Noncompliance Violation must be reported for a single contaminant regardless of how many entry points are in violation
- Contaminant code is:
  - 1022 = Copper
  - 1030 = Lead
  - reported in lieu of 5000 code that is used for all other LCR or LCRMR violations

If a system exceeds the MPL for only Lead or only Copper in more than one source water sample, the State would report a single violation for that period, for that contaminant.

If a system exceeds the MPL for both Lead and Copper, the State would report two violations.

To simplify reporting, only ONE Lead or ONE Copper violation is required to be reported in each designated monitoring period, regardless of how many entry points incur an exceedance.

There are no SNC conditions for source water monitoring, failure to provide a source water recommendation, or failure to meet source water treatment installation requirements.



Violations

The LCRMR expand the definition of what constitutes an LSLR violation. Systems replacing only a portion of an LSL, can incur a violation when they fail to complete all requirements of each partial replacement project. EPA did not create a separate M/R violation for failure to conduct the notification, monitoring, and reporting requirements associated with partial LSLR. Failure to conduct these activities are included as a treatment technique violation and is reported using the 64 violation code.

Systems only replacing a portion of the line (i.e., partial LSLR) have additional notification and reporting requirements.

The first year of LSLR begins when the State determines the PWS is triggered into LSLR. The violation begins the first day after the end of the designated 12-month replacement year.

For Partial LSLR, the violation begins the first day after the due date of the requirement for that partial replacement project (i.e., notification to the resident prior to partial LSLR, sampling of water in service line and reporting results to users, and appropriate reporting to State.)

Multiple reasons for LSLR noncompliance are reported as one violation, ***if the initial reason for the violation has not been corrected before additional reasons for LSLR noncompliance occur.***

There are no SNC conditions, and the reporting of RTC or Intentional No-Action is required.

LSLR Milestone: States must report, on a quarterly basis, those systems which are required to replace lead service lines and the date the system was required to start the replacement and those systems that are "retriggered" back into LSLR requirements do to a subsequent lead exceedance. Under the LCRMR, States are no longer required to report those systems on an accelerated replacement schedule, the annual replacement rate, or submit a separate report for those systems which are in compliance with their replacement schedule. Replacement rates for LSLs which have already been reported to SDWIS/FED prior to January 12, 2000 will be archived, and will no longer be available in SDWIS/FED. However, States still must report a violation for systems that do not meet their replacement schedules.

Data Transfer Format (DTF)

- DTF transactions are 80 characters long
- DTF is the only way to get data into SDWIS/FED, Except for SETS (restricted to EPA)
- Single DTF transaction is required for each piece of data to be inserted, modified, or deleted, Except for Enforcement Linking

Data Transfer Format (DTF)
DTF Transaction Format

Form ID	Data Qualifiers			Action Code	Data Element Number	Data Element Value	N/A	Batch Seq. Number
	Qual 1	Qual 2	Qual 3					
1 - 2	3-11	12-18	19-25	26	27-31	32 - 71	72-74	75 - 80

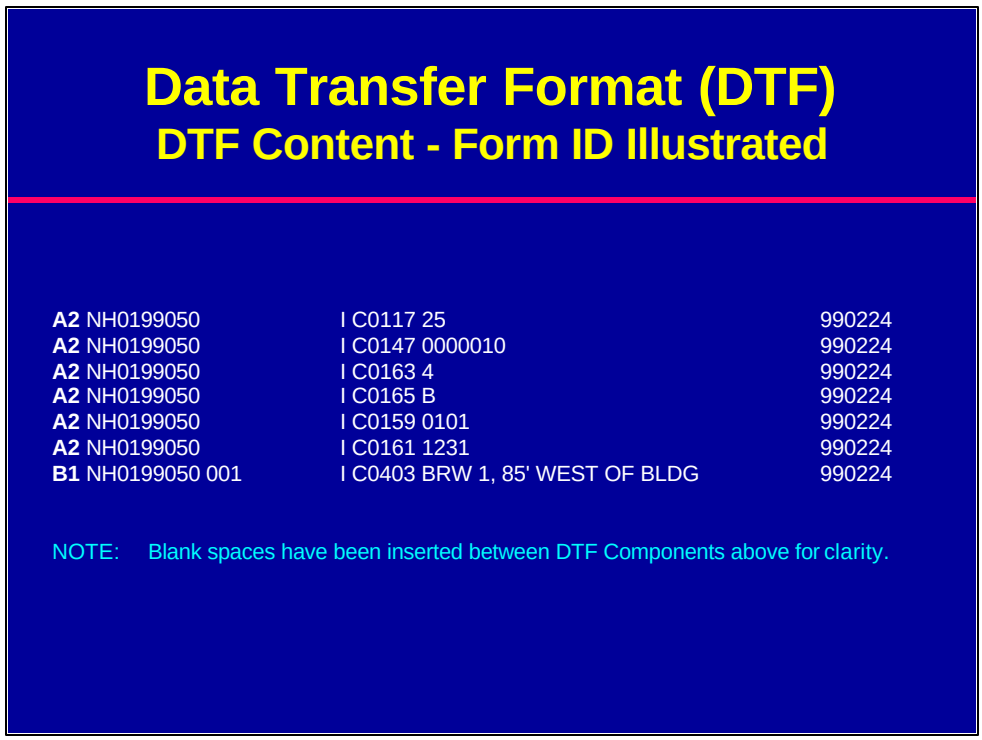
1. Form ID - Uniquely identifies Records in SDWIS.
2. Data Qualifiers - Groups data of “like” types (e.g., Inventory, Milestones, Violations, Enforcements, Samples).
   A. Qualifiers must be unique to that PWS, at each record level, within each input file.
   B. Up to 3 qualifiers per transaction
      - Qual 1 = PWS-ID
      - Qual 2 = 1st subordinate level record (source to PWS)
      - Qual 3 = 2nd subordinate level record (treatment to source).
   C. Qualifiers 2 and 3 may be assigned by the user (must be numeric), or Generated by SDWIS via Group Generation codes (GGCs). The first position of a GGC must be “G” - the remainder must be numeric except Violations, Enforcements, Variance & Exemptions, and V&E Schedules. The first two positions for these records must be the Fiscal year followed by the “G” and a unique numeric number for each record of that type for that PWS in that file (e.g., two violations in a 1999 file - the first record would be “99G0001”, the second “99G0002”).
   D. GGCs and user defined qualifiers cannot be mixed.
   E. DTF Qualifiers cannot be deleted, inserted, or modified (i.e., specified as a Data Element Value).

Data Transfer Format (DTF)
DTF Transaction Format

Form ID	Data Qualifiers			Action Code	Data Element Number	Data Element Value	N/A	Batch Seq. Number
	Qual 1	Qual 2	Qual 3					
1 - 2	3-11	12-18	19-25	26	27-31	32 - 71	72-74	75 - 80

3. Action Code (DIM Code) - Used to specify a Delete, Insert, or Modify operation upon SDWIS/FED data.
4. Data Element Number - 4-digit number preceded with the letter “C”. Used in DTF to identify each piece of data, and used by Edit/Update software for cross-edit checking (i.e., one data element requires another). The element is not stored in SDWIS/FED (e.g., water system name).
5. Data - Contains the actual data to be posted (40 character).
6. Batch Sequence Number - Used to sequence DTF transactions for Edit/Update processing.

NOTE that positions 72 through 74 are used to display the 3-character error codes in the generated ERRORS file and are otherwise ignored by the edit/update process.



Example of inventory data - population, service connections, system begin and end dates, and a source address. All data belongs to one PWS. All data is being inserted into the database.

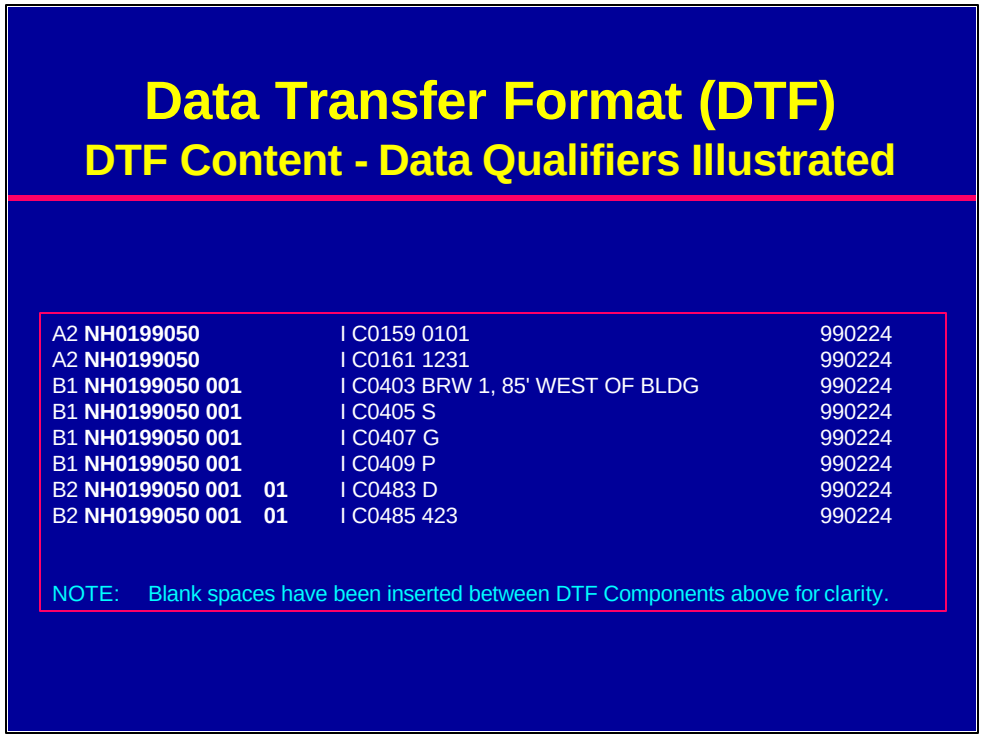
Data Transfer Format (DTF)
DTF Content - Form IDs and Data Qualifiers

FORM ID	FORM NAME	Record	QUAL 1	QUAL 2	QUAL 3
A1	System Address Data	100	PWS-ID		
A2	PWS Characteristics Data	100	PWS-ID		
A3	Other Address Data	300	PWS-ID	ADDRESS-ID	
B1	Source/Entity Data	400	PWS-ID	SE-ID	
B1(2)	Location Data		PWS-ID	SE-ID	
B2	Treatment Data	480	PWS-ID	SE-ID	TREATMENT-ID
B3	Facility Flow Data	A5000	PWS-ID	SE-ID	
B4	Treatment Plant Address Data	350	PWS-ID	SE-ID	

The table above provides a list of form IDs, form names, and their corresponding record type. It also displays the qualifiers, and the appropriate number and type of subordinate qualifiers.

Example: Form B-2 is Treatment Data, its record number is 480, its first qualifier is the PWS-ID, the second is the Source/Entity (water system facility) Identifier and the third is the Treatment Identifier.

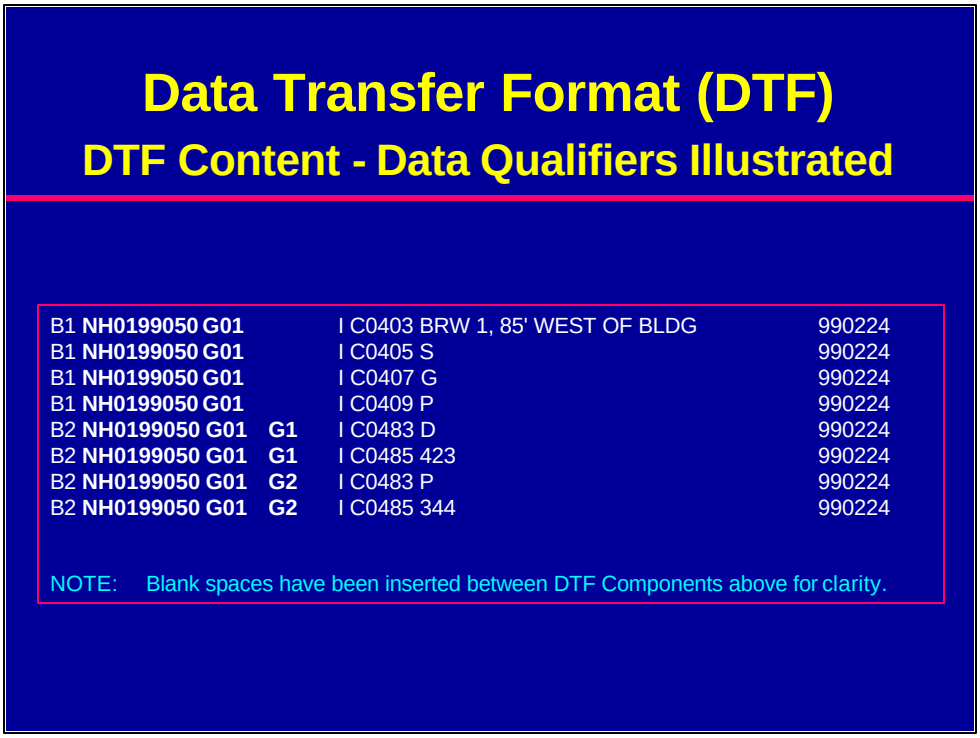
A PWS may have many water system facilities, each water system facility may have many treatments. However a treatment is related to only one water system facility, and a water system facility is only related to one PWS.



Example of Valid user-assigned IDs in BOTH Data Qualifier #2 and #3.

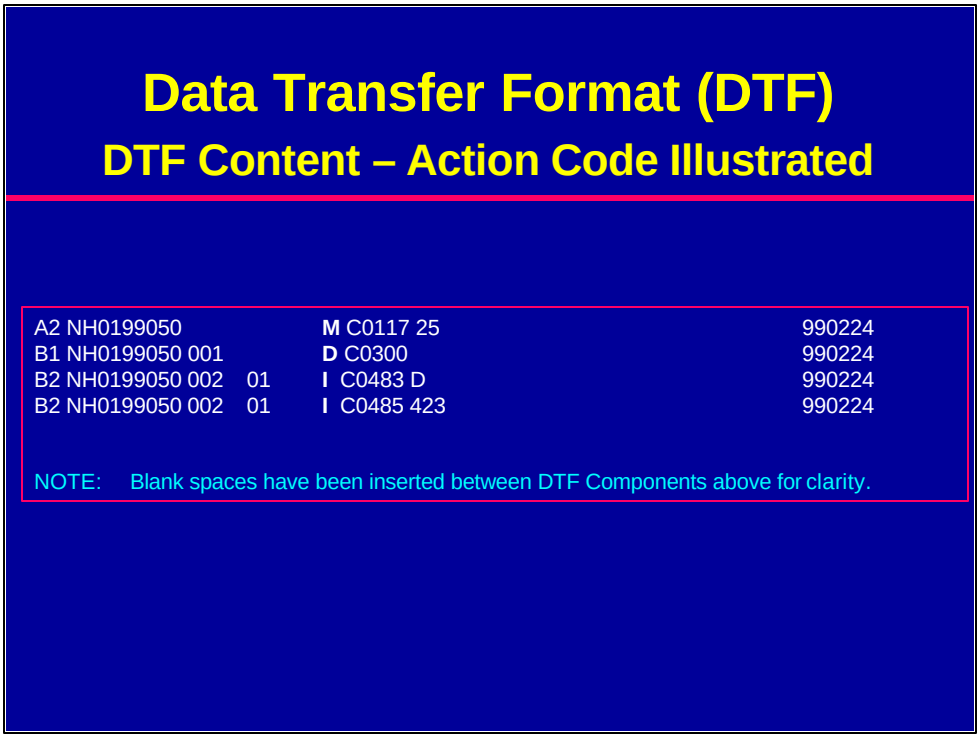
Note State code in PWS ID - 2 char USPS State code or 2-digit EPA Region code for Direct Implementation Programs (Indian PWS).

Positions 3 - 9 may contain any combination of 0-9 or A-Z.



Example of Group Generation Codes (GGC) - This PWS has two treatment objective/process combinations for the same water system facility. The water system facility is represented by the G01 and the treatment objective/process combination is represented by G1 and G2.

If EPA did not differentiate them with the unique numbers, G1 and G2, SDWIS/FED would interpret the data to indicate that there were two treatments and two objectives, but it could not tell which two were to be considered “valid combinations”.



Examples of the Action Codes

M = Modify the population (C117) to be 25.

D = Delete the Record C0300 (Other Address Data) - all data elements associated with it for address record 001.

I = Insert the new treatment process (C485 = chlorination) and objective (C483 = D disinfection) for water system facility 002.

Next slide explains Record Numbers Used for Deletion of data.

Data Transfer Format (DTF)

DTF Content – Data Element Number

Record Numbers

- Used in DTF ONLY to identify entire records in SDWIS/FED to be deleted in a Traditional update
- Valid record numbers are shown on the *Record Deletion Form*

Data Transfer Format (DTF)

DTF Content – Data Element Number

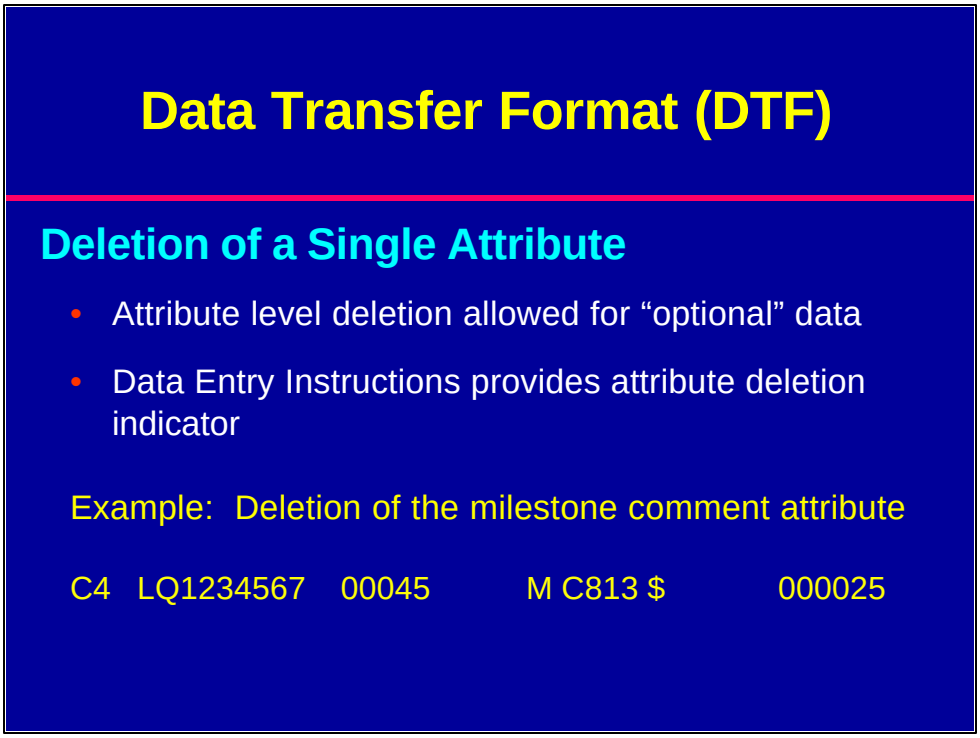
Record Numbers Illustrated

A3 NH0199050 1		D **C0300**	990224
B1 NH0199050 001		D **C0400**	990224
B2 NH0199050 001	01	D **C0480**	990224
B3 NH0199050 001		D **A5000**	990224
B4 NH0199050 001		D **C0350**	990224
C1 NH0199050 00001		D **C0500**	990224
C2 NH0199050 00001		D **C0600**	990224
C3 NH0199050 00001		D **C0700**	990224
C4 NH0199050 0001		D **C0800**	990224
D1 NH0199050 9900001		D **C1100**	990224
E1 NH0199050 9900001		D **C1200**	990224
F1 NH0199050 9900001		D **C3000**	990224
F2 NH0199050 9900001 01		D **C3100**	990224
H1 NH0199050 00001		D **C2100**	990224

NOTE: Blank spaces have been inserted between DTF Components above for clarity.

Example of Record numbers used as method of Deletion for all data elements contained in that record. Remember the record is identified by the qualifier, or combination of qualifiers for that record.

The third line represents a treatment record of 01 belonging to water facility 001 for PWS-ID NH199050.



Some attributes may be deleted. Attributes which are required to register a record do not allow deletion. See the SDWIS/FED Data Entry Instructions for specific details on which data elements or attributes allow deletion at the attribute level.

The example above displays the DTF transaction for the deletion of the milestone comment (C813) for milestone with the record identifier of “00045”.

The deletion is accomplished by modifying the milestone comment and listing the dollar sign ($) in the first position of the data value field in the DTF format. This essentially deletes the milestone comment.

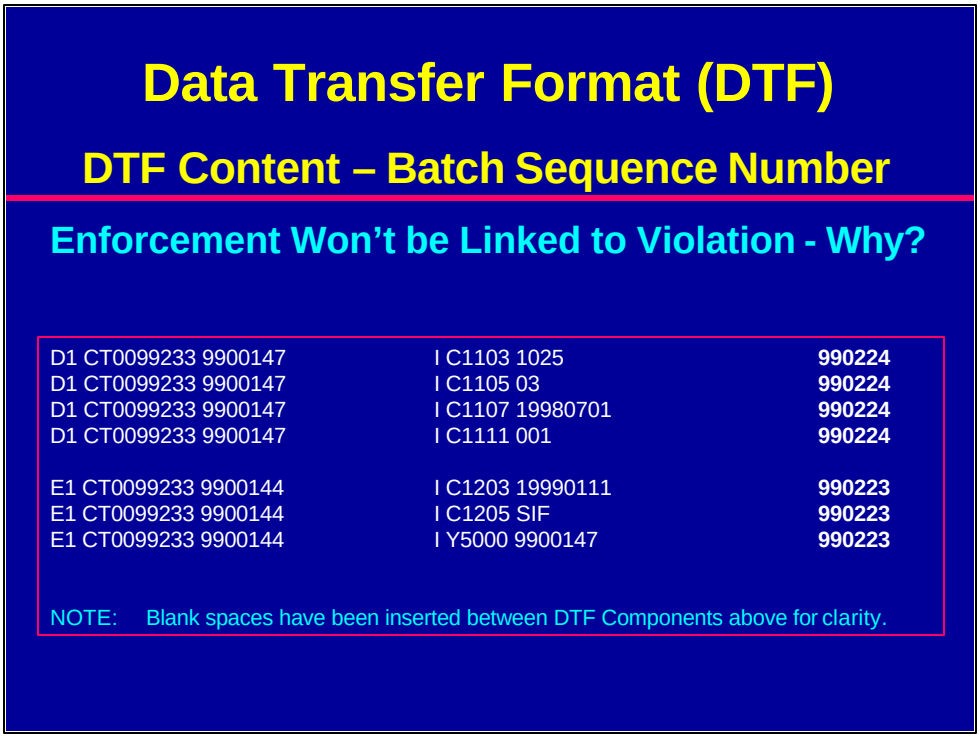
Data Transfer Format (DTF)

DTF Content – Batch Sequence Number

- **Used to sequence update events in traditional updates only … not used in total replace updates**
- **Lowest number processed first**
- **Alpha/numeric format**

Batch sequence numbers are not required unless a State wishes to sequence the processing order of the data in a traditional update file.

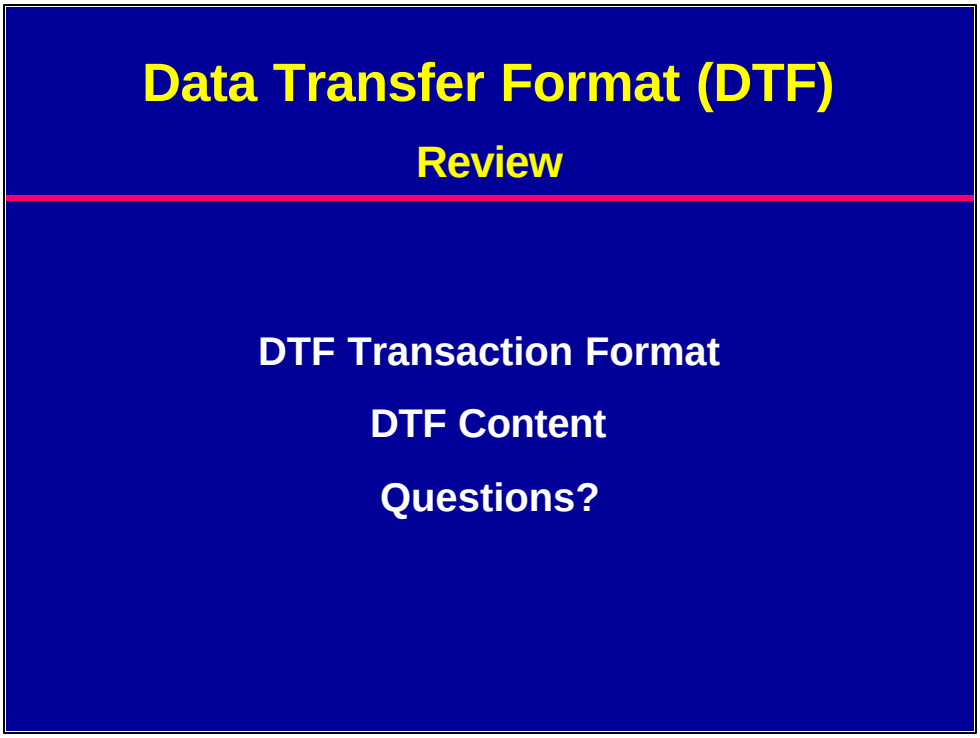
To ensure the desired result is achieved, care must be given when using batch sequence numbers. Example on next slide.



In the example above, the top half represents a violation record with a batch sequence number of 990224; while the bottom half represents an enforcement record with a batch sequence number of 990223. SDWIS/FED orders the data input file by the batch sequence number from lowest to highest. In the example above, the enforcement record has a lower batch sequence number than the violation record (990223 and 990224, respectively). Therefore, SDWIS/FED will post the enforcement action before the violation and attempt to link the enforcement action to the referenced violation (see bottom transaction line which is the enforcement link data which presents the violation ID link method). The violation having the violation ID of 990147 is the violation record listed at the top. However, because the violation has not posted yet, SDWIS/FED cannot post the link transaction and writes the link transaction to the errors file. The enforcement is now referred to as an orphan.

SDWIS/FED then moves to the next record in the input file according to the sort priority and find the violation record has the next highest batch sequence number. The violation record will be posted. When the enforcement link transaction is rejected in these cases, the SDWIS/FED error message will tell you the violation record was not found.

To prevent the enforcement link transaction from being rejected, the batch sequence number for the violation must be lower than the batch sequence number for the enforcement action.



DTF Transaction Format

- 80 characters
- Only way to get data into SDWIS/FED presently
- One Transaction for one piece of data

DTF Content

- Form ID, Data Qualifiers, DIM Code, Data Element Number, Data Element Value, Batch Sequence Number
- Batch Sequence Number applicable for Traditional updates only

Successful use of Qualifiers is critical to successful processing.

SDWIS/FED Reporting
Enforcements

Enforcement/Follow-Up Actions (RTC) and Enforcement Linking

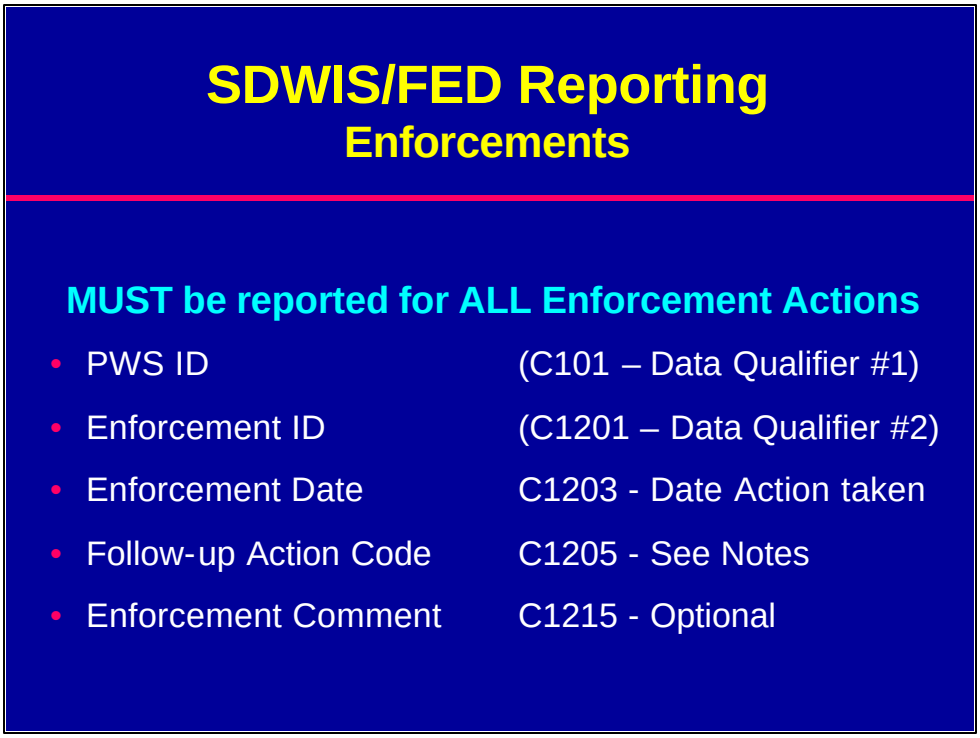
SDWIS/FED Reporting
Enforcements

Enforcement/RTC

- Formal Enforcement Follow-up actions are Required Reporting
- Enforcement/follow-up action must be linked to the violation
- Compliance Period/Violation Period End Date is replaced by the RTC action date; therefore, RTC must be reported

All formal enforcement/follow-up actions are required to be reported to SDWIS/FED. A returned to compliance, or "RTC", (EOX or SOX = compliance achieved action) is classified as an "other" action type and is also required reporting for this rule.

Because SDWIS/FED defaults a future compliance period/violation period end date of 12/31/2015 for these violations, RTC reporting is required. When the RTC record is reported and LINKED to the violation, the defaulted end date is replaced with the RTC enforcement/follow-up action date. Therefore, reporting RTC actions and the appropriate violation link data is required.



Data Element Numbers, in parentheses, are used in the DTF transaction to associate attributes within the record with other records (e.g., enforcement to PWS)

The remaining Data Element Numbers identify the data value to the database.

SDWIS/FED Reporting
Enforcements

Enforcement Record Data

Data Element

Number	Name	Type	Length	Format/Comment
C101	PWS ID	A/N	9	SSxxxxxxx
C1201	Enforcement ID	A/N	7	FFxnnnn
C1203	Enforcement Date	Date	8	YYYYMMDD
C1205	Follow-up Action Code	A/N	3	
C1215	Enforcement Comment	A/N	40	Optional

And the appropriate Link data.

PWS ID format …

SS	USPS State code or EPA Region number
xxxxxxx	7-characters, alphanumeric

Enforcement ID format …

FF	2-digit Fiscal Year - FY action was taken
x	A number if the Enforcement ID is/was user-supplied
	The letter “G” if the Enforcement ID is to be generated for a new Enforcement
	The letter “E” if the Enforcement ID was generated by SDWIS/FED
	nnnn 4-digit number

Enforcement Action Code …

XXX	Pos. 1- represents the Origin: E=EPA, S=State
	Pos. 2- represents formality: F=formal, I=informal, O=other
	Pos. 3- represents enforcement code
	(Example: SIF = State Informal Request for Public Notice action)

SDWIS/FED Reporting
Enforcements

Links to Violations

- Formal Enforcement Actions should be linked to the appropriate violation(s)
- RTC and Intentional No Action are “Formal”
- Unlinked Enforcements are “Orphans”
- 4 Methods to Link Enforcements to Violation(s)

It is possible to post an Enforcement to the SDWIS/FED data base without linking it to any Violation.

Failure to link an Enforcement to one or more Violations, however, results in an “Orphan” Enforcement, which is highly undesirable.

If X/Y/Z5000 link fails, the Enforcement will still be posted to the SDWIS/FED data base.

If J5000 link fails, the Enforcement will **NOT** be posted to the SDWIS/FED data base.

Note: RTC and Intentional No Action are technically considered Other actions; however, they must be reported to SDWIS/FED.

SDWIS/FED Reporting
Enforcements

Link Methods

- X5000 - Associated Violation Range
- Y5000 - Associated Violation IDs
- Z5000 - Associated Violation Contaminant Groups
- J5000 - Associated J5000 Group

The next several slides provide enforcement reporting requirements and characteristic details for each enforcement link method listed above.

SDWIS/FED Reporting
Enforcements

X5000 - Associated Violation Range

- Enforcement is linked to Violation(s) between specified date range
- Maximum of one Associated Violation Date Range in the Data Element Value
- Links to violations matching **begin** or **end** dates
- Links to ALL violations of ALL Rules (CAUTION)
- Failed Link - posts Enforcement - rejects Link

Will link all violations of all rules or violation types where the violation compliance period begin **OR** compliance period end dates fall within the range specified by the X5000 dates. Caution should be used when reporting under this link method.

Only one Associated Date Range may be specified in a single X5000 DTF transaction's Data Element Value.

SDWIS/FED X5000 Link Record Layout

Data Element Number	Name	Type	Length	Format/Content
X5000	**Associated Violation Range**			
	Compliance Period Begin Date	**Date**	**8**	**YYYYMMDD**
	Compliance Period End Date	**Date**	**8**	**YYYYMMDD**

SDWIS/FED Reporting
Enforcements

X5000 - Associated Violation Range Illustration

E1 CT0099233 9900144	I C1203 19990511	990224
E1 CT0099233 9900144	I C1205 SIF	990224
E1 CT0099233 9900144	I X5000 19990301 19990331	990224
or		
E1 CT0099233 9900144	I X5000 19990101 19990331	990224

First example links to violations in one month:
3/1/1999 to 3/31/1999

Second example links violations in one quarter:
1/1/1999 to 3/31/1999

NOTE: Blank spaces have been inserted between DTF Components above for clarity.

SDWIS/FED Reporting
Enforcements

Y5000 - Associated Violation IDs

- Enforcement is linked to specific Violation(s) by Violation ID
- Maximum of four Associated Violation IDs in the Data Element Value
- Failed link - posts Enforcement - rejects Link

Accurate entry of valid violation record identifiers is critical to successful enforcement/violation linking. Careful consideration should be given to the use and management of record identifiers for all data, particularly violation and enforcement data. This method uses Federal fiscal years.

One, two, three, or four Associated Violation IDs may be specified in **ONE** Y5000 DTF transaction's Data Element Value.

A failed Y5000 link will result in the link being rejected and the enforcement being posted as an orphan.

SDWIS/FED Y5000 Enforcement Link Record Layout

Data Element

Number	Name	Type	Length	Format/Comment
Y5000	**Associated Violation ID(s)**			
	Violation ID 1	**A/N**	**7**	**FFxnnnn**
	Violation ID 2	**A/N**	**7**	**FFxnnnn**
	Violation ID 3	**A/N**	**7**	**FFxnnnn**
	Violation ID 4	**A/N**	**7**	**FFxnnnn**

SDWIS/FED Reporting
Enforcements

Y5000 - Associated Violation IDs Illustrated

(Proper Use of Y5000)

E1 CT0099233 9900144	I C1203 19990111	990224
E1 CT0099233 9900144	I C1205 SIF	990224
E1 CT0099233 9900144	I Y5000 9900047	990224
E1 CT0099233 9900144	I Y5000 9900048	990224
E1 CT0099233 9900144	I Y5000 9900049	990224

Allows 3 transaction rows - one violation link on each row, OR

NOTE: Blank spaces have been inserted between DTF Components above for clarity.

OK to link this way.

SDWIS/FED Reporting
Enforcements

Y5000 - Associated Violation IDs Illustrated

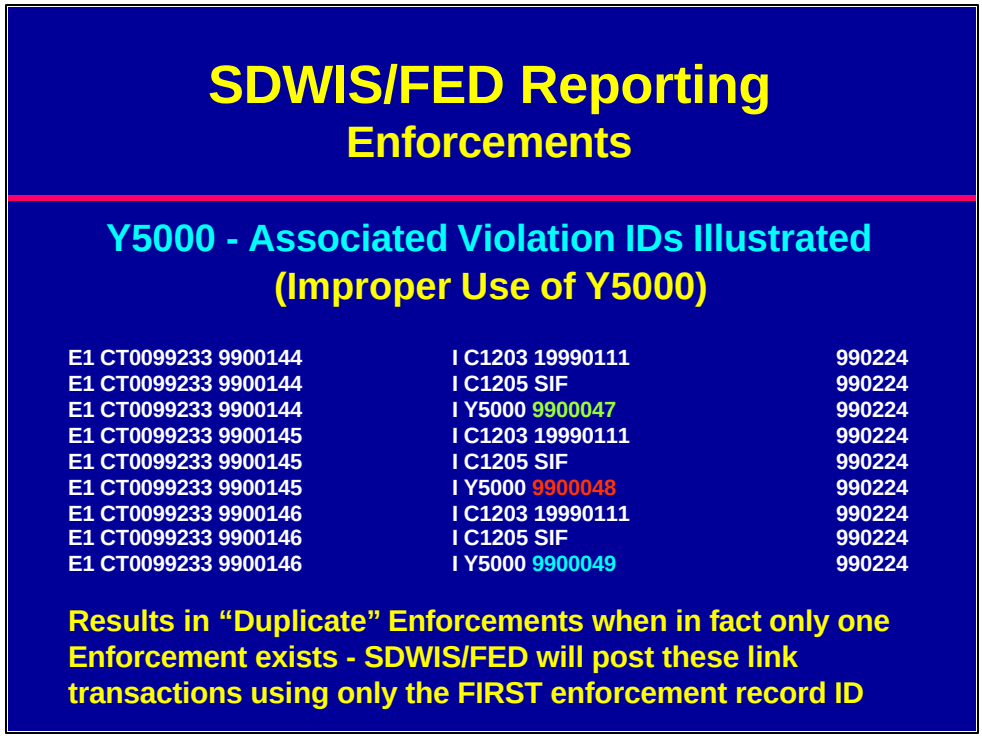
(Proper Use of Y5000)

E1 CT0099233 9900144	I C1203 19990111	990224
E1 CT0099233 9900144	I C1205 SIF	990224
E1 CT0099233 9900144	I Y5000 9900047 9900048 9900049	990224

3 violation ID s on One transaction row

NOTE: Blank spaces have been inserted between DTF Components above for clarity.

OK to link this way.



Note that the entire Enforcement is duplicated with three different record identifiers.

This method of linking is incorrect.

SDWIS/FED posts the enforcement and the link from the first record in the file, then posts the links from the remaining "duplicates" using the enforcement record identifier from the first record. SDWIS/FED rejects the "duplicate" data and sends it to "transaction heaven". This results in the enforcement record identifiers being posted to SDWIS/FED not matching record identifiers in State records.

SDWIS/FED Reporting
Enforcements

Z5000 - Associated Violation Contaminant Groups

- Link requires exact match of:
  - **Violation Type**
  - **Contaminant, and**
  - **Violation Compliance Period Begin Date**
- Maximum of two Associated Violation Contaminant Groups in the Data Element Value
- Failed Link - posts Enforcement - rejects Link

Enforcement is linked to Violation(s) exactly matching Violation Type, Contaminant, and Compliance Period Begin Date.

Maximum of two Associated Violation Contaminant Groups in the Data Element Value.

If link fails, the Enforcement will still be posted to the SDWIS/FED data base.

Reporting Enforcement Data – Z5000

Number	Name	Type	Length	Format/Comment
Z5000	Associated Violation Contaminant Group(s)			
	Violation Type Code	Number	2	51-53, 56-69, 63-65
	Contaminant Code	Number	4	5000, 1022, 1030
	Compliance Period Begin Date	Date	8	YYYYMMDD

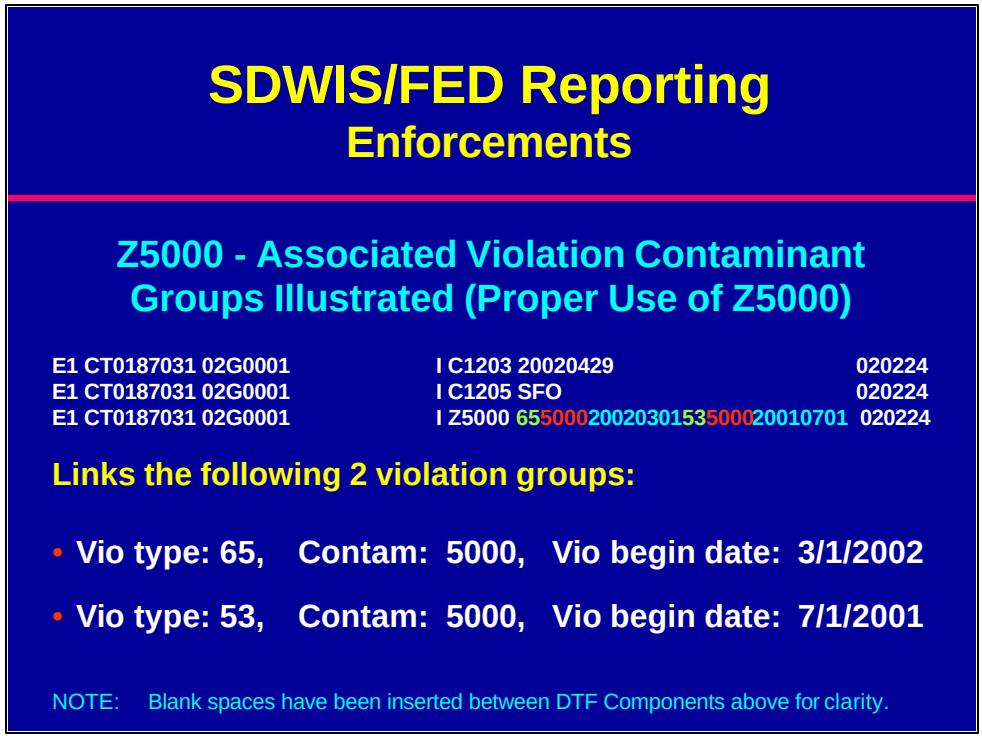
Remember: When States are switching over to the new reporting requirements, they should not revise pre-existing violation begin dates. This is because enforcement actions are linked to violation begin dates. Thus modifying pre-existing begin dates will cause these links to be broken.

SDWIS/FED Reporting
Enforcements

Z5000 - Associated Violation Contaminant Groups Illustrated (Proper Use of Z5000)

E1 CT0187031 99G0001	I C1203 19970129	990224
E1 CT0187031 99G0001	I C1205 SFO	990224
E1 CT0187031 99G0001	I Z5000 515000 19920101	990224
E1 CT0187031 99G0001	I Z5000 535000 19920101	990224

NOTE: Blank spaces have been inserted between DTF Components above for clarity.



Example: System exceeded the lead action level in the July through December 2001 designated monitoring period. The system was required to conduct its initial public education activities within 60 days and fails to do so. The system is also required to monitor WQPs and fails to do so. Violations were issued for both conditions. On 4/29/2002, the State takes a formal action (SFO - State Administrative Order with penalty). By 8/15/2002, the formal enforcement action and link data is reported to SDWIS/FED.

SDWIS/FED Reporting
Enforcements

J5000 - Associated J5000 Group

- Link requires exact match of:
  - **Violation Type**
  - **Contaminant or Rule**
  - **Enforcement Period Begin Date, and**
  - **Enforceable Compliance Date**
- Maximum of one Associated Violation J5000 Group in Data Element Value
- Failed link REJECTS ENFORCEMENT

Enforcement is linked to Violation(s) which match exactly based on the following criteria:

Violation Type, Contaminant or Rule, Enforcement Period Begin Date, and Enforceable Compliance Date (deadline).

Only one Associated J5000 Group may be specified in a J5000 DTF transaction's Data Element Value.

If link fails, the Enforcement will **NOT** be posted to the SDWIS/FED data base.

Reporting Enforcement Data - J5000 Format

D.E Number	Name	Type	Length	Format/Comment
J5000	Associated J5000 Group			
	Enforcement Action Begin Date	Date	8	YYYYMMDD
	Enforceable Compliance Date	Date	8	YYYYMMDD
	Violation Type Code	Number	2	51-53, 56-69, 63-65
	Contaminant Code	Number	4	5000, 1022, 1030
	Rule Code	A/N	4	LCR

SDWIS/FED Reporting
Enforcements

J5000 - Associated J5000 Group Illustrated

```
E1 PR0455114 99G1118                I C1203 19990715                    990224
E1 PR0455114 99G1118                I C1205 SFL                         990224
E1 PR0455114 99G1118                I J5000 1999013120000715    LCR     990224
```

- **Enforcement Period begin Date: 1/31/1999**
- **Enforceable Compliance Date: 7/15/2000**
- **Rule Code: LCR - Lead and Copper Rule, or contaminant code of 5000**

NOTE: Blank spaces have been inserted between DTF Components above for clarity.

SDWIS/FED Reporting
Enforcements

Violation, Enforcement and Z5000 - Associated Violation Contaminant Groups Link Example

D1 CT0187031 0400221	I C1103 5000	040224
D1 CT0187031 0400221	I C1105 59	040224
D1 CT0187031 0400221	I C1107 20030701	040224
D1 CT0187031 0400221	I C1109 20031231	040224
E1 CT0187031 0400035	I C1203 19990129	040224
E1 CT0187031 0400035	I C1205 SFO	040224
E1 CT0187031 0400035	I C1215 CASE REFERENCE T-2275	990224
E1 CT0187031 0400035	I Z5000 59500020030701	040224

Y5000 would look like the following:

E1 CT0187031 0400035	I Y5000 0400221	040224

SDWIS/FED Reporting

General Information

All LCR/LCRMR data is required to be reported to SDWIS/FED within 45 days after the end of the quarter in which the monitoring, violations, milestone determinations, and or enforcement/follow-up actions were completed, issued, made or taken.

Data review and error correction should be completed by the 90th day after the end of the quarter.

The Production database is frozen on or about the 5th day of the 4th month after the end of the quarter and the data is provided to EPA's ENVIROFACTS web site for public access.

SDWIS/FED Reporting
Information Resources

SDWIS/FED Documentation: EPA Home Page

WWW.EPA.GOV/SAFEWATER/SDWISFED/SDWIS3.htm

- SDWIS/FED User Support: Michelle Stoner 202-260-2798
- SDWIS/FED Production Control/Help Line: 703-292-6121
- SDWIS/FED Technical information: Fran Haertel 214-665-8090
- LCRMR Implementation and Compliance Determination Questions: Leslie Cronkhite 202-260-0713
- EPA Regional Data Management Coordinators

Lead and Copper NPDWR Requirements

- Lead and Copper Tap/Initial WQP Monitoring
- Corrosion Control Optimization
- Public Education
- Source Water Monitoring & Treatment
- Replacement of Lead Service Lines
- State Reporting and Recordkeeping
- Primacy and Implementation

The components of the State's primacy package should include the following sections:

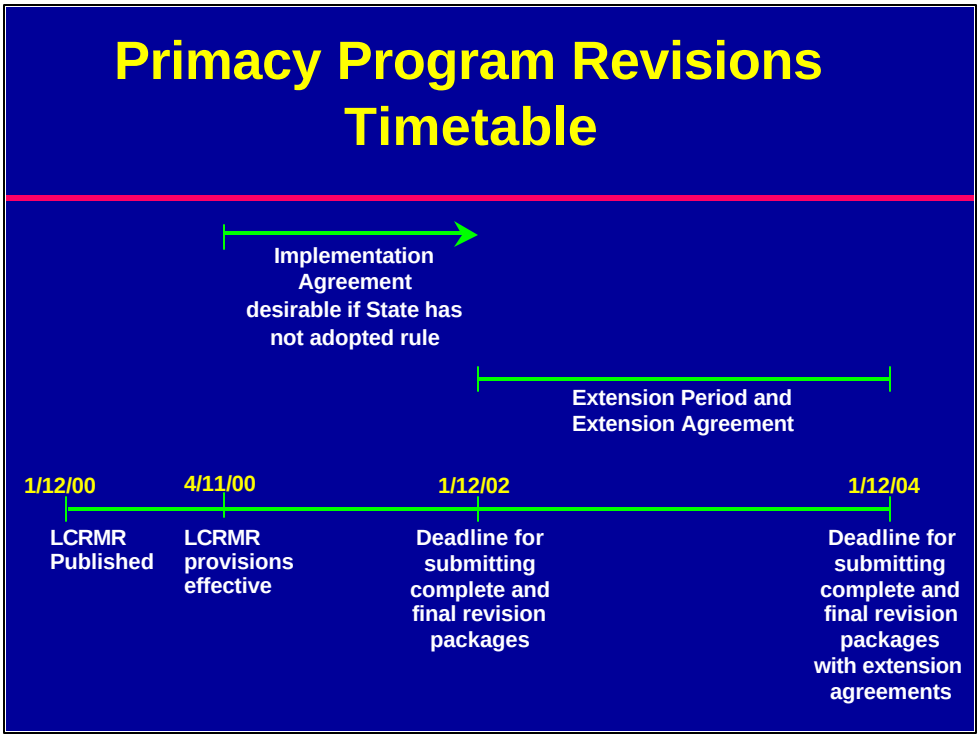
1. State Primacy Checklist. This checklist contains the general primacy requirements of 40 *CFR* 142.10. It allows States to identify the program elements that they have revised in response to new Federal requirements.
2. Text of State Regulation. Each primacy application package must include the text of the State regulation.
3. Primacy Revision Crosswalk. The crosswalk contains a summary of each revision and is intended to assist States in revising their regulations.
4. State Recordkeeping and Reporting Checklists. States should use this checklist to explain how their reporting and recordkeeping requirements are consistent with Federal requirements. If a State's requirements are inconsistent with Federal requirements, it must explain how its requirements are "no less stringent."
5. Special Primacy Requirements. The LCRMR contain three new special primacy conditions added by the LCRMR. One of these primacy conditions must be included in the State's primacy application. The two optional provisions must be included in the primacy application if the State plans to include them as part of its program. These special primacy requirements are discussed in more detail later in this presentation.
6. Attorney General's Statement of Enforceability. This statement must certify that:
   - the State regulations were duly adopted and are enforceable;
   - the State does not have any audit privilege or immunity laws, or if it has such laws, that these laws do not prevent the State from meeting the requirements of the SDWA; and
   - if the State is not adopting the new PWS definition because it has no "constructed conveyance systems," that the State statute or regulation is "as stringent as" the federal requirements and that any future constructed conveyance systems will be prohibited *(if not previously included in a primacy package for another rule).*

EPA and State Implementation Agreement

- After 4/11/00, EPA responsible for enforcing rule until State receives primacy
- States/EPA may agree to co-implement rule
- Unnecessary if State has submitted package and meets requirements for Interim Primacy

Until the LCRMR primacy application is submitted, or the revised State LCRMR regulations become effective, whichever is later, EPA Regions have responsibility for enforcing the LCRMR. EPA and the States can enter into an implementation agreement that will allow the States to implement the LCRMR between the time that the rule became effective (i.e., April 11, 2000) and the day the State submits a final primacy revision package to EPA.

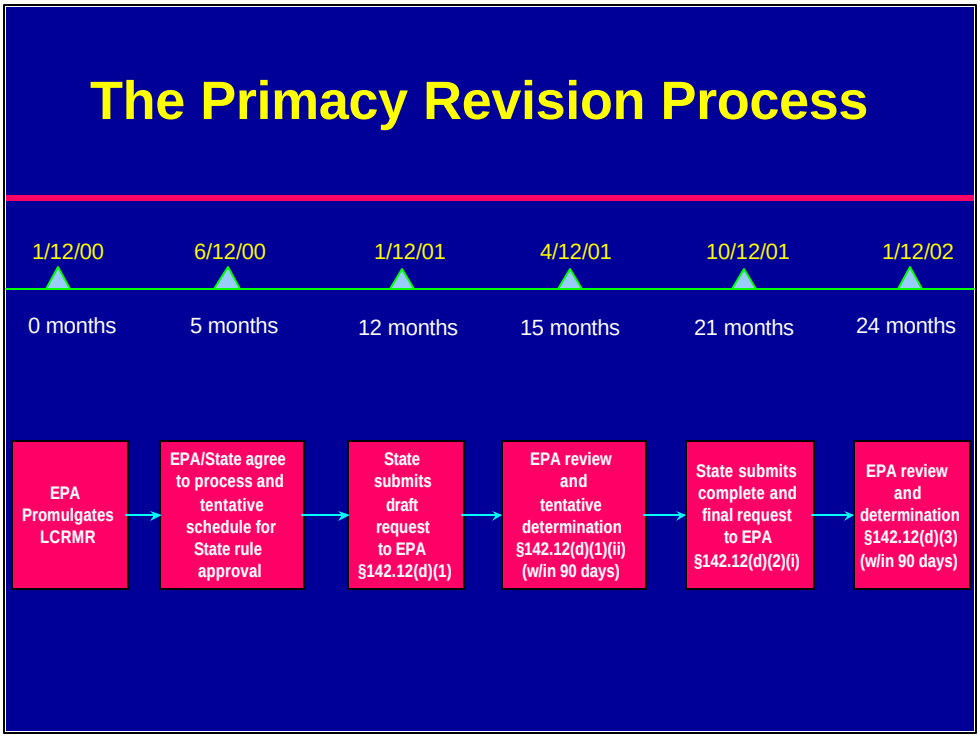
If the State is eligible for interim primacy, it will have full implementation and enforcement authority once the State submits a complete and final revision package, or once its revised State LCRMR regulation becomes effective, whichever is later. A State may be granted additional time (up to two years) to submit the application package. During this period, an extension agreement outlining specific State and EPA responsibilities must be in place, as per §142.12(b)(3). Extension agreements are discussed on the next two pages.



Key Primacy Program Revision Dates

January 12, 2000:	LCRMR published in *Federal Register*.
April 11, 2000:	LCRMR provisions became effective (as we have discussed throughout the presentation, States/systems are not required to comply with some of the requirements until they have become adopted into the State's regulation.)
January 12, 2002:	States without extension agreements must submit a complete and final primacy revision package.
January 12, 2004:	Deadline for submitting a complete and final revision package for systems with extension agreements.

Each of these milestones will be discussed in more detail in the next few pages.



The Revision Process

January 12, 2000:	LCRMR published in *Federal Register*.
June 12, 2000:	State and EPA Regions establish a process and agree upon a schedule for application review and approval.
January 12, 2001:	States, at its option, submit a draft program revision package that includes: Preliminary Approval Request, Draft State Regulations and/or statutes, and Regulation Crosswalk.
April 12, 2001	EPA reviews the draft within 90 days of State submittal of draft.
October 12, 2001 (suggested):*	States that do not receive an extension have until January 12, 2002 (2 years) to submit their complete and final revision package.

* EPA is requesting that States submit their final package by October 12, 2001 (within 21 months from LCRMR date of publication). This will ensure that States will have interim primacy within 24 months and will prevent them from becoming backlogged with revision applications to adopt future federal requirements.

Primacy and Implementation
Revisions that Must Be Adopted

- **Revisions that must be adopted to maintain primacy:**
  - **Are more stringent than the 1991 Rule**
  - **Must be implemented beginning April 11, 2000 by Region or State**
  - **Must be incorporated into State regulations by January 12, 2002 to retain primacy (extension available)**
  - **Include clarifications to original LCR language**

Throughout the presentation we have indicated those provisions that States must adopt to maintain primacy. These provisions were preceded by the symbol "✪". These revisions are generally more stringent than the 1991 Rule.

States must incorporate these revisions into their drinking water regulations by 1/12/02 (i.e., within 24 months of the rule's publication in the *Federal Register*) to retain/obtain primacy, unless EPA grants the State an extension of no more than 2 years.

Some revisions that must be incorporated were made simply to clarify the intent of the original rule language. A State must incorporate these clarifications into its regulations ***only*** if the State's regulation does not already clearly communicate the original intent of the LCR.

EPA has prepared a document entitled, *Lead and Copper Rule: Summary of Revisions,* April 2000, EPA 815-R-99-020. This guidance contains a discussion of each of the important revisions made to the 1991 Rule by major rule section (i.e., §141.81, §141.82, §§141.84-141.90, and §141.43), and identifies when systems and States must begin complying with the new requirements.

Primacy and Implementation
Revisions that Must Be Adopted

- **Pb/Cu Tap Monitoring and Reporting**
  - Use of representative sites
  - States can specify reduced sampling locations
  - Report change in treatment or new source
- **Continued monitoring and/or treatment requirements for systems:**
  - with CCT but WQP monitoring not required
  - with treatment in place prior to 12/7/92
  - that qualify as (b)(3) systems

Remember, these provisions are found in *Federal Register*, Vol. 65, No. 8. Drinking Water Regulations; Maximum Contaminant Level Goals and National Primary Drinking Water Regulations for Lead and Copper; Final Rule; (Wed., Jan 12, 2000).

LCRMR Revision	Where to Find It
Use representative sites, if system has insufficient number of tiered sites,	§§141.86(a)(5) & (7)
Reduced sampling sites must be representative & State can specify location	§§141.86(c)& (d)(4)(iv)
Report change in treatment of new source for systems on reduced monitoring	§§141.86(d)(4)(vii) & (g)(4)(iii), §141.90(a)(3)
Continued requirements for systems with CCT but that are not required to conduct WQP monitoring	§141.81(b)(3)(i)
Continued requirements for (b)(2) systems with treatment in place prior to 12/7/92	§141.81(b)(2)
Continued requirements for (b)(3) systems	§§141.87(b)(3)(ii)-(v)
Requirement for (b)(3) systems to not exceed the copper action level	§141.87(b)(3)(iv)

Primacy and Implementation
Revisions that Must Be Adopted

- More timely public education compliance reporting by systems
- Source water monitoring
  - Revisions to source water resampling triggers
  - Compositing by a certified lab
- LSLR requirements
  - Who receives replacement offer clarified
  - All revisions pertaining to partial LSLR

LCRMR Revision	Where to Find It
More timely public education compliance reporting & allowance for systems to forego resubmitting the distribution list	§141.90(f)
Revisions to source water resampling triggers	§141.88(a)(1)(iii)
Compositing by certified laboratory	§141.89(a)(1)(iv)
Clarification of who receives replacement offer	§141.84(d)
Stronger partial LSLR notification requirements	§141.84(d)(1)
Representative service line sample	§141.84(d)(1)
Partial LSLR reporting to State	§141.90(e)(4)

Primacy and Implementation
Cannot Be Implemented Unless State Allows

- **These revisions:**
  - **Are generally less stringent than 1991 Rule**
  - **Cannot be implemented by systems until and unless incorporated into State regulations**
  - **Are optional inclusions in State regulation**

If the current State requirements are more stringent than the LCRMR, systems must abide by the existing State regulations until they incorporate the minor revisions into State regulations. States also have the choice whether or not to incorporate the less stringent requirements. However, if a States elects not to incorporate a revision into its regulations, this revision cannot be implemented by water systems in that State, unless the State has laws that allow earlier implementation.

For water systems owned and operated by Tribal governments, the Federal version of the entire LCRMR applies. Therefore, these systems were able to take advantage of the burden reduction requirements of the LCRMR on April 11, 2000.

For more detail regarding revisions to the State primacy program, refer to Section III of the State Implementation Guidance for the Lead and Copper Rule Minor Revisions, February 2001, EPA 816-R-99-015.

Primacy and Implementation
Cannot Be Implemented Unless State Allows

- **Changes to Sampling Pool**
  - Use of non-first draw samples
- **Reduced Lead and Copper Tap Monitoring**
  - No longer need to request permission
  - State may designate alternate period
  - Accelerated reduced monitoring

LCRMR Revision	Where to Find It
Use of non-first draw samples & associated system reporting requirements	§141.86(b)(5) & 141.90(a)(2)(i)-(ii)
System no longer submit written request for reduced monitoring	§§141.86(d)(4)(ii) & (iii)
Alternate period for reduced monitoring	§141.86(d)(4)(iv)(A)
Accelerated reduced monitoring	§141.86(d)(4)(v)

Primacy and Implementation
Cannot Be Implemented Unless State Allows

- Sample Invalidation
- Monitoring waivers
- Reduced holding time for acidified samples
- Reporting changes
  - 90th percentile calculation by State
  - elimination of sampling justifications
  - elimination of sample collection certifications

LCRMR Revision	Where to Find It
Sample invalidation & associated system reporting requirements	§§141.86(f) & 141.90(a)(1)(ii)
Monitoring waivers & associated system reporting requirements	§§141.86(g) & 141.90(a)(4)(i)-(iv)
Reduced holding times for acidified samples prior to analysis	§141.86(b)(2)
State calculation of 90th percentile level	§141.90(h)
Other system reporting requirements for lead and copper tap monitoring and WQP monitoring	§141.90(a)

Primacy and Implementation

Cannot Be Implemented Unless State Allows

- Expanded (b)(3) definition
- Change in OWQP compliance procedure
- Representative entry point WQP monitoring for ground water systems
- Accelerated reduced WQP tap monitoring

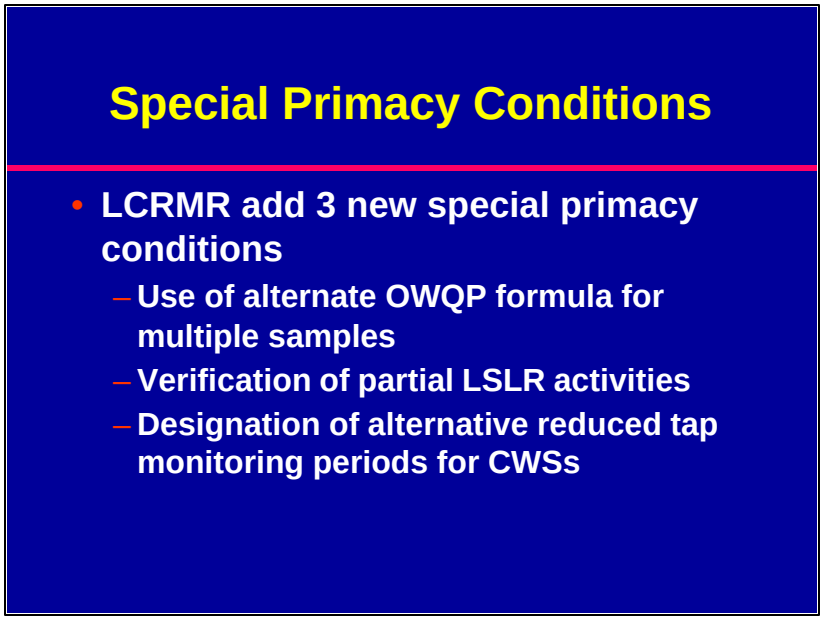
LCRMR Revision	Where to Find It
Allowance for systems with source water below MDL to qualify as (b)(3) system	§141.81(b)(3)(i)
Change in compliance procedure for OWQPs	§141.82(g) & §141.87(d)
Representative WQP entry point monitoring for ground water systems & associated system reporting requirements	§§141.87(c)(3) & 141.90(a)(5)
Accelerated reduced WQP tap monitoring	§141.87(e)(2)(ii)

Primacy and Implementation

Cannot Be Implemented Unless Adopted

- All public education revisions except more timely system reporting & need for resubmitting distribution list
- Reduced source water monitoring for systems without MPLs
- Labs not required to meet Copper MDL

LCRMR Revision	Where to Find It
Delete obsolete or irrelevant language (reference to LSL, control of LSLs, building records)	§§141.85(a)(1)(i) & (a)(2)
Mail notices separately from water bill	§141.85(c)(2)(i)
Reduce requirements for CWSs serving ≤ 3,300	§§141.85(c)(8)(i)-(ii)
Provide specific NTNCWS mandatory language	§§141.85(a)(2)(i)-(iv)
Allow use of electronic transmission by NTNCWSs	§141.85(c)(4)(ii)
Allow special-case CWSs to use NTNCWS language and delivery requirements	§§141.85(c)(7)(i)-(ii)
Reduced monitoring for systems w/o MPLs	§§141.88(e)(1) & (2)
Labs are not required to achieve the Copper MDL to analyze composite source water samples	§141.89(a)(1)(iii)



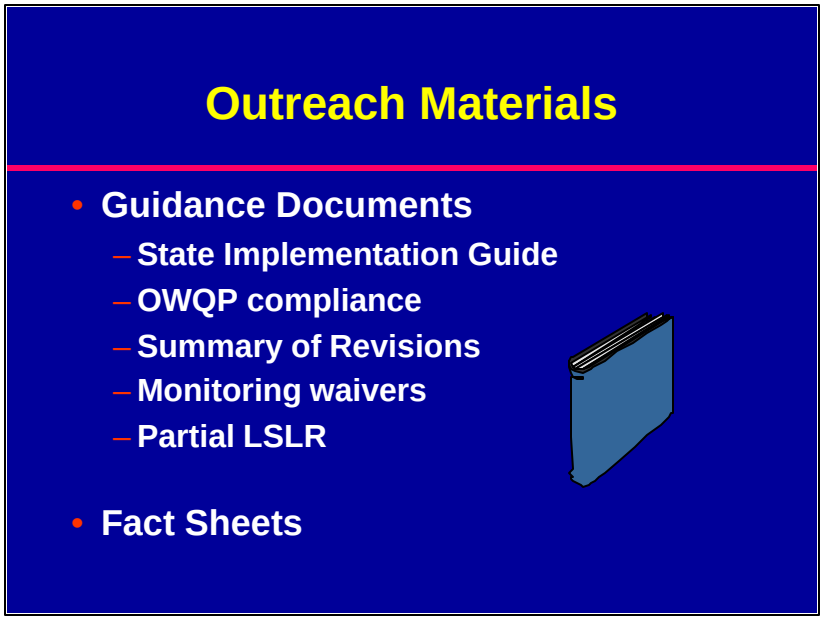
The LCRMR Adds 3 New Special Primacy Conditions

1. States have the option to use an **alternative formula** for determining the daily value other than averaging when multiple WQP samples are collected per day at the same monitoring location. If a State chooses to develop an alternate formula, the State must discuss its approach in its revised primacy package and the alternative approach must be approved by EPA before the State can implement it.

2. States must explain how they will **verify compliance with LSLR requirements**. The LCRMR give States flexibility on the type of information or method used to verify compliance with LSLR requirements. For example, States can allow a system not to submit the results of lead sample following partial LSLR, if they have another procedure for verifying this (e.g., audit). Similarly, States can require system to submit other information; the rule does not explicitly ask for proof that the system notified residents before and after partial LSLR.

3. States have the discretion to **designate an alternate period** for system to collect reduced monitoring other than June - September. If a State chooses to do so for CWSs, it must indicate in its primacy package how it will determine an alternate period for CWSs in which the highest lead levels are likely to occur.

Section III of the *State Implementation Guidance for the Lead and Copper Rule Minor Revisions*, February 2001, EPA 816-F-99-015, contains examples for these three special primacy conditions.



Guidance Documents

State Implementation Guidance for the Lead and Copper Rule Minor Revisions, February 2001, EPA 816-F-99-015.

How to Determine Compliance with Optimal Water Quality Parameters as Revised by the Lead and Copper Rule Minor Revisions, February 2001, EPA 815-R-99-019.

Lead and Copper Rule: Summary of Revisions, April 2000, EPA 815-R-99-020. This document also contains an appendix which compares the rule language of the Lead and Copper Rule against the LCRMR.

Monitoring Waivers under The Lead and Copper Rule Minor Revisions for Systems Serving 3,300 or Fewer People, April 2000, EPA 815-R-99-021.

Notification and Reporting Requirements for Partial Lead Service Line Replacement under the Lead and Copper Rule, April 2000, EPA 815-R-99-022.

Lead and Copper Rule: Minor Revisions Compared to the 1991 Rule, April 2000, EPA 816-R-00-009

Fact Sheets

Fact Sheet Lead and Copper Rule Minor Revisions, December 1999, EPA 815-F-99-010.

Fact Sheet for Public Water Systems that Serve 3,300 or Fewer Persons, February 2001, EPA 816-F-00-007.

Fact Sheet for Public Water Systems that Serve 3,301 to 50,000 Persons, February 2001, EPA 816-F-00-008.

Fact Sheet for Public Water Systems that Serve More Than 50,000 Persons, February 2001, EPA 816-F-00-009.

Fact Sheet for Tribal Water System Owners and Operators, February 2001, EPA 816-F-00-010

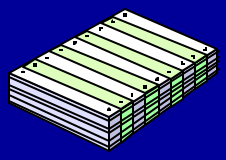
Fact Sheet for State Primacy Agencies, Lead and Copper Rule Minor Revisions, February 2001, EPA 816-F-99-011.

These documents can be obtained from the Safe Drinking Water Hotline at 1-800-426-4791, the Water Resource Center (202) 260-7786 or e-mail at center.water resource@epa.gov, or from the Office of Ground Water and Drinking Water web page at www.epa.gov/safewater/leadcop.html.

EPA has also made an electronic version of this training available to States.

Outreach Materials
SDWIS/FED

- LCRMR Reporting Guidance - DRAFT
- SDWIS/FED Data Entry Instructions
- SDWIS/FED Online Data Dictionary (ODD)
- SDWIS/FED Error Code Data Base (ECDB)
- DTFWriter Software, Release 5.2
- DTFWriter User Manual



Lead/Copper Rule Minor Revisions (LCRMR) Reporting Guidance - Draft. This document is Appendix B of the *State Implementation Guidance for the Lead and Copper Rule Minor Revisions*, September 2000, EPA 816-F-99-015

Code lists … Violation Types, Milestone Codes, Milestone Reason Codes, Enforcement Codes

DTFWriter Requirements and Technical Specifications for Lead and Copper Rule Minor Revisions (LCRMR)

SDC-0002-018-LM-2023, January 21, 2000

DTFWriter User Manual

SDC-0002-018-AG-2017A, February 15, 2000

SDWIS/FED documents can be obtained from the Office of Ground Water and Drinking Water web page at www.epa.gov/safewater/sdwisfed/sdwis.htm.