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Submitted by

Prepared by

For reading

Chairman of the Assembly at
the Request of the Mayor
Department of Health and
Human Services

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ANCHORAGE, ALASKA
AO NO. 99- 11

AN ORDINANCE AMENDING ANCHORAGE MUNICIPAL CODE CHAPTER 16.15,
PUBLIC BATHING FACILITIES, TO INCLUDE PROVISIONS FROM ALASKA
ADMINISTRATIVE CODE AS THE LAW OF THE MUNICIPALITY REGULATING
SWIMMING POOLS AND SPAS.

THE ANCHORAGE ASSEMBLY ORDAINS:

Section 1. That Anchorage Municipal Code Chapter 16.15 is hereby amended to read as follows:

PUBLIC SWIMMING POOLS AND SPAS* [BATHING FACILITIES]

- 16.15.010 Definitions.
- 16.15.020 Permit required.
- 16.15.030 Application for permit.
- 16.15.040 Investigation; granting of permit; plan review; inspections.
- 16.15.050 Suspension or revocation of permit.
- 16.15.060 Facilities in violation of chapter declared public nuisance.
- 16.15.070 Penalty. (Repealed)
- 16.15.080 Authority to prescribe additional regulations; waivers.
- 16.15.100 Design and Materials.
- 16.15.110 Shape, Slope, and Depth.
- 16.15.120 Inlets and Outlets.
- 16.15.130 Electrical.
- 16.15.140 Circulation and Filtration.
- 16.15.150 Disinfection.
- 16.15.160 Operation.
- 16.15.170 Hygiene Requirements.
- 16.15.180 Lifesaving Equipment.
- 16.15.190 Water, Wastewater, and Solid Waste.
- 16.15.200 Plumbing.
- 16.15.210 Maintenance.
- 16.15.220 User Load Computation.
- 16.15.230 Dressing, Shower, and Toilet Facilities.

1 16.15.240 Recreational Water Slide Flumes.

2 16.15.250 Flotation Tanks.

3 16.15.260 Public Spas.

4 *Cross reference(s)--Business licenses and regulations, title 10; fines, § 14.60.030

5 ***

6 Section 2. That Anchorage Municipal Code subsection 16.15.010 is hereby amended to read
7 as follows:

8 16.15.010 Definitions.

9 The following words, terms and phrases, when used in this chapter, shall have the
10 meanings ascribed to them in this section, except where the context clearly
11 indicates a different meaning:

12 *Automatic sensor control* means a mechanical device that regulates the amount of
13 disinfectant that needs to be added to the water based on the measurement of the
14 disinfectant residual level.

15 *Balancing tank* means a watertight tank that can be incorporated into the gutters
16 of a pool overflow system and is designed to contain pool water displaced by
17 bathers.

18 *Bather periods* means the sum of all minutes spent by each bather in a spa,
19 divided by 20 minutes.

20 *Continuous disinfection* means that disinfectant is mechanically dispensed or
21 provided to a pool or spa by a continuous disinfection system.

22 *Continuous disinfection system* means a system consisting of a chemical tank,
23 chemical feeder, and device to regulate the flow of disinfectant into a spa or pool
24 water return line.

25 *Deck* means the walkway area surrounding a swimming pool and intended for use
26 by bathers.

27 *Department* means the Department of Health and Human Services.

28 *Diatomaceous earth* means that filtering material made of the siliceous cells of
29 finely pulverized diatoms.

30 *Fill and draw pool* means a swimming pool in which the principal means of
31 cleaning is the complete draining of the pool and subsequent replacement of water
32 from a fill source.

33 *Flotation tank* means a watertight tank designed to accommodate a bather in a

solution of water and either sodium chloride or epsom salt.

Flow-through pool means a swimming pool in which the water from a fill source constantly enters the pool to replace an equal amount of water constantly being drained from the pool.

Health director means the director of the department of health and human services or an [HIS] authorized representative.

Lifeguard chair means an elevated chair located to provide a clear, unobstructed view of the pool bottom in the area under surveillance.

Natatorium means a complex consisting of a pool and decks.

Person means any person, firm, corporation, association, institution or municipality, whether principal or agent, employer or employee.

Pool means a public swimming pool.

Public swimming pool means a swimming pool with a depth of two feet or more at any point, operated by an owner, agent, lessee, operator, licensee, or concessionaire, and intended for public use for swimming, diving, or recreational bathing with or without a fee [PUBLIC SWIMMING INSTALLATION AND INSTALLATION MEAN ANY PUBLIC SWIMMING POOL, BATHHOUSE OR STRUCTURE INTENDED TO BE USED FOR SWIMMING OR BATHING PURPOSES.]

Sanitary facility means a flush toilet, urinal, handsink, or shower.

Spa means a contained pool of water with a depth of no more than 3.28 feet, other than a residential spa or hot tub, that is designed for recreational or therapeutic use and is operated by an owner, lessee, operator, or concessionaire, with or without a fee; a spa may be an individual unit or may be a unit integrated into a pool; the term "spa" includes a hot tub and a whirlpool.

Turnover means the amount of time required for a volume of water equal to the volume of the pool to circulate through the filtration and disinfection systems.

(GAAB 16.15.010; AO No. 85-8)

Cross reference(s)--Definitions and rules of construction generally, § .05.020.

Section 3. That Anchorage Municipal Code subsection 16.15.030 is hereby amended to read as follows:

16.15.030 Application for permit.

Any person desiring [TO CONSTRUCT OR] to operate or to continue to operate any public swimming installation within the municipality shall file an application for a permit and pay each applicable fee required in AMCR 15.05 for each separate pool and spa [PERMISSION TO DO SO] with the health director. [THE APPLICATION SHALL STATE:

A THE SOURCE OF WATER SUPPLY

B THE AMOUNT AND QUANTITY OF WATER AVAILABLE AND INTENDED TO BE USED.

C THE METHOD AND MANNER OF WATER PURIFICATION, TREATMENT, DISINFECTION, HEATING, REGULATING AND CLEANING INCLUDING MANUFACTURER'S DESIGN AND SPECIFICATIONS.

D THE LIFESAVING APPARATUS AND MEASURES TO ENSURE SAFETY OF BATHERS.

E THE MEASURES TO ENSURE PERSONAL CLEANLINESS OF BATHERS.

F THE METHODS AND MANNER OF WASHING, DISINFECTING, DRYING AND STORING BATHING APPAREL AND TOWELS.

G ALL OTHER INFORMATION AND STATISTICS THAT MAY BE REQUIRED BY THE HEALTH DIRECTOR TO DETERMINE COMPLIANCE WITH THIS CHAPTER.]

Section 4.

That Anchorage Municipal Code subsection 16.15.040 is hereby amended to read as follows:

16.15.040 [INVESTIGATION;] G[G]ranting of permit; plan review; inspections.

[A. INVESTIGATION; GRANTING OF PERMIT. UPON RECEIPT OF THE APPLICATION FOR A PERMIT UNDER THIS CHAPTER, THE HEALTH DIRECTOR MAY CAUSE AN INVESTIGATION TO BE MADE OF THE INSTALLATION. IF THE HEALTH DIRECTOR DETERMINES AS A FACT THAT THE INSTALLATION IS OR MAY REASONABLY BE EXPECTED TO BECOME UNCLEAN OR UNSANITARY, OR MAY CONSTITUTE A MENACE TO PUBLIC HEALTH, THE HEALTH DIRECTOR MAY DENY THE PERMIT. IF THE HEALTH DIRECTOR DETERMINES AS A FACT THAT THE INSTALLATION IS OR MAY REASONABLY BE EXPECTED TO BE CONDUCTED CONTINUOUSLY IN

1 A CLEAN AND SANITARY MANNER AND MAY NOT CONSTITUTE A
2 MENACE TO PUBLIC HEALTH, THE HEALTH DIRECTOR MAY GRANT
3 THE PERMIT UNDER SUCH RESTRICTIONS AS THE HEALTH
4 DIRECTOR DEEMS PROPER.]

5 A[B]. Inspections. For the purposes of this chapter, the health director shall have
6 full power and authority to, and shall be permitted to, enter upon any and all parts
7 of the premises of such installations to make examination and investigations to
8 determine the sanitary condition of such installations and whether the provisions
9 of this chapter, or the rules and regulations issued pursuant to this chapter
10 pertaining thereto, are being violated.

11 B[C]. Public reports. Reports of such inspections may be made public, at the
12 discretion of the health director.

13 C. Plan review and inspection.

14 1. If a facility subject to this chapter is to be constructed or remodeled,
15 the operator of the facility shall submit a plan review application
16 accompanied by properly prepared plans and specifications with the
17 applicable fee to the department for review and approval before
18 construction or remodeling is begun.

19 2. The department may

20 (a) Conduct a pre-occupancy inspection of a facility to
21 determine compliance with the applicable provisions of this
22 chapter;

23
24 (b) Conduct inspections of an existing facility subject to this
25 chapter and forward copies of its findings, including required
26 changes and recommendations, to the facility operator;
27 and

28
29 (c) Conduct inspections as otherwise required by this chapter.
30

31 (GAAB 16.15.040)

32 *** *** *** ***

33 Section 5. Anchorage Municipal Code subsections 16.15.080 is hereby amended by adding a
34 new section to read as follows:

35 16.15.080 Authority to prescribe additional regulations, waivers

36 A. The health director shall supervise the sanitation, healthfulness,
37 cleanliness and safety of public swimming installations and is empowered
38 to make and enforce such rules and regulations pertaining thereto, and

deemed necessary to carry out the provisions of this chapter.

B. Waivers.

1. The department may waive a provision of this chapter if it determines that the health and protection of the public and the satisfaction of the purpose of the provision is reasonably assured and the requirements of applicable statutes are satisfied.

2. An application for a waiver shall be made in writing to the department, and shall include:

a. Identification of the provision for which the waiver is requested;

b. Reasons why the provision cannot be met or would create an undue hardship; and

c. A description of the alternative method proposed for meeting the purpose of the provision that is requested to be waived.

3. A request for a waiver shall be answered in writing within 30 days after its receipt.

(GAAB 16.15.080)

Section 6.

Anchorage Municipal Code is hereby amended by adding new sections 16.15.100 through 16.15.260 to read as follows:

16.15.100 Design and Materials.

(a) Nonabsorbent materials shall be used to construct pools or pool decks. Mildly abrasive, nonslip surfaces shall be used on pool decks, steps, ramps, and diving boards. Pools and pool decks shall be constructed of light-colored, durable, and nonabsorbent materials that are nontoxic to humans and the environment.

(b) Decks, side walls, bottom surfaces, gutters, and components shall have smooth, easily cleanable surfaces without sharp edges or protrusions.

(c) A nonslip handhold shall be used around the perimeter of a pool, and at steps and ladders.

(d) Steps and ladders shall provide easy access to both ends of the pool and shall drain completely when the pool is emptied. Step risers shall be no higher than 12 inches, and shall be uniform in height, except that the bottom riser may be less

than the uniform height

(e) Aluminum pools shall be designed and maintained to minimize the effects of electrolysis. Anodes and cathodes shall be installed and maintained in aluminum pools.

(f) An absolute separation is required between the pool deck and the spectator area. There shall be no means by which bathers can directly enter the spectator area, or by which spectators can directly enter the pool deck.

(g) Entrances to the pool deck from locker rooms shall be at the shallow end of the pool.

(h) The ventilation system in a pool enclosure shall provide a minimum rate of 20 cubic feet per person per minute, or six complete air exchanges per hour, whichever is greater. The ventilation system shall prevent direct drafts on bathers and shall minimize condensation.

(i) Natatorium lighting shall be designed to permit the replacement of light bulbs or tubes.

(j) The circulation system shall be designed for 100 percent flow through the overflow channels and 100 percent flow through the main drains. During normal operations the overflow channels shall use at least 60 percent of the return flow.

(k) Hose bibs with back siphonage preventers shall be used around the deck so that all parts of the deck may be reached with a 50-foot hose.

(l) At least one drinking fountain is required within the pool enclosure.

(m) Diatomaceous earth filters shall have a maximum flow rate as recommended by NSF Standard 50, Swimming Pools, Spas, or Hot Tubs Circulation System Components, dated June 1, 1992, the requirements of which are incorporated by reference in this chapter, and in no case may exceed 1.5 gallons per square foot per minute. Rapid sand filters shall have a maximum flow rate of 3 gallons per square foot per minute. High rate sand filters may not exceed flow rates of 20 gallons per square foot per minute unless approved by the department. Each pressure filter shall have a pressure gauge on each side of the pressure filter (influent and effluent); or, for a vacuum filter, one pressure gauge after the filter but before the pump. In addition, each filter shall have a gauge measuring the rate of flow through the filter system. This gauge shall be installed in a readily visible location, have a scale range approximately one-half times the design flow rate, and be accurate to within 10 percent of the true flow.

n) Pools built after June 4, 1983 shall have a continuous disinfection system with

an automatic sensor control.

(o) Plans submitted under 16.15.040, including floor plans, specifications, and reports, shall contain information sufficient to demonstrate to the department that the proposed pool or improvements may comply with this chapter. The plans shall be to scale, and shall

(1) include a floor plan showing the location of the pool, deck, dressing rooms, spectator area, mechanical room, and all other areas and rooms provided in conjunction with the pool facility; and

(2) clearly describe

(A) construction materials and finishes of floors, walls, and ceilings;

(B) type and placement of light fixtures;

(C) heating, ventilation, and air conditioning;

(D) pool construction materials, dimensions, slopes, area, and volume;

(E) flow rate, turnover, and filtration rate;

(F) anticipated maximum and average swimmer load;

(G) analyses of the source, quantity, and quality of the water supply, including analyses of the alkalinity, pH, iron, and manganese;

(H) the filtration system recirculation equipment, and piping, including

(i) hydraulic computations that include head loss

(ii) pump curves showing that the proposed recirculation pump will adequately handle proposed flows;

(iii) schematic diagrams, including plan and elevation views; and

(iv) construction details, including dimensions, appropriate cross sections, and color coding of the piping; and

(I) complete, detailed specifications for all other equipment, components, fixtures, and furnishings to be installed at the pool facility.

(p) Changes to or replacements of fixed or installed equipment shall meet the requirements of this chapter unless the replacement is an exact duplicate of the unit being replaced, and the unit being replaced met the requirements of this chapter when it was installed.

(q) Exposed piping in pools and spas shall be color-coded according to the color scheme set out in Table A of this section. If any two colors do not have sufficient contrast to easily distinguish between them, a six-inch band of contrasting color shall be painted on one or more of the pipes at approximately 30-inch intervals. The name of the liquid or gas and arrows indicating direction of flow shall be painted on the pipe.

TABLE A
COLOR-CODING REQUIREMENTS

PIPING		COLOR CODE
Potable Water Lines		Dark Blue
Recirculation		
Filtered		Aqua
Skimmer or gutter return		Olive green
Main Drain		Black
Chemical Lines		
Alum		Orange
Chlorine (Gas & Solution)		Yellow
Soda Ash		White
Acid		Pink
Waste Lines		
Backwash Waste		Dark Brown
Sewer (Sanitary or other)		Dark Gray
Deck Drains		Light Brown
Other		
Compressed Air		Dark Green
Gas		Green

Editor's Notes -A copy of NSF 50, Swimming Pools, Spas, or Hot Tubs Circulation System Components, dated June 1, 1992 referred to in this section may be obtained from NSF International, 3475 Plymouth Road, P.O. Box 130140, Ann Arbor, Michigan 48113-0140 or reviewed at the Department of Health and Human Services.

16.15.110 Shape, Slope, and Depth.

(a) Decks shall slope away from the pool to perimeter deck drains to prevent debris from being washed into the gutter return system. Decks may not slope more than a ratio of 1:24.

(b) Pool bottoms may not slope more than a ratio of 1:8, unless the edge of a steeper slope is clearly marked by a floating safety line or permanent barrier. The safety line shall be kept in place at all times, except when the pool is used for lap swimming or competition and is closed to the general public. The safety line or permanent barrier shall be placed one foot toward the shallow end, away from the break point line, and shall be strung tightly to allow a swimmer to hold onto the line. Underwater ledges are prohibited. Pool sides shall be vertical

(1) to a water depth of at least six feet; or

(2) for a distance of 2.5 feet below the water level, below which the wall shall be curved to the bottom with a radius not to exceed

(A) at the 3-foot depth, a 6-inch radius cove at the base of a 2.5-foot vertical section;

(B) at the 3.5-foot depth, a one-foot radius cove at the base of a 2.5-foot vertical section; and

(C) at the 5-foot depth, a 1.5-foot radius cove at the base of a 3.5-foot vertical section; from this point, the springline or point of departure from vertical may, through an 8-foot transitional zone, measured horizontally, to a typical deep end wall design consisting of at least a 2.5-foot vertical section, with a curved section from that point meeting the floor of the pool; the requirements of this paragraph are indicated on Table B of this subsection.

TABLE B

MAXIMUM RADIUS COVING OF POOL INTRUSION DIMENSIONS

BETWEEN POOL FLOOR AND WALLS

Pool Depth	2 ft.	3 ft.	3.5 ft.	5 ft.	5 ft.
Minimum Sidewall Vertical Depth (Springline)	1.5 ft.	2 ft., 2 in.	2.5 ft.	3.5 ft.	3.5 ft.
Maximum Radius of Curvature	6 in.	10 in.	1.0 ft.	1.5 ft.	**

**** Maximum radius equals pool depth minus the vertical wall depth. Radius of coving may not intrude into pool within diving envelope.**

Note: For pool depths falling between the depths listed in this table, values may be interpolated

(c) The deck shall be at least 6.5 feet wide. Where diving boards are located, the deck shall be at least 13 feet wide.

(d) The ratio of the area of the pool deck to the surface of the pool water shall be at least 1:1.

(e) The dimension in the diving area of a pool shall conform to Table C of this subsection.

TABLE C

DIVING AREA DIMENSION REQUIREMENTS

Height of board (in meters)	Minimum water depth at end of board and 12 ft. beyond	Horizontal Separation between board, tower, and side walls	Unobstructed head room above diving board/tower
0.0 - 2.0m.	ft., 10 in.	10 ft	16 ft., 6 in.
2 - 3.0m.	12 ft., 6 in	10 ft.	16 ft., 6 in.
3 m. or higher	15 ft.	10 ft.	16 ft., 6 in.

(f) Water depth shall be clearly and durably marked on the pool walls and deck in numerals at least four inches high with a color-contrasting background. The depth of the water in the pool shall be plainly marked at or above the water surface on the vertical pool wall. Depth markers shall be

(1) installed on the edge of the deck or walk next to the pool, at maximum and minimum depths, at each point where the pool depth drops more than one foot, and at intermediate one-foot increments of depth; and

(2) placed at intervals not greater than 25 feet around the perimeter of the pool.

g) The words "NO DIVING" shall be clearly and durably printed on the deck

where depths are less than five feet. Lettering shall be at least four inches high with a color-contrasting background.

(h) If depth markers cannot be placed on the vertical walls above the water level, other markings that are plainly visible to persons in the pool shall be used. The depth in the diving areas shall be clearly marked.

16.15.120 Inlets and Outlets.

(a) Inlets for fresh or repurified water shall be placed to allow uniform circulation of water and maintain a uniform disinfectant residual throughout the pool. Inlets shall be submerged at least 18 inches below the water surface to reduce the escape of chlorine or other disinfectants. Pools installed after 12/23/93 shall be tested by the operator with a crystal violet water distribution test or its equivalent to determine and adjust the recirculation pattern. This test shall be conducted in the presence of a department representative, and shall be approved by the department.

(b) Anti-vortex main drains shall be used in the deepest part of the pool and shall be covered with grates that cannot be easily broken or removed by bathers. The maximum velocity of water passing through the drain may not exceed 1.25 ft/sec at 100 percent of the design flow rate.

(c) If the pool is more than 30 feet wide, multiple main drain outlets shall be provided. These outlets shall be spaced not more than 20 feet apart, nor more than six feet from the side walls of the pool.

(d) Fill and draw pools are prohibited. Flow-through pools may be allowed if a waiver of provisions is granted under 16.15.080.

16.15.130 Electrical.

(a) Lighting fixtures shall illuminate all parts of the pool enclosure and the water in the pool. The lighting intensity measured at a point 30 inches above the pool deck shall be at least 50 footcandles. If underwater lighting of at least 100 lamp lumens/square foot is provided, the minimum intensity of the overhead lighting may be reduced to 30 footcandles. Arrangement and design of lighting fixtures shall permit lifeguards to clearly see all pool waters, walkways, springboards, and other fixtures. If underwater lighting is used, the lights may not create a hazard to bathers.

(b) Pool wiring on the deck, or where exposed to water, shall be of the ground fault interruptor type.

(c) Booster pumps used with the chlorinator shall use pool water from the circulation system. The booster pump shall be wired with the circulation pump

1 to prevent feeding chlorine when the circulation pump is not running. A
2 solenoid check valve shall be wired into the same system to prevent the flow of
3 water in the chlorine ejection line when the booster pump is not operating.

4 (d) Electrical vacuum pumps shall be grounded

5 16.15.140 Circulation and Filtration.

6 (a) A pool shall have a complete circulation system, including pumping
7 equipment, filters, balancing tanks, valves, pipe connections to the inlets and
8 outlets of the pool, and provisions for cleaning the filters.
9

10 (b) At least four turnovers of the pool water are required every 24 hours.

11
12 (c) Skimmers may be approved under 16.15.080.

13
14 (d) Hair and lint catchers shall be used in pressure filter systems and shall be
15 (1) corrosion-resistant, with openings to provide a free flow area at least
16 four times the area of the pump suction line; and

17
18 (2) readily accessible for frequent cleaning

19
20 (e) The piping system of a pool shall be built to prevent

21 (1) wastewater from entering the circulation system of the pool; and

22
23 (2) water from the circulation system from entering the make-up water
24 supply.
25

26 (f) Water velocity in pipes may not exceed six feet per second.

27
28 (g) Balancing tanks are required on all filter systems. For pools built or
29 extensively remodeled after 12/23/93, the capacity, in gallons, shall be 15 times
30 the maximum bathing load. Vacuum filter systems may use a combination
31 surge/filter tank.
32

33 (h) The size of the circulation pump is determined from total dynamic head
34 including maximum head loss through the filter, and from velocities required
35 for backwashing.
36

37 (i) The department may waive circulation system requirements for flowthrough
38 pools if
39

40 (1) the water supply provides at least four turnovers of the pool water
41 every 24 hours;
42

2 (2) the water supply meets the requirements of 18 AAC 70.020 for contact
3 recreation and 16.15.190, and is disinfected as set out in 16.15.150 ;

4 (3) fresh treated water is introduced into the pool by the same type of inlet
5 design required by 16.15.120 (a); and
6

7 (4) drain outlets meet the requirements of 16.15.120 (c).
8

9 (j) Filters shall completely drain by gravity.
10

11 (k) If diatomaceous earth filters are used, disposal of the used diatomaceous earth
12 shall be approved by the department.
13

14 (l) Cartridge filters may be allowed, if a waiver of provisions is granted under
15 16.15.080 .
16

17 (m) Sand filters shall be physically inspected by the operator at least once each
18 year for channeling, buildup, compaction, or other flow resistance factors.
19 Filter media shall be replaced, if channeling, buildup, compaction, or any other
20 flow resistance factor is observed. All inspection dates and results shall be
21 noted by the operator on the pool log.
22

23 16.15.150 Disinfection. 24

25 (a) Disinfectant shall be added to the pool water return line downstream of other
26 equipment and as far from the pool as possible.
27

28 (b) If gas chlorine is used for disinfection, the gas chlorinator and cylinder shall
29 be operated from a separate heat-controlled, outside room located at or above
30 ground level, with a door that opens only to the outside. The chlorine room shall
31 be clearly marked and vented by a fan which draws from floor level and
32 discharges at a point at least seven feet high and opposite the doorway. The
33 discharge point shall not contaminate other air vents, and shall not present a
34 hazard to users of the pool natatorium. In addition,
35

36 (1) a chlorine room shall be nearly airtight, except for ventilation, and
37 shall be built of corrosion-resistant materials;
38

39 (2) a chlorine room shall have a shatterproof, airtight inspection window;
40

41 (3) the minimum air exchange rate shall be one chlorine room volume per
42 minute;
43

(4) electrical switches for lights and fan shall be outside the chlorine room door;

(5) platform scales, a self-contained breathing apparatus (air pack), and a chlorine cylinder repair kit shall be provided; the air pack shall be stored outside the chlorine room and be available for emergency use; at least one pool attendant or lifeguard familiar with the air pack operation shall be on site whenever the pool is open for public use;

(6) new and unused gaskets shall be used each time a chlorine cylinder is changed;

(7) chlorine cylinders shall be stored upright and secured by chains, and shall have protective hoods in place when not in use; and

(8) a chlorine leak detector such as bottled commercial strength (26 degree Baume) ammonia shall be in the chlorinator room.

(c) Disinfectants other than chlorine or bromine may be allowed under 16.16.080.

16.15.160 Operation.

(a) No pool may be operated without plan review and approval and a pre-occupancy inspection as specified in 16.15.040 to confirm compliance with this chapter.

(b) Pools and fixtures shall be kept in a sanitary condition when the pool is open to bathers. Premises shall be kept in good repair, well drained, and free from roaches, flies, rodents, and other pests or conditions likely to attract or harbor these pests. If pests are discovered in the pool or in the premises of the pool, the department may require a facility operator to secure pest control services from a certified operator.

(c) Pool surfaces, including side walls, bottoms, gutters, and components, shall be kept clean and in good repair.

(d) Appropriate test equipment in good repair, with necessary reagents, shall be used to measure pool water pH, free and combined disinfectants, alkalinity, total dissolved solids and hardness. Test kits shall meet the minimum range and accuracy as set out on Table D of this section.

TABLE D
TEST KIT REQUIREMENTS

CHEMICAL TEST	MINIMUM RANGE	MINIMUM ACCURACY
Free available chlorine mg/l	0.3 - 5.0 mg/l	0.2
Total chlorine	0.3 - 5.0 mg/l	0.2 mg/l
Total bromine	0.3 - 6.0 mg/l	0.2 mg/l
pH	7.0 - 8.2	0.2 pH units
Alkalinity	0 - 300 mg/l	5 mg/l
Total dissolved solids	0 - 3,000 mg/l	50 mg/l
Hardness	0 - 1,000 mg/l	2 mg/l
Note: 1 mg/l = 1 PPM		

(e) Pools shall be operated by persons familiar with the equipment, fixtures, pool water chemistry, and maintenance procedures. Pools and spas shall have at least one operator who is certified, or may be certified within one year of that operator's date of employment, by the National Swimming Pool Foundation or an equivalent certification program as determined by the department.

(f) To ensure proper installation, operation, and maintenance, a pool operation manual shall be available at the site of the pool. The manual shall include

- (1) instructions for the care of each filter, pump, and other pool equipment;
- (2) drawings, illustrations, charts, and operating instructions;
- (3) a parts list; and
- (4) information on all chemicals used in pool operation.

(g) The following information shall be recorded for each day that the pool is open to the public:

- (1) hours of operation;
- (2) length of time that the pumps and filters are in operation, and the rate of pressure, vacuum, and rate-of-flow readings;
- (3) date that each filter is backwashed or cleaned;

2 (4) frequency and results of alkalinity and hardness tests;
3

4 (5) frequency and results of pH and disinfectant tests; pH and
5 disinfectant tests shall be made two or more times daily, depending upon
6 chlorine demand;
7

8 (6) amount of water and chemicals added to maintain water quality; and
9

10 (7) any equipment failure or repair required while the pool is in operation.
11

12 (h) The department may require copies of the records listed in (g) of this section
13 to be submitted to the department, upon the request of the department.
14

15 (i) Water clarity shall permit a one-inch black disk on a three-inch white field to
16 be clearly visible on the bottom of the pool at the deepest point. If the test disk
17 cannot be seen, the pool shall be closed immediately until the disk can be seen.
18 If the disk is still not visible 48 hours after closure, the department may order the
19 pool drained as a safety precaution.
20

21 16.15.170 Hygiene Requirements.
22

23 (a) Bathers shall shower with warm water and soap, and shall rinse off all soap
24 before entering the pool.
25

26 (b) The pool manager shall restrict from using the pool any person known or
27 reasonably suspected to have
28

29 1) a communicable disease;
30

31 (2) skin lesions;
32

33 (3) sore or inflamed eyes reasonably believed to have been caused by a
34 communicable disease; or
35

36 (4) mouth, nose, or ear discharges.
37

38 (c) No person may urinate, spit, blow the nose, or deposit any foreign matter in a
39 pool.
40

41 (d) Tobacco, food, and drink are prohibited on the pool deck or in the pool.
42

43 (e) Only persons dressed for bathing, unless authorized by the pool manager, are

1 allowed on the pool deck or in the pool.

2
3 (f) Signs stating the requirements of (a) through (e) of this section shall be visibly
4 posted in dressing rooms and by the pool.

5
6 (g) Bathing suits, towels, and bathing caps furnished to patrons shall be laundered
7 with soap and hot water, rinsed, and dried before reuse.

8
9 16.15.180 Lifesaving Equipment.

10 (a) The following lifesaving equipment shall be provided

11
12 (1) a 20-inch outside diameter ring buoy with 60 feet of 3/16 -inch rope
13 attached; and

14
15 (2) a life pole, or a shepherd's crook-type pole, with blunt ends and at least
16 12 feet long.

17
18 (b) Lifeguard chairs are not required. However, if lifeguard chairs are furnished,
19 pool operators shall furnish one lifeguard chair for every 2,000 square feet of
20 pool surface area or for every 50 bathers, whichever method provides the most
21 chairs. Pool operators shall place multiple lifeguard chairs, if any, on the opposite
22 sides of the pool if the pool measures 40 feet or more.

23
24 16.15.190 Water, Wastewater, And Solid Waste.

25 (a) Potable water shall be provided from a source approved by the department.
26 The water supply shall be adequate for the purposes of the facility and shall
27 meet the standards of 18 AAC 80.

28
29 (b) Samples of pool water shall be collected at least monthly while the pool is in
30 use, at a point near the outlet of the pool, and at any other points designated
31 by the department. The department may increase the frequency of pool water
32 sampling if necessary to assure that the pool water meets the
33 standards of this section.

34
35 (c) Routine samples collected under (b) of this section may not

36
37 (1) contain more than 200 bacteria per milliliter, as determined by the
38 standard (heterographic) agar plate count at 35 degrees C; or

39
40 (2) show positive test (confirmed test) for coliform organisms in any of the
41 five 10 milliliter portions of a sample, or when the membrane filter test is
42
43

used, show positive test (confirmed test) for more than zero coliforms organisms per 100 milliliter.

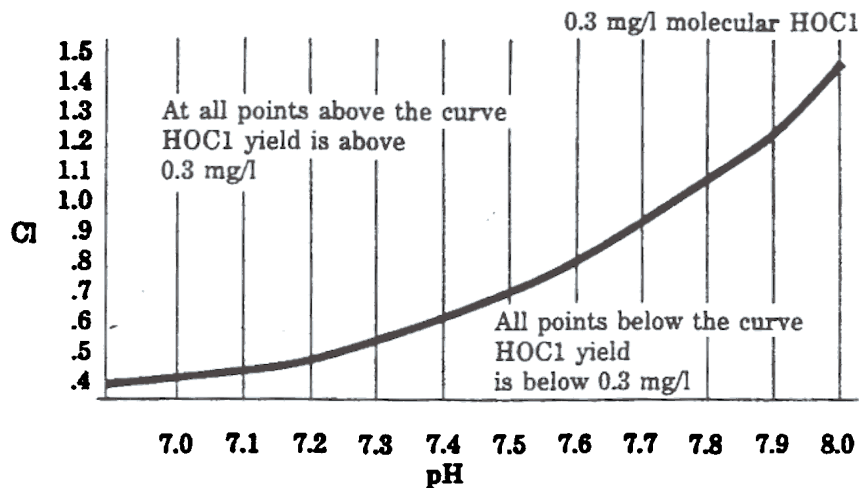
(d) Samples of pool water shall be collected and examined in accordance with the American Public Health Association's Standard Methods for the Examination of Water and Wastewater, 16th Edition, 1985.

(e) If a sample of pool water tests positive for pseudomonas or other pathogens, the pool shall be closed until sampling shows that the water is free of the pathogen.

(f) Samples of pool water shall be examined by a laboratory approved by the department.

(g) If chlorine is used as a disinfectant, the level of free chlorine shall provide a molecular hypochlorous yield of not less than 0.3 mg/l. The yield shall be determined either mathematically or by using the graph in Table E of this subsection.

TABLE E
FREE CHLORINE LEVELS



To determine correct free chlorine dosage at a measured pH

(1) find the measured pH on the horizontal axis of the graph;

(2) follow the corresponding vertical line up to where it crosses the curved 0.3 mg/l line; and

2 (3) from this point, draw a horizontal line to the axis and determine the
3 minimum free chlorine dosage required.

4 To determine if a sample at a specific pH and free chlorine level meets the
5 standard

6 (1) read horizontally from the free chlorine level determined by testing;

7
8 (2) read vertically from the tested pH

9
10 (3) if the point where these lines cross is below the line of the curve, the
11 sample does not meet the minimum standard and the free chlorine dosage
12 shall be increased or the pH lowered; and

13
14 (4) if the point where these lines cross is on or above the line of the curve,
15 the sample meets the standard.

16
17 (h) In addition to the requirements of (g) of this section, the following
18 requirements apply to the level of free chlorine:

19
20 (1) chloramines may not exceed one-half of the total chlorine level;

21
22 (2) chlorinated isocyanurates and cyanuric acid shall not be used;

23
24 (3) only solution feed systems shall be used, but erosion feed systems and
25 manual feed systems shall not be used;

26
27 (4) gas chlorinators shall feed no more than three pounds of chlorine per
28 10,000 gallons of pool volume in a 24-hour period; and

29
30 (5) mechanical means shall be used to dispense pool chemicals and
31 disinfectants that are added routinely; chemicals shall only be applied
32 directly into the pool by hand during an emergency to super-chlorinate or
33 otherwise adjust pool water quality; hand application shall only occur
34 when the pool is closed to bathers.

35
36 (i) The pH of pool water shall be kept between 7.0 and 8.0 when bathers are in the
37 water.

38
39 (j) Alkalinity shall be kept between 50 and 200 mg/l and shall be measured at
40 least once a week.

41
42 (k) Pool water shall not cause corrosion or scaling of the pool. Total hardness
43 shall be kept between 100 and 1,000 mg per liter. Calcium hardness shall be at

2 least 70 percent of the total hardness. The saturation index shall be within plus or
3 minus 0.5.

4 (l) The wastewater system shall comply with 18 AAC 72. The sanitary sewer
5 serving the pool and auxiliary facilities shall discharge to a public sewer system
6 whenever possible.

7
8 (m) Solid waste shall be conveyed, stored, and disposed of in a manner which
9 minimizes the development of odor, prevents waste from attracting and harboring
10 vermin, and otherwise complies with 18 AAC 60. Any incinerator used by the
11 facility shall comply with 18 AAC 50.

12
13 Editor's Notes -The document described in 16.15.145 may be obtained from the
14 American Public Health Association, 1015 Fifteenth Street, N.W., Washington,
15 D.C. 20005. The document may be reviewed at the Department of Health and
16 Human Services.

17
18 16.15.200 Plumbing.

19
20 (a) All plumbing used in pools and spas located within the municipality shall
21 comply with the current edition of the Uniform Plumbing Code.

22
23 (b) Regardless of whether a pool or spa is subject to (a) of this section, all pools
24 and spas within the municipality shall

25
26 (1) provide hot and cold running water under pressure to all handsinks and
27 showers; and

28
29 (2) have all plumbing fixtures, drains, components, and appliances, used to
30 receive or discharge liquid wastes or sewage, properly connected to the
31 drainage system of the building or premises.

32
33 Editor's Notes -A copy of the Uniform Plumbing Code may be reviewed at the
34 Department of Health and Human Services. A copy may be obtained from the
35 International Conference of Plumbing and Mechanical Officials, 32 Alhambra
36 Avenue, Los Angeles, CA 90032.

37
38 16.15.210 Maintenance.

39
40 (a) Equipment for circulation, filtration, disinfection, and pool water treatment
41 shall be available and properly maintained.

42
43 (b) Dressing room floors and pool deck areas shall be sanitized daily. If sanitizers

might be splashed or otherwise introduced into the pool, only sanitizers compatible with the disinfectant used in the pool shall be used.

(c) The pool bottom shall be vacuumed when dirt is visible.

(d) Gutters shall be kept free of body oil accumulations.

16.15.220 User Load Computation.

Bather load for pools shall not exceed one person per 35 square feet of pool area less 300 square feet for each diving board or platform.

16.15.230 Dressing, Shower, and Toilet Facilities.

(a) Dressing rooms shall be near toilets and showers, and shall be well lighted. Dressing room ventilation shall be designed to prevent corrosion and condensation. Dressing room floors shall be constructed of nonabsorbent materials with nonslip finishes and shall slope to properly located drains.

(b) Showers shall be located near the pool entrance. The hot water temperature for showers shall not be less than 100 degrees F, nor more than 120 degrees F.

(c) At least one flush toilet, one urinal, one shower, and one handsink shall be provided for male bathers. At least one flush toilet, one shower, and one handsink shall be provided for female bathers.

(d) In addition to the requirements of (c) of this section, sanitary facilities shall be provided as set out in Table F of this subsection.

TABLE F
SANITARY FACILITY REQUIREMENTS

FACILITY	MALES	FEMALES
Showers	1:40	1:40
Flush toilets	1:60	1:40
Urinals	1:60	----
Handsinks	1:60	1:60

(e) Sanitary facilities shall be located near the pool entrance

(f) The layout of the dressing room shall allow bathers to pass through the showers before exiting the dressing room on the way to the pool.

1 (g) Flush toilets, urinals, and handsinks for spectators shall be provided and be
2 separate from those for bathers. The approaches to spectator toilet facilities
3 shall not include an area where bathers pass in bare feet.
4

5 h) At least one handwash sink shall be provided in each toilet room.
6

7 (i) Soap shall be available at showers and handsinks.
8

9 (j) Toilet tissue in a suitable dispenser shall be provided at each toilet
10

11 (k) Hose bibs equipped with vacuum breakers shall be provided within each
12 dressing room to allow the entire room to be reached with a 50-foot hose.
13

14 16.15.240 Recreational Water Slide Flumes.
15

16 Recreational water slide flumes shall meet the standards set out in the July 1981
17 edition of *Suggested Health and Safety Guidelines for Recreational Water*
18 *Slide Flumes*, published by the Centers for Disease Control, Public Health
19 Service, United States Department of Health and Social Services, requirements of
20 which are adopted by reference as part of this chapter.
21

22 Editor's Notes -A copy of *Suggested Health and Safety Guidelines for*
23 *Recreational Water Slide Flumes* is available from the Public Information Office,
24 Centers for Disease Control, Atlanta, Georgia 30333, or from the Department of
25 Health and Human Services.
26

27 16.15.250 Flotation Tanks.
28

29 A flotation tank may be allowed under 16.15.080 if
30

31 (1) the flotation tank complies with 16.50.260;
32

33 (2) flotation tank water is cycled at least three times by the filtration system
34 between uses;
35

36 (3) a plan for emergency evacuation of bathers in the flotation tank should a
37 fire or other emergency occur is posted in a conspicuous place;
38

39 (4) the door of the flotation tank is not equipped with a locking device
40

41 (5) an attendant is on duty at all times when the flotation tank is in use;
42 and
43

(6) a written plan for communicating with bathers when the bathers are in the flotation tank is posted in a conspicuous place.

16.15.260 Public Spas.

(a) In addition to the other requirements of this section, public spas, including public hot tubs, shall meet the standards set out in the April 1981 edition of *Suggested Health and Safety Guidelines for Public Spas and Hot Tubs*, published by the Centers for Disease Control, Public Health Service, United States Department of Health and Human Services, the requirements of which are adopted by reference in this chapter.

(b) Continuous disinfection is required for spas built after June 4, 1983.

(c) An automatic sensor control is required for disinfectant and pH

(d) A disinfectant other than chlorine or bromine may be allowed under 16.15.080.

(e) The free chlorine residual shall be kept at a minimum of 2.0 mg/l and a maximum of 10 mg/l.

(f) The pH level shall be between 7.2 and 7.6 when the spa is in use.

(g) The free chlorine or bromine residual and pH shall be measured every two hours when the spa is in use.

(h) Total alkalinity shall be kept between 100 and 140 mg/l, and shall be measured at least weekly.

(i) An air circulation rate of at least six air exchanges per hour shall be provided in the room containing the spa.

(j) A spa, including a hot tub, shall comply with 16.15.100 (o) - (q), 16.15.160, and 16.15.190.

(k) A spa, including a hot tub, with wooden interior surfaces is prohibited.

(l) A spa, including a hot tub, shall be completely drained whenever

(1) the operator determines that the water requires replacement;

(2) the number derived by dividing one-third of the total capacity, in

2 gallons, of the spa by the number of bather periods since the spa
3 was last filled equals the number of days since the spa was last filled; or

4 (3) the total dissolved solids reach 1,500 PPM; if this method is used, the
5 total dissolved solids shall be measured daily, with results recorded in the
6 log.
7

8 Section 7. This ordinance shall become effective upon passage and approval
9

10 PASSED AND APPROVED by the Assembly this 9th day of

12 February , 1999.
13

14 
15
16 Chair

17
18 ATTEST

19
20
21 
22 Municipal Clerk