



**American Water Works  
Association**

The Authoritative Resource for Safe Drinking Water<sup>SM</sup>

ANSI/AWWA C654-03  
(Revision of ANSI/AWWA C654-97)

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*AWWA Standard*

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# Disinfection of Wells



Effective date: Nov. 1, 2003.  
First edition pending by AWWA Board of Directors Jan. 25, 1987.  
This edition approved by AWWA Board of Directors Jan. 19, 2003.  
Approved by American National Standards Institute Sept. 17, 2003.

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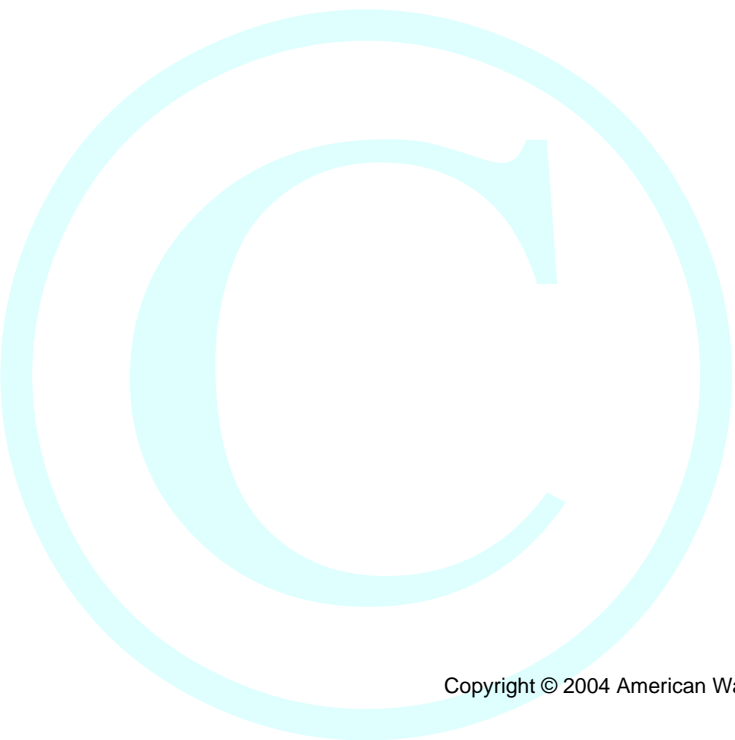
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# Foreword

*This foreword is for information only and is not a part of AWWA C654.*

## **I. Introduction.**

I.A. *Background.* During construction or maintenance of a well, the drill hole may become contaminated by surface-water inflow and undesirable fluids through which the well may penetrate. In addition, contamination may be introduced in a well in the drilling fluid, on equipment, or through the drill hole itself. A part of this contamination may be carried into the water-producing formations.

Well disinfection in accordance with this standard includes chlorination of the well casing, the pump and associated piping, and the gravel pack and the immediate area of the aquifer around the casing as well as verification of satisfactory bacteriological quality of the water. This standard is not intended to provide procedures for disinfection of the aquifer beyond the immediate location of a well; aquifer disinfection can best be handled by an engineering evaluation of all the conditions present at a specific location. The procedures for disinfection described in this standard are expanded beyond, and are intended to complement, information contained in AWWA A100, Standard for Water Wells, Sec. 11, Well Disinfection.

I.B. *History.* This is the third edition of AWWA C654, Standard for Disinfection of Wells. The first edition was approved by the AWWA Board of Directors on Jan. 25, 1987. The second edition was approved on June 15, 1997. This third edition was approved Jan. 19, 2003.

I.C. *Acceptance.* In May 1985, the US Environmental Protection Agency (USEPA) entered into a cooperative agreement with a consortium led by NSF International (NSF) to develop voluntary third-party consensus standards and a certification program for all direct and indirect drinking water additives. Other members of the original consortium included the American Water Works Association Research Foundation (AWWARF) and the Conference of State Health and Environmental Managers (COSHEM). The American Water Works Association (AWWA) and the Association of State Drinking Water Administrators (ASDWA) joined later.

In the United States, authority to regulate products for use in, or in contact with, drinking water rests with individual states.\* Local agencies may choose to impose requirements more stringent than those required by the state. To evaluate the health effects of products and drinking water additives from such products, state and local agencies may use various references, including

1. An advisory program formerly administered by USEPA, Office of Drinking Water, discontinued on Apr. 7, 1990.
2. Specific policies of the state or local agency.
3. Two standards developed under the direction of NSF, ANSI<sup>†</sup>/NSF<sup>‡</sup> 60, Drinking Water Treatment Chemicals—Health Effects, and ANSI/NSF 61, Drinking Water System Components—Health Effects.
4. Other references, including AWWA standards, *Food Chemicals Codex*, *Water Chemicals Codex*,<sup>§</sup> and other standards considered appropriate by the state or local agency.

Various certification organizations may be involved in certifying products in accordance with ANSI/NSF 60 and 61. Individual states or local agencies have authority to accept or accredit certification organizations within their jurisdiction. Accreditation of certification organizations may vary from jurisdiction to jurisdiction.

Annex A, "Toxicology Review and Evaluation Procedures," to ANSI/NSF 60 does not stipulate a maximum allowable level (MAL) of a contaminant for substances not regulated by a USEPA final maximum contaminant level (MCL). The MALs of an unspecified list of "unregulated contaminants" are based on toxicity testing guidelines (noncarcinogens) and risk characterization methodology (carcinogens). Use of Annex A procedures may not always be identical, depending on the certifier.

AWWA C654-03 does not address additives requirements. Thus, users of this standard should consult the appropriate state or local agency having jurisdiction in order to

1. Determine additives requirements, including applicable standards.

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\*Persons in Canada, Mexico, and non-North American countries should contact the appropriate authority having jurisdiction.

†American National Standards Institute, 25 W. 43rd St., Fourth Floor, New York, NY 10036.

‡NSF International, 789 N. Dixboro Rd., Ann Arbor, MI 48105.

§Both publications available from National Academy of Sciences, 2101 Constitution Ave. N.W., Washington, DC 20418.



2. Determine the status of certifications by all parties offering to certify products for contact with, or treatment of, drinking water.
3. Determine current information on product certification.

**II. Special Issues.** This standard has no applicable information for this section.

**III. Use of This Standard.** AWWA has no responsibility for the suitability or compatibility of the provisions of this standard to any intended application by any user. Accordingly, each user of this standard is responsible for determining that the standard's provisions are suitable for and compatible with that user's intended application.

**III.A. Purchaser Options and Alternatives.** The following items should be covered in the purchaser's specifications:

1. Standard used—that is, ANSI/AWWA C654, Standard for Disinfection of Wells, of latest revision.
2. Method of chlorination to be used.
3. Precautions related to disposal of chlorinated water.
4. Bacteriological evaluation and method to be used.
5. Redisinfection procedure to be used when necessary.

**III.B. Modification to Standard.** Any modification to the provisions, definitions, or terminology in this standard must be provided in the purchaser's specifications.

**IV. Major Revisions.** Major changes made to the standard in this revision include the following:

1. Minor editorial changes throughout the standard.

**V. Comments.** If you have any comments or questions about this standard, please call the AWWA Standards and Technical Support Group (303) 794-7711, FAX (303) 795-7603, or write to the group at 6666 W. Quincy Ave., Denver, CO 80235-3098, or by e-mail at [standards@awwa.org](mailto:standards@awwa.org).

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## *AWWA Standard*

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# Disinfection of Wells

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## SECTION 1: GENERAL

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### Sec. 1.1 Scope

This standard describes the procedures for shock chlorination and bacteriological testing for the disinfection of wells for potable water service. These procedures shall be followed prior to using any new or existing well for potable water service if the well may have been contaminated as a result of construction, servicing, or maintenance. The chlorination procedures provided in this standard are for the gravel pack, well casing, pump, and appurtenant piping and are presented in the sequence in which they generally would be implemented.

### Sec. 1.2 Purpose

The purpose of this standard is to establish the minimum requirements for the disinfection of wells for potable water service, including procedures for chlorination and bacteriological evaluation.

### Sec. 1.3 Application

This standard can be referenced in specifications for the disinfection of wells and can be used as a guide for procedures for chlorination and bacteriological