Small Water System Regulatory Compliance Workshop

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

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

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??

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)

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.

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.

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.

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)

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

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

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- Surface water sources annually
 Detections above MCL (except Nitrate)
- Inform DDW or LPA within 48 hrs and begin quarterly monitoring, or
 - 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

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
- Surface water sources quat
 Nitrite monitoring frequency:
- All systems once every 3 years
- Detections above <u>MCL</u>
 - 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

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

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 lia replacement costs.

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

Hexavalent Chromium

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

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

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.

1,2,3 - Trichloropropane

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

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

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.

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

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.

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.

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

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 30th?
 - Worst case conditions more corrosive

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 90th percentile values

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 CO2 to increase pH

Contact the Division for Corrosion Control Expert

Lead and Copper Rule

- Lead and Copper Database
 - Track sample dates
 - No. of samples
 - 90th percentiles
 - Report to Division when requested as indicated on the LPA Evaluation Report

LCR Important Reminders

- Lead and Copper tap monitoring samples should be collected from the same sites for all rounds. Sites should be selected using the criteria (Tier 1, 2, 3) in the LCR.
- Public Water Systems are encouraged to practice enhanced ransparency by providing:
 Results to individual homeowners

 - Publishing the number of sites above the ALs
 - Including the results from the individual homes on a website or CCR.
- Changes to the LCR are coming.

Form 141-AR		Page 1 of 2			
LEAD AND COPPER RULE SAMPLING REPORT					
System's Name:	Туре:	CWS INTNOVS			
Address:	Size	□ >100,000 □ 50,001 to 100,000 □ 10,001 to 50,000 □ 3,301 to 10,000 □ 501 to 3,300 □ 101 to 500 □ ≤ 100			
Contact Person:	Sample Date(x);				
SAMPLE SITE IDER	NTIFICATION				
Number of sample sites in each category: 	ider installed after 1982; stalled after 1982;	Total			
Number of lead service lines present in the distribution system		_			
Number of samples collected from sites served by lead servic	a lines:	-			
The following sources have been explored to determine to piper or copper pipe with lead solver: Physhing and/or building codes. Physhing and/or building permits. Contacts with the building department, municipal cirk's office, or state regulatory agencies. Water quality data.	Interviews with build Survey of service an when and where lea 1982 to present. Survey of residents.	ing inspectors			
The following sources have been explored to determine t distribution system:	he number of lead servic	e lines in the			
Distribution system rapps and record downlogs. Capitel inprovement plans and/or master plans for di- bandard operating procedures and/or seater plans for di- bandard operating productions and/or seater With receasing data. Interferences with serior personnel. Conduct serics line sampling where lead service line Review of permit line.	aintenance manuals for the complaint investigations .				

	RESULTS OF SAMPLING
	ts of Lead And Copper Tap Water Samples: (Attach copy of all results to this form.)
	er of tap samples required:
	er of tap samples collected & submitted:90h Percentile Copper levelmgL
Resul	Its of Water Quality Parameter (WQP) Samples: (Complete only if system is required to collect WQP samples.)
Numb	er of WQP samples required to be collected:
	er of WQP samples collected & submitted
	er of WQP entry point samples required to be collected:
Numb	er of WQP entry point samples collected and submitted
	CERTIFICATION OF COLLECTION METHODS
l certi	fy that:
	Each first draw tap sample for lead and copper is one liter in volume and has stood motionless in
	plumbing system of each sampling site for at least six hours. Each first draw sample collected from a single-family residence has been collected from the cold water
	kitchen tap or bathroom sink tap.
•	Each first draw sample collected from a non-residential building has been collected at an interior tap from which water is twocally drawn for consumption.
	months of June, July, August, or September.
•	Each resident who volunteered to collect tap water samples from his or her home has been properly instructed in the proper methods for collecting lead and poper samples. I do not challenge the accuracy
	of those sampling results.
•	Enclosed is a copy of the material distributed to residents explaining the proper collection methods, and a list of the residents who performed sampling.
	CHANGE OF SAMPLING SITES
-	
	al site address:
New 3	ite address:
Distan	ce between sites (approximately):
Target	ting Criteria: New Site: 🖬 Tier 1 Old Site: 🔲 Tier 1
	Ter 2 Ter 3
	on for sample site change:
Rease	
Reaso	
Ress	
	ATURE: DATE:

California Radionuclide Rule

- Applies to community and NTNC water systems
- Initial Monitoring
 - Each system needed to collect four quarterly samples from each source and monitor for gross alpha particle activity and radium-228
 - Monitoring for Radium-226 can be waived if the gross alpha particle activity is $< 5 \ pCi/L$
 - Monitoring for Uranium can be waived if the gross alpha particle activity is $<15\ \text{piC/L}$
 - Frequency of monitoring is determined by initial round of monitoring results.

California Radionuclide Rule

	Radiological ?	fonitoring	
Radioactivity - Section 64442	MCL.	EPA Method	Frequency
Gross Alpha	15 pCi/L		Based on result of last sample (1)
Radium-226	5 pCi/L Combined		When (GA-Unanium) > 5 pCirL (2)
Radium-228	Radium-226 + 228		Waived (1)
Uranium	20 pCi/L		When GA > 5 pCi/L (2)
Man Made Radioactivity - Section 64443			
Tritium	20000 pCill.		Not Required
Strontium	8 pCiL		Not Required
Gross Beta	50 pCi/L		Not Required
1. Routine Monitoring			
 Routine monitoring frequency for Gross Alpha is based on last sample collected. 			
	Gross Alpha	Monitoring Frequency	
	Less than 3 pCi/L	1 sample every 9 years	
	\geq 3 and \leq 7.5 pCi/L	1 sample every 6 years	
	> 7.5 and < 15 pCi/L	1 sample every 3 years	
b) Routine monitoring frequency for Radium-228 will be waived if there is no MCL exceedance.			



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.

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

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

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

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

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

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

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

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

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

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.

Consumer Confidence Report (CCR)

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

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

Consumer Confidence Report

- · 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.

Electronic Annual Report

- Released February of every year.
- Needs to be completed and submitted by April 1st 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

QUESTIONS??????

Kassy.chauhan@waterboards.ca.gov

559-447-3316

559-385-5014