

Drinking Water News

A Newsletter for Pennsylvania's Public Water Systems

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Health Advisories in Public Notifications

Thomas Blair, Sanitarian Supervisor, DEP Northwest Regional Office

In the 2009 revisions to the Public Notification Rule, a new requirement was added calling for Tier 1 notices when a Health Advisory is exceeded. This exceedance is uncommon and many operators and communities are not aware of the correct procedure for issuing the notice. Specific references for this policy can be found in the publication "DEP Policy for Issuing and Removing Water Supply Warnings," which can be accessed at <http://www.elibrary.dep.state.pa.us/dsweb/ApplySimpleSearch>.

A sample result significantly above a maximum contaminant level (MCL) may necessitate the inclusion of a "health advisory" as part of the Tier 1 Public Notification (PN). MCLs are usually based on long term (chronic) exposure to a chemical. The concept of a health advisory is to warn consumers of the immediate (acute) dangers when a sample result is very high. The health advisory levels are based on one- and 10-day exposures for a 22 lb. (10 Kg) child. Most health advisories are triggered when the result is five to 10 times the MCL. In some cases, such as mercury and cyanide, the health advisory level is the same as the MCL.

Tier 1 templates for a health advisory are on DEP's website (select programs A-Z, then chose P for Public Notification). There are two choices when the health advisory level is exceeded: "do not drink," or "do not use." "Do not drink" applies to a health risk (illness) and "do not use" applies when there is both an illness risk and other dangers such as a high chemical concentration where contact could cause skin burns. Remember that you need to consult with DEP whenever a Tier 1 PN is needed to assure that the PN is correct and complete.

The need to issue a health advisory emphasizes the importance of laboratories notifying the water system within one hour of determining an MCL exceedance and notifying DEP within 24 hours of the determination. The purpose of the health advisory is diminished if it isn't issued in a timely manner.



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DRINKING WATER WARNING

DO NOT USE THE WATER

NO USE EL AGUA

ESTE INFORME CONTIENE INFORMACIÓN IMPORTANTE ACERCA DE SU AGUA POTABLE. HAGA QUE ALGUIEN LO TRADUZCA PARA USTED, O HABLE CON ALGUIEN QUE LO ENTIENDA.

_____ has high levels of _____

Sample results received on _____ showed levels of _____. This is above the EPA health advisory level of mg/L. According to EPA, using water that contains a contaminant above this health advisory level may be a serious health concern.

What should I do?

DO NOT USE THE WATER. Use bottled water or alternative sources for drinking, bathing, hand washing, making ice, brushing teeth, washing dishes, cooking, or food preparation **until further notice.**

DO NOT BOIL THE WATER. Boiling, freezing, filtering, or letting water stand does not reduce the level.

Slowing Hypochlorite Decay

Renee Diehl, Environmental Protection Compliance Specialist, DEP Southwest Regional Office

Summer is finally upon us bringing with it warmer temperatures, which in water treatment means hypochlorite decay.

Many public water systems have converted to sodium hypochlorite in the past few years due to increasing safety concerns with chlorine gas. Sodium hypochlorite can be generated on-site or delivered in bulk. Since the capital cost of an on-site generation system is nearly three times the cost of a commercial system, most systems will have bulk and day storage tanks. The drawback with bulk storage is chlorine degradation.



Sodium hypochlorite solutions naturally

degrade over time. A 12.5 percent hypochlorite solution, for example, will degrade to 10 percent in 30 days under “best case conditions”.

The decay of sodium hypochlorite solutions is further accelerated by the following factors:

- Solution concentration (more concentrated solutions degrade faster)
- Higher temperatures
- UV light
- Presence of copper, nickel, cobalt and other transitional metals

In order to slow the rate of decay, the above factors should be considered when storing sodium hypochlorite. Sodium hypochlorite solutions are most stable at a pH between 11 and 13, a temperature of 60F or lower, and minimal exposure to ultraviolet light. Avoiding extended storage times will also maintain a higher concentration of hypochlorite. Decay not only causes a monetary loss of chemical, but will cause systems to increase chemical feeds in order to maintain the target residual. Routine testing of the chlorine solution can determine if an increase in the feed rate is necessary.

If care is taken when storing sodium hypochlorite, your facility will save time and money!

Certified Operator Handbook

Cheri Sansoni, Administrative Officer, Central Office

The Drinking Water and Wastewater Systems Operator Certification Program is intended to protect public health and safety, protect the environment and promote the long-term sustainability of the State’s drinking water and wastewater treatment systems. “The Drinking Water and Wastewater Systems Operator Certification Program Handbook” is now publicly available to assist operators and system owners in understanding program elements.

The appendices in the handbook contain helpful information and templates, including the need-to-know criteria for examinations, definitions of classes and subclasses, a template for an operator report to the system owner, example templates for Standard Operating Procedures, an example process control plan template, and circuit rider work plans and management plan templates.

Inside the Handbook

- Introduction and background information on the Operator Certification Program
- Requirements and activities associated with becoming a certified operator
- The process for applying for a certificate
- Certificate renewal and continuing education requirements
- Grandparenting provisions for operators
- System classes and subclassifications
- System operation and process control
- Using DEP’s Operator Information Center website

The Drinking Water and Wastewater Systems Operator Certification Program Handbook is available online at: www.depweb.state.pa.us/operatorcenter

The DBP Stage 2 Deadline is October 1; Are You Ready?

Dennis Harney, Compliance Assistance Specialist, DEP Southeast Region

All water systems that serve fewer than 50,000 customers and deliver water treated with a primary or residual disinfectant other than ultraviolet are required to submit a copy of their Compliance Monitoring Plan to DEP and begin sampling under the next phase (Stage 2) of the Disinfectants and Disinfection Byproducts Rule by Oct. 1, 2013.

If a water system conducted an Initial Distribution System Evaluation (IDSE) between 2008 and 2010, the Compliance Monitoring Plan may already have been completed in conjunction with the IDSE report. However, if a system received a Very Small System Waiver or if it submitted a 40/30 Certification to opt out of the IDSE process, then the October deadline for a Compliance Monitoring Plan will most likely apply.

A key difference between Stage 1 and Stage 2 is that compliance will now be determined at each sampling location rather than on a system-wide average. The Compliance Monitoring Plan is the water system's way of selecting the appropriate sampling locations for Stage 2 monitoring, and for communicating the details of its compliance plans to DEP. Forms and instructions are found at www.elibrary.dep.state.pa.us using the search term: 3900-FM-BSDW0473.

DEP is teaming up with the American Water Works Association (AWWA) to deliver training for water systems and their operators this summer. Certified operators can get credit for the course. Training has taken place in Meadville, Harrisburg, Slippery Rock, Manheim, Reading, Clarion, Altoona and Doylestown. Additional training dates are listed below. For information, contact Nancy Dinger at AWWA at 717.774.8870 or nancydinger@paawwa.org.

Upcoming DBP Stage 2 Training

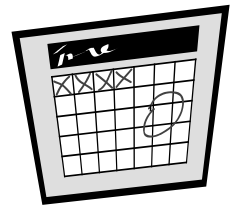
July 11	Pittsburgh 15222
July 16	Northampton 18067
July 17	Skippack 19474
July 31	Williamsport 17701
Aug. 8	Wellsboro 16901
Aug. 8	West Chester 19380
Aug. 21	Wescoville 18106
Sept. 5	Ebensburg 15931

Reporting Reminders for Stage 2 DBPR Results

Dawn Hissner, Operations and Monitoring, DEP Central Office

Many water systems began compliance monitoring under the Stage 2 Disinfectant Byproduct Rule (DBPR) in 2012 and many more will begin in October 2013. Although most water systems rely on their accredited lab to collect the TTHM/HAA5 samples, there are some details you need to provide to your lab to ensure the results are reported properly. So, to avoid monitoring violations, be sure your lab knows:

The sample date: The Stage 2 DBPR requires that samples be collected within a one-week window during the peak historical month and approximately every 90 days around that date (if the frequency is quarterly). To ensure the sampling is evenly spaced during the year, DEP has instructed water suppliers to identify a specific date in their monitoring plan. Be sure to tell your lab the sampling schedule you have identified. Although results from samples collected outside of the one-week window (your sample date + three days) will be used in maximum contaminant level (MCL) compliance determinations, you will still incur a monitoring violation.



The sample location ID#: Under the Stage 2 DBPR, MCL compliance is determined for each sampling location, so to ensure the compliance value is accurately calculated, results must be reported for specific location ID#s. Therefore, DEP now requires a location code for TTHM/HAA5 sample locations (similar to an entry point ID#). The DEP Site ID is a three-digit code that is a unique number from 700-799 for each distribution system TTHM/HAA5 sampling location. You must assign the three-digit code(s) to identify each sampling location for your water system.

The sample type: Under the Stage 2 DBPR, all monitoring results for compliance determinations must be reported as D (distribution) samples. Results reported as M (maximum residence) samples are not valid for Stage 2 compliance monitoring. (NOTE: Systems continuing to monitor under the Stage 1 DBPR through Sept. 30, 2013 should still use the M sample type as appropriate.)

Is it time you talked to your lab?



Stage 2 DBPR – Operational Evaluation Levels

Dawn Hissner, Operations and Monitoring, DEP Central Office

The Stage 2 DBPR requires all public water supply systems that are collecting compliance samples on a quarterly frequency to calculate an Operational Evaluation Level (OEL) for each sampling location. The purpose of the OEL is to assist systems that have increasing levels of disinfection byproducts to determine the cause and reverse the trend *before* a violation occurs. The OEL must be calculated at the end of the thirdquarter (after your Stage 2 DBPR compliance monitoring begin date), and then every quarter thereafter. The OEL calculation is:

$$\text{OEL} = \frac{[(\text{result from 2}^{\text{nd}} \text{ previous quarter)} + (\text{result from previous quarter}) + 2(\text{current quarter result})]}{4}$$

An OEL exceedance occurs if either the TTHM OEL value is > 0.080 **or** the HAA5 OEL value is > 0.060. If an OEL exceedance occurs at one or more sampling locations, the water system is required to notify DEP within 10 days of the end of the quarter in which the OEL exceedance occurs. The information reported to DEP includes:

- the sampling location(s) that exceeded;
- the sample date of the most recent quarterly result;
- the calculated OEL value for that location; and
- the reason for the OEL exceedance if you are requesting a limited scope evaluation (to be eligible for a limited scope evaluation you must be able to determine the cause of the OEL exceedance to DEP’s satisfaction).

The following table captures these details for two sampling locations and can be used to report OEL exceedances until DEP has a form available.

OEL Exceedance Notification Details			
PWS ID#:			
PWS Name:			
DEP Sample Location ID# (3-digit # starting with “7”)		DEP Sample Location ID# (3-digit # starting with “7”)	
Sample Location Name		Sample Location Name	
Sample Date (most recent quarterly sample)		Sample Date (most recent quarterly sample)	
Sample Received Date (date result received from lab)		Sample Received Date (date result received from lab)	
Monitoring Period (Qtr)		Monitoring Period (Qtr)	
TTHM: Calculated OEL Value		TTHM: Calculated OEL Value	
OEL Calculation: [() + () + 2()] / 4		OEL Calculation: [() + () + 2()] / 4	
HAA5: Calculated OEL Value		HAA5: Calculated OEL Value	
OEL Calculation: [() + () + 2()] / 4		OEL Calculation: [() + () + 2()] / 4	
Limited Scope Evaluation Requested?: <input type="checkbox"/> No <input type="checkbox"/> Yes (if yes, include reason for exceedance below)			
Reason:			
Responsible Official’s Name (printed):			
Responsible Official’s Signature:			
Date:			

Don't Worry, We Have That Covered!

(Emergency Interconnections at Your Public Water System)

Paul Vogel, Environmental Protection Compliance Specialist, DEP Southwest Regional Office

Unfortunately something has happened at your system and, for whatever reason, you are not able to provide safe drinking water to some, or all, of your customers. Perhaps there has been some unforeseen contamination of your source, or maybe drought conditions have limited the quantity of water you are able to produce. But not to worry! You have carefully planned for this situation for quite some time. You have diligently reviewed and updated your system's Emergency Response Plan (ERP) in the event of just such an emergency. In your ERP, you designated the "Plentiful Water Authority" as an emergency interconnection for your system. But when the time comes, will you be able to utilize this resource?

Many public water suppliers have installed interconnections with neighboring systems so they have a backup source in an emergency situation. If you have an interconnection with a neighboring system, there are many things that you must consider.

Where is your interconnection located? Believe it or not, there have been many instances of systems not being able to physically locate their emergency interconnection. Obviously, if you cannot locate the interconnection, you will not be able to use it. It is imperative that the exact locations of all emergency interconnections are documented clearly so that any authorized person is able to find them when necessary.

Are your interconnections functional? Are you able to open the valve? It is easy to take this for granted and assume that they are, however, many valves go unused for long periods of time, and if they have not been exercised properly they may not be functional when you need them most. All public water suppliers should include routine valve exercising as part of their standard operation and maintenance procedures. This is particularly important when you are dealing with an emergency interconnection. Remember, when an emergency occurs, you do not want to waste time dealing with a faulty valve.

How much water does the interconnected system have to spare in an emergency? Some emergency interconnections were designed only to provide short term fire protection via small diameter pipes. They may

not be capable of providing large quantities of water in order to supply an entire additional system for an extended period of time. If your emergency response plan includes purchasing water from another system, you should evaluate the capacity of that system in advance. Will it meet your needs, both short term and long term if necessary? It is important to consider this question in advance so that you may include other options for providing water during emergency situations if necessary.

Can water be provided in either direction in an emergency situation?

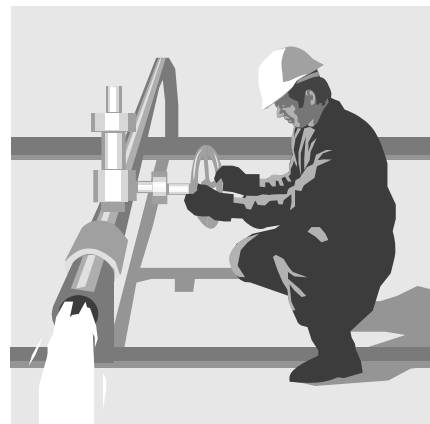
Depending on the hydraulics of the interconnected systems, it may be possible that only one of them is able to utilize the connection as

an emergency water supply. Even if it has been assumed that the connection is able to provide water in both directions, it is important to verify that this is still the case. Changes to either system over the years may have had an impact on the ability to supply water both ways.

Are there any legal and/or purchasing agreements in place for the use of the emergency interconnect? If you have included a connection to another system as an asset in your emergency contingency planning, you should ensure that you have a mutual aid agreement in place. You do not want to be haggling over purchase price and quantities in the event that you have an immediate need for an emergency supply.

Remember, merely listing an interconnection as a resource during an emergency is not enough! You must be able to use it when necessary and you must be able to use it quickly. Like all aspects of emergency planning, it is of utmost importance that you evaluate what resources you have available and the procedures necessary for utilizing those resources.

If you take some time to consider all of these questions related to your emergency interconnection, then you really will have it covered!



Mandatory Security Course Requirement for Certified Operators

Bill McNamara Training Section Chief, DEP Central Office

The Operators' Certification Regulation mandates that all certified operators complete DEP's system security course called "Securing Drinking Water and Wastewater Facilities." This requirement encompasses all classifications of operators, including those with a "grandfathered" certificate (i.e. NTNC drinking water certificate or CSSP wastewater certificate). The course must be completed by the end of the operator's first full cycle that begins on or after Oct. 1, 2010. For example, if your current cycle began on April 1, 2011, you need to complete the security course by March 31, 2014.

For operators with cycles that end on September 30 of this year (2013), you are the first group that must have the security course completed by your end date. Failure to complete the course will result in the loss of your license.

The training is available in three formats: Online (Course ID 2954), correspondence (Course ID 2953), and classroom (Course ID 2952). These are the only courses that fulfill the requirement. You only need to take the course once!

To find upcoming classroom sessions of the course, go to the Earthwise Academy calendar at: www.earthwise.dep.state.pa.us/edu, then click "Calendar" on the left side and look for the title "Securing Drinking Water and Wastewater Facilities."

To see the complete list of classroom and correspondence providers please go to: <http://tinyurl.com/SecurityPADEP>

The online version is available through DEP's Earthwise Academy eLearning site. Go to <http://padepelearn.com>. Under "Required Security Training" click on course 2954, Securing Drinking Water and Wastewater Facilities. Follow the instructions to log-in using your Client ID number.

If you prefer, you can take the course before your required full cycle to fulfill the security course requirement. If you wish to view your operator training transcript, enter the Earthwise Academy Home using the address above and click "Transcripts". Enter your DEP Client ID number to view your transcript.

You can find more information regarding this training course on the Operator Website at www.dep.state.pa.us/operatorcenter and click on Education and Training on the right side. If you have any questions regarding the security course requirement, please call 717.787.0122 and ask to speak to someone in the Training Section.



Circuit Riders

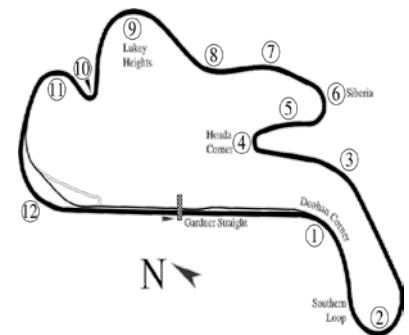
Ian Scott Sykes, Water Program Specialist, DEP Central Office

The Water and Wastewater Systems Operator's Certification Act 2002 defines a circuit rider as "a management program in which a certified operator may make process control decisions at more than one system of different ownership". Furthermore, the act mandates that each facility shall have a certified operator of the appropriate class and sub-class and that only an appropriately certified operator shall make process control decisions.

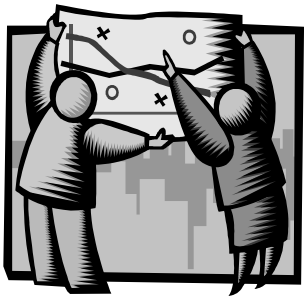
The overwhelming majority of water and wastewater systems/facilities throughout Pennsylvania are systems with a design capacity of 1.0 million gallons per day or less, typically located in rural areas. Consequently, the use of a circuit rider allows many of these small water and wastewater systems to meet the regulatory requirement for a certified operator without the cost of a

full-time employee. As with any addition, loss, change or replacement of an available operator, the system owner simply has to notify DEP within 10 days when a circuit rider is employed to operate the system.

One of the best ways to ensure effective water and wastewater treatment system operations by circuit riders is through the use of a general work plan and a system specific management plan. The work plan obliges circuit riders to outline their company particulars, numbers of systems/facilities and a strategy for operating multiple facilities. The system/facility specific management plan insures the certified operator in responsible charge is knowledgeable of the actual operations and that test reports and results are



representative of the actual system operational conditions. The strategies of the work plan and management plan should be closely aligned with achieving the strategic goals determined by regulatory compliance.

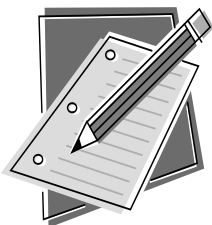


Essentially, the work plan and management plan specify the management methods employed by the circuit rider business and the operational specifics of the facilities under the umbrella of the circuit rider business.

It's a road map that leads to a clearly defined system/facilities operations strategy to achieve precise regulatory compliance objectives.

A circuit rider may be in responsible charge of more than one water treatment plant, water distribution system, and/or wastewater treatment plant or wastewater collection system if the following conditions are met:

1. The circuit rider holds a certificate of a class at least equal to or higher than the class of each facility under his/her charge and the certificates contains all the subclasses of each facility under his/her charge.
2. The circuit rider is able to provide "adequate supervision" to all systems involved.
3. A General Work Plan and System Specific Management Plan (signed by the circuit rider) is submitted to the owner or governing body of each water treatment plant, water distribution system, wastewater treatment plant and wastewater collection system to be under the responsible charge of the circuit rider.
4. Standard Operating Procedures are developed and followed by all systems served by a circuit rider.
5. The circuit rider is present for the conduct of all sanitary surveys and inspections by DEP staff.



Operating a water or wastewater system/facility is a dynamic process. However, circuit rider work and management plans need to remain current. Whenever conditions significantly change, these plans need to be updated. If

desired, circuit riders may modify only the pertinent section of the work plan or management plan and indicate the revision date and section in the signatory requirements page. Major, long-term changes, including adding systems/facilities, days or hours of system/facility visits, or personnel changes to the circuit rider work plan or management plan should initiate an immediate update of the plans.

In February 2013, DEP mailed a letter to the circuit rider businesses or individuals in DEP's records to remind them that they are now required to develop and submit a General Work Plan and a System Specific Management Plan to the owner of each system that the circuit rider operates. The letter explained how to find templates for a General Work Plan and a System Specific Management Plan on the DEP website. The letter also noted that these plans need **NOT** be submitted to DEP unless DEP requests submission of the plans in writing or request to see the plans during facility inspections.



DEP has always recognized that circuit riders offer a great service to many water and wastewater systems throughout Pennsylvania. With the aging of the operator workforce and the continuing loss of operators due to retirement, DEP has seen a steady increase in the number of systems utilizing the services of circuit riders. In 2011, the Operator Certification Program identified 1,127 public water supply systems (692 community and 435 nontransient noncommunity) that have contracted with a circuit rider to manage and maintain compliance in their system. This represents about 36 percent of the water systems in the State - an increase of 5 percent over the previous year. DEP expects the percentage to continue to increase in the years ahead.

You can find more information on Circuit Riders and General Work Plan and System Specific Management Plan templates in Appendix F of the "Drinking Water and Wastewater Systems Operator Certification Program Handbook." Visit DEP's Operator Information Center at http://www.depweb.state.pa.us/portal/server.pt/community/operator_certification/10526.

Does Your Monitoring Data Represent All of Your Sources?

Dawn Hissner, Operations and Monitoring, DEP Central Office

Does your system have entry points that are supplied by more than one source? If so, are you ensuring that your samples for compliance monitoring are representative of all your sources?



Not all sources are used on a 24/7 basis. However, if you have more than one source that supplies water to an entry point and the sources are blended (used simultaneously) and combined prior to distribution, the entry point sample should be collected during normal operating conditions (i.e. when water is representative of all sources being used).

If you have more than one source that supplies water to an entry point and the sources are alternated (used separately), you should be collecting more than one sample from that entry point in a compliance period to ensure your monitoring is representative of all sources. If you use multiple sources and/or entry points, you should complete a monitoring plan that describes how routine monitoring will be representative of all sources being used. The monitoring plan may point out the need to conduct additional monitoring in order to ensure that monitoring is representative of all sources.

Why is all this necessary? Both state and federal regulations require a public water system (PWS) to monitor all of their entry points (EP) and associated sources during routine compliance monitoring. Specifically, DEP's Chapter 109 requires the following:

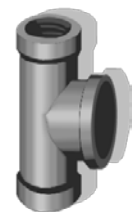
- **§109.4.** PWSs shall provide and effectively operate and maintain PWS facilities, and shall take whatever investigative or corrective action is necessary to assure that safe and potable water is continuously supplied to the users.
- **As per 40 CFR Part 141 and incorporated under §109.301.** Monitoring must be representative of each source after treatment.
- **109.303(a)(4).** Samples for determining compliance with maximum contaminant levels... shall be taken at each entry point to the distribution system after an application of treatment during periods of normal operating conditions. If a system draws water from more than one source and the sources are combined prior to distribution, the system shall sample at the EP where the water is representative of combined sources being used during normal operating conditions.

If you have questions on your monitoring requirements, please contact your Drinking Water Inspector/Sanitarian at the local DEP district or regional office.

The Revised Lead-Free Definition: What it Means for Water Systems

Jill Anderson, Environmental Protection Compliance Specialist, Southcentral Region

The Reduction of Lead in Drinking Water Act was signed into law on Jan. 4, 2011, with an effective date of **Jan. 4, 2014**. The act was intended to reduce human exposure to lead by requiring plumbing fixtures to be essentially lead-free.



The act amends the Safe Drinking Water Act by revising the definition of lead-free and reducing the allowable lead content of pipe and plumbing fittings and fixtures. Under the act, **water system components must meet a weighted average lead content of not more than 0.25 percent for wetted surfaces**. A wide variety of plumbing

components are affected by the revision, including practically all components of both treatment and distribution systems. The act does exempt components used "exclusively for nonpotable services", as well as applications where the water is "not anticipated to be used for human consumption."

The National Science Foundation (NSF) developed two new standards (NSF 61 Annex G and NSF 372) for components that are required to comply with the revised lead-free definition. You can find more information on these standards and on the revised lead-free definition at these links:

http://www.nsf.org/media/enews/pbulletin_1106.html#art2

http://www.nsf.org/business/mechanical_plumbing/annexg.asp

<http://www.waterworld.com/articles/print/volume-29/issue-1/editorial-features/industry-plans-transition-lead-free-rules.html>

continued

What do these changes mean for public water systems? Water system owners and operators have much to consider leading up to Jan. 4, 2014:

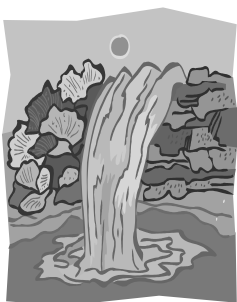
- Components previously installed and in place prior to Jan. 4, 2014 will be grandfathered in.
- Parts meeting the new definition of lead-free are generally more expensive than their current leaded counterparts, due to the higher cost of lead-free alloys.
- Water system staff should begin to **transition to lead-free parts now**. That way, they will have compliant parts in stock and readily available beginning in 2014.
- System staff should also **evaluate their current inventory**, and consider what leaded parts they have on-hand and what projects are upcoming. Can they use parts currently in stock prior to 2014? Will they be able to scrap left over leaded parts, or use them in nonpotable applications?
- Systems may also need to **adjust their budgets**. Because of the higher cost of lead free components, materials costs for any projects will be escalated.

With all of these considerations, water system owners and operators need to educate themselves on the act, so that they are fully prepared to comply with the new requirements. They should consider developing an implementation plan for the transition to lead-free, in order to minimize the impact to their system staff and customers alike.



The Water Allocation Permitting & Compliance Program

Karen Unruh, Water Program Specialist, DEP Central Office



The Water Allocation Program revolves around the Water Rights Act of 1939, P.L. 842 (Act No. 365). Under this act, public water supply agencies must obtain Water Allocation Permits from DEP to acquire rights to use surface water sources in Pennsylvania. Surface sources that require permits include rivers, streams, natural lakes, ponds and springs (that flow or are the potential headwaters to a surface water body). Springs and wells that underwent surface water

identification protocol and are not considered groundwater under direct influence can still be required to have a water allocation permit based upon site specific circumstances. The act regulates surface water permitting as an issue of taking a “quantity” of surface water, rather than a “quality” issue.

Water rights authorized under a Water Allocation Permit allow the withdrawal or diversion of surface water from a given location in an amount to meet a justified public water supply demand for present purposes and future needs. These rights cannot be transferred from one agency to another without permit approval. This applies to purchases, leases or the exercise of eminent domain by public water supply agencies. Although the act does not distinguish between direct withdrawals and purchases, the Water Allocation Program has adopted the term “subsidiary” to refer to water rights obtained through purchase of surface waters from another water supply agency. Water allocation permits issued for the purchase of surface waters are referred to as “subsidiary allocation permits”.

Water Allocation Permits are issued for a term of up to 25 years. Older permits could have been issued for as long as 50 years. The oldest permits are termed “Orders of Confirmation” and they typically have no expiration date and few permit conditions, if any. In most cases, water suppliers are required to submit a monthly report of daily water withdrawals and, where necessary, instream flow amounts (IFRs/pass-bys/conservation releases). They must also complete an annual permit compliance report.

DEP regional offices conduct most application reviews and permit issuances. Permits have expiration dates and, typically, permit conditions. System operators need to pay attention to the permit conditions, as well as any communications from the DEP Sanitarians who inspect their system. All reporting is tracked by central office staff, who inform field staff of water systems that are not maintaining compliance with their permit(s).

Information and a fact sheet on the Water Allocation Program can be found on the DEP website at: http://www.portal.state.pa.us/portal/server.pt/community/water_allocation/10632

For permitting guidance, contact the Safe Drinking Water Technical Services Chief in your local DEP regional office. Central Office contacts are Susan Weaver (Division Chief), Dave Jostenski (Civil Eng. Mgr), and Karen Unruh (Water Program Specialist), and they can be reached at 717.772.4048.

Chapter 110 Reporting: Your Questions Answered

Karen Unruh, Water Program Specialist, DEP Central Office

The current State Water Plan replaced an outdated one that was completed in 1983. The obsolescence of the former plan led DEP to conduct a series of 16 water forums in the spring of 2001 that sought input from the public about water resource management. The forums helped DEP set its strategic water resources management agenda and generated grass roots support for legislation to require adoption of a new State Water Plan.

The Water Resources Planning Act of Dec. 16, 2002, established a Statewide Water Resources Committee and six Regional Water Resources Committees that are charged with guiding DEP through the development of a new State Water Plan and updating it in five-year intervals. As a functional planning tool, this updated water plan provides Pennsylvanians with a vision, goals, and recommendations for meeting the challenges of sustainable water use over a 15-year planning horizon. This updated State Water Plan seeks answers to the following questions:

1. How much water do we have?
2. How much water do we use?
3. How much water do we need?

In order to answer question #2, DEP developed 25 Pa. Code Chapter 110, which became effective upon its publication in the *Pennsylvania Bulletin* on Nov. 15, 2008. These regulations establish water withdrawal and

use registration, monitoring, record-keeping and reporting requirements. Chapter 110 applies to public water supply agencies (defined as community water systems) and hydropower facilities, irrespective of the amount of withdrawal. It also applies to any entity, operated as a system either concurrently or sequentially, whose total withdrawal from one or more points within a watershed exceeds an average rate of 10,000 gallons per day of water in any 30-day period. Those entities who obtain their water through an interconnection with another entity in an amount that exceeds an average rate of 100,000 gallons per day in any 30-day period also must register.

Registrants must annually report their water usage and other information and retain records for at least five years. Specifically, all community public water systems are required to submit annual water use reports (a.k.a. Subfacility Reports) on every source, along with overall system information (a.k.a. Primary Facility Report/Annual Water Supply Report) by March 31 following the report year. These reports must be submitted electronically through DEP's GreenPort (www.depgreenport.state.pa.us). DEP staff in central office (Safe Drinking Water, Planning and Conservation Division) handles data verification and assistance with registering water sources and reporting in DEP's GreenPort. Staff can be reached at 717.772.4048.

For more information on Chapter 110 and applicable forms to register a new or existing source or terminate registration of an abandoned source, please visit: <http://www.pawaterplan.dep.state.pa.us/StateWaterPlan/WaterUse/WaterUse.aspx>

Revised Total Coliform Rule

Wendy Lloyd, Water Program Specialist, DEP Central Office

EPA published the Revised Total Coliform Rule (RTCR) in the Federal Register on Feb. 13, 2013. All public water systems (PWSs) will be required to comply with RTCR beginning in April 2016. Until the RTCR goes into effect, PWSs are to continue complying with the current Total Coliform Rule.



Under the RTCR, if monitoring results show a system may be vulnerable to contamination, an assessment is performed to identify sanitary defects. Correction of all sanitary defects found during the assessment is then required. The upcoming revised rule will also drop the former, non-acute (monthly) maximum contaminant level (MCL) for coliforms. The rule does, however, establish an MCL for E. coli.

For more information on the federal RTCR, water systems can visit EPA's website on this regulation at: http://water.epa.gov/lawsregs/rulesregs/sdwa/tcr/regulation_revisions.cfm

The 1989 Total Coliform Rule remains effective until March 31, 2016. Public water systems and primacy agencies must comply with the requirements of the Revised Total Coliform Rule beginning April 1, 2016. The DEP contact for this upcoming regulation is Jeff Allgyer (717.772.4015).



Cross-connection Control/ Backflow Prevention Corner

Steve Flannery, Compliance Assistance Specialist, DEP
Southeast Region

Editor's Note: This is the first in a series of articles exploring the subject of cross-connection control and backflow prevention.

Part 1: Uncovering the Basics

While it is generally thought that water always flows in one direction - away from its source - this is seldom the case. Water, like lightning, will always flow in the direction of least resistance when not being acted on by outside forces such as pumps or other forms of suction which will be discussed later. Water naturally flows from an area of high pressure to one of a lower pressure, and this continues until a balance is achieved or the source is removed.



Once water enters the distribution system, a public water supply's piping network, its endpoint is normally the consumer's tap. But what happens if there is a water main break or fire somewhere in the

distribution which calls for large volumes of water on demand? Water that is normally available upon opening a tap may appear normal at first but, under these circumstances, could quickly turn to a trickle, become discolored or stop flowing all together.

There are a few other key components to this topic which need to be covered to fully explain the basics of backflow prevention/cross-connection control. First, the

CCR Electronic Delivery Options

Deb Rotz, Water Program Specialist, DEP Central Office

The Consumer Confidence Rule requires water suppliers to mail or otherwise directly deliver their annual Consumer Confidence Reports (CCRs) to each bill-paying customer. In 2009, DEP updated report templates to allow water suppliers to email CCRs to bill-paying customers who provided their email addresses. In January 2013, EPA issued new guidance about

electronic methods that meet the definition of direct delivery.



force of gravity creates pressure when fluids are elevated. This occurs in the plumbing systems of high rise buildings, elevated water tanks, and other high elevation locations, such as the distribution system of a water supply which is located in a hilly area of the state. This natural pressure will cause backflow to occur given the right circumstances. Second, the friction inside piping naturally causes pressure loss. In cases of extreme accumulation of sediment inside piping, restriction and drop in pressure can eventually lead to backpressure and backflow given the appropriate hydraulic conditions.

Finally, to fully understand how backflow devices, assemblies and cross-connections function, one needs to be able to visualize how fluids flow in a hydraulic system. Water is a unique substance in our environment and we often take for granted how it will react and behave when put into a closed hydraulic system. It is affected by the environment that it comes into contact with and behaves differently when temperatures suddenly rise and fall, has excessive compressive pressure applied to it, or is pushed up to great heights inside the plumbing of buildings, elevated storage tanks or reservoirs placed on top of hills.



So take a moment to think about the path the water has taken to get to your customers' taps the next time they turn on their faucets. It has likely traveled a great distance and been subjected to many forces we don't normally think about in our routine lives. Keep an eye out for further articles on this subject as there are many topics to explore.

Up Next - Part 2: Backflow

Here are the new electronic delivery methods that EPA and DEP will accept as a form of direct delivery and a description of each method.

Mail – notification that CCR is available on website

A water system may mail to each bill-paying customer a notification that the CCR is available and provides a **DIRECT** URL to the CCR where it can be viewed. The mail method for the notification may be, but is not limited to, a water bill insert, a postcard, a statement on the water bill or a community newsletter.

Email – direct URL to CCR

A water system may email a **DIRECT** URL to the CCR that is posed on a publicly available site on the Internet.

continued....

Email – CCR sent as an attachment to the email

A water system may email the CCR as an electronic file email attachment (e.g., portable document format)

Email – CCR sent as an email embedded image

A water system may email the CCR text and tables inserted into the body of an email (not as an attachment.)



Although many water systems are looking forward to having more options for the direct delivery of their annual CCRs to their customers, there are some important factors to note. They are:

1. Water systems **CANNOT** use social media (e.g., Twitter or Facebook) directed to bill-paying customers. These are membership internet outlets and would require a customer to join the website to read their CCR. Additionally, water systems cannot use automatic telephone dialers to distribute CCRs because the entire content of the CCR cannot be provided in the phone call.

2. If a water system employs an electronic delivery method, the system must still provide a way for customers to request a paper CCR and receive it. If a water system is aware of a customer's inability to receive a CCR electronically, it must continue providing a paper CCR.
3. Water systems must still mail a paper copy of the CCR to DEP by July 1 each year. DEP is responsible for reviewing and evaluating these reports for compliance with content requirements and maintaining CCRs on file as part of our primacy obligations.

In addition to electronic delivery, EPA and DEP will continue to accept mail delivery or hand delivery of paper copies of annual CCRs as forms of acceptable delivery. To view EPA's CCR Delivery Options memo and guidance, click on this link:

<http://water.epa.gov/lawsregs/rulesregs/sdwa/ccr/uploa d/ccrdeliveryoptionsmemo.pdf>

We're So Glad You Asked



We get a lot of good questions from water system operators and officials, so we thought we'd share some of the most common questions we receive in hopes of helping more water systems and certified laboratories out there.

Q: In 2011, DEP asked my lab to report the individual constituents for Total Trihalomethanes (TTHMs) and Haloacetic Acids (HAA5). Is this still required?

A: Yes. DEP is asking that the individual constituents continue to be reported along with the total TTHM and HAA5 values.

Q: Is there any training for water suppliers or operators on the Stage 2 DBPR?

A: Yes. DEP is working with AWWA to present a 4.5 hour classroom training course on the Stage 2 DBPR. Look for the brochure from AWWA or visit their website to register for a course near you (<http://www.paawwa.org/CalendarEvents.shtml>). Class size is limited so register early!

Q: Where can I find information about operator certification exams?

A: Please visit the Drinking Water Management – Operator Information Center website at: http://www.portal.state.pa.us/portal/server.pt/community/operator_certification/10526 for details on exam dates and locations.

NOTE: The DEP Safe Drinking Water Program is now part of the **Bureau of Safe Drinking Water**. Please update your records with the contact information for our central office:

400 Market St., 10th floor, Harrisburg, PA 17105-8467
Phone: 717.787.9633
FAX: 717.772.5630