

# Aqua Talk

a safe drinking water newsletter



**COLORADO**  
Water Quality Control Division  
Department of Public Health & Environment

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## Lead and Copper Rule



by Ron Falco, P.E., safe drinking water program manager

In 1991, EPA enacted the federal Lead and Copper Rule to reduce exposure to lead and copper in drinking water. The rule applies to all community water systems, but the rule does not apply to small, transient non-community systems like campgrounds. The framework of the rule is complicated and attempts to address complex water chemistry problems that originate in distribution system infrastructure that is often not owned by public drinking water systems and is located within privately-owned homes and other buildings. The rule has undergone revisions since it was enacted, but many of the original problems remain.

Over the last six months, lead in drinking water has become a national hot topic in response to the crisis experienced in Flint, Michigan. While there are numerous aspects to Flint water issues, many of the foundational elements of the rule were highlighted and implicated as the root of the issues. As a result, the existing rule and state implementation practices are undergoing close scrutiny.

The Safe Drinking Water Program here at the Colorado Department of Public Health and Environment has been working proactively with the regulated

*(Continued on page 11)*

# Where is the new lead and copper rule going?

by Ron Falco, P.E., safe drinking water program manager

As you likely well know, EPA is moving forward with drafting a substantially revised lead and copper rule with an anticipated release date of early 2017. This article discusses only lead, not copper. While it is tempting to think that this happening solely in response to the crisis in Flint, Michigan, in fact EPA has been working on revising this rule for a number of years. The lead and copper rule is the most complicated rule that public drinking water systems need to comply with and that primacy agencies including the Colorado Department of Public Health and Environment must implement, all with limited resources. Due to the complex nature of the rule, issues with lead service line replacement including ownership and control, documented problems with partial lead service line replacement and other issues, "EPA requested that the National Drinking Water Advisory Committee form the Lead and Copper Rule Working Group to consider several key questions" is to help develop the new rule.

I believe that EPA will set the basic approach to the revised rule based on the final report from the working group and two other important related documents. The working group issued its final report in August 2015, however they did not reach full consensus on a number of issues. A dissenting opinion from one member of the working group, Dr. Lambrinidou, was submitted to EPA in October 2015. Further comments on the report were provided to EPA by another group of interested parties, now available on a web site hosted by earthjustice.org. (The date on this document appears to be erroneously listed as January 15, 2015 when I believe it was actually issued in early 2016 because it references the final working group report.) In any case, you can find a link to these documents on our website at [www.colorado.gov/cdphe/aqua-talk-resources](http://www.colorado.gov/cdphe/aqua-talk-resources).

These documents are not easy reading but they are important to read to begin to understand the challenges ahead. EPA is still working on specifics and it is not possible to predict exactly how they will adopt and adapt the recommendations and considerations from these three documents.



Some major themes for change have emerged:

1. Develop an inventory of lead service lines and concurrently replace them.
2. More extensive and on-going public education and customer communication.
3. Additional corrosion control evaluations and water quality parameter monitoring.
4. Robust customer sampling programs that could replace the current sampling paradigm.

In summary, it appears that the new rule will focus on removing lead service lines proactively which will reduce one major source of lead from drinking water, and shift to a more partnered approach for water systems to take with their customers regarding education, sampling and funding. The above listed documents all advocate for developing tools and mechanisms to try and overcome some of the age old barriers associated with this rule including getting customers to help with sampling, allow access to their property and addressing control/ownership problems with replacing lead service lines. The documents also advocate for significant funding assistance support for water systems and implementing agencies to implement these potentially costly new requirements.

At this point, my suggestions to you are:

1. Read these documents.
2. Assess the implications for your water system and begin communicating to decision makers about what is likely to come.
3. Strongly advocate for the additional support resources and funding needed to implement a new rule that proceeds down this pathway.
4. Prepare to engage with comments and input to the draft rule when it comes out.

EPA will draft the new rule over the next several months and will need to consider costs and benefits. I

*(Continued on page 3)*

## Revised Total Coliform Rule

# Level 1 assessments

by Bryan Pilson, drinking water compliance assurance

One of the new requirements in the Revised Total Coliform Rule is the Level 1 assessment. A Level 1 assessment is triggered when a supplier has two or more total coliform positive samples within a monitoring period if collecting less than 40 samples per month or more than five percent of samples total coliform positive if collecting 40 or more samples per month. A supplier may also trigger a Level 1 Assessment if they fail to collect all three of the required repeat samples within 24 hours after being notified of a single total coliform positive sample. A Level 1 assessment is an evaluation conducted by the supplier to identify sanitary defects, inadequate or inappropriate distribution system sampling practices and other possible causes that triggered the assessment.

Once a Level 1 assessment has been triggered, the supplier has 30 days to complete the evaluation, correct all identified sanitary defects or propose a schedule for any corrective actions not already completed. They are also required to submit a Level 1 assessment form to the department. The Level 1 assessment form is structured so a supplier evaluates each component of their water system from sources, treatment, distribution, storage tanks, as well as sampling sites and sampling protocols to determine if any sanitary defects are present within the system.

Even if sampling protocols are suspected as the trigger for a Level 1 assessment, the supplier is still required to evaluate all of the system's facilities and treatment processes and fix any sanitary defects found.



Triggering a Level 1 assessment is not a violation and in most cases, public notification is not required. However, if a supplier fails to submit a completed Level 1 assessment form within 30 days, then the supplier is in violation and public notification to all customers is required. Removing sanitary defects after a Level 1 assessment should prevent a reoccurrence of total coliform positive samples in the future. As such, if a supplier triggers two Level 1 assessments within 12 consecutive months, the department is required to complete an on-site Level 2 assessment within 30 days. The Level 2 assessment serves as a sanitary survey and the department will document any sanitary defects that must be corrected by the supplier.

## Message from the program manager ... continued

*(Continued from page 2)*

am supportive of an approach that emphasizes getting rid of lead service lines and shifts to a more customer-based tap water sampling program as opposed to the deeply flawed sampling process in the current rule. However, there are many details to work out and I am concerned about complexities, unintended consequences, the impact to all systems especially small and medium sized systems and of course funding. We also see instances in Colorado where systems have no lead service lines and still exceed the action level and there does not appear to

be an emphasis on this situation in the new rule, which will become more common as lead service lines are replaced. We intend to engage with stakeholders to discuss these new pathways and ultimately to comment on the new rule through the adoption process.

Thank you.

Links: [www.colorado.gov/cdphe/aqua-talk-resources](http://www.colorado.gov/cdphe/aqua-talk-resources)

# Source of treatment change

by Tyson Ingels, P.E. and Doug Camrud, P.E., engineering section

The Water Quality Control Division implements the Safe Drinking Water Act in Colorado through the Colorado Primary Drinking Water Regulations (Regulation 11). Section 11.26 lists the requirements of the Lead and Copper Rule and specifically Section 11.26(8) states:

**The department must review and approve the addition of a new source or long-term change in treatment before it is implemented by the supplier.**

As part of the approval of a new source or a long-term treatment change, the department will assess if the public water system can remain deemed optimal or if additional lead and copper rule steps need to occur. In reviewing a new source or a long-term treatment change to a public water system, the department has the authority under Section 11.26(8) to consider certain changes as exempt and therefore not require a review of lead and copper corrosion control status. At this time, these exempt changes include the changes listed below. Any change by the water system that is not exempt below will likely result in increased lead and copper monitoring to once every six-months and at double the current sites.

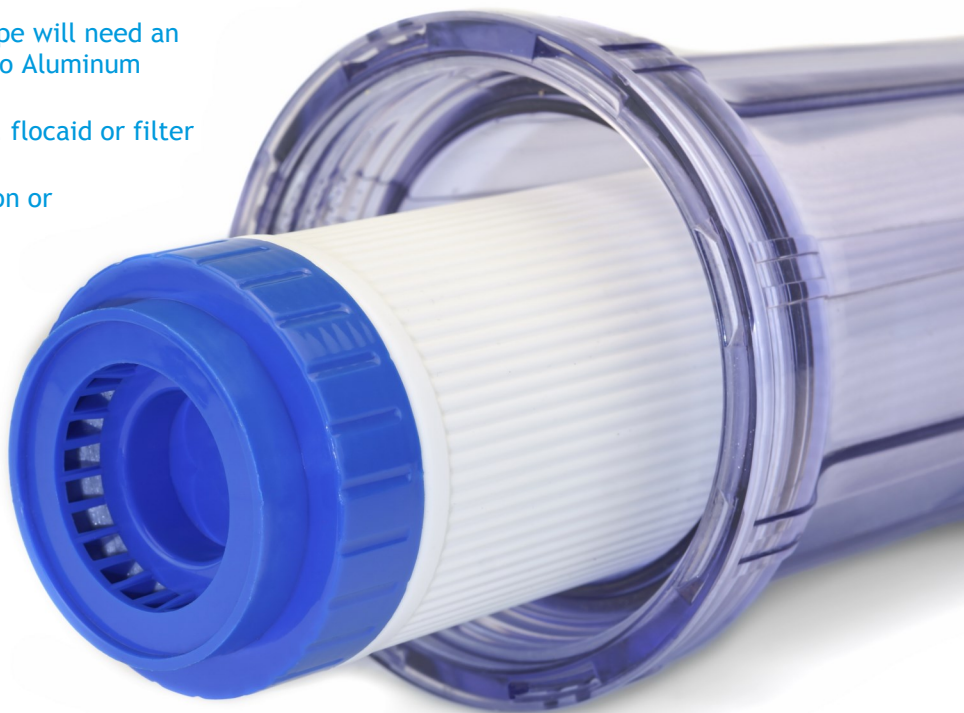
## Exempt treatment changes for 11.26(8)

- Addition of copper sulfate in the source water.
- Addition of powder activated carbon.
- Relocation of existing approved chemical (e.g., Permanganate, Chlorine or ClO<sub>2</sub>).
  - Changes of primary coagulant with the same chemical formula (e.g., two different brands of PACl).
- Any change of primary coagulant type will need an evaluation (e.g. Aluminum Sulfate to Aluminum Chloride).
- Changes/additions of coagulant aid, floccid or filter aid polymers.
- Physical modifications to flocculation or sedimentation.

- Changes/modifications to filtration within the same family of filters (e.g., conventional media change out, microfiltration module replacement, etc.).
- Existing groundwater system reclassified to GWUDI (only adding bag or cartridge or micro (ultra) filtration with no coagulant addition).
- Sediment removal for groundwater (no coagulant addition).
- Physical changes to storage tanks or addition of distribution system storage tanks.

## Exempt source changes for 11.26(8)

- Relocating a surface water source within the same segment (similar water quality, but



# Minimum disinfectant residual

by Bryan Pilson compliance assurance section

Maintaining a disinfectant residual in the distribution system is a key factor to ensure water remains free of microbial contamination after leaving the treatment plant. Contamination in the distribution system can come from biofilm, backflow events, uncontrolled cross connections or improperly protected storage tanks. Having a disinfectant residual in the distribution system can inactivate organisms that may be present or were introduced into the distribution system.

Effective April 1, 2016, the minimum disinfectant residual required changed from detectable to a defined level of 0.2 mg/L. Compliance with the 0.2 mg/L minimum disinfectant residual is based on residuals collected at the same time and place as total coliform samples. Operational sampling of disinfectant residuals without an accompanying total coliform sample does not impact a system's compliance. Additional sampling throughout the compliance period is encouraged. If a supplier collects one total coliform sample per month or less frequent and the disinfectant residual is less than 0.2 mg/L, the system is in violation and public notice to all customers is required within 30 days. With rounding, a violation occurs when the



reported residual is less than or equal to 0.149 mg/L. If the system collects more than one sample per month, a violation occurs if more than one sample and greater than five percent of samples is less than 0.2 mg/L.

Before the supplier collects a total coliform sample, the disinfectant residual should be measured. If the supplier measures the disinfectant residual concentration below 0.2 mg/L, the supplier may choose not to collect a total coliform sample and instead work to increase the disinfectant residual through flushing or increasing the chlorine dosage at the treatment plant. If low disinfectant residuals in the distribution system are persistent, the supplier should investigate long-term solutions such as routine flushing, looping of dead ends and booster chlorination in the distribution system.

## Results from tracer studies

by Gordon Whittaker, local assistance unit

Since May 2013, the Water Quality Control Division has performed 28 tracer studies at 18 public water systems throughout the state. Some public water systems had multiple tracer studies performed to verify results under different flow rates and contact tank volumes and four trace studies included multiple segments of their contact volume studied simultaneously. Another 20 tracer studies were performed at Colorado State University's Engineering Resource Center to evaluate increasing and decreasing contact tank volume at different flow rates.

The tracer most often used is sodium chloride, common table salt. Specific conductance is measured on a real time basis as a surrogate to monitor the movement of salt through the system. For public water systems with contact tank volumes that exceed the ability to deliver enough table salt, lithium chloride is used. Lithium chloride is an ideal tracer because it is present at very low background levels and subsequently requires a small addition. The lithium chloride is also measurable at part per billion levels. The downside of using lithium

chloride is that it requires collecting and providing discrete samples to a laboratory for analysis. The analytical costs are substantial and turnaround time is several weeks.

The tracer can be introduced on a continuous basis in what is described as a step feed or it can be introduced all at once as a slug. Data from a slug study requires an additional analytical step but generally delivers just as reliable results. The physical layout of the system determines which method is preferred. Depending on the size and flow rate of the system, tracer studies have been performed in less than three hours or can last several days. Continuous pumping of a source for a long duration can change the quality of water coming from that source; it has been found that in some instances background conductivity needs to be monitored during the study to compensate. Generally the department prefers that system do tracer studies on their contact volume for disinfection in order to validate and accurately reflect the disinfection the system is actually achieving.

# On your mark, get set, go!

by Margaret Pauls, grants and loans unit

Now is the time to start! With state grant funding sources on the decline we need to start thinking about other ways to fill the infrastructure funding gap. Often a less than popular topic, examining existing user rates may be the key to ensuring rates are appropriate and supporting the cost of delivering safe drinking water. Water user rates can help provide revenues needed to maintain, repair, and replace aging infrastructure, enable participation in subsidized loan programs and meet future drinking water needs.

### Why start now?

In 2015 the department's Small Communities Grant program provided \$9.5 million dollars for wastewater and drinking water system improvements to public systems serving fewer than 5,000 people and helped 16 communities. In 2016, \$9.5 million dollars were available through the program which assisted over 30 communities.

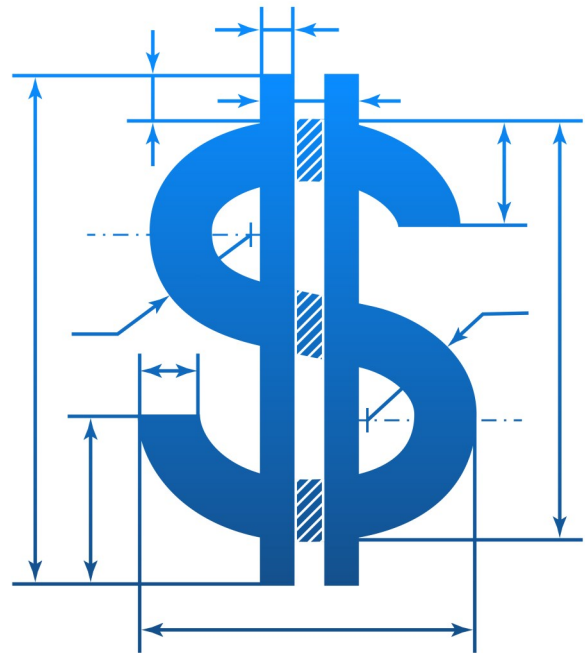
Yet, it's anticipated that the Small Communities Grant program likely won't be funded over the next several years. Funds from severance taxes only roll into the fund after a minimum threshold of \$201.5 million is met. As a result in lower oil and gas prices over the past year or so, future forecasts suggest that this threshold will not be reached.

Other state grant programs face similar realities. Building financial capacity in a utility in order to self-fund or participate in subsidized loan programs, such as the State Revolving Fund (SRF), can enable public water systems to undertake needed infrastructure improvements despite a lack of grant funding sources. Where do you start?

### Charting your own path.

Luckily, many resources and tools exist to help you plan, assess user rates and capture the true costs of providing safe drinking water. The [EPA website](#) houses numerous documents, webinars, links, and tips to help you assess true costs, build community understanding, plan ahead and fund ongoing water service improvements.

Available resources include toolkits for hosting your own water workshops, workbooks to help you analyze your system's true costs and identify associated revenues and



rates needed as well as a variety of rate structure examples.

### Finding a rate structure that fits.

Potential rate structure options include flat or fixed, uniform, decreasing block, increasing rate, time of day/peak demand, seasonable and single tariff. Uniform and flat fee rates charge set rates independent of water use and don't encourage conservation. Increasing block rates based on higher fees for higher use, excessive water use surcharges and higher rates based on peak time of day and seasons all reward conservation with lower user rates. Conserving water stretches existing infrastructure and water sources farther reducing capital construction needs. Maintaining an appropriate base rate helps cover the full cost of providing service - funding both operations and maintenance as well as capital expenses.

### Finding off the beaten path solutions.

In addition to strategic planning, growing community support, and matching user rates to cover future and current needs, creative programs can bolster fiscal sustainability efforts and aid water users. Some entities create customer assistance programs or CAPs to help community

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# Disinfection outreach and certification effort

by Tyson Ingels, lead drinking water engineer

In August 2014, all public water systems that serve surface water and groundwater under the direct influence of surface water were contacted by the department to explain our effort to re-assess the disinfection capabilities of their water plant. Since September of 2014, we have been diligently working with systems. As part of our original outreach, we stated:

Based on the results of sanitary surveys performed over the past few years, the division recommends that all public water systems reassess surface water treatment removal credits and disinfection efficacy for each facility. During the next 18 months, the division will contact you to arrange an on-site visit to verify your log inactivation and treatment credits through a special project titled: Disinfection Outreach and Certification Effort.

Although nearly two years have passed, it may be apparent that many water systems have not yet been contacted. The issues identified in the Aquatalk newsletter (summer 2014 edition) are still relevant including:

- Inappropriate baffling factors.
- Inappropriate entry point or disinfection monitoring locations.
- Improper classification of treatment (direct filtration vs. conventional filtration).

Originally, we set out to assess all 360 surface water/GWUDI systems within 18 months. To date we have only assessed approximately 100 of the 360 systems. There are several key reasons for our inability to stay on schedule:

- New issues discovered during implantation of the project (e.g. definition of peak hour flow, frequency of tank level measurements, etc).
- We anticipated that about 25 percent of the surface water/GWUDI systems would have major issues - however, subsequently we discovered that nearly 75% of the systems have some sort of issue.
- We anticipated that the level of effort required for completion of the DOVE project would be roughly 25 hours per evaluation. Most evaluations take well over 40 hours of staff time.
- The crisis in Flint, Michigan has initiated a re-evaluation to our approach for lead and copper/corrosion control compliance.



We want to assure water systems that we are continuing the DOVE project and are anticipating a 2019 completion date. If we have not contacted you, we will still be doing the evaluation and setting your public water system up with a new monthly operating report which accurately reflects the disinfection achieved.

To address some of the issues noted above, we updated both important surface water treatment policy and guidance: Policy 4 and Policy 4 guidance (<https://www.colorado.gov/cdphe/wq-current-drinking-water-policies>) to more clearly express appropriate methods for demonstrating compliance with surface water rules. Please visit the stakeholder page (<https://www.colorado.gov/cdphe/drinking-water-stakeholder-information>) to provide comments. The comment period for these updates closes October 1, 2016.

We would also like to remind systems that participation in DOVE compliance assistance is voluntary, but compliance with the pathogen removal and inactivation treatment techniques is required. If we determine that a system is not meeting the pathogen removal and inactivation requirements and is not adequately progressing in the implementation of an agreed upon compliance plan, the system may ultimately be issued a treatment technique violation (as identified in Regulation 11, Section 11.8(3)(a), which requires Tier 2 public notice). To be clear, our preferred path is one of compliance assistance. We hope that issuing violations and enforcement orders will not be needed.

# Facility operator certification news

by Jackie Whelan, local assistance unit

## OCPO

The Water and Wastewater Facility Operators Certification Board (WWFOCB) contracts with a non-profit group made up of volunteers who are subject matter experts to administer the certification process. A management company handles the day-to-day operations as the Operator Certification Program Office (OCPO).

## Certification Exams

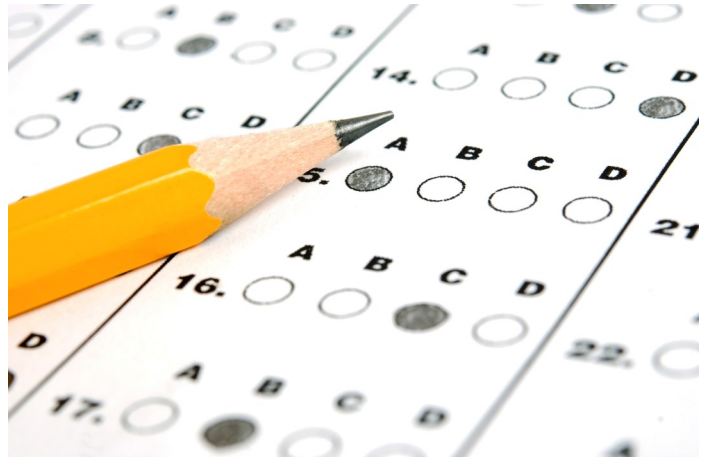
The [Water and Wastewater Facility Operators Certification Requirements](#), Regulation 100, is the regulation governing certification requirements. Certification is a two step process. First, you must pass the certification exam. Once you've passed the exam you receive written notification that you are eligible to apply for certification and instructions for completing the operator certification process.

Exams are taken sequentially starting at Level D treatment or Level 1 collection or distribution. There are three exam cycles each year. The deadlines to submit applications to take the exams are March 1, July 1, and November 1; there are multiple exam dates and locations in each exam cycle. The website lists exam site locations 6-8 weeks before deadlines. If you want to take the exam electronically, follow the application instructions for selecting online for the exam site. When your application is approved you'll receive written instructions for signing up for the electronic testing.

Applications, fees, submission deadlines and other information concerning the certification process are available by calling 303-394-8994 or online at [www.ocpoweb.com](http://www.ocpoweb.com). Each certificate is good for three years. There are requirements to complete professional development within the three year period to qualify for renewing the certificate. A list of board approved courses for training units is available on the website.

## Training

There isn't mandatory training required before taking an exam, but formal training is highly recommended. Training is widely available online, and we have included a list of resources for you at [www.colorado.gov/cdphe/aqua-talk-resources](http://www.colorado.gov/cdphe/aqua-talk-resources).



## Need to Know Criteria and Study Guides

The Association of Boards of Certification (ABC) develops the exams used for certification in Colorado. ABC provides the Need to Know criteria for exams. The criteria is compiled from surveys completed by operators working at facilities throughout the United States. The criteria are available along with links to study guides on our website at [www.colorado.gov/cdphe/aqua-talk-resources](http://www.colorado.gov/cdphe/aqua-talk-resources).

Study guides developed by ABC, AWWA and WEF offer sample questions that are similar in form and content to the certification exams. The guides include practice questions, answers, and reference to the question locations for further review. Questions are organized by certification level.

## Written Operating Plan

Assistance developing your system's written operating plan is offered by the division. This assistance is provided free of charge by submitting a request for assistance online.

## WWFOCB

The board meets six times per year. Upcoming meetings will be held in August and October on the last Tuesday of the month at 9 a.m. The board will hold a rulemaking hearing for proposed changes to Regulation 100 at their November 2016 meeting.

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## Facility operator certification news



*(Operator certification news ... Continued from page 8)*

If you would like to provide comments outside of items on the published agenda at the meeting, you should contact Nancy Horan at 303-692-3463. Specific agenda information can be found online by going to the division's web site at [www.colorado.gov/cdphe/wqcd](http://www.colorado.gov/cdphe/wqcd) and clicking on boards & commissions at the top of the page.

### ORC Changes

Please submit the appropriate water or wastewater contact update form to the division within 30 days of the change in ORC. Forms may be found online. ORCs please notify the division by email to [cdphe.facilityoperator@state.co.us](mailto:cdphe.facilityoperator@state.co.us) when you leave a facility.

## Coming down the pipe—Basic Operator Training

In 2009, the Water Quality Control Division, in partnership with Arcadis (formerly known as Malcolm Pirnie), began an Advanced Operator Training that was held bi-annually on the Front Range. The training was intended for level A and B operators and covered topics such as filter media reclassification, jar testing, optimization and CT calculations. The idea for Basic Operator Training came from one of our coaches, Mike Bacon. He noticed that training opportunities for small system operators were few and far between. After years of coaching, Mike noticed that most small system operators weren't able to take an extended trip to the Front Range for training. It was then he decided to initiate a Basic Operator Training that would be tailored for small system operators in more rural locations. We intend to offer one Basic Operator Training per month and are currently scheduling trainings in various regions of the state.

The training will take place over one day and will cover topics such as the regulations, operations and maintenance, sampling techniques, sanitary surveys, source water protection and other fundamentals of



running a water system. The training is in a group setting however, the division (via the local assistance unit) also offers the training one-on-one by request. For more information contact Mike Bacon at [michael.bacon@state.co.us](mailto:michael.bacon@state.co.us).

# Evaluation of sampling locations

by Kelly Jacques, field unit 1 manager

With the Revised Total Coliform Rule going into effect April 1, 2016, now is a good time to re-visit all of your sampling plans and ensure that sample locations have been correctly selected and are still representative. If your distribution system has changed or grown since sample locations were last selected, new locations may need to be selected for the Revised Total Coliform Rule, the Disinfection Byproducts Rule or the Lead and Copper Rule.

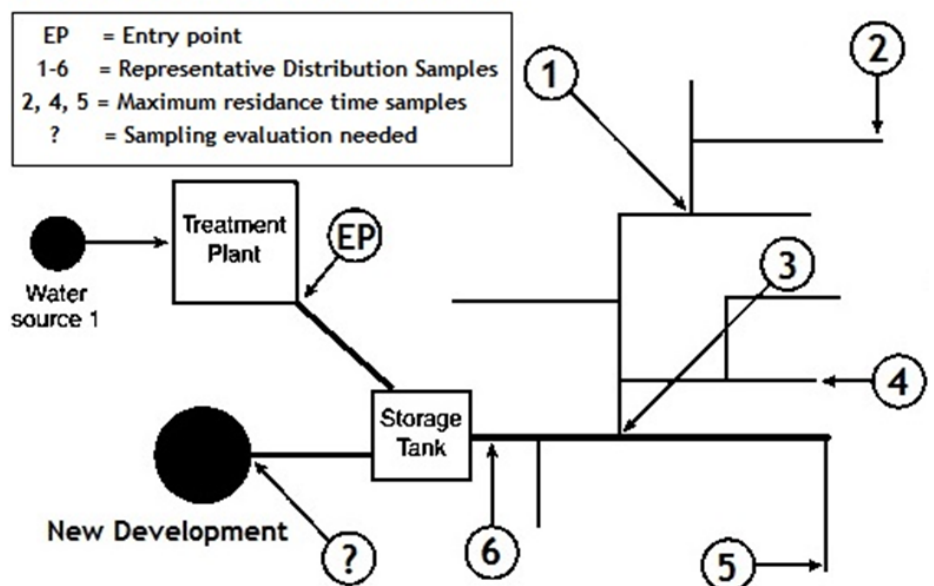
The Revised Total Coliform Rule requires routine sample locations to be representative of the entire distribution system and sample collection should be rotated to different locations where possible. This method allows for coverage of the distribution system without increasing the need for additional samples. We recommend that suppliers regularly evaluate distribution system sample locations to ensure that all areas of the distribution system are represented in the sampling plan. Suppliers are also required to develop criteria for selecting repeat sampling sites on a situational basis that the supplier believes to best verify and determine the extent of potential contamination and a potential pathway for contamination of the distribution system in a standard operating procedure.

The Disinfection Byproducts Rule utilizes an Initial Distribution System Evaluation Report (IDSE Report) to best identify sample locations for Total Trihalomethanes (TTHM) and Haloacetic Acids (HAA5). The IDSE Report means a report resulting from a historical requirement where the supplier identified sampling locations that represent high TTHM and HAA5 concentrations in the distribution system. If a supplier does not have an IDSE Report then TTHM and HAA5 sampling locations must be selected by alternating between sampling locations that represent high TTHM concentrations and sampling locations that represent high HAA5 concentrations until the required number of sampling locations have been identified. The supplier must also explain the rationale used for identifying the sampling locations as having high concentrations of TTHM or HAA5.

The Lead and Copper Rule requirements for site selection for lead and copper tap samples is based on the materials evaluation conducted to identify lead, copper and galvanized steel materials in the distribution system. Suppliers are expected to identify potential lead and copper tap sample sites and categorize each sample site. As a reminder, even if a supplier is on reduced frequency lead and copper sampling which utilizes half the sampling sites, the full lead and copper sampling pool must still be available. If a supplier makes a long term change in treatment or adds a new source, we may modify sampling requirements to require the supplier to return to a six-month lead and copper tap sampling frequency and increase the number of samples to the full list of sites in the lead and copper sampling pool.

With the complexity of distribution systems always changing, it is important to regularly evaluate how sampling is conducted to ensure that public health is being protected. Be sure to revisit all of your sampling plan locations and update your distribution system schematics to ensure that sample sites are representative.

**Example Sampling Location Schematic**



# Lead and Copper Rule

*(Lead and Copper Rule ... Continued from page 1)*

community and developed a frequently asked questions document specifically related to the rule. This is intended to be an evolving document that will be updated regularly as we receive new questions from public water systems and/or EPA provides updates to its regulations and/or guidance. The document is available on our website, [www.colorado.gov/cdphe/lcr](http://www.colorado.gov/cdphe/lcr).

Over the past few months, we have been communicating with water systems and certified laboratories regarding updates and clarifications to rule related requirements and guidance; we will continue these focused communications for the foreseeable future. A copy of the correspondence is also available on the webpage listed above. As you receive these communications, please contact us with any questions as soon as possible so that we can work with you to resolve issues. Please contact Nicole Graziano in the Drinking Water Compliance Assurance unit at (303) 692-3258 or at [nicole.graziano@state.co.us](mailto:nicole.graziano@state.co.us). We are encouraging water systems to access the FAQ document for more information.

Additionally, EPA at the federal and Region 8 levels have asked that states encourage water systems to increase transparency with customers, specifically regarding materials surveys and sample results information. While the rule requires that systems provide the lead and copper test sample results to the homes sampled, other consumers may be unaware of the system's overall lead and copper results. We recommend that water systems work to provide this transparency in ways that work for the water system and its consumers. Some possible ways to do this include:

- Consumers can view 90th percentile lead and copper summary results on the department's website at <http://environmentalrecords.colorado.gov/HPRMWebDrawer/Record>. Please note that we do not share individual lead and copper results as data contains individual homeowner addresses. The department has deemed individual addresses as confidential information.
- Many systems are receiving questions from the public regarding the homeowner's service line type. Depending on a system's available data and resources, systems may:



- Direct homeowners to the local county assessor's office to determine when the home was built. This may provide an indicator of the existing service line type (i.e., lead service line versus copper service line with lead solder).
- Direct homeowners how to test their service line (e.g., provide a directory of local plumbers or access to quick lead "swab" tests).
- Review the system's historical information with the customer, if available.
- Some systems have been able to provide digital maps that identify zones or neighborhoods where lead or copper service lines with lead solder are typically found.
- Many systems collect customer requested samples in partnership with their consumers. Please note that any customer requested samples must be submitted to the department for review. The samples will be evaluated (i.e., for compliance, if appropriate, or for possible sampling pool modifications). Please refer to the FAQ document for additional information on customer requested sample collection.

We update the lead and copper webpage with include up-to-date information regarding guidance, regulatory clarifications, sampling instructions, sample site information, reporting forms and templates. This information is available at [www.colorado.gov/cdphe/lcr](http://www.colorado.gov/cdphe/lcr).

# Source water protection tips

by Kristen Hughes, local assistance unit

Protecting source water from contamination is one of the more cost effective ways to help a system produce and deliver safe drinking water. The Colorado Rural Water Association and the Source Water Protection Program are available to help. The association is available to help any public water system develop a source water protection plan and the Source Water Protection Program's grant program can help systems fund the best management practices suggested in the source water protection plan.

Some of the more powerful best management practices systems can implement involve education and outreach. Oftentimes people believe that source water protection is simply the water systems' problem, and don't think about how their actions will affect local water quality. A well rounded education and outreach campaign can significantly change people's understanding of source water. Some systems have created calendars that provide helpful tips on each page such as when to irrigate, when to pump septic systems, etc., while others have added signs to trailheads reminding hikers that they are entering a source water drainage area and to remember to pick up after their animals and protect the area.

Systems have also created laminated emergency management cards to give to local authorities and



dispatch officers. In the event of a spill, dispatchers can determine if the spill happened near a drinking water intake structure or wellhead and can alert the water system much more quickly.

For additional information on source water protection, please contact Kristen Hughes at [kristen.hughes@state.co.us](mailto:kristen.hughes@state.co.us)

(On your mark, get set, go! ... Continued from page 6)

members who struggle to pay their water utility bills. The proactive approach helps water users pay an amount they can manage in a timely fashion, reducing administrative costs and aids in maintaining a more predictable revenue stream. In addition, the programs can connect utilities with stakeholders in positive and supportive ways.

Tapping into water efficiency programs such as [EPA's WaterSense](#) or creating your own conservation plan can delay or mitigate the need for additional capital improvements. As less water is used, the need to expand facilities decreases. Ideally, reductions in water use per household can offset modest growth from new taps. Maintaining existing supply volumes without increases relieves the need to build more infrastructure for more water. This strategic approach to conservation and growth is another way to bolster financial planning for future needs.

Another way to save is to perform energy audits on existing facilities and have new facilities designed to take

advantage of incentive programs from energy utility companies. Xcel offers third party energy design analysis and rebate incentives through their Energy Design Assistance program for new facilities. Existing buildings may qualify for low cost or no cost energy audits. Your energy provider may have similar programs. All can help you save for future capital projects.

Whatever tools you choose, aligning services with the user rates can help public water systems create a balanced fiscal plan and set the course for self-funding capital construction and/or participating in a subsidized loan program. These approaches can help water utilities reach their goals and provide safe drinking water long into the future. We have provided a list of resources for you at [www.colorado.gov/cdphe/aqua-talk-resources](http://www.colorado.gov/cdphe/aqua-talk-resources).

For questions or assistance please contact Margaret Pauls by email at [margaret.pauls@state.co.us](mailto:margaret.pauls@state.co.us) or by phone at 303-250-8450.

# Ask Aqua Man

Dear Aqua Man,  
 I understand that when an owner designated ORC is on-site at all times a written operating plan for the delegation of tasks and activities is not required. What is required when an ORC cannot be at the facility?  
 Sincerely,  
 Del A. Gator

Dear Aqua Man,  
 I heard about the new Storage Tank Rule but I'm unsure where to start. Can you help?  
 Sincerely,  
 Tanked Out

Dear Del A. Gator,  
 You are correct a written operating plan would not be necessary when an owner-designated ORC is on-site at all times to make decisions reserved to an ORC.

When an ORC cannot be on-site, a written operating plan must be in place for the ORC to maintain direct supervision

Operators certified at or above the level of the classification of the facility that are not designated as ORCs can only make independent decisions when the ORC has delegated that authority to them through the written operating plan.

In many facilities there are multiple people the owner wants to be able to make independent decisions for the facility, such as a shift ORC or the operator covering for weekends, holidays, vacations or illness. This designation must be in writing so it is clear to all staff the specific people who have this independent decision-making authority for the operation of the facility. The following table clarifies who does what.

Role	Responsibility
Facility Owner	Designates ORCs.
Designated ORC*	Makes operational decisions. Delegates ORCs for coverage (Shift ORC). Delegates tasks and activities using a written operating plan. Reviews and signs WOPs.
Delegated ORC*	Makes operational decisions in a "coverage situation" in accordance with a WOP. In this situation "in accordance with" simply means the WOP identifies whom the coverage ORC is and how to contact.
Other operators**	Follows WOP. Contacts designated or delegated ORCs when in doubt.

\*Appropriate certification required \*\*No certification required

Dear Tanked Out,  
 Glad you have heard about the new Storage Tank Rule, which became effective April 1, 2016. The department created the following templates and guidance to help systems comply with the new rule:

- Handbook for Complying with the Storage Tank Rule.
- Storage Tank Inspection Summary.
- Finished Water Storage Tank Inspection Plan template.
- Comprehensive Inspection Checklist.
- Comprehensive Inspection Instructions .
- Periodic Inspection Checklist.
- Periodic Inspection Instructions.

These documents are available online at [www.colorado.gov/cdphe/tank](http://www.colorado.gov/cdphe/tank).

## Your turn: Ask Aqua Man

Have some time saving helpful hints or tips to share with fellow operators? Can Aqua Man answer your question? Is there a topic you would like discussed?

- 💧 email: [cdphe.wqdwtraining@state.co.us](mailto:cdphe.wqdwtraining@state.co.us)
- 💧 phone: 303-692-3619
- 💧 fax: 303-782-0390
- 💧 mail: WQCD, 4300 Cherry Creek Drive South, Denver, CO 80247

# Test your knowledge

Think you know everything about drinking water? Prove your drinking water knowledge with our interactive quiz.

Please go [online](#) to record your answers. Answers will appear in the next issue. You can find the link to the online quiz at [www.colorado.gov/cdphe/aqua-talk-resources](http://www.colorado.gov/cdphe/aqua-talk-resources).

Enjoy!

1. Basic operator training will cover which of the following topics:
  - A. Regulations.
  - B. Filter media reclassification.
  - C. Sampling techniques.
  - D. Sanitary surveys.
  - E. A, B, and C.
  - F. A, C and D.
2. What up-to-date information regarding lead and copper can be found at [www.colorado.gov/cdphe/lcr](http://www.colorado.gov/cdphe/lcr):
  - A. Guidance information.
  - B. Regulatory clarifications.
  - C. Sampling instructions.
  - D. Sample site information.
  - E. Reporting forms and templates.
  - F. All of the above.
3. Which of the following Colorado cities is displaying their “Drinking Water Protection Area” sign in this issue of Aqua Talk?
  - A. Durango.
  - B. Boulder.
  - C. Cortez.
  - D. Lamar.
4. Adding copper sulfate in the source water is a treatment change that requires a review of lead and copper corrosion status by the department.
  - A. True.
  - B. False.



## Answers to the spring 2016 drinking water quiz

1. How much money was awarded from the small communities water and wastewater grant fund?
  - C. \$9.4 million
2. How many Colorado regulated public water systems are subject to the lead and copper rule.
  - C. 1,000
3. The owner is responsible to ensure system compliance with applicable permits, laws and regulations?
  - A. True
4. The goal of drinking water week is to increase public awareness and involvement in drinking water issues.
  - A. True
5. What is the best way to stay informed about drinking water issues?
  - C. All of the above (visit the Water Quality Control Division website at [www.colorado.gov/cdphe/wqcd](http://www.colorado.gov/cdphe/wqcd) and sign-up for the drinking water listserve.

## Resources and more information

# Visit us on the web

Links and resources from this issue of Aquatalk

[www.colorado.gov/cdphe/aqua-talk-resources](http://www.colorado.gov/cdphe/aqua-talk-resources)

Follow safe drinking water program on Twitter!

[twitter.com/WQCD\\_Colorado](https://twitter.com/WQCD_Colorado)

The Water Quality Control Division's home page web address is

[www.colorado.gov/cdphe/wqcd](http://www.colorado.gov/cdphe/wqcd)

For training opportunities, please visit the division's website at

[www.colorado.gov/cdphe/dwtraining.com](http://www.colorado.gov/cdphe/dwtraining.com)

To access Aqua Talk online, go to

[www.colorado.gov/cdphe/aquatalk.com](http://www.colorado.gov/cdphe/aquatalk.com)

To access inspection services go to:

[www.colorado.gov/cdphe/wqinspectionsservices](http://www.colorado.gov/cdphe/wqinspectionsservices)

To access the contact list for drinking water regulations go to:

[www.colorado.gov/cdphe/wqcd](http://www.colorado.gov/cdphe/wqcd)

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# Aqua Talk

## Newsletter Information

Editorial team: Ron Falco, Kaitlyn Minich, Doug Camrud, Armando Herald, Kelly Jacques, Corrina Quintana, Nicole Graziano and Jackie Whelan.

We welcome comments, questions, story ideas, articles and photographs submitted for publication. Please address correspondence to Armando Herald, Aqua Talk Newsletter, Water Quality Control Division, 4300 Cherry Creek Dr. S., B2, Denver, CO 80246,1530 or email [cdphe.wqdwtraining@state.co.us](mailto:cdphe.wqdwtraining@state.co.us). Enter "Safe Drinking Water Newsletter" as the subject. Past issues are available by contacting the editor or visiting the website at: [www.colorado.gov/cdphe/aquatalk.com](http://www.colorado.gov/cdphe/aquatalk.com)

UNSUBSCRIBE: if you would like to stop receiving this newsletter, please contact us at 303-692-3619.



**COLORADO**

**Water Quality Control Division**

Department of Public Health & Environment



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# Aqua Talk



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