

## PBCU INVALIDATION REQUESTS DUE TO IMPROPER SAMPLE ANALYSIS

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### Invalidation Section of Federal PBCU Rule

Invalidation of lead or copper tap water samples: 40 CFR 141.86(f)

Only the BSDW QA Unit can invalidate PBCU tap water samples.

Tap water samples not invalidated by BSDW, must be used for the 90<sup>th</sup> percentile calculation for lead and copper.

*There are only four conditions by which PBCU samples can be invalidated.*

### Conditions for PBCU Tap Sample Invalidations

- (i) The laboratory establishes that improper sample analysis caused erroneous results.
- (ii) The State determines that the sample was taken from a site that did not meet the site selection criteria of this section.
- (iii) The sample container was damaged in transit.
- (iv) There is substantial reason to believe that the sample was subject to tampering.

### EPA Memo of November 11, 2004

**From:** Benjamin Grumbles, Acting Assistant Administrator of the EPA Office of Water

**To:** Regional Administrators, Water Division Directors and Regions I-X

**Subject:** Clarification of Requirements for Collecting Samples and Calculating Compliance

### Questions Addressed in Nov. 2004 EPA Memo

- 1) What samples are used to calculate the 90<sup>th</sup> percentile?
- 2) What should utilities do with sample results from customer-requested sampling programs?
- 3) What should states do with samples taken outside of the sampling compliance period?
- 4) What should states do to calculate compliance if the minimum number of samples are not collected?
- 5) What is a proper sample?
- 6) How can utilities avoid problems with sample collection?
- 7) On what grounds may a sample be invalidated?

### Condition (i) Refers to Improper Sample Analysis - Not Sample Collection

Community water systems that use resident collected samples for their PBCU tap monitoring must know that once the sample is analyzed, they cannot challenge the results claiming resident collection error.

It is important that the CWS capture all required information on the participation forms so that any samples not collected according to instructions are not submitted to the lab for analysis. In this case, the CWS can either return to that location or use an alternative approved site to obtain a first draw tap sample.

The CWS does not need to notify the BSDW QA Unit for PBCU first draw samples that are not analyzed.

### Condition (i) Refers to Improper Sample Analysis - Not Sample Collection

If a lab collects samples, they should have the list of approved sample sites for the system prior to sampling. This list can be found in Drinking Water Watch. [www.nj.gov/dep/watersupply](http://www.nj.gov/dep/watersupply). Go to [Drinking Water Watch](#) and the particular water system. The list of approved sites as PBCU numbers can be found under [System Facilities](#). Choose [Lead and Copper Sample Points](#).

The Sample Point ID is the PBCU#

*Ask the water system to provide you with the site description which is usually the address for each of the Sample Point IDs.*

### Condition (i) Refers to Improper Sample Analysis - Not Sample Collection

If a sample was collected from an unapproved site, as long as it is a Tier 1 site or other high risk site, in most cases, it will not be invalidated.

There is a minimum stagnation period (6 hours) but no maximum. If the water had not been sitting for at least 6 hours, another sample must be obtained from that same location and used for the 90<sup>th</sup> percentile calculation for lead and copper.

### The Request for an Invalidation of a PBCU Sample(s) Based on Improper Lab Analysis...

The initial request should be received from the water system and sent to the BSDW QA unit.

*NOTE: All PBCU invalidation requests must come from the water system.*

When requesting an invalidation of a PBCU result, the water system must submit results of the samples and supporting documentation for the invalidation.

After the request is made by the water system, the laboratory may submit supporting documentation and other information directly to the BSDW QA unit. The water system must be copied on all emails.

### The Request for an Invalidation of a PBCU Sample(s) Based on Improper Lab Analysis...

Once the decision is made, the BSDW QA Unit will send the water system an email and will copy the lab.

If the BSDW QA Unit granted the invalidation and the sample had been entered through E2, the lab can use the email from the BSDW QA Unit as justification for removal of the sample from E2 and SDWIS.

The invalidation will be formally documented by the BSDW QA Unit with a letter to the system and a copy of the letter to the lab.

### The Request for an Invalidation of a PBCU Sample(s) Based on Improper Lab Analysis...

Once the invalidation is granted, the system may collect a replacement sample at the same location or if it is not available, then at other approved PBCU locations other than those already used for sampling during the monitoring period.

The replacement sample must be taken as soon as possible but no later than 20 days after the decision or by the end of the monitoring period which ever occurs later.

The system may have already returned to that location and collected a proper sample prior to the determination. In most cases, this is acceptable.

### Chain of Custody Issues

- For a NTNC system or CWS where residents are not performing the collection, please print name of collector and indicate the affiliation of the collector.
- Besides the date, always include the time the sample was taken. They should not be listed as collected at the same time.
- Describe the location as closely as possible to the PBCU site plan on the chain of custody and if possible also include the PBCU # of the site.
- Indicate if the sample was preserved in the field.
- *If there are noticeable particulates in the sample, please indicate this on the chain of custody*. It would be helpful if the BSDW QA unit was also notified of this since it may indicate a treatment problem.



### Analysis of Lead and Copper Samples

Samples must be acidified using concentrated nitric acid to a pH of 2 within 14 days of sample collection. If this timeframe is not met the samples should not be analyzed since their results could not be used for PBCU tap sample compliance.

Samples must be analyzed using an approved EPA method found in:  
**40 CFR 141.23 (k)(1) or Appendix A of subpart C.**

The PQL in the regulations for lead is 5 µg/L. The minimum reporting value the NJ BOE required with Lead in NJ Schools Lead Sampling was 2 µg/L. The labs should use a Lead reporting limit of 2 µg/L or less.