



DRINKING WATER SAMPLING INSTRUCTIONS

8081 Lougheed Highway, Burnaby, BC V5A 1W9 | +1 604 253 4188

Introduction

Water that is used for drinking, cooking, brushing teeth, washing dishes and other domestic uses should be from a safe water supply. This means that your water supply is safe from bacteria and routine chemicals that may cause disease and pose a health risk. The best way to ensure your well water is safe to drink is to have your well water regularly tested by a laboratory. Your Environmental Health Officer (EHO) ¹ can advise you on the timing and scope of testing required for your water. If you are a private well owner you should be testing for bacteria at least once a year or sooner if it appears the quality of the water has been compromised. Health Canada ¹ recommends testing for bacteria two to three times a year and when the risk of contamination is greatest.

¹ http://www.health.gov.bc.ca/protect/dw_ha_contacts.html

² <http://www.hc-sc.gc.ca/ewh-semt/pubs/water-eau/well-puits-eng.php>

Sampling Supplies and Containers

The proper collection, storage and transport of your drinking water test sample is a very important part of the analytical process. When you have determined that you need to collect a sample for drinking water analysis, please contact ALS Vancouver at 604-253-4188. We will work with you to determine what you need and prepare and send all necessary sampling supplies and containers. For each drinking water sample requiring analysis, the following containers may be required:

Containers Supplied for a Single Drinking Water Sample

Bottle A – 200 mL plastic sterile bottle containing Sodium Thiosulfate preservative (for Bacteriological analyses)

Bottle B – 1.0 L plastic bottle (for Physicals and Dissolved Anions analysis)

Bottle C – 250 mL plastic bottle (for Total Metals analysis)

Bottle D – 40 mL glass vial (for Total Mercury analysis)

In addition, ALS will also provide the following supplies:

- (1) ALS Chain of Custody
- (1) ALS BC and Yukon Drinking Water Submission Form
- (4) ALS labels
- (1) ALS Return Address label

All supplies will be provided in an appropriately sized cooler with ice pack. The actual cooler size will depend on the number of drinking water samples that are being taken.



Bacteriological Testing

Total Coliforms and E.coli are the bacteriological tests used to determine the presence of bacteria. Bottle A – which is labeled with “Sterilized for Bacteriological Testing” on the bottom of the label is provided for this purpose. Samples should be refrigerated NOT frozen and analyzed within 30 hours of collection.

Total Coliforms are found everywhere in the environment. If detected, there may be a problem with the well or distribution system. Resampling after reviewing this document is recommended to ensure proper collection of sample.

If E.coli are detected, this indicates recent contamination from human or animal feces, which can cause serious health issues. Boiling water that is used for drinking, brushing teeth, food preparation is advised immediately.

The table below provides the package provided by ALS. For more information about the health impacts of any of the bacteriological parameters in the table, please click on any parameter underlined and you will be directed to the Health Canada website fact sheet.

| Bacteriological Tests - Package A |
|--|
| Total Coliforms |
| E. Coli |

Physicals, Dissolved Anions & Total Metals Testing

Although your water looks, tastes, and smells fine, there may be the presence of unacceptable levels of bacteria or chemicals in the water. Good quality water should meet the Health Canada Guidelines for Canadian Drinking Water Quality for each routine chemical tested. The table below provides the packages provided by ALS. For more information about the health impacts of any of the chemicals in the table, please click on any chemical underlined and you will be directed to the Health Canada website fact sheet.

| Physicals + Dissolved Anions - Package B | | Total Metals - Package C | | |
|---|------------------|---------------------------------|-----------|-----------|
| Colour | Alkalinity | Aluminum | Chromium | Potassium |
| Conductivity | Chloride | Antimony | Copper | Selenium |
| Dissolved Solids | Fluoride | Arsenic | Iron | Sodium |
| Total Hardness | Sulfate | Barium | Lead | Uranium |
| pH | Nitrate Nitrogen | Boron | Magnesium | Zinc |
| Turbidity | Nitrite Nitrogen | Cadmium | Manganese | |
| | | Calcium | Mercury | |

The routine chemicals are often grouped on the report according to the headings in the table above.

Bottle B – is used to collect the Physicals and Dissolved Anions (Package B) and Bottles C and D – are used to collect the Total Metals (Package C).

The Health Canada website is a good source of information for Guidelines for Canadian Drinking Water Quality. See link below.

<http://www.hc-sc.gc.ca/ewh-semt/water-eau/drink-potab/guide/index-eng.php>

Sample Collection Procedures (Sampling from a Tap)

1. Remove any attachments (aerators, tap screens, hoses, filters, etc.) from the tap.
2. Wash your hands or wear disposable gloves provided.
3. Let the water run to waste for at least 2 minutes before collecting the sample.
4. If the tap is a "mixing faucet" run the hot water to waste for at least 2 minutes and then the cold water for 2 minutes. Take the sample from the cold water tap only.
5. Remove the cap of the sample bottle, taking care not to touch the mouth of the bottle or the inside of the cap.



6. Without rinsing, fill each bottle as follows:
 - Bottle A - 200 mL plastic sterile bottle (for Bacteriological analyses-Package A). Fill the bottle to the 200 mL line. Do not fill to the top, leave at least two centimeters of air space.
 - Bottle B - 1.0 L plastic bottle (for Physicals and Dissolved Anions analyses-Package B). Fill the bottle up to the shoulder, leaving an air space.
 - Bottle C -250 mL plastic bottle (for Total Metals analysis-Package C). Empty the Nitric Acid (Blue) preservative vial into the bottle. Fill the bottle up to the shoulder, leaving an air space.
 - Bottle D - 40 mL glass vial (for Total Mercury analysis-Package C). Empty the Hydrochloric acid (Yellow) preservative vial into the vial. Fill the vial up to the shoulder.
7. Cap the bottles immediately after collecting the sample and tighten securely. Remember not to touch the inside of the cap with your hands.

Sample Collection Procedures (Sampling from a source other than a Tap)

1. Wash your hands or wear disposable gloves provided.
2. Remove the cap of the sample bottle, taking care not to touch the mouth of the bottle or the inside of the cap.
3. Without rinsing, fill each bottle as follows:

Note: Use a clean/sterile secondary container to take the sample if needed, and then transfer into the bottles as outlined below. If the sample bottle must be submerged, be sure to wipe dry the exterior of the bottle after capping. If filling to the top is unavoidable, pour off excess sample.

- Bottle A - 200 mL plastic sterile bottle (for Microbiological analyses-Package A). Fill the bottle to the 200 mL line. Do not fill to the top, leave at least two centimeters of air space.
 - Bottle B - 1.0 L plastic bottle (for Physicals and Dissolved Anions analyses-Package B). Fill the bottle up to the shoulder, leaving an air space.
 - Bottle C -250 mL plastic bottle (for Total Metals analysis-Package C). Empty the Nitric Acid (Blue) preservative vial into the bottle. Fill the bottle up to the shoulder, leaving an air space.
 - Bottle D - 40 mL glass vial (for Total Mercury analysis-Package C). Empty the Hydrochloric acid (Yellow) preservative vial into the vial. Fill the vial up to the shoulder.
4. Cap the bottles immediately after collecting the sample and tighten securely. Remember not to touch the inside of the cap with your hands.

Labeling of Samples

For each sample location fill out the label on each container with the sample location (e.g. Kitchen Tap) and the Date and Time the sample was collected. The information on the label should match the information on the ALS BC and Yukon Drinking Water Submission Form and the Chain of Custody.



Completion of the ALS BC and YK Drinking Water Submission Form

Please follow the instructions on the form by completing the sections that apply to your samples. Sections A and B should always be completed, signed and dated with date and time you submitted the samples to a courier or to an ALS laboratory.

Regular service is to provide results in 10 working days. If rush service is required, please indicate in Section B. Typically, rush services are double the cost of regular service.

Payment

Payment in full is required prior to commencement of drinking water analyses. Please contact ALS to arrange payment by credit card or submit your information under Special Instructions on the Chain of Custody (card holder name, card number, expiry date). Please note that a minimum charge of \$75.00 per submission is applied.

Sample Storage and Transport

1. Submit your drinking water sample(s) to ALS as quickly as possible after collection as bacteriological analysis should be performed within 30 hours after sampling.
2. Refrigerate samples until ready for shipping.
3. Ship samples to the lab in the cooler provided with sufficient frozen ice packs to keep the sample cool (but not frozen) preferably between 20C & 80C, this will help preserve the integrity of the sample.
4. Do not allow samples to freeze.
5. Place the completed paperwork in a Ziploc bag and include with the sample(s).
6. Ship samples by same day or overnight courier, or drop off samples in person, in order to meet the regulated holding times.

ALS Contact Information and Hours of Operation

ALS Environmental - Vancouver
8081 Lougheed Highway
Burnaby, BC V5A 1W9
+1 604 253 4188

Front Office Hours

Monday - Friday 8:00 a.m. - 5:00 p.m.

Sample Receiving Hours (24 Hours Weekdays)

Monday - Thursday 8:00 a.m. - 8:00 a.m.
Friday 8:00 a.m. - 7:00 a.m.
Saturday & Sunday 8:00 a.m. - 4:00 p.m.