



STATEMENT OF NEED AND REASONABLENESS

**Possible Revisions to Rules Governing Public Pools,
Minnesota Rules, Chapter 4717; Revisor's ID Number 4442**

October 2020

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INTRODUCTION

The Minnesota Pool Code, *Minnesota Rules*, Parts 4717.0150 to 4717.3975 (Code), establishes the design, installation, construction, and operation and maintenance standards for public pools. This Code regulates all public pools in Minnesota. A public pool includes any pool, other than a private residential pool.¹ It does not matter if the pool is operated by any person whether the person is an owner, lessee, operator, or concessionaire.

Swimming and enjoying other water features such as spa pools and water parks are fun and good for our health. Most of the time, these activities are safe and hazard free because rules such as the Code regulate the design, construction, and operation of public pools. State and local governments regulate public pools in the United States. In Minnesota, the Minnesota Department of Health (MDH) has the primary authority, which it delegates to some local health agencies (Delegated Agencies).² Delegated Agencies are listed in Attachment A. As scientific findings and best practices evolve, MDH must update this Code.

MDH has begun a multi-phase process to update this Code. We completed the first step in 2016. This rulemaking is step 2 and we are:

- deleting obsolete requirements and updating other sections to match current science and best practices,
- streamlining Code compliance and Code enforcement requirements, and
- updating certain requirements and making them easier to understand.

Some of these changes will simplify the pool and spa plan review process for licensees. Other changes are intended to increase the level of public health protection by preventing potential accidents or minimizing unnecessary chemical exposures that may have an adverse effect on pool and spa users.

Based on feedback from our community and industry partners, these rule changes will make understanding Code requirements easier for the vast majority of licensees. We are maintaining the same or a stricter level of public health protection as established by the current Code.

¹ Minn. Stat. § 144.1222, subd. 4(d).

² § 144.1222, subd. 1.

**Chart of affected sections, reason for the changes and cost impact
(Additional cost information in Attachment B)**

Rule Section	Subject	Action	Cost Impact
4717.0310	Plan review fees	Deletion	No impact. Current fees are contained in Minnesota Statutes.
4717.0650, subp. 5, item E, subitems 4 and 5	Operator training – online option	Addition	Possible cost savings. Some people may save money because they will not have to travel to training.
4717.1250	Emergency telephone location	Deletion	Possible cost savings
4717.1350, subp. 2, items C and D	Pool user capacity	Deletion and re-lettering of sections	None
4717.1450, subp. 5	Pool water condition	Relocation of language and deletion of language	None
4717.1750, subp. 3, item F	Disinfection residual	Deletion	None
4717.1750, subps. 9 and 10	Bacterial samples and bacterial treatment	Deletion	None
4717.1750, subp. 11	Use of cyanuric acid	Addition of all new language	Cost increase and then cost decrease for pools currently using cyanuric acid.
4717.2570, subp. 4	Rate-of-flow indicator	Deletion of some wording	Possible cost savings

Rule Section	Subject	Action	Cost Impact
4717.2595, subp. 1, item G	Skimmers	Deletion of the current language and addition of new language	Possible cost savings
4717.3450, subp. 1, items A through E	Lighting	Deletion of current items A and E and re-lettering of current items B through D	None
4717.3850, subp. 10	Spa pools/signs	Deletion of citation to section being deleted	None
4717.3970, item C	Pool closure	Update of citation	None

ALTERNATIVE FORMAT

To obtain this information in a different format, please call 651-201-4500.

STATUTORY AUTHORITY

Minnesota Statutes, section 144.1222, subdivision 1, provides that, “The commissioner of health shall be responsible for the adoption of rules and enforcement of applicable laws and rules relating to the operation, maintenance, design, installation, and construction of public pools and facilities related to them.”

Related Federal and State Statutes

Virginia Graeme Baker Pool and Spa Safety Act (Virginia Graeme Baker or VGBA):

The VGBA is a federal law named after a person who died in a pool accident in June 2002 when the suction from a spa drain entrapped her under the water. The VGBA required that, as of December 19, 2008, all operating public pools and spas must have drain covers that meet the ANSI/ASME A112.19.8-2007 standard on every drain and grate. Skimmer equalizer lines are submerged suction outlets and must either be covered with a compliant cover or plugged. (The VGBA was included in the Energy Independence and Security Act of 2007 as Title XIV, PUBLIC LAW 110-140.) The U. S. Consumer Product Safety Commission enforces the VGBA.

Abigail Taylor Pool Safety Act (ATPSA)

Abigail Taylor, a six-year-old girl from Edina, Minnesota, was severely injured when she sat on an open drain in a wading pool. These injuries eventually led to her death. To prevent future tragedies, the Minnesota Legislature unanimously passed the ATPSA³ in 2008.

The law requires daily physical inspections of drain covers and grates in all public pools and mandates drainage systems be designed to prevent suction from blockage.⁴ Please note, while the Code has historically regulated skimmer equalizer lines, the current language in Minnesota statute does not expressly mention them as a type of submerged suction outlet.

REGULATORY ANALYSIS

“(1) a description of the classes of persons who probably will be affected by the proposed rule, including classes that will bear the costs of the proposed rule and classes that will benefit from the proposed rule.”

The classes of affected persons are:

- Pool licensees (also referred to as “owners” or “operators”): These are people that own or are licensed to operate public pools and spas regulated by the Code and *Minnesota Statutes*, section 144.1222.
- Pool designers and builders: These people design and build pools and spas regulated by the Code and *Minnesota Statutes*, section 144.1222.
- Pool users: These are members of the public who use and swim in pools and spas that are regulated by the Code and *Minnesota Statutes*, section 144.1222. This group includes both Minnesota residents and tourists.
- Delegated agencies: This group consists of local city, county, and multi-county agencies to which MDH has delegated pool and spa regulatory authority. They are obligated under their respective delegation agreements with MDH to enforce the provisions of the Code and *Minnesota Statutes*, section 144.1222. (Delegated local agencies are listed in Attachment A.)

Those that will bear the costs of the proposed rule are:

- A very small number of existing licensees will have a one-time cost for elimination of the use of cyanuric acid and installation of equalizer line cover(s). Industry estimates for the one-time cyanuric acid change will likely result in a *net savings* for this class within one

³ The ATPSA was enacted via *Minnesota Laws* 2008, Chapter 328, sections 2 to 4, and is codified in *Minnesota Statutes*, section 144.1222.

⁴ Minn. Stat. § 144.1222, subd. 1d.

year after the change due to reduced chemical supply costs after changing disinfectant delivery equipment. (Please see Attachment B for the complete cost calculations.)

- No other classes of affected persons will bear any costs related to the proposed rule.

Those who will benefit are:

- All classes of people listed above will benefit from the proposed rule in various ways as described in the Rule-By-Rule Analysis.

“(2) the probable costs to the agency and to any other agency of the implementation and enforcement of the proposed rule and any anticipated effect on state revenues”

- MDH and its Delegated Agencies are the only entities with Code enforcement authority over public pools and spas. Neither MDH nor any Delegated Agency is expected to incur additional costs for the implementation and enforcement of the proposed rule revisions.
- A few state agencies and entities, such as the Minnesota Academies for the Deaf and Blind, Minnesota State Colleges and Universities, and the Minnesota Zoo, have pools that are licensed and regulated under the Code. They may be minimally affected by the proposed revisions.
- These licensees would have the same possible cost increase as discussed in (5) below.
- There will be no reduced or increased revenues for any state agencies due to these proposed rule revisions.

“(3) a determination of whether there are less costly methods or less intrusive methods for achieving the purpose of the proposed rule”

Less costly or less intrusive methods:

- No less costly or less intrusive methods are available for achieving the purpose of proposed rule revisions. We based this conclusion on consultation with the pool industry and our regulatory partners. In addition, we considered the technologies and techniques currently in existence. We did not receive any complaints or concerns regarding the effect of these proposed rule revisions on operating costs during the “Request for Comments” period.
- Costlier methods are available, as in the case of equalizer line entrapment prevention. The department could have proposed requiring the removal of existing equalizer lines and prohibiting any equalizer lines in all new pools. This option was rejected in favor of a less costly method that allows existing equalizer lines to remain or to be built in new pools as long as entrapment is prevented by using specific covers.
- More intrusive methods are available. In the example of equalizer line entrapment prevention, MDH could have prohibited equalizer lines in any new pools and required the removal of existing equalizer lines. However, these options were rejected in favor of a less

intrusive method that allows existing equalizer lines to remain or to be built in new pools so long as entrapment is prevented by using specific covers.

“(4) a description of any alternative methods for achieving the purpose of the proposed rule that were seriously considered by the agency and the reasons why they were rejected in favor of the proposed rule”

Based on consultation with industry and regulatory partners and with consideration given to the technologies and techniques currently in existence, the department has determined that no other methods are available to achieve the purpose of the proposed rule, other than those costlier and more intrusive methods discussed above at (3). Most of the proposed changes, like the elimination of the requirement that licensees post signs that identify the nearest telephone, are eliminating requirements that are difficult or impossible to enforce. Other revisions, such as the prohibition of cyanuric acid, are providing increased public health protection and there are no alternative methods available to achieve the same level of protection.

“(5) the probable costs of complying with the proposed rule, including the portion of the total costs that will be borne by identifiable categories of affected parties, such as separate classes of governmental units, businesses, or individuals”

- A majority of the rule revisions will lower costs or are cost neutral. No material, staffing, or regulatory cost increases will result from any changes other than the cyanuric acid removal and equalizer line entrapment protection revisions discussed below. The cyanuric acid use revision, however, will actually result in *a cost savings* for pool licensees after a period of time.
- All estimated costs will be borne by licensees only.
- **Cyanuric acid removal for indoor pools:** A small number of indoor pools currently utilize an erosion disinfection system that uses stabilized chlorine tablets containing cyanuric acid that is also sometimes called “trichlor.” The average volume of these pools is estimated to be 20,000 gallons. These rule revisions require licensees to replace cyanuric acid disinfection systems within two years after the effective date of the new rules. The most cost-effective replacement is to switch to a liquid sodium hypochlorite system.

Based on pool chemical company-provided calculations reviewed by MDH staff, the first year replacement costs and subsequent savings are as follows:

- **First Year:** switching from cyanuric acid to liquid sodium hypochlorite will cost the average pool approximately *\$133.09 more* due to the one-time cost of equipment installation.
- **Approximately 16 months after the change:** switching from cyanuric acid to liquid sodium hypochlorite, the average pool will *break even on costs* due to reduced chemical supply costs.

- **Two years after switching:** the average pool will realize a cumulative savings of \$253.83 due to the reduced chemical supply costs.
- **Each year thereafter:** the average pool will *save approximately \$386.91 per year* in reduced chemical supply costs.
- **Correlation with Pool size:** due to the increased use of chemicals in bodies of water larger than 20,000 gallons, owners of larger pools will realize faster returns on their investments.

These estimates are specific to operation of the pool itself. They do not factor in the *potential healthcare savings pool users* will enjoy from eliminating their exposure to potentially carcinogenic levels of cyanuric acid and the poor air quality created by the byproducts of its use in an indoor pool setting.

The detailed calculations are in Attachment C.

- **Covering of equalizer lines:** A VGBA-compliant cover costs approximately \$23. The average pool with skimmers has approximately two skimmers. The total cost of compliance would be approximately \$46 per pool on average.

The alternative method of compliance is permanently plugging the equalizer line with concrete or grout. This would cost less than \$1 per equalizer line for an approximate total cost of \$2 per pool on average.

These costs are only applicable to existing pools. There would be no additional cost to new pools, as federal law has required the installation of these covers since 2010, and new pools can be built without equalizer lines.

“(6) the probable costs or consequences of not adopting the proposed rule, including those costs or consequences borne by identifiable categories of affected parties, such as separate classes of government units, businesses, or individuals”

If these rules amendments are not adopted, licensees will bear a burden of time and money when having to initially take or renew their trained operator credentials because only in-person courses would continue to be allowed. The proposed rule may reduce this cost by allowing pool and spa licensees to schedule their education on their own time via the online training courses, which may save them money.

Without these rule revisions, costs for licensees will remain the same because of a continued need to comply with outdated and overly specific first aid kit inventory requirements and the need to have a spine board.

Without these proposed changes to skimmer requirements, injuries due to entrapment from uncovered or unblocked equalizer lines may occur. These would be very costly for a licensee if found liable through civil lawsuits.

Licensees will incur higher costs than necessary if there are no changes to the electrical power supply requirements for underwater pool lighting. The existing rule imposes antiquated lighting

requirements set to the wattage of the lights used, which are no longer relevant with the introduction of light emitting diode (LED) lighting technology. To meet these requirements, licensees must incur higher electrical costs for security lighting than are necessary to supply the required power to modern lighting fixtures.

“(7) an assessment of any differences between the proposed rule and existing federal regulations and a specific analysis of the need for and reasonableness of each difference”

This change eliminates a difference between the current pool Code and federal law, the VGBA, and generally brings the Code into better alignment with federal requirements. The current pool Code is incongruent with the VGBA because it does not require equalizer line suction covers, which are required under the VGBA. By addressing equalizer line suction, this proposed rule eliminates a difference between state and federal requirements.

“(8) an assessment of the cumulative effect of the rule with other federal and state regulations related to the specific purpose of the rule. . . . ‘[C]umulative effect’ means the impact that results from incremental impact of the proposed rule in addition to other rules, regardless of what state or federal agency has adopted the other rules. Cumulative effects can result from individually minor but collectively significant rules adopted over a period of time.”

No cumulative effect will occur from the adoption of these proposed rule revisions. These revisions add no increased regulatory burden to licensees or any other affected class of persons. Most of these revisions will make compliance less burdensome and enforcement more efficient while increasing the level of public health protection for public pools and spas.

PERFORMANCE-BASED RULES

Minnesota Statutes, sections 14.002 and 14.131, require that the SONAR describe how the agency, in developing the rules, considered and implemented performance-based standards that emphasize superior achievement in meeting the agency’s regulatory objectives and maximum flexibility for the regulated party and the agency in meeting those goals.

A true performance-based rule would establish specific outcome(s), and the regulated party would be able to select the approach or manner to achieve the outcome(s). In much of public health regulation, this is not possible without putting the public’s health in danger.

The objective of the Pool Code is to provide a safe swimming environment in pools throughout Minnesota. MDH considered performance-based standards but could not reconcile setting this goal for pool and spa licensees and allowing them to select approaches or manners to achieve this goal with the more important need to protect public health. There is no acceptable level of accident severity or negative health effects when it comes to pool user safety and health. This rule and the proposed revisions are the best practices available now to ensure a safe aquatic experience for all Minnesotans using public spas and pools.

ADDITIONAL NOTICE

MDH sent (via the U.S. Post Office, email, GovDelivery/Granicus) the Request for Comments (RFC) to:

- MDH's official rulemaking list
- all pools licensed by MDH,
- all of the Delegated Agencies, which are local units of government delegated to administer the licensing and inspection of pools,
- pools licensed by Delegated Agencies, except for Lake County because staff did not provide the contact information. The County was asked to notify its licensed pools, and
- a list of pool construction companies, pool supply companies, and other interested people and organizations.

The RFC and the draft proposed rule revisions are posted on the department's website at [Minnesota Pool Code Rule Revision](https://www.health.state.mn.us/communities/environment/recreation/pools/rules/rulerevision.html) (<https://www.health.state.mn.us/communities/environment/recreation/pools/rules/rulerevision.html>).

MDH staff presented and discussed proposed draft revisions at Regulators' Breakfast meetings. (Attendees at these meetings include inspectors and other regulatory staff from MDH and Delegated Agencies.)

Staff also presented and discussed the proposed revisions with Minnesota Recreational Water Advisory Council (MRWAC). MRWAC is an unofficial, voluntary, open-to-the-public, group of aquatic professionals, builders, suppliers, and regulators meeting bi-monthly. MRWAC has endorsed the proposed rule changes.

A Minnesota Pool Code Advisory Committee (Committee) was formed and held one meeting. A list of members is contained in Attachment E. Staff presented the proposed revisions to the Committee and the Committee members discussed each item. Members supported all of the proposed revisions.

Our Additional Notice Plan includes giving all of the notice required by statute. We will send (email or postal service) the rule revisions and Notice of Intent to Adopt to everyone who has registered to be on MDH's rulemaking mailing list under *Minnesota Statutes*, section 14.14, subdivision 1a.

- We also will send the rule revisions and Notice of Intent to Adopt (email, postal mail or GovDelivery/Granicus) to all pools licensed by MDH and a list of pool construction companies and pool supply companies.
- We will email the Notice of Intent to Adopt to all of the Delegated Agencies. We will ask them to notify their licensed pools.
- The Notice of Intent to Adopt, the draft proposed rule revisions, and the SONAR will be posted on MDH's website at

<https://www.health.state.mn.us/communities/environment/recreation/pools/rules/rulerevision.html> and will also be posted on the Office of Administrative Hearings Rulemaking e-comments website at <https://minnesotaoah.granicusideas.com>.

- The revisions and Notice of Intent to Adopt will be presented and discussed at a Regulators' Breakfast meeting.
- The revisions and Notice of Intent to Adopt will be presented and discussed at a MRWAC meeting.
- Our Notice Plan does not include notifying the Commissioner of Agriculture per *Minnesota Statutes*, section 14.111, because the rules do not affect farming operations.

CONSULTATION WITH MMB ON LOCAL GOVERNMENT IMPACT

As required by *Minnesota Statutes*, section 14.131, the department has consulted with Minnesota Management and Budget (MMB). Before publishing the Notice of Intent to Adopt, we sent the Governor's Office Proposed Rule and SONAR Form; the proposed rules; and the SONAR to MMB for review. A copy of the correspondence to MMB is included as Attachment F.

DETERMINATION ABOUT RULES REQUIRING LOCAL IMPLEMENTATION AND EFFECTIVE DATE OF THE RULES

As required by *Minnesota Statutes*, section 14.128, subdivision 1, MDH has considered whether these proposed rules will require a local government to adopt or amend any ordinance or other regulation in order to comply with these changes to the Code. The Delegated Agencies, which are comprised of local units of government with delegated authority to enforce the Code, are required to adopt ordinances or regulations governing pools. They are required to have established local authority to license and inspect pools according to their delegation agreement contracts with MDH.

Some Delegated Agencies will have to adopt or amend an ordinance or other regulation to comply with the proposed revisions. Some Delegated Agencies have adopted the Code by reference in their local ordinances. Delegated Agencies that have not adopted the Code by reference may need to revise their ordinance(s) to match the revised rule to comply with requirements established by the delegation agreement contract.

Because of this requirement, the effective date of this rule revision will be the first business day six months after the "Notice of Adoption" is published in the *State Register*.

COST OF COMPLYING FOR SMALL BUSINESS OR CITY

There are no anticipated costs of compliance with the proposed revisions for small businesses or cities other than those identified in the cost estimations found in section (5) of the Regulatory Analysis above. These costs are specific to equalizer line entrapment prevention and cyanuric

acid use changes. In the case of equalizer line entrapment prevention, there is a range of compliance options from very low cost to low cost.

In the case of the cyanuric acid use changes, most pool licensees will realize a chemical cost savings within two years from discontinuing the use of stabilized chlorine. Specific details regarding these costs can be found in section (5) above. No other revisions proposed to the Code will result in cost increases to any of the affected parties identified above.

RULE-BY-RULE ANALYSIS

4717.0310 PLAN REVIEW FEES

The department is deleting this part because it is out of date and causes confusion for persons wanting to submit pool plans. The current and correct plan review fees are listed in *Minnesota Statutes*, section 144.1222, subdivision 1a.

4717.0650 POOL OPERATION AND MAINTENANCE; OPERATOR TRAINING

At subpart 5, item E, subitems (4) and (5), the department added two additional pool operator training courses to the acceptable courses list. These are online courses and provide a curriculum that is equivalent to the courses listed in the existing rule. They are industry-recognized operator training courses.

These courses address a need for more training opportunities in rural parts of the state, especially in the vast geographical expanse of northern Minnesota. Current in-person training opportunities in these parts of the state are very limited and there is a need for additional training options to increase education equity among all parts of Minnesota. Licensees in these areas will benefit greatly from reduced travel time and costs. Providing more opportunities for training for licensees will increase compliance with training requirements found in the Code.

Licensees and others are already taking these courses under authority of a statewide variance issued by the department. It is reasonable to eliminate the need for renewing variances and any confusion among regulators regarding the acceptability of the curriculum.

4717.1250 EMERGENCY TELEPHONE LOCATION

The department is repealing part 4717.1250 that required:

1. the provision of an emergency phone *at a pool with a lifeguard*,
2. the posting of the emergency phone number *if a phone is present*, and
3. the location of the nearest emergency phone if a phone is not located in the pool enclosure.

This first requirement is not practical or needed. The requirement only applies to pools that have lifeguards. This requirement was adopted when Minnesota only had landline telephones. This requirement is unnecessary and obsolete due to the advent of cellular telephones. The vast majority of pool users, licensees, bystanders, and lifeguards carry a cellular phone with them,

which is a much faster means of communication with emergency responders as compared to locating the nearest landline phone.

Those pools located in a geographic area not well served by cellular coverage may still provide a landline phone if needed. In addition, facilities that provide lifeguards typically have a telecommunication infrastructure that provides a means for contacting emergency services.

To the extent, a facility lacks this infrastructure; the rule deters it from hiring lifeguards by imposing on it the costs of installing an emergency phone line. Lifeguards are required by this Code to be trained in Cardiopulmonary Resuscitation (CPR) and first aid. Having a lifeguard trained in CPR and first aid is the primary prevention for injury or drownings. Emergency service response times are usually insufficient to revive a drowning victim.

When a phone is provided voluntarily at a pool, the pool licensee is required to provide the emergency telephone number on a sign. This requirement is a disincentive to voluntarily providing a phone because the licensee is obligated to provide the emergency telephone number signage.

The requirement to provide the location of the nearest emergency phone and the emergency number is impractical to abide by and to enforce. Many times, the nearest landline telephone is located blocks or even miles from the pool at a location such as a gas station or convenience store. The regulator often is unable to verify its existence or availability for use.

This change does not prohibit landline phones or posting of emergency number information. If a pool licensee wants to provide a landline for emergency use or post the emergency number for liability reduction, they are still able to do so. Some licensees will have cost savings because they will no longer need to maintain a telephone landline and pay a phone bill.

4717.1350 POOL FACILITY CAPACITY

MDH is repealing subpart 2, item C, and relabeling the existing item D as item C. The existing version of the item C requires a calculation for user capacity at a pool related to diving boards, diving platforms, and slides.

The existing requirement is obsolete. There is no sanitary or safety basis for this method of user capacity calculation as it relates to diving boards, diving platforms, or slides. Calculating the pool user capacity using the methods in items A and B is sufficient for safety and sanitation purposes. This capacity calculated is not significantly different from the calculation using the method in existing item C.

The removal of this requirement will simplify the user capacity calculation for pool licensees, designers, and regulators. Improving the understanding of user capacity calculations for licensees, designers, and regulators will likely improve regulation and compliance.

4717.1450 LIFEGUARD STATIONS AND LIFESAVING EQUIPMENT

MDH is repealing the requirement in subpart 5 that licensees keep a specific set of first aid equipment and spine boards at *pools with lifeguards*. This requirement applies to only to one small segment of the population of pools. The requirements are overly prescriptive requiring an arbitrary set of first aid equipment that has no specific public health justification.

It is unreasonable to require an exhaustive prescriptive list of first aid items that serve no public health purpose. The existing rule was written when first aid kits with a comprehensive inventory of supplies were not as readily available as they are today. Giving pools the flexibility to decide what first aid items are needed based on the risks applicable to their operation is reasonable. Licensees need to be able to use first aid kits as needed without fear of being cited for not having the required number of specific medical bandages or other items. Most pools that are currently not required to have a first aid kit still voluntarily keep a kit on hand. It is reasonable to assume pools will still voluntarily choose to keep and maintain a first aid kit for cuts, bumps, and bruises.

Lifeguards are trained in CPR and first aid but they are not emergency responders and may not be trained in the proper use of spine boards. Repealing this subpart will allow a licensee employing a lifeguard the discretion to determine if a spine board needs to be available or if he or she would prefer to rely on responding emergency services. Pools are required to have “no diving” signage in shallow areas to prevent neck injuries that would require a spine board.

Vandalism at pools is a legitimate concern for licensees. Waiting for first responders with properly maintained equipment may be a better option than using equipment damaged by vandalism or lack of maintenance. This repeal does not eliminate the need for lifeguards in certain situations, nor does it relax the training requirements for those lifeguards.

4717.1750 POOL WATER CONDITION

The department is moving language from subpart 3, item F, to a newly established subpart 11 and repealing subparts 9 and 10.

MDH’s revisions to subpart 3, item F, and the addition of subpart 11 are needed because cyanuric acid is not a disinfecting chemical and does not belong in a subpart that covers disinfecting chemicals. Providing a separate subpart specifically for cyanuric acid is reasonable because of the potential negative health and safety risks of its use at concentrations above 100ppm and the inappropriate use of the chemical in indoor pool settings.

Providing this separate subpart, which prohibits the use of cyanuric acid in new indoor pools, and phasing out its use for existing indoor pools over the period of two years, is a reasonable approach that will protect the health of pool users. This will also give licensees enough time to adjust their chemical disinfection delivery systems without creating a surprising financial burden for licensees. Industry-provided chemical supply costs outlined in the Regulatory Analysis section demonstrate that pool owners of an average size pool will actually *save* money on chemical supplies within two years of switching from a chlorine product containing cyanuric acid to a liquid sodium hypochlorite based disinfection system.

MDH is adding subpart 11, items A – D, regarding cyanuric acid. Because of the complexities related to pools treated using cyanuric acid, it is better to have the requirements specific to the use of cyanuric acid as a standalone subpart. These requirements get lost when they are lumped in with the requirements for disinfection residuals.

The new subpart 11 addresses the unnecessary and inappropriate use of cyanuric acid in *indoor pools*. It provides a phase-out period for pools currently using cyanuric acid-stabilized chlorine or bromine. It prohibits the use of cyanuric acid in newly constructed indoor pools.

Chlorine and bromine are the main disinfection chemicals used in pool water treatment. Cyanuric acid is not a disinfectant but is a chemical “stabilizer” that helps to keep chlorine and bromine in the pool water. In some pools, such as those found outdoors, chlorine and bromine may leave the pool quickly due to chemical breakdown from sunlight. Cyanuric acid can be helpful when used in outdoor pools to stabilize bromine and chlorine levels in the pools by preventing evaporation or breakdown.

Some licensees of indoor pools are incorrectly using a type of chlorine or bromine that is already “stabilized” with cyanuric acid. When this happens, air quality in the indoor pool area is negatively affected. This can cause breathing issues for pool users and licensees. In addition, pool water with levels of cyanuric acid greater than 100ppm may become cloudy, obscuring visibility of the main drain or pool bottom.

Indoor pools can have a rapid increase in cyanuric acid concentrations if the stabilized forms of chlorine or bromine are used. This results in unacceptable health and safety risks from the compromised air quality and cloudy water. Outdoor pools lose enough water throughout the operating season due to evaporation that cyanuric acid levels are typically diluted to a safe level with the addition of fresh water.

The repeal of subparts 9 and 10 is necessary because they are no longer a valid indicator of the quality of pool water. Bacteriological sampling is no longer conducted by any regulatory jurisdictions in Minnesota. The water chemistry testing requirements and disinfection residual levels outlined in other portions of this Code serve as an effective control of bacterial growth in pool water, making costly bacteriological sampling unnecessary. It is reasonable to delete requirements that do not provide any additional public health protections beyond what is already provided for in other parts of this Code.

4717.2570 RECIRCULATION EQUIPMENT

MDH is deleting a small section of subpart 4 requiring a flow meter to be capable of reading flows measuring at least 1 ½ times the design flow rate. This requirement provides no additional benefit to public health protection or the operation of the pool. It is unnecessarily restrictive in its description.

Removing this requirement does not affect pool user safety or health. It has created confusion among licensees and regulators regarding how to comply with this provision. So removing it is reasonable. Removing language that does not provide any meaningful pool user protections and that creates a burden for licensees and regulators to determine compliance is reasonable.

Pool water flow must still be measured by a flow meter to make accurate calculations for treatment and filtration of pool water. The existing Code already specifies that the flow meter must be accurate to within ten percent of the true flow and easy to read, which is sufficient for proper pool operation. The requirement that the flow meter be able to measure at least 1 ½ times the design flow provides no additional benefits, may be costly to comply with for certain licensees, and is very difficult to enforce for regulators.

4717.2595 SKIMMERS

MDH is replacing the requirements found in subpart 1, item G, with a requirement of a pipe that does not cause an entrapment risk. This is needed to provide a public health benefit and safety protections. The existing rule only protects recirculation equipment.

The new language is needed to ensure that when an equalizer line is installed at a pool, it is installed with a cover that prevents suction or entrapment similar to the requirements for main drains found under the ATPSA.

An equalizer line is a device installed below pool skimmers that takes in water from a pipe located at a level below the skimmer. These devices are designed to prevent air from entering the recirculation system and causing damage to the pump and other system components.

An unintended result of equalizer lines is that if the water drops and begins flowing through the drain line, a pool user could possibly become entrapped by suction to the side of the pool. To prevent pool-user entrapment, the Code needs precautions in place to prevent this dangerous suction. This addition establishes a requirement that equalizer lines must either be plugged or fitted with a suction fitting that is compliant with ASME/ANSI standards set forth by the ATPSA's federal counterpart, the VGBA.

An example of a situation that would result in a water level drop would be at a pool where the water is filled manually by a hose. There are pools around the state where this is the filling method. If the licensee is unavailable for an extended period such as on vacation or medical leave and unable to fill the pool, the water level could drop rapidly over a short period. If there is a leak in the circulation system caused by a cracked pipe or incomplete join and the water level drops below the skimmers, water would flow through the equalizer drain line creating a potential entrapment hazard. Unfortunately, this example scenario is a real possibility.

MDH deleted the existing subpart 1, item G, because the intent of this Code is to ensure the health and safety of the pool users and licensees, not to provide regulations for the sake of pool equipment preservation. By describing the requirements for equalizer systems for skimmers, the current Code is inadvertently encouraging the installation of them, which may actually increase the potential hazard of entrapment from suction.

MDH's changes are reasonable because the Code will no longer mandate that pool owners must install equalizer lines for the protection of their pool pumps. Leaving the responsibility for protection of the pool recirculation equipment up to the licensee of the pool and limiting this item to the protection of pool users through prevention of possible entrapment through controlling suction hazards is reasonable.

4717.3450 LIGHTING, VENTILATION, AND ELECTRICAL REQUIREMENTS

MDH is deleting items A and E of subpart 1 and re-lettering current items B through D accordingly.

MDH is deleting subpart 1, item A, because the existing language describes electricity supply standards that are now out of date and no longer relevant with the introduction of LED lighting technology. The previous requirement for 0.5 watts of electricity per square foot of pool water surface area was a standard based on incandescent lighting technologies. LED technology now

allows for a much lower power supply for lighting to reach the areas of the pool required by existing items B, C, and D.

Under the existing Code, larger pools with a large surface area require a large power supply to achieve the necessary lighting using incandescent lights. Using a larger power supply for lighting increases the risk of electrical shock to pool users and licensees if there is a wiring issue. LED lights are safer to use because of the lower electrical supply necessary to illuminate the pool.

MDH is also deleting subpart 1, item E. It does not require security lighting be provided, but establishes an illumination requirement if security lighting is provided. This incentivizes pool licensees to remove any security lighting so they do not have to comply with the requirement to illuminate the entire pool area.

Security lighting is a public safety issue for pools and not a health or hygiene-related requirement. It should be used at the discretion of the pool licensee. The remaining lighting requirements in this subpart are sufficient to ensure that pool users' health and safety are preserved by requiring that all areas of the pool be visible without glare, and requiring illumination of the pool surface and deck within five feet of the pool when it is in use.

These revisions are reasonable because the existing portion of this subpart allows pool licensees not to provide underwater lighting or security lighting. In such cases, the power supply and lighting intensities in items A and E are unenforceable. Additionally, the existing language is unrelated to health and hygiene of pools and can possibly lead to electrical hazards that create additional safety risks for pools. It is reasonable to allow licensees and owners to determine what supplemental lighting they want to provide in addition to the minimum required light levels that ensure pool user safety.

4717.3850 SPA POOLS

We deleted the reference to part 4717.1250 in part 4717.3850, subpart 10, because part 4727.1250 is being repealed.

4717.3970 POOL CLOSURE

MDH is refining a reference to part 4717.1750, subpart 3, in part 4717.3970, item C. We are making this change to state clearly what pool water chemistry conditions require the closure of a pool.

The existing rule requires a pool to be closed in the case of any violations of part 4717.1750, subpart 3. This can cause a problem because, for example, a large number of pools may have a combined chlorine level that is in excess of the requirements of part 4717.1750, subpart 3, item F. This condition is a result of the incoming city-supplied water. This excess of combined chlorine is not a public health risk.

Pool water must have a sufficient amount of free chlorine or bromine to actively disinfect the water and destroy potential pathogens. Other water chemistry issues, such as having a little too much free chlorine or combined chlorine, are simply quality issues that do not require the closure of a pool. The current version of item E of part 4717.3970 still allows regulatory jurisdictions to

use their professional discretion to immediately address any water chemistry, other pool safety, or health related issues by ordering the closure of the pool.

Revising part 4717.3970 to clarify for regulatory agencies and pool licensees when a pool must be closed is needed and reasonable. The current language results in some regulatory jurisdictions closing a pool for a high free or combined chlorine issue while other agencies will leave the pool open and leave orders for licensees to make chemistry adjustments as needed while staying open. This revision will allow licensees to better prioritize pool chemistry adjustments that need to be made so that the pool water is effectively treated for potential pathogens, which is the greatest public health risk for pool users.

LIST OF WITNESSES

MDH does not expect this uncontroversial rule revision to go to a hearing. If we were to have a hearing, we do not plan to call any outside person(s) to testify. MDH expects that Angie Cyr, Acting Section Manager, Food, Pools, and Lodging Services Section (FPLSS), MDH, Kim Carlton, Unit Supervisor, FPLSS and Steve Klemm, P.E., Public Health Engineer, FPLSS would testify for MDH. We do not expect call any witnesses from outside the department.

CONCLUSION

Based on the foregoing, the proposed rules are both needed and reasonable.

10/21/2020

Date



Jan K. Malcolm
Commissioner
Minnesota Department of Health

Attachment A

MDH Delegation Agreements

1. Aitkin County
2. Anoka County
3. City of Bloomington
4. City of Brooklyn Park
5. Brown, Nicollet, Counties
6. Cottonwood County
7. Watonwan County
8. Partnership4Health (Clay, Wilkin, Ottertail)
9. Countryside Public Health (Big Stone, Swift, Chippewa, Lac qui Parle, Yellow Medicine Counties)
10. City of Edina
11. Faribault-Martin Counties
12. Hennepin County
13. Horizon Public Health (Douglas and Pope Counties)
14. Kandiyohi-Renville Counties
15. Lake County
16. LeSueur-Waseca Counties
17. City of Maplewood
18. City of Minneapolis
19. City of Minnetonka
20. Morrison County
21. Todd County
22. Olmsted County
23. Ramsey County (not including the City of St. Paul)
24. City of Richfield
25. City of St. Cloud
26. Stearns County
27. Southwest Health and Human Services (Lincoln, Lyon, Murray, Pipestone, Redwood, Rock Counties)
28. Wadena County
29. Washington County
30. City of Wayzata

Attachment B

ESTIMATED COST of Installing Liquid Sodium Hypochlorite Disinfection Equipment

Item or Substance	Amount Needed	Cost Per	Cost Per Item or Substance	First year Annual Total Cost
One time installation of the equipment			\$520.00	
Annual chlorine needed using liquid sodium hypochlorite	273.75 gallons of liquid sodium hypochlorite	\$3.75/gallon	\$1,026.56	
Annual pH adjustment cost	0.05 gallons of muriatic acid/day for 365 days/year	\$5.25/gallon	\$95.81	
				\$1,642.37

- **First Year:** switching from cyanuric acid to liquid sodium hypochlorite will cost the average pool approximately *\$133.09 more* due to the one-time cost of equipment installation.
- **Approximately 16 months after the change:** switching from cyanuric acid to liquid sodium hypochlorite, the average pool will *break even on costs* due to reduced chemical supply costs.
- **Two years after switching:** the average pool will realize a cumulative *savings of \$253.83* due to the reduced chemical supply costs.
- **Each year thereafter:** the average pool will *save approximately \$386.91 per year* in reduced chemical supply costs.
- **The larger the pool:** the faster the return on investment will be realized due to the increased use of chemicals in bodies of water larger than 20,000 gallons.

These estimates are specific to operation of the pool itself and do not factor in the *potential healthcare savings for pool users* that will not be exposed to potentially carcinogenic levels of cyanuric acid or poor air quality as a result of disinfection byproducts that result from using cyanuric acid in an indoor pool setting.

Attachment C

Cost calculation for discontinuing the use of cyanuric acid in indoor pools

A small number of indoor pools currently operate an erosion disinfection system that uses stabilized chlorine tablets containing cyanuric acid also known as “trichlor.”

The average volume of these pools is estimated to be 20,000 gallons.

The *most cost-effective option* for a cyanuric acid disinfection system replacement is switching to a liquid sodium hypochlorite system. (*Other chemicals can be used in existing erosion style feeders without cyanuric acid, such as bromine, but this would cost a pool slightly more than cyanuric acid.*)

The pH of pool water must be adjusted up or down depending on the type of chemical used to maintain proper water chemistry.

Based on pool chemical company-provided calculations reviewed by MDH staff, the following numbers show of switching from an erosion type cyanuric acid disinfection system to a liquid sodium hypochlorite disinfection system for a 20,000-gallon pool.

CURRENT OPERATION COST: Erosion Type Cyanuric Acid Disinfection System

Substance Used	Amount Needed	Cost Per Pound	Cost Per Substance	Total Cost
Annual amount of chlorine needed	405.15 pounds of dry tablets	\$3.50/pound	\$1,418.03	
Annual pH adjustment costs for cyanuric acid using soda ash	0.25 pounds of soda ash/day X 365 days = 91.25 pounds	\$1.00/pound	\$91.25	
Annual cost of cyanuric acid disinfectant and pH adjustments				\$1,509.28

Attachment D

Official Rulemaking List

AGENCY NOTIFICATION LIST FOR RULEMAKING

BY MAIL:

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Attachment E Pool Code Advisory Member List

Name	Email	Representative
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Marnie Lietz, Sales Operations Analyst-Institutional	marnie.lietz@ecolab.com	Industry
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Attachment F



Office Memorandum

Date: 07/30/2020

To: Linda Prail
Policy and Rule Coordinator
Minnesota Department of Health

From: Josh Riesen
Executive Budget Officer
Minnesota Management & Budget

Subject: M.S. 14.131 Review of Proposed Amendments to Rules Relating Governing Public Pools, Minnesota Rules, Chapter 4717, Revisor's ID Number 4442

Background

The Minnesota Department of Health (MDH) is proposing amendments to rules related to pool construction, operations, and operator training in Minnesota Rules, Chapter 4717. Pursuant to Minnesota Statutes 14.131, the Department of Health has requested Minnesota Management & Budget to evaluate the proposed amendments for fiscal impact and benefits on units of local government.

Evaluation

On behalf of the Commissioner of Minnesota Management and Budget, I have reviewed the proposed changes and the draft of the SONAR to explore the potential fiscal impact these changes may have on local governments.

These proposed rule amendments update requirements for pool construction to eliminate outdated requirements, phase out the use of cyanuric acid, and increase conformity between federal law and state safety rules. Changes to eliminate requirements made obsolete by technology, like eliminating requirements for land line phones are not expected to have a cost. The phase out of cyanuric acid is

expected to have a cost on pool operators as they transition away from cyanuric acid. Rule amendments to conform with federal law requirements are not anticipated to have costs on local government.

Based upon this information and consultation with agency staff, I believe the rule amendments proposed will have costs to local units of government.

Sincerely,

A handwritten signature in black ink, appearing to be 'JR' with a long horizontal stroke extending to the right.

Josh Riesen
Executive Budget Officer

cc: Angela Vogt, Executive Budget Coordinator, Minnesota Management and Budget