



TAP TALK

Division of Public Health · Spring 2015

Lead and Copper Sampling Plans

By Katie Huegel

All community and non-transient, non-community water systems were required to have a lead and copper sampling plan submitted to the Office of Drinking Water (ODW) at the start of the Lead and Copper Rule (LCR) in the early 1990's. ODW now requires these water systems to update their sampling plans and resubmit them by December 31, 2015. New systems, and those that did not create a sampling plan when the rule began, will now be required to create one by the same deadline.

The purpose of creating a sampling plan is to identify locations that may be susceptible to high lead or copper levels. In addition, many of the exceedances that occurred in 2014 were due to a system having a new water operator that was unfamiliar with the previous sampling locations. Examples of improper sample locations include outside taps, frost-free taps, and mop sinks. With the implementation of a sampling plan, systems can save money and time by collecting samples from pre-approved sites thereby eliminating the need for the invalidation and recollection of samples.

Most systems completed a materials evaluation of their distribution system when they created their original sampling plan. ODW is requiring these systems to update and resubmit this evaluation as well. The materials evaluation will assist in identifying sampling sites that best meet the tiering requirements listed below. If your system has not completed this requisite, visit <http://water.epa.gov/lawsregs/rulesregs/sdwa/lcr/upload/Revised-Lead-and-Copper-Rule-Monitoring-and-Reporting-Guidance-for-Public-Water-Systems.pdf>, page 110, to obtain a standard materials evaluation sheet. This must be submitted to ODW along with the sampling plan.

The LCR provides a tiering system to assist in selecting and prioritizing sampling sites. If your system cannot complete its sampling at sites that meet the tiering criteria (e.g., the system is 100 percent PVC), please state this on your materials evaluation and collect samples at representative sites throughout the distribution system.

Once a sampling plan is created for a system, only those locations are to be used unless a site is no longer accessible or is unavailable during the time of sampling. ODW also recommends that you identify the standard number of sampling sites, even if the system is currently on reduced monitoring. That way, in case a volunteer drops out, if a site is not accessible, or if an exceedance occurs and the system

must return to standard monitoring, pre-approved sites have already been determined.

The lead and copper sampling plan must be combined with the systems other sampling plans, such as total coliform and disinfection byproducts. A completed submission includes a materials evaluation sheet and a map of the distribution system, which shows the sites that will be used for sampling (starting with tier 1, 2 and 3 sites; and if none of these apply,

-continued on page 2

Tiering Classification

If you are a CWS:

Tier 1 sampling sites are single family structures:

- With copper pipes with lead solder installed after 1982 (but before Delaware's 1984 lead ban) or contain lead pipes; and/or
- That are served by a lead service line.

Note: When multiple-family residences (MFRs) 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 MFRs:

- With copper pipes with lead solder installed after 1982 (but before Delaware's 1984 lead ban) or contain lead pipes; and/or
- That are served by a lead service line.

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

If you are an NTNCWS:

Tier 1 sampling sites consist of buildings:

- With copper pipes with lead solder installed after 1982 (but before Delaware's 1984 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

Representative Sample: If a CWS or NTNCWS cannot collect enough samples from tiered sites, it must collect them from sites where the plumbing is similar to that used at other sites served by the water system.

The Administrator's Corner

By Ed Hallock

Program Administrator,
Office of Drinking Water



As I write this column I am working on adopting the revised total coliform rule (RTCR) into our regulations. This rule is a significant change in how we regulate total coliforms and will require a lot of work on the part of my staff and our water system operators. We will be switching from a public notice for total

coliform model to a "find and fix" model. This will require efforts by the operators to assess their water systems and their practices in operating the system to see if there is a reason the total coliforms were detected. The process will require the operator to complete a water system Level 1 assessment that will be reviewed by my staff. Subsequent total coliform detections or a confirmed *E coli* detection will require a Level 2 assessment, which will need to be conducted by a third party approved by the Office of Drinking Water. At this time the Level 2 assessments will be conducted by staff from my office.

So, what are we doing to prepare for the RTCR? We are holding training sessions on the sample plan submittal requirements. We are working closely with the Delaware Rural Water Association (DRWA) to assist in training opportunities, and working with our seasonal water systems on preparing for the rule. One of the elements of the rule is that seasonal water systems that shut down all or part of their water system during the off-season must have a written start-up plan, and must follow that plan each year. We will be working with DRWA to contact our seasonal systems and work with them individually to create the startup procedures protocols and submit them to my office.

The EPA rule is scheduled to become effective April 1, 2016. I am drafting the rule into our drinking water regulations at this time because I plan to have the rule become effective January 1, 2016. This will help to minimize confusion for community water systems, as they do their 2016 consumer confidence reports in 2017. I urge all water system operators and owners to keep an eye out for training on the RTCR as it will impact every public water system in the state.

Lead and Copper Sampling Plans

-continued from page 1

representative sites throughout the distribution system).

It is also important to differentiate which sites will be used for standard monitoring, and which will be used for reduced monitoring.

If you would like to schedule a time to create a lead and copper sampling plan, or would like more information, please contact Katie Huegel at Katie.Huegel@state.de.us or 302-741-8598.

Collecting a Bacteriological Sample

By Amy Torres

Collecting bacteriological samples is a straightforward process if you remember certain things. When collecting a bacteriological sample, you must have a cooler with wet ice (versus blue ice packs, which are not acceptable) and a temperature control (TC). A TC is simply a bacteriological sample bottle filled with water and placed in the iced cooler. The lab will not accept samples without a TC. The TC is used by the lab to indicate the temperature for all samples stored in the cooler.

Anyone collecting samples to be analyzed by the Delaware Public Health Lab in Smyrna may get bottles from the Office of Drinking Water (ODW). Samples going to private labs will need be in bottles provided by that lab, as they may have different bottles.

To collect a bacteriological sample, turn on the bathroom cold water and let it run on full flow for three to five minutes. Then turn the water flow down; the stream should be the size of a pencil in diameter. While the water is running and before you collect the sample, take a free chlorine reading if the system is chlorinated. The chlorine residual should be at least 0.3 mg/L. Once the water has flowed for three to five minutes, open the bacteriological sample bottle and fill until the water is slightly above the 100 ml line. Then close the bottle and apply a sample label. After the sample is labeled, complete bacteriological form and chain of custody. Bacteriological samples have a holding time of 30 hours from the time the sample was collected.

When you bring your samples to the lab or ODW, a staff member will check the TC to ensure that it is below 10° C. Samples collected within two hours will be accepted for analysis if they are above 10° C.

Did You Know?

Iron in Drinking Water

by Keith Harrison

Iron is the second most abundant metal, accounting for about five percent of the earth's crust. Iron is very common in drinking water that comes from wells, and it is especially common in certain regions of Delaware's groundwater.

Iron is not a health hazard; in fact, the EPA classifies iron as a secondary or aesthetic contaminant. Even the word *contaminant* is a bit of a misnomer. Iron is an essential nutrient for our bodies; our blood is red because it contains iron. If your drinking water contains high levels of iron, you couldn't drink enough to cause you physical harm.

On the other hand, drinking water with high levels of iron may taste metallic, and stain laundry, toilets, and sinks. This discoloration can be very hard to remove. Iron can even build up in the plumbing and clog pipes or appliances such as dishwashers. Furthermore, iron reacts with certain foods to turn them dark and unappetizing.

Waterborne Disease Spotlight- Norovirus

By Keith Mensch

Identification: Formerly called Norwalk or Norwalk-like virus after the town in Ohio where it was first identified in an outbreak in 1972, it is transmissible not only through food and water, but from person to person. It is the single most common cause of foodborne illness outbreaks. It is also extremely contagious, requiring exposure to very few virus particles to cause illness. Simply flushing a toilet with contaminated bodily fluids can aerosolize more than enough viruses to cause infection where virus particles are inhaled, caught by oral mucosa, and subsequently swallowed.

Symptoms: Diarrhea, nausea, vomiting, stomach pain, fever, headache, body aches; and can lead to dehydration. Although rarely fatal, severe dehydration can occur in infants or the elderly and cause death.

Infectious Agent: Small structured RNA viruses classified as caliciviruses.

Occurrence: Worldwide and common; sources of outbreaks include shellfish, prepared foods, and drinking water contaminated with human feces.

Reservoir: Humans are the only known reservoir.

Mode of Transmission: Fecal-oral contact and airborne including:

- consuming contaminated food or liquids,
- hand contact with contaminated objects or surfaces, followed by hand contact with the mouth,
- contact with an infected person, including caring for the sick person or sharing food or utensils,
- aerosolized vomit that is swallowed or contaminates surfaces.

Incubation Period: 12 to 48 hours.

Period of Communicability: Typically contagious from the onset of symptoms up to two weeks after symptoms subside.

Susceptibility and Resistance: Susceptibility is widespread. Short term immunity lasting up to 14 weeks has been demonstrated.

Preventive Measures: Hygienic measures to reduce the likelihood of fecal-oral transmission including handwashing, thoroughly cooking shellfish, and preventing contamination from human waste.

Drinking Water Facts: It has been the source of water-borne outbreaks in Wyoming, Canada, New Zealand, Finland, and Switzerland. All of the outbreaks were associated with contamination of source water with human waste, most often groundwater. The water systems either did not have disinfection or did not maintain adequate disinfection residuals. Source water protection and maintaining adequate disinfection residuals are important for public water supplies to reduce the likelihood of a Norovirus outbreak.



MISS UTILITY OF DELMARVA

Know what's below. Call before you dig.

IT'S THE LAW!

Delaware Law requires anyone digging to give notice at least two full business days (not counting weekends or holidays), prior to the day they plan to start work. This law includes professional excavators as well as property and homeowner's contractors.

Call Miss Utility of Delmarva at 811 or 1-800-282-8555, or visit any time of the day or night and follow these steps:

1. **WAIT** for the site to be marked with paint, flags or stakes by the utility line owners.
2. **RESPECT THE MARKS.**
3. **DIG WITH CARE.** This means hand digging within two feet on either side of any marked facility.

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Approved Sampler/Tester (AST) Training

An approved sampler/tester is certified by Delaware Health and Social Services for conducting routine water sampling and water quality analyses. The approved sampler/tester works under the direction of a fully licensed water operator. During training, the participant will learn about water-borne bacteria and the Total Coliform Rule that regulates bacteria in drinking water. They will also learn about other chemicals and compounds that may enter drinking water. The focus of the training is to help participants understand drinking water regulations in relation to public health.

Upcoming Approved Sampler/Tester (AST) Trainings
Please note that registration is required for all trainings; call 302-741-8630.

AST Basic (3 CEU)

The Basic course is a three-hour training for those new to the AST program.

AST Basic, 9:00 a.m. - noon

May 14, 2015, Dover
June 4, 2015, Dover
June 18, 2015, Milford
June 19, 2015, Newark
July 9, 2015, Dover
August 13, 2015, Dover
September 10, 2015, Dover
October 8, 2015, Dover
October 15, 2015, Milford
October 16, 2015, Newark
November 12, 2015, Dover

AST Refresher (1 CEU)

The Refresher course is a one-hour course designed to reinforce your knowledge of bacteria, sampling and testing, public health, and chlorine residuals. **Bring your testing kit** if you have one.

AST Refresher, *9:00 a.m. – 10:00 a.m.

May 28, 2015, Dover
June 18, 2015, 8:00 a.m., Milford
June 19, 2015, 8:15 a.m., Newark
June 25, 2015, Dover
July 23, 2015, Dover
August 27, 2015, Dover
September 24, 2015, Dover
October 15, 2015, 8:00 a.m., Milford
October 16, 2015, 8:15 a.m., Newark
October 22, 2015, Dover

*unless specified otherwise

Other Training Opportunities

Revised Total Coliform Rule Training

August 12, 2015, 9:00 a.m. — noon, Dover
October 20, 2015, 9:00 a.m. — noon, Milford

Training Locations

- Newark: Oxford Building, Suite 100, 256 Chapman Road (University Plaza), Newark, DE 19702
- Dover: Office of Drinking Water, 43 S. DuPont Hwy. (Edgehill Shopping Center), Dover, DE 19901
- Milford: Delaware Rural Water Association