

# Section 9: Appendices

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Note: Some of the appendices may actually be a fact sheet and may not be included in these guidelines.

<b>Appendix 1</b>	<b>Example: Aquatic Safety Plan Table of Contents</b>
<b>Appendix 2</b>	<b>Pool Operation Training Course Requirements</b>
<b>Appendix 3</b>	<b>Pool Parameters</b>
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## **Appendix 1: Example: Aquatic Safety Plan Table of Contents**

Facility Name

Facility Address

Plan Prepared by

Date Plan Prepared

Plan Reviewed by

Date Plan Reviewed

Pool Characteristics

- Type of Facility (outdoor pool, indoor pool, wading pool)
- Square Footage
- Minimum Depth
- Maximum Depth
- Bather Capacity
- Diving Allowed (Y/N)
- Slides (Y/N)
- Pool volume
- Other features (e.g., climbing wall, rope swing)

Pool Operator Qualification

Lifeguard Certifications (e.g., required skills and certifications for lifeguard personnel)

Other personnel qualifications, certifications, job descriptions, and required training (e.g., instructors)

Operating Procedures

- Pool and Hot Tub Rules
- Pool and Hot Tub Water Testing and Maintenance Log
- Maintenance and Cleaning Schedules
- Chemical Storage and Handling Procedures
- Integrating the Fire Safety Plan

Emergency Response Procedures (e.g., search, communications, reporting, training)

Injury Prevention

- Waterfront Hazards (e.g., mitigation of hazards in entrance areas to pool, diving boards, and slides)
- Lighting and Electrical (e.g., emergency lighting)
- Maintenance (e.g., daily inspections and reporting of results)
- Rules – other than the pool and hot tub rules
- Diving Areas (posting of rules)
- Pool Slides (posting of rules)

Responding to Incidents

- Important Phone Numbers
- Incident Response
- Fecal Clean Up Procedure
- Lifesaving, Lifeguard and First Aid Equipment
- Pool Supervision Schedule
- Vomit and Blood Clean-up Procedures

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## **Appendix 2: Pool Operation Training Course Requirements**

### **Basic Pool Operation Course Requirements**

- Nova Scotia Operational Guidelines for Aquatic Facilities
- Pool types and designs
- Pool chemistry
- Water testing
- Circulation, filtration, and turnover rate
- Suction entrapment hazards
- Preventative maintenance
- Seasonal maintenance
- Safe handling and storage of chemicals
- Troubleshooting problems

### **Comprehensive Pool Operation Course (12 to 14 hours minimum)**

- Review of basic course information
- Nova Scotia Operational Guidelines for Aquatic Facilities
- Increased depth on pool chemistry
- Filter sizing
- Pumps and motors and their maintenance
- General maintenance
- Mechanical workings
- Risk management
- Secondary disinfection (ozone, ultraviolet light)
- Oxidation-reduction potential
- Troubleshooting problems

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## Appendix 3: Pool Parameters

Parameters	Pool Type	Min.	Ideal	Max.	Test Frequency & Comments
Free Available Chlorine (FAC) (not stabilized, no cyanuric acid)	Pool & Water Park	1.0 ppm	2-4 ppm	5.0 ppm	*Prior to opening daily, every two hours for manual feed or every 4 hours for automatic feed.
	Increased Risk Venue	2.0 ppm	Secondary disinfection system recommended		
	Spa	3.0 ppm	3.0-5.0 ppm	5.0 ppm	
FAC when using cyanurate acid or using stabilized chlorine	Outdoor Swimming Pools/Parks	2.0 ppm	3.0-5.0 ppm	5.0 ppm	*Same as above
Bromine	Pool	3.0 ppm	4-6 ppm	6.0 ppm	*Same as above
	Spa	4.0 ppm	6.0 ppm	8.0 ppm	
Oxidation-Reduction Potential (ORP)	All Pools	650 mV - 750 mV			Daily testing
Combined Chlorine (CC)	Pools	0.0 ppm	0.0 ppm	<0.4	At least daily testing
pH	All	7.2	7.4-7.6	7.8	*Same as above
Total Alkalinity	All	60 ppm	80-120 ppm	180 ppm	At least weekly
Calcium Hardness	All	180 ppm	200 ppm	400 ppm	Weekly / monthly
Temperature	Pool	Activity dependent			Daily
	Spa	<104°F, (40°C)			
Total Dissolved Solids	All	Less than 2000 or 1500 above fill water TDS			Quarterly
Salt Levels	Salt water generated pools	2500-3500 ppm			Weekly
Cyanuric Acid (outdoor pools only)	Stabilizer is not effective in brominated pools.	0 ppm	20-30 ppm	100 ppm	At least weekly

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## Appendix 4: Example Daily Pool Log

### Pool Record Log to be Inspected/Tested Prior to Pool Opening

	Time	Operator Signature		Time	Operator Signature
Emergency Telephone			Ground Fault Circuit Interrupter (activated)		
Pool Rules Notices Posted Unsupervised Sign Posted if Applicable			First Aid Kit Fully Stocked		
Non-conducting Reaching Pole Present			Buoyant Throwing Aid Present with Adequate Rope		
Spine Board			Self-Latching Gate Securely Latches Gates Closed		

### Public Pool – Water Chemistry and Clarity Tests

	30 min prior to opening	am/pm	am/pm	am/pm	am/pm	am/pm	am/pm	am/pm	am/pm	am/pm	am/pm	am/pm
Total Alkalinity Minimum 60-120												
pH 7.2-7.8												
Free Available Chlorine (min) Unstabilized 1.0ppm Stabilized (CYA-Present) 2.0 ppm												
Bromine 3.0ppm												
Combined Chlorine >0.4 ppm												
Oxidation-Reduction Potential Minimum XXx mV												
Water Clarity Black Disc Visible from 9m												
Total # of Bathers												
Operator's Initials												
Water Meter Reading	Records of any emergencies, rescues, or breakdowns of equipment, maintenance, date of pool drain and refill, type and amount of any chemicals added manually, etc.:											
Reading at beginning of day	Reading at end of day											
Make-up Water Added												

Weekly Cyanuric Acid Test for Stabilized Pool: (sign and date) (maximum 100 ppm)

Monthly Water Outlet Cover Security Test: (sign and date)

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## Appendix 5: Example Spa Log

### Spa Record Log to be Inspected/Tested 30 Minutes Prior to Opening

	Time	Operator Signature		Time	Operator Signature
Emergency Telephone			Ground Fault Circuit Interrupter (activated)		
Caution Notices			First Aid Kit Fully Stocked		
Non-conducting Reaching Pole Present			Buoyant Throwing Aid Present with Adequate Rope		
Spine Board			Self-Latching Gate Securely Latches Gates Closed		

### Public Spa – Water Chemistry and Clarity Tests

	Prior to opening	am/pm	am/pm	am/pm	am/pm	am/pm	am/pm	am/pm	am/pm	am/pm	am/pm	am/pm
Total Alkalinity Minimum 80-120												
pH 7.2-7.8												
Free Available Chlorine 3-5 ppm Total Bromine 4-5 ppm												
Oxidation-Reduction Potential Minimum												
Water Clarity Lowest water outlet drain visible in non-turbulent state												
Total # of Bathers												
Water Temperature (max. 40°C)												
Operator's Initials												
Water Meter Reading	Records of any emergencies, rescues, or breakdowns of equipment, maintenance, date of pool drain and refill, type and amount of any chemicals added manually, etc.:											
Reading at beginning of day	Reading at end of day											
Make-up Water Added												

After drain and refill, inspections of drain covers, suction fittings, emergency equipment within spa: (date and sign) (secure and operational)

Weekly Cyanuric Acid Test for Stabilized Spa: (sign and date) (ideal 30 maximum 100 ppm)

Monthly Water Outlet Cover Security Test: (sign and date)

Monthly Emergency Stop Button Test: (sign and date)

Monthly Vacuum Release Mechanism Test: (sign and date)

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## **Appendix 6: Hard Surface Incident Response Recommendations<sup>126</sup>**

### **(Vomit, blood, or feces on pool deck/change room incident)**

Accidents can happen out of the pool too. Being prepared to deal with a vomit, blood, or fecal incident on your pool deck or in the change/shower rooms is important for the prevention of disease transmission within the facility. The following recommended procedure shall be adapted to suit your facility-specific Aquatic Safety Plan.

1. Establish an incident response kit consisting of cleaning equipment, buckets, mops, Health Canada-approved (must have a Drug Identification Number) disinfectant, or household bleach (5.25%) and the appropriate personal protective equipment.
2. Immediately close the affected area and post warning signs until clean-up is complete.
3. Put on disposable gloves to prevent contamination of hands. Torn gloves shall not be used, and avoid tearing your gloves on equipment or sharp objects. Use additional personal protection equipment, as needed, to protect personal clothing, skin, lips, lungs and eyes.
4. Wipe up the spill using paper towels or absorbent material and place in a plastic garbage bag.
5. Gently pour approved disinfectant or bleach solution onto all contaminated areas of the surface. Ensure product used is compatible with other chemicals used in the pool and area.
  - Either a Health Canada-approved disinfectant (one with a Drug Identification Number) following the instructions on the package, or
  - A bleach disinfecting solution shall be applied liberally.
    - Recipe for Bleach Disinfecting Solution
      - 9 parts cool water
      - 1 part household bleach
      - Add the household bleach to the water.
      - Gently mix the solution.
6. Let the approved disinfectant or bleach solution remain on the contaminated area for the required contact time.
7. After required contact time wipe up the remaining disinfectant/bleach solution.
8. All non-disposable cleaning materials used such as mops and scrub brushes shall be disinfected by saturating with a disinfectant solution and air dried.
9. Remove gloves and place in plastic garbage bag with all soiled cleaning materials.
10. Double-bag and securely tie up plastic garbage bags and discard.
11. Thoroughly wash hands with soap and water.
12. Log the incident and remedial action taken.
13. Replenish incident response kit.

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<sup>126</sup> This Fact Sheet is consistent with CDC's Healthy Swimming Recommendations and the MAHC. For more information go to CDC Healthy Swim website

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## Appendix 7: Criteria for Immediate Closure of a Pool

### The Issue

Closing a pool to all swimmers and patrons is necessary and the responsibility of pool staff when conditions exist of an imminent nature that could cause illness or injury to the patrons. A swimming pool is subject to immediate closure when any of the following conditions are observed:

Issue	Risk
<b>Unsecured pool enclosures:</b> shall be self-closing and self-latching gates	<ul style="list-style-type: none"> <li>• Risk of drowning</li> </ul>
<b>Emergency telephone or alarm system missing or malfunctioning</b> (where applicable – no lifeguard on duty)	<ul style="list-style-type: none"> <li>• No means to get help</li> </ul>
<b>No or malfunctioning automatic shut-off for high risk venues and hot tub (spas)</b>	<ul style="list-style-type: none"> <li>• Risk of entrapment, evisceration and drowning</li> </ul>
<b>Lifesaving safety equipment not available or not in good repair</b>	<ul style="list-style-type: none"> <li>• Unable to assist in an emergency situation</li> </ul>
<b>Lack of supervisory personnel and/or required lifeguards or the required number of lifeguards not available</b> (where applicable)	<ul style="list-style-type: none"> <li>• Risk of drowning or serious injury</li> </ul>
<b>Poor Water Clarity:</b> must be able to clearly see the main drain of the pool and/or the pool must pass the black disc test.	<ul style="list-style-type: none"> <li>• Swimmer cannot see bottom increasing risk of injury</li> <li>• Unable to see if a person is in trouble under the water increasing risk of drowning</li> <li>• Indication of ineffective disinfection and/or filtration system</li> </ul>
<b>Lack of disinfectant residual</b> in pool water and no disinfectant available on site to resolve the issue	<ul style="list-style-type: none"> <li>• Risk of disease transmission</li> </ul>
<b>pH outside of acceptable range:</b> pH of above 8 ppm and no product to lower pH to appropriate range	<ul style="list-style-type: none"> <li>• pH has a dramatic effect on water quality and the effectiveness of the disinfectant</li> </ul>
<b>Fecal (solid or diarrheal), vomit, or chemical release in the pool</b> (see fact sheets)	<ul style="list-style-type: none"> <li>• Risk of disease transmission or injury</li> </ul>
<b>Filtration or circulation system is not operative or is malfunctioning</b>	<ul style="list-style-type: none"> <li>• Risk of disease transmission</li> <li>• Increased risks of high turbidity interfering with clarity of pool</li> <li>• Diminishes the ability of proper disinfection</li> </ul>
<b>Missing or damaged drain cover or fittings</b>	<ul style="list-style-type: none"> <li>• Suction entrapment and entanglement risk</li> <li>• Drowning risk</li> </ul>
<b>Ground Fault Circuit interrupter missing or malfunctioning</b>	<ul style="list-style-type: none"> <li>• Electrical shock hazard</li> </ul>
<b>Improper chemical storage</b>	<ul style="list-style-type: none"> <li>• Improper or incompatible storage of chemicals can create a risk of fire, explosion, release and personal injury to anyone in or around the facility</li> </ul>
<b>Other Hazardous Conditions</b>	<ul style="list-style-type: none"> <li>• Risk of physical injury e.g., power outage, broken glass, severe weather at outdoor pools (thunder and lightning), water too hot in spas or any other imminent health risk</li> </ul>



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## Appendix 8: Example: Public Pool and Spa Signage

It is further recommended to supplement these signs with universally accepted pictograms when possible. Not all facilities will require all signage.

Public Pools Signage Recommendations	Lettering Size Stroke Size	Recommended Location
<p><b>CAUTION</b> SWIM AT YOUR OWN RISK LIFEGUARD IS NOT ON DUTY</p>	25 mm	Posted in a conspicuous place within the pool and as determined in the Aquatic Safety Plan risk assessment
<p><b>HEALTH WARNING</b> No person infected with a communicable disease or having open sores on his or her body shall enter the pool. No person shall bring a glass container onto the deck or into the pool. No person shall engage in boisterous play in or about the pool. The maximum number of bathers permitted on the deck and in the pool at any time is _____. The location of the emergency telephone that is available is _____.</p>	25 mm	In at least two locations and as determined in the Aquatic Safety Plan risk assessment
<p><b>A CLEAN POOL IS A SHARED RESPONSIBILITY POOLS ARE NOT A BATHTUB OR A TOILET</b></p> <ul style="list-style-type: none"> <li>• Each bather shall take a shower using warm water and soap and thoroughly rinse off all soap before entering or re-entering the deck</li> <li>• Take frequent bathroom breaks</li> <li>• Do not pee in the pool</li> <li>• Do not poo in the pool</li> <li>• Do not drink the pool water</li> <li>• Do not swim if you have had diarrhea in the last two weeks</li> </ul>	25 mm	At each entrance to the pool surround area and as determined in the Aquatic Safety Plan risk assessment
<p><b>Designated Diaper Change Area</b></p> <ul style="list-style-type: none"> <li>• Never leave child unattended on the diaper change table.</li> <li>• Dispose of used disposable diapers in the diaper bucket or receptacle provided.</li> <li>• When finished dump contents from reusable diapers into toilets and bag diapers to take home.</li> <li>• Use the materials provided to clean/sanitize the surface of the diaper change station before and after each use.</li> <li>• Wash your hands and your child's hands after diapering.</li> <li>• Do not swim if ill with diarrhea.</li> </ul>	25 mm	Located at diaper change area

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<p><b>Example Hot Tub Rules</b></p> <p><b>Before entering the Hot tub you should:</b></p> <ul style="list-style-type: none"> <li>• Consult with your doctor if you             <ul style="list-style-type: none"> <li>- Are an elderly person</li> <li>- Have heart disease, diabetes, or high or low blood pressure</li> <li>- Are taking medications for cardiovascular or nerve disorders</li> <li>- Are pregnant</li> </ul> </li> <li>• Make sure someone is available to always be with you in the hot tub.</li> </ul> <p><b>When you are in the Hot Tub you must:</b></p> <ul style="list-style-type: none"> <li>• Always enter and leave the hot tub slowly and cautiously.</li> <li>• Keep long hair out of the water, away from all underwater fittings, especially suction fittings.</li> </ul> <p><b>When you are in the Hot Tub you must NOT:</b></p> <ul style="list-style-type: none"> <li>• Dive into the water.</li> <li>• Stay in the hot tub for more than 10 minutes at one time (long exposure may result in nausea, dizziness or fainting.)</li> </ul> <p><b>Once you have finished you should</b></p> <ul style="list-style-type: none"> <li>• Shower to cool down</li> <li>• Then, if you wish, return for another brief stay.</li> <li>• Drink water.</li> </ul>	<p>25 mm</p>	<p>In conspicuous location in clear view of the Hot Tub patrons</p>
<p><b>Pool Rules</b></p> <p><b>Before entering our pool you must:</b></p> <ul style="list-style-type: none"> <li>• Ensure you are not ill—including having conditions such as diarrhea, vomiting, open sores, bandages, head colds, discharging ears or noses, or ear infections. Persons with related symptoms should not enter the pool until 48 hours after cessation of these symptoms.</li> <li>• Wear clean and appropriate bathing attire.</li> <li>• Take a cleansing shower with soap.</li> <li>• Ensure all young children and non-swimmers are closely supervised (within arm’s reach at all times) by a responsible person of at least 16 years of age.</li> <li>• Ensure that infants and toddlers are wearing swim diapers and/or elastic swim pants.</li> <li>• Ensure one responsible person supervises a maximum of three children who are less than seven years of age.</li> <li>• Note that you must report an injury suffered while in the pool enclosure, or contamination or fouling of the pool (e.g., urinating or defecating), to the pool manager or lifeguard.</li> </ul>	<p>25 mm</p>	<p>Posted at slide entrance on pool deck and channel tunnel entry area, and as determined in the Aquatic Safety Plan risk assessment.</p>

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## Appendix 8: Example: Public Pool and Spa Signage

It is further recommended to supplement these signs with universally accepted pictograms when possible. Not all facilities will require all signage.

<p><b>The following is not allowed in our pool:</b></p> <ul style="list-style-type: none"> <li>• Changing diapers poolside.</li> <li>• Running, fighting or engaging in other conduct likely to cause an injury.</li> <li>• Contaminating or fouling the pool.</li> <li>• Diving into pool in water less than 2 m deep (the term “diving” is not intended to include swimming competitions or training for swimming competitions. In these cases the FINA rules should be followed).</li> <li>• Bringing glass into the pool area.</li> <li>• Using or being under the influence of intoxicants.</li> </ul>		
<p><b>Water Slide Safety Signage</b> <sup>127,128</sup></p> <ul style="list-style-type: none"> <li>• Maximum operational load 1 person, 300 pounds</li> <li>• All riders must be 48 inches tall to ride the water slide (Users of the slide must be of an age and size to manage the slide)</li> <li>• Obey all orders given by the attendant and operator</li> <li>• Hands must be kept inside the channel</li> <li>• No bunching or chaining by riders permitted</li> <li>• Wait until the landing area is clear before entering the slide</li> <li>• Slide only in the sitting position or on the back into a feet-first position</li> <li>• Absolutely no riding on stomach or head first</li> <li>• Do not attempt to stop on the slide</li> <li>• Leave the plunge area immediately</li> <li>• Any other restrictions required by the slide manufacturer and designer</li> <li>• Any emergency procedures specifically designed for the slide must be clearly posted</li> </ul>	25 mm	Posted at slide entrance on pool deck and channel tunnel entry area, and as determined in the Aquatic Safety Plan risk assessment.
<p><b>Emergency Telephone Located Here</b>          This emergency phone directly links to 911 <b>or</b>          This emergency phone is directed to a designated facility emergency person</p>		Post at the emergency telephone

<sup>127</sup> Lifesaving Society, Yi Fan Wang Coroner’s Inquest Recommendations, May 23, 2013 retrieved from the www at [www.cdc.ca/news/canada/new-brunswick/coroner-s-jury-recommends-pool-safety-changes-11317228](http://www.cdc.ca/news/canada/new-brunswick/coroner-s-jury-recommends-pool-safety-changes-11317228)

<sup>128</sup> <http://www.health.gov.bc.ca/protect/pdf/bc-pool-design-guidelines.pdf>

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## Appendix 8: Example: Public Pool and Spa Signage

It is further recommended to supplement these signs with universally accepted pictograms when possible. Not all facilities will require all signage.

<p><b>Emergency Telephone Script</b></p> <ol style="list-style-type: none"> <li>1. Dial _____(911) (if necessary include any numbers that will give you an outside line)</li> <li>2. What is your emergency: State Fire, Medical, etc. (what do you need)</li> <li>3. Facility land line phone number is: _____</li> <li>4. Give location             <ol style="list-style-type: none"> <li>a. Civic # is: _____</li> <li>b. Street Name is: _____</li> <li>c. Street type is: e.g., avenue, street, etc. _____</li> <li>d. Town: _____</li> <li>e. County: _____</li> <li>f. Address _____</li> <li>g. Emergency entrance is located where: _____</li> </ol> </li> </ol>		Post at the emergency telephone
<p><b>MARKINGS</b>  <b>Water depths indicating the deep points, breaks between gentle and steep slopes and shallow points and the words DEEP AREA, SHALLOW AREA</b></p>	100 mm	On the deck clearly marked in figures at appropriate locations.
<p><b>CAUTION</b>  <b>SHALLOW WATER NO DIVING</b></p>	150 mm	Post at a conspicuous location, where the pool has a maximum water depth of <2.50 meters.
<p><b>CAUTION</b>  <b>NO DIVING</b></p>	150 mm	Post conspicuously on each wall or fence enclosing the pool as determined in the Aquatic Safety Plan risk assessment.
<p><b>UNSUPERVISED BATHERS NOT ALLOWED BEYOND THIS POINT</b></p>	25 mm	
<p><b>NO BATHERS BEYOND THIS POINT</b></p>	25 mm	Where appropriate as determined in the Aquatic Safety Plan risk assessment.
<p><b>EMERGENCY STOP BUTTON</b>          In the event of an emergency push emergency stop button and use emergency phone. An audible and visual signal will activate.</p>	25 mm	
<p>Any additional signage as determined in the Aquatic Safety Plan risk assessment.</p>	TBD	