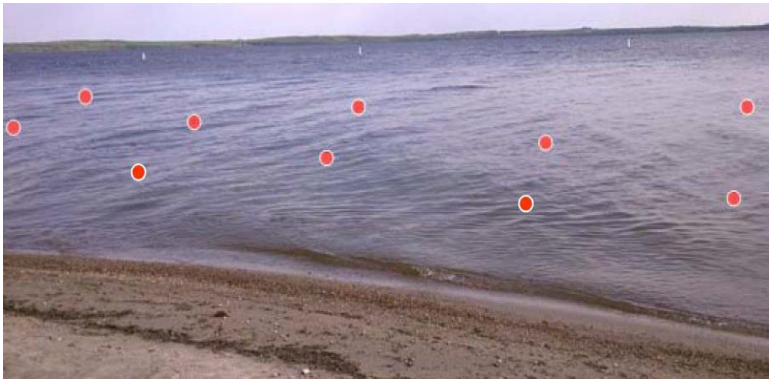
How to Collect Cyanobacteria (Blue-Green Algae) Water Samples

Only designated priority beaches may submit *Enterococcus* samples. Samples submitted by non-designated beaches will be rejected. Refer to the Alberta Safe Beach Protocol for more information. Contact your local public health inspector if you have questions or concerns about recreational water quality.

Materials supplied by AHS (per sampling event)	
One 125 mL Alberta Centre for Toxicology (ACFT) plastic bottle with a white cap – for microcystin sampling	
Two 50 mL conical tubes with orange caps – for cell count and speciation sampling	
Two plastic resealable sample bags	
ACFT Laboratory Requisition for Microcystins Analysis form	
Lugol's solution and Safety Data Sheet	
Plastic wine thief	
Materials supplied by sampler	
Large pail	Aluminum foil
Hip waders	Ice packs
Disposable gloves	Cooler
Plastic or metal probe thermometer	Life jacket/personal flotation device
Preprinted beach name and access number labels (optional)	

Microcystin sample bottle (left). Conical tubes for cell count and speciation (right).

Note: If a cyanobacterial bloom is present, avoid direct contact with the water as some types of cyanobacteria may cause skin irritation. The use of hip waders and disposable gloves will help prevent contact with a bloom. A cyanobacteria reference guide with pictures can be found in the Frequently Asked Questions document located at www.ahs.ca/bga.



Composite sampling method: Water from ten different sampling locations is combined, thoroughly mixed, and treated as a single sample. This sampling method is used as cyanobacteria are not evenly spread through the water. In the picture (left), ten sample sites are used to make the composite for the cyanobacteria sample.

Sample Collection

1. Rinse the pail and wine thief thoroughly with lake water at the beach where the sample is to be collected.
2. Using the wine thief, collect water samples from five locations that are knee deep and five locations that are mid-thigh deep (ten locations in total along the length of the beach). Deposit each sample into the pail. Try to keep sample locations consistent from week-to-week.
3. Mix the contents by swishing the pail.
4. Using the contents of the pail:
    a. Fill the ACFT microcystin bottle ¾ full (approximately 100 mL).
    b. Fill the two conical tubes with orange caps to the 49 mL mark. Add 1-2 mL of Lugol's solution.
5. Ensure all caps are "finger tight". Do not overtighten caps as this can cause cracking.

Submitting the Samples

1. **Label all three bottles** with the waterbody name, beach name, access number, and collection date. Pre-printed labels are recommended.
2. Stick a sample ID label (attached to the requisition form) onto all three sample containers and caps (see picture top of page 1), and in the top right corner of the requisition form. Be sure to use current year ID labels (e.g. M22**** for 2022).
3. Wrap the 125 mL ACFT microcystin bottle in aluminum foil to protect the sample from sunlight.
4. Complete all sections of the requisition form. See the last page of this resource for a sample form.
    a. Record site conditions including colour, turbidity, evidence of a cyanobacterial bloom, water temperature (measured at the approximate location of sample collection using a plastic or metal thermometer), wind, and 24-hour rainfall.
5. Place the ACFT microcystin bottle in a plastic bag and put the completed requisition form in this bag. Place the two conical tubes with the sample ID labels in another plastic bag without a requisition form.
6. Store the bottles in a cooler with ice packs.
7. Transport the samples to an Environmental Public Health office. Consult your local public health inspector regarding accepted days and times for sample drop-off.

Notes

- **If a cyanobacterial bloom is suspected to be present in the water**, consult your local public health inspector. If requested, use a wide mouth bottle to collect some of the surface scum. Follow steps 4-5 of the collection procedures using the surface scum water. Submit these samples following the procedures listed above. Note that the sample type must be indicated as "**grab**" on the requisition form instead of "composite". Grab samples do not replace routine weekly composite sampling activities. Please ensure routine composite sampling is also completed.

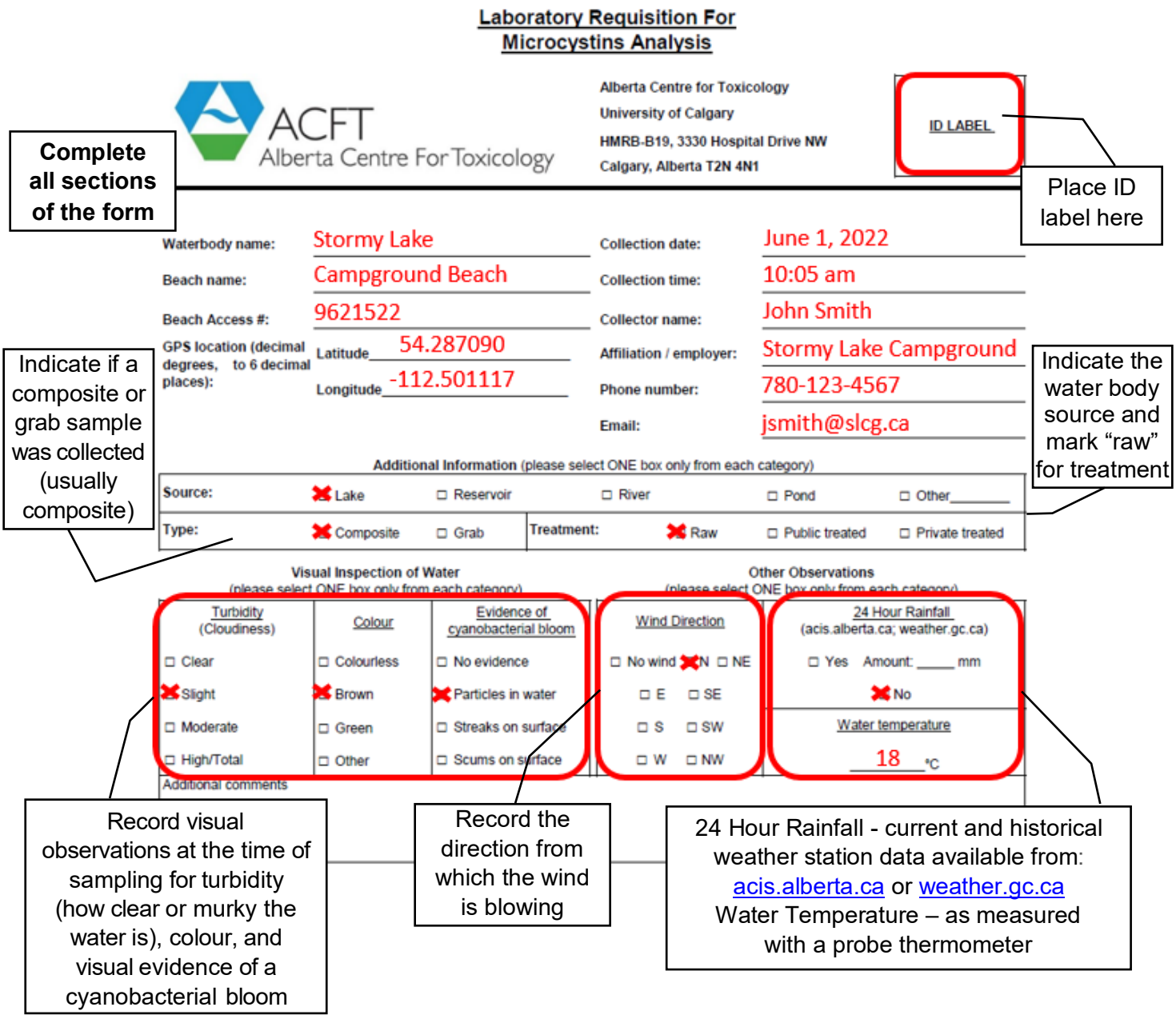
- When not in use, wrap the Lugol's solution in aluminum foil and store it in a cool, dark location. Lugol's solution is an iodine-based substance used to preserve the cell count samples. The Safety Data Sheet (SDS) for the solution should be supplied with the Lugol's solution. Consult your local health inspector if you did not receive the SDS.

- Pre-printed labels can be made to assist with the sampling process (see sample label below). Include the waterbody name, beach name, beach access number, and a space for the collection date.

  Stormy Lake
  Campground Beach
  Access number: 9621522
  Collection date:

- Ensure requisition forms are complete. Incomplete requisition forms may result in samples not being tested by the laboratory or a lack of information to properly interpret the sample results.

- Lab results will be sent to Alberta Health Services for interpretation and distribution to beach operators.



Contact us at 1-833-476-4743 or submit a request online at ahs.ca/eph.

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