



Interior Health

## Creating a Beach Safety Plan



Interior Health would like to recognize and acknowledge the traditional, ancestral, and unceded territories of the Däkelh Dené, Ktunaxa, Nlaka'pamux, Secwépemc, St'át'imc, syilx, and Tšilhqot'in Nations where we live, learn, collaborate and work together

## Contents

Contents.....	2
Introduction.....	3
Roles and Responsibilities.....	3
Definitions.....	4
Step 1: Identify the Hazards.....	4
1.1 Environmental Health & Safety Survey.....	4
1.2 Potential Hazards.....	4
Step 2: Monitor for the Hazards (Beach Monitoring Program).....	5
2.1 Visual Monitoring.....	5
Cyanobacterial (Blue-Green Algae) Blooms.....	6
2.2 Public Complaints.....	6
Swimmer’s Itch (Schistosomes).....	6
2.3 Sampling.....	6
Step 3: Respond to the Hazards (Implement Barriers).....	7
3.1 Physical Action.....	7
3.2 Sampling Response.....	7
3.3 Public Awareness and Communication.....	7
Signage.....	7
3.4 Important Contacts.....	8
Appendix A – Environmental Health & Safety Survey Tool.....	9
Appendix B – Beach Sampling.....	14
Microbiological Sampling.....	14
Microcystin Sampling.....	15
Appendix C – Beach Signage Templates.....	16
1. Swimming Advisory.....	17
2. Beach Closure.....	18
3. Cyanobacteria Advisory.....	19
Appendix D – Important Beach Contacts.....	20

## Introduction

British Columbia's recreational waters and their surrounding beach areas can be great places for people to swim, play and enjoy the day. However, swimming in contaminated water can increase the risk of infection or illness; injuries, and even death, can also arise where physical or chemical hazards may be present. For that reason, this document is intended to assist you, the beach owner/operator, in creating a Beach Safety Plan. Your Beach Safety Plan should provide information to both yourself and your staff on **known or potential hazards** associated with beach use, and how to **monitor** and **respond to these hazards** to reduce the risk of public exposure.

This document assists with interpretation of the Health Canada [Guidelines for Canadian Recreational Water Quality](#) (the *Guideline*), the [Decision Protocols for Cyanobacterial Toxins in B.C.](#) and the information files from [HealthLink BC](#).

## Roles and Responsibilities

Collaboration between all levels of government, beach owners/operators and the public can result in a reduction of the hazards and risks associated with recreational waters and beaches.

### The role of Interior Health is to:

- Provide guidance to beach owners/operators on the development and implementation of Beach Safety Plans;
- Provide public education on the importance of Beach Safety Plans and reporting hazards, including cyanobacteria blooms;
- Provide laboratory analysis of water samples for priority beaches and provide interpretation of results to beach owners/operators; and,
- Post advisories for beaches due to unacceptable microbiological results and during cyanobacteria blooms that have unacceptable levels of toxin on [Interior Health | Public Beaches](#).

### The role of the Ministry of Environment and Climate Change Strategy is to:

- Support the identification and tracking of potential cyanobacteria algae blooms through [Algae Watch](#);
- Provide information resources to support users' identification of potential cyanobacteria blooms;
- Support visual identification of potential cyanobacteria blooms. Photos and observations must be submitted;
- Map locations of submitted potential cyanobacteria blooms within BC for current and previous years.

### The role of beach owners/operators is to:

- Create and implement Beach Safety Plans for beaches they oversee;
- Report identified or suspected hazards, such as cyanobacteria blooms;
- Obtain water samples and ship to laboratory for analysis (for priority beaches only);
- Reduce risks associated with their beaches where possible, and inform the public of risks (e.g. post signage, media announcements); and,
- Update Beach Safety Plans annually or as needed.

## Definitions

**Barriers:** Procedures or actions that collectively reduce the risk of human exposure to hazards associated with beach use, including: physical actions such as beach cleanup; public education and notifications to warn the public of any hazards relevant to their beach use; and consultations with your local [Interior Health | Environmental Public Health & Licensing office](#).

**Hazard:** An object or condition that may endanger human health or safety.

**Priority Beaches:** Beaches determined to be of significance due to established criteria based on bather use and water quality.

**Risk:** The likelihood of exposure to a given hazard and the associated consequence.

## Step 1: Identify the Hazards

### 1.1 Environmental Health & Safety Survey

[Health Canada's guideline](#) recommends beach owners complete an Environmental Health & Safety Survey to identify the known or potential hazards (biological, chemical and physical), and their associated risks on the health and safety of beach users. The Environmental Health & Safety Survey (EHSS) is available in [Appendix A](#) to assist you in collecting information regarding all aspects of the beach and its operations. The EHSS should be **completed prior to the start of the beach season**, and then reviewed and updated at least **annually**. It should:

- Catalogue the recreational waters and surrounding beach area's basic characteristics.
- Identify any potential sources of fecal contamination.
- Identify any other potential biological, chemical or physical hazards.
- Evaluate the effectiveness of any monitoring programs and barriers currently in place.

The information collected from the EHSS should be used to develop/update your *beach monitoring program* ([Step 2](#)) and *barriers to implement* ([Step 3](#)).

### 1.2 Potential Hazards

The following is a list of potential hazards associated with beaches. This list is not meant to be exhaustive, but are some hazards you should look for when completing your EHSS:

**Cyanobacteria:** Cyanobacteria, or blue-green algae, commonly grow in shallow, slow-moving/still waters, and make up a natural part of the lake aquatic ecosystem in the Interior Health Region. Excessive growth can cause cyanobacteria blooms to form, and may cause the water to look or smell bad. Cyanobacteria can also produce toxins called microcystins, which can be poisonous to people, pets or livestock. Beach users can be exposed to these toxins by accidentally drinking water that contains a bloom, or by getting it on their skin during recreational activities. For more information, visit: [Cyanobacteria Blooms | HealthLink BC](#).

**Chemical Hazards:** Chemical hazards may include: industrial discharge, contamination from marinas or watercraft, and chemical spills. The risks associated with a specific chemical hazard will be dependent on the particular situation (type of chemical, size of spill/discharge, circumstances of the area), and should be assessed on a case-by-case basis.

**Microbiological Hazards:** Microbiological hazards may include:

- Point source contamination (sewage discharge, storm water discharge, fecal waste); and
- Diffuse source of contamination (domestic and wild animals and birds, storm water runoff, septic waste runoff, contamination from swimmers).

Recreational water that has been contaminated with human or animal waste can contain pathogenic microorganisms that may cause infection or illness if accidentally ingested.

**Physical Hazards:** The types of physical hazards will depend on each beach and situation. You should be aware of the potential risks these hazards may present (drowning, entrapment, injury). Some physical hazards may include: poor visibility, underwater hazards such as pipes or large rocks and, litter/flood debris.

**Swimmer's Itch:** Swimmer's Itch, or cercarial dermatitis, is a skin rash caused by an allergic reaction to small parasites called schistosomes when they burrow under the swimmer's skin. These parasites are commonly found in warm shallow waters along the shores of fresh waters and coastal beaches. The effects may be felt shortly after swimming, and symptoms can persist for up to 2 weeks. For more information, visit: [Swimmer's Itch | HealthLink BC](#).

## Step 2: Monitor for the Hazards (Beach Monitoring Program)

The results of your EHSS should have identified the hazards or potential sources of hazards to monitor. Your beach monitoring program is the section in your Beach Safety Plan that will outline: **how a parameter is monitored**; and the **location, times and frequencies for monitoring**. Of note, each beach will have its own unique characteristics and operational considerations (e.g. type of users, recreational activities taking place, any other relevant historical information). These specifics should be taken into consideration when developing your monitoring program.

### 2.1 Visual Monitoring

Visual inspection of the beach plays an important part in monitoring for biological, chemical and physical hazards. Refer to your EHSS to develop a list of monitoring parameters; and location, time and frequency for monitoring. Examples of visual monitoring parameters may include, but are not limited to:

- Water usage and swimmer density;
- Weather conditions;
- Wildlife (e.g. animal waste, birds, plant debris);
- Floating or large scale debris (e.g. from an emergency event like mud or land slide, or flood);
- Signs of spills or discharge (e.g. chemical, sewage);
- Signs of algae blooms; and
- Changes in water quality, including visual changes or odors.

## Algae Blooms

If you suspect an algae bloom is present, follow the steps below to help you determine if it is likely the type that can produce toxins, i.e. cyanobacteria:

1. Go to [BC Algae Watch](#):
  - Follow the information under “Recognize algae blooms” to assess if the bloom is likely a cyanobacteria bloom;
  - Submit your algae bloom observations.
2. Proceed to [Step 3: Respond to the Hazards](#).

If you have concerns that are immediate and related to drinking or recreational water use, please contact your [Interior Health | Environmental Public Health & Licensing office](#).

## 2.2 Public Complaints

Some hazards may not be visually observable and you may need to rely on public complaints.

### Swimmer’s Itch (Schistosomes)

The presence of schistosomes in natural waters is dependent upon a number of factors, both biological and environmental. As a result, it is very difficult to predict when and where Swimmer’s Itch might become a problem. A beach where Swimmer’s Itch was a concern one year may not have the same issue the next year, or vice versa. Therefore, monitoring may be dependent on complaints reported by the public.

## 2.3 Sampling

### PRIORITY BEACHES

*Interior Health works with local government owners of priority beaches for analysis and regular testing of microbiological indicators of fecal contamination and, during active cyanobacteria blooms, microcystin toxins. Priority beaches are determined to be of significance due to established criteria based on bather use and water quality.*

*Information on beach sampling procedures are provided in [Appendix B](#). For questions about priority beaches, contact one of our local Environmental Health offices.*

## Step 3: Respond to the Hazards (Implement Barriers)

This is the section of your Beach Safety Plan that outlines the **steps to take** in the event a hazard or change in water quality is observed or reported. These are your **barriers** to reduce risk to beach users.

### 3.1 Physical Action

If visual monitoring identifies a hazard, you should take steps to physically remove the hazard ***if it is safe and possible to do so***. For example, the physical removal of any litter. Litter is not only an aesthetic problem, but can injure beach users who come into contact. It also has the potential to attract wildlife and contribute to fecal contamination. The installation of physical barriers designed to discourage wildlife, and signage to remind beach users to refrain from littering or feeding animals should also be considered.

For hazards that cannot be removed safely, or it would be impossible to do so, refer to [Section 3.3](#) on *Public Awareness and Communication*.

### 3.2 Sampling Response

Beach owners/operators that take part in recreational water quality sampling will require response actions in the event sample results come back as unacceptable. Information on beach sampling is provided in [Appendix B](#).

### 3.3 Public Awareness and Communication

If a hazard/change in water quality has been observed or reported, and the hazard cannot be physically removed, or cannot be done so safely, you should make the users aware of the situation so they may take steps to reduce their exposure. The minimum for communicating the risk is to **post signage**. Depending on the season and usage of the beach, it may be necessary to include other methods of communication, such as:

- Posting notifications on the beach's associated webpage;
- Using social media channels; and,
- Connecting with media.

#### Signage

Have signage templates, with situation-specific messaging, created ahead of time as part of your Beach Safety Plan. [Appendix C](#) provides fillable signage templates for the following types of signage:

- 
- **Swimming Advisory:** Issued when water is not suitable for recreational use. Under these situations, users are advised to refrain from whole body contact with the water.
  - **Beach Closure:** Issued when there is serious risk to the health and safety of recreational water users, and/or hazard permeates the entire beach area, and contact with the beach area must be restricted.
  - **Cautionary Cyanobacteria Advisory:** Issued when there is a known/suspected cyanobacteria bloom.
- 

Below provides some examples of situations where signage should be posted:

**Cyanobacteria Bloom:** If you suspect it to be cyanobacteria or are unsure, IH recommends posting a **Cautionary Cyanobacteria Advisory with the** suggested wording in the Cautionary Cyanobacteria Advisory in [Appendix C](#). Resources are available on BC Algae Watch to support determination. Remove signage if determined it is not cyanobacteria or when the bloom has dissipated for a minimum of 2 weeks. If sampling results show unacceptable levels of cyanobacteria toxins, refer to the Beach Closure template.

**Emergency Event:** Post appropriate signage if hazards or a change in water quality is observed after an emergency event (e.g. mud/land slide or flood results in large debris being present in the recreational waters). Remove signage once conditions return to normal.

**Microbiological Concern:** Post appropriate signage after:

- An adverse weather event and you suspect there may be fecal contamination risk (e.g. from nearby runoffs);
- If sampling is conducted and sample results come back unacceptable as a result of fecal contamination (refer to [Appendix B](#)); or
- If it suspected the beach is associated with a waterborne illness outbreak.

Only remove signage once water quality or the situation returns to normal.

**Chemical/Sewage** If the observed hazard or source of water quality change is due to a chemical or sewage discharge/disposal/spill, contact the *Report All Poachers and Polluters (RAPP)* hotline at 1-877-952-7277, and post appropriate signage until conditions return to normal.

**Swimmer's Itch** If there are reports or complaints of Swimmer's Itch exposure, post a Swimming Advisory until conditions return to normal.

### 3.4 Important Contacts

Develop and maintain a list of contacts that would be important during a hazard response. Your EHSS may already include some important contacts. An additional template is also available in [Appendix D](#).

## Appendix A – Environmental Health & Safety Survey Tool

<b>BATHING BEACH</b>		
<b>Environmental Health &amp; Safety Survey &amp; Sampling Frequency Tool</b>		
Beach Name:		
Site Address:		
Beach Owner and Operator Name(s):		
Phone:	Cell:	Fax:
Email:		
Person Conducting Survey:		
Date & Time of Survey:		
Local Government/Health Authority Contact:		
Phone (day time):		Phone (after hours):
<b>Beach Specifications</b>		
Name of Water Body:		# Sampling Sites:
Surrounding Land Details <i>Check all that apply:</i>		
<input type="checkbox"/> Urban	<input type="checkbox"/> Field	<input type="checkbox"/> Commercial (specify)
<input type="checkbox"/> Suburban	<input type="checkbox"/> Hills/Uplands	<input type="checkbox"/> Agriculture (specify)
<input type="checkbox"/> Rural	<input type="checkbox"/> Marsh/Swamp	<input type="checkbox"/> Industrial (specify)
<input type="checkbox"/> Forest	<input type="checkbox"/> Landfill	<input type="checkbox"/> River/Stream/Ditch/Harbour (specify)
Description of surrounding land:		

## Microbiological Hazards

Items for consideration:

- Proximity of potential contamination sources to the swimming area.
- Potential for contamination sources to have an impact on the swimming area (including an indication of their risk priority: Low, medium, high).
- Evaluation of water quality according to historical microbiological data (e.g. frequency of exceedances of the guideline values for the recommended indicators of faecal contamination - continuous/periodic/sporadic).
- Discharges: Assessment of such factors as volume, flow rate, treatment type, applicable indicator standards, periodicity (continuous, sporadic) and predictability.
- Effects of rainfall: levels triggering contamination events and typical event duration.
- Assessment of swimming area circulation: effects of onshore winds, tides, currents, flow patterns in transporting faecal contamination to and entrapping it within the swimming area.
- Animals and birds: assessment of their types, numbers, and droppings.
- Impact of swimmers on water quality – numbers, ages.
- Assessment of potential barriers: Barrier types and points at which they may be applied to reduce the impact of the contamination source and/or swimmer exposure.

### **Check all microbiological hazards that apply:**

- |   |   |
|---|---|
| <input type="checkbox"/> Municipal sewage discharges                                | <input type="checkbox"/> Animal feeding operation waste |
| <input type="checkbox"/> Combined sewer overflows (CSOs)                            | <input type="checkbox"/> Storm water drains/discharges  |
| <input type="checkbox"/> Other discharges containing faecal wastes (list):          |   |
| <input type="checkbox"/> Other sewage collection/disposal/treatment systems (list): |   |

Storm water runoff from:

- |   |  |                            |
|---|--|----------------------------|
| <input type="checkbox"/> Agricultural areas | <input type="checkbox"/> Areas receiving sewage sludge | Beach and surrounding area |
|---|--|----------------------------|

2 Yr. Microbiological History (Note: GV means Guideline Value):

95% of samples less than GV	60-94% of samples less than GV	> 60% of samples less than GV
-----------------------------	--------------------------------	-------------------------------

Other Environmental Sources:

- |   |  |              |
|---|--|--------------|
| <input type="checkbox"/> Rivers/streams/creeks discharging near beach | <input type="checkbox"/> Upstream activities | Wild animals |
|---|--|--------------|

Birds (e.g. Gulls, ducks, geese):

- |                               |                              |                                 |                               |
|-------------------------------|------------------------------|---------------------------------|-------------------------------|
| <input type="checkbox"/> None | <input type="checkbox"/> Low | <input type="checkbox"/> Medium | <input type="checkbox"/> High |
|-------------------------------|------------------------------|---------------------------------|-------------------------------|

Swimmers (average/day use during bathing season):

None       Low (< 50)       Medium (50-100)       High (> 100)

Pets:

None       Low       Medium       High

### Chemical Hazards

Items for consideration:

- Proximity of potential contamination sources to the bathing area.
- Potential for contamination sources to have an impact on the swimming area (including an indication of their risk priority: Low, medium, high).
- Discharges: Assessment of such factors as volume, flow rate, treatment type, periodicity (continuous, sporadic) and predictability.
- Effects of rainfall: Levels triggering contamination events and typical event duration.
- Assessment of swimming area circulation: effects of onshore winds, tides, currents, flow patterns in potentially transporting chemical contamination to and entrapping it within the swimming area.
- Motorized watercraft: assessment of their types and numbers
- Assessment of potential barriers: Barrier types and points at which they may be applied to reduce impact of the contamination source and/or swimmer exposure.

### Check all chemical hazards that apply:

Areas subject to fertilizer application       Storm runoff from areas subject to pesticide application       Commercial/Industrial Discharges (list):

Motorized Watercraft       Urban areas       Marinas (list):

### Other Biological Hazards

Items for consideration:

- Seasonal nature of the hazard: continuous, annual, sporadic
- Presence of contributing factors (as applicable): water conditions, local geography, temperatures, nutrient levels, presence of appropriate host species. Assessment of potential barriers to control hazard and/or reduce human exposure in areas/during times of increased risk

### Biological hazards known to affect recreation water areas:

Cyanobacterial blooms:       Continuous       Seasonal       Sporadic

Schistosomes (swimmer's Itch):       Continuous       Seasonal       Sporadic

Large numbers of aquatic plants:       Continuous       Seasonal       Sporadic

## Physical Hazards and Aesthetic Considerations

Items for consideration:

- Assessment of the physical characteristics of the beach and their potential impacts on safe enjoyable use of the area. Includes evaluation of physical layout geography, topography), composition of shoreline and bottom material, influence of existing structures.
- Assessment of potential risks posed by specific hazards/factors in causing injury or illness or otherwise interfering with the enjoyable use of the area.
- Shoreline and water free from obstructions and of sufficient clarity to permit viewing of persons who may in distress.
- Assessment of the nature and origin of litter and floating debris.
- Applicable physical and aesthetic parameters (pH, temperature, turbidity, colour, clarity, litter) in agreement with recommendations given in the Guidelines for Canadian Rec Water Quality.
- Assessment of potential barriers to control hazard and/or reduce human exposure in areas/during times of increased risk.

### **Check all physical hazards and aesthetic considerations that apply:**

Subsurface hazards:

- |  |   |  |
|--|---|--|
| <input type="checkbox"/> Steep slopes or drop-offs | <input type="checkbox"/> Large rocks                      | <input type="checkbox"/> Sand/mud/gravel/rock lake substrate |
| <input type="checkbox"/> Depths greater than 4.5 m | <input type="checkbox"/> Slippery or uneven bottom (rock) |  |

Water Conditions:

- |  |                                   |                                    |
|--|-----------------------------------|------------------------------------|
| <input type="checkbox"/> Strong currents   | <input type="checkbox"/> Undertow | <input type="checkbox"/> Rip tides |
| <input type="checkbox"/> Boats/Watercraft? |                                   |                                    |

Litter on beach?  None  Low  Medium  High

Vehicles permitted on beach?  No  Yes

Broken Glass or sharp objects?  None  Low  Medium  High

Floating debris?  None  Low  Medium  High

Seaweed/algae on beach?  None  Low  Medium  High

Medical waste?  None  Low  Medium  High

### Facilities and Safety Provisions

Toilets	<input type="checkbox"/> No	<input type="checkbox"/> Yes #_____
Showers	<input type="checkbox"/> No	<input type="checkbox"/> Yes #_____
Drinking water fountains Portable taps	<input type="checkbox"/> No	<input type="checkbox"/> Yes #_____
Litter/recycling bins:	<input type="checkbox"/> No	<input type="checkbox"/> Yes #_____
Picnic tables	<input type="checkbox"/> No	<input type="checkbox"/> Yes #_____
Lifeguard stations:	<input type="checkbox"/> No	<input type="checkbox"/> Yes #_____
Access for persons with disabilities:	<input type="checkbox"/> No	<input type="checkbox"/> Yes
Emergency phone number	<input type="checkbox"/> No	<input type="checkbox"/> Yes
Accessible lifesaving equipment	<input type="checkbox"/> No	<input type="checkbox"/> Yes
First aid stations	<input type="checkbox"/> No	<input type="checkbox"/> Yes

## Appendix B – Beach Sampling

### Microbiological Sampling

In addition to visual monitoring, fecal contamination is monitored by sampling the recreational water for fecal indicators (e.g. *E. coli*). Guideline values established in the *Guideline* are summarized in Table 1. Fecal indicators above these values are associated with increased risk of illness.

**Table 1. Guideline Values for Fresh Water Samples**

Parameter	Considerations	Guideline Value
Fresh water <i>Escherichia coli</i>	Geometric mean* concentration (minimum 5 samples)	≤ 200 E. coli / 100 mL
	Single sample** max (Beach Action Value)	≤ 235 E. coli / 100 mL

\* Geometric mean identifies chronic issues, and calculated using a minimum of 5 samples.

\*\*Single sample identifies immediate increased risk to water quality issues.

Below outlines standard sampling procedures. More information on microbiological sampling and analysis can be found in the [Guideline](#). Interior Health works with priority beaches on microbiological sampling. Private beach owners/operators may contact their [local provincially approved laboratory](#) for sampling bottles and submissions.

**Frequency** Recreational water quality sampling should be conducted at least once per week during the beach season to continually monitor the risk of exposure to beach users. Sampling should also be considered immediately following any contamination events, such as heavy rainfall.

**Location** Sampling locations will depend on the size and use of the beach. Samples should be taken at locations of greatest swimming activity and where there is indication of point source fecal contamination. Ideally, sampling locations are every 100 m. Samples should be collected where the water reaches knee or chest height (~1.2-1.5 meters).

**Procedure** Samples should be collected in clean, sterilized, environmentally sensitive bottles with a screw cap. With the bottle, plunge it neck-downward to a depth of 15-30 cm (~elbow depth). Turn the bottle horizontally in a direction away from the sampler's hand/reaching pole or towards the current. Fill the bottle to the fill line, and replace the cap immediately. The samples should be held at temperatures <10°C (never frozen), and delivered to the laboratory for analysis within 24 hours.

Unacceptable sample results are: **Beach Action Value >235 E.coli/100 mL** or **geometric mean >200 E.coli/100 mL**. Response actions may include: **taking additional samples** to confirm sampling accuracy; or **posting signage** to warn beach users of the risk. Some factors to consider when determining the appropriate response:

- Does the beach have historically low sample results?
- Have recent sample results been steadily increasing?
- Do other sampling points on the same beach demonstrate good water quality?
- Does the sample result exceed the acceptable value by a small margin?
- Was there a recent adverse weather event (e.g. heavy rainfall)?

Only remove any posted signage once re-sampling indicates water quality has returned to normal.

## Microcystin Sampling

While cyanobacteria blooms are most easily identified by visual observations, microcystins are not. Once a bloom is identified, beach owners/operators should post signage (Refer to Cautionary Cyanobacteria Advisory) in accordance with their Beach Safety Plan. Priority beaches should also sample for microcystins on a weekly basis while the bloom is active and for 2 weeks after it has dissipated.

In accordance with the [Cyanobacteria and their Toxins](#) section of the *Guideline*, the guideline value for total microcystins in recreational waters is a maximum concentration of 10 µg/L.

The standard sampling procedure is summarized below. Interior Health works with owners of priority beaches for analysis of microcystins during cyanobacteria blooms. More detailed procedures and requisition forms are available for priority beach owners.

**Frequency** Recreational water quality sampling should be conducted at least once per week **during** a cyanobacterial bloom to continually monitor the risk of exposure to beach users.

**Location** Sampling locations will depend on the size and use of the beach. Samples should be taken at locations of greatest swimming activity and where there is indication of cyanobacterial bloom. Collect algae water sample(s) from wherever the algal bloom is most visible from your access beach. Use gloves to collect sample. Should you touch any algae, wash thoroughly with soap and water as soon as practicable.

**Procedure** Samples should be collected in clean, sterilized, environmentally sensitive bottles with a screw cap. Fill the bottle provided to just below mouth/neck and gently secure the cap immediately. The samples should be held at temperatures <10°C (never frozen), and delivered to the laboratory for analysis within 24 hours. Microcystin sampling **MUST** be done Monday or Tuesday to receive results the same week.

An Environmental Health Officer will contact the beach owner/operator with the lab results from the microcystin sampling and recommendations for further action. Lab results are typically available in 2-3 business days.

Results from sampling will indicate a concentration of **microcystins** between 5µg/L and 20µg/L. Cyanobacteria blooms are highly variable and conditions can change. Test results only represent that particular water sample at that particular time. Cyanobacteria Advisory signage should not be removed even if test results show an absence of microcystins—the advisory should remain posted until 2 weeks after the bloom has dissipated.

If test results show **microcystins** are present in concentrations >10µg/L, per the *Guideline*, the Environmental Health Officer may recommend the beach owner/operator close the beach (see Beach Closure template),.

## Appendix C – Beach Signage Templates

Beach signage templates are provided in the following sections. Each template includes suggested messaging that would be appropriate for its intended use – click into the **drop-down menus** for the messaging. Refer back to [Section 3.3](#) to determine which type of signage is most appropriate for the type of situation you run into.

Fill in the fillable space with your appropriate information as indicated (e.g. contact information).

- 1. Swimming Advisory:** In the drop-down menu, example reasons for when a Swimming Advisory should be posted include:
  - Fecal indicator bacteria levels exceed guidance values.
  - Bacterial levels may be elevated due to recent weather events.
  - Evidence of risk of swimmer's itch.
  - Some large debris may be present.
- 2. Beach Closure:** In the drop-down menu, example reasons for when a Beach Closure is warranted may include:
  - Suspicion that area is responsible for waterborne disease outbreak.
  - Sewage or chemical spill affecting water.
  - Emergency event impacting health and safety of beach users.
  - Unacceptable level of toxins from cyanobacteria bloom.
- 3. Cautionary Cyanobacteria Advisory:** Fill in the fillable space with your appropriate information as indicated.

1. Swimming Advisory

**WARNING**

**WATER NOT SUITABLE  
FOR SWIMMING**



**STATEMENT REGARDING REASON FOR POSTING**

**ADDITIONAL INFORMATION BENEFICIAL TO PUBLIC'S  
UNDERSTANDING OF SITUATION**

**FOR MORE INFORMATION ON THE MONITORING OF THIS BEACH, CONTACT:  
PERSON OF CONTACT AT CONTACT INFORMATION  
OR VISIT: [WWW.INTERIORHEALTH.CA](http://WWW.INTERIORHEALTH.CA)**

2. Beach Closure

**BEACH  
CLOSED**



**STATEMENT REGARDING REASON FOR POSTING**

**ADDITIONAL INFORMATION BENEFICIAL TO PUBLIC'S  
UNDERSTANDING OF SITUATION**

**FOR MORE INFORMATION ON THE MONITORING OF THIS BEACH, CONTACT:  
PERSON OF CONTACT AT CONTACT INFORMATION**

**OR VISIT: [WWW.INTERIORHEALTH.CA](http://WWW.INTERIORHEALTH.CA)**

### 3. Cautionary Cyanobacteria Advisory

#### **SWIMMING ADVISORY: CYANOBACTERIA IN NAME OF WATER SYSTEM**

**[Names of beach owners]** is monitoring a cyanobacteria bloom on **[Name of body of water]**

**For cyanobacteria blooms, Interior Health advises users to:**

- **Avoid all direct contact with the bloom. If contact is made, rinse your body with clean water.**
- **Recreational activities, such as swimming, are discouraged in areas where the bloom is present.**
- **Do not consume drinking water directly from the lake. If your source water intake is **[Name of body of water]**, consider using an alternate source for drinking water. Contact your water supplier for more information.**
- **Consider providing pets and livestock with an alternate source of drinking water.**

**Posted: [Posting Date]**

***For the most up to date information, please visit the webpages below:***

***Interior Health's Cyanobacteria (Blue-Green Algae) page:***

***[Public Beaches | Environmental & Seasonal Health | IH \(interiorhealth.ca\)](#)***

***HealthLinkBC Cyanobacteria Blooms (Blue-Green Algae):***

***[Cyanobacteria Blooms \(Blue-green Algae\) | HealthLink BC](#)***

***Ministry of Environment's Algae Watch website:***

***[Algae Watch | Province of British Columbia \(gov.bc.ca\)](#)***

## Appendix D – Important Beach Contacts

Contact Type and Name	Phone #s	What they do
<b>Beach Operator</b>		
<b>Beach Operator or Maintenance Contractor</b>		
<b>Local Government/Health Authority Contacts (day time)</b>		
		<i>Find your local Interior Health Environmental Health office contact <a href="#">here</a>.</i>
<b>Ministry of Environmental Report All Poachers and Polluters (RAPP)</b>		
Report All Poachers and Polluters (RAPP) hotline	1-877-952-7277	