

# *Small Water System Regulatory Compliance Workshop*

State Water Resources Control Board  
Division of Drinking Water  
May 24, 2016

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## *OUTLINE*

- Legal Obligations of Public Water Systems
- Water Quality Monitoring Requirements
  - Bacteriological
  - Inorganic Chemical Monitoring
    - Arsenic
    - Hexavalent Chromium
  - Nitrate and Nitrite Monitoring
  - Organic Chemical Monitoring
  - Radionuclide Monitoring

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## *Outline Continued*

- Lead and Copper Tap Monitoring
- Water Supply Permits
- California Waterworks Standards
- Cross Connection Control Program
- Emergency Notification Plans
- Operator Certification
- Consumer Confidence Reports
- Questions??

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## Regulatory Responsibility in CA

- EPA has delegated primacy to enforce the Safe Drinking Water Act to SWRCB - DDW
- DDW has delegated primacy to 32 of the 58 counties (known as LPA counties) for small water systems
  - Community water systems < 200 service connections
  - Non-community water systems (transient and non-transient)

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## Legal Obligations of PWS

*Most of these will be discussed further in this presentation.*

- Provide a reliable and adequate supply of pure, wholesome, healthful, and potable water.
- Obtain a Water Supply Permit and comply with all conditions.
- Use only approved drinking water sources.
- Use only NSF approved additives and components.
- All new public water systems and those that change ownership must comply with Technical, Managerial, and Financial (TMF) requirements.
- Prepare and maintain an Emergency Notification Plan.

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## Legal Obligations of PWS (2)

- Employ or utilize only water treatment plant operators that have been certified by the Division at the appropriate grade.
- Comply with operator certification requirements.
- Conduct water quality monitoring and submit results as required.
- Comply with bacteriological quality requirements.
- Comply with primary and secondary drinking water standards.
- Provide treatment as necessary to comply with requirements.

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### Legal Obligations of PWS (3)

- Comply with waterworks standards.
- Ensure that the water system will not be subject to backflow under normal conditions.
- Prepare and distribute an annual Consumer Confidence Report as required.
- Submit an annual report to the Division.
- Maintain records and submit reports as required.
- Comply with Division directives and orders
- Pay all required fees.

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### Water Quality Monitoring Requirements

Constituent(s)	Source or System?	Type of System
Bacteriological	System	All
Primary Standards – Inorganic	Source	All (with exceptions)
Primary Standards – Organic	Source	Comm. & non-transient
Secondary Standards	Source	Community
Unregulated Chemicals	Source	Comm. & non-transient
Trihalomethanes	System	Community
Radioactivity	Source	Community
Lead and Copper	System	Comm. & non-transient
Surface Water Treatment	Source & System	All (with surface water)
Treated Water	System	All (if treatment req'd)

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### Bacteriological Quality

Each water supplier shall:

- Develop a routine sample siting plan
- Collect routine, repeat, and replacement samples as required
- Have all samples analyzed by approved laboratories
- Notify the Division when there is an increase in the coliform bacteria in samples
- Comply with the bacteriological MCL
- Refer to detailed training provided on 1/23/2015

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## *Inorganic Chemical Monitoring*

- These are inorganic chemicals that represent a health risk to the consumer
- All community and non-transient water systems, and transient systems >1000 population, shall monitor for the chemicals in CCR Table 64431-A
- Monitoring frequency (except Nitrate)
  - Ground water sources – once every 3 years
  - Surface water sources – annually
- Detections above MCL (except Nitrate)
  - Inform DDW or LPA within 48 hrs and begin quarterly monitoring, or
  - Inform DDW or LPA within 7 days and collect second sample within 14 days. If average of 2 samples > MCL, begin quarterly monitoring

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## *Primary Standards Nitrate and Nitrite*

- All systems shall monitor for Nitrate and Nitrite
- Nitrate monitoring frequency:
  - Transient systems – annually
  - Community and non-transient systems:
    - Ground water sources – annually
    - Surface water sources – quarterly
- Nitrite monitoring frequency:
  - All systems – once every 3 years
- Detections above MCL
  - Laboratory must notify water system within 24 hrs
  - Second sample required
  - If average of samples > MCL contact DDW and/or LPA within 24 hours
  - If average of samples < MCL contact DDW and/or LPA within 7 days
- Detections > 50% of MCL
  - Conduct quarterly monitoring

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## *Arsenic Rule*

- Effective October 18, 2008
  - Historical monitoring results could be used to satisfy initial monitoring requirements
  - One sample greater than 10 µg/L – quarterly monitoring for one year
  - Compliance based on running annual average of quarterly monitoring results

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## *What if a source exceeds the MCL for an Inorganic Constituent?*

- Consider BLENDING as the first option
  - Easiest, most cost effective treatment
- Treatment Alternatives
  - Arsenic: Blending/Adsorptive Media/Coagulation-Filtration
  - Do Pilot Study for your system
  - Contact Division for approved list of medias
  - Consider Operations and Maintenance Costs
    - Increased level of operator certification.
    - Power costs.
    - Media replacement costs.

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## *Hexavalent Chromium*

- Effective July 1, 2014
- Initial monitoring (one sample) by December 31, 2015
- If Cr VI > 10.0 ug/L – initiate quarterly monitoring
- Compliance based on RAA
- RAA > 10.0 ug/L – Treatment Required

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## *Hexavalent Chromium*

- If no initial monitoring
  - Email or letter reminder
  - If no data submitted, monitoring and reporting violation
  - Require monitoring

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## Organic Chemical Monitoring

- These are organic chemicals that represent a health risk to the consumer. These include Volatile Organic Chemicals (VOCs) and Synthetic Organic Chemicals (SOCs)
- Monitoring required for Community and non-transient systems
- Initial monitoring = four quarterly samples or 3 annual samples
- Repeat monitoring based on results; if no detections:
  - VOCs
    - GW = 3 annual samples, then once every 3 years
    - SW = annual sampling
  - SOCs
    - > 3,300 population = 2 quarterly samples once every three years
    - < 3,300 population = once every three years
- Waivers possible that may reduce repeat monitoring frequency

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## 1,2,3 - Trichloropropane

- Next constituent to have an MCL in California
  - Late 2016 - Draft MCL to be issued
  - Source:
    - Man-made substance traditionally used as an industrial solvent and cleaning agent, as an intermediary in the production of other chemicals, and is found as an impurity in some previously-used soil fumigants.

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## 1,2,3 - Trichloropropane

- Initial Monitoring Required
- Current Notification Level - 5 ppt
- Treatment Technologies
  - Granular Activated Carbon (BAT)
  - Increased Operations Costs
  - Increased Water Rates

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## 1,2,3 - Trichloropropane

- Early Monitoring
  - Recommend all CWS and NTNC water systems collect at least one sample from active and standby drinking water sources in advance of adopting the 1,2,3-TCP MCL.
    - Use proper analytical method. (SRL 524M-TCP, SRL 525M-TCP or EPA Method 504.1)
    - DLR = 5 ppt or lower

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## 1,2,3 - Trichloropropane

- Benefits of Early Monitoring
  - Allows time for water system to plan for getting into compliance if elevated 1,2,3-TCP levels are found.
  - Occurrence data for Regulatory Development Unit.
  - Grandfathering of existing data to comply with initial monitoring requirements.

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## Secondary Standards

- These are chemicals and constituents that affect the consumer acceptability of the water.
- Community water systems must monitor for those in Tables 64449-A and 64449-B, and these:
  - Bicarbonate
  - Carbonate
  - Hydroxide alkalinity
  - Calcium
  - Magnesium
  - Sodium
  - pH
  - Total hardness
- Monitoring frequency:
  - Ground water = once every 3 years
  - Surface water = annually

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## Secondary Standards

- Compliance with secondary constituents is based on a running annual average.
- If individual sample > MCL – increase monitoring frequency to quarterly
- If RAA > MCL – enforcement action required.
- Waivers for Secondary MCL Compliance
  - If the RAA is not greater than 3 times the MCL, CWS is eligible to apply for a 9 year waiver
  - Requires a survey of the customers and preparation of an engineering report.
  - Are you willing to pay for iron and/or manganese sequestering treatment?
  - Are you willing to pay for iron/manganese (any secondary constituent) reduction treatment?
  - 51% needed to be granted a waiver. Customer decides if they can live with the aesthetic problems or if they want to pay for treatment.
  - Waiver has to be renewed every 9 years.

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## Secondary Standards

- NTNC and TNC shall monitor for the following at least once:
  - Bicarbonate
  - Carbonate
  - Hydroxide Alkalinity
  - Calcium
  - Iron
  - Magnesium
  - Manganese
  - pH
  - Specific conductance
  - Sodium
  - Total Hardness

NTNC and TNC water systems do not have to conduct follow up monitoring if the concentration in any of these constituents exceeds the secondary MCL.

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## Lead and Copper Tap Monitoring

- Monitoring Requirements
  - First Round Initial Tap Monitoring
  - Second Round Initial Tap Monitoring
  - First Round Annual Tap Monitoring
  - Second Round Annual Tap Monitoring
  - First Round Triennial Tap Monitoring
  - Second Round Triennial Tap Monitoring
- Standard vs. Reduced Monitoring
- Refer to LCR Refresher Course – Feb. 18, 2016

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## *Lead and Copper Rule*

- When Should Monitoring Occur?
  - Two standard rounds – 6 months apart. One between 6/1 and 9/30
  - Annual monitoring between 6/1 and 9/30
  - Triennial monitoring between 6/1 and 9/30
- Why June 1 to September 30<sup>th</sup>?
  - Worst case conditions – more corrosive

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## *Lead and Copper Rule*

- Tap Monitoring
  - First Draw Samples
    - Leave sample bottles the day before with instructions.
    - Water should sit a minimum of 6 hours

### Reporting

- Use Form 141AR for reporting results
- Calculate 90<sup>th</sup> percentile values

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## *Lead and Copper Rule*

- Exceeding the Pb and/or Cu AL
  - Must start over with initial monitoring (std)
  - Must provide Public Education for Pb AL
  - May be required to provide corrosion control treatment
    - Limestone contactor
    - Poly-orthophosphate – Aqua Mag
    - Air Stripper – Remove CO<sub>2</sub> to increase pH

Contact the Division for Corrosion Control Expert

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### *EDT Regulation*

- As of March 1, 2002, the Division no longer accepts water quality analysis results in hard-copy form.
- All source water quality monitoring results must be submitted by Electronic Data Transfer
- Each source has to be assigned a source class code.

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### *DBPR – Stage 2*

- Chapter 15.5, Title 22, Section 64530
- All systems required to comply if they provide continuous chlorination
  - Monitor for TTHM/HAA5
  - Complete DBPR Monitoring Plan
  - # of samples depends on source type/size
  - Routine, Increased and Reduced Monitoring
  - Collected at location representing Max Residence Time in Distribution System

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### *Stage 2 DBPR Compliance*

- Locational Running Annual Average
  - TTHM < 0.080 mg/L
  - HAA5 < 0.060 mg/L
  - Reported quarterly, annually, every 3 years
  - Compliance based on LRAA for all samples
- Maximum Residual Disinfectant Level
  - RAA < 4.0 mg/L
  - Reported quarterly

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## Stage 2 DBPR Compliance

- DBP Precursors
  - Conventional SWTP
  - Paired TOC and alkalinity samples
  - Must achieve TOC Removal
  - TOC Percent Removal Ratio > 1.0
  - Alternative Criteria available
    - TOC (treated or source) < 2.0 mg/L – Ratio = 1.0
    - SUVA (treated or source) < 2.0 mg/L – Ratio = 1.0
  - Compliance based on RAA
  - Citation for Treatment Technique violation if TOC % removal ratio RAA < 1.0

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## Water Supply Permits

- Must apply for a permit amendment any time a change is made to the water system, such as adding sources, adding treatment
- Must comply with California Environmental Quality Act (CEQA) and provide environmental documents
  - When DDW is the lead agency, complete the CEQA Environmental Information Form
  - CEQA determination must be made prior to issuance of permit

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## Water Supply Permits

- Permits are non-transferable when ownership of the water system changes.
  - Must apply for a new water supply permit
  - Must provide TMF Capacity Assessment Form

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## California Waterworks Standards

- Adopted March 9, 2008
- New Items
  - Incorporates the waterline separation criteria
  - Permit Amendment required for storage tanks >100,000-gallons
  - Control zone for all GW sources – 50-foot minimum radius
  - Indirect & Direct additives – ANSI/NSF certified (Standard 60 and 61)
  - No one-well water systems – new systems
  - Criteria for establishing source capacity
  - Flow meters for all sources

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## Cross-Connection Control

- Each Backflow Prevention Device must be tested annually
- Draft regulations in Title 17 – see website
- Report information on e-ARDWP
- Cross-Connection Control Survey
  - Should evaluate the system a minimum of once every five years
  - Templates available

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## Emergency Notification Plans (ENP)

- Every water system must have an ENP on file with the Division/County
- ENP must include:
  - Names, titles, and phone numbers of the water system personnel who are responsible and authorized to implement the ENP.
  - Name and phone number of newspaper, radio stations, TV stations and other electronic media used to implement the ENP

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## *Emergency Notification Plans (ENP)*

- Door-to-Door Notification Method
  - Who?
  - How?
    - Well Coordinated
    - Service Area Map
    - Never down-play the importance of the emergency
  - When?
    - Time Frame allotted for notification
- Must identify key facilities (schools, hospitals, convalescent homes, etc...)
  - Notify by phone and hand notification

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## *Distribution Operator Certification*

- DDW/LPA classified all treatment facilities and distribution systems
- All CWS's and NTNCWS's must have a certified distribution operator
- Water systems must identify the chief and shift operators
- Chlorinated GW systems can use certified distribution system operator instead of treatment operator.

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## *Consumer Confidence Report (CCR)*

- Who must prepare and distribute CCR's?
  - All community and non-transient, non-community water systems
- Important Dates:
  - July 1<sup>st</sup> of each year - CCR for previous year must be distributed to water system customers and County
  - Within 3 months of July 1<sup>st</sup>, the water system must submit a certification letter

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## *Consumer Confidence Report (CCR)*

- Where do I get help?
  - Template available for small water systems
  - CCR Guidance for Water Suppliers
  - Contact your District Office for assistance

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## *Consumer Confidence Report (CCR)*

- Tracking and Review
  - Review CCR to ensure that it contains all of the required information.
  - Ensure that systems with Monitoring and Reporting violations have included the Tier 3 public notification information in the CCR.
  - If there are significant deficiencies noted, the system may have to redistribute their CCR.
  - Track submittals and ensure certification form is received.

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## *Electronic Annual Report*

- Released February of every year.
- Needs to be completed and submitted by April 1<sup>st</sup> every year.
- Required for all water systems
- e-AR review
  - Sources – any new sources
  - Operator Certification – changes
  - Backflow Prevention Devices – Tested each year?
  - New and planned projects
  - Other items

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*QUESTIONS??????*

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