



The Water System Approval Process

Under the BC Drinking Water Protection Act and Regulation, Operating Permits are required for all drinking water systems serving anything other than a single-family dwelling. Drinking Water Officers (DWO) with Island Health work with prospective and existing water suppliers and monitor for compliance with this legislation.

1. Application Requirements

The prospective water supplier initiates the approval process through submission of an application and the accompanying information. The DWO is responsible for reviewing submissions and determining whether to issue an operating permit.

Water Supplier responsibilities:

- Submit drinking water system application form (to be obtained from Health Protection)
- Provide a map showing all portions of the proposed water system, other water sources and water bodies, onsite sewage disposal and any other potential contaminant sources, etc. (Depending system size and complexity, drawings may need to be prepared by a professional engineer).
- Submit source to tap screening tool for DWO review.
- Submit other documentation, as applicable:
 - Water quality results for each source (bacteriological and chemical/physical parameters as per Island Health list and/or DWO instruction).
 - Details about source location(s)
 - Intended water uses and populations to be served
 - Well log and pump test results
 - Water license
 - Information on existing land uses and demands on water source
 - Hydrogeologist report (*may address risks, identify confining/protective layers or time of travel radius for point contaminant sources, define non-point sources, provide maximum discharge rates and area recharge data, describe historical use of groundwater, etc.*)

2. Source Approval

The DWO will review the submissions outlined above and conduct a site assessment to determine whether the proposed well site or intake location may be appropriate.

Water Supplier responsibilities:

- At the request of the DWO, attend the site assessment

3. Construction Permit Application/Construction Permit Waiver Request

Drinking water works must not be constructed, expanded or altered without a valid construction permit or a waiver granted by the Public Health Engineer prior.

The Public Health Engineer may consider construction permit waivers requests for:

- 1) The construction of a new, small water system serving a single parcel of land, and the system:
 - Uses a single deep-well source that meets the health parameters specified in the CGDWQ, or
 - Uses only simple treatment and/or disinfection;

Or

- 2) The alteration of an existing small water system serving more than a single parcel of land provided the DWO is prepared to accept the proposal, and the proposed alterations:
 - Are relatively minor, or
 - Are to add simple treatment and/or disinfection,

For proposals on larger systems or relating to the construction of more complex works, a construction permit will be required as per the legislation.

For further assistance in determining whether your proposal may be eligible for a construction permit waiver, consult with the DWO.

Water Supplier responsibilities:

- Submit permit application or waiver request, including detailed specifications for proposed equipment (pumps, tanks, conveyances, disinfection/treatment equipment)
- Ensure all information is complete and accurate to facilitate a timely public health engineering (PHE) review.
- Allow for an extended waiting period for PHE review

4. Inspection by the DWO

The DWO will conduct an **initial inspection** from source to tap after granting source approval and receiving notice from the water supplier that construction is complete. The intent will be to confirm that infrastructure is consistent with the construction permit application or waiver request, and that the building blocks for successful management of the system are in place (i.e. Emergency Response Plan, Standard Operating and Maintenance Procedures, Operator training).

The DWO will conduct subsequent routine inspections at a frequency based on his or her discretion and the results of an Inspection Priority Rating Tool, which assesses risk based on information provided by the operator, system specifics, and inspection findings.

Routine Inspections resemble initial inspections in intent and method, but there is additional focus on management and operation of the water system. The DWO may require logbooks and records for

review (i.e. disinfectant residual, UV system upkeep and maintenance such as bulb changing and sleeve cleaning). The DWO will attempt to verify that the operator's level of knowledge and ability are appropriate to safely operate the system, and may recommend or require additional training.

At his or her discretion, the DWO may schedule **follow up inspections** to monitor for compliance.

Water Supplier responsibilities:

- Notify the DWO when construction is complete.
- Ensure availability of a trained operator to accompany the DWO on all inspections.
- Be aware of ongoing requirements laid out in the Drinking Water Protection Act and Regulation (available online for your review at www.bclaws.ca), and DWO direction via inspection reports, terms and conditions to the operating permit, etc.

5. Operating Permit

Before issuing an operating permit, the DWO will review source approval and construction permit or waiver requirements, and may attach terms and conditions to outline system specific requirements or further define the legislation.

Water Supplier responsibilities:

- Ensure that no water reaches water users until an operating permit is in place.
- Review proposed terms and conditions, and request changes if necessary.
- Adhere to all terms and conditions once the permit has been issued. Failure to do so may result in the DWO taking enforcement action.

6. Water Quality Monitoring Program

Sample frequency for E coli and total coliform bacteria will be as per Schedule B of the Drinking Water Protection Regulation, or, at his or her discretion, the DWO may modify sample frequency.

In considering a deviation from the legislated bacteriological sampling frequency, the DWO will:

- Review all submissions, including any rationale for a proposed reduction in sample frequency from that specified in the legislation.
- Consider source type and integrity, system size, sample history (if any), compliance history (if any), water quality, disinfection/treatment methods, inherent system risk etc
- Assess raw water sampling requirements
- Determine whether THM/HAA sampling is to be required (where chlorine is applied)

The DWO will set the frequency for chemical/physical scans based on system characteristics such as source type and security, also considering any results from previous testing.

Water Supplier responsibilities:

- Submit evidence to support any proposed changes or reductions in sampling frequency.

- Meet all requirements of the monitoring program, retaining all results for future reference.

7. Maintenance and Operating Procedures

Written maintenance and operating procedures are required to ensure system operations are smooth and effective. These procedures should comprise a logbook with daily, weekly, and monthly tasks, and require the person responsible to initial the logbook upon completion of a task.

Water Supplier responsibilities:

- Develop written operating and maintenance procedures appropriate to the system
- Monitor source water and treatment or disinfection equipment (i.e. chlorine residuals, turbidity etc) Consult user manuals to inform this process.
- Initiate record keeping and retain all records for reference and inspection purposes

8. Source Protection

Depending system size, the plan may include signage, limits on land use, purchase of land, zoning restrictions, controls on industry/resource harvesting etc. Resources should be focused on areas under water system control. The plan should demonstrate that the water supplier knows what impacts the water source may be subject to, how to prevent or mitigate harm to water users in the event of a contamination event. The DWO may be able to provide written resources to assist in developing a source protection plan.

Water Supplier responsibilities:

- Establish and adhere to a source protection plan

9. Emergency Response Plan (ERP)

An ERP will inform system response to any threat to water user health. It will outline required actions in each type of emergency, with up to date contact information for all individuals who may be required for assistance. The DWO may be able to provide an ERP template, particularly for small systems.

Water Supplier responsibilities:

- Prepare an ERP, ensure familiarity and accessibility to staff, and conduct annual plan reviews.

10. Operator Training

For large systems, the Environmental Operators Certification Program (EOCP) will provide a rating to indicate training requirements for the water system operator. The rating considers source, complexity of disinfection/ treatment, size of system etc. Training requirements for small system operators are at the discretion of the DWO, but Water Safe (or equivalent) is generally a minimal requirement.

Where there will be a delay in securing a trained operator, the DWO may have additional requirements to ensure the operational needs of the system are met in the interim (i.e. contract with an offsite certified operator to visit the system and provide required oversight.)

Water Supplier responsibilities:

- Determine training requirements and develop and adhere to a plan to meet requirements
- Plan for succession through the provision of training to an alternate staff member

11. Annual Report

Water suppliers are required to make an annual report to water users.

The report will provide

- bacteriological results
- chemical results
- description of upgrades or major work on the system
- planned upgrades
- expected rate increases and justifications
- Additional information specific to the system

The DWO may provide instruction on expected annual report content or release date, or may attach related requirements as terms and conditions to the operating permit. Depending on system size and other characteristics, the water supplier may post the report in a common area, include a copy with the water bill, post it to the water system website and notify water users that this has been done etc.

Water Supplier responsibilities:

- Prepare annual reports to water users and provide a copy to the DWO.
- Ensure adherence to report release date and any additional report contents specified by the DWO

12. Ongoing Contact with DWO

The DWO may contact the water supplier to arrange inspections, to obtain audit samples, to discuss operator training, to inform of possible changes or additions to terms and conditions of the operating permit, or for a variety of other reasons.

The water supplier must inform the DWO of any emergency or other atypical occurrence in system operations, and may contact the DWO at any time with questions or concerns.

Water Supplier responsibilities:

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- Inform the DWO in an case of known or suspected water contamination or other emergency, but do not allow any delay in taking necessary precautions as per the ERP (i.e. issuance of a Public Notice)
- Ensure the availability of a qualified operator to accompany the DWO on inspections