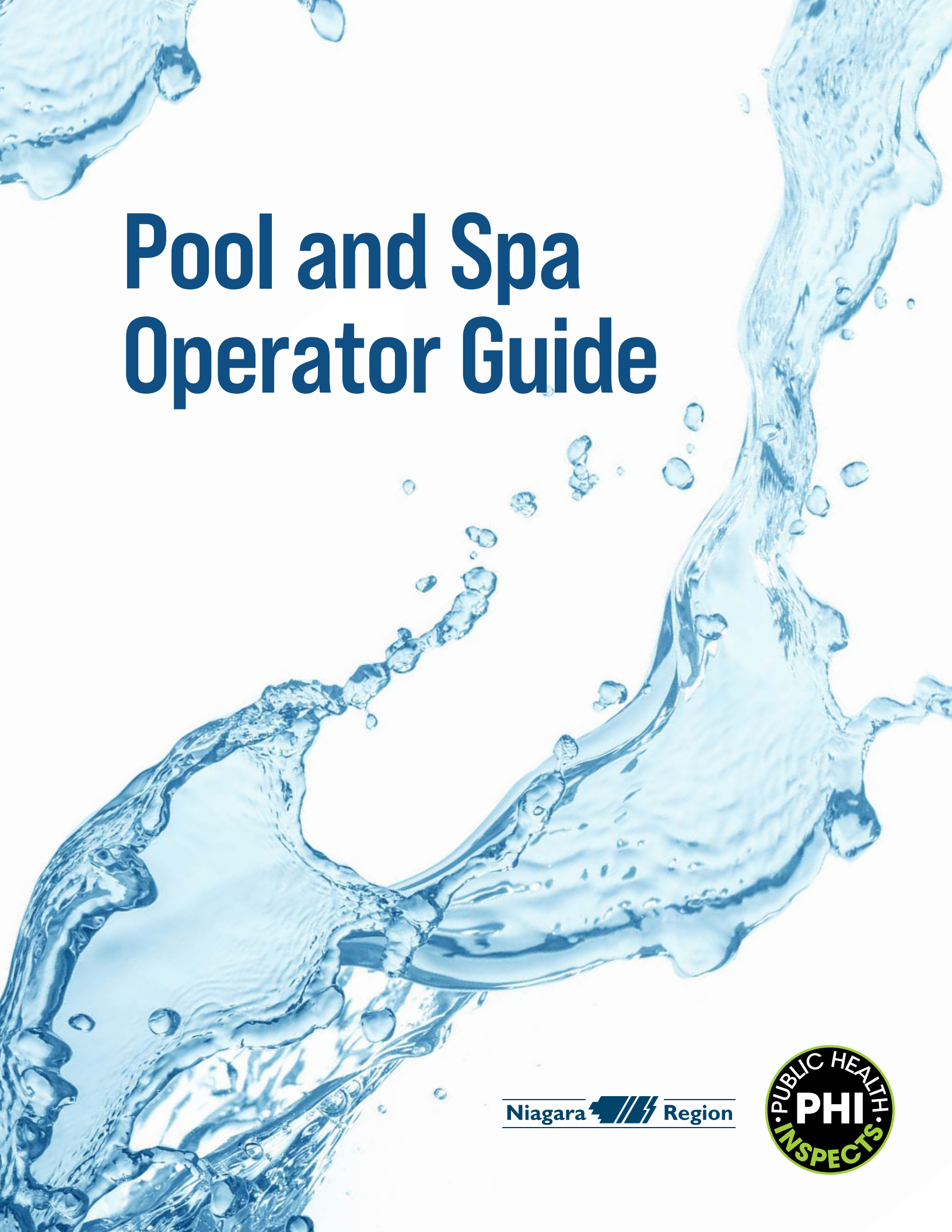
Pool and Spa Operator Guide



Niagara Region

PUBLIC HEALTH PHI INSPECTS

Introduction

Recreational water facilities must be maintained in a safe and sanitary condition, to ensure that use by the public does not result in illness,injury or death.

The intent of this recreational water safety guide is to provide public pool and spa owners and operators with enhanced recreational water safety knowledge, to assist in maintaining safe pools and spas. This guide will highlight recreational water safety legislation, water chemistry, types of public health inspections, and the Niagara Region Public Health & Emergency Services disclosure website. It is recommended that owners, operators and staff read this guide thoroughly; however, it is ultimately the responsibility of recreational water facility owners and operators to ensure their pools and/or spas are being maintained in a safe and sanitary condition.

For additional information: Please call your area public health inspector or call Niagara Region Public Health & Emergency Services, Environmental Health Duty Officer 905-688-8248 or 1-888-505-6074 ext. 7590 or visit niagararegion.ca/water (online sources).

DEFINITIONS

Automatic Sensing Devices: A device that determines and continuously displays sanitizer residual in a pool or spa's water and pH value of a pool or pub lic spa's water. The device regulates the operation of chemical feeders to maintain sanitizer and pH level in accordance with the Public Pools Regulation.

Back Wash: The process of cleaning the pool or spas filter by reversing the flow of water to flush out contaminants.

Bather: A person dressed for bathing.

Class A Pool: Examples include city pools, gym pools, or recreational pools.

Class B Pool: Hotel/motel pools, campground pools, or apartment/ condominium buildings with six or more dwelling units.

Class C Facility: Splash/spray pads, wading pools, and water slide receiving basins.

Daily Use Period: The period of time during which a public pool or public spa is open for use in an operating day.

Deck: The area immediately surrounding a public pool or spa.

Health Hazard: A condition of a premises; a substance, thing, plant, or animal other than a person; or a solid, liquid, gas, or combination of any of them, that has or is likely to have an adverse effect on the health of any person.

Make-Up Water: Water added to a public pool or public spa from an external source.

Operator: A person who is designated by the owner of a public pool or public spa as being responsible for the operation of the pool or spa.

Pool Fouling: Fecal or vomitus contamination of the pool or spa water.

Potable Water: Water that is safe to drink.

Public Spa or "Hot Tub": An enclosed body of water that is not drained between each use and uses hydro jets, air bubbles, or another method to have current flow through the majority of the water. Most spas also have a higher water temperature.

Recreational Water Illness: Illness caused by germs or chemicals found in the water we swim in. They are acquired by swallowing, breathing in mists or aerosols of, or having contact with contaminated water (CDC, 2019).

Sanitizer: Chemical solution used to kill bacteria and inhibit the growth of viruses, algae, and other contaminants.

Water Balance: Water that has the correct amount of minerals, which will not corrode surfaces or cause scale to form. Unbalanced water will be either corrosive or scaling.

Public Health Legislation Ontario

All public pools and spas in Ontario must meet the requirements of Ontario Regulation 565 – Public Pools (O.Reg 565) which is made under the authority of the Health Protection and Promotion Act (HPPA). Public health inspectors inspect all public pools and spas in order to ensure compliance with the legislation and ensure the facility is free of health hazards. Inspectors are also available as a resource to pool and spa operators to provide education and support.

Copies of Ontario Regulation 565 - Public Pools and the Health Protection and Promotion Act are available online at ontario.ca/laws.

Public Health Inspection Process

Routine inspections are conducted four times a year. Inspectors will assess the facility for compliance with O.Reg 565 and provide a report summarizing observations and items in need of correction. Inspectors will provide education and advice throughout the inspection. In certain situations, legal action including tickets, summons, or orders may be taken. Inspectors arrive unannounced and have a legal right of entry. Failure to allow an inspector access to the facility will result in an obstruction charge.

Inspections are also conducted in response to complaints received from the public, or in response to a report of water-borne illness.

If a health hazard is observed during the inspection, the inspector will issue an immediate verbal closure order. This verbal order is legally binding and will be followed up with a written order. All requirements of the order must be met and a re-inspection must be conducted before permission is given to re-open a facility. Failure to comply with an order will result in legal action.

Inspections can also be completed on demand for opening of new water facilities. Operators are legally required to provide a written notification to public health 14 days prior to opening to the public. To provide this notification, please complete this online form. niagararegion.ca/living/water/pools/re-open-pool.aspx

Public Disclosure

Public health units have a duty to inform and disclose inspection results. As per the Ministry of Health's recreational water protocol, inspection results must be made available to the general public. People can use inspection results to determine whether or not they wish to visit a facility. It is also beneficial to owners and operators as, it provides an opportunity to show the public that their facilities are operated in a safe and sanitary manner. Disclosure information is maintained on the Niagara Region website at niagararegion.ca/inspect. It displays all infractions observed during an inspection, including items that are corrected at time of inspection, and those that are outstanding, requiring a follow up inspection. Additionally, closures, convictions and orders issued are displayed for public knowledge along with those facilities that do not have of any issues.

Prevention of Illness, Injury and Death

Recreational water settings can be the host of bacteria, parasites, protozoa, and viruses that cause illness in the stomach as well as skin and ear infections. In addition, recreational water facilities also present a risk of drowning and other injury risks associated with suction drain injuries, chemical injuries, skin and eye conditions, and lastly injuries related to slipping and falling on wet surfaces. Proper operation and maintenance of public aquatic facilities is an important part of healthy and safe swimming. It is the responsibility of pool or spa owners and operators to ensure their recreational water facility is kept free from hazards to prevent injury, drowning, and death.

Pool Fouling Guidelines

Fecal incidents are a concern and an inconvenience to both pool and spa operators as well as bathers. Operators should carefully explain to bathers why the recreational water facility needs to be closed in response to a fecal incident – proper disinfection and protecting the bather's health. Closures allow chlorine to do its job – kill germs and help prevent recreational water illnesses.

Spas, wading pools and some (recirculating) splash/spray pads can have smaller amounts of water. In response to a fecal incidents in small-volume facilities, it might be more efficient to completely drain as much water as possible from the facility, scrub and clean all accessible surfaces in contact with the contaminated water, replace or clean filter media when appropriate, and refill with uncontaminated potable water from an approved source (e.g. municipal water system).

Fouling Procedures

Niagara Region Public Health & Emergency Services advocates following the U.S. Centers for Disease Control and Prevention Guidelines regarding fecal contamination. The guidelines concentrate on the deactivation of the germ Cryptosporidium. Cryptosporidium is a treatment resistant, waterborne pathogen or germ. A formed stool presents less of a risk for disease transmission as it acts as a container for the pathogen. As a result, the procedures distinguish three separate approaches for water disinfection – formed stool, and diarrhea with and without stabilizer in the water.

FORMED STOOL

Step 1: Close the aquatic venue to swimmers. If there are multiple facilities that use the same filtration system, all facilities will have to be closed. Do not allow anyone to enter the facility until the disinfection process is completed.

Step 2: Remove as much of the fecal matter as possible using a net or scoop and dispose of the fecal matter in a sanitary manner. Clean and disinfect the item used to remove fecal matter (e.g. leaving the net or bucket immersed in the water during disinfection). Vacuuming fecal matter from the water is not recommended.

Step 3: If necessary, clean and disinfect any contaminated pool and deck surfaces using an adequate disinfecting solution (1 part bleach to 9 parts water).

Step 4: Raise the water's free available chlorine (FAC) to at least 2 parts per million (ppm) and ensure that pH is maintained between 7.2 to 7.5. Close pool for additional 25 minutes. Other concentrations or closure times may be used (refer to table).

Step 5: Confirm that the filtration system is operating while the water reaches and is maintained at the proper chlorine concentration and pH for disinfection.

Step 6: Allow swimmers back into the water only after the disinfection process has been completed and all water chemistry is within acceptable range as per Ontario Public Pools regulation.

Step 7: Document the incident and details on the daily records.

Requirements for Formed Stool Fecal Incidents	
Free Available Chlorine (ppm)	**Disinfection Time**
1.0	45 minutes
2.0	25 minutes
3.0	19 minutes

DIARRHEA IN WATER WITHOUT STABILIZER (INDOOR)

Step 1: Close the aquatic venue to swimmers. If you have multiple venues that use the same filtration system, all venues will have to be closed. Do not allow anyone to enter the venue(s) until the hyperchlorination process is completed.

Step 2: Remove as much of the fecal matter as possible (using a net or bucket) and dispose of the fecal matter in a sanitary manner. Clean and disinfect the item used to remove the fecal matter (after cleaning, leave the net or bucket immersed in water during hyperchlorination). Vacuuming fecal matter from the water is not recommended.

Step 3: If necessary, clean and disinfect any contaminated pool and deck surfaces using an adequate disinfecting solution (1 part bleach to 9 parts water).

Step 4: Using unstabilized chlorine (sodium hypochlorite), raise the water's free chlorine concentration (see table below) and maintain water at pH 7.5 or less.

Step 5: Achieve a concentration x time (CT) inactivation value of 15,300 to inactivate or kill Crypto. The CT inactivation value refers to the concentration of free chlorine in ppm multiplied by the time in minutes at a specific pH and temperature.

Step 6: Confirm the filtration system is operating while the water reaches and is maintained at the proper free chlorine concentration and pH for hyperchlorination.

Step 7: Back wash the filter thoroughly after reaching the CT inactivation value. Be sure to discharge directly to waste and according to provincial or local regulations. Do not return the backwash through the filter. Where appropriate, replace the filter media.

Step 8: Allow swimmers back into the water only after the required CT inactivation value has been achieved and the free chlorine concentration and pH are within the operating range.

Step 9: Document the incident and details on the daily records.

Requirements for Diarrhea without Stabilizer (Indoor Pools/Spas)	
Free Available Chlorine (ppm)	**Time**
20	12.75 hours
10	25.5 hours

DIARRHEA IN WATER WITH STABILIZER (OUTDOOR)

Step 1: Close the aquatic venue to swimmers. If you have multiple venues that use the same filtration system, all venues will have to be closed. Do not allow anyone to enter the venue(s) until the hyperchlorination process is completed.

Step 2: Remove as much of the fecal matter as possible (using a net or bucket) and dispose of the fecal matter in a sanitary manner. Clean and disinfect the item used to remove the fecal matter (after cleaning, leave the net or bucket immersed in water during hyperchlorination). Vacuuming fecal matter from the water is not recommended.

Step 3: If necessary, clean and disinfect any contaminated pool and deck surfaces using an adequate disinfecting solution (1 part bleach to 9 parts water).

Step 4: Using unstabilized chlorine (sodium hypochlorite), raise the water's free chlorine concentration and maintain water at pH 7.5 or less.

Step 5: Hyperchlorinate. Chlorine stabilizer slows the rate at which free chlorine inactivates or kills Crypto, and the more stabilizer there is in the water the longer it takes to kill Crypto. If the cyanuric acid concentration is 1-15 parts per million (ppm): raise the free chlorine concentration to 20 ppm for 28 hours or, raise the free chlorine concentration to 30 ppm for 18 hours or, raise the free chlorine concentration to 40 ppm for 8.5 hours.

If the cyanuric acid concentration is more than 15 ppm, lower the concentration to 1-15 ppm by draining partially and adding fresh water without chlorine stabilizer before attempting to hyperchlorinate.

Step 6: Confirm the filtration system is operating while the water reaches and is maintained at the proper free chlorine concentration and pH for hyperchlorination.

Step 7: Back wash the filter thoroughly after reaching the CT inactivation value. Be sure to discharge directly to waste and according to provincial or local regulations. Do not return the backwash through the filter. Where appropriate, replace the filter media.

Step 8: Allow swimmers back into the water only after the required CT inactivation value has been achieved and the free chlorine concentration and pH are within the operating range.

Step 9: Document the incident and details on the daily records.

Vomit

Vomiting while swimming appears to be a common event. Often, vomiting is a result of swallowing too much water, meaning that the vomit is probably not infectious. However, if the contents of the stomach are vomited, it is important to act immediately using the same procedure that applies to formed stool.

Blood

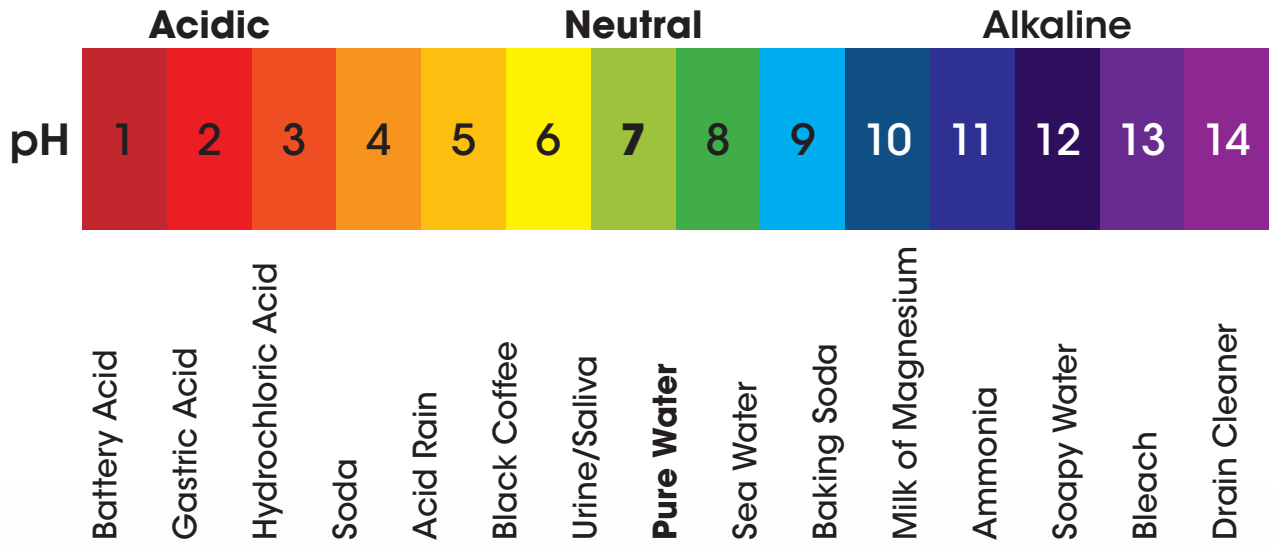
Germs from blood do not get transmitted by swimming in a pool or spa. These germs have to enter the bloodstream of another person in order to potentially cause illness. Chlorine is able to kill off germs and as a result, there is no public health reason to recommend a closure after a blood spill in a properly disinfected pool or spa.

Water Chemistry

pH

pH is a measure of the acidity or basicity of the water. The scale ranges from 0 (most acidic) to 14 (most basic) with 7 being the neutral point.

The required pH range for pool and spa water is 7.2 to 7.8



pH	
Problem	**Effect**
Low pH	Eye irritation Corrosion
High pH	Chlorine effectiveness decreases Eye irritation Chlorine inefficiency Short filter runs Scaling
Note: When mixing chemicals, add them slowly. Never add water to chemicals, always add the chemicals to the water while following manufacturers instructions.	

Consult with pool specialist/company for direction on balancing water chemistry.

Effect of pH on Hypochlorous Acid Chart

pH Levels	Active Chlorine % (Efficacy)
6.0	97
6.5	91
7.0	76
7.2	66
7.5	50
7.8	33
8.0	24
8.5	9

As pH increases, the effectiveness of the chlorine decreases. At pH of 8.0 chlorine efficiency is 10 per cent. As the pH decreases, the effectiveness of the chlorine increases.

Total Alkalinity (TA)

Total Alkalinity must be maintained between 80 – 120 ppm.

Total alkalinity is the measure of waters ability to resist change in pH.

Total alkalinity should be adjusted when:

- pH of the pool water is consistently high and difficult to maintain from 7.2 – 7.8
- Water is cloudy
- There is excessive corrosion or staining

Total Alkalinity (TA)	
Problem	**Effect**
Low TA	pH bounce Staining Increased corrosion
High TA	High acid demand Water is cloudy pH usually high Bicarbonate scale

Consult with pool specialist/company for direction on balancing water chemistry.

Stabilizer (Cyanuric Acid)

Stabilization is the addition of cyanuric acid to water. Cyanuric acid is a weak organic acid that binds the chlorine residual of the water and greatly reduces chlorine effectiveness by the suns ultraviolet rays. Stabilizer is available in chlorine pucks or powder form.

Chlorine residuals that have been stabilized will last three to four times longer. The cyanuric acid slightly reduce the disinfection power of the chlorine, thus high levels of chlorine must be maintained greater than 1.0 mg/L and less than 10 mg/L.

Stabilizer does not dissipate or wear-out. Adding fresh water can help to reduce elevated levels. Consider reducing levels of cyanuric acid if greater than 60mg/L.

Cyanurate stabilizer must not be used in spas or pools that are totally or partially covered by a roof.

Chlorine Sanitizer

Chlorination is the addition of chlorine to pool water. Chlorine is added to sanitize and destroy harmful bacteria and to oxidize or burn out organic contaminants.

Free Available Chlorine (FAC)	The amount of chlorine in the water available to sanitize, and kill bacteria.
Combined Chlorine (CC)	Chlorine which has combined with organic waste, also known as chloramines. Combined chlorine has little sanitizing power and causes chlorine odours in a pool or spa. It also causes symptoms such as eye irritation.
Total Chlorine (TC)	The sum of combined chlorine and free available chlorine.

TC = FAC + CC

Facility	Limits	Frequency of Tests
Chlorine – Public Pool	**0.5 – 10.0 ppm** (without stabilizer) **1.0 – 10.0 ppm** (with stabilizer)	**No automatic sensing device:** • ½ hour prior to opening and every 2 hours while operating **With automatic sensing device** • ½ hour prior to opening, every 4 hours while pool is open
Chlorine – Spa	**5.0 – 10 ppm**	
Chlorine – Wading Pool	**5.0 – 10 ppm**	

Superchlorination (Shocking)

Superchlorination is the addition of high dose of chlorine to remove contaminants and improve pool water quality. The continual addition of chlorine, dirt, and microorganisms eventually leads to a build up combined chlorine. Combined chlorine causes eye irritation and chlorine odour. To rid the water of these, large amounts of chlorine are required, raising the free available chlorine levels to roughly 10-20 mg/L.

Superchlorination is not to take place during the daily use period and must occur after the pool has closed.

Bromine Sanitizer

Bromination is the addition of bromine to pool water. Bromine is added to sanitize and destroy harmful bacteria. Bromine sanitizer efficiency is essentially independent of the pH; however, it reduces the pH of the pool or spa water and as a result also reduces the total alkalinity. There is no known stabilizer for bromine and it is more stable than chlorine. Bromine is the preferred sanitizer for warm water facilities such as spas.

Facility	Limits	Frequency of Tests
Bromine – Public Pool (excluding wave pool)	**2.0 – 4.0 ppm**	**No automatic sensing device:** • **½ hour prior to opening and every 2 hours while operating** **With automatic sensing device** • **½ hour prior to opening, every 4 hours while pool is open**
Bromine – Wave action pools	**3.0 – 10 ppm**	
Bromine – Spa	**5.0 – 10 ppm**	
Bromine – Wading Pool	**5.0 – 10 ppm**	

Oxidation Reduction Potential (ORP)

An ORP reading on an automatic sensing device of a pool or spa is an indicator of the sanitizer's ability to destroy harmful organic matter in the water, such as bacteria, viruses, human waste, etc. This is measured in millivolts (mV).

The accuracy of an ORP reading is also dependant upon proper installation and maintenance of measuring equipment. The electrodes (probes) that measure the ORP are designated to operate with a set volume of water flowing past it. Probes must be routinely calibrated, and kept clean and free from any deposits to give accurate ORP readings. Information on proper maintenance can be obtained from the manufacturer.

ORP is a measure of the effectiveness of the chemicals in the water, but does not measure the concentration of sanitizer levels. A substantial difference between the ORP reading and manual chemical test (mg/L) means the automatic sensing device requires maintenance.

The required ORP value must be maintained between 600mV – 900mV for a pool or spa.

Sanitary Operations & Safety Supervision

Pool Operation/Maintenance

Deck and Walls: Must be maintained in a sanitary condition and free from hazards, such as damaged tiles or broken glass.

Submerged Surfaces: Submerged surfaces of the pool must be white or light in colour, except for markings for safety or competition purposes to promote bather visibility beneath the surface.

Outlet Covers: All pool and spa outlet covers must be in place and properly secured to prevent any risks of bather entrapment. All outlet covers must be inspected at least once within each period of 30 operating days. Pools or spas with a single main drain must be equipped with an anti-entrapment drain cover.

Exposed Piping: All exposed piping within the pool enclosure must be clearly identified with colour coded bands of at least 25 millimeters and located at intervals not greater than 1.2 metres. All pipes containing chlorinated water are to be marked yellow; and all pipes containing potable water are to be marked green.

Turnover Rate: Is the number of times per day the total volume of the pool is filtered, disinfected and passed through the pool each day. Class A pools require a turnover rate of at least four times and class B pools at least three times daily.

Water Clarity: A 150 mm black disc must be clearly visible and present on a white background at the deepest point of all public pools. In spas, the main drain must be clearly visible when the water is in a non-turbulent state.

Bather Load: The maximum bather load is determined by the following formula:

maximum bather load = D / 2.5 + S / 1.4

D = The area in square metres of the part of the pool that is deeper than 1.35 metres; and

S = The area in square metres of the part of the pool that is 1.35 metres in depth or shallower.

Make up Water: Add 15 L of water per bather per day

Accessibility: All pool and spas must be inaccessible (locked) to the public when not in use.

Dressing/Locker/Change Rooms: Where provided, change rooms must be kept clean, free from hazards and obstructions, and adequately ventilated.

Chemical Safety: Train staff in proper handling and storage of chemicals and about the potential hazards with pool chemicals.

Admission Standards

In a response to a child drowning in a public pool as a result of inadequate supervision, Ontario's Chief Coroner's office made recommendations to increase direct supervision for young children. Niagara Region Public Health & Emergency Services requires admission standards signs to be posted at each entrance and at two locations within the pool enclosure.

The signs are also available for print at niagararegion.ca/water.

Admission Standards for Public Pools

Admission Standards for Public Pools were developed by the Office of the Chief Coroner to assist lifeguards and assistant lifeguards in maintaining adequate surveillance over the whereabouts and the activities of young bathers while they are inside the pool enclosure.

The Ministry of Health and Long-Term Care strongly supports these recommendations for the purposes of preventing injuries and fatalities.

- Children under the age of 10 years who are non-swimmers must be accompanied by a parent or guardian who is at least 12 years of age and responsible for their direct supervision

  The ratio of non-swimmers to parent or guardian may be a maximum of 4 bathers to one parent or guardian (4:1)

  The ratio of non-swimmers to parent or guardian may be increased to a maximum of 8 bathers to one parent or guardian (8:1) if lifejackets are worn by all non-swimmers in their charge
- Children under the age of 10 who are swimmers (able to demonstrate comfort in the water and pass the facility swim test) may be admitted to the swimming pool unaccompanied

- Children under the age of 6 years may not be admitted to the swimming pool unless they are accompanied by a parent or guardian who is responsible for their direct supervision, with a maximum of two children for each parent or guardian
- Guardians or group leaders are responsible for the children in their care while in the facility and must directly supervise the children at all times
- Guardians or group leaders should be at least 12 years of age
- Ratios of instructors/lifeguards to bathers must also be maintained as per Regulation 565

Class B Public Pools that do not require lifeguards still require bathers under twelve years of age to be accompanied by a parent or his or her agent who is not less than sixteen years of age.

Emergency Procedures and Safety Equipment

Every owner and every operator shall ensure that an emergency telephone is present and in working order while the pool and/or spa is open to the public.

Emergency Telephone Requirements	
Facility	**Location**
Class A	Easily accessible and directly connected to the local telephone utility.
Class B	Accessible no farther than 30 metres from the pool.
Spa	A landline emergency telephone that connects directly to an emergency service or the local telephone utility is located within 30 metres of the spa.
Prior to the pool or spa being opened for use each day, the emergency telephone is required to be tested to confirm that it is in proper working order.	

General Signage Requirements

General Signage Requirements (Pool and Spa)	Lettering Stroke Size	Ontario Regulation Section	Posting Location
EMERGENCY TELEPHONE Dial 9-1-1 for police, fire and ambulance		19. 3(i)	At the emergency telephone
In case of emergency Speak clearly and slowly Ask for emergency service Post a sign that has the name, address and telephone number for the pool/spa		19. 3(i)	At the emergency telephone
SPECTATORS FORBIDDEN FROM WALKING UPON THE DECK WITHIN 1.80 METRES OF THE EDGE OF THE POOL		19.4	At permanent spectator gallery, adjacent to the deck If your facility does not have a permanent spectator gallery, you do not need to have this sign.

General Signage Requirements (Pool and Spa)	Lettering Stroke Size	Ontario Regulation Section	Posting Location
Each bather shall take a shower using warm water and soap, and thoroughly rinse off all soap before entering or re-entering the deck		19.5	At entrance shower area and every entrance to the deck used by bathers

Public Pool Signage Requirements

The following signage requirements for public pools are in addition to those identified in the general signage section.

Public Pool Signage Requirements	Lettering Stroke Size	Ontario Regulation Section	Posting Location
CAUTION THIS POOL IS UNSUPERVISED. BATHERS UNDER 12 YEARS OF AGE ARE NOT ALLOWED WITHIN THE POOL ENCLOSURE UNLESS ACCOMPANIED BY A PARENT OR THEIR AGENT WHO IS NOT LESS THAN 16 YEARS OF AGE.	≥ 25mm (height)	17.(19)(a)	Class B pool ≤ 93 square metres; post in a visable location within the pool enclosure
CAUTION THIS POOL IS UNSUPERVISED. BATHERS UNDER 12 YEARS OF AGE ARE NOT ALLOWED WITHIN THE POOL ENCLOSURE UNLESS ACCOMPANIED BY A PARENT OR THEIR AGENT WHO IS NOT LESS THAN 16 YEARS OF AGE. THE TOTAL NUMBER OF BATHERS ON THE DECK AND IN THE POOL SHALL NOT EXCEED 10.	≥ 25mm (height)	17.(19)(b)	Class B pool > 93 square metres; post in a conspicuous location within the pool enclosure

Public Pool Signage Requirements	Lettering Stroke Size	Ontario Regulation Section	Posting Location
HEALTH WARNING No person infected with a communicable disease or having open sores on their body shall enter the pool No person shall bring a glass container onto the deck or into the pool. No person shall pollute the water in any manner and that spitting, spouting of water, and blowing the nose in the pool or on the deck are prohibited. 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 telephone is available for emergency use is located at _____.		19.1(i-vi)	Post at not fewer than two places at the pool
Markings; Water depths indicating the deep points, breaks between gentle and steep bottom slopes and the shallow points and the words DEEP AREA, SHALLOW AREA	≥ 100 mm (height)	19.6	On the deck, clearly marked in figures at appropriate locations

Public Pool Signage Requirements	Lettering Stroke Size	Ontario Regulation Section	Posting Location
CAUTION – AVOID DEEP DIVES or SHALLOW WATER – NO DIVING	150 mm	19.7	Post at a conspicuous location, where the pool has a maximum water depth of < 2.5 m
JUMPING OR DIVING IS NOT PERMITTED IN THIS AREA		19.8	At a wave action pool. Affixed to a wall or barrier supported by posts located 1 m or less from the edge of the pool
DANGER - AVOID DEEP OR LONG DIVES		19.9	Class B pool equipped with a diving board
CAUTION – NO DIVING		19.10	A pool with one or more ramps. Posted on each side of the wall or fence
UNSUPERVISED BATHERS ARE NOT ALLOWED BEYOND THIS POINT	≥ 25 mm (height)	19.11(i)	Posted at the ramp(s) – pool with one more ramps that are not submerged
BATHERS ARE NOT ALLOWED BEYOND THIS POINT	≥ 25 mm (height)	19.11(ii)	Posted at the removable barrier – pool with one or more ramps that are submerged

Public Spa Signage Requirements

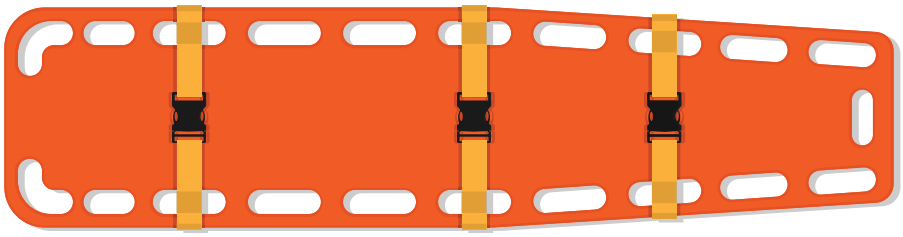
Public Spa Signage Requirements	Lettering Stroke Size	Ontario Regulation Section	Posting Location
EMERGENCY TELEPHONE LOCATED _____	>25 mm (height) > 5 mm (stroke)	19.2	Post in a visible location at the entrance to the public spa
Timing Device IN THE EVENT OF AN EMERGENCY PUSH EMERGENCY STOP BUTTON AND USE EMERGENCY PHONE. AUDIBLE VISUAL SIGNAL WILL ACTIVATE	25 mm (height) 5 mm (stroke)	22(2)	Posted at the timing device
	25 mm (height) 5 mm (stroke)	26(2)	Posted above the Emergency Stop button

Public Spa Signage Requirements	Lettering Stroke Size	Ontario Regulation Section	Posting Location
CAUTION Children under the age of 12 are not allowed in the spa unless supervised by a person who is 16 years of age or older. Pregnant women and persons with known health or medical conditions should consult with a physician before using a spa. Do not use the spa if you have an open sore or rash, or are experiencing nausea, vomiting, or diarrhea. Over exposure may cause fainting, 10 – 15 minutes may be excessive for some individuals. Cool down periodically and leave the spa if nausea or dizziness occurs. Enter and exit the spa slowly, to prevent slipping. Do not play or swim near drains or suction devices. Your body, body parts, hair, jewellery, and other objects may become trapped and cause injury or drowning. People with long hair should be especially careful. Do not enter or remain in the spa if a drain cover or suction fitting is loose, broken or missing. Immediately notify the spa operator. No food or beverage except water is permitted within the deck or spa. No glass containers of any kind are permitted within the deck or spa. Maximum bather capacity _____.	50 mm for the word CAUTION 10 mm for other wording >5 mm (stroke)	19.1(1) 19.1(2)	Post in a conspicuous place at each entrance to the public spa

Emergency Equipment

Safety equipment represents an important part of pool and spa operation, and plays an integral role of keeping bathers safe. The public health inspector will check during every inspection that all emergency equipment is in place and in working condition. The designated pool operator has the responsibility to check and test this equipment daily and record the findings.

Where item(s) are provided for a public pool that operates in the immediate vicinity of a public spa, operators are not required to provide duplicate item(s) for the spa or to duplicate the emergency telephone, as long as the item or telephone is conveniently located for emergency use at the spa.



(Spine Board)

Required Emergency Equipment			
Emergency Equipment	**Class A**	**Class B**	**Spa**
An electrically insulated or non-conducting reaching pole at least 3.65 metres long	X	X	X (inner horizontal dimension greater than 3 metres)
Two buoyant throwing aids, each of which has securely attached to it a 6 millimetre diameter rope of a length not less than 1/2 the width of the pool plus 3 metres	X	X	X (one buoyant throwing aid required for spas with an inner horizontal dimension greater than 3 metres)
Buoy line separating shallow from deep areas		X only Class B pools with slope greater than 8%	

Required Emergency Equipment			
Emergency Equipment	**Class A**	**Class B**	**Spa**
A buoyant throwing aid to which is securely attached a 6 millimetre diameter rope of a length not less than 1/2 the width of the pool area plus 3 metres			X
Spine board or device designated for lifting a person who may have incurred a spinal injury	X	X	X
First aid kit conveniently located for emergency use containing: a) A current copy of a standard first aid manual b) Safety pins; c) Adhesive dressings individually wrapped; d) Sterile gauze pads, each 75 millimetres square; e) 50 millimetre gauze bandages; f) 100 millimetre gauze bandages; g) Sterile surgical pads suitable for pressure dressings individually wrapped; h) Triangular bandages; i) Rolls of splint padding; j) At least one roll-up splint; k) At least one pair of scissors; l) Non-permeable gloves; m) Resuscitation pocket masks.	X	X	X

Required Emergency Equipment			
Emergency Equipment	**Class A**	**Class B**	**Spa**
Emergency stop button capable of deactivating all pumps used in the operation of pool or spa. • Separate from timing device • Located within the immediate vicinity • Activates an audible and visual signal			X
Clock, installed at an obvious location and easily visible			X
Tamper proof upper limit cut off switch that: • Limits the water temperature to 40C • Independent off the water temperature thermostat			X
Lifeguard control stations	X		
Ground fault circuit interrupters	X	X	X
Vacuum release mechanism/ suction limiting			X
Hand-rail and contrasting bands of colour on steps entering/exiting the water			X

(Buoyant Throwing Aid)

Public Pool Record Keeping

O.Reg 565 lays out the required monitoring and frequency of record keeping. Regular monitoring and record keeping of water chemistry, equipment, and operational tasks is an important part of maintaining a safe pool environment. The water quality of a pool can change quickly throughout the day and it is important to continuously monitor and respond to these changes. All records must be kept on site and available for a public health inspector to view for a minimum of one year. Proper record keeping is key to proving an operator's due diligence in case of accident, water borne illness, or complaint from the public.

The following chart lists the required frequency of water chemistry records. Note that the requirements depend on the presence or absence of an automatic sensing device. An automatic sensing device is a piece of equipment that continuously monitors the pH, and free available chlorine or oxidation reduction potential, and displays or records the results. A pool or spa with an automatic sensing device must record the applicable water chemistry readings every four hours, or every two hours without an automatic sensing device.

Required Daily Records	
Free available chlorine or total bromine	30 minutes before opening and every 2 or 4 hours while operating
Total chlorine (if applicable)	
pH	
Total alkalinity	
Water clarity	
ORP (if applicable)	
Temperature (Spa)	
Cyanuric acid (if applicable)	Weekly

The following chart lists the frequency of operational records that must be recorded.

Additional Operational Records	
Estimated number of bathers	Daily
Water meter reading	Daily
Emergencies, rescues, or equipment breakdowns	Daily
Emergency telephone test	Daily before opening
Chemicals added to the pool	Daily
Outlet covers	Every 30 days
Vacuum Release mechanism (if applicable)	Every 30 days
Ground fault interrupter/de-energizing devices	Every 30 days
Emergency stop button test (if applicable)	Every 30 days

All records **must** include the date, time the check was completed, and the initials of the operator who completed the record. Failure to maintain records may result in legal action. Record keeping templates are available from your public health inspector or online at niagararegion.ca/water. Remember, if it's not written down it did not happen. Proper record keeping will help protect yourself and the health of the public.

Spa Requirements

Public spas are regulated under O.Reg 565 along with public pools. They have many of the same requirements as a public pool, however due to the unique features of a spa there are additional risks. Additional requirements for spas are included in order to reduce these risks.

Higher water temperature in a spa causes chemical reactions to occur faster, which affects the water chemistry. Bacteria are able to reproduce faster at higher temperatures. People exposed to high temperatures for an extended period of time may become ill with heat related illness. Spas are usually a smaller volume of water, which means the water chemistry can change quickly and small amounts of contaminants or chemicals can cause big changes. The use of jets and increased flow also create a greater safety hazard for entrapment.

To mitigate these risks the following list includse spa-specific requirements:

- **Visible clock** to ensure clients monitor their time in the spa
- **A timer** to control the operation of jets must be located so that clients must leave the spa to turn jets on. The timer must be a maximum of 15 minutes.
- **Tamper proof upper limit cut off switch** to limit water temperature to under 104 F or 40 C which must be separate from the water's thermostat
- **Vacuum release mechanism** to prevent entrapment
- **Emergency stop button** separate from the timing device that has an audible and visual alarm. The stop button must immediately shut off all pumps when pressed.
- **Steps** leading into the spa must have a secure railing installed, non-slip tread, and a contrasting colour along the edge of each step
- **Sanitizer levels** must remain between 5-10 ppm FAC or bromine
- A spa with a water volume of greater than 4000L must add 15L of **make-up water** per bather per day up to 20% of the spa volume
- A spa with a water volume of less than 4000L must **drain and refill** the spa at a frequency determined by a formula which uses the volume of the spa and the number of daily bathers. Days Between Draining = volume of the spa / (10 x estimated daily users).

Common Reasons for Closing a Swimming Pool or Spa

It is the operator's responsibility to close a pool or spa if a health hazard exists. A swimming pool or spa is subject to immediate closure when any of the following conditions are observed:

- Pool/spa not made inaccessible when closed to the public.
- Water clarity is poor or black disc not available for clarity test
- Pool fouling, e.g. feces, vomit or chemical
- Filtration or circulation system is not operating or malfunctioning
- Drain/outlet covers missing or damaged
- Equalizer valve(s) open
- Emergency telephone missing or not functioning
- Lifesaving equipment not available or not in good repair
- Ground Fault Circuit Interrupter missing or not functioning
- Insufficient sanitizer levels
- High pH in a chlorine pool or spa
- Spa temperature greater than 40 C
- Emergency stop button missing or not functioning in the spa
- Suction release system missing or not functioning for spas (e.g. vacuum release mechanism)
- Any other conditions that may constitute an immediate health hazard, (e.g. power outage, confirmed pathogenic agents such as cryptosporidium, water leaking from the ceiling into the pool/spa, etc.)

Niagara Region Public Health
& Emergency Services

Environmental Health Division

1815 Sir Isaac Brock Way Thorold, ON
905-688-8248 or 1-888-505-6074 ext. 7590
niagararegion.ca**/water**

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