



California Department of Public Health
MEMORANDUM

DATE: April 22, 2008

TO: All Community Public Water Systems

FROM: Division of Drinking Water and Environmental Management
1616 Capitol Avenue
Sacramento, CA 95899-7377

SUBJECT: **STATE ADOPTION OF REVISED WATERWORKS STANDARDS**

The California Department of Public Health (Department) has adopted revised Waterworks Standards **effective March 9, 2008**. Although some similarities may remain for particular requirements, **the old Waterworks Standards have been repealed and are no longer applicable**. The new regulations have been incorporated into our on-line regulation book at <http://www.cdph.ca.gov/certlic/drinkingwater/Pages/Lawbook.aspx>, under Chapter 16 of Title 22, California Code of Regulations. The revised Waterworks Standards start on page 169 of the Lawbook.

This memorandum serves to announce the adoption of the new regulations and to provide a general overview of the requirements. It is not intended to be a substitute for the actual regulations. If you have any questions regarding the content of this memo, please contact your local Drinking Water Program District Office.

WHAT YOU SHOULD KNOW ABOUT THE NEW WATERWORKS STANDARDS!

The new standards include requirements on the following topics:

- Permits, including initial permits and permit amendments
- Source capacity, including new methods for determining source capacities
- New well siting and construction
- Installation and construction material requirements for water mains and other distribution system appurtenances
- Disinfection requirements for reservoirs, wells, and new or repaired mains
- Design and construction criteria for distribution reservoirs
- Distribution system operation requirements
- ANSI/NSF certification for chemicals, products, equipment, and materials added to drinking water, as well as those that come in contact with drinking water or come in contact with a product to be added to drinking water

You will need to apply for a permit amendment if you plan on...

- adding a treated water tank or reservoir \geq 100,000 gallons
- adding a new source
- changing the status of a source (e.g. active, standby)
- changing a source in a manner that affects the quantity or quality of the supply
- changing or adding a treatment process
- expanding your service area by 20% or more



California Department of Public Health MEMORANDUM

- consolidating with another water system
- obtaining a Secondary Maximum Contaminant Level waiver
- modifying recreational activities at a reservoir

Refer to Section 64556 for the complete list. Please note that a permit amendment may be required for other situations, pursuant to Section 64556(b) and Section 116550 of the Health and Safety Code.

If you have no existing domestic public water supply permit and need to obtain an initial permit, you will need to apply pursuant to Section 64552.

- In addition to the requirements in Section 64552, a community water system using only groundwater must have a minimum of two approved sources and be capable of meeting maximum day demand with its highest source off line. *[see Section 64554(c)]*

Do you have enough source and storage capacity?

- New requirements for meeting Maximum Day Demand (MDD) and Peak Hourly Demand (PHD) replace the charts in the old Waterworks Standards *[see (a), (b), and (d) of Section 64554]*. MDD and PHD must be determined from the most recent 10 years of production data.
- A water system's sources must at all times have the capacity to supply maximum day demand. *[see Section 64554(a)]*
- Systems with < 1,000 connections must have storage capacity equal to or greater than MDD. *[see Section 64554(a)(2)]*
- Requirements must be met in each individual pressure zone, as well as for the system as a whole *[see Section 64554(a)(3)]*
- Specific requirements for well pump tests to determine reliable well capacity replace the old requirements for determining well capacity. *[see Section 64554(e)-(f)]* Contact your local District Office for a copy of what is required.
- If your existing system or a planned expansion has or may lead to source capacity problems, you may be required to complete a Source Capacity Planning Study *[see Section 64558]*
- Sources must be metered such that the quantity of water produced can be determined and recorded at least monthly *[see Section 64561]*

Are you planning on putting in a new well? [see Section 64560]

- First, contact the Department's local District Office
- Include the following in your permit application:
 - A source water assessment for the well site
 - Demonstrate a 50-foot radius control zone around the well
 - Design plans and specifications for the well
 - California Environmental Quality Act (CEQA) documentation
- After the application has been approved, submit the following:
 - A copy of the well construction permit (if required by local agencies)
 - The Department of Water Resources well completion report
 - Pump test results and information per Section 64554



California Department of Public Health MEMORANDUM

- Water quality data
- As-built plans
- Make sure well is constructed such that:
 - The well meets California Department of Water Resources Bulletins 74-81 and 74-90
 - The well meets AWWA Standard A100-06
 - The well has the ability to pump to waste, with the waste discharge line protected against backflow
 - The equipment is accessible
 - The well is protected against flooding
 - The wellhead terminates at least 18 inches above the finished grade
 - The wellhead and electrical controls are **not** in a vault
 - The well is equipped to enable chlorination facilities to be readily installed
 - A non-threaded sampling tap is located between the wellhead and check-valve (no screens or aerators if used for bacteriological sampling)
 - A meter exists to determine the quantity of water [see Section 64561]

Are you planning on destroying a well? [see Sections 64560.5]

- The destruction of a well must be performed in accordance with the California Department of Water Resources Bulletins 74-81 and 74-90.

Are you planning on installing a water main? [see Sections 64570 and 64572]

- The installation and materials must meet applicable AWWA standards
- The main must be protected against freezing and loads that may crush the main
- The main or supply line must be 10 feet from and 1 foot above pipes containing:
 - Untreated sewage
 - Primary or secondary treated sewage
 - Disinfected secondary 2.2 or 23 recycled water
 - Hazardous fluids such as fuels, industrial waste, wastewater sludge, etc.
- The main or supply line must be 4 feet from and 1 foot above:
 - Storm drains
 - Disinfected tertiary recycled pipes
- The main must be more than 100 feet from a sanitary landfill, wastewater disposal pond, or hazardous waste site
- The main must be more than 25 feet from cesspools, septic tanks, sewage leach fields, seepage pits, underground hazardous material storage tanks, or groundwater recharge project sites
- If you're a Community Water System, the main must have a diameter of at least 4 inches [see Section 64573]
- If it's a dead-end, it'll need a flushing valve [see Section 64575]
- Install a valve between main and each fire hydrant [see Section 64577]
- If it's a 12-inch diameter main (or less), install an isolation valve no farther than every 1320 feet and at tees or crossings [see Section 64577]



California Department of Public Health MEMORANDUM

- Make sure buried valve stems have a valve box and, if 5 feet below grade, it should either have a valve stem riser (to allow use of a normal key) or a notation in records indicating a long key is needed [see Section 64578]

Note: The Department understands that meeting the separation criteria may not always be feasible. If you demonstrate that you are unable to meet the separation criteria and will take other measures to ensure an equivalent level public health protection, you may be approved to use an alternative pursuant to Section 64572 or Section 64551.100.

Are you planning on flushing a water main? [see Sections 64575]

- Don't discharge to a sewer without a proper air gap
- The flushing velocity should be at least 2.5 ft/sec

Are you replacing or putting in a new air-release, air-vacuum, or combination valve? [see Sections 64575]

- Install it to meet AWWA C512-04 and AWWA Manual M51-2001
- Make sure it's readily accessible for inspection, maintenance, and replacement
- Make sure the vent opening is downward facing and screened (or domed) and is above:
 - finished grade,
 - the 100-year flood level, and
 - the highest recorded water level
- Make sure it's constructed to prevent vandalism and exposure to rain, insects, and varmints

Do you need to disinfect a reservoir, new main, repaired main, or well?

- Make sure you meet the applicable requirements in Sections 64580, 64582, 64583, and the applicable AWWA standards.

Are you designing a new treated water reservoir?

- If you're planning to install a new reservoir:
 - You need to apply for a permit amendment if it's $\geq 100,000$ gallons [see Section 64556]
 - It needs to be designed to meet the requirements listed in 64585(a) and (b)
 - You need to submit plans and specifications to the Department for review prior to constructing the reservoir

Note: If it's an existing reservoir, it needs to meet the requirements in Section 64585(a)

Are you adding a chemical or a product to the drinking water? [see Section 64590, Direct Additives]

- As required in the old Waterworks Standards, the product or chemical will need to be NSF/ANSI 60 certified...this includes chemicals used to clean your water



California Department of Public Health MEMORANDUM

treatment facilities [see Subsection 64591(c)]. However, the *new* Waterworks Standards require the certifying organization to include product testing, facility inspections, QA/QC review, manufacturing practice reviews, and chemical stock inspections; all on an annual basis. Most certifying organizations perform these tasks annually. Check with your supplier to make sure.

Do the materials and products that come in contact with your drinking water meet the new indirect additive requirements? [see Section 64591, Indirect Additives]

- Beginning March 9, 2008, essentially all products and materials that come in contact with your drinking water (or in contact with an additive you'll be applying to your drinking water) must be NSF/ANSI 61 certified. However, if you're under a contract signed before March 9, 2008, you're exempt until March 9, 2009.

Note: Some uncertified direct or indirect additives may be used if specific criteria are met. See Section 64593 for details.

Is your water system being properly operated and maintained?

- Your water system must be operated in a manner that ensures 20 psi at every service connection, at all times. If you expand your distribution system service connections by more than 20% (or the expansion adversely affects the distribution system), the new distribution system will need to be designed to provide 40 psi (excluding fire flow). [see Section 64602]
- If the Department has identified deficiencies in the operation or maintenance of your water system, you may be required to prepare and implement an operations and maintenance plan to address the deficiencies. [see Section 64600]

Do your recordkeeping practices meet the new requirements? [see Section 64604]

- All public water systems must prepare, maintain, and update the following:
 - As built plans, maps, and drawings of all new water system facilities, as well as nearby existing facilities. The location, size, construction material, and year of installation must be included for each new water main or facility.
 - A schematic map that includes the location of each water source, treatment facility, pumping plant, reservoir, water main, and isolation valve.
 - Results of laboratory analyses must be maintained for at least 3 years.
 - Flushing records must be maintained for at least 3 years.
 - Reservoir cleaning and inspection records must be maintained for at least 3 years.

Do you have a unique situation making the Waterworks Standards unworkable or an innovative technique for meeting the intent of a requirement?

- If you demonstrate to the Department that your alternative ensures an equivalent level public health protection as that of the Waterworks Standards requirement, you may be approved to use an alternative pursuant to Section 64551.100.



California Department of Public Health
MEMORANDUM

Many third-party standards have been incorporated by reference, making them enforceable standards. They include...

California Department of Water Resources:

- Bulletins 74-81 and 74-90...California Well Standards

American National Standard Institute/NSF International (ANSI/NSF):

- ANSI/NSF Standard 60-2005...Direct Additives
- ANSI/NSF 61-2005/Addendum 1.0-2005...Indirect Additives

The incorporated AWWA standards include:

- A100-06...Water Wells
- C150/A21.50-02...Ductile iron pipe thickness
- C151/A21.51-02...Ductile iron pipe, centrifugally cast
- C200-97...Steel pipe, six inches and larger
- C300-04...Reinforced concrete cylinder pipe
- C301-99...Prestressed Concrete Pressure Pipe, Steel-Cylinder
- C302-04...Reinforced Concrete Pressure Pipe, Noncylinder
- C303-02...Concrete Pressure Pipe, Bar-Wrapped, Steel-Cylinder Type
- C304-99...Design of Prestressed Concrete Cylinder Pipe
- C512-04...Air Release, Air/Vacuum, and Combination Air Valves for Waterworks Service
- C600-05...Ductile-iron water mains and their appurtenances
- C605-05...Installation and hydrostatic testing procedures for polyvinyl chloride (PVC)
- C651-05...Disinfecting Water Mains
- C652-02...Disinfection of water storage facilities
- C654-03...Disinfection of wells
- C800-05...Underground Service Line Valves and Fittings
- C900-97...Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings
- C905-97...Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings
- C906-99...Polyethylene (PE) Pressure Pipe and Fittings
- C909-02...Molecularly Oriented Polyvinyl Chloride (PVCO) Pressure Pipe
- C950-01...Fiberglass Pressure Pipe
- D100-05...Welded carbon steel tanks
- D102-03...Coating Steel Water-Storage Tanks
- D103-97...Factory-coated bolted steel tanks
- D110-04...Wire- and Strand-Wound, Circular, Prestressed Concrete Water Tanks
- D120-02...Thermosetting Fiberglass-Reinforced Plastic Tanks
- D130-02...Flexible-Membrane Materials for Potable Water Applications
- Manual M9 (1995)...Concrete Pressure Pipe
- Manual M11 (2004)...Steel Water Pipe: A Guide for Design and Installation
- M25 (2000)...Flexible-Membrane Storage
- M51 (2001)...Air-Release, Air/Vacuum, and Combination Air Valves
- Cal/Nevada Section (April 1999)...Reservoir Floating Cover Guidelines