



GEORGIA
DEPARTMENT OF NATURAL RESOURCES

ENVIRONMENTAL PROTECTION DIVISION

EPD – Stakeholder Meeting
Updates to: 1) Safe Drinking Water Rules; 2) Minimum Standards for Public Water Systems; and 3) Boil Water Advisory Guidance

September 2, 2020

Jac Capp

Meeting Overview

- Meeting is “Virtually” hosted by GAWP
- EPD Presenters:
 - Jac Capp, Branch Chief, Watershed Protection Branch
 - Draft amendments to Chapter 391-3-5, Rules for Safe Drinking Water
 - Manny Patel, Program Manager, Drinking Water Program, Watershed Protection Branch
 - Draft updates to the Minimum Standards for Public Water Systems
 - Draft updates to the Boil Water Advisory Guidance

Meeting Overview

- EPD will do a short presentation to highlight the key features of each topic, which will be followed by a Q & A session
- Order of Presentations
 - Draft updates to the Boil Water Advisory Guidance
 - Presentation: Manny Patel
 - Q & A Session
 - Draft amendments to Chapter 391-3-5, Rules for Safe Drinking Water
 - Presentation: Jac Capp
 - Q & A Session
 - Draft updates to the Minimum Standards for Public Water Systems
 - Presentation: Manny Patel
 - Q & A Session
 - Wrap Up

Submitting Comments

- Deadline September 18, 2020
- Email to EPDComments@dnr.ga.gov
- Regular mail to EPD Watershed Protection Branch, 2 Martin Luther King, Jr. Dr., Suite 1152, East Tower, Atlanta, Georgia, 30334.
- EPD prefers email comments
- Please include the words “Watershed Protection Branch, Drinking Water Program Updates” in the subject line to help ensure that your comments are identified.

Next Steps

- Draft amendments to Chapter 391-3-5, Rules for Safe Drinking Water
 - Review comments submitted by September 18 and make changes as appropriate
 - Brief DNR Board at October 2020 Board Meeting
 - Public notice during November
 - Goal: Recommend adoption to DNR Board at January 2021 Board Meeting
- Minimum Standards
 - Review comments submitted by September 18 and make changes as appropriate
 - If necessary, we could have a 2nd round of comments during November to early December 2020.
 - Goal: Finalize at approximately same time as Rules above
- Boil Water Advisory Guidance
 - Review comments submitted by September 18 and make changes as appropriate
 - Goal: Finalize and begin implementing when ready



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Updates to Boil Water Advisory Guidance Manual

**Manny Patel,
Drinking Water Program Manager**



BOIL WATER ADVISORY

- Collaborative effort between GAWP and GAEPD
- GAWP organized a Boil Water Advisory Committee
- Committee researched how different states were approaching the issuance of Boil Water Advisory
- Committee agreed on an approach and presented their draft approach to EPD.
- EPD agreed with the general approach
- GAWP and EPD jointly worked on the revised Boil Water Advisory.



BOIL WATER ADVISORY

Specific changes made to Boil Water Guidance Document

- Applies to all Water Systems regardless of the size of the system
- Added a Table defining different types of water main breaks
- Added flow Charts to help guide in decision making when a Boil Water Advisory is needed.
- Adopting AWWA C651 Protocols for sanitizing after repairs are complete.
- Clear guidance on steps to follow for publishing and lifting the boil water advisory.
- Revise the Boil Water Notice to make it more consumer friendly by adding do's and don't while the advisory is in effect and what to do after the Advisory is lifted.



WHEN TO ISSUE A BOIL WATER ADVISORY?

- When a wide-spread loss of positive pressure occurs in the distribution system due to a power outage, pump failure or other system malfunction. When system wide pressure or pressure over a large extent of the distribution system falls below 20 PSI loss of positive pressure had deemed to occur.
- For water main break or leaks, refer to Table 1 and Figure 1 for guidance on when a BWA is necessary. In these circumstances, positive pressure is considered to be anything greater than zero.
- Failure to maintain a detectable residual of free chlorine in all parts of the distribution system.



WHEN TO ISSUE A BOIL WATER ADVISORY?(CONT.)

- Presence of *Escherichia coli* (*E.coli*) in finished water
 - when confirmed by repeat sample
 - upon first detection when any other information indicates water may be unsanitary. For e.g. Flooding of well
 - upon failure to take all required repeat samples after an *E. coli* positive routine sample.
- Presence of fecal indicators in raw groundwater at systems that do not provide 4-log treatment
- Turbidity exceedances in finished water that pose an imminent threat to public health.
- The above three instances are required under SWTR and GWR and are normally referred to as Public Notice.



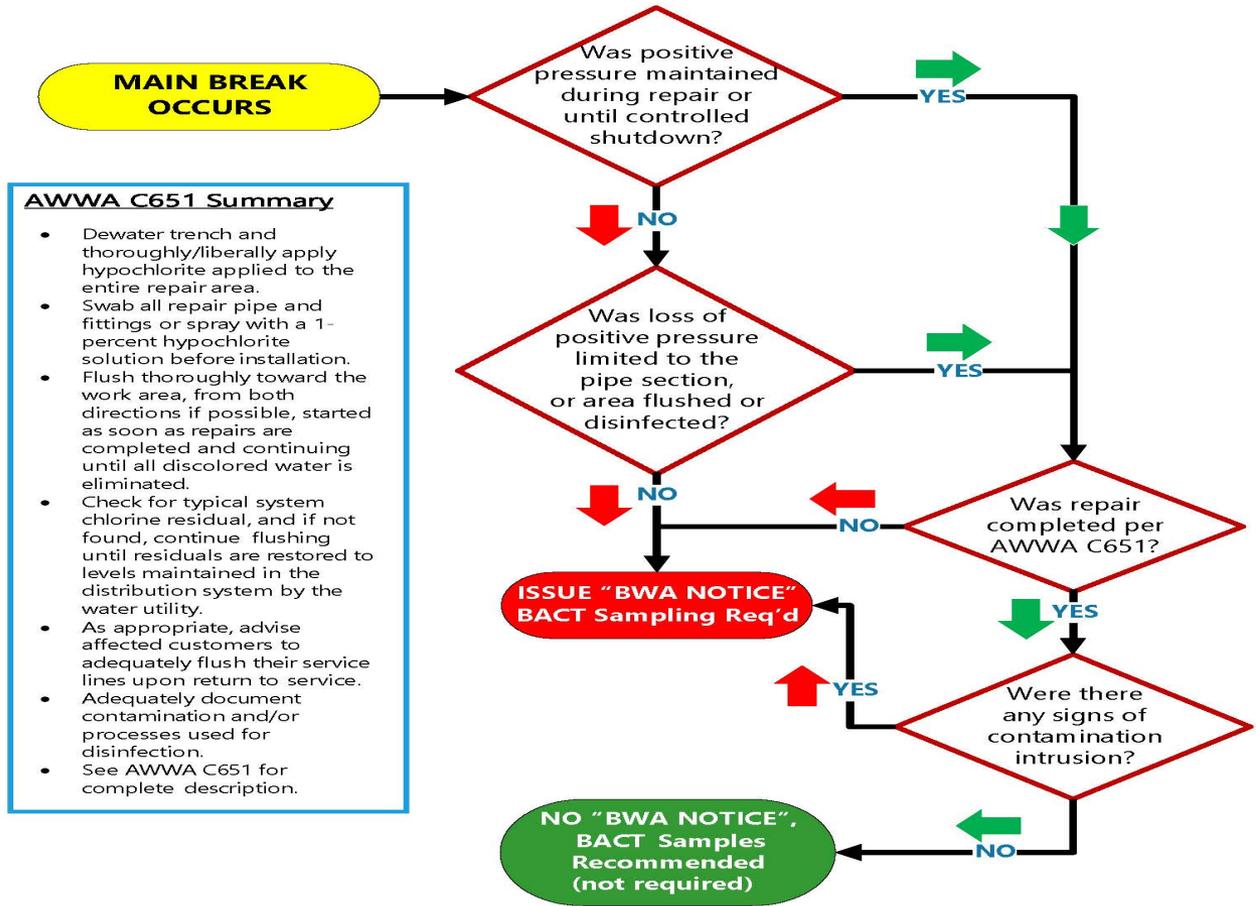
DETERMINING TYPE OF WATER MAIN BREAKS AND ASSOCIATED RESPONSES

	Identify Break/Leak Type	Type 1	Type 2	Type 3	Type 4
	Risk	Minimal	Minimal	Moderate	High
	Pressure Maintained Throughout Water Loss	Yes - Repaired Under Pressure	Yes - Controlled Shutdown	Questionable - Localized Loss of Pressure	Not Likely - Widespread Loss of Pressure
	Contamination Intrusion	No	No	Possible	Likely
	Necessary Actions				
First Considerations	Document Possible Contamination	No	No	Yes	Yes
	Isolate Broken Pipe segment by shutting valves	No	Yes	TO EXTENT POSSIBLE	TO EXTENT POSSIBLE
	Issue Boil Water Advisory Notice	No	No	TBD* based on depressurization extent and presence of contamination	Yes
Make Repair	Safely Excavate around and Below Break	Yes	Yes	Yes	Yes
	Pump/Maintain Pit Water Level Below Break	Yes	Yes	Yes	Yes
	Disinfect Repair Parts with bleach	Yes	Yes	Yes	Yes
	Make Repair	Yes	Yes	Yes	Yes
Following Repair	Flush & Disinfect per AWWA C651-14	No	Yes	Yes	Yes
	Check for Adequate Residual disinfectant level	Yes	Yes	Yes	Yes
	Conduct Bacteriological Sampling	No	No	TBD* based on depressurization extent and presence of contamination	Yes
	Instruct Customers to Flush premise plumbing upon return to service	No	Yes	Yes	Yes



BOIL WATER ADVISORY ISSUANCE DECISION FLOWCHART FOR WATER MAIN BREAK

BOIL WATER ADVISORY (BWA) ISSUANCE DECISION FLOWCHART





ISSUING A BOIL WATER ADVISORY

- After following the protocol and flowchart if it is determined that a Boil Water Advisory is required.
- Contact the assigned Georgia Environmental Protection Division's (EPD) Drinking Water Program inspector, compliance officer or engineer within three hours.
- Discuss the situation with EPD for actions to be undertaken.
- On nights and weekends, contact the EPD using the Emergency Call number of (404) 635-7200.
- Contact the local county health department as well as the county Emergency Management office (EMA) to apprise them of the situation.
- Issue a public advisory targeted to the affected customers.



PUBLIC NOTIFICATION PROCEDURES

- Issue a Public advisory to the affected customers.
- Water System is required to make sure that affected water customers have been notified of this public advisory.
- Notify the affected customers by:
 - Radio & television announcements
 - Publishing in local and regional newspaper
 - Reverse-911 calls
 - Hand delivery .
 - Other appropriate methods.



DISINFECTION PROCEDURES

- Appropriate procedures for the sanitary repair, disinfection and flushing of the water main must be followed in accordance with the American Water Works Association Standard for Disinfecting Water Mains – AWWA C651-14
- Water main leaks or breaks repaired in-service with clamping devices (or other devices), while the water main remains pressurized, present little danger of contamination and do not require disinfection.
- De-chlorination of highly chlorinated waters is required prior to the discharge to either sanitary or storm sewers or any surface or groundwater.



WATER QUALITY TESTING

- Free chlorine residual measurements and coliform bacteria samples must be collected from enough sites to adequately represent all areas of the distribution system.

Number of connections affected by the BWA*	Minimum Number of Samples
15 - 1,000	3
1,001 - 2,500	5
2,501 - 5,000	10
5,001 - 10,000	12
10,001 - 25,000	15
25,001 - 50,000	18
50,001 - 100,000	20
>100,000	As recommended by EPD

- For BWAs that affect less than 15 connections, at least one sample should be collected downstream of the repair, or one sample from each end of the repaired break if flow direction is uncertain/unknown.
- Chlorine residuals must be analyzed at the same locations in the distribution system where samples were drawn from.



LIFTING A BOIL WATER ADVISORY

- Unless under an EPD issued Order, an affected water system may rescind a Boil Water Advisory (wholly or in-Part) without EPD approval as long as the following conditions are met. However, the PWS should notify EPD as soon as possible that the advisory has been lifted and submit test results from microbiological testing
 - *Complete appropriate repairs or mitigation*
 - Normal operating conditions have resumed
 - All microbiological tests (performed by a certified laboratory) must be negative for total coliform bacteria. A copy of the laboratory results must be sent to EPD.
 - Water quality samples show a minimum chlorine residual of 0.2 mg/L throughout the distribution system.
- Water system shall keep a log of all water main breaks and boil water advisory issued. These logs shall be available for inspection when requested by EPD.



Questions/Comments?

Manny Patel, GA EPD, Drinking Water Program Manager

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EPD – Stakeholder Meeting Updates to Safe Drinking Water Rules

September 2, 2020

Jac Capp

Overview

- Chapter 391-3-5 is long, due to the many different rules that protect drinking water
- The draft rule amendments primarily fit into 3 categories
 - Addressing comments from US EPA in order get final primacy approval of our rules
 - General cleanup and consistency with current Secretary of State Office standards for state rule formatting
 - State rule updates that are not impacted by US EPA's primacy review (because they address issues that EPA's rules do not address)
- We are prepared to address specific questions on any of the draft changes, but this presentation will focus on the last category in the interest of time and because they likely need to the most explanation.

Rule 391-3-5-.04

Summary of Changes	Amendment is related to:
<p>Paragraph (2)</p> <ul style="list-style-type: none">• Adding ability for larger privately-owned community water systems to, where approved by EPD, approve limited additions to their system• Adding deadline for approved systems to annually report the additions they approved during the prior year	<ul style="list-style-type: none">• State rule change (no EPA review needed)

Rule 391-3-5-.07

Summary of Changes	Amendment is related to:
<p>Paragraph (3)</p> <ul style="list-style-type: none">Remove detail regarding well siting criteria and replace with reference to Minimum Standards <p>Paragraphs (5) and (9)</p> <ul style="list-style-type: none">Updates to well construction and disinfection standards based on updated national engineering guidelines (ASTM/AWWA) <p>Paragraph (11)</p> <ul style="list-style-type: none">Clarifying the location for a raw water sampling port on a groundwater supply well	<ul style="list-style-type: none">Moving detail to Minimum StandardsState rule change (no EPA review needed)State rule change (no EPA review needed)

Rule 391-3-5-.17

Summary of Changes	Amendment is related to:
<p>Paragraph (2)</p> <ul style="list-style-type: none">• Removed last sentence, which refers to a “trustee”; clean-up item related to June 2016 trust indenture rulemaking	<ul style="list-style-type: none">• State rule change (no EPA review needed)
<p>Paragraph (5)</p> <ul style="list-style-type: none">• Updates to public notice requirements; these mirror recent changes to Chapter 391-3-6 wastewater permitting notices	<ul style="list-style-type: none">• State rule change (no EPA review needed)
<p>Paragraph (11)</p> <ul style="list-style-type: none">• Adding deadline for permit applications for renewal (90 days before expiration)	<ul style="list-style-type: none">• State rule change (no EPA review needed)

Rule 391-3-5-.17

Summary of Changes	Amendment is related to:
<p>Paragraph (2)</p> <ul style="list-style-type: none">Removed last sentence, which refers to a “trustee”; clean-up item related to June 2016 trust indenture rulemaking	<ul style="list-style-type: none">State rule change (no EPA review needed)
<p>Paragraph (5)</p> <ul style="list-style-type: none">Updates to public notice requirements; these mirror recent changes to Chapter 391-3-6; wastewater permitting notices	<ul style="list-style-type: none">State rule change (no EPA review needed)
<p>Paragraph (11)</p> <ul style="list-style-type: none">Adding deadline for permit applications for renewal (90 days before expiration)	<ul style="list-style-type: none">State rule change (no EPA review needed)

Q & A

- Questions?



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Updates to Minimum Standards for Public Water Systems

**Manny Patel,
Drinking Water Program Manager**



MINIMUM STANDARDS FOR PWS

BACKGROUND

- Current Minimum Standards were adopted in 2000
- Based on “ Ten State Standards”
- Several revisions to the Ten State Standards since 2000 (2007,2014 and 2018) most recent revision was published in 2018.
- Georgia has made no changes to the current Minimum Standards which date back to 2000.



MINIMUM STANDARDS FOR PWS

GOAL

- Update Georgia's Minimum Standards to most recent Ten State Standards (2018)
- Incorporate advances in water treatment technology for physical and chemical treatment of Drinking Water
- Streamline the document
- Include Checklist(s) for Permitting PWS developed in our Lean Six Sigma Project.
- Update sections impacted as a result of State and Federal Rule changes



MINIMUM STANDARDS FOR PWS

GENERAL

- Applies to New and Modified PWS. Current facilities are not affected unless making a modification.
- All of the new additions to the current Minimum Standard are in **red text** in the Draft.
- You will notice that the document sections have change as many parts have been moved around. This was done to align our old standard with the 2018 standard.
- There is no redline underline strikethrough version
- EPD is adopting these standards and is not the author of the standards.



MINIMUM STANDARDS FOR PWS

General Design Consideration (Part 4)

- **Monitoring and Testing Equipment**
- **Color Codes for Pipes**
- **Provisions for metering and blending sources of water**
- **Operation Manual on site**
- **Safety considerations**
- **Security of the Physical Plant**
- **Good Engineering Practices like emergency generator and 100 year Flood Plain considerations.**



MINIMUM STANDARDS FOR PWS

Well location and Construction (Part 5)

- Changes to setback from Permanent structure and storm water drainage ditch.
- Continuous sanitary Protection of the well site
- Upper Terminal Well Construction
- Steel Casing thickness in accordance with ASTM A53 or API 5L
- Type of Packers- Lead free
- Testing of the Wells- Test Pump capacity
- Plumbness and Alignment



MINIMUM STANDARDS FOR PWS

Well location and Construction (Continued)

- Capping Requirements
- Well Disinfection shall be done in accordance with AWWA C654
- New Sections for Line Shaft Pumps and Submersible Pumps
- Naturally flowing Wells- new
- Discharge Piping



MINIMUM STANDARDS FOR PWS

Chemicals (Part 7)

- All Chemicals that are added for drinking water treatment should be NSF/ANSI approved
- Chlorine- Leak Detection and Alarms for gaseous feed
- Addition of Sodium Hypochlorite –New
- Addition of Ammonia –New
- Addition of Fluoride- New
- Addition of Ozone – New about 10 pages



MINIMUM STANDARDS FOR PWS

Treatments (Part 9)

- Microscreening – New
- Minor changes to flocculation and sedimentation section- GEP
- Chlorine Testing Equipment
- Chloramine Disinfection New
- Chlorine Dioxide – New
- UV Disinfection – Reference EPA guidance Document
- Corrosion Control – updates



MINIMUM STANDARDS FOR PWS

Treatments (Part 9) Continued

- Phosphates- New
- pH/Alkalinity Adjustment- New
- Anion Exchange – New
- Filter Backwash Requirement- Incorporated by reference



MINIMUM STANDARDS FOR PWS

Finished Water Storage (Part 10)

- Good Engineering Practices
- Location should be above 100 years flood elevation and two feet above the water table.
- Water turnover considerations
- Overflow Pipes and Vents
- Access- Manholes
- Safety- ladder, handrails, confined space, internal catwalk etc.
- Minor Changes to Hydropneumatic (Pressure) Tanks



MINIMUM STANDARDS FOR PWS

Pumping Facilities (Part 11)

- Pumping station to be elevated at least three feet above the 100-year flood elevation
- Suction Lift not encouraged.
- Pump Priming- New
- Booster Pump- Requires flowmeters, duplicate Pumps
- Fuel Tanks and fuel lines for generator should be elevated and protected from water damage



MINIMUM STANDARDS FOR PWS

Distribution System (Part 12)

- PVC Pipes shall meet the requirements set forth in ASTM Standard D 2241, with a minimum pressure class rating of Class 200.
- Pressure Variation – Min 20 psi, normal working pressure of 60 to 80 psi, pressure reducing device required when static pressure exceeds 100 psi.
- Additional restraints may be necessary on fusible pipe at the connection to appurtenances or transitions to different pipe materials to prevent separation of joints.



MINIMUM STANDARDS FOR PWS

Distribution System (Part 12)- Continued

- Any pipe, pipe fittings, plumbing fittings or fixtures, solder, or flux used in the installation or repair of a public water system must meet the new definition of lead free meaning
- Additional requirements for aggressive soils.
- Hydrostatic Test- New formula for allowable leakage
- Individual booster pump shall not be allowed for any individual residential service from the public water supply mains
- Requirements for water loading stations



MINIMUM STANDARDS FOR PWS

Waste Disposal (Part 13)

- Brine waste from ion exchange, membrane or demineralization must be properly disposed
- Requirements for farmland application of lime sludge
- Alum sludge may be disposed of by land application as long as it is not mixed with any other wastes, and disposal has been approved by the Division.
- Subsurface infiltration lagoons may be acceptable if approved by the Division.
- Requirements for backwash reclaim tanks
- Radioactive and Arsenic waste – new section.



Questions/Comments?

Manny Patel, GA EPD, Drinking Water Program Manager

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