AQUA TALK

Colorado Department of Public Health and Environment

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A newsletter from the Safe Drinking Water Program of the Water Quality Control Division

Sanitary Survey – Distribution and Storage

by Bret Icenogle

The Water Quality Control Division routinely performs sanitary surveys at all regulated public water systems as a quality assurance measure for the protection of public health. While sanitary surveys always have included an evaluation of a water system's sources, facilities, equipment, operations, and maintenance practices, the division has made an effort to improve its evaluation of distribution and storage facilities after the Alamosa waterborne outbreak.

The division supports a multi-barrier approach for the protection of public health including source water protection, treatment, storage and delivery components. Since storage and distribution components typically establish the last protective barrier prior to users, failures in these final barriers may pose an even greater risk of a negative impact on customers than other protective measures. Even with this higher risk factor, storage and distribution facilities often receive the least amount of attention from some water systems. These systems must adjust their current mind-set and treat distribution and storage facilities with a concern equal to all other treatment barriers.

To remind water systems of the importance of storage and distribution systems as a barrier, the division suggests that systems a perform self- evaluation of their multiple barriers on a regular basis. The following lists identify some of the more common and critical violations identified during sanitary surveys.

Please call your district engineer or drinking water engineer with specific questions or concerns about drinking water protection through proper maintenance and operation of treatment, storage and delivery systems.

Distribution Systems	Storage Tanks
• untreated domestic water taps	• finished water storage not covered
• raw water bypass	• cracks in the walls or storage cover
• not maintaining a disinfection residual at the entry point or in the distribution system	• accesses and vents not protected with screen or other approved devices
• distribution system pressures less than 20 pounds per square inch	• storage facility not structurally sound
• no flushing program	• vents do not terminate in a downward direction
• uncontrolled cross connection	• lack of normal maintenance and inspection schedule for storage tanks
• no emergency action plan	

INSIDE THIS ISSUE

Message from the Safe Drinking Water Program Manager

The Significance of Deficiencies

The Safe Drinking Water Program periodically conducts sanitary surveys at all public water systems in Colorado. During the survey, we review source(s), treatment, distribution system, finished water storage, pumps and controls, monitoring and reporting data, system management and operation, and operator certification compliance. The Safe Drinking Water Program believes that the benefits of conducting sanitary surveys include providing compliance and technical assistance, communicating with water systems to better clarify current and upcoming regulations, and conducting a detailed review of all the elements listed above to help ensure that the water system is able to provide safe drinking water to its customers.

Ron Falco, P.E.,
Safe Drinking Water Program Manager

After the survey is complete a sanitary survey report letter is sent to the water system. The first part of the sanitary survey letter will notify you if your system has any significant deficiencies. Significant deficiencies are conditions or practices at a water system that may result in the production of finished water that represents an unacceptable health risk to the public. Occasionally, we do find situations that represent an imminent, acute threat to public health. These instances require the immediate attention of both the water system and the state.

However, more typically, the sanitary survey letter will include a specific time frame for the water system to correct the significant deficiency or contact us regarding its plan to correct the significant deficiency. This follow-up is required in Article 11 of the Colorado Primary Drinking Water Regulations. Because of the risk to public health that significant deficiencies represent, it is imperative that public water systems correct significant deficiencies and that the Safe Drinking Water Program verifies that these issues are addressed. Article 11.4(e) requires a public water system to respond in writing to significant deficiencies and violations from Sanitary Survey reports no later than 45 days after receiving the report.

The response should indicate the actions the system will take to address the significant deficiencies and violations noted in the survey letter and include a proposed schedule for completing those corrective actions and achieving compliance.

Thus, I encourage you to find your last sanitary survey letter from us, and review whether any significant deficiencies were included in the letter. If there were significant deficiencies, are you sure that they were corrected? I recommend verifying that the deficiencies were corrected and contacting the person that conducted the sanitary survey. If the deficiencies have not been corrected, then I recommend contacting the person who conducted the survey and developing a plan to correct the deficiencies. When the deficiencies are corrected, please contact that person again to confirm that the deficiency is resolved. We may ask for documentation that deficiencies have been corrected, so that our records can be updated.

By working together to identify and correct significant deficiencies, the Safe Drinking Water Program and public water systems can help ensure that the public always receives safe drinking water.

Thank you,

Colorado Water Systems Are Saving More Than $300,000 on Disinfection Byproduct Monitoring

by Emily Clark

Starting in the calendar year 2008, the Drinking Water Compliance Assurance Unit (DWCA Unit) has been working diligently to proactively reduce disinfection byproduct monitoring burdens for Colorado water systems. This schedule reduction project couldn't be more timely as the economy squeezes water system budgets. So far...

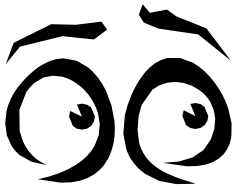
- 361 systems received reduced TTHM/HAA5 monitoring, saving an estimated cumulative $278,400 over the next three years
- 13 systems received reduced chlorite monitoring, saving an estimated cumulative $33,797 over the next three years.

Congratulations to all the water systems that qualified! These systems qualified through a provision of the Colorado Primary Drinking Water Regulations due to diligent adherence to their sample schedules, documenting their sampling sites in their monitoring plan, and by showing that the water served to their consumers is consistently far below the maximum contaminant level. The specific qualifications for reducing disinfection byproduct monitoring depend on system classification and contaminant type and can be found in Article 7.6.3 of the regulations.

Are you aware of a new initiative to save you money that is taking place in the division?

The DWCA Unit is identifying candidate systems as fast as it can, so if your system qualifies but hasn't received a monitoring reduction yet, you may be receiving notification in the near future. The DWCA Unit will also review new data each quarter to identify new systems as they qualify, so keep up the good work and remember your scheduled sampling!

Stay tuned for announcements on reduced monitoring opportunities for other contaminants in the next year!



Low Entry-Point Disinfectant Can be an Acute Health Risk – What Should You Do?

by Serenity Valdez

Public water systems that treat surface water or ground water under the direct influence of surface water have special disinfectant requirements because surface water can contain viruses, Giardia lamblia, Cryptosporidium and other disease-causing organisms. The risk for disease outbreaks increases when treatment of surface water is not adequate. Therefore, if you are required to maintain a 0.2 mg/L disinfectant residual at the entry-point to the distribution system, you must follow additional reporting requirements.

If your chlorine falls below 0.2 mg/L, the Colorado Primary Drinking Water Regulations require that you call as soon as possible. Call the surface water treatment rule manager at 303-692-3519. When you can't reach the rule manager, call 303-692-3583 or after-hours call 877-518-5608. If you can't call right away, you must call by the end of the next business day. If you are doing grab sampling, you must begin taking samples every four hours until the disinfectant is at least 0.2 mg/L.

When you call, make sure you know (1) when the disinfectant level dropped below 0.2 mg/L, (2) how long it was below 0.2 mg/L, and (3) what was the lowest disinfectant level. According to rounding rules, 0.15 mg/L is not below 0.2 mg/L, but 0.14 mg/L is below 0.2 mg/L.

An exception to the requirement to call is when the residual drops below 0.2 mg/L on continuous meters due to backwashing or no flow; but in reality the chlorine in the water was never low. Anytime your monthly operating report shows a low disinfectant level, make sure you include comments about why and how long.

The Final Barrier in Protecting Against Disease Outbreaks

by Emily Clark

Once drinking water is treated to meet public health standards, there is one final protective barrier that must be maintained: the residual disinfection level in the distribution system. Maintaining this residual disinfectant (chlorine or chloramines) prevents bacterial regrowth and helps protect against the intrusion of microbial contamination (viruses, bacteria, parasites, etc.), especially in the unfortunate event of a pipe break or backflow event. Even under normal conditions, disinfectants degrade based on demand and water age, so operators must manage disinfectant levels on a frequent and ongoing basis to protect consumers.

Specifically, Articles 7 and 13 of the Colorado Primary Drinking Water Regulations require maintaining a detectable residual in at least 95 percent of samples withdrawn from the extremities of the distribution system. This requirement applies to all public water systems that deliver water that has been treated with a chemical disinfectant. The residual disinfectant must be measured and reported at the same points in the distribution system and at the same time that total coliforms are sampled. **Therefore, the division is responsible for assessing the adequacy of disinfectant residuals in distribution systems. To improve efficiency, the division is modifying its approach to assessing compliance with this requirement on April 1, 2009.** Here is a summary of the requirements:

Monitoring and Reporting:

1) Measure the residual at the same time and place as total coliform bacteria samples (including any repeat total coliform samples).
2) Use an approved field test kit. Also, make sure the sampler knows how to follow the method and calibrate the field test kit. Chlorine residual should be measured as free chlorine; chloramines should be measured as total or combined chlorine.
3) Report a disinfectant residual measurement to the lab with **each** total coliform sample result;
   - all laboratories certified for total coliform analysis (including the CDPHE labs) will be reporting the field residual measurement to the state with each total coliform sample result;
   - **maximum residual disinfectant level (MRDL) form 1 and 2 will no longer be used for compliance.** Please do not send these forms to the division anymore.
   - only water systems taking 40 or more total coliform samples per month may report summarized data using the **revised** Form 1-Routine Safe Data reporting form, http://www.cdphe.state.co.us/wq/drinkingwater/LaboratoryReportingForms.html.
4) Failing to measure a disinfectant residual with each total coliform sample is considered a monitoring violation.

Operational Standards:

Residual chlorine cannot exceed 4.0 mg/L on a running annual average. Exceeding this level is considered a violation for community and non-transient water systems and will require public notification.

A trace residual level is considered to be the detection limit of the method. For example, the DPD colorimetric method cannot reliably measure residual below 0.05 mg/L.

If a public water system fails to have at least a trace residual in more than 5 percent of samples per month for two consecutive months, this will be considered a violation and will require public notification.

Past data reported to the Division show that a majority of water systems are in compliance with these requirements. For a few water systems, especially consecutive systems that receive treated water and do not add a chemical disinfectant, operators may need to modify their sampling practices and ensure that adequate disinfectant residual levels are present throughout their distribution system.

If you have questions about these requirements, you can contact Cristin Jones, total coliform rule manager at (303) 692-3308; Emily Clark, disinfectant/disinfection byproduct rule manager at (303) 692-3502; or Serenity Valdez, surface water treatment rule manager at (303) 692-3519.

The Water Quality Financial Solutions Unit Welcomes New Staff Members

by Elise Masters

The Water Quality Financial Solutions Unit, previously the Outreach and Project Assistance Unit, is happy to welcome four new staff members to the unit. Michael Beck, Louanna Cruz, Brandon Koehler and Elise Masters all have recently joined the unit, ending a long siege of being understaffed.

Due to Donna Davis' promotion as program manager of the new Administration Program, Carolyn Schachterle accepted the vacant unit manager position.

Louanna Cruz joins us as Carolyn Schachterle's replacement as work group lead and is the project manager for the northwest part of the state. Michael Beck and Brandon Koehler are new project managers within the unit.

Michael covers the southeast part of the state, and Brandon handles the northeast part of the state. Elise Masters is our new program assistant and will be the project coordinator for projects under construction. Erick Worker is project manager for the southwest portion of the state.

The purpose of the Water Quality Financial Solutions Unit is to provide financial outreach and project coordination services to Colorado communities so they can finance affordable water quality solutions for drinking water, wastewater, stormwater and non-point source projects. For additional information, please contact Carolyn Schachterle at 303.692-3551.

Water Quality Financial Solutions Unit: (front row) Elise Masters, Carolyn Schachterle, Louanna Cruz; (back row) Michael Beck, Brandon Koehler, Erick Worker

Meet the Southeast Region Office (Pueblo) Unit!

by Gary Soldano

The Colorado Department of Public Health and Environment's Southeast Field Office of the Water Quality Control Division is located in Pueblo, Colorado. This office covers 22 counties in the southeast and the San Luis Valley: Alamosa, Baca, Bent, Chaffee, Conejos, Costilla, Crowley, Custer, El Paso, Fremont, part of Hinsdale, Huerfano, Kiowa, Lake, Las Animas, Mineral, Otero, Prowers, Pueblo, Rio Grande, Saguache and Teller.

The office is supervised by Unit Manager Gary Soldano. There are two district engineers (Tim Vrudny and Dave Knope), two drinking water engineers (Joey Talbott and Monique Morey), and one administrative assistant (Carol Keever). Between all of the engineers, there is in excess of 75 years of drinking water and wastewater experience!

This office reviews drinking water facility designs and wastewater facility sites and designs. Staff also inspects numerous drinking water, domestic wastewater and industrial wastewater facilities each year. The office also responds to complaints, drinking water acute risk situations, spills and general questions.

Southeast Region Office Unit: (back row) Gary Soldano, Joseph Talbott, Tim Vrudny, Dave Knope; (front row) Monique Morey, Carol Keever

Certification Corner

To protect the public health and the environment, the Colorado Water and Wastewater Facility Operators Certification Board (the board) oversees the Operator Certification Program for the state of Colorado. The board's duties include the supervision/coordination of water and wastewater treatment applications, examinations and renewals; water distribution and wastewater collection applications, examinations and renewals; reciprocity; training approvals; policy and regulation revisions; water and wastewater system classifications; and disciplinary actions. The board generally meets at 9 a.m. on the last Thursday of each month at the Colorado Department of Public Health and Environment at 4300 Cherry Creek Drive South, Denver. Exceptions to this schedule include the January 2009 meeting on Jan. 20 and the February 2009 meeting at the Colorado Rural Water Conference at the Crowne Plaza Hotel in Colorado Springs on Feb. 17. Public comment is welcomed at each meeting.

The board members are appointed by the governor for a term of four years and may be reappointed to a second four-year term. Recent appointments to the board include the following:

- Allen Coyne, town manager and operator in responsible charge for the town of Julesburg was reappointed to the board. Allen also serves on the boards of the Lower Platte River Water Conservancy District and the Colorado Rural Water Association.
- Scott Leslie, president of Environmental Process Control (a water and wastewater operations firm serving Garfield and Pitkin counties) and manager of the West Glenwood Sanitation District, was reappointed to the board.
- Bill Wright, Public Works director and operator in responsible charge for the city of Sterling, was appointed to the board.
- Richard Hayes, executive director of the Colorado Rural Water Association, was appointed to the Board. Rich also is the operator in responsible charge for the Avondale Water and Sanitation District.

BOARD VACANCY: There currently is a vacancy on the board due to the retirement of one of the members. The term to be filled will expire on June 30, 2011. The requirements for this position are (1) the appointee must hold a valid class "4" certification in water distribution and/or wastewater collection, and (2) the appointee's primary job duties/experience must be in the fields of water distribution and/or wastewater collection. The appointee may reside in any part of the state. If you wish to apply for this board appointment, please contact Heather Timms at the board office at 303-692-3469 or check the governor's website at www.colorado.gov. Select the governor's web page and then select "Boards and Commissions."

REMINDER: The application deadline for the upcoming distribution and collection exams in May and August (Leadville) is **Feb. 15, 2009**. Schedules should be available around the first of the year at www.ocpoweb.com.

REMINDER: Check your expiration dates!!!! Call us if you need a bridge letter: Lori Billeisen at 303-692-3510 or Betsy Beaver at 303-692-3503.

Ask Aqua Man

Dear Aqua Man,

If my water system's administrative contact changes, how do I notify the division?

- Not Sure

Dear Not Sure,

All too often we all can overlook some of the small details. However, sometimes these details can make all the difference, especially if there should be an incident. The division's list of contacts or components for your system comes directly from you. It is your responsibility as a public water system to be proactive and report changes to the division. We're here to help you, but we can't help if we don't know what's going on. To make changes to contact information or if your phone number or e-mail address has changed, please fill out the form at http://www.cdphe.state.co.us/wq/drinkingwater/pdf/SDWISInventoryForm.pdf or call 303-692-3566 or 1-800-886-7689 extension 3556 to have this form mailed or faxed to you. Please return promptly via fax, e-mail or mail, and the division will do its best to get it entered.

Dear Aqua Man,

If my number of samples or frequency of sampling has changed, do I need to submit a new monitoring plan?

- Sample Confusion

Dear Sample Confusion,

Technically, the monitoring plan the division has on file should be updated within 30 days of any major changes to the system's monitoring locations or frequency. There is a template to assist with this at http://www.cdphe.state.co.us/wq/drinkingwater/PublicWaterSystemReportingForms.html.

If any questions come up regarding this issue, please don't hesitate to contact a drinking water rule manager to assist you.

Dear Aqua Man,

Does our system have to submit a consumer confidence report each year?

- C.C.R. Anonymous

Dear C.C.R. Anonymous,

If your water system is a community water system, it is required to submit a new consumer confidence report each calendar year.

- Use the checklist from the Guidance Handbook to ensure it is complete. The checklist is available at http://www.cdphe.state.co.us/wq/drinkingwater/pdf/CCRGuidanceDocuments/CCR_Guidance.pdf.
- Send the consumer confidence report to consumers by July 1.
- Send a copy of the consumer confidence report and certificate of delivery back to the division by July 1.

Dear Aqua Man,

If I received a failure to monitor violation when I have the data for that monitoring period, what should I do?

- Oops

Dear Oops,

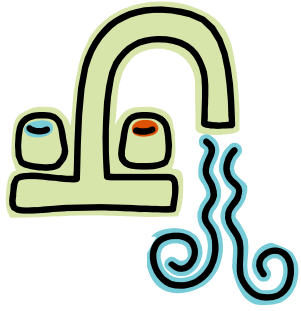
This means the division probably didn't receive a copy of the result. Simply fax it to "Attention: (specific rule manager's name)" and it will get on the priority list to review. Reviewing violations that might be eligible to return to compliance can take a number of weeks. Please be patient; the rule managers are working on the issue and will call or write a letter when they have reviewed the data.

What's Wrong With This Picture?

Try to identify two things wrong with this picture. If you see something we missed, let us know!

Answers:

- improperly secured chlorine cylinders
- cylinders exposed to weather



Coming Down the Pipe... News Alerts for the Drinking Water Community

- Monitoring Schedules – The Compliance Assurance and Data Management Section distributed the 2009 Monitoring Schedules last month. If you did not get yours, or don't know where it is, contact Sean Scott, safe drinking water rule manager work group leader at (303) 692-3258. Also, if you have any questions regarding your monitoring schedule, Sean can help out. Be sure to look over your schedule for any changes from past years, and note them on your calendar.
- 2009 Boulder School Schedule – If you are not in Boulder Jan. 19-23, you will have missed the fundamentals course. The intermediate and advanced courses will be held March 23-27. Go to http://www.waterwastewater.org/ for more information and to register.
- Drinking Water Revolving Fund Loans – Deadline for applications for direct loans and leveraged loans (greater than $2 million) is Jan. 15 for the March 6 meeting of the Colorado Water Resources and Power Development Authority Board. The next meeting, April 17, has a deadline of Feb.15, but only for direct loans less than $2 million.
- See the Certification Corner for deadlines for operator testing.

Photographs From Advanced Training Sessions

In 2008, the Colorado Drinking Water Excellence Program offered courses in Advanced Process Control and Optimization and Advanced Process Diagnostics for Performance Evaluation. These are some photos of the students and instructors in action. Thanks to the city of Golden and Ute Water Conservancy District for hosting these exciting classes! If your facility is interested in hosting a class in 2009, please contact Sharon Williams at 303-692-3635.

Students in the advanced training sessions brush up on jar testing skills that will help them ensure their plants are operating at their best.

Filter surveillance is an important part of operating and maintaining a conventional or direct surface water treatment process. Students in the advanced training sessions learn to apply these skills in a filter basin like this one at Ute Water.

Instructors for the advanced training sessions at Ute Water's facility teach students to apply jar testing and optimization techniques in a hands-on setting.

The advanced training sessions offer operators learning opportunities that go beyond the classroom or lecture hall by challenging students to learn where they work—in the water treatment facility.

Visit Us on the Web

- The Safe Drinking Water Program's home page Web address is www.cdphe.state.co.us/wq/drinkingwater/index.html.
- TRAINING OPPORTUNITIES! Please visit the division's website at www.cdphe.state.co.us/wq/drinkingwater/Training.html.
- To access Aqua Talk online, visit www.cdphe.state.co.us/wq/drinkingwater/QuickLinks.html.
- To access the district engineer county listing, visit www.cdphe.state.co.us/wq/engineering/pdf/ESDElist.pdf.
- To access the contact list for drinking water rules, visit www.cdphe.state.co.us/wq/drinkingwater/pdf/CADM_Contact_List.pdf.

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

Colorado Department of Public Health and Environment

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Safe Drinking Water Program

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