CITY OF KANSAS CITY, MO.
HEALTH DEPARTMENT

Regulations for Swimming Pools & Bathing Facilities

Environmental Public Health Program
Environmental Health Services
2400 Troost Ave.
Kansas City, MO 64108

Public Health

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Forward

The purpose and intent of this document is to provide a uniform set of rules and regulations governing and controlling swimming and bathing facilities, which shall include special-purpose facilities, and technical requirements pertaining to such facilities. The Director of Health has the authority to make specific requirements for each permit holder, as the discretion is just and reasonable.

All existing pools/spas which are not in compliance with these regulations at the effective date of these regulations shall be exempt from compliance with those construction provisions which do not pertain directly to health and safety of the patrons. All pools/spas, when remodeled, shall comply with all applicable provisions of these regulations pertinent to the renovation, unless a variance is granted by the Regulatory Authority. Any variance shall be granted in writing for a specific time period.

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Definitions

Abbreviations (technical) include:

- **"DE"** means diatomaceous earth
- **"GPM"** means gallons per minute
- **"ppm"** means parts per million

Alteration/Renovation means replacement of any portion of the recirculation system including pool/spa plumbing or perimeter overflow/skimmer equipment, pumps, filters, or disinfection units, or modification of the physical structure of the pool or spa, or any change that would not conform to the original specifications. This does not include repair of small sections of pipes due to leaking, or maintenance activities such as painting, plastering or acid washing.

ANSI means the American National Standard Institute, Incorporated.

Anti-entrapment Drain or Cover means a drain with a raised cover or design which allows horizontal flow of water into the drain rather than a vertical flow. The purpose of the design is to prevent the dangerous suction effect on a body, limb, hair entanglement or physical object which may come in contact with the drain.

APSP means Association of Pool and Spa Professionals.

Automatic Controllers means integrated electrical/electronic equipment, connected to chemical feed equipment which continuously monitors and controls the pH level and chlorine/bromine residual of swimming pool water.

Backflow Preventer means a device used to protect a potable water supply from contamination or pollution.

Backwash means the process of thoroughly cleansing the filter media and/or elements, by reversing the flow of water through the filter.

Barrier means a wall, building, fence or any combination of these which control access to the pool area. This barrier shall be of such construction as to provide reasonable protection for the safety of the public.

Break Point Chlorination means the process of adding enough free chlorine to chemically oxidize and remove combined chlorine (chloramines) from pool or spa water, commonly referred to as shocking a pool. The additional free chlorine amount needed is typically calculated as follows: ten (10) times the combined chlorine (CC) amount minus the existing free chlorine (FC) residual. (10 x CC) – (FC) = amount of additional chlorine needed to shock the pool.

Cartridge Filter means a filter that utilizes a replaceable and disposable porous element as the filter medium.

CDC means Center for Disease Control and Prevention.

Chlorine Demand means the materials in the water which use up chlorine such as bacteria, algae, dirt, leaves and swimmer wastes. The chlorine demand must be satisfied before chlorine residual is available to disinfect the pool water.

Chlorine Residual means the chlorine level in the water after the chlorine demand has been satisfied. The free chlorine residual is the true measure of potential chlorine disinfection and is the active chlorine that kills bacteria and algae. The active form of chlorine in water is known as hypochlorous acid.

Combined Chlorine means the amount of chlorine that has reacted with the organic substances in the water, forming compounds known as chloramines.

Coping means the covering which joins the top of the pool wall with the decking and is considered part of the deck.

Critical Item means those aspects of operation or conditions of facilities or equipment, which if present, constitute the greatest hazards to health and safety, including imminent health hazards.

Cross Connection means any physical arrangement connecting:

- A potable water system, directly or indirectly, with anything other than another potable water system: or
- Pool water to any potable or non-potable water source capable of contaminating either the pool water, its components, or potable water source due to backflow.

Dead Spots means places in the pool/spa where filtered/disinfected water does not reach because of poor circulation.

Diatomaceous Earth (DE) means the type of filter medium that is obtained from the fossil remains of microscopic marine organisms and that is used in a thin coating over the filter septa.

Fill-and-Draw Pool or Spa means a pool or spa which is drained, cleaned and refilled after each individual use.

Filter means a device that separates solid particles from pool water by recirculating through a porous substance (filter media or cartridge element).

Filter Media means the fine material which entraps suspended particles from the water. These include sand, DE and sand/DE substitutes.

Filter Septa means that part of the filter element consisting of cloth, wire, screen or other porous material on which DE or similar media are deposited.

General Public means all people without restriction.

Hose Bibb means a water faucet with male screw threads for attaching a hose.

Hydrostatic Relief Valve means a device used to relieve ground water pressure imposed on the outer shell of the pool. These are usually installed in the main drain(s).

Imminent Health Hazard means any condition, deficiency, or practice which, if not corrected, is very likely to result in illness, injury or loss of life to any person**.**

Inlet means the fitting or opening through which filtered water enters the pool.

Lifeguard means an individual who has demonstrated competency in water safety and lifesaving, through a certification program approved by the Regulatory Authority

Main Drain means the outlet(s) at the bottom portion of the pool or spa. These outlets are suction outlets connected to the recirculation piping.

Minimum Flow Rate means the least flow of water measured in GPM through the water treatment system that must be maintained to provide adequate treatment. Minimum flow rate is calculated by dividing the volume of the pool, in gallons, by the required turnover time, in minutes.

NSF means the National Sanitation Foundation.

Overflow System means perimeter type overflow, surface skimmers and surface water collection systems of various design and manufacture.

Perimeter Overflow means a gutter or trough around the inside of the pool walls, with the overflow lip effecting a skimming action to clean the pool water surface.

Person means any individual, partnership, firm, corporation, agency, municipality, state or political subdivision, or the federal government and its agencies and departments.

pH means the measure of the degree of acid or alkaline qualities a solution possesses, as determined by its hydrogen ion content. A pH below 7.0 is considered acid; a pH of 7.0 is considered neutral; a pH above 7.0 is considered alkaline.

Pool Area means the water surface and deck area.

Pool Deck means the paved area around the pool including the coping.

Pool Operator means the person or persons responsible for the daily maintenance and operation of the pool or other related facility.

Pool/Spa Depth means the distance between the floor of the pool and the normal operating water level when the pool or spa is in use.

Precoat Pot means a hopper with a valved connection to the suction side of the recirculation pump of pressure DE filter systems that are used for coating the filter media prior to filtering water through the system.

Private Residential Pool means any individually owned swimming pool which is built in connection with a single-family residence, the use of which shall be confined to the family of the owner and his guests. This shall not include any type of cooperative housing or joint tenancy of two or more families, and shall be located within the same property boundary as the family dwelling building which it serves.

Rate-of-Flow Indicator means a device installed on the pool recirculation piping or backwash line to indicate recirculation flow of the pool or backwash flow in gallons per minute (GPM).

Readily Accessible means an item or device that is capable of being reached and utilized quickly for operation, safety or inspection purposes without requiring those to whom use is essential, to climb over or remove obstacles and search for intended item/device, or anything else that requires undue time to utilize.

Regulatory Authority means the City of Kansas City, Missouri Health Department, or where required, employees authorized by the Department.

Scuba Pool means a special purpose pool designed with the intent of training scuba divers.

Serious Injury means any injury requiring emergency service response where a person needs medical treatment as determined by the emergency response personnel; and/or resulting in a person seeking medical attention at a hospital emergency room or admission to a hospital.

Spray Ground means an artificially constructed area into which recirculated water is sprayed but is not allowed to pond, classified as a Class V Special Purpose Facility.

Stabilizer (Cyanuric Acid) means a chemical that helps prolong the useful life of chlorine in the water by slowing down chlorine loss due to sunlight.

Surface Skimmer means a device used to remove surface debris from the pool over a self-adjusting weir.

Surge Tank means a tank receiving the gravity flow water from the overflow gutter and main drain(s) from which the recirculation pump takes suction. This may also be referred to as a balance tank.

Swimming Pool includes the term in its ordinary sense and meaning, and also any and all wading pools, spray ground, private pools, semiprivate pools, club pools, public pools, spas or any other artificial bathing place where such could be reasonably so denominated, but not exclusive thereof, whether they are operated or managed on a profit or not-for-profit basis, or for public recreational purposes.
For the purposes of this regulation, public swimming pools have been categorized into the following classes:

- **Class I Public Pool -** Any pool intended for, or used by, the general public for recreational use, owned and operated by any person, firm, corporation, institution, association, club or any government entity.

- **Class II Semi-Public Pool -** Any pool not open to the general public, but open rather to a limited group, such as institutions, schools, child care facilities, resident subdivisions or similar developments, camps, day camps, recreational facilities, or pools of similar usage and type. Or any pool whose use is restricted to residents, members or registered guests, including but not limited to hotels, motels, apartments, trailer parks/mobile home parks, churches and condominiums.

- **Class III Wading Pool -** All baby pools or wading pools with a maximum depth of two (2) feet.

- **Class IV Spa**- Hot tubs, spas, or whirlpools. Any commercial whirlpool, hot tub, or spa designed for recreation, or relaxation use, in combination with hydrojet circulation, air induction systems, or other circulation systems using hot, cold, or ambient water temperature. These facilities have a maximum water depth of four (4) feet and are not used for swimming or diving.

- **Class V Special Purpose Facilities** - Any pool whose design and/or use is significantly different from a swimming pool. This includes, but is not limited to scuba pools, instructional pools, water slides, spray grounds.

Turbidity means a cloudy condition of the water due to the presence of extremely fine particulate materials in suspension that interfere with the passage of light.

Turnover means the period of time (usually in hours) required to circulate a volume of water equal to the pool capacity.

UL means Underwriters Laboratory.

Water Recreation Attraction means a swimming facility open to the general public with design and operational features that provides patron recreational activity which is different from that associated with a conventional swimming pool. Water recreation attractions include, but are not limited to, water amusement lagoons, water slides and wave pools.

Water Slide means a special purpose facility which consists of one or more flumes, a plunge pool, pump reservoir, filtration, disinfection and chemical treatment facilities.

Chapter 1: Plan Review and Compliance

A. Plans Required.

Before work is commenced on any new construction, or alteration of any existing pool, spa or water recreation attraction, complete and detailed plans and specifications shall be submitted to the City Planning and Development. Specific plan requirements are available upon request. Plans for all pools shall be prepared by a professional engineer. All work shall be performed in compliance with local, state and federal regulations.

B. Structural Design Not Reviewed.

The review of the plans and specifications does not include structural design or structural stability of any part of the pool construction.

C. Deviation from Plans.

No part of the work shall be undertaken until the Regulatory Authority has granted written approval of said plans. No deviations from the approved plans shall be made unless the proposed changes have been submitted to, and approved by, the City of Kansas City, Missouri Health Department.

D. Final Construction Inspection.

No newly constructed or renovated public pool or other related facility shall be placed into operation until a final inspection of the facility has been conducted and written authorization to operate is issued by the Regulatory Authority. Notification to the Regulatory Authority shall be made not less than ten (10) days prior to the need for a final construction inspection. In addition to the final inspection, a Regulatory Authority representative shall be notified at the start of construction and shall be notified to inspect the piping in place prior to covering. The final construction inspection shall be made by a Regulatory Authority representative(s) in the presence of the pool owner and/or pool builder or pool designer to ascertain that the pool was constructed in accordance with the approved plans.

1. Additional Regulation Compliance.

All pools, new and existing, and other related facilities shall comply with all appropriate local laws, rules and regulations. This includes, but is not limited to the following:

- **a.** Kansas City, Missouri Food Code
- **b.** National Electric Code
- **c.** Kansas City, Missouri Sewers and Sewage Disposal Code
- **d.** Uniform Plumbing Code
- **e.** International Mechanical Code
- **f.** International Fuel Gas Code
- **g.** International Building Code

In addition to any Federal Regulations pertaining to Pools and Spas such as:

a. Virginia Graeme Baker Pool And Spa Safety Act (VGBA—Enforced by Consumer Product Safety Commission)
b. Americans With Disabilities Act (ADA—Enforced By Department of Justice)

E. Instructions for Operation.

Upon completion of the pool or other related facility, the builder shall provide the owner and/or his operator(s) with complete written and oral instructions on the operation of the pool and all equipment, on the chemistry of pool water, and on specific details concerning the maintenance of the equipment. The builder shall supply complete manufacturer's information on each of the component parts of the recirculation, filtration, and disinfection systems.

F. New or Alternative Product Submission and Approval

The manufacturer or other sponsor proposing alternative equipment, products, or materials for use in pools/spas shall make a written request to the Regulatory Authority for acceptance of equipment, products or materials by the Regulatory Authority. Technical information as required by the Regulatory Authority to complete its review shall be submitted. Such information is typically as follows:

1. Equipment and Material Items.

Technical documents, including approval or acceptance by other states, NSF approval information describing the proposed product and including catalog cut sheets, drawings, specifications, and promotional literature shall be submitted.

2. Chemical Products.

Technical documents including information on chemical formulation, toxicity and efficacy studies and date, EPA registration manufacturer's proposed use and directions for and promotional literature shall be submitted.

Chapter 2: Pool and Spa Construction Details

A. Location.

An outdoor pool location shall be evaluated during the design phase to reduce exposure to excessive pollution by dust, smoke, leaves or other potential sources of contamination. The pool/spa shall be located so that drainage from the surrounding area will not wash contamination into the pool/spa during rains. Gutters from buildings adjacent to the pool/spa area shall not discharge onto the pool deck.

B. Material.

1. General.

Pools, spas, and related facilities shall be constructed of concrete or other approved material, with a white or light colored finish. Materials shall be inert, non-toxic to man, impervious, permanent, and enduring. Materials must withstand the design stresses with an adequate factor of safety. Materials must provide a water-tight tank with a smooth and easy to clean surface or to which a smooth, easy to clean finish can be applied.

2. Approved Pool Materials.

Approved pool materials include, but are not limited to the following: concrete, stainless steel or fiberglass walls with concrete bottom. Concrete may be required behind the walls of fiberglass wall pools if the bracing system is determined to be inadequate for support. Vinyl on sand, earth, or material other than concrete shall not be permitted in pool, spas, or water recreational attractions.

3. Approved Spa Materials.

Approved spa materials include any of the approved pool materials or one- piece fiberglass or acrylic prefabricated units. Other materials will be evaluated on a case-by-case basis.

C. Shape, Design, and Slopes.

1. Swimming Pools.

Pools shall be designed and constructed of such shape and contour so that efficient and safe control of the pool and bathers can be accomplished.

2. Competition Pools.

These shall meet the design standards of the appropriate accreditation association and/or these rules and regulations as determined by the Regulatory Authority.

3. **Wading Pools, Spray Grounds and Spas.**

The bottom shall slope not less than three (3) inches in ten (10) feet toward the drains, nor more than six (6) inches in ten (10) feet toward the drain(s). No obstructions such as excessively raised drains, steps or concrete appurtenances on which persons may fall or become injured shall be placed in the wading pool or spray ground area. This does not preclude the installation of water features such as water spray devices. Design features shall be reviewed during preliminary review with the Regulatory Authority.

4. **Water Slides.**

The minimum plunge pool operating water depth at the slide flume terminus shall be three (3) feet. This depth shall be maintained for a minimum distance of ten (10) feet in front the slide terminus from which point the plunge pool may have a constant upward slope to allow a minimum water depth of two (2) feet at the base of the steps. The floor slope shall not exceed one (1) foot in ten (10) feet. The slide flume shall terminate at or six (6) inches below normal water operating level. The slide flume shall be perpendicular to the plunge pool wall for a minimum length of ten (10) feet at the exit end of the flume(s). The minimum distance between any plunge poolside wall and the outer edge of any slide flume terminus shall be four (4) feet. All sections of the flume shall be properly formed and sealed together so as to prevent possible abrasions or injuries.

5. **Water Recreation Attractions, Special Purpose Pools.**

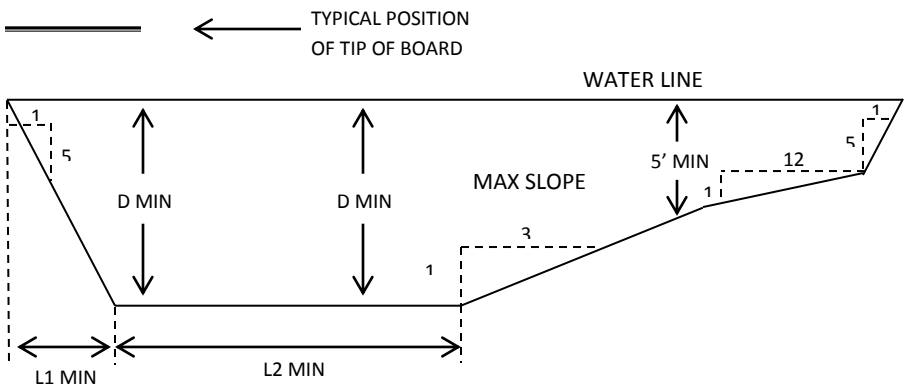
Special consultation with the Regulatory Authority is necessary in order that consideration can be given to concepts of design variations and to areas where potential problems may exist. Therefore, prior to preparation and submission of engineering plans and specifications, the design engineer shall consult with the Regulatory Authority to ensure the Regulatory Authority has a complete understanding and agrees to the design concepts of the project. Preliminary design plans shall be submitted for review.

6. **Diving Area.**

The area of a swimming pool where diving is permitted shall be at one end of the pool, or may be in a recessed area forming one of the legs of a T, L or Z shaped pool, and shall be separated from the main swimming area by a lifeline or as a wholly separate structure. Supports, platforms and steps for diving boards shall be of substantial construction and of sufficient structural strength to safely carry the maximum anticipated loads.

Placement of boards shall observe the following minimum dimensions:

Max Board Height Over Water	Max Board Length	Minimum Dimensions*			
		D	L1	L2	Pool Width
26" (2/3 M)	10'	8'6"	2'	10'	20'
30" (3/4 M)	12'	9'	3'	10'	20'
1 M	16'	10'	4'	12'	20'
3 M	16'	12'	6'	12'	24'



*With multiple board installations, minimum pool widths must be increased accordingly:

- 1 meter or less board height over water: board to pool side shall be at least 10'
- 3 meter or less board height over water: board to pool side shall be at least 12'
- Minimum distance between adjacent boards shall be at least 10'

D. Walk Areas (Pool Deck).

1. General.

Walk areas shall extend entirely around the perimeter of the pool. Walks shall be constructed of concrete or other approved material and kept in good repair. The walks shall be adequately drained by sloping at least one-fourth inch per foot away from the pool. New products used on or as pool decks shall be reviewed by the Regulatory Authority prior to installation.

2. Deck Drains.

Deck drains must be installed where necessary to prevent standing water on the deck. All deck drainage must be to waste and not be filtered or returned to the pool. The deck drain grates shall be removable to facilitate the cleaning of the drains.

3. Use of Carpet.

The use of carpet on indoor or outdoor pool/spa facilities is prohibited.

4. Ventilation.

All indoor pool/spa enclosures must be properly ventilated to prevent the accumulation of moisture. Ventilation shall meet the requirements of the current Kansas City, Missouri Mechanical Code.

5. Minimum Deck Widths.

Poolside tables and chairs or other equipment should not obstruct the deck areas. The minimum widths for each type of pool are listed.

Pool Type	Walk Area Requirement
Outdoor pool	8 feet
Indoor pool	4 feet
Pool w/ diving board-water surface 3000sqft or less	4 feet behind board
Pool w/ diving board-water surface >3000sqft	8 feet behind board
Wading pool	4 feet
Water slide	4 feet, except at exit side where the walk shall be a minimum of 10 feet
Spa	4 feet around 50% of the spa
Water recreation attractions	As determined by the Regulatory Authority
Special purpose pools	As determined by the Regulatory Authority

E. Lighting.

1. Area Lighting.

Adequate lighting shall be provided to effectively illuminate all areas of the pool and pool enclosure; when the pool is not in operation, security lighting is recommended. The arrangement and design of the area lighting shall be such that personnel may clearly observe every part of the pool, diving boards, and other walk areas. Lights shall be so installed as to create no hazards to bathers.

2. Underwater lights.

Where underwater lights are used, a Ground Fault Circuit Interrupter (GFCI) circuit breaker shall be installed for safety.

F. Hose Connections.

Sufficient hose connections of adequate size and water pressure and equipped with vacuum breakers shall be provided for cleaning all of the pool area.

G. Steps, Benches, Ladders, and Diving Boards/Platforms.

1. Steps, Benches, and Ladders.

Steps, benches and ladders shall be of an impervious material and of such design that they can be easily cleaned. They shall be designed and constructed that no water is left on them when the water level in the pool is lower than the steps. The steps must have a non-skid surface. Permanent black or dark colored edge contrasting stripes or tiles must mark the steps. Handrails shall be provided for all steps. When figure 4 type handrails are used for spa steps, they may be mounted to the deck. The ladders must be readily removable. All pool benches or other underwater design features must be clearly marked on the vertical and horizontal faces and edges.

2. **Diving Boards/Platforms.**

   Diving boards, towers and platforms shall have a non-skid finish. Steps shall be of corrosion-resistant material, easily cleanable and of non-skid design. Handrails shall be provided at all steps and ladders leading to diving boards. One-meter diving boards or platforms shall have guardrails at least 30 inches above the diving board or platform and extend to the pool water's edge line. All diving boards or platforms higher than 1 meter shall have guardrails, which are at least 36 inches above the diving board or platforms and extend to the pool water's edge line. Three-meter diving boards or platforms shall provide an effective side rail barrier. There shall be a minimum of 16' of unobstructed head room above the level of the diving board.

3. **Means of Egress**.

   Swimming pools shall have at least two means of egress, located on opposite ends. Pools 30 feet or more wide shall have at least four means of egress which shall be located at each end on opposite sides. A means of egress shall consist of a ladder, step-holes and grab rails, built-in steps, or zero-entry. Pools with diving boards or wells shall have two ladders placed in the diving end.

H. Sand Beaches or Landscape Area in Pool Enclosures.

1. **Limited Access.**

   Sand beaches, gravel and landscape areas shall not be located inside of the pool enclosure unless an approved barrier to prevent access on the part of the bathers is provided or satisfactory facilities shall be provided for the proper cleansing of bathers before they again enter the bathing areas. This may include the installation of foot showers.

2. **Preliminary Design Review.**

   Design of these facilities shall be submitted in the preliminary stages for consultation with the Regulatory Authority in order that consideration can be given to areas where potential maintenance or safety problems may exist.

I. Foot Baths.

The use of foot baths is prohibited. This does not preclude the use of foot showers, provided the area is well drained away from the pool.

Chapter 3: Water

A. Water Supply.

1. General.

The water supply for all pools, bather preparation facilities, water recreation attractions and drinking water facilities included as adjuncts to the pool shall be potable water that meets Kansas City, Missouri Water Code and United States Public Health Service Drinking Water Standards (latest edition).

2. Drinking Fountains.

All drinking water shall be dispensed from angle jet fountains equipped with a protective mouth guard or from a single-service container. A suitable protective container must be provided for dispensing the cups.

3. Cross-connections.

No piping arrangements shall exist which**,** under any conditions, will permit sewage or wastewater to enter the recirculation system or will permit water from the recirculation system or pool to enter the make-up water supply.

B. Pool Water Quality.

1. Clarity of Water (Excessive Turbidity).

The water must be sufficiently clear to plainly view the main drain(s) or bottom of pool from the deck of the pool at all times when the pool is open. The viewer must be able to clearly distinguish the type, shape and number of gratings of the main drains when standing at the edge of the pool deck nearest that main drain.

2. Cleanliness of Water.

Floating debris shall not be allowed to accumulate in the pool. Water levels in pools shall be maintained and operated to remove such material continuously. The bottom and sides of the pool shall be cleaned as often as necessary to maintain a condition of cleanliness. The sides and bottom of pools, decks and other surfaces shall be kept free of slime and algae to maintain cleanliness of water.

3. Pool/Spa Water Chemistry.

The water in all pools/spas shall meet the mandatory chemical parameters indicated in Appendix A for free and combined chlorine or bromine, pH, total alkalinity and, where stabilizer (cyanuric acid) is used.

4. **Pool Water Temperature.**
   Pool water temperatures shall be maintained at a minimum of 70°F/21°C, for proper balance of disinfectant residual and comfort of bathers. The temperature for an outdoor pool shall not exceed 95°F/35°C and 85°F/29°F for an indoor pool.

5. **Spa Water Temperature.**
   Spa water temperatures shall never exceed 104°F/40°C, as immersion in hot water above that temperature may cause hyperthermia. All gas-fired heaters for pools or spas shall be American Gas Association (AGA) design Certified and be certified as meeting the most current ANSI standard.

6. **Bacteriological Water Quality.**
   The Regulatory Authority shall take samples for bacterial analysis for each pool whenever suspected water borne illness is reported. The presence of any harmful bacteria will indicate unsatisfactory water quality and the pool or other related facility shall be closed until a satisfactory water sample can be obtained. Other samples may be collected based on recommendations of the CDC.

7. **Testing and Sampling of Pool Water.**
   Chemical water quality testing shall be conducted by the pool operator at a minimum of twice daily at such intervals as determined appropriate by the Regulatory Authority. Water chemistry tests will also be made by an authorized employee of the Regulatory Authority at the time of inspection. This does not preclude a facility from utilizing testing facilities provided by a pool service company.

   a. **Test Equipment.**
      All pools/spas shall have a functional and accurate test kit or equipment for measuring free and combined chlorine or bromine concentration, pH, total alkalinity and cyanuric acid (if stabilizer is used in pool/spa water). Other test kits may be required when deemed necessary by the Regulatory Authority. The use of orthotolodine (OTO) tests for chlorine is prohibited. N,N-diethyl-p-phenylenediamine (DPD) test kits shall be provided and capable of measuring the minimum and maximum allowable ranges for chemical operational parameters.

C. **Make-up Water Facilities.**
   All water shall enter the pool through one of the following:

1. An over-the-rim fill spout with an air gap 2 ½ times the pipe diameter above the pool coping level. The fill spout shall be rigid and properly located or shielded so as not to create a safety hazard. The open end should have no sharp edges and should not extend more than two inches beyond the edge of the pool. The fill spout can be designed to be detachable and the plumbing plugged to prevent a trip hazard.

2. An automatic water fill control with a manual override may be provided to maintain the water level in the pool/spa at the proper level. The water supply must be protected at all times from backflow. An approved backflow preventer installation consists of a reduced pressure zone (RPZ) backflow preventer which has been accepted by the Regulatory Authority and which is installed where it is readily accessible for inspection and maintenance. The RPZ must be protected from freezing temperature wherever installed. This includes under buildings, inside buildings, or in an insulated box manufactured for maintenance purposes for the RPZ. Ample room is required for testing and/or maintenance. If installed out in the open, it shall be the responsibility of the plumbing contractor and/or the owner as the case may be, to provide proper freeze protection.

3. A hose bibb equipped with vacuum breaker. If make-up water is added to the surge tank through the pool/spa recirculation piping or through a dedicated fill line which allows water to enter at the pool water level, then the installation must comply with the above requirements for backflow prevention.

D. Sewage.

The sewer system for all pools/spas shall comply with the following:

1. **Capacity.**
   The sewer system shall have sufficient capacity to serve the facility, including bathhouse, locker rooms, toilets, and related accommodations.

2. **Connection.**
   There shall be no direct physical connection between the sewer system and any drain from the pool/spa or circulation system. Any pool/spa deck drain, backwash or overflow from the circulation system, when discharged to the sewer system, or other approved natural drainage course, shall be discharged through a suitable air gap so as to preclude the possibility of backflow of sewage or waste water into the pool/spa or piping system.

3. **Individual Sewage Disposal Systems.**
   The sanitary sewer servicing the pool and auxiliary facilities shall discharge to a public sewer system wherever possible and in accordance with applicable requirements. Where no such sewer is available, the connection shall be made to a suitable waste water treatment system which has been designed and constructed and is operated and maintained in accordance with all the current Kansas City, Missouri Sewers and Sewage Disposal Code. An on-site sewage disposal system permit shall be approved before pool construction can begin. Filter backwash and pool drainage shall not be discharged into an onsite sewage disposal system.

Chapter 4: Recirculation Systems and Equipment

A. General.

All pools, spas, or other related facilities shall be equipped with a circulation system consisting of at least a pump or pumps, hair and lint strainer(s), piping, a filter or filters, water treatment and disinfecting equipment and other accessory equipment. All system components shall meet the latest requirements of Standard 50 of the National Sanitation Foundation and shall bear their seal of approval. Pumps larger than those reviewed by NSF or UL testing standards shall be considered on a case-by- case basis.

B. Turnover.

The capacity of the circulation system, when operating at the maximum allowable head loss on the filters, shall be sufficient to recirculate and disinfect the entire volume of the pool, spa, or other facility water as follows:

Swimming/Competition Pool	6 hours
Wading Pool	2 hours
Spray Ground	2 hours
Spa	30 minutes
Special Purpose Pool	Case-by-case determined by RA

C. Separation.

As of the date these regulations are adopted, any new or renovated wading pool or spa water shall not be interconnected with any other pool and all wading pools/spas shall have a separate recirculating system consisting of a filter, pump, piping and disinfection equipment.

D. Jet Systems.

The return lines of spa jets shall be independent of the recirculation-filtration and heating system.

E. Pumping Equipment.

1. Capacity.

A pump or pumps shall be provided with adequate capacity for the required turnover rate of swimming pool/spa water as specified in Chapter 4, Section B, and whenever possible shall be so located as to eliminate the need for priming. If the pump or suction piping is located above the overflow level of the pool/spa, the pump shall be self-priming.

The pump shall be capable of providing a flow adequate for backwashing filters. Under normal conditions, the pump or pumps shall supply the required circulation rate of flow to obtain the turnover rate required, at a total dynamic head of at least:

a. 45 feet for all vacuum filters

b. 40 feet for pressure type sand filters

c. 50 feet for pressure type DE or cartridge filters

d. 40 feet total head for vacuum type DE filters with 20 inches of vacuum on the suction side.

Note: When the recirculation equipment is installed below pool level, these head rates may be increased.

F. Pump Strainer.

The circulation system shall include a strainer installed on the suction side of the pump to prevent hair, lint, and other debris from reaching the pump. Strainers shall be corrosion resistant with openings not more than ¼ inch in size, and shall provide a free flow area at least four times the cross-section area of the pump station line and be readily accessible for cleaning. A spare strainer basket should be provided.

G. Piping System.

Piping shall be constructed of non-toxic material, shall be able to withstand the maximum internal and external operating temperatures and shall be designed to minimize friction loss. All plastic pipe used shall be NSF approved and shall be schedule 40 or greater. All valves and piping shall be appropriately labeled and identified as to their purpose. Pool piping shall be supported to preclude possible settlement, which would provide either dirt traps or air pockets. The flow velocity in the pressure piping shall not exceed ten (10) feet per second. The flow velocity in suction piping shall not exceed six (6) feet per second. Design calculations shall be required for projects greater than 3000 square feet of water surface.

H. Clean-outs.

Clean-outs should be provided at such points in the recirculation system so as to allow obstructions and/or accumulations to be readily removed.

I. Main Drains.

1. General.

All facilities shall be provided with a main outlet at the deepest point to permit the facility to be completely and easily drained. Openings must be covered by proper grating. If no main drain is present, a sufficient number of inlets and skimmers must be present in order to achieve the appropriate turnover rate and chemical balance, and to eliminate dead spots in the pool.

2. Main Drain Flow Rate.

The main drain(s) shall be designed for a flow rate based on a minimum 30% of the total flow in GPM, not to exceed the maximum allowable filtration rate and shall not exceed the drain cover flow rating.

3. Hydrostatic Relief Valves.

Each main drain shall be equipped with a hydrostatic relief valve except for spas/pools installed above ground level or if the spa/pool contains sidewall main drains. A sump pump or other

approved method of removing ground water from under the pool shell shall be required on any below grade spa/pool that has sidewall main drains.

4. **Spa Suction Fittings.**
   On a spa, the main drain outlets shall be designed with dual suction fittings which have equal pipe diameter sizes. The system shall be designed so that neither of the main drain outlets can be cut out of the suction line by a valve or other means. The jet system for spas shall be equipped with two suction fittings of approved anti-entrapment design.

5. **Safety.**
   The combined areas of the openings of the grating shall be at least 4 times the area of the main outlet pipe and have sufficient area so that the maximum velocity of the water passing through the grate does not exceed 1 ½ ft. per second at maximum flow. The maximum width of grate openings shall be ¼ inch. Pools with a single main drain not meeting the above design shall have an anti-entrapment type cover. Dual main drains shall be required on all new construction or renovation of pool main drain plumbing, unless plans have been approved that eliminate the need for a main drain. The dual main drains must have a minimum of three foot distance from center to center from each other. All pool/spa outlet main drain grates, anti-entrapment covers and inlet fittings shall have tamper-proof screws that cannot be removed except with tools.

J. Inlets.

1. **General.**
   Pool inlets shall be submerged and be located not less than six (6) inches or more than eighteen (18) inches below normal operating water level. Pool inlets shall be installed on a maximum of fifteen feet centers to produce a circulation of water throughout the pool without the existence of dead spots and to carry pool-bottom deposits to the outlets. Provisions shall be made for adjusting the volume of flow through each inlet.

2. **Directional Inlets.**
   Wall inlets shall be capable of adjusting the direction of flow and of producing sufficient velocity to impart a substantial circulatory movement to the pool water.

3. **Recessed Stair Inlets.**
   At least one inlet shall be located in **each** recessed stairwell or other space where water circulation might be impaired.

4. **Floor Inlets.**
   If inlets are to be placed on the bottom of the pool, the number of inlets shall be determined by dividing the perimeter of the pool (measured in feet), by 15. Any fraction thereof would require 1 additional inlet. Floor inlets shall be designed so as to not create a hazard.

5. **Special requirements.**
   Inlet requirements for special designs such as zero depth entry pools shall be evaluated on a case-by-case basis.

6. **Wading Pools and Spas.**
   Inlet requirements for wading pools and spas designed for six (6) or fewer bathers shall be one for every 50 square feet of water surface. Any additional fraction thereof would require one (1) additional inlet.

K. Rate-of-Flow Indicators

All pools and other related facilities shall be provided with an operational rate-of-flow indicator that reads in gallons per minute (GPM). All rate-of-flow indicators shall be installed so as to meet manufacturers' installation requirements, such as upstream and downstream straight pipe lengths. Where the rate-of-flow indicator is installed between the pump and the filter, periodic cleaning shall be performed to ensure accurate readings.

L. Winterizing.

All equipment shall be properly winterized, if and when the pool/spa is closed for operation at the end of the season. When the pool/spa is closed, all gates shall be locked.

Chapter 5: Overflow Systems

A. General.

1. Overflow System Required.

All pools/spas shall be provided with a surface overflow system which shall be an integral part of the circulation system and which shall consist of built-in-place gutters, prefabricated gutters, and/or recessed automatic surface skimmers.

2. Combination Gutter/Skimmer System.

Nothing in this section shall preclude use of a surface overflow system which combines both a gutter and a recessed automatic surface skimmer. All pools with a water surface greater than 3,000 square feet shall be equipped with gutters or a combination of gutters and skimmers.

B. Perimeter Overflow (Gutters).

Whenever a built-in-place perimeter overflow system or a prefabricated perimeter overflow system is provided, it shall be designed and installed according to the following:

1. Capacity.

The system shall be capable of handling 100 percent of the circulation flow (based upon the required turnover rate) without the overflow troughs being flooded for any substantial period of time.

2. Surge Capacity.

A surge capacity shall be provided either in the system and/or by use of a surge tank. The total surge capacity shall be at least equal to one gallon/square foot of swimming pool water surface area.

3. Water Level.

The water level of the swimming pool/spa shall be maintained at or slightly higher than the level of the overflow rim of the perimeter overflows, except for the time needed to transfer all of the water which may be in surge capacity back into the swimming pool after a period of use, provided that this transfer time shall not be greater than 20 minutes.

4. Overflow Gutters.

Gutters shall extend entirely around the perimeter of the pool and have the necessary slope to prevent accumulations of debris, dirt, etc., be of ample size to carry off normal amounts of water introduced into them, and be easily accessible for cleaning. Drainage outlets shall be provided at least every 15 feet and shall be covered by removable grating.

5. **Overflow Rim**.
   When installed, the tolerance of the overflow rim shall not exceed ¼ inch as measured between the highest point and the lowest point of the overflow rim.

6. **Automatic Skimming.**
   During non-use, the overflow system shall be capable of providing continuous and automatic skimming action to the water at the surface of pool.

7. **Overflow Troughs.**
   The overflow troughs shall be installed completely around the perimeter of the swimming pool, except at steps, recessed ladders and stairs.

   a. **Hand Hold.**
      The exposed surfaces of the overflow trough shall be capable of providing a firm and safe handhold.

   b. **Easily Cleaned.**
      The overflow trough shall be capable of being cleaned easily and shall be of such configuration as to minimize accidental injury and provide for adequate water depth marking.

C. Recessed Automatic Surface Skimmers.

1. **NSF Conformance Required.**
   When recessed automatic surface skimmer is installed, it shall be designed and constructed in accordance with the current NSF standards pertaining to recessed automatic surface skimmers.

2. **Skimmer Design and Material.**
   The recessed skimmer shall be of a grade designed for commercial pools; be of substantial, durable, reasonably corrosion resistant material; and be equipped with an automatic skimmer weir with removable strainer basket and flat lid which is flush with deck and securely attached at all times.

3. **Skimmer Flow Rate.**
   The skimmer shall be designed for a flow rate based on manufacturer's specifications.

4. **Skimmer Flow Adjustment Valve.**
   All skimmers shall have an integral trimmer valve.

5. Skimmer Minimum Required.

	Quantity	Minimum Number
Swimming Pool	1 per 500 sq. ft.	4*
Wading Pool	1 per 500 sq. ft.	1
Water Slide	1 per 500 sq. ft.	2 Skimmers-Plunge Pool; 1 Skimmer-Pump Reservoir
Therapy Pool/Swim Spa/Spa	1 per 500 sq. ft.	1

Note: Minimum number of skimmers may be reduced as determined by the Regulatory Authority.

6. Skimmer Location.

On outdoor pools/spas the recessed automatic surface skimmer(s) shall be so located as to take into consideration the direction of prevailing winds.

7. Skimmer Recessed.

A recessed automatic skimmer shall not protrude into the pool.

8. Skimmer Weir.

The weir in the skimmer shall adjust automatically and operate freely to variations in water level over a minimum range flow of four inches. The floating basket design is approved in lieu of weirs.

9. Equalizer.

All skimmers must be equipped with an equalizer valve or float valve to prevent air being drawn into the filter when the water level drops below the skimmer inlet.

Chapter 6: Filtration Systems and Equipment

A. General.

1. Filter Required.

All pools/spas shall be equipped with a filtration system for the purpose of clarifying the water. The filtration system shall be an integral part of the circulation system and shall consist of sand-type filters, DE type filters, or cartridge filters.

2. Design.

All filter units shall be designed and constructed in accordance with applicable NSF/ANSI standards pertaining to swimming pool/spa filters. The filter system shall be designed and installed with all the necessary valves and piping which may be needed to isolate, backwash or drain an individual filter unit for maintenance and/or repair.

3. System Capacity.

The filtration system shall have the capacity to meet the flow rate required for the prescribed number of turnovers without exceeding the maximum allowable filtration rate.

4. Rate of Flow Control.

All filter installations shall be equipped with a rate of flow control valve (ball, gate and other control valve types) on the discharge side of the pump.

5. Accessibility.

All filters shall be designed and installed so as to provide easy accessibility for cleaning, operating, maintaining and servicing.

6. Gauges.

Filters shall be equipped with an approved pressure gauge or gauges. Vacuum filters shall be equipped with a vacuum gauge(s).

7. Drainage.

All filters shall be designed and installed with all the valves and piping needed to drain the filters completely for servicing or winterizing.

8. Bypass.

Provisions shall be made to bypass the filter and empty the pool water to waste.

9. Air Relief.

All pressure filters shall be designed and installed with an air relief valve or valves which shall be located at or near the high point of the filters and be capable of being operated manually. Automatic air-relief valves on top of the filters with manual air-relief capabilities are acceptable.

10. Filter Backwash.

Backwash from the filter(s) shall be piped to a sanitary sewer. In all cases of filter backwash discharge, an air-gap shall be provided with a minimum of six (6) inches between the discharge pipe and top of the sump or sewer piping. Both the sump and the exit pipe shall be sized to accommodate the backwash flow.

B. Sand Filters.

1. General.

When a sand-type filter(s) is installed, it may be either gravity or a pressure, or a vacuum, sand-type filter. Options shall include:

a. Rapid-rate sand-type filter, which shall be designed for filtration rates not in excess of 3GPM/square foot of sand bed area, or

b. High rate sand-type filter, which shall be designed: with filtration rates not in excess of 15 GPM/square feet of sand bed area pools using a 6 hour turnover rate. (Chapter 4, Section B)

2. Single Filter Flow Control.

If a single filter unit is provided on pools designed and constructed prior to the adoption of these regulations, the pump shall be sized at 15 GPM/square foot of filter area to provide the necessary backwash flows. A valve to control flow shall be provided to limit the normal filtration rate to 7.5 gallons per minute per square foot of filter area. Flow control valves shall be required on existing facilities utilizing single sand filters on a 7.5 GPM/sq. ft. rate. Any filter renovation of pools prior to the adoption of these regulations will require preliminary review to determine existing piping size and design considerations.

3. Multiple Filters.

If two or more filters are used to achieve the required filter area, they must be of the same size.

4. Inspection Port.

Internal components of the filter shall be accessible through an inspection port as required by NSF.

5. Backwash.

When a sand-type filter is installed, it shall be designed and installed such that it may be backwashed at a rate of no less than 15 GPM/square foot of filter bed area.

6. Filter Media.

Sand filter media shall comply with the filter manufacturer's specifications.

7. **Freeboard.**
   A freeboard between the top of the filter media and the lowest draw off point of the upper distribution system shall be provided and be of sufficient height so no media is lost during backwash.

C. Diatomaceous Earth Filters.

1. **Filter Type.**
   When a DE type filter is installed, it may be either a pressure or a vacuum type and it may be designed to operate either with or without continuous slurry feed. A DE filter with a continuous slurry feed shall be used for filtration rates not in excess of 2.5 GPM/ square foot filter area. A DE filter which operates without continuous slurry feed shall be used for filtration rates not in excess of 2 GPM/square foot of filter area.

2. **Cleaning.**
   When a DE filter is installed, it shall be designed and installed with provisions for cleaning by one or more of the following methods:

   a. Backwashing
   b. Spray Wash (either mechanical or manual)
   c. Soaking
   d. Agitation

   The water used in cleaning a DE filter shall be discharged to waste or other approved means.

3. **Precoat.**
   Precoating of the septa shall be in accordance with manufacturer's recommendations to ensure adequate coating of DE prior to filtering water through the system. A precoat pot may be installed on the suction side of the pump to ensure adequate coating of the filter septa. No additional precoat equipment is needed on vacuum systems since the DE can be placed directly in the filter tank.

4. **Filter Piping.**
   The system piping shall be such that during precoat procedures the filtered effluent shall be refiltered or wasted without passing into the pool until the effluent is clear of suspended matter.

5. **DE Substitutes.**
   Synthetic substitutes such as cellulose products manufactured as DE replacements may be utilized.

D. Cartridge Filters.

1. Number.

One extra complete set of cartridges per filter shall be kept on the premises at all times. Replacement of cartridge elements shall be done whenever the requirements of Chapter 4, Section B, cannot be maintained.

2. Cleaning.

Cartridge filters must be cleaned by soaking in an approved cleaning solution and/or by pressure spraying.

3. Filter Rate.

Cartridge filters must filter at a rate not in excess of .375 GPM per square foot.

E. Other Filters.

Any filters other than those described above must be approved by the NSF and the Regulatory Authority as set forth in Chapter 1, Section F, before they can be considered for use in the recirculation system for public swimming pools/spas.

Chapter 7: Disinfection Equipment

A. General.

Every pool/spa shall be equipped with a disinfectant feeder(s) as required to maintain the microbiological, chemical and physical characteristics of the pool/spa water within the required limits as listed in Appendix A. The disinfectant shall provide a residual in the pool/spa water so that it can be monitored. The minimum requirements for testing pool and spa water will be at least twice daily, with an appropriate amount of time between readings.

B. Types of Feeders.

Disinfectant feeders for use on public pools and spas may be the hypochlorinator type that feeds as a liquid by positive displacement or by a feeder that uses controlled erosion or dissolving of a chemical by the flow through process. Feeders shall maintain a dosage proportional to the flow. Because of serious safety considerations, the use of gas chlorine is not recommended and is not permitted without authorization from the Regulatory Authority.

C. Disinfectants Other Than Chlorine or Bromine.

Disinfectants other than chlorine or bromine require special approval and are not to be used without prior written permission from the Regulatory Authority.

D. Approval of Disinfectant Feeders and Chemical Feeders.

All disinfectant feeders and all chemical feeders which are installed on pools/spas shall be designed and constructed in accordance with applicable NSF or UL standards pertaining to disinfectant and chemical feeding equipment for use on swimming pools and spas.

E. Alternate Disinfection Devices.

Any disinfection device such as ultraviolet light, ozonators, copper/silver ionizers, etc. must be reviewed and approved for use per Chapter 1, Section F.

F. Feed Rate.

Disinfection feeders shall have the capacity to feed 5 ppm to the 24 hour recirculation flow of the filtration system. All other disinfectants shall feed at rates as determined by the Regulatory Authority.

G. Hypochlorinators and Chemical Feeders.

1. General.

A chemical feeder must be used in conjunction with a hypochlorinator feeding chlorine in order to maintain pH of pool/spa water. It shall be a positive displacement type feeder. This same type feeder can also be used to feed acid, granular chlorine for super-chlorination, and soda ash.

2. Positive Feed Required.

Feed shall be positive and constant under all conditions of pressure in the circulating system.

3. **Back Flow Prevention.**
   Positive features to prevent back-flow from the circulation system to the solution container shall be provided.

H. Flow Through or Controlled Erosion Feeders.

1. Flow through or controlled erosion feeders shall be used in conjunction with a chemical feeder to maintain pH when used for feeding a hypochlorite non-stabilized compound.

2. The feeder shall have an adjustable rate of flow through the feeder.

3. The feeder shall have a positive flow indicator.

4. The feeder shall be so constructed and installed so that no chemical shall be fed when the circulating system has been shut down.

Chapter 8: Equipment and Equipment Rooms

A. Access to Equipment.

Filters and other equipment shall be easily accessible for service. Equipment shall be safeguarded to prevent unauthorized tampering. The equipment room shall be adequately drained and ventilated. The room(s) and equipment shall be maintained clean and in good repair.

B. Chemical Storage.

Chemicals shall be kept in the original containers and shall be used and stored in accordance with label instructions. All rooms used for storage of pool chemicals shall be plainly marked as such by any combination of words, pictures or symbols. Adequate space shall be provided for storage of chemicals, separate from the operating equipment.

C. Ventilation for Equipment Rooms.

Where the equipment room is provided below grade, stairway access and suitable drainage shall be provided. All equipment and chemical storage rooms shall be ventilated. In order to achieve adequate ventilation, an exhaust fan may be necessary. Chemical rooms must be vented away from the walk area.

D. Lighting.

All equipment and chemical storage rooms shall be equipped with at least one (1) watt of artificial light per square foot of floor area with a minimum of 100 watts provided.

E. Cleaning Equipment.

Equipment shall be provided to remove sediment, sludge and other accumulations from all areas of the pool/spa bottom and walls.

1. Minimum Requirements.

The minimum equipment required for pool/spa cleaning includes:

- **a.** One (1) vacuum head and hose or portable vacuum
- **b.** One (1) wall brush suitable for use on pool/spa material
- **c.** One (1) leaf net
- **d.** One (1) telescoping pole

2. Use of Common Cleaning Equipment.

Multiple facility operations may use common cleaning equipment. To prevent cross contamination, caution must be taken to clean and disinfect vacuum equipment following fecal accidents or suspected waterborne disease outbreaks.

3. Cleaning and Maintenance of Pool/Spa and the Facility.

All parts of the pool/spa and related pool/spa facilities and equipment shall be maintained in good repair. Floors shall be kept free from cracks and other defects. Walls, ceilings, partitions, doors, lockers and similar surfaces and equipment shall be refinished as often as necessary to be

kept in a state of good repair. Pool/spa surfaces including but not limited to tile, plaster and/or paint shall be maintained in good repair.

Chapter 9: Bather/Facility Requirements

A. General.

All pools and spas open to the general public shall provide adequate bather preparation facilities. Pools not open to the general public shall provide bather preparation facilities whenever suitable facilities are not available within a reasonable distance of the pool. In these instances the Regulatory Authority shall determine reasonable distance. Lavatories, showers, water closets, and a dressing room shall be provided for each gender based on the maximum bather load and as listed below. Certain pools having a high rate of swimmer change out, such as a school's pool used for classes, may be required to provide additional facilities.

Fixture	Men	Women
Lavatories	1 per 40	1 per 40
Water Closets	1 per 40	1 per 20
Showers	1 per 30	1 per 30
Urinals	1 per 40	

1. Lavatories, Showers, Water Closets, and Dressing Rooms.

Shall be satisfactorily located, constructed, and equipped with hot and cold running water under pressure. Floor finish shall be non-skid cement, tile, or other impervious material. Indoor-outdoor carpet is not approved. Non-skid mats may be installed but shall be removable for cleaning. Walls and partitions shall be constructed of smooth, impervious material. Adequate hand drying facilities, either single service paper towels or blower type hand dryers, must be provided.

2. Light and Ventilation.

All bather preparation areas shall be adequately ventilated and lighted.

B. Maintenance.

All bather preparation facilities shall be maintained in a clean condition and in good repair.

C. Bather Load.

The maximum number of bathers in the pool at any one time shall not exceed a number determined by the following formula:

1. SWIMMING POOL MAXIMUM BATHING LOAD = $\frac{\text{shallow surface area}}{15} + \frac{\text{deep surface area}}{30}$

2. Bather load for a Class III Wading pools, Class IV spas, and Class V Special Purpose Facilities shall be determined by the pool facility and approved by the Regulatory Authority.

3. The maximum bather load shall be conspicuously posted at the within the pool enclosure of the facility and shall not be exceeded.

D. Bather Clothing.

Only clothing designed for use in swimming shall be allowed in the pool. Cutoffs shall not be worn in the pool unless hemmed. Street shoes are not allowed in the water. Children should not be allowed in the pool or wading pool without an appropriate swim diaper/covering.

Chapter 10: Safety

A. General Safety.

No glass bottles, sharp objects or any other debris, which might cause injury or accidents, shall be in the pool area. Food and/or drinks are prohibited in the pool/spa water. No operational activities or conditions of facilities which are likely to cause illness or injury shall be allowed to exist.

B. Lifeguard Requirements.

1. Number of Lifeguards.

For open recreation swimming, there shall be at least one lifeguard guarding the pool at all times for up to 30 swimmers in the water; for over 30 swimmers in the water, there shall be at least 2 lifeguards on duty guarding the pools at all times up to 100 swimmers in the water. This is the minimum lifeguard- coverage acceptable under these rules. It is the responsibility of the management of each facility to evaluate the facility configuration, the features of the facility, including water slides, spraygrounds, play features, etc., the patrons, and the type of use, and to determine the facility specific requirements for supervision by lifeguards.

2. Lifeguard Chairs.

One (1) elevated lifeguard chair or platform shall be provided for pools having over 2000 square feet up to 4000 square feet of pool water surface. One (1) additional lifeguard chair or platform shall be provided for each 2000 square feet or major fraction thereof of pool water surface area above 4000 square feet. The lifeguard chair(s) or platform(s) shall be located to allow a clear and unobstructed view of the pool bottom in the area of surveillance.

3. Lifeguard Certification.

Lifeguards must be 16 years of age or older and shall have a current lifesaving certificate, be in good physical condition and competent in techniques. Certification through the American Red Cross, or equivalent, will satisfy this requirement. The certificate of such competency shall be posted.

C. Entry/Access to the Facility.

1. General.

Provisions must be made to exclude unauthorized entry to the facility. The barrier may be any fence, wall or structure which prevents entry except through self-closing, self-latching and lockable gates or doors. The barrier shall surround all four sides of the pool/spa and not prevent visual observation of the pool. In any new construction of an outside pool or spa, an adjacent building (clubhouse, locker room, etc.) may only serve as one barrier side. In existing construction, each entry from any adjacent building to the pool area must contain either an alarm on the door, cardkey access to pool deck; install fencing between building structure and pool or other means which may be reviewed on a case by case basis. Shrubbery shall be maintained and not constitute an acceptable barrier.

2. **Barrier Design.**
   The barrier shall not be less than four (4) feet in height. The topography outside the barrier shall be considered during the construction phase to ensure the barrier will provide a minimum four (4) feet. Barriers shall not have open spaces greater than four (4) inches horizontally. There shall not be more than four (4) inches of space between the bottom of the barrier and the ground's surface or the pool deck.

3. **Multiple Facilities.**
   Where multiple facilities are located within a common pool area (i.e., pool, spa, and/or wading pool) provisions shall be made to prevent access to any pool or spa, which is closed for maintenance, repair or as the result of non-compliance. This requirement does not apply to lifeguarded facilities. Locking spa covers and portable fencing which meet the above criteria are acceptable options for closure. Floating spa covers are not acceptable. Signs shall be posted indicating which facility is closed. The need for separate fencing for water recreation attractions, such as water theme parks, shall be evaluated on a case-by-case basis.

4. **Indoor Pools/Spas.**
   The area must be secured by self-closing doors for dedicated pool/spa rooms or by barriers as required above, wherever the pool/spa are located where guest rooms or lobbies open onto the pool area. Some means of access control (such as room key or card) should be provided to prevent entry by unattended children.

5. **Water Slides.**
   The entire water slide area including the plunge pool, pool deck, the slide, and the walk area to the slide, shall be blocked for access by portable fencing or other barrier to prevent access when the slide is not in operation. The Regulatory Authority may approve alternative barrier methods equivalent to those described above.

6. **Access.**
   The Regulatory Authority must have access to each bathing facility, to conduct inspections to determine whether the provisions of these Rules and Regulations are being complied with. If the pool or spa is gated or locked, in a way that would prohibit entrance to the inspector, arrangements must be made to provide access to the pool/spa. This includes, but is not limited to: providing a key, code, card, or other method of access to the Regulatory Authority. Failure to provide access could result in permit suspension and/or revocation. (City of Kansas City, MO ordinance No. 140307, Section 34-524)

D. Emergency Communications.
All pools shall have an emergency communication system, in the form of a standard telephone line or call box. It must be in working order, available at the pool and must connect directly to emergency services. The telephone number of the emergency service, as well as any instructions necessary to operate the communication system shall be posted in a conspicuous place near the

communication device or station. In addition, the address of the pool must be posted next to the communication device or station. The location of the emergency communication device must be in the vicinity of the swimming pool area; available at all times the pool is operational, and available to both the staff and the public.

E. Accident Report.

The operator of any pool or other related facility shall immediately report any drowning, other death or serious injury occurring on the premises. A written report shall be submitted to the Regulatory Authority on forms provided by the Regulatory Authority. (Refer to Appendix B for report)

F. Life Saving and Safety Equipment.

1. Required Equipment.

Readily accessible and conspicuously mounted lifesaving equipment shall be provided at all swimming pools. Lifesaving equipment shall consist of the following:

a. A shepherd's crook and pole with adequate length to reach the bottom, center of the pool, and;

b. A U.S. Coast Guard approved ring buoy attached to an adequate length of rope to reach the center of the pool.

Life-saving equipment shall be required for each 2,000 square feet of water surface or fraction thereof. It is recommended that instructions for proper usage of life saving equipment be posted.

2. Lifeline.

All pools in which the maximum pool depth exceeds five (5) feet, shall install a lifeline located at or before the five (5) feet depth area(s) separating the shallow area(s) and the deep area(s). Lifeguarded wave type pools shall be exempt from this requirement.

Pools which provide lane swimming, may remove a lifeline during periods of lap swimming or routine maintenance. The lifeline shall be replaced following any maintenance activities or lap swimming to ensure safety for recreational swimming. The lifeline shall be maintained in good condition. Connections for lifeline shall be recessed in the pool walls at appropriate locations, and in a manner which presents no hazard to swimmers.

G. First Aid Equipment.

Each pool and other related facility shall have basic first aid kit to care for minor injuries. The first aid kit must be prominently mounted in the swimming pool enclosure. (Refer to Appendix E for recommended first aid kit supplies)

H. Electrical Requirements.

Wiring and grounding for lights and all electrical power for pool equipment must conform to the codes of the International Electrical Code. Ground fault protection shall be provided on all electrical circuits within the pool area. Junction boxes must be above the pool water level and not be a trip hazard.

I. Spa Timers and Emergency Shut-Off Switch.

A maximum setting of 15 minutes for the timer to activate the jet system shall be installed on spas and shall be located at a distance that would require the bather to exit the spa to restart. An emergency shut-off switch shall also be required and accessible for all spas.

J. Signs and Safety Markings.

All signs and depth markers must be in contrasting color and clearly readable at all times.

1. No Diving.

This sign shall be displayed in conspicuous locations at all pools not meeting the minimum requirements for diving. The sign shall read NO DIVING with minimum four (4) inch lettering. NO DIVING tiles placed conspicuously on the deck and wall shall meet this requirement.

2. Warning – No Lifeguard on Duty.

This sign shall be posted at pools and other related facilities where lifeguard service is not provided. The sign shall be in clearly legible letters at least four (4) inches high.

3. Spa Safety Signage and Rules

On a warning sign, precautions for spa patrons shall be posted. Rules of operation governing the use of and instructions to bathers shall be posted conspicuously at each spa. Rules shall be enforced by the pool operator. (Refer to Appendix D)

4. For Emergency Use Only.

All life-safety equipment, including the emergency phone, shall be marked “For Emergency Use Only” and used as such.

5. Pool Rules.

Rules of operation governing the use of and instructions to bathers shall be posted conspicuously at each pool. Rules shall be enforced by the pool operator.
(Refer to Appendix D)

6. Water Slides Safety Signs.

The following warnings must be posted at all slides:

a. Always slide feet first and only after previous slider has cleared the area.
b. No jumping or diving from slide.
c. Only one person at a time allowed on the slide.

d. No play equipment on slide.

7. Pool Depth Markers.

Depth markings shall:

a. Plainly mark the water depth in a unit of measurement, (i.e. feet, inches or meters) on the vertical pool wall at or above the water level and on the horizontal surface of the coping or deck edge. Depth markers located on the coping or deck should be within eighteen inches of the water edge and readable while standing on the deck facing the water

b. Be slip resistant

c. Be placed at the maximum and minimum water depths and at all points of slope change

d. Meet the above requirements on irregularly shaped pools and designate the depths at all major deviations in shape

e. Have four (4) inch minimum font height on the deck and the vertical pool wall

f. Be applied in a contrasting color

g. Additional markers may be required based on pool design

8. Spa or Wading Pool Depth Markers.

A spa or wading pool shall have a minimum of two (2) three inch depth markers indicating depth on the deck and/or post on a sign or wall.

K. Hours of Operation.

Non-lifeguarded pools must close daily by 10:00 p.m.

L. Supervision of Minors.

No children under the age of 12 are allowed in the pool area without a responsible person of the age 16 or older.

Chapter 11: Operations Management

A. General.

Every pool shall be under the supervision of a manager who is fully capable of and who shall assume responsibility for compliance with all ordinances, rules and regulations relating to pool operation, maintenance, and safety of bathers. Any pool may be subject to immediate closure whenever a critical item(s) is noted. These include, but are not limited to the following:

1. Failure or lack of filtration, sanitizing and cleaning equipment
2. Insufficient or critically high disinfectant
3. Excessive turbidity, main drain not visible
4. Life safety violations, including but not limited to:
   a. Main drain cover in disrepair
   b. Emergency 911 phone not working
   c. Gates not self-closing or latching
   d. Life safety equipment missing or in disrepair
5. Water temperature out of range
6. Cross connection, back siphonage
7. Unapproved water supply
8. Absence or lack of required supervisory personnel
9. Lack of restriction of employees with infection
10. Sewage, liquid waste disposal
11. Disinfectant and/or pH out of range at two consecutive inspections

In the case of voluntary pool closure, one or more signs shall be posted conspicuously stating Pool Closed, or No Swimming, or similar language.

When closed by the Regulatory Authority for noncompliance, the Regulatory Authority shall post POOL CLOSED sign(s). Only the Regulatory Authority may remove the issued signage and the facility shall not reopen until an inspection has been conducted by the Regulatory Authority indicating compliance. (City of Kansas City, Missouri Ordinance No. 140307, Section 34-604).

It is required that the operator shall have successfully completed a swimming pool operator course and have current certification on site, recognized by the Regulatory Authority. Approved Courses include the following:

a. National Swimming Pool Foundation Certified Pool Operator (CPO) Course
b. Association of Pool and Spa Professionals (APSP) pool certification courses
c. National Recreation and Park Association (NRPA) pool certification courses
d. Kansas City, Missouri Health Department Pool & Spa Operator training course
e. Other courses or curriculum (evaluated on a case by case basis by the Regulatory Authority) which provide technical training in pool/spa water chemistry, maintenance, and safety.

B. Operational Records.

Records shall be retained by the pool owner/manager for review upon request by the Regulatory Authority. Such mandatory records include but not limited to: Swimming Pool Operational Records Refer to Appendix F), Report of Accident or Drowning at Pools/Spas, Record of Pool Contamination Incident (Refer to Appendix C), MSDS Safety Sheets, and Employee MSDS Training (Refer to Appendix G).

C. Inspections.

Results of inspections shall be recorded on the Regulatory Authority's forms which summarize the requirements of these Rules and Regulations. A copy of this report is left at the facility after the inspection is complete. All items should be corrected as soon as possible, but in any event by the time of the next inspection. If the violation cannot be corrected by the next inspection, the report shall specify a reasonable period of time for correction determined by the Regulatory Authority. A follow-up inspection can be conducted to ensure compliance.

D. Facility Closure or Abandonment.

A pool or other related facility for which no operational permit is in effect and which is not in use for two (2) weeks or longer shall be covered, drained, or maintained by the owner in a condition which prevents creating a hazard to health or safety. If drained, care should be taken to ensure that the facility is not damaged by subsurface hydro-static pressure and that access by animals and humans is restricted.

If a public swimming pool/spa is to be permanently closed, the pool/spa shall be filled in or removed and the water and drainage connections removed. Written notification must be made to the Regulatory Authority. Any public swimming pool/spa left in a state of disrepair or out of service for more than one (1) swimming season shall be kept drained and secured so as to not create an imminent health hazard or nuisance.

E. Permit Required.

No bathing facility or swimming pool shall operate unless the operator has applied for and received an operating permit from the Director of Health. Permits shall expire on December 31st of each year unless previously revoked for a violation of the Swimming and Bathing Facilities Ordinance (Sections 34-580 through 34-630) or regulations of the Health Department. The Director will exercise the right to close swimming pools and bathing facilities not operated in conformance with these regulations. The operating permit shall be posted in a conspicuous place, easily visible to patrons and inspectors.

F. Transfer of Ownership.

Pool permits are non- transferrable**.** Each holder of a permit for operation shall notify the Regulatory Authority upon sale, lease, or other transfer of responsibility for the facility and shall supply the Regulatory Authority with the name and address of the new owner/operator. The new owner must submit a Pool Operating Permit Application, pass a pre-operational inspection, and be given approval by the Regulatory Authority to operate before opening to the public.

G. Food Service Operations.

Any food service operations conducted at the pool facility shall meet the current requirements of the Kansas City, Missouri Food Code.

H. Communicable Disease.

No person suffering from an open cut, rash, skin lesion, any skin disease or any possible communicable disease transmitted via water shall be permitted to patronize the pool. No person having a communicable disease shall work at any pool in a function in which there is likelihood that they will transmit the disease to any other person.

I. Animals Prohibited in Pool/Spa.

Except for service animals, animals are not allowed in the enclosure or water.

APPENDIX A

KANSAS CITY POOL OPERATIONAL CHEMICAL PARAMETERS

Below are operation parameters for the proper chemical treatment and maintenance of pool/spa water. Chemical treatment alone will not produce sanitary pool water. A filtration system and proper operational conditions are also required to attain acceptable water quality.

Disinfectant Levels *Free chlorine, ppm*	***Min***	***Ideal***	***Max***	**Comments**	**Testing Interval**
Pool	1.0	2.0-4.0	4.0	Hot weather/heavy use may require operation at or near maximum level. Regular superchlorination is recommended.	Twice daily
Spa	3.0	3.0-5.0	5.0		
When stabilizer is used	2.0		4.0		
Disinfectant Levels *Combined chlorine, ppm*	***Min***	***Ideal***	***Max***	**Comments**	**Testing Interval**
Pool	None	None	0.2	High combined chlorine results in reduced chemical efficacy. Take remedial action to establish breakpoint chlorination. Signs of combined chlorine: sharp chlorine odor, eye irritation, algae growth.	Twice daily
Spa	None	None	0.2		
Disinfectant Levels *Bromine, ppm*	***Min***	***Ideal***	***Max***	**Comments**	**Testing Interval**
Pool	3.0	4.0-6.0	8.0	N/A	Twice daily
Spa	4.0	6.0-10.0	10.0		
Disinfectant Levels *Iodine, ppm*	***Min***	***Ideal***	***Max***	**Comments**	
	---	---	---	Levels not established. **Note:** Department must approve before use.	
Temperature			***Max***	**Comments**	**Check**
Spa			104°F	For 15 minute intervals on a timer.	Twice Daily

*NOTE: Additional testing intervals may be needed based on the type of facility, hours of operation, & bather load.

APPENDIX A (Continued)

KANSAS CITY POOL OPERATIONAL CHEMICAL PARAMETERS

Below are operation parameters for the proper chemical treatment and maintenance of pool/spa water. Chemical treatment alone will not produce sanitary pool water. A filtration system and proper operational conditions are also required to attain acceptable water quality.

Chemical Values	***Min***	***Ideal***	***Max***	**Comments**	**Testing Interval**
pH	7.2	7.4 – 7.6	7.8	If pH is- Too high: low chlorine efficiency, scale formation, cloudy water, eye discomfort. Too low: rapid dissipation of disinfectant, plaster and concrete etching, eye discomfort, corrosion of metals, vinyl liner damage	Twice daily
Total Alkalinity (buffering) as $CaCO_3$ chlorite (ppm)	60	80 – 100 calcium, lithium, sodium hypochlorites 100 – 120 sodium dichlor, trichlor, bromine compounds	180	If total alkalinity is- Too low: pH bounce, corrosion tendency Too high: cloudy water, increased scaling potential, pH tends to be too high	Weekly
Cyanuric acid (ppm)	None	30– 40	100	If stabilizer is- Too low: chlorine residual rapidly destroyed by sunlight Too high: may reduce chlorine efficacy, interfere with total alkalinity test Note: stabilizer is not needed in indoor or brominated pools	Weekly
Total dissolved solids	300	1000 – 2000	3000	These values are offered as ppm guidelines rather than absolute values to indicate concern for accumulation of impurities in the course of operation. Excessively high TDS may lead to hazy water, corrosion of fixtures, etc…and can be reduced by partial draining with addition of fresh water. High initial TDS may indicate poor water quality due to corrosive mineral salts, or organic matter. Consult KCMO Water.	Monthly or when suspected
Calcium hardness (ppm)	150	200 – 400	500 – 1000	Operation of pools at maximum hardness will depend on alkalinity (buffering) requirements of the sanitizer used. Minimum alkalinity and lower pH must be used with maximum hardness (over 50ppm)	Monthly or when suspected
Heavy metals				If heavy metals, such as copper, iron, or manganese are present: staining may occur, water may discolor, chlorine dissipates rapidly, filter may plug, may indicate pH too low, corrosion, etc…	When suspected

APPENDIX B

It is the responsibility of the pool operator to complete this form for any drowning or accident at a public swimming pool. Submit promptly to the **KCMO Health Department, Environmental Public Health Program, 2400 Troost Ave, Kansas City, MO 64108**. Please print clearly.

Today's date:		
Name of pool:	Phone:	
Address:	City:	Zip:
Owner or person in charge:		Title:
Date of accident:	Time of accident:	
1) Nature of accident (describe in detail):		
2) Accident victim name:		
-Age: Sex: □M □F □Fatal □Non-Fatal □Swimmer □Non-Swimmer □Unknown		
3) Did injury occur? □Y □N		
- If yes, describe nature and extent of injury:		
4) Did injury require medical attention? □Y □N		
-If yes, explain treatment required and where provided:		
5) Was pool open at the time? □Y □N		
6) Was pool lifeguarded at the time? □Y □N		
7) If no lifeguard required, give name and location of nearest available person responsible for pool:		
8) What safety equipment was used?		
9) Name(s) of witnesses to accident:		
a)	Phone:	
b)	Phone:	
c)	Phone:	
10) Additional comments (Attach any applicable information, documentation or reports):		
Completed by:	Title:	Date:
Official Use Only		
Received by:	Title:	Date:
Pool permit #:		
*Attach copy of last swimming pool inspection report		

APPENDIX C

PROCEDURES FOR DISINFECTION AND MANAGEMENT OF FECAL ACCIDENTS IN POOL AND OTHER RELATED FACILITIES *

In the event of fecal contamination, the following procedures shall be followed:

How long does it take to disinfect the pool after a fecal incident? This depends on what type of fecal incident has occurred and at which free chlorine levels you choose to disinfect the pool. If the fecal incident is formed stool, follow Figure 1, which displays the specific time and free chlorine levels needed to inactivate *Giardia*. If the fecal incident is diarrhea, follow Figure 2, which displays the specific time and free chlorine levels needed to inactivate Crypto.

Figure 1 *Giardia* Inactivation Time for a Formed-Stool Fecal Incident

Free Chlorine Level (ppm)	Disinfection Time*
1.0	45 minutes
2.0	25 minutes
3.0	19 minutes

*These closure times are based on 99.9% inactivation of *Giardia* cysts by chlorine at pH 7.5 or less and a temperature of 77°F (25°C) or higher. The closure times were derived from the U.S. Environmental Protection Agency (EPA) Disinfection Profiling and Benchmarking Guidance Manual. These closure times do not take into account ―dead spots‖ and other areas of poor pool water mixing.

Figure 2 Crypto Inactivation Time for a Diarrheal Fecal Incident

Free Chlorine Level (ppm)	Disinfection Time*†
10	1,530 minutes (25.5 hours)
20	765 minutes (12.75 hours)
40	383 minutes (6.5 hours

* Shields JM, Hill VR, Arrowood MJ, Beach MJ. Inactivation of *Cryptosporidium parvum* under chlorinated recreational water condi-tions. J Water Health 2008;6(4):513–20.
† At pH 7.5 or less and a temperature of 77°F (25°C) or higher.

*Fill out Record of Pool Contamination Incident form found in this Appendix.

* The information above was obtained from the Centers for Disease Control and Prevention.

APPENDIX C (Continued)

Record of Pool Contamination Incident*

Date of incident: _____ Time of incident: _____

Name of individual responsible for incident: _____

Phone: _____ Male_____ Female_____

Home address: _____ City: _____ State: _____ Zip: _____

Did individual have any symptoms of illness at the time of incident? Yes_____ No_____

If yes, list the symptoms: _____

Nature of incident: _____ Formed Stool _____ Diarrhea _____ Vomitus _____ Blood

Time of pool closure: _____ AM/PM

Person in charge at the time of incident: _____ Certified Operator? _____

Chemical readings at the time of incident: _____ Free Chlorine _____ Combined Chlorine

_____Total Alkalinity _____Cyanuric Acid _____pH

Describe corrective action taken in sequence: _____

_____

Specify chemical adjustments made: _____

Chemical readings at the time of re-opening: _____ Free Chlorine _____ Combined Chlorine

_____Total Alkalinity _____ Cyanuric Acid _____pH

Time of re-testing:_____ AM/PM Time of re-opening: _____ AM/PM

_____ _____

Print Name/Title Date

_____

Name of person completing the report

***Report to KCMO Health Department and retain with permanent facility**

APPENDIX D

LIST OF RECOMMENDED RULES FOR ALL POOL AND OTHER RELATED FACILITIES

These rules may be conveyed by any combination of words, pictures, or symbols.

1. All persons should take a shower before entering the water.
2. Running or boisterous play is not allowed on the deck.
3. Glass articles, sharp metal objects, and other hazardous objects are not allowed in the enclosure.
4. Pets or any animals are not allowed in the enclosure except for service animals for the physically impaired.
5. Persons with contagious or infectious health conditions are not permitted to patronize the pool.
6. Location of nearest telephone for emergency use or emergency notification procedure.
7. All pools which do not require a lifeguard shall close by 10:00pm, and shall not allow children under the age of 12 without a responsible person the age of 16 or older.
8. Street clothes and shoes are not allowed in the water. Children should not be allowed in the pool or wading pool with disposable diapers unless covered with plastic pants.
9. Food or drink is prohibited in the pool water.
10. Gum and tobacco are not allowed on the wet deck area.
11. Use of the pool by persons under the influence of alcohol or drugs is prohibited.

APPENDIX D (Continued)

SPA SAFETY SIGNAGE AND RULES

Safety signage and rules should align with the items listed below.

1. Elderly persons and those suffering from heart disease, diabetes, or high blood pressure should consult a physician before using the spa pool.
2. No person suffering from a communicable disease, transmissible via water, shall use the spa pool.
3. Persons using prescription medications should consult a physician before using the spa pool.
4. Individuals under the influence of alcohol should not use the spa pool.
5. No person shall use the spa pool alone.
6. Pregnant women should not use the spa pool without consulting their physicians.
7. Persons should spend no more than 15 minutes in the spa at any one session.
8. Unsupervised use by children is prohibited. Recommend that children under 12 years be restricted from using a spa due to high temperatures.
9. No person shall run or engage in horseplay in or around the spa pool.
10. Patrons must shower before and after using the spa pool.
11. Keep all glass and other breakable objects out of the spa area.

APPENDIX E

The first aid supplies shall include, at a minimum, the supplies required by ANSI for a Workplace First Aid Kit which are as follows:

1. 1- First Aid Guide
2. 1- Absorbent compress, 4 x 8" minimum
3. 16- Adhesive bandages, 1 x 3"
4. 1-Adhesive tape, 2.5 yards
5. 10- Antiseptic treatment application
6. 6- Burn treatment applications
7. 4- Sterile pads, 3 x 3 " minimum
8. 2- Pair of medical exam gloves
9. 1- Triangular bandage, 40 x 40 x 56" minimum
10. 6- Antibiotic treatment applications

Appendix F

Swimming Pool/Spa Operation Record

Name of Pool/Spa: _____ Address: _____Person in charge: _____

Morning Reading							Afternoon Reading								
Date	**Free Chlorine**	**pH**	**Alkalinity**	**Water Temp**	**Cyanuric Acid**	**Chemicals Added**	**Free Chlorine**	**pH**	**Alkalinity**	**Water Temp**	**Cyanuric Acid**	**Chemicals Added**	**Back-Washed Y/N**	**Accident***	**Operator's Initials**

Comments:_____

_____

Keep original in your files. Upon request, submit to your inspector. Operator Signature _____

***Complete Accident Report Form.**

APPENDIX G

Employee MSDS Training

Date: _____ Trainer/Instructor: _____

Topics:

1. Special handling procedures for swimming pool chemicals
2. Storage practices for swimming pool chemicals
3. Potential health related hazards
4. Swimming pool chemical interactions

    Common swimming pool chemicals

    - Sodium Hypochlorite
    - Calcium Hypochlorite
    - Bromine
    - Muriatic Acid
    - Sodium Bisulfate
    - Sodium Bicarbonate
    - Test Kit reagents

5. General Protection Practices
6. Emergency Care

Employees present for training session:

Name	Signature

Training verified by: _____ Date: _____ Title: _____

***Retain with permanent facility records**