



Aqua Talk

A newsletter from the Safe Drinking Water Program



COLORADO
Department of Public
Health & Environment

Monitoring locations for compliance with Regulation 11

Volume 8, Issue 4
Fall 2014

by Jorge Delgado, P.E., field services section

Regulation 11 specifies various sampling locations for compliance monitoring to evaluate filter performance, demonstrate disinfection and validate total organic carbon removal. During a sanitary survey, the Colorado Department of Public Health and Environment’s inspectors evaluate sampling locations for compliance with various sections of Regulation 11. These sampling locations can be found throughout the treatment process, at the entry point to the distribution system and within the distribution system. Through our survey evaluation process, we became aware that not all public water systems are sampling in accordance with Regulation 11. This may be due to misinterpretation of monitoring schedules and the fact that sampling locations are typically very site specific depending on existing infrastructure.

The Regulation 11 readability rulemaking hearing has clarified sampling locations to ensure public water systems are providing the most representative data and are protective of public health. The purpose of this article is to make public water systems aware of specific sampling location requirements for components of both the surface water treatment and the disinfection byproduct precursor rules.

Regulation 11.10(2) and 11.24(1) Source water monitoring requirements:

All source water sampling locations must be sampling locations representative of the raw water quality. This sample must be collected before any treatment and before any recycled water is introduced.

Regulation 11.8(2)(c)(i) Combined filter effluent and individual filter effluent

Combined filter effluent means a location representative of the filtered water quality that includes the filter effluent from all filters in use at any given time and is as close as practical to the point where all individual filter effluents combine or as approved by the department. Individual filter effluent means a location representative of the filtered

(Continued on page 3)

Program manager message	2
Wildfire impact on Cache la Poudre watershed	6
Surface water filtration for small systems	7
Free chlorine test kits	8
Natural disaster grant fund	8
Coach's corner	9
Drinking water quiz	10
Coming down the pipe	11
Ask Aqua Man	12
Operating plan requirement	13
Facility operator program	14

Message from the Safe Drinking Water program manager

Executive director visits treatment plants

by Ron Falco, P.E., Safe Drinking Water Program manager

Hello,

Over the last few months I had the pleasure of visiting two water treatment plants with CDPHE's executive director, Dr. Larry Wolk. In August we attended the grand opening ceremonies for the new water treatment plant at the Climax molybdenum mine near Leadville. Dr. Wolk spoke at the event along with U.S. congressional representatives Tipton and Polis. The plant itself was new with state of the art controls and friendly staff conducted a thorough and educational tour. Then, in September we visited the new drinking



Dr. Larry Wolk, Colorado Department of Public Health and Environment executive director and Ron Falco, Safe Drinking Water program manager, attend Climax Moly Mine water

water treatment plant that serves the City of Sterling. Joining us for that visit were Karin McGowan, CDPHE's deputy director; Martha Rudolph, director of environmental programs; and Eliza Schultz, legislative liaison. Sterling's treatment plant utilizes a state of the art reverse osmosis treatment process to remove uranium and prevent disinfection byproduct formation. The brine generated by the treatment process is disposed via deep wells. The exceptional water generated at this facility tasted great too!

We were tremendously impressed by the investment in these facilities, as well as their

technology, controls and cleanliness. Importantly, we appreciated the considerable knowledge and dedication demonstrated by the operators of these facilities. What a fantastic group!

The operators we encountered intimately understood the treatment processes deployed, goals for the treatment processes, how they were controlled in daily operation, as well as the long term maintenance and equipment care needed to keep them performing for years to come. As a member of the Water and Wastewater Facility Operator Certification Board, I could not have been more proud of the professionals running these plants.

Although these facilities were shiny and new, we recognize the great work operators do every day to run treatment facilities of all ages across Colorado. We recognize the skill and professionalism you bring to the job every day.



Dr. Wolk visits with staff at the new drinking water treatment plant for the City of Sterling.

Most of all, we thank you for protecting our waterbodies and making safe drinking water for the citizens and visitors to this great state.

A special thanks to the staff at the Climax mine and City of Sterling for their time and courtesy in answering all our questions.

Happy holidays! Be safe!

A handwritten signature in black ink, which appears to be "RF", located at the bottom right of the page.

Monitoring locations for compliance with Regulation 11

(Continued from page 1)

water quality from an individual filter's effluent that is at a point before combining with the effluent flow from other filters (before the combined filter effluent).

Combined filter effluent turbidity measurement is required for all public water systems that serve surface water to the public. Whenever possible, the combined filter effluent turbidity should come from a location after all the filtered water combines but before any chemical addition such as chlorine, fluoride, pH control, or corrosion inhibitors. Effluent turbidity is used to evaluate filter performance. Adding chemicals to the filtered water could affect the turbidity of the filtered water through other processes such as oxidation. Allowing filtered water to travel through a contact time basin could settle out suspended particles. These potential changes in water quality could affect the turbidity and impair the public water system and department's ability to evaluate filter performance. We realize that due to various infrastructure issues it is not always possible to obtain a combined effluent turbidity sample at the location described above. Many public water systems' most representative sampling location of the effluent turbidity is water located in a contact time basin or at the entry point.

Individual filter effluent turbidity measurement is required for all surface water public water systems classified by the department as either direct or conventional filtration. The individual filter effluent must come from a location representative of each individual filter. There is an exception for suppliers serving less than 10,000 people that consist of two or fewer filters, in which case the supplier may conduct continuous combined filter effluent turbidity monitoring to represent individual filter effluent turbidity monitoring.

Regulation 11.8(3)(c)(i)(A) Entry point disinfectant residual monitoring

Entry point means a location before or at the first customer that is representative of finished water. The entry point may represent finished water from multiple treatment plants and/or multiple sources.

Regulation 11 requires that all public water systems, that serve treated surface water to the public, continuously measure the disinfectant residual concentration at each entry point. Typically, this entry point residual is also used to evaluate log inactivation achieved for *Giardia lamblia* and viruses and minimum residual disinfectant levels required at the entry point. This sample location **must** be representative of the treated water being served to the public and must come after all water has met log inactivation and removal requirements specified in Regulation 11.8. (1)(b)(i)(A).

Many public water systems use transmission lines after filtration or after a clearwell to achieve the required log inactivation through disinfection. If that is the case for you, the entry point disinfectant residual monitoring location is required to be at or before the first customer.

Regulation 11.24(1) Disinfection byproduct precursors rule.

Public water systems that serve treated surface water to the public and are classified as conventional systems comply with the requirements specified in the disinfection byproducts precursor rule. There are various ways for a public water system to comply with the rule. The rule specifies three sampling locations; a source water sampling location for total organic carbon, alkalinity, and specific ultraviolet absorption treated water sampling location for total organic carbon and a finished water sampling location for specific ultraviolet absorption.

The source water sampling location must be from a location that is consistent with the source water monitoring location described above. The treated water location must be collected before or at the point of combined filter effluent turbidity monitoring and must be representative of all filtered water.

The finished water location for a specific ultraviolet absorption sample must be collected from a location that is representative of the water supplied to the distribution system and intended for distribution and human consumption without further treatment, including disinfection contact time prior to the utilization of any chemical oxidant. In cases where the supplier treats the

(Continued on page 4)

Monitoring locations for compliance with Regulation 11

(Continued from page 3)

potable water with an oxidant, the supplier may perform jar testing that simulates water quality without the addition of an oxidant to evaluate specific ultraviolet absorption. The supplier may collect a sample prior to the addition of the oxidant as long as the oxidant is added after filtration. Please contact your assigned compliance officer with any questions you may have regarding absorption analysis and oxidant additions.

The following process flow diagrams for various process provide examples observed in Colorado. There are many other compliance monitoring location variations than those demonstrated below. Please note that membrane, bag and cartridge filtration systems are required to be monitored in the same manner demonstrated below with the exception of individual filter effluent compliance monitoring.

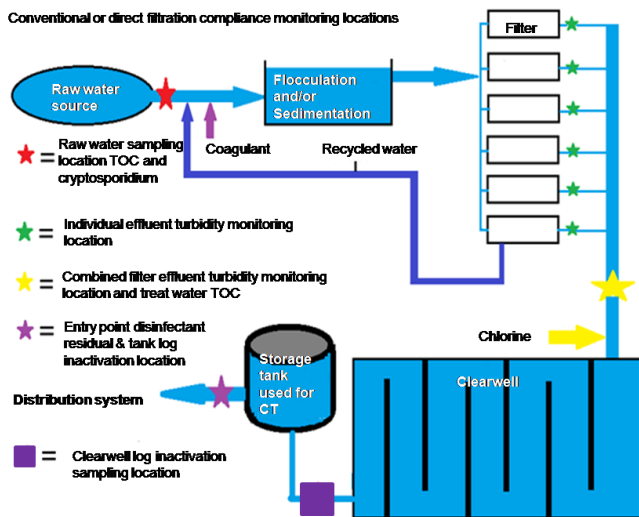


Figure 1. Combined filter effluent collected prior to disinfection.

The department, with your help, will continue to evaluate compliance sampling locations at treatment plants to ensure that all data gathered to assess system performance come from the most representative locations possible. We will continue to work with public water systems to evaluate and determine the most practical sampling locations throughout the treatment process including the entry point and the distribution system that comply with Regulation 11.

If you have any questions regarding sampling locations, please contact your compliance officer or Jorge Delgado, senior field engineer, field services section at 303-692-3511 or via email at jorge.a.delgado@state.co.us. ♦

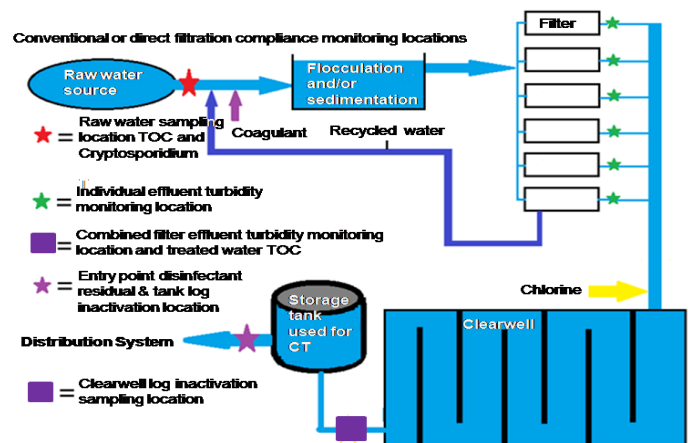


Figure 2. Combined filter effluent collected after clearwell due to infrastructure limitations.

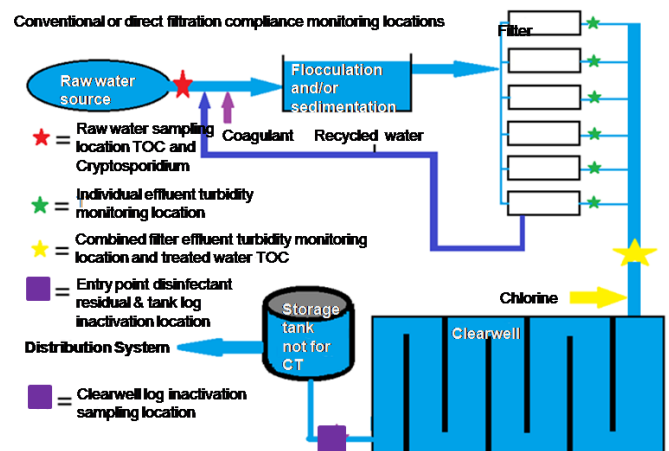


Figure 3. Storage tank not for contact time.

Monitoring location process flow diagrams

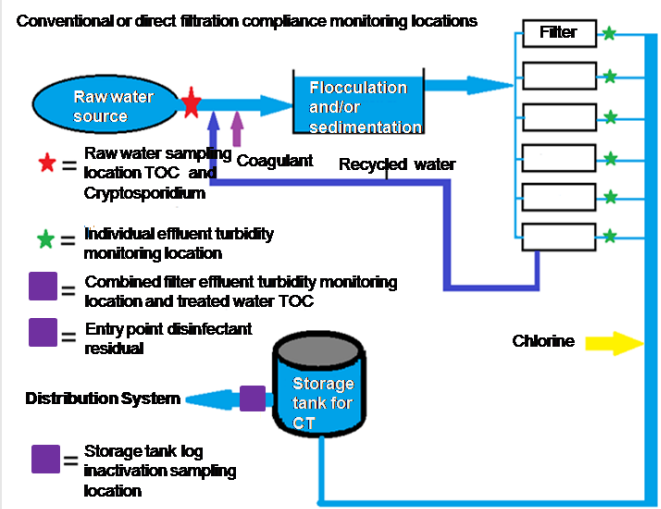


Figure 5. Storage tank for contact time, combined filter effluent after tank due to infrastructure limitations.

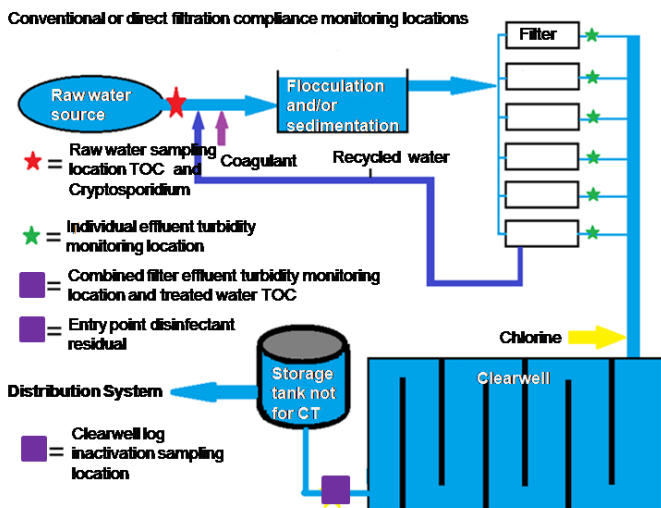


Figure 4. Storage tank not for contact time, combined filter effluent after clearwell due to infrastructure limitations

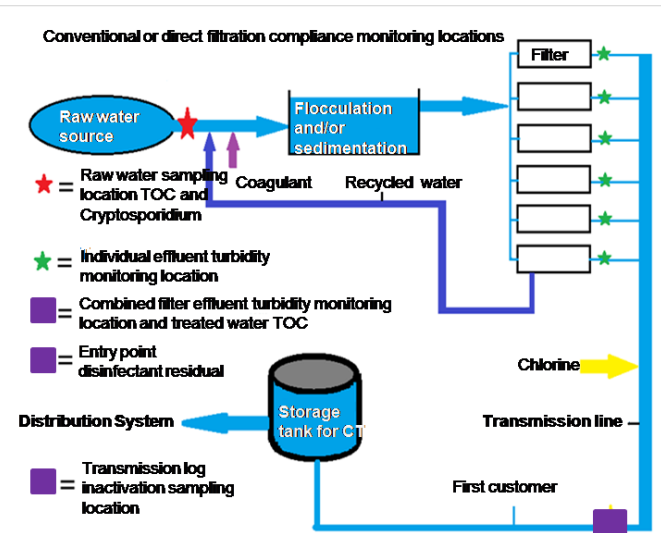


Figure 6. Transmission line used for contact time.

Wildfire impact on Cache la Poudre watershed

Fernando L. Rosario-Ortiz, D. Env., assistant professor, University of Colorado, Civil, Environmental and Architectural Engineering

The Water Quality Control Division recognizes the need to assist public water systems in complying with disinfection byproduct regulations including byproduct precursor, organic material and formation control. In February 2013 the division contracted with the University of Colorado at Boulder to begin a comprehensive study to evaluate impacts of the High Park wildfire on water quality in the Cache la Poudre watershed.

The study focused on nutrients (phosphorus, nitrogen) organic matter (carbon), disinfection byproduct formation (TTHMs, HAA5s), and treatability with alum coagulation. Sampling locations included a fire impacted site at the City of Fort Collins drinking water intake within the burn area and at a control location upstream and outside of the burn area. Additionally, six storm event samples were collected from the fire impacted site during significant summer rainfall events. Routine samples were collected from April through October 2013 to capture spring snowmelt and summer rainfall events. Fire effects were expected to be greatest at this time due to erosion and sediment transport of burned material.

Overall, the study showed elevated levels of turbidity and nutrients at the fire impacted site compared to the control. Samples collected during the beginning of spring snowmelt generally exhibited the most substantial differences compared to the control site, while the highest concentrations were observed in the storm event samples.

Due to higher amounts of carbon and thus more

precursors, the impacted site formed slightly higher concentrations of TTHMs and HAA5s in some cases, but the differences were insignificant. When concentrations were normalized on a per unit carbon basis the fire impacted material did not yield higher TTHMs and HAA5s. However the impact of wildfires on other byproducts, including nitrogen-based species, remains an active area of research.

On average, fire impacted samples required 10 mg/L more alum to achieve maximum dissolved organic carbon removal

than the control site. Likewise, rainstorm samples also required additional alum and several storm samples did not coagulate effectively, with minimal dissolved organic carbon removal even at

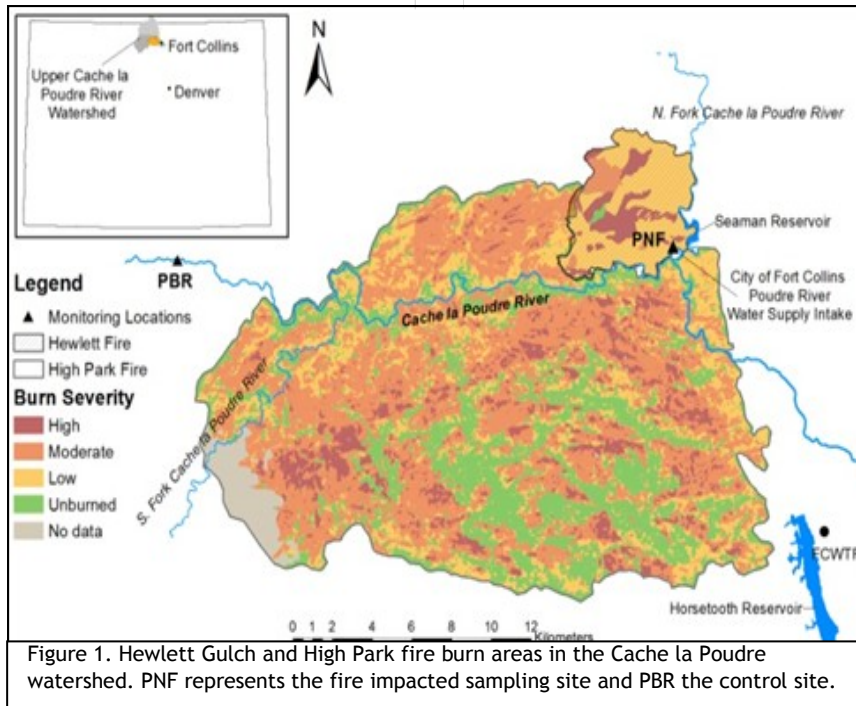


Figure 2. City of Fort Collins drinking water intake and fire impacted sampling site. Large amounts of burned sediment were visible prior to the onset of spring snowmelt in 2013.

high alum doses. Alternatively, several of the storm samples were efficiently treated to finished

(Continued on page 12)

Free chlorine test kits

by David Dani, local assistance unit

Are you with a small system serving a population less than 3,300? Are you interested in receiving free stuff? If so, your system is eligible to receive a free chlorine test kit as part of a special promotion from the Water Quality Control Division pursuing excellence awards program. What's the catch? No catch, all you have to do is complete step one of the new program and set goals for your system. We only have a limited supply of chlorine test kits, so act now!

What is this new awards program? The division's new pursuing excellence awards program provides all public drinking water systems and operators with resources and incentives to continuously improve performance from source to tap. The awards program is the result of collaboration between the division, drinking water utilities, industry and universities. We are thrilled to provide awards and much deserved recognition to our drinking water systems taking extra steps to improve performance beyond just meeting regulatory requirements!



Award perks:

- ◆ Award certificate presented to system during National Drinking Water Week.
- ◆ Free training opportunities for staff.
- ◆ Public recognition in industry publications, letter for system administrator and language to share with customers.

Complete these three steps to pursue drinking water excellence for 2014 and receive rewards and perks:

1. Set goals.
2. Improve performance.
3. Meet excellence criteria.

For more information go to www.colorado.gov/cdphe/excellence-award-program or call Kaitlyn Minich at 303-691-4084. ◆

Natural disaster grant fund

by Mike Beck, grants and loans unit

Community drinking water and wastewater systems impacted by the September 2013 flooding benefited from \$12 million in funding through HB14-1002.

Sixteen communities in total received grant funding for drinking water and wastewater projects that were either destroyed or damaged as a result of the flood. Of those 16 communities nine were for drinking water projects totaling \$4,768,476.

In hard hit areas such as Jamestown, this funding will provide critical support in rebuilding service lines to individual residences, allowing displaced families to return to their homes. In the City of Boulder, extension of the city's water will provide safe drinking water to residents in areas that relied on wells for drinking water that were contaminated by E. coli and other bacteria from the floodwaters.

Natural Disaster Grants to Drinking Water Systems:

Water System	\$ Amount
City of Boulder	\$1,000,000
Estes Valley Recreation and Park District	\$360,500
Evergreen Metro District	\$114,487
Town of Jamestown	\$1,000,000
Larimer County (on behalf of Big Elk Meadows Water Assoc.)	\$780,000
City of Loveland	\$196,000
Pine Brook Water District	\$320,375
Pinewood Springs Water District	\$125,500
Red Rock Valley Water District	\$871,614
Total drinking water projects	\$4,768,476

Surface water filtration for small systems

by Doug Camrud, P.E., engineering section

The Colorado Department of Public Health and Environment’s Water Quality Control Division has reviewed vendor information for numerous membranes and bag and cartridge filters used for surface water filtration. The purpose of the reviews was to determine if the filtration treatment would comply with the surface water treatment rule (Section 11.8 of the *Colorado Primary Drinking Water Regulations, Regulation 11*) for removal of *Giardia*, *cryptosporidium* and turbidity. All accepted membranes and bag and cartridge filters must have received third party validation for removal of *Giardia* and *cryptosporidium* or an acceptable surrogate. The third party validation must have been accomplished in accordance with the validation requirements in USEPA’s Membrane Filtration Guidance Manual or an approved alternative. Additionally, each membrane and bag and cartridge filter vendor must submit any additional required information to the department for review and acceptance. Once a technology was accepted as an alternative technology, an individual acceptance letter was prepared and issued by the department that listed conditions of acceptance, qualifications, exceptions and additional information required for each filtration technology. The following table presents a summary of the currently accepted membranes and bag and cartridge filters used by small systems for surface water filtration. ♣

Manufacturer	Model	Compliance credit awarded		Log inactivation required through disinfection		
		Giardia	Crypto	Giardia	Crypto	Viruses
Graver technologies	QCR, QMA Cartridge Filter	2.5	2	0.5	NA	4.0
	ZTEC-B Cartridge Filter	2.5	2	0.5	NA	4.0
Harmsco	PPFS-HC-40-1, PPFS-HC-90-1, PPFS-HC-170-1 Cartridge Filters	2.5	2	0.5	NA	4.0
	HC/170-LT2 Cartridge Filter	2.5	2	0.5	NA	4.0
Rosedale	PS-740-PPP-356 Cartridge Filter	2.5	2	0.5	NA	4.0
Strainrite	Two Stage Bag Filtration System: Aqua-Maxx PF-A Prefilter Aqua-Maxx FF-A Final Filter AQ2-2 vessel (manufactured after 1/1/2007) with AQB-Perf support basket	2.5	2	0.5	NA	4.0
	Two Stage Bag Filtration System: HPM99-CC-2-SR Prefilter HPM99-CCX-2-SR Final Filter AQ2-2B vessel with AQC-1 compression device	2.5	2	0.5	NA	4.0
Pentair - innovative water technologies	Homespring UF211 Membrane	3	3	0	NA	4.0

Note: This table is a summary of accepted alternative filtration technologies used by small systems in the State of Colorado. This table does not contain all the conditions of acceptance, exceptions or qualifications for the individual filtration technology. Please refer to the individual acceptance letters for each technology for the conditions of acceptance and additional information.

Training opportunities

by Mike Bacon, drinking water coach

Coach's Corner



Drawn by Tiffany Jackson

It is never too late for training! Regulation 11 has been in effect since March. Newly revised Regulation 100 became effective Oct. 30. These changes may pertain to you and your system. The local assistance unit provides training assistance to drinking water systems. Our goal is to help you and your system in any capacity we can. Whether you need monitoring plans, a math refresher, sanitary survey preparation, addressing sanitary survey deficiencies,

plant optimization, ground water under the direct influence of surface water reclassification training, disinfection issues, CT concerns or even financial questions, we have a team waiting for you.

Our team of trainers is developing a basic operator training program specifically designed for water systems serving a population of less than 3,300. The intent of this training is to provide the basic information small water systems need to know, including the new regulations. Our trainers will come to your site upon request. Training units are issued based on the hours of training provided. The training will include sampling techniques, operation and maintenance, standard operating procedures, math, regulations and more.

Another new opportunity where you can receive coaching assistance is with the pursuing excellence awards program. Operators set goals to improve not only themselves as operators, but to help improve water quality at the system level. Those that complete three phase program will receive recognition and awards. Small systems serving a population less than 3,300 that complete step one and set goals are eligible to receive a new chlorine test kit. Chlorine test kits will be awarded on a first come, first serve basis. Supplies are limited. For more information on the pursuing excellence program the Free chlorine test kits article on page 8. ♦

If you wish to receive free coaching assistance or training, please go to our web site at www.colorado.gov/cdphe/wqcd, select drinking water then training opportunities. Fill out a coaching request form or call the local assistance unit at 303-692-3665. A coach will contact with you within four business days. ♦

Division staff visit facilities

by Jacki Main, local assistant unit

Presented with an opportunity to obtain first-hand knowledge of water and wastewater treatment facilities, Water Quality Control Division staff toured Centennial Water and Sanitation District and Plum Creek Wastewater Treatment Plants. Paul Ferraro, with the Colorado Wastewater Utility Council spearheaded and sponsored the tours. To date 37 percent of division staff have participated in tours.

Division staff enhanced their understanding of water and wastewater treatment processes. This experience will

assist staff in performing their tasks of writing permits, developing standards and providing knowledgeable customer service.

Division staff extends their gratitude to the utility council, Centennial Water and Sanitation District and Plum Creek Wastewater Treatment Plant for sponsoring and hosting the tours for division staff. ♦



Division staff tour Centennial Water and Sanitation District plant



Drinking Water Quiz

Think you know everything about drinking water? Prove your drinking water knowledge with our quiz. Complete all four 2014 drinking water quizzes [online](#) and you'll be entered in a drawing to receive *AWWA Water Operator Field Guide*, valued over \$50. The drawing will be held in January 2015. Go to <http://fs8.formsite.com/cohealth/form370/index.html> to record your answers. Answers will appear in the next issue. The summer 2014 quiz answers are on page 11.

1. Which of the following did the High Park Wildfire Water Quality Study focus on?
 - a. Nutrients (phosphorus, nitrogen, carbon).
 - b. Organic matter.
 - c. Disinfection byproduct formation (TTHMs, HAA5s).
 - d. Treatability with alum coagulation.
 - e. All of the above.
2. How can a small system receive a free chlorine test kit?
 - a. Forget to monitor the entry point chlorine residual.
 - b. Complete step one of the pursuing excellence awards program.
 - c. Ace your next sanitary survey.
 - d. All of the above.
3. Who is eligible to receive pursuing excellence award perks?
 - a. Large surface water systems with membranes.
 - b. Large groundwater systems with ion exchange.
 - c. Small surface water systems with cartridge filters.
 - d. All of the above.
4. On which of the following topics can you receive training from the local assistance unit?
 - a. Monitoring plans.
 - b. Math refresher.
 - c. Preparation for a sanitary survey.
 - d. Addressing any deficiencies from your sanitary survey.
 - e. Plant optimization.
 - f. Ground water under the direct influence of surface water (GWUDI) reclassification.
 - g. Disinfection issues.
 - h. CT concerns.
 - i. Financial questions.
 - j. All of the above.

Coming Down the Pipe...

Zeno Bain, environmental engineer, US Environmental Protection Agency



EPA released its Preliminary Regulatory Determination 3 on October 20, 2014 and made preliminary regulatory determinations for five contaminants listed on the third drinking water contaminant candidate list. EPA made an initial decision

to regulate one contaminant and to not regulate four contaminants on the contaminant list. A regulatory determination is a formal decision on whether EPA should initiate a rulemaking process to develop a national primary drinking water regulation for a specific contaminant. The Safe Drinking Water Act requires that, every five years, EPA develop a contaminant candidate list and then make a regulatory determination for at least five contaminants on the list.

EPA decided to regulate strontium and to not regulate dimethoate, 1,3-dinitrobenzene, terbufos, and terbufos sulfone. Strontium replaces calcium in bone, affecting skeletal development. As a result, although strontium affects all life stages, infants, children, and adolescents are of particular concern as a sensitive population because their bones are developing. Strontium occurs naturally and is abundant in the environment. Strontium has been detected in 99 percent of public water systems and at levels of concern in 7 percent of public water systems in the U.S. The other four contaminants listed above are not found or have low levels of occurrence in public water systems, thus requiring no regulation at this time. ♣

Quiz Answers

Answers to the drinking water quiz published in the summer 2014 issue of *Aqua Talk*.

1. How long after being notified of a positive total coliform distribution sample do you have to collect a raw water sample to be analyzed for total coliform? *B. 24 hours*
2. The Environmental Protection Agency approves waivers to state revolving fund borrowers under the American Iron and Steel requirement? *A. True*
3. The certified operator in responsible charge (ORC) may delegate tasks or activities to non-certified personnel if: *C. ORC has a written operating plan detailing tasks or activities.*
4. Public water systems established before 2001 have already completed the assessment phase of the source water assessment and protection program?
5. On the redesigned website, how does one navigate to emergency notification contact information? *D. All of the above.*
All of the above.
6. How can I get answers to questions about my water system anonymously? *Through the Water Utility Council. ♣*

Ask Aqua Man

Dear Aqua Man,

I have to submit my disinfection byproduct sample results, but I am confused on what forms I need to submit for my compliance with the stage 2 disinfection/disinfection byproducts rule. What forms should I submit to the health department and what forms are for my own use? Please help.

Thanks,

Confused in Colorado

Dear Confused in Colorado,

Stage 2 is now in full effect for the State of Colorado. As a result, the department has modified all of the disinfection byproduct reporting forms to make them more streamlined and in alignment with the department's other forms. If you request, your laboratory may send data directly to the department. Please coordinate with your laboratory, as necessary. Specifically, the following changes have been made with respect to the byproduct forms:

The only forms that drinking water systems **MUST** submit are:

- ◆ TTHM laboratory report form.
- ◆ HAA5 laboratory report form.
- ◆ Precursors laboratory report form.
- ◆ Bromate laboratory report form (only for systems using ozone).
- ◆ Chlorite laboratory report form (only for systems using chlorine dioxide).
- ◆ Daily entry point chlorine dioxide/chlorite report form (only for systems using chlorine dioxide).
- ◆ Forms provided for system assistance, that **DO NOT** need to be submitted to the department:



- ◆ TTHM/HAA5 LRAA form: This form only applies to systems performing quarterly sampling and is provided for the system to assist in the compliance calculations, but is not required to be submitted to the department.
- ◆ Precursors compliance calculation form: This form is provided for the system to assist in the compliance calculations, but is not required to be submitted to the department.
- ◆ Eliminated forms:
- ◆ Please discard all previous versions of disinfection byproduct precursor forms 2, 3 and 4. These forms are no longer required or used.

In addition to the byproduct reporting forms, the department continues to revise and consolidate many of its other reporting forms. The latest versions of the department's forms and templates can be found at <https://wqcdcompliance.com/forms>. ◆

Wildfire impact

(Continued from page 6)

water dissolved organic carbon concentrations of 3.0 mg/L or less at reasonable alum doses. The extreme demand of particulates in the storm samples as well as the slow settling of ash both likely contributed to the difficulty of treating these samples.

The University of Colorado Boulder continues to do work on the impacts of wildfires on watersheds, including developing tests that will allow utilities to evaluate potential changes to their water quality and treatment operations.

The full disinfection byproduct study report can be found by entering High Park wildfire impact in the search box at www.colorado.gov/cdphe/wqdc. ◆

Written task delegation operating plan requirement

by Jackie Whelan, local assistance unit

The Water and Wastewater Facility Operators Certification Board held a rulemaking hearing Aug. 26 to adopt changes to Regulation 100. Beginning Oct. 30, section 100.16.6, Regulation 100, stipulates staff operators may only be delegated routine tasks and activities if the limits of such tasks and activities are outlined in a written operating plan. The certified operator in responsible charge may delegate to another certified operator the authority to make certain operational decisions within the framework of a facility's operational plan. In all cases, the certified operator in responsible charge is accountable for the consequences of decisions made by subordinates within that framework.

The certified operator in responsible charge develop or participate in the development of the facility's written operating plan. The plans must be reviewed and updated as needed, but at least annually. Contract operators should ensure that development of the written operating plan is included in their contract with the water or wastewater facility owner.

The operating plan must be very clear in defining the limits of the tasks, activities or decisions delegated to staff operators. The operating plan must identify operators that may perform which task or activity. Any operational activity beyond these limits requires the immediate and direct consultation with and participation of the certified operator in responsible charge or another operator certified at the level of the facility as outlined in the operating plan.

In some instances, a certified operator in responsible charge is always on-site when the facility is operating to make process control and facility integrity decisions and a written operating plan would not be necessary. Many water and wastewater facilities have already incorporated the elements of the operating plan in other documents, such as operations and maintenance manuals, standard operating procedures, facility training plans or quality management system operational plans. In these instances, a separate, stand-alone operating plan is not required.

The department will be discussing the requirement for a facility operating plan during sanitary surveys and on-site inspections. Recommendations will be noted by the inspector. The department has developed guidance documents and templates to assist with compliance. These documents are located at www.colorado.gov/cdphe/wqcd, click on facility operator certification then operating plan.

Background and assistance:

Regulation 100 requires every water treatment facility, domestic or industrial wastewater treatment facility, wastewater collection system and water distribution system to be under the supervision of at least one certified operator in responsible charge, holding a certificate in a class equal to or higher than the class of the facility or system. Regulation 100 also reserves all process control and/or facility integrity decisions about water quality or quantity or wastewater effluent quality or quantity that may affect public health or the environment to the certified operators in responsible charge of a facility.

A clear, written operating plan ensures everyone understands their roles and responsibilities for the day-to-day operation and maintenance of the facility. The plan ensures the facility remains under the direct supervision of the certified operator in responsible charge, even when not physically on-site.

For small facilities with limited treatment, a one-page table listing the activity or task, name of the person who may perform the task or activity, and circumstances when the certified operator in responsible charge must be contacted for consultation and further instructions may suffice.

For more complex facilities, the plan may be incorporated into the operations and maintenance manual. For assistance with the development of a manual which includes the plan elements, please contact the local assistance unit at 303-692-3665 or cdphewqdwtraining@state.co.us.

If you have questions about the operating plan requirements, please contact Jackie Whelan at 303-692-3617 or jackie.whelan@state.co.us. ♦

Facility operator program

by Jackie Whelan, local assistance unit



The [Water and Wastewater Facility Operators Certification Requirements](#), Regulation 100, requires owners to ensure all water and wastewater facilities operate under the direct supervision of a certified operator and the regulation outlines certification requirements.

Training: Basic training is available at no charge by downloading *Operator Basics* at Montana University Water Center watercenter.montana.edu. This training course is often sufficient preparation to pass entry level exams in water and wastewater. Additional training is available from many sources. Board approved courses can be found on the Operator Certification Program Office's website at www.ocpoweb.com.

Each certification is valid for three years. Professional development requirements must be completed within the three year period. Many training opportunities offered by the Water Quality Control Division are free or low cost to facilitate the on-going education requirements. A list of board-approved courses for training units is available on the Operator Certification Program Office website.

Passing the appropriate level exam is required for certification. Exams are taken sequentially starting at level D for treatment and level 1 for collection or distribution. Exams are offered three times each year. The deadlines to submit exam applications are March 1, July 1 and Nov. 1; there are multiple exam dates and locations in each exam cycle. For an additional fee electronic testing at the OCPO office is available. Information regarding certification exams is available by contacting OCPO at 303-394-8994 or www.ocpoweb.com.

Applications, fees, submission deadlines and other exam information are available through OCPO. Colorado specific need-to-know study topics are also listed on their website.

Operator in responsible charge changes: The owner/permittee with a new ORC must submit a contact update form to the division within 30 days of the change. Forms are available at www.colorado.gov/cdphe/wqcd. As a courtesy please notify the division in writing if you are the certified operator/ORC and are leaving the facility. Please include your name, the name of the system, the PWSID number or permit number and the effective date of separation.

Additional information is available on the division's website at www.colorado.gov/cdphe/wqcd, click on facility operator certification. ♦

To all readers:

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? Contact Jacki Main by

- ♦ email: jacklyn.main@state.co.us
- ♦ phone: 303-692-3665
- ♦ fax: 303-782-0390
- ♦ mail: WQCD, 4300 Cherry Creek Drive South, Denver, CO 80247

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Follow safe drinking water program on Twitter! [@WQCD_Colorado](#)

Water Quality Control Division home page

<https://www.colorado.gov/pacific/cdphe/water-quality-control-division-topics>

Water operator training opportunities

<https://www.colorado.gov/pacific/cdphe/drinking-water-training-opportunities>

Aqua Talk online

<https://www.colorado.gov/pacific/cdphe/search/site/aqua%20talk>

Inspection services

<https://www.colorado.gov/pacific/cdphe/drinking-water-inspection-services>

Contact list for drinking water regulations

<https://www.colorado.gov/pacific/cdphe/wq-regulations>



Aqua Talk Newsletter Information

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We welcome comments, questions, story ideas, articles and photographs submitted for publication. Please address correspondence to Jacki Main, Aqua Talk Newsletter, Water Quality Control Division, 4300 Cherry Creek Dr. S., B2, Denver, CO 80246, 1530 or email comments.wqcd@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/wqcd and enter Aqua Talk in the search box.



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Editor: Jacki Main

Purpose: To communicate division drinking water-related issues to stakeholders in a fun and informative format.