Taking samples for lab analysis

1. Together with ENR, decide what you will be sampling for. For example, if you are monitoring a waterbody that is near a mine, you might be interested in analyzing a sample for trace metals. It you are monitoring a waterbody that receives discharge from the sewage lagoon, you might be interested in monitoring nutrients. If you suspect that your waterbody is affected by nearby tar sands operations, you might be interested in analyzing for PAHs. (See fact sheets for background info on trace metals and PAHs).
2. Once you have decided what you will be analyzing for, contact ENR and decide what lab you will be using. Contact the lab, tell them what you will be sampling, and order the appropriate bottles. Each lab has specific bottles that they use for specific analyses. For example, a sample for trace metals may have to be taken in a 500 mL plastic bottle whereas a sample for chlorophyll might have to be taken in a 1 L amber glass bottle. Sometimes, you will have to preserve your sample and the lab will ship you preservatives as well. These should be colour-coded so that it is easy to tell which preservatives go into each sample.
3. Once you have received your bottles and preservatives, head to your field site and record in your field book the date, time, and location (including GPS coordinates) of sampling, and also determine the pH, DO, ORP, temperature, and conductivity using the hand-held YSI meter. Record these either in your field book or on a water quality sampling sheet.
4. Put on a pair of nitrile or latex gloves, and wade out into the river or stream where you wish to take a sample. Make sure the bottles are pre-labeled – it is really hard to label them once they become wet!
5. Take the cap off and fill the bottle half way with lake or river water. Replace the cap and shake vigorously. Repeat this two more times so that you have rinsed the bottle three times in total.
6. Making sure that you are holding the bottle **under the water,** fill the bottle with your sample. If the sample needs to be preserved, knock a small amount of water out of the top, add the preservative, and cap. If you do not need to add preservative, simply replace the cap.
7. Keep the sample cool in a fridge or cooler until you can ship the samples to a lab. You need to ship the samples as soon as you possibly can.
8. When shipping, make sure that you fill out the lab's chain-of-custody form (ship-receive form). They will send this to you with the bottles. On this form, you will fill out who is shipping the samples, who the data should be

Photo taken from: http://pc.gc.ca

sent to, the samples you are submitting, and what they should be analyzed for. Contact ENR or the lab for assistance with filling out this form – each lab has a slightly different form. There is an example of a form at the end of this document.

9. Ship the samples in a cooler with ice packs and lots of packaging. Ensure that the cooler is well-labeled, and that the chain of custody is in a Ziploc bag that is taped to the outside of the cooler.

Sample Shipping/Receiving Form – Chain of Custody

1. Project: _____ **Project #:** _____

2. Sender	3. Carrier	4. Receiver
Signature _____ Date _____ Sent from: _____	Company _____ Signature _____ Date _____ B/L No. _____ Pkg Tracking No. _____ _____	Courier from Depot Signature _____ Date _____ Lab Custodian Signature _____ Date _____ Condition upon Receipt _____ _____

5. Shipment Description

Number of packages _____ Sealed (yes or no) _____ Types of containers _____ Condition prior to shipment (e.g., frozen, fresh)_____ _____ _____	Description of contents _____ _____ _____ _____

6. Contents

Sample I.D. Number	Type of Sample	Legal Seal Intact? (yes or no) (if any)	Legal Seal No. (if any)	Condition (damaged, loss of liquid, etc.)

Fill this form out, and then make 2 copies. Put the original in a Ziploc bag or other waterproof bag, and duct tape it to the container you are shipping. Write 'COC' on the bag. Put the first copy inside the shipping container and keep the other copy for your files.