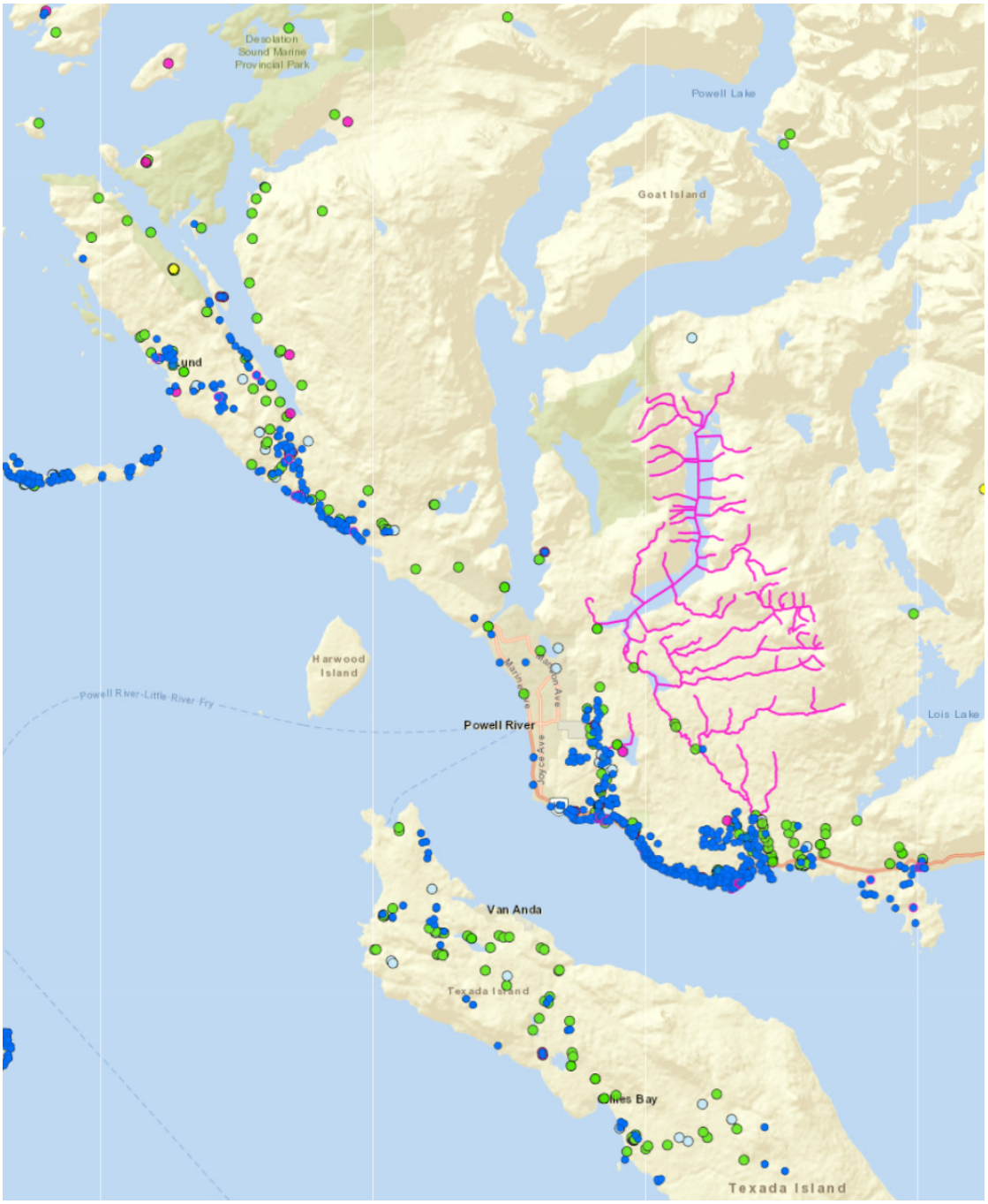
Vancouver Coastal Health

DRINKING WATER OPERATING PERMIT REQUIREMENTS & APPLICATION FORM



Vancouver Coastal Health

Health Protection
Office of the Chief Medical Health Officer
8th Floor, 601 West Broadway
Vancouver, BC V5Z 4C2

Drinking Water Protection Act
What you need to know and resources

June 2023

To Water Suppliers;

Re: Summary of legislative requirements of the Drinking Water Protection Act (DWPA) to operating a water supply system

This letter summarizes the legislative requirements to running a water supply system under the Drinking Water Protection Act (the "Act") and Drinking Water Protection Regulation (the "Regulation"). The intent is to offer a basic summary of the responsibilities for water suppliers by the Act and Regulation. References are made to the relevant sections of the Act and Regulation, and these sections should be consulted to determine the specific nature and extent of responsibilities. Definitions are found in Section 1 of the Act. Much of this information was adapted from the Drinking Water Officer's Guide, (linked below) published by the Ministry of Health, which also contains an excellent collection of documents pertaining to best practices and technical assistance.

Water Supplier
This is legally defined as an owner of a water supply system. It includes those who are responsible for the ongoing operation of the water supply system or simply in charge of managing that operation. (defined in section 1 of the Act)

Water Supply System
Anything which collects, treats or distributes water used for domestic purposes to more than one single family dwelling. (Legally defined as "*equipment, works and facilities used for the intake, treatment, diversion, storage, pumping, transmission and distribution of drinking water that is used for domestic purposes by more than one single family dwelling".)*

- ***Domestic purposes*** is legally defined as the use of water for human consumption, food preparation or sanitation.
- S***mall System*** means a water supply system that serves up to 500 individuals during any 24 hour period.

Potable water
"Potable" is defined as:

(a) meets the standards prescribed by regulations, and
(b) is safe to drink and fit for domestic purposes without further treatment.

All water suppliers must supply water which is potable and meets any requirements of the operating permit or regulations.

Interpretation notes:

- *In the Regulation, prescribed standards are established for bacteria in water: E.coli and total coliforms.*
- *Chemical exceedances in finished drinking water (e.g. above the thresholds established as Maximum Allowable Concentrations (MACs) in Health Canada's Guidelines for Canadian Drinking Water Quality) may be considered to interpret section 1(b) of the potable water definition.*
- *The Regulation also requires all surface water to be "disinfected"*
- *Potability for "small systems" may be provided in some situations by use of a Point-of-Entry or Point-of-Use treatment system where accepted by the DWO.*

Construction permits

Persons may only construct or alter a water supply system if they obtain a construction permit in advance. (See Act section 7 and Regulation section 6).

Interpretation notes:

- *VCH employs a Public Health Engineer as an issuing official for review and issuance of Construction Permits.*
- *In some situations for "small systems" the requirement for a construction permit may be waived (with or without conditions) by an issuing official. (See Regulation section 6(3)(c))*
- *The requirement for construction permits is not limited to new systems. Existing systems carrying out upgrades also require construction permits.*
- *Construction permits may not be required where a person is simply undertaking a repair to return a system to the condition for which construction had previously been authorized, or for emergency repairs.*

Operating permits

Water suppliers must not operate a water supply system without an operating permit and must comply with the terms and conditions of the permit (See Act section 8 and Regulation section 7). Annual operating permit fees may apply depending on the number of connections (i.e. > 14 connections). Bulk water haulers also must posses an operating permit.

Possible Permit Conditions:

- *Treatment requirements (which may include dates by which they must be implemented)*
- *Equipment, works, facilities and operating requirements (including compliance with the construction permit)*
- *Qualifications, training or certification of the persons operating, maintaining or repairing the water supply system*
- *Minimum sampling frequency (bacteriological and chemical water quality) of the drinking water source and water being supplied*
- *Water treatment standards required (e.g., minimum free chlorine residual level)*
- *Requirement to establish operation plans and maintenance plans*
- *Requirement to review and update the emergency response and contingency plans (ERCP) every year*

Operator Training

Persons must not operate a water supply system unless they meet the operator training and certification requirements set out in the regulation. (See Act section 9, Regulation section 12)

Interpretation notes:

- *This requirement may be relaxed in some cases for "small systems" (See Regulation section 4(2))*

Emergency Response and Contingency Plans

Water suppliers must have written Emergency Response and Contingency Plans. (See Act section 10, Regulation section 13). The information in the plan must be kept up to date.

Interpretation notes:

- *This plan contains contact information, and steps for the water supplier to follow in different types of emergencies or abnormal operating conditions including protocols for communication to users. For example, what series of actions should the water supplier should do in the event that monitoring detects E. coli in finished drinking water.*
- *Templates and samples of signage are available from the Drinking Water Officer.*

Monitoring
Water suppliers must sample as required by the regulations, operating permit and directions of a Drinking Water Officer (See Act section 11, Regulation section 8). This includes laboratory analysis of total coliforms and *Escherichia coli* in drinking water. The frequency of sampling (both bacteriological and chemical) may be established as an operating permit condition.

Interpretation notes:

- *Water analysis must be completed by a provincially-accredited laboratory. In most cases, bacteriological samples are processed by the BCCDC lab in Vancouver; testing for other parameters (chemical and physical) can be undertaken at any other accredited laboratory.*

Laboratory reports
Laboratories must immediately report to water suppliers, the Drinking Water Officer and the Medical Health Officer if any presence of *E.* coli is detected in water which may be supplied to users. Laboratories must also advise Drinking Water Officers of other information if requested. Water suppliers must immediately advise the Drinking Water Officer that they have been notified by the lab in such cases. (See Act section 12, Regulation section 9)

Notifying Drinking Water Officer of threats
Water suppliers must immediately notify the Drinking Water Officer of any threats to drinking water if they become aware of them. (See Act, section 13)

Interpretation notes:

- *This refers to any circumstances that may make the water non-potable. This includes, but is not limited to water quality sample results which do not meet the required standard.*

Public notice of threats
Water suppliers must provide public notice of threats to drinking water if requested by a Drinking Water Officer. (See Act section 14, Regulation section 10). Also, if a laboratory advises that an immediate reporting requirement exists, or the supplier is otherwise aware of a potential drinking water health hazard, and the Drinking Water Officer cannot be immediately contacted, the water supplier must notify the users of the water supply system immediately, in accordance with emergency response and contingency plans. In this case, no request or order from a Drinking Water Officer is required. (See Act section 14, Regulation section 10)

Interpretation notes:

- *This obligation places the duty on water suppliers to communicate advisory information to users on the water supply system. These advisories may be a 'boil water notice' or a 'do not consume notice.'*

Annual Reports: Publication of other information
Water suppliers are required to make an annual report available. This report includes monitoring tests taken (both chemical and bacteriological), and other information pertinent to the operation of the water system. (See Act section 15, Regulation section 11).

Interpretation notes:

- *This annual report covers a 12 month period of the previous calendar year and is due no later than 6 months past the end of every calendar year (June 30).*
- *Templates are available from the Drinking Water Officer.*

Flood-proofing of wells

Owners and operators of wells must flood proof them if required by the regulations. (See Act section 16, Regulation section 14).

Interpretation notes:

- *Any well providing drinking water which is at risk of flooding and/or any well supplying a water system which was completed after October 31, 2005 must be flood-proofed.*

Assessments and Assessment Response Plans

Water suppliers must conduct water source and system assessments of water supply systems, if required by the regulations or a Drinking Water Officer (See Act, section 19). In response to an assessment, the Drinking Water Officer may add conditions to the operating permit as well as order the water supplier to prepare an assessment response plan.

Other

In various other circumstances, Drinking Water Officers can impose requirements on water suppliers, make requests or issue orders under the Act. Water suppliers must comply with those requests, orders, permit conditions, and requirements. For further questions and clarification, please contact your local Drinking Water Officer:

Service Area	Phone
Central Coast & West Chilcotin	604-983-6793
North Shore	604-983-6793
Powell River	604-485-3310
Richmond	604-233-3147
Squamish	604-892-2293
Sunshine Coast	604-885-5164
Vancouver	604-675-3800
Whistler	604-932-3202

Construction Permit Inquiries or Applications

Public Health Engineer: Michael Wu 604-675-3800 michael.wu@vch.ca

Useful Links for Small Water Systems

Legislation, Policy and Resources

- The Ministry of Health - *Drinking Water Quality Home Page*
- Ministry of Health - *Drinking Water Officers' Guide* - Contains all provincial health policy related to drinking water
- Thomson Rivers University - *British Columbia Small Water Systems Online Help Centre* - Valuable summary of provincial drinking water legislation, resources and requirements for small water system operators
- Health Canada - *Guidelines for Canadian Drinking Water Quality*
- Vancouver Coastal Health - *Drinking Water Main Page* - Includes resources, reports and notifications

Design Considerations

- VCH Construction Permits - VCH Construction Permit Guideline
- Ministry of Health - *Safe Water Supply: Vital to your Health* - Provides information on the risks, operation and basic components of private and public small water systems
- Ministry of Health - *Small Water System Guidebook* - This guidebook is intended to be the first step in helping owners and operators find solutions to the challenges of operating a small water system.
- BC Ministry of Environment - *Design Guidelines for Rural Residential Community Water Systems* - Design document.
- Vancouver Coastal Health - *Water Supply System Construction Permit Application & Guidelines*

Emergency Response Planning and Water Quality Notifications

- Ministry of Health - *Emergency Response and Contingency Planning for Small Water Systems* - Template for small water system operators.
- Vancouver Coastal Health - *Emergency Response and Contingency Plan Template* - Ask your DWO for a copy
- Ministry of Health - *Water Quality Notifications* - Information and links
- Vancouver Coastal Health - *Boil water notice* - *Frequently asked questions for general public*

Source Protection

- Ministry of Health - *Drinking Water Source-to-Tap Screening Tool*
- Interior Health Authority - *Small Water Source Protection Plan Toolkit* - A comprehensive guide to help small water suppliers develop a scaled-down version of a source assessment and protection plan
- Ministry of Health - *Guidance Document for Determining Groundwater at Risk of Containing Pathogens (GARP)*
- Ministry of Environment - *Water Well Disinfection Using the Simple Chlorination Method*

Sampling and Reporting

- Vancouver Coastal Health - *Testing Your Well Water* - Laboratories approved for full spectrum chemical analysis
- Vancouver Coastal Health - *Drinking Water Annual Report Form*

Submission Requirements:

New (or Existing Unapproved) Water Supply System

System Name:		Submission Date:	

General Submissions	Included	Comments
Drinking Water System Application form	☐	
Chemical water analysis	☐	
Bacterial water analysis	☐	
Detailed site map	☐	
Schematic of existing system (where applicable)	☐	
Schematic of proposed construction	☐	
Manufacturers Information and Specifications (for all proposed (and unapproved) equipment)	☐	
Source to Tap Screening Tool	☐	
Application for Construction Permit	☐	
Emergency Response and Contingency Plan	☐	

Case Specific Submissions	Included	Comments
Proof of Operator Training (i.e. course certificate)	☐	
Water license (surface water sources)	☐	
Well log (ground water sources)	☐	
Cross Connection Control Plan	☐	
Maintenance and Operating Procedures	☐	
Source Protection Plan	☐	
Assessment Response Plan	☐	
Hydrogeological Report	☐	
Additional documents *(specify in comments)*	☐	

Water Supply System Construction Permit Application Form

INTRODUCTION

Under the Drinking Water Protection Act, a Construction Permit is required from the Issuing Official before commencing construction, alteration or extension of a water supply system. Information on the application and approval process and who should apply, refer to the "**Water System Construction permit Guidelines**" or contact the local Environmental Health Officers or the local Drinking Water Officers in your area:

Richmond	604-233-3147	HealthProtectionRH@vch.ca
Vancouver	604-675-3800	EnvironmentalHealth@vch.ca
North Shore & Bowen Island	604-983-6793	HealthProtectionNS@vch.ca
Central Coast & Indian Arm	604-983-6793	HealthProtectionNS@vch.ca
Sea to Sky	604-892-2293	HealthProtectionCG@vch.ca
Sunshine Coast	604-885-5164	HealthProtectionCG@vch.ca
Powell River	604-485-3310	HealthProtectionCG@vch.ca

Completed Construction Permit Applications should be submitted to:

Michael Wu, Public Health Engineer, Health Protection
#1200 – 601, West Broadway, Vancouver, B.C., V5Z 4C2
Phone: 604-675-3800
E-mail: michael.wu@vch.ca

SUMMISSION REQUIREMENTS

An application for a Construction Permit should be of professional quality. For complex municipal water works, all plans must be sealed, signed and dated by a Professional Engineer. Submit two complete sets of the application package for new water sources. Submit one complete set of plans for works involving water treatment, watermain extensions or replacements. The design is wholly the responsibility of the applicant.

The following information should be included in the application:

- ☐ Documentation outlining the legal basis of the owner - Improvement District, Water Utility under the Water Utility Act, Water Users Community under the Water Act, Strata Corporation, privately owned (mobile home parks, campsites), etc.;

- ☐ A letter explaining the purpose of the project with a key plan/map to show the location and layout of the site;
  - For new or changes to treatment system, include: transmission, storage, pumping, treatment and distribution works, layout and specifications of equipment used, for example, size and capacity of filters, type and make of ultraviolet disinfection systems, size and type of water pipes etc., also include operational details like how the water is to be disinfected and the equipment monitored
  - For new or changes to the distribution system, include: name of the system owner, plan and profile of the watermain and sewers that are nearby, clearly indicating the separation between them and the protective measures for the watermain

- ☐ If there is a new water source, additional information is to be provided as follows:
  - Recent bacteriological and chemical analysis of the proposed source (see Appendix), and
  - For groundwater: well log, well plate number, pump test, wellhead protection details, GARP Assessment (https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/waterquality/how-drinking-water-is-protected-in-bc/garp_assessment_oct_2017.pdf)
  - For surface water: details of the intake structure and location plan, a description of the watershed, noting any sources of contamination, flood level, safe yield, hydrological data, etc

Application for a Water Supply System Construction Permit

Pursuant to Section 7 of the Drinking Water Protection Act

FOR OFFICE USE ONLY **(CP Number: VCH - -)**

Date Application Received:
Date Construction Permit Issued:

NAME OF WATER SYSTEM:

(if existing, name as it appears on Operating Permit) : _____

Owner: (Municipality, Private Owner, for example)

_____

Mailing Address:

_____

Contact: _____ Telephone: _____ E-mail: _____

APPLICATION AND DRAWINGS PREPARED BY:

Designer/Engineer on Record: _____

Company Name: _____

Mailing Address: _____

Contact: _____ Telephone: _____ E-mail: _____

REASON FOR APPLYING

- ☐ New Water Supply System
- ☐ Replacement/Alteration Work
- ☐ System Extension
- ☐ New Source (Source evaluation letter needs to be completed prior to construction permit phase)

System within a System: Is the proposed water main extension under the permanent ownership of the water supplier?

- ☐ Yes
- ☐ No

PROPOSED WORKS (water source, treatment works, storage etc., details to be provide in the appendix)

_____

_____

APPROXIMATE VALUE OF THE PROPOSED WORKS: $ _____

LOCATION OF PROPOSED WORKS (with sufficient information for Public Health Engineer to locate the site)

_____

APPENDIX

DISTRIBUTION SYSTEM INFORMATIAON

For new water main and/or replacement, provide the following design details

Length (m)	Size(mm)	Pressure Rating (Class)	Material

Is the water distribution system looped? If it is not looped, is it part of the overall Looping Conceptual Plan? (must be shown on the Key Plan)	□ Yes □ No (Specify)
Will the water mains maintain a minimum of 0.45m separation above and clear of sanitary or storm sewers at all crossings? (If no, attach note explaining).	□ Yes □ No (Specify)
Will the water mains have 3 meter clear separation from storm and sanitary sewers? (If no, attach note explaining).	□ Yes □ No (Specify)
Do all works not on public right-of-ways have registered easements? (if no, attach note explaining)	□ Yes □ No (Specify)

WATER SYSTEM INFORMATION

Choose the total number of connections once the work is completed	□ 14 or less connections □ 15-300 connections □ 301-10,000 connections	□ 10,001 – 20,000 connections □ More than 20,000 connections □ Bulk water hauler
Is this an existing system, is the water on a water notification such as a Boil Water Notice?	□ No	□ Yes (specify)

NEW WATER SOURCE INFORMATION

Does the application include a new drinking water source? □ N/A □ Yes □ No	Name of Source	
	The source is a □ Lake □ Well □ Stream	
If Yes, a written approval from the area Environmental Health Officer will be required	Well Tag Number	
	Water Lenience Number	

Application submitted by:_____

Date:

_____**Signature**_____

Freedom of Information

The personal information collected is necessary for program operation per Section 26 of the Freedom of Information and Protection of Privacy Act. Information that appears on a permit may be disclosed per Section 22 (4) of the Act.

Application for a Water Supply System Operating Permit

Pursuant to Section 8 of the Drinking Water Protection Act

☐ **NEW WATER SYSTEM** ☐ **CHANGE TO EXISTING WATER SYSTEM**

SECTION 1 If a New Water System, include the following with this Application and Complete Sections 3,4, and Verification:

☐ Laboratory Data ☐ Detailed Drawing ☐ Emergency Response Plan

☐ Training Certificates

SECTION 2 If Change to Existing Water System, check type of change(s) and complete Sections 3,4, and Verification:

☐ Proposed Date of Change _____

☐ Owner / Contact Person Change include the following:

☐ Revised Emergency Response Plan

☐ Training Certificates

☐ Change in Size of Distribution System

☐ Water System Name Change --- Old Water System Name _____

☐ Changes to Months of Operation

☐ Mailing Address / Fax / Email Change

SECTION 3 Water System Information *Please Print*

Water System Name		
Telephone of Operator	Fax of Operator	E-mail
Water System Address / Location		Postal Code
Owner Name	Operator Name	

☐ Source _____ ☐ Treatment _____

☐ # of Connections _____

SECTION 4 Business Information

Primary Contact Person (Operator)

Telephone / Fax / Email

Address

City / Province / Postal Code

Owners Name (Company or Individual)

Operator/Manager/President's Name

Business Billing Address (for annual fee of operating permit)

Postal Code / Telephone / Fax

VERIFICATION

Applicant Signature: _____

I hereby certify that the information set out by me in this application is true and correct to the best of my knowledge and belief. I acknowledge that it is an offence to supply false or inaccurate information on this application.

Print Name: **Date:**

Vancouver Coastal Health
Powell River Health Unit
3rd Floor - 5000 Joyce Ave
Powell River, BC V8A 5R3
604 485 3310

Small Water System – Emergency Response & Contingency Plan

Name of Water System: _____
Date Prepared: _____
Prepared By: _____

Contact Name(s)	Phone #	Cell#	Alternate#	E-mail
OPERATOR **Name:** **EOCP#:**				
OWNER(S) **Name:** **Address:**				
ELECTRICIAN **Name:**				
PLUMBER **Name:**				
EQUIPMENT SUPPLIER **Name:**				
OTHER **Name:**				
PUBLIC HEALTH CONTACT INFORMATION				
PRIMARY CONTACT				
Jack Davidson **DWO**	604-485-3335	604-483-1981	604-314-0596	jack.davidson@vch.ca
BACK-UP HEALTH CONTACTS				
1.Darren Molder **DWO**	604-885-8711	604-989-1357	604-989-7678	darren.molder@vch.ca
2.Michael Nguyen **DWO**	604-485-3324	604-414-5545	778-317-8567	michael.nguyen@vch.ca
3.Dan Glover **DWO**	604-815-6846	604-815-3128	n.a.	dan.glover@vch.ca
4.Phil Muirhead **DWO**	604-983-6756	604-306-2717	n.a.	phil.muirhead@vch.ca
5.Moliehi Khaketla **MHO***	604-984-5070	604-612-9433	n.a.	moliehi.khaketla1@vch.ca

***Note: For the purpose of the Drinking Water Protection Act and Regulation, Dr. Moliehi Khaketla is both a Medical Health Officer and a Drinking Water Officer.**

DWO; Drinking Water Officer
MHO; Medical Health Officer

Vancouver CoastalHealth

Location of Water Source(s)

Directions to Site: _____

Attach photo's (Optional)

GPS settings: (if Known) _____

IN CASE OF EMERGENCY: Enter name of the person responsible for tasks.
If the water in the water system becomes contaminated or you receive an unsatisfactory water result, or in the event of an interruption in the treatment process:

1. Shut off water supply, if appropriate.
2. _____will notify DWO or back-up health contact.
3. Contact other appropriate person(s) from the list of emergency numbers.
4. _____will notify any affected water users. Please keep a
5. _____phone and address list of users and warning signs handy. May need to phone or hand deliver the notice (and water disinfection procedures) to the users.
6. _____will post warning signs.
7. _____will coordinate repair.
8. Organize alternate source of safe drinking water (if available).

Start-up Procedure

1. Identify and correct source of contamination.
2. Entire system should be flushed and disinfected. Follow attached guideline.
3. Submit water sample(s) to appropriate approved Lab for testing. For bacteriological contamination three negative successive samples are usually required. Contact your DWO to confirm the number of samples necessary.
4. Contact DWO for approval to resume use of water supply.

Posting the Emergency Response Plan

The ERP must be posted in a conspicuous location that is easily accessible to the operator and management of the water supply.

Location of ERP: _____.

Additional Information

1. **Include a schematic drawing of the water supply system; from the source to the tap. Include all sources, storage, reservoirs, and treatment and distribution system.**
2. **Include public notices which may be required in the event of a "boil advisory" or "do not consume" notice. Templates are attached.**

Emergency Response Planning

Public Notification

As part of an *Emergency Response and Contingency Plan*, the Drinking Water Protection Act (Section 14) requires that a water supplier give "public notification" regarding threats to drinking water quality. The purpose of public notification is to protect public health in the event that users of a water supply system are exposed to a threat from their drinking water.

The type of notification is dependant on the health risk assessment and subsequent response required by the water supplier. While it is the water supplier's responsibility to notify the public of the precautions to take when there is a threat to the drinking water, the decision about which type of advisory is typically done in consultation with the Environmental Health Officer (Drinking Water Officer). In BC, there are four notices that have been used in the past. Please review each of the following four notices and the explanations concerning their use:

Water Quality Advisory	Used in situations in which the public health threat posed by the water supply system is modest, and actions can be taken to reduce the risks through means other than requiring a Boil Water Notice or Do Not Use Water Notice.
Boil Water Notice	Used in situations in which the public health threat posed by the water supply system is significant and the nature of the threat is one that can be effectively addressed through boiling of the water.
Do Not Consume Water Notice	Used in situations where a significant public health threat exists in relation to the water supply system and the threat cannot be adequately addressed through a Water Quality Advisory, a Boil Water Notice or a Do Not Use Water Notice. The water is considered safe for bathing and flushing toilets but not for consumption.
Do Not Use Water Notice	Used in situations where a significant public health threat exists in relation to the water supply system and the threat cannot be adequately addressed through a Water Quality Advisory or Boil Water Notice. This water is not considered safe for bathing, sanitation or consumption.

BOIL WATER NOTICE (BWN)

_____ - WATER SYSTEM HAS ISSUED AN ADVISORY DUE TO:

Boil water before using it for drinking, making ice, cooking, washing food, or brushing teeth. Use a hand sanitizer after washing hands.

Until notified, all users are advised to:

1. Bring water to a rolling boil for at least 1 minute, or
2. Use an alternate, safe source of water.

For more information contact at

DO NOT CONSUME (DNC)

_____ - WATER SYSTEM HAS ISSUED AN ADVISORY DUE TO:

This water should not be used for drinking, making beverages, brushing teeth or food preparation. All water users are advised to use an alternate source of water or bottled water for the above purposes.

Boiling water will not make it safe!

It is okay to use the water for household cleaning, bathing and flushing toilets. The water in your hot water tank would also be unsafe for consumption. Please consult a qualified plumber before draining your hot water tank.

For more information contact _____ at _____

DO NOT USE (DNU)

_____ - WATER SYSTEM HAS ISSUED AN ADVISORY DUE TO:

Do not use this water for any purpose. This includes drinking, making beverages, brushing teeth, food preparation, bathing, water for your pet(s), washing anything (including vehicles), and watering plants.

Do not turn on your taps for any reason. Use an alternate source of water for the purposes mentioned.

Boiling water will not make it safe!

The water in your hot water tank could be unsafe. Consult a qualified plumber before draining tank.

For more information contact _____ at _____

WATER QUALITY ADVISORY (WQA)

_____ - WATER SYSTEM HAS ISSUED AN ADVISORY DUE TO:

People with weakened immune systems, and/or wishing additional protection should take precautions when drinking, washing fruits & vegetables, making beverages or ice, or when brushing teeth.

- Until notified, these users are advised to:
    1. Bring water to a rolling boil for at least 1 minute, or
    2. Use an alternate, safe source of water.

For more information contact at

Vancouver Coastal Health

Health Protection
Office of the Chief Medical Health Officer
8th Floor, 601 West Broadway
Vancouver, BC V5Z 4C2

Testing Your Well Water

June 2023

Why should I get my well water tested?

A visual inspection of your water or a taste test does not tell you if your well water is safe to drink. The only way to provide this reassurance is to have your water tested at an accredited lab.
Water for drinking, cooking, washing dishes, brushing teeth and all other domestic purposes should be free from harmful microorganisms, like bacteria, viruses and protozoa. Additionally, chemicals or minerals should not be present in your water at a level that could cause a health problem.

What should I test for and how often?

Bacteriological Testing: You should test your well for bacteria at least once per year or immediately if you notice a change in clarity, colour or taste. If you have a shallow well (dug well) or a surface supply:

- Test more frequently (e.g. seasonally) as these sources are more susceptible to contamination.
- Recommendation: install an approved treatment device to disinfect or otherwise remove harmful bacteria, virus and protozoa (e.g. filtration and ultraviolet).
- Contact your local Drinking Water Officer for advice; refer to the contact information below.

The presence of "indicator organisms" (total coliform and E. coli) shows that contamination has entered the well and disease-causing organisms may be present. Contamination can occur from many sources including the soil, animal waste, or human waste from failing septic systems.

Chemical Testing: Testing should be done initially when the well construction is completed and annually thereafter. If there is no significant change in water chemistry over two years then testing can be done every five years. Safe drinking water should meet the most common physical and chemical parameters listed in the *Guidelines for Canadian Drinking Water Quality*.

The table below lists the chemical and physical parameters that are recommended for testing. Ensure that the test includes a low level metals scan (ICPMS Extractable).

Physical Parameters	Dissolved Anions	Total Metals		
Color	Alkalinity	Aluminum	Copper	Potassium
Conductivity	Chloride	Arsenic*	Iron	Selenium
Dissolved Solids	Fluoride	Barium	Lead	Sodium
Total Hardness	Sulphate	Boron	Magnesium	Uranium
pH	Nitrate-Nitrogen	Calcium	Manganese	Zinc
Turbidity	Nitrite-Nitrogen	Chromium	Mercury	

*Note: Elevated levels of naturally-occurring arsenic are common in drilled wells in the Sunshine Coast, Powell River, Sea to Sky and Bowen Island areas. Do not consume water with arsenic levels above the Maximum Acceptable Concentration (MAC) determined by Health Canada guidelines. Contact your local Drinking Water Officer for advice or refer to the Arsenic in Drinking Water health file.

How do I collect and ship the water sample?

Contact a lab from the list below and enquire about lab costs, sample bottles and shipping arrangements. Once you receive the sample bottles from the lab, read the sampling instructions carefully. Sampling error often contaminates the samples and produces elevated coliform results (false positive results).

When collecting a sample, it is important that the following steps are followed:

1. Choose a sample site that is accessible and used often, e.g., kitchen tap. Do not use a garden hose or dipper.
2. The water must be collected prior to water treatment devices such as softeners, carbon filters, reverse osmosis units and ceramic filters. Bypass, remove or disconnect these devices to take the sample before the water enters these devices.
3. Remove attachments from the tap such as an aerator, swivel, or hose and rubber washers.
4. **Wash your hands prior to collecting the water sample.**
5. Clean and disinfect the tap inside and out with an alcohol wipe or chlorine bleach solution prior (4 parts water to 1 part chlorine).
6. Run the water until cold.
7. Do not rinse the bottle prior to sampling.
8. Remove the lid from the sample bottle with one hand while holding the container with the other hand. Do not touch the bottle neck or inside of the lid or otherwise allow anything else to contaminate the bottle.
9. Fill the bottle to the recommended level.
10. If you are unsure whether the sample was contaminated; discard and re-sample using a new bottle.
11. Package the sample in a cooler with an ice pack (maintain temperature below 10°c) and ship to the lab immediately (the test may not be completed if the transit time is greater than 30 hours).

Where can I get my water tested?

Water can be tested for bacteria and chemical analysis at the labs listed below. This test is often referred to as a "Potability Test" by local building departments for final occupancy approval or for mortgage companies when applying for a new mortgage. Vancouver Coastal Health does not provide certification that the water is potable.

Name of Lab	Location	Contact information
ALS Laboratory Group	8081 Lougheed Hwy, Burnaby, BC V5A 1W9	**604-253-4188; www.alsglobal.com**
Bureau Veritas Laboratories (formerly Maxxam)	4606 Canada Way, Burnaby, BC V5G 1K5 2755B Moray Avenue, Courtney, BC V9N 8M9	**604-734-7276, www.bvlabs.com** **250-338-7786**
Exova Ltd.	#104-19575-55A Avenue, Surrey, BC V3S 8P8	**604-514-3322; www.exova.ca**
MB Laboratories Ltd.	2062 Henry Avenue, W. Sidney, BC V8L 5Y1	**250-656-1334; www.mblabs.com**
CARO Analytical Services	4011 Viking Way, Richmond, BC V6V 2K9	**604-279-1499; www.caro.ca**

What if there is a problem with my water test?

Obtain more information on the following topics from the Government of BC websites.
Arsenic in Drinking Water
Water Well Disinfection
Should I Get My Well Water Tested

To speak to an Environmental Health Officer in your service area, please call:

Service Area	Phone
Central Coast & West Chilcotin	604-983-6793
North Shore	604-983-6793
Powell River	604-485-3310
Richmond	604-233-3147
Squamish	604-892-2293
Sunshine Coast	604-885-5164
Vancouver	604-675-3800
Whistler	604-932-3202

Vancouver Coastal Health

WATER BACTERIOLOGY SAMPLING INSTRUCTIONS

The purpose of this procedure is to ensure that samples are:

- Collected using sanitary techniques to avoid contamination and,
- Stored and transported to the laboratory in a manner to prevent alterations of bacterial populations within the samples.

1. LABEL SAMPLE BOTTLE

(Use only bottles provided by the Health Unit)

Label bottle with:

- **Name of water system**
- **Location of water sample, and**
- **Date and Time sample was collected**
- **Indicate SENT BY: VCH**

2. REQUISTION FORM

(Use only requisitions provided by the Health Unit)

- **Complete the DATE & TIME the sample was collected**
- **Do not make photocopies of the requisitions. Please ensure that the paperwork has not expired (see date in lower right hand corner). If you need additional requisitions please call 604-485-3310 to order more.**

3. SAMPLING PROCEDURES:

- Do not rinse the bottles.
- Remove the aerator, swivel or hose and any washers attached to the tap.
- Disinfect the tap with an alcohol wipe or strong chlorine solution prior to collecting the sample.
- Run cold water for a minimum of 2 minutes before sampling.
- Fill the bottle with water to above the fill line mark.
- To avoid contaminating the sample, do not touch the neck of the bottle or the inside of the cap.
- Replace cap.
- **Place the Requisition Form inside the plastic bag and attach the bag to the bottle with an elastic band.**

4. DELIVER SAMPLES TO THE HEALTH UNIT

- Samples should be transported to the Health Unit as soon as possible after collection*
- Samples should be stored in a cooler during sampling and transportation.
- Samples should be stored in the fridge (4^0C) if samples are not shipped within 2hrs

***IMPORTANT: Water samples must be submitted to the Health Unit on the same day the sample is collected.**

- **Drop off location:**
  - Powell River Health Unit (3rd floor rear entrance to Powell River General Hospital)
  - 3rd Floor, 5000 Joyce Avenue, Powell River, BC

- **Sample Collection Drop-off Days:**
  - Mondays, Tuesdays and Wednesdays only - between 8:30 a.m. and 1:30 pm.

4. RESULTS

- Routine results will be returned by fax and/or e-mail.
- In the event of an e-coli positive, you will receive a phone call from BCCDC and the Drinking Water Officer.
- If you have changes to your phone number, fax or e-mail address, please contact Powell River Community Health Office 604-485-3310.