ADOPTED REGULATION OF

THE STATE ENVIRONMENTAL COMMISSION

LCB File No. R118-14

Effective December 22, 2014

EXPLANATION – Matter in ***italics*** is new; matter in brackets **[~~omitted material~~]** is material to be omitted.

AUTHORITY: §§1-15, NRS 445A.860.

A REGULATION relating to public water systems; revising the definitions of certain terms related to public water systems; adopting by reference certain federal regulations applicable to public water systems; revising references to certain standards and publications adopted by reference; making various other changes relating to public water systems; and providing other matters properly relating thereto.

Legislative Counsel's Digest:

Existing law authorizes the State Environmental Commission to adopt regulations as may be necessary to govern the construction, operation and maintenance of public water systems if those activities affect the quality of water. (NRS 445A.860)

Sections 1, 7 and 8 of this regulation amend the definitions of certain terms related to public water systems.

Section 2 of this regulation adopts by references certain federal National Primary Drinking Water Regulations that are applicable to public water systems. **Section 3** of this regulation provides that monitoring requirements for public water systems must comply with those federal regulations.

Sections 4-6 and 9 of this regulation update information on how to obtain certain publications related to public water systems. **Sections 10 and 12-15** of this regulation make conforming changes.

Existing regulations require certain reservoirs with floating covers to have a lining and cover composed of a flexible membrane which conforms to certain requirements. (NAC 445A.67075) **Section 11** of this regulation provides that additional information for designing, installing, operating and maintaining reservoirs with flexible-membrane materials is outlined in the *Manual M25 Flexible-Membrane Covers and Linings for Potable-Water Reservoirs,* third edition, of the American Water Works Association. **Section 11** also provides information on how to obtain the *Manual*.

Existing regulations require that pipes, fittings and valves of a distribution system, and fire hydrants connected to a public water system, comply with certain standards. (NAC 445A.67125) **Section 12** adds that fixtures of a water distribution system also must conform with those standards.

Existing regulations also require that pipes, fittings, solder or flux used in the installation or repair of a public water system be lead-free. (NAC 445A.67125) **Section 12** authorizes, under certain circumstances, that a gate valve, service saddle or fire hydrant used in the installation or repair of a public water system contain lead.

Section 1. NAC 445A.450 is hereby amended to read as follows:

445A.450 As used in NAC 445A.450 to 445A.5405, inclusive, unless the context otherwise requires:

1. "Commission" has the meaning ascribed to it in NRS 445A.8075.

2. "District board of health" has the meaning ascribed to it in NRS 445A.812.

3. "Division" has the meaning ascribed to it in NRS 445A.814.

4. "Federal Act" means the Safe Drinking Water Act, 42 U.S.C. §§ 300f et seq., as amended on August 6, 1996 ~~[.]~~ ***, and as amended by the Reduction of Lead in Drinking Water Act, Public Law 111-380, and the Community Fire Safety Act, Public Law 113-64.***

5. "Monitoring program" means a program developed by a public water system and approved by the Division or the appropriate district board of health to sample water quality from a sampling point for compliance purposes.

6. "Primary standard" means a standard which specifies a maximum contaminant level for any constituent found in a public water supply which, if exceeded, may adversely affect the health of persons.

7. "Public water system" has the meaning ascribed to it in NRS 445A.840 and includes a water authority in a county whose population is ~~[400,000]~~ ***700,000*** or more.

8. "Sampling point" means a location where water samples are taken for compliance purposes in accordance with the requirements for the specific contaminant or water quality parameters being monitored.

9. "Sanitary survey" means an on-site review of the water source, facilities, equipment, operation and maintenance of a public water system for the purposes of evaluating the adequacy of such source, facilities, equipment, operation and maintenance for producing and distributing safe drinking water.

10. "Secondary maximum contaminant level" means a maximum contaminant level adopted by the Commission for a constituent found in a public water supply that, if exceeded, may cause aesthetic concerns to a consumer.

11. "Supplier of water" has the meaning ascribed to it in NRS 445A.845.

12. "Treatment technique" means an enforceable water treatment process or procedure, required to be operated at a specified effectiveness for removal of a measurable surrogate contaminant, that public water systems must employ to ensure effective removal of other contaminants for which there is not a reliable, economical, technically feasible method to measure at levels of concern.

13. "Water authority" has the meaning ascribed to it in NRS 377B.040.

14. The words and terms defined in 40 C.F.R. § 141.2 have the meanings ascribed to them in that section, as adopted by reference in NAC 445A.4525.

Sec. 2. NAC 445A.4525 is hereby amended to read as follows:

445A.4525 1. The provisions of 40 C.F.R. §§ 141.1, 141.2, 141.4 to 141.42, inclusive, subsections (a) and (d) of § 141.43 ***,*** ~~[and]~~ §§ 141.60 to 141.722, inclusive, ***and 141.851 to 141.861, inclusive,*** of the "National Primary Drinking Water Regulations," and related federal

regulations applicable to public water systems, including all tables and appendices therein, as those provisions and regulations existed on July 1, ~~[2009,]~~ ***2014,*** are hereby adopted by reference.

2. The provisions of 40 C.F.R. §§ 142.61 to 142.65, inclusive, including all tables therein, as those provisions existed on July 1, ~~[2006,]~~ ***2014,*** are hereby adopted by reference.

3. A copy of a publication containing those provisions is available by mail from the Superintendent of Documents, United States Government Printing Office, P.O. Box 979050, St. Louis, Missouri 63197-9000, or by toll-free telephone at (866) 512-1800, for the price of $67. Copies of those regulations are also available, free of charge, at the Internet address **http://www.gpoaccess.gov/cfr/index.html**.

Sec. 3. NAC 445A.454 is hereby amended to read as follows:

445A.454 1. The monitoring requirements for the primary standards set forth in NAC 445A.453 must be performed as required by 40 C.F.R. §§ 141.21 to 141.29, inclusive, 141.40, 141.41, 141.42, 141.74, 141.86 to 141.89, inclusive, 141.131, 141.132, 141.133, 141.172, 141.173, 141.174, 141.402, 141.530 to 141.564, inclusive, 141.605, 141.621 to 141.628, inclusive, ~~[and]~~ 141.701 to 141.709, inclusive, ***and 141.851 to 141.858, inclusive,*** as adopted by reference in NAC 445A.4525.

2. Any analysis conducted to determine compliance with the primary standards referenced in NAC 445A.453 must be performed by a laboratory that is certified pursuant to the provisions of NAC 445A.542 to 445A.54296, inclusive, in accordance with:

(a) The method or methods listed in, or approved pursuant to, the provisions of NAC 445A.542 to 445A.54296, inclusive, for the selected contaminant or contaminants in the drinking water; or

(b) Any method for the selected contaminant or contaminants in the drinking water approved by the United States Environmental Protection Agency as an acceptable alternative test procedure for drinking water.

3. For water systems which are conducting water quality monitoring at a frequency greater than annually, compliance with the maximum contaminant levels for antimony, arsenic, asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, selenium or thallium must be determined during normal operating conditions by a running annual average at any sampling point. A monitoring program identifying the sampling points must be submitted to the Division or the appropriate district board of health for review and approval. The monitoring program must demonstrate that the average quality of the water served to each customer in the distribution system is below the maximum contaminant level. The Division or the appropriate district board of health shall establish the number of samples the public water system must take for calculating the running annual average. The public water systems may not monitor more frequently than specified in the monitoring program by the Division or the appropriate district board of health to determine compliance unless approved in writing by the Division or the appropriate district board of health.

4. As used in this section:

(a) "Normal operating conditions" means the conditions that are achieved when the water system operates wells or treatment plants to supply water for seasonal demands.

(b) "Running annual average" means the sum of the consecutive 12-month contaminant sample values divided by the total number of samples taken at one sample point. (Example: $(\Sigma x_1 + x_2 + x_n)/n$ = running annual average)

Sec. 4. NAC 445A.459 is hereby amended to read as follows:

445A.459 1. Samples of water taken for the purpose of a complete chemical analysis must be taken as provided in this section.

2. A sample taken to analyze levels of components not requiring preservation must be collected in a clean glass or plastic half-gallon or gallon container. A thoroughly rinsed plastic distilled water bottle or unused plastic milk bottle, obtainable at a dairy or a food or drug store, is recommended for this purpose.

3. A sample taken to analyze levels of nitrates and metals must be collected in a container provided by the laboratory performing the analysis, using the appropriate materials for preservation provided by the laboratory. These materials may be added to the containers by the laboratory before the sample is taken. Care must be exercised in using such materials because of their hazardous nature.

4. A sample taken to analyze levels of trace organic materials must be taken in a glass container provided by the laboratory performing the analysis. The laboratory shall also provide any preservatives required for preventing deterioration of the organic materials.

5. If any representative sample is taken from a well for the purpose of chemical analysis:

(a) Except as otherwise provided in paragraph (b), an amount of water equivalent to 4 to 10 times the bore volume of the well must be pumped from the well before the sample is taken.

(b) In the case of a new well, the well must be pumped until all artifacts of the drilling process have been removed and the water flows clean and clear, and in any event for not less than 24 hours.

(c) The sample must be taken in a manner consistent with that described in chapter 9, section 9.6, of the *Handbook for Sampling and Sample Preservation of Water and Wastewater*, EPA-600/4-82-029.

6. If any representative sample is taken from a distribution system for the purpose of chemical analysis:

(a) Except for lead and copper samples collected pursuant to 40 C.F.R. § 141.86, as adopted by reference in NAC 445A.4525, the water line from which the sample is taken must be flushed until the temperature of the water stabilizes.

(b) The sample must be taken in a manner consistent with that described in chapter 9, section 9.9, of the *Handbook for Sampling and Sample Preservation of Water and Wastewater*, EPA-600/4-82-029.

7. If any sample is taken for the purpose of bacteriological examination, the sample must be collected in a container obtained from the laboratory performing the analysis of the sample.

8. A copy of the *Handbook for Sampling and Sample Preservation of Water and Wastewater* is available from the National Technical Information Service, ~~[~~5285 Port Royal~~]~~ ***5301 Shawnee*** Road, ~~[~~Springfield,~~]~~ ***Alexandria,*** Virginia ~~[~~22161,~~]~~ ***22312, by toll-free telephone at (800) 553-6847,*** or at the Internet address **http://www.ntis.gov**. The product code of the publication is PB83-124503, and it may be obtained at a cost of $99 ~~[~~.~~]~~ ***for a paper copy, $50 for a CD-ROM or $35 for an electronic document.***

Sec. 5. NAC 445A.5265 is hereby amended to read as follows:

445A.5265 1. A supplier of water who is required to meet the requirements for treatment of *Cryptosporidium* contamination pursuant to subsection 4 of NAC 445A.5195 shall implement the requirements of the applicable components of the microbial toolbox options in accordance with 40 C.F.R. §§ 141.716 to 141.720, inclusive, as adopted by reference in NAC 445A.4525. If a supplier of water wishes to use ultraviolet light to meet those requirements, additional information on obtaining approval to operate with ultraviolet light is outlined in the *Ultraviolet*

Disinfection Guidance Manual for the Final Long Term 2 Enhanced Surface Water Treatment Rule, 2006 edition, as published by the United States Environmental Protection Agency, document number EPA 815-R-06-007. A copy of the manual is available, free of charge, at the Internet address ~~[http://www.epa.gov/safewater/disinfection/lt2/pdfs/guide_lt2_uvguidance.pdf.]~~ ***http://www.epa.gov/ogwdw/disinfection/lt2/pdfs/guide_lt2_uvguidance.pdf.***

2. If a supplier of water wishes to receive treatment credits, in addition to the requirements of subsection 1, the supplier shall:

(a) If using the watershed control program component of the microbial toolbox, demonstrate before any treatment that the actions identified to reduce *Cryptosporidium* in the source water are capable of 0.5-log reduction of *Cryptosporidium* in the source water by:

(1) Reducing the potential for contamination; or

(2) Physical removal.

(b) If using the demonstration of performance component of the microbial toolbox, conduct or cause to be conducted a site-specific study pursuant to a protocol approved by the Division which, at a minimum, must:

(1) Be approved before the commencement of the study, unless the study was conducted before July 1, 2008; and

(2) Provide for the inclusion of the entire treatment process in the study.

(c) If using alternative ozone or chlorine dioxide concentration times time values, conduct or cause to be conducted a site-specific study pursuant to a protocol approved by the Division which, at minimum, must:

(1) Be approved before the commencement of the study, unless the study was conducted before July 1, 2008;

(2) Provide for the measuring of *Cryptosporidium* inactivation; and

(3) Provide for the study of the full range of expected water quality and operational conditions.

(d) If using the ultraviolet light component of the microbial toolbox, and wishing to obtain approval of an alternative approach to ultraviolet light reactor validation:

(1) Demonstrate inactivation of a test microorganism or a surrogate approved by the Division; and

(2) Document that the validation has been overseen by an independent third party.

Sec. 6. NAC 445A.5335 is hereby amended to read as follows:

445A.5335 1. A composite correction program required pursuant to NAC 445A.533 must be performed by a person approved by the Division or the appropriate district board of health.

2. Each supplier of water required to perform a composite correction program shall implement recommendations identified by the composite correction program in accordance with a schedule approved by the Division or the appropriate district board of health.

3. Additional information on performing a composite correction program is outlined in the handbook entitled *Optimizing Water Treatment Plant Performance Using the Composite Correction Program*, 1998, published by the United States Environmental Protection Agency, document number EPA 625/6-91/027. A copy of the manual is available, free of charge, at the Internet address ~~[http://www.epa.gov/nrmrl/pubs/625691027/625691027.pdf.]~~ ***http://nepis.epa.gov.***

Sec. 7. NAC 445A.65825 is hereby amended to read as follows:

445A.65825 "Determined to be compatible with drinking water" means that a product is determined to be compatible with drinking water through:

1. Certification of the product ~~[by its manufacturer, after the product has been tested]~~ in accordance with Standard 14, 42, 44, 53, ~~[54,]~~ 55, 58, 60 ***,*** ~~[or]~~ 61 ~~[,]~~ ***or 372,*** as appropriate, as adopted by reference in NAC 445A.6663; ***or***

2. ~~[Compliance of the materials in the product with 21 C.F.R § 177.2420, as adopted by reference in NAC 445A.6663; or~~

~~3.]~~ Certification of the product by an independent laboratory approved by the Division or the appropriate district board of health.

Sec. 8. NAC 445A.66085 is hereby amended to read as follows:

445A.66085 "Lead-free" means, with regard to:

1. Solder and flux, that not more than 0.2 percent of the composition of the solder or flux is lead.

2. Pipes ***,*** ~~[and]~~ fittings ~~[,]~~ ***and fixtures,*** that not more than ~~[8]~~ ***a weighted average of 0.25*** percent of the composition of the ***wetted surfaces of the*** pipe ***,*** ~~[or]~~ fitting ***or fixture*** is lead ~~[.]~~ ***, as calculated in accordance with Standard 372 of the American National Standards Institute and the National Sanitation Foundation International, as adopted by reference in NAC 445A.6663.***

Sec. 9. NAC 445A.6663 is hereby amended to read as follows:

445A.6663 ***1.*** The following provisions and publications are hereby adopted by reference:

~~[1.]~~ ***(a)*** The *American Water Works Association Standards*, as those standards existed on ~~[February 20, 1997.]~~ ***July 1, 2014.*** A copy of those standards is available by mail from the American Water Works Association, 6666 West Quincy Avenue, Denver, Colorado 80235, ~~[or]~~ by ***toll-free*** telephone at (800) 926-7337, ***or at the Internet address***

http://www.awwa.org/store.aspx, at a price of ~~[$818.83]~~ ***$2,538*** for members and ~~[$1230.85]~~ ***$4,376*** for nonmembers.

~~[2.]~~ ***(b)*** Standards 14, 42, 44, 53, ~~[54,]~~ 55, 58, 60 ***,*** ~~[and]~~ 61 ***and 372*** of the American National Standards Institute and the National Sanitation Foundation International, as those standards existed on ~~[February 20, 1997.]~~ ***July 1, 2014.*** Those standards are available by mail from National Sanitation Foundation International, ~~[3475 Plymouth Road,]~~ ***3916 Ranchero Drive,*** Ann Arbor, Michigan ~~[48105, or]~~ ***48108,*** by ***toll-free*** telephone at ~~[(313) 769-8010,]~~ ***(800) 699-9277, or at the Internet address http://www.techstreet.com/nsf/,*** at a price of ~~[$40]~~ ***$165*** for Standard 14, 42 ***,*** ~~[or]~~ 44, ~~[$50]~~ ***53, 55 or 58, $325*** for Standard ~~[53, 54 or 58, $45]~~ ***60 or 61 and $55*** for Standard ~~[55 and $65 for Standard 60 or 61.~~

~~3.]~~ ***372.***

(c) Standard D3212 of the American Society for Testing and Materials, as that standard existed on ~~[February 20, 1997.]~~ ***July 1, 2014.*** That standard is available by mail from ASTM International, 100 Barr Harbor Drive, ***P.O. Box C700,*** West Conshohocken, Pennsylvania 19428, ~~[or]~~ by ***toll-free*** telephone at ~~[(610) 832-9500,]~~ ***(877) 909-2786, or at the Internet address http://www.astm.org,*** at a price of ~~[$16.50.~~

~~4. The provisions of 21 C.F.R. § 177.2420, as those provisions existed on February 20, 1997. The publication that contains those provisions is available by mail from the Superintendent of Documents, U.S. Government Printing Office, P.O. Box 979050, St. Louis, Missouri 63197-9000, or by toll-free telephone at (866) 512-1800, at a price of $22.~~

~~5.]~~ ***$37.***

(d) The *Manual of Cross-Connection Control*, ~~[ninth]~~ ***tenth*** edition, as developed by the Foundation for Cross-Connection Control and Hydraulic Research of the University of Southern

California. This publication is available by mail from the University of Southern California, ~~[~~KAP-200 University Park MC-2531,~~]~~ ***3716 South Hope Street,*** Los Angeles, California 90089-~~[~~2531, or~~]~~ ***7700,*** by ***toll-free*** telephone at ~~[~~(213) 740-2032,~~]~~ ***(866) 545-6340, or at the Internet address http://www.usc.edu/dept/fccchr/tools.html,*** at a price of ~~[~~$48.

6.~~]~~ ***$70 for members and $95 for nonmembers.***

(e) ***Manual M14*** *Recommended Practice for Backflow Prevention and Cross-Connection Control*, ~~[~~1990~~]~~ ***third*** edition, as published by the American Water Works Association. This publication is available by mail from the American Water Works Association, 6666 West Quincy Avenue, Denver, Colorado 80235, ~~[~~or~~]~~ by ***toll-free*** telephone at (800) 926-7337, ***or at the Internet address http://www.awwa.org/store.aspx,*** at a price of ~~[~~$33.65~~]~~ ***$76*** for members and ~~[~~$48.65~~]~~ ***$122*** for nonmembers.

~~[~~7.~~]~~ ***(f)*** *Recommended Standards for Water Works*, ~~[~~1992~~]~~ ***2012*** edition, as developed and approved by the Great Lakes Upper Mississippi River Board of State ***and Provincial*** Public Health and Environmental Managers. This publication is available by mail from Health ~~[~~Education Services, P.O. Box 7126, Albany,~~]~~ ***Research Incorporated, 150 Broadway, Suite 560, Menands,*** New York ~~[~~12224, or~~]~~ ***12204,*** by telephone at (518) ~~[~~439-7286,~~]~~ ***431-1200, or at the Internet address http://www.healthresearch.org/store,*** at a price of ~~[~~$12.

8.~~]~~ ***$20, or at no cost at the Internet address http://10statesstandards.com.***

(g) *Standard Methods for the Examination of Water and Wastewater*, ~~[~~19th~~]~~ ***22nd*** edition, as published by the American Water Works Association. This publication is available by mail from the American Water Works Association, 6666 West Quincy Avenue, Denver, Colorado 80235, ~~[~~or~~]~~ by ***toll-free*** telephone at (800) 926-7337, ***or at the Internet address***

http://www.awwa.org/store.aspx, at a price of ~~[~~$146.50~~]~~ ***$195*** for members and ~~[~~$218.40~~]~~ ***$295*** for nonmembers.

~~[~~9.~~]~~ ***(h)*** *Standard Specifications for Public Works Construction*, ~~[~~1996~~]~~ ***also known as the "Orange Book," 2012*** edition, as sponsored and distributed by the Regional Transportation Commission of Washoe County, Washoe County, the City of Sparks, the City of Reno, Carson City and the City of Yerington. This publication may be obtained by mail from the Regional Transportation Commission of Washoe County, 2050 Villanova Drive, Reno, Nevada 89502, or by telephone at (775) ~~[~~348-0171,~~]~~ ***348-0400,*** at a price of ~~[~~$35.

~~10.]~~ ***$40, or at no cost at the Internet address***

http://www.rtcwashoe.com/streetshighways/documents/2012%20ORANGEBOOK.pdf.

(i) *Uniform Design and Construction Standards for* ***Potable*** *Water Distribution Systems*, ~~[~~1995~~]~~ ***third*** edition, as developed and adopted by Boulder City, Henderson, North Las Vegas, the Big Bend Water District and the Las Vegas Valley Water District. This publication is available by mail from the Las Vegas Valley Water District, Engineering Services Division, 1001 South Valley View Boulevard, Las Vegas, Nevada 89153, or by telephone at (702) 258-3165, at a price of ~~[~~$15.

~~11.]~~ ***$12, or at no cost at the Internet address***

http://www.lvvwd.com/eng/references_udacs.html.

(j) The *Uniform Plumbing Code*, ~~[~~1994~~]~~ ***2012*** edition, as adopted by the International Association of Plumbing and Mechanical Officials. This publication is available by mail from the International Association of Plumbing and Mechanical Officials, ~~[~~20001 Walnut Drive South, Walnut,~~]~~ ***4755 E. Philadelphia Street, Ontario,*** California ~~[~~91789-2825, or~~]~~ ***91761,*** by telephone at (909) ~~[~~595-8449,~~]~~ ***472-4208, or at the Internet address***

http://iapmomembership.org, at a price of ~~[$52.89]~~ ***$88.80 for members and $111 for nonmembers*** for a softcover copy ~~[or $62.81]~~ ***, $107.20 for members and $134 for members*** for a looseleaf copy ~~[.]~~ ***, and $80.80 for members and $101 for nonmembers for a CD-ROM or electronic copy.***

2. If there is any conflict between any of the provisions described in subsection 1, the most stringent of those provisions prevails.

Sec. 10. NAC 445A.66685 is hereby amended to read as follows:

445A.66685 1. The design and construction of a public water system must comply with the provisions of:

(a) NAC 445A.65505 to 445A.6731, inclusive.

(b) The *American Water Works Association Standards*, as adopted by reference in NAC 445A.6663.

(c) Standards 14, 42, 44, 53, ~~[54,]~~ 55, 58, 60 ***,*** ~~[and]~~ 61 ***and 372*** of the American National Standards Institute and ~~[NSF]~~ ***National Sanitation Foundation*** International, as adopted by reference in NAC 445A.6663.

(d) ***Manual M14*** *Recommended Practice for Backflow Prevention and Cross-Connection Control*, as adopted by reference in NAC 445A.6663.

(e) *Recommended Standards for Water Works*, as adopted by reference in NAC 445A.6663.

(f) For public water systems in Carson City, Fallon, Reno, Sparks, Yerington, Douglas County, Lander County, Lyon County, Nye County or Washoe County, *Standard Specifications for Public Works Construction*, ***also known as the "Orange Book,"*** as adopted by reference in NAC 445A.6663.

(g) For public water systems in Boulder City, Henderson, North Las Vegas, the Big Bend Water District or the Las Vegas Valley Water District, *Uniform Design and Construction Standards for* ***Potable*** *Water Distribution Systems*, as adopted by reference in NAC 445A.6663.

(h) *The Uniform Plumbing Code*, as adopted by reference in NAC 445A.6663.

(i) Any other engineering standards approved by the Division.

2. If there is any conflict between any of the provisions described in subsection 1, the most stringent of those provisions prevails.

Sec. 11. NAC 445A.67075 is hereby amended to read as follows:

445A.67075 1. Except as otherwise provided in subsection 3, storage tanks must:

(a) Consist of welded steel and comply with *American Water Works Association Standard* D100;

(b) Consist of factory-coated, bolted steel and comply with *American Water Works Association Standard* D103;

(c) Consist of reinforced concrete of portland cement;

(d) Consist of prestressed concrete and comply with *American Water Works Association Standard* D110; or

(e) Consist of fiberglass-reinforced plastic and comply with *American Water Works Association Standard* D120.

2. Reservoirs with floating covers may be used for the storage of water only if approved by the Division or the appropriate district board of health after evaluation on a case-by-case basis. If so approved, such a reservoir must have a lining and cover composed of a flexible membrane which conforms to the requirements of ~~[~~:

~~(a) Standard 54 of the American National Standards Institute and NSF International; and~~

~~(b)~~ *American Water Works Association Standard* D130. ***Additional information for designing, installing, operating and maintaining reservoirs using flexible-membrane materials is outlined in Manual M25 Flexible-Membrane Covers and Linings for Potable-Water Reservoirs, third edition, of the American Water Works Association. This document is available at a cost of $52 for members and $83 for nonmembers from the American Water Works Association, 6666 West Quincy Avenue, Denver, Colorado 80235, by toll-free telephone at (800) 926-7337, or at the Internet address http://www.awwa.org/store.aspx.***

3. The Division or the appropriate district board of health may authorize a public water system to use a storage tank composed of galvanized steel if:

(a) The plans and specifications for the tank are submitted to the Division or the appropriate district board of health.

(b) The tank is assembled and hot-dip galvanized, and any other coating is applied, at a factory. The tank must not be modified at another location unless the modification is inspected by an engineer and approved by the Division or the appropriate district board of health.

(c) Any material used to coat the tank is determined to be compatible with drinking water. Before being introduced into service, the tank must be sampled for the presence of volatile organic chemicals.

(d) An analysis of the quality of water in the tank demonstrates that the stored water will not corrode the tank and the only material used to coat the tank is a galvanized coating.

(e) The construction of the tank complies with *American Water Works Association Standard* D103.

4. This section does not:

(a) Prohibit the Division or the appropriate district board of health from:

(1) Disallowing the use of galvanized storage tanks in a public water system; or

(2) Imposing more stringent requirement for the construction of a galvanized storage tank.

(b) Apply to the use of galvanized tanks for any purpose other than the storage of water for a public water system.

5. All standards referenced in this section are adopted by reference in NAC 445A.6663.

Sec. 12. NAC 445A.67125 is hereby amended to read as follows:

445A.67125 1. Except as otherwise provided in subsections 2 and 3, the pipes, fittings ***, fixtures*** and valves of a distribution system, and any fire hydrants connected to a public water system, must:

(a) For public water systems in Carson City, Fallon, Reno, Sparks, Yerington, Douglas County, Lander County, Lyon County, Nye County or Washoe County, comply with *Standard Specifications for Public Works Construction* ***, also known as the "Orange Book,"*** and the *American Water Works Association Standards* ~~[.]~~ ***, as adopted by reference in NAC 445A.6663.***

(b) For public water systems in Boulder City, Henderson, North Las Vegas, the Big Bend Water District or the Las Vegas Valley Water District, comply with *Uniform Design and Construction Standards for* ***Potable*** *Water Distribution Systems* and the *American Water Works Association Standards* ~~[.]~~ ***, as adopted by reference in NAC 445A.6663.***

(c) For public water systems in other areas of the State, comply with the *American Water Works Association Standards* ~~[.]~~ ***, as adopted by reference in NAC 445A.6663.***

2. The choice of materials for ~~[the pipes of]~~ a distribution system must be based on the properties of the soil and water. In areas where:

(a) The water is corrosive, metallic pipe must not be used ~~[.]~~ ***; and***

(b) The groundwater or soil is contaminated with volatile or synthetic organic chemicals, plastic ~~[pipe]~~ and ~~[gasketed pipe]~~ ***gaskets*** must not be used.

` 3. ~~[Any]~~ ***Except as otherwise provided in this subsection, any*** pipes, fittings, ***fixtures,*** solder or flux used in the installation or repair of a public water system must be lead-free ***.*** ~~[and comply with section 316.1.3 of the Uniform Plumbing Code.]~~ ***A gate valve which is 2 inches in diameter or larger, a service saddle or a fire hydrant is not required to be lead-free if the:***

(a) Federal Act authorizes a gate valve, service saddle or fire hydrant, as applicable, to contain lead; and

(b) The amount of lead in the gate valve, service saddle or fire hydrant, as applicable, does not exceed the maximum amount permissible pursuant to the Federal Act.

Sec. 13. NAC 445A.67145 is hereby amended to read as follows:

445A.67145 1. Except as otherwise provided in this section, a water main must be installed:

(a) For public water systems in Carson City, Fallon, Reno, Sparks, Yerington, Douglas County, Lander County, Lyon County, Nye County or Washoe County, in compliance with *Standard Specifications for Public Works Construction* ***, also known as the "Orange Book,"*** and the *American Water Works Association Standards*, as adopted by reference in NAC 445A.6663.

(b) For public water systems in Boulder City, Henderson, North Las Vegas, the Big Bend Water District or the Las Vegas Valley Water District, in compliance with *Uniform Design and Construction Standards for* ***Potable*** *Water Distribution Systems* and the *American Water Works Association Standards*, as adopted by reference in NAC 445A.6663.

(c) For public water systems in other areas of the State, in compliance with the *American Water Works Association Standards*, as adopted by reference in NAC 445A.6663.

(d) Except as otherwise provided in paragraphs (a), (b) and (c), in compliance with the procedures for installation recommended by the manufacturer of the water main.

2. Except as otherwise provided in this subsection, water mains must be installed in areas that are dedicated for public use as streets or highways or are otherwise sufficiently open to the public to facilitate access for maintenance and emergency repairs. Water mains may be constructed on private property, under structures or in or under bodies of water only if approved by the Division or the appropriate district board of health.

3. Piping for a distribution system must be designed and constructed in such a manner that appropriate measures, as determined by frost depth, type of backfill and surface loads, are taken for trenching, bedding and refilling. Water mains must be:

(a) Properly bedded and covered with a sufficient amount of earth or other insulation to prevent freezing.

(b) Installed with at least 36 inches of cover over the piping or at least 12 inches below frost depth, whichever is deeper.

4. The design and construction of a distribution system must provide for the avoidance of pressure surges and water hammer through the use of reaction blocking and similar methods. Where appropriate, water mains, tees, bends, plugs and hydrants must have thrust blocks, thrust anchors or joints designed to prevent movement. Water mains located on a slope must be restrained in such a manner as determined appropriate by an engineer.

5. Locator tape, magnetic tape or conductive wire and tape must be installed in the trench above a water main.

6. A water main must not be placed into service after its initial construction until:

(a) The water main has been disinfected in accordance with *American Water Works Association Standard* C651, as adopted by reference in NAC 445A.6663. The disposal of any spent chlorine solutions must be coordinated with the Division.

(b) An analysis of the water main which indicates that it meets primary standards for coliform bacteria has been obtained and reported to the Division or the appropriate district board of health.

7. The piping installed in a distribution system must, if the piping consists of:

(a) Ductile iron, be pressure tested in accordance with *American Water Works Association Standard* C600, as adopted by reference in NAC 445A.6663;

(b) PVC, be pressure tested in accordance with *American Water Works Association Standard* C605, as adopted by reference in NAC 445A.6663; or

(c) Another material, be pressure tested in accordance with:

(1) For public water systems in Carson City, Fallon, Reno, Sparks, Yerington, Douglas County, Lander County, Lyon County, Nye County or Washoe County, *Standard Specifications for Public Works Construction*, ***also known as the "Orange Book,"*** as adopted by reference in NAC 445A.6663;

(2) For public water systems in Boulder City, Henderson, North Las Vegas, the Big Bend Water District or the Las Vegas Valley Water District, *Uniform Design and Construction Standards for* ***Potable*** *Water Distribution Systems*, as adopted by reference in NAC 445A.6663; or

(3) For public water systems in other areas of the State, the requirements of the Division or the appropriate district board of health,

➥ before the piping is flushed, disinfected or sampled for an analysis of water quality.

8. During the construction of a distribution system, any openings in unfinished piping or appurtenances must be sealed at the end of each working day in such a manner as to prevent the entry of birds and other animals, dirt, trench water and other sources of pollution or contamination.

Sec. 14. NAC 445A.67165 is hereby amended to read as follows:

445A.67165 If a sewer main crosses a water main:

1. The sewer main must be located at least 18 inches lower than the water main, as measured vertically from the exterior walls of the pipes; or

2. If compliance with subsection 1 is impracticable:

(a) A reasonable effort must be made to place the pipeline joints of the sewer main and water main, other than any welded joints, an equal distance from the point of crossing;

(b) The sewer main and water main must be:

(1) Located at least 6 inches apart, as measured vertically from the exterior walls of the pipes; and

(2) Provided with such structural support as the supplier of water determines necessary; and

(c) The area of crossing must be constructed in such a manner that:

(1) The sewer main is composed of materials that:

(I) For public water systems in Carson City, Fallon, Reno, Sparks, Yerington, Douglas County, Lander County, Lyon County, Nye County or Washoe County, comply with *Standard Specifications for Public Works Construction* ***, also known as the "Orange Book,"*** and the *American Water Works Association Standards*;

(II) For public water systems in Boulder City, Henderson, North Las Vegas, the Big Bend Water District or the Las Vegas Valley Water District, comply with *Uniform Design and Construction Standards for* ***Potable*** *Water Distribution Systems* and the *American Water Works Association Standards*; or

(III) For public water systems in other areas of the State, comply with the *American Water Works Association Standards*;

(2) The sewer main consists of PVC which is constructed with joints that comply with Standard D3212 of the American Society for Testing and Materials;

(3) The sewer main or water main is totally encased in at least 4 inches of cement slurry for a distance of at least 10 feet on each side of the point of crossing; or

(4) The sewer main or water main is installed in a pipe sleeve that extends, without joints, at least 10 feet on each side of the point of crossing.

Sec. 15. NAC 445A.67185 is hereby amended to read as follows:

445A.67185 A supplier of water shall:

1. Ensure that there are no unprotected connections between the supplies of water, systems for the pumping, storage and treatment of water, and distribution system of the public water system and any source of pollution or contamination pursuant to which any unsafe water or other degrading material can be discharged or drawn into the public water system as a result of backsiphonage or backpressure.

2. Develop and carry out a program for the control of cross-connections that is approved by the Division or the appropriate district board of health. Except for a program that has been approved by the Division of Public and Behavioral Health or the appropriate district board of health before February 20, 1997, a program for the control of cross-connections must:

(a) Be submitted to the Division or the appropriate district board of health for its approval not later than:

(1) January 1, 1999; or

(2) Eighteen months after the public water system begins operation,

➥ whichever is later.

(b) Include:

(1) A schedule for implementation.

(2) A plan for inspecting the properties served by the public water system to determine the potential risk of cross-connection and backflow.

(3) A plan for testing and tracking all primary assemblies for the prevention of backflow which are intended to protect the public water system upstream from a service connection. The plan must provide for the annual testing of those assemblies and for the retention of records from that testing.

(4) A list of the particular assemblies for the prevention of backflow which may be used in the public water system or on service connections to the public water system.

(5) A list of the measures the supplier of water will take to enforce the program if any customers of the system fail to comply with the program.

(c) Ensure compliance with NAC 445A.67185 to 445A.67255, inclusive.

(d) Except as otherwise provided in NAC 445A.67185 to 445A.67255, inclusive, comply with the provisions of:

(1) The *Uniform Plumbing Code*, as adopted by reference in NAC 445A.6663;

(2) ***Manual M14*** *Recommended Practice for Backflow Prevention and Cross-Connection Control*, as adopted by reference in NAC 445A.6663; and

(3) The *Manual of Cross-Connection Control*, as adopted by reference in NAC 445A.6663.

➥ If there is any conflict between any of the provisions described in this paragraph, the most stringent of those provisions prevails.